XFI™ NSR FORD 4.6L/5.4L MODULAR 3V CAMS
(NO SPRINGS REQUIRED)

The COMP Cams® XFI™ NSR (No Springs Required) Cam Sets for Ford 4.6L/5.4L Modular 3 Valve Engines are the first truly “drop-in installation” camshafts ever created for this popular application – striking the perfect balance of performance versus installation difficulty. Offered for both naturally aspirated and supercharger-equipped engines, these cam sets require no additional computer re-tuning; however testing has shown that mild tuning can result in power gains even greater than the normal 25 rear wheel horsepower. These camshafts are fully compatible with the factory variable cam timing (VCT) system and are designed to operate in the stock rpm range. The stage one cam set is designed to maximize mid-range power and torque, while stage two maximizes top end horsepower.

<table>
<thead>
<tr>
<th>APPLICATION/CAMSHAFT</th>
<th>RPM OPERATING RANGE</th>
<th>CAM SET PART NUMBER</th>
<th>CAMSHAFT GRIND NUMBER</th>
<th>DURATION @ .050&quot;</th>
<th>VALVE LIFT</th>
<th>LOBE SEP. ANGLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1 - Great upgrade for stock engine. Solid power gains above 4700 rpm, compatible with stock springs. Works with with tuners, no computer re-tuning required.</td>
<td>750-6200</td>
<td>127050</td>
<td>XE253LH-14</td>
<td>253 270 214 227</td>
<td>.450 .450</td>
<td>114°</td>
</tr>
<tr>
<td>Stage 2 - Solid power gains above 4900 rpm, compatible with stock springs. Works with tuners, no computer re-tuning required. Best with 3.73 gears &amp; 2500 stall. Great idle.</td>
<td>750-6400</td>
<td>127200</td>
<td>XE261LH-15.5</td>
<td>261 278 222 235</td>
<td>.450 .450</td>
<td>115.5°</td>
</tr>
</tbody>
</table>


Blower Grind, Stage 2 - Mid to upper range cam for bolt-on blowers running higher boost psi. Major power gains above 4900 rpm. Compatible with stock springs. Best with 3.73+ gears & 2500 stall. Great idle.

*Note: Each cam set part # includes right and left camshafts.
- Call for custom grinds or turbo applications.

XFI™ VSR FORD 4.6L/5.4L MODULAR 3V CAMS
(VALVE SPRINGS REQUIRED)

For those hardcore enthusiasts looking to achieve substantial horsepower and torque increases and who aren’t intimidated by having to upgrade their valve springs, COMP Cams® offers a full line-up of XFI™ VSR (Valve Springs Required) Cam Sets for Ford 4.6L/5.4L Modular 3 Valve Engines that offer as much as 40 hp increases over stock levels. Available for both naturally aspirated and supercharged engines, these cam sets are also available in two stages. Designed to work with the Ford variable cam timing (VCT) system, these camshaft sets are direct replacements that bolt in without engine modification except the valve spring upgrade. By working with the VCT, which is programmed to retard the camshaft timing at peak power, COMP Cams® XFI™ VSR Cam Sets for Ford 4.6L/5.4L Modular 3 Valve Engines optimize both mid-range and high rpm performance.

<table>
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<tr>
<th>APPLICATION/CAMSHAFT</th>
<th>RPM OPERATING RANGE</th>
<th>CAM SET PART NUMBER</th>
<th>CAMSHAFT GRIND NUMBER</th>
<th>DURATION @ .050&quot;</th>
<th>VALVE LIFT</th>
<th>LOBE SEP. ANGLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1 - Excellent upgrade over stock. Solid power gains above 4400 rpm, requires spring upgrade. Tuner recommended. Stock gears &amp; converter OK.</td>
<td>850-6200</td>
<td>127100</td>
<td>XE253H-14</td>
<td>253 270 214 227</td>
<td>.480 .470</td>
<td>114°</td>
</tr>
<tr>
<td>Stage 2 - Serious street cam, noticeable idle. Solid power gains above 4600 rpm, requires spring upgrade. Works with tuners, tuning recommended. Best with 3.90 gears &amp; 3000 stall.</td>
<td>950-6400</td>
<td>127300</td>
<td>XE261H-15.5</td>
<td>261 278 222 235</td>
<td>.490 .480</td>
<td>115.5°</td>
</tr>
</tbody>
</table>

Blower Grind, Stage 1 - Powerful mid-rpm range cam for bolt-on blowers at stock boost levels. Solid power gains above 4400 rpm. Requires spring upgrade. Stock gears & converter OK.

Blower Grind, Stage 2 - Mid to upper range cam for bolt-on blowers with high boost. Noticeable idle, solid power gains above 4900 rpm, requires spring upgrade. Best with 3000+ stall.

*Note: Each cam set part # includes right and left camshafts.
- Call for custom grinds or turbo applications.
## TEST PARAMETERS

**Engine:** Ford 4.6 Liter Modular 3 Valve Engine
**Intake Modifications:** JLT Cold Air Intake
**Headers:** Dynatech Full Length Headers With X-Pipe & High Flow Cat
**Mufflers:** Stock

*Special Notes:
*Stock/functioning CMCV plates were used for all engine dyno tests
*Unless noted above all components stock*

Testing performed At COMP Performance Group™ R&D Center on SuperFlow 902 Engine Dyno

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### PART NUMBERS IN RED REPRESENT A PREMIUM UPGRADE

<table>
<thead>
<tr>
<th>HIGH PERF. SPRINGS</th>
<th>HIGH LOAD SPRINGS (HIGH-BOOST, 7000+ RPM OPERATION)</th>
<th>STEEL RET.</th>
<th>TITANIUM RET.</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
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</tr>
</tbody>
</table>

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“This was an incredible gain on our highly modified naturally aspirated engine combination. The exhaust is incredible; it sounds like a big block. There was no bottom end power loss and a 72 rwhp gain. You guys have blown me away with these cams.”

Jim D’Amore Sr.
Championship Ford Mod Motor Builder
Owner & Engineer – JDM Engineering
The COMP Cams® XFI™ SPR (Springs and Phaser Mods Required) Camshafts are the best way to achieve the most horsepower and torque increases possible with the popular Ford 4.6L/5.4L Modular 3 Valve engines. This last group of cam sets is available for both naturally aspirated and supercharged engines, and each version is offered in three performance levels. Designed to work with a modified Ford variable cam timing (VCT) system, these camshafts are direct replacement components. Working with the required COMP Cams® Cam Phaser Limiter Kit (Part #5449; patent pending), these XFI™ SPR Cams optimize both low and high rpm performance. As noted by the COMP Cams® engineering staff during extensive dyno testing, these camshafts provided the biggest power and torque improvements of any cam series they’ve ever tested in the Ford Modular 3 Valve engine.

<table>
<thead>
<tr>
<th>APPLICATION/CAMSHAFT</th>
<th>RPM OPERATING RANGE</th>
<th>CAM SET PART NUMBER*</th>
<th>CAM GRIND NUMBER</th>
<th>DURATION ADVERTISED IN.</th>
<th>EX.</th>
<th>VALVE LIFT IN.</th>
<th>EX.</th>
<th>LOBE SEP. ANGLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1 - Powerful cam with great idle, excellent upgrade over stock. Good torque down low with powerful mid-range. Solid power gains above 4500 rpm, requires spring &amp; phaser upgrade. Custom tuning required. Stock gears &amp; converter OK.</td>
<td>900-6700</td>
<td>127400</td>
<td>XE256PH-12</td>
<td>256</td>
<td>267</td>
<td>221</td>
<td>228</td>
<td>.523</td>
</tr>
<tr>
<td>Stage 2 - Powerful cam with very rough idle, biggest cam to use with stock heads. Good mid-range torque with incredible top end hp gains. Solid power above 4700 rpm, spring &amp; phaser upgrade required. 3.90 or better gears &amp; 3000+ stall.</td>
<td>950-6900</td>
<td>127500</td>
<td>XE264PH-12</td>
<td>264</td>
<td>275</td>
<td>229</td>
<td>236</td>
<td>.535</td>
</tr>
<tr>
<td>Stage 3 - Max effort street/strip cam with very rough idle, needs ported heads. Good mid-range with incredible power up to 7000+ rpm. Solid power gains above 4900 rpm, requires spring &amp; phaser upgrade. Custom tuning required. 4.10+ gears &amp; 3200+ stall.</td>
<td>1000-7100</td>
<td>127600</td>
<td>XE272PH-12</td>
<td>272</td>
<td>283</td>
<td>237</td>
<td>244</td>
<td>.547</td>
</tr>
</tbody>
</table>

Blower Grind, Stage 1 - Powerful cam with great idle, excellent upgrade over stock. Good torque down low with powerful mid-range. Solid power gains above 4500 rpm, requires spring & phaser upgrade. Custom tuning required. OK with stock gears.

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<td>900-6700</td>
<td>127450</td>
<td>XE264PH-13</td>
<td>264</td>
<td>279</td>
<td>229</td>
<td>240</td>
<td>.535</td>
</tr>
</tbody>
</table>

Blower Grind, Stage 2 - Big power gains in mid to upper-rpm range for bolt-on blowers with high boost. Rough idle, solid power gains above 4900 rpm, requires spring & phaser upgrade. Custom tuning required. Best with 3.90+ gears & 3000+ stall.

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<th>CAM GRIND NUMBER</th>
<th>DURATION ADVERTISED IN.</th>
<th>EX.</th>
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<th>EX.</th>
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<td>950-6900</td>
<td>127550</td>
<td>XE272PH-13</td>
<td>272</td>
<td>287</td>
<td>237</td>
<td>248</td>
<td>.547</td>
</tr>
</tbody>
</table>

Blower Grind, Stage 3 - Max effort blower cam with very rough idle, needs ported heads. Great mid-range with incredible gains up to 7000+ rpm. Solid power gains above 4900 rpm, requires spring & phaser upgrade. Custom tuning required. 4.10+ gears & 3200+ stall.

<table>
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<tr>
<th>APPLICATION/CAMSHAFT</th>
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<th>CAM SET PART NUMBER*</th>
<th>CAM GRIND NUMBER</th>
<th>DURATION ADVERTISED IN.</th>
<th>EX.</th>
<th>VALVE LIFT IN.</th>
<th>EX.</th>
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</thead>
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<td>1000-7100</td>
<td>127650</td>
<td>XE280PH-13</td>
<td>280</td>
<td>295</td>
<td>245</td>
<td>256</td>
<td>.559</td>
</tr>
</tbody>
</table>

*Note: Each cam set part # includes right and left camshafts. - Call for custom grinds or turbo applications.

Ford 4.6L/5.4L Modular 3V Engine
Cam Phaser Q & A

What are cam phasers?
Ford’s cam phasers are specially designed, computer-controlled cam gears for all 2005 and newer Ford Modular 3 Valve engines that have the ability to adjust camshaft position while the engine is running. Since the modular engine uses two camshafts, two cam phasers are used.

How do they work?
Engine oil is pressure fed to the cam phasers through a series of passageways in the cylinder heads and camshafts. The engine computer controls a pair of solenoids that adjusts this oil flow into and out of the cam phaser’s control chambers, giving the ability to retard the cams up to 60 crank degrees.

Why did Ford put them in the engine?
When the cams are retarded 20-40 degrees during part throttle engine operation, it takes less power to turn the engine over. This helps to increase the engine’s fuel efficiency. Another power benefit is that the cam phasers allow the camshafts to always be in the best position for maximum power, regardless of what the engine’s rpm is. The engine makes more torque and horsepower and extends the high rpm powerband by an extra 800-1000 rpm.

Why should I modify the cam phasers with a COMP Cams® Limiter Kit?
If there is a downside to the stock cam phasers designed by Ford, it is that they have such a wide range of movement. Since the cams can theoretically be retarded by up to 60 degrees, there is very little piston to valve clearance in the engine. This minimal piston to valve clearance limits us to fairly small cam profiles with very little overlap.
What does the COMP Cams® Phaser Limiter Kit do?
These limiter plates replace the factory back-plate on the cam phaser. They have posts which extend into the cam gear’s control chambers, limiting their movement to no more than 20 degrees. This gives more piston to valve clearance and lets you install bigger, more powerful camshafts with safe piston to valve clearances. While keeping up to 20 degrees of movement available, all the wide-open throttle benefits of the cam phasing are retained, since the normal retard the cams see at wide-open throttle is only around 9 degrees.

Do I have to reprogram my engine’s computer after installing the Cam Phaser Limiter Kit?
Yes, you MUST reprogram your engine’s computer for the engine to operate properly after installing the cam phaser limiters. The guidelines for reprogramming are simple – just make sure that the maximum retard amount entered for any of the cam phaser tables and DTC strategies in your tuning software does not exceed 20 degrees.

PART NUMBERS IN RED REPRESENT A PREMIUM UPGRADE

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>HIGH LOAD SPRINGS</th>
<th>STEEL RET.</th>
<th>TITANIUM RET.</th>
<th>CAM PHASER LIMITER KIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>26113-24</td>
<td>26125-24</td>
<td>700-24</td>
<td>702-24</td>
<td>5449</td>
</tr>
<tr>
<td>26113-24</td>
<td>26125-24</td>
<td>700-24</td>
<td>702-24</td>
<td>5449</td>
</tr>
<tr>
<td>N/A</td>
<td>26125-24</td>
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</tbody>
</table>

TEST PARAMETERS

Engine: Ford 4.6 Liter Modular 3 Valve Engine
Intake Modifications: JLT Cold Air Intake
Headers: Dynatech Full Length Headers With X-Pipe & High Flow Cat
Mufflers: Stock
Special Notes:
*COMP Cam® Phaser Limiters #5449 installed
*Stock/functioning CMCV plates were used for all engine dyno tests
*Unless noted above all components stock

Testing performed At COMP Performance Group™ R&D Center on SuperFlow 902 Engine Dyno

PRODUCTS ARE NOT LEGAL FOR SALE OR USE ON POLLUTION CONTROLLED STREET VEHICLES; FOR USE IN COMPETITION & OFF-ROAD VEHICLES ONLY
COMP Cams® Cam Phaser Limiter Kits
Limits movement of cam gear to no more than 20°, allowing more piston to valve clearance and more powerful cams, all while still keeping wide-open throttle benefits of cam phasing

#5449 Cam Phaser Limiter Kit – includes two limiter plates and installation tools

www.compcams.com 1-800-999-0853

COMP Cams® Beehive™ Valve Springs For Ford 4.6L/5.4L Modular 3V Engines
Reduced weight and increased valve control allow cars to turn more rpm and have higher lift camshafts while maintaining stability of OE applications

#26113 Beehive™ – 93 lbs. seat pressure, 198 lbs. open pressure
#26125 High Load Beehive™ – 120 lbs. seat pressure, 275 lbs. open pressure
#700 Steel Retainers – .959” spring diameter
#702 Titanium Retainers – .959” spring diameter

www.compcams.com 1-800-999-0853

COMP Cams® XFI™ Ford Modular 3V Camshafts
Three camshaft series use innovative lobe design to work in conjunction with the factory variable cam timing system to deliver more horsepower and torque

NSR Series – No Springs Required
VSR Series – Valve Springs Required
SPR Series – Springs and Phaser Mods Required

*See charts on previous pages for part numbers

www.compcams.com 1-800-999-0853

FAST™ Dual Sensor Air/Fuel Meter
Dual sensor capability and easy-to-use format allow even novice tuners to monitor air/fuel ratio with precision accuracy; optional rpm module and in-vehicle mount kit also available

#170402 Dual Sensor Air/Fuel Meter
#170493 Air/Fuel Meter Interior Mount Kit
#170536 Air/Fuel Meter RPM Module Kit

www.fuelairspark.com 1-877-334-8355

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TCI® StreetFighter® Ford Mustang Ratchet Shifter For 5R55S Transmission
Cable-operated ratchet shifter that delivers eye-catching billet appearance, positive shifting action and fits within factory Mustang console

#619570 StreetFighter® Ford Mustang Ratchet Shifter For 5R55S Transmission
www.tciauto.com 1-888-776-9824

ZEX™ Mustang Nitrous Kits
Custom fit nitrous kits feature Active Fuel Control™ to adjust fuel enrichment with variations in bottle pressure and feature everything necessary for a two hour, plug and play installation

#82034 2005-Current Mustang GT Nitrous System – Tunable from 75 to 175 hp
#82242 2005-Current High Output Mustang Nitrous System – Tunable from 100 to 250 hp
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TCI® Ford Mustang Torque Converters
Available in several stall speeds, these triple-tested, computer balanced converters provide quicker acceleration and lower elapsed times

#456000 StreetFighter® Torque Converter – 3000 rpm stall speed
#456002 Super StreetFighter™ Torque Converter – 3500 rpm stall speed
#456005 Competition Torque Converter – 3800 rpm stall speed
*Custom stall speeds available
www.tciauto.com 1-888-776-9824

TCI® StreetFighter® 5R55S Transmissions
These transmissions incorporate the latest in drivetrain technology to increase shift firmness and fluid flow in your automatic-equipped Mustang

#571100 StreetFighter® Transmission – Up to 850 hp
#571000 Super StreetFighter™ Transmission – Up to 1200 hp
www.tciauto.com 1-888-776-9824
The Ford 4.6L/5.4L Modular 3V Ford Mustang engine has become increasingly popular, so now the question is - how can we further improve the performance of it? COMP Cams® has built upon Ford’s technology with three new series of camshafts created specifically for these engines: NSR (No Springs Required), VSR (Valve Springs Required), and SPR (Springs and Phaser Mods Required). Each series of cams is available for both naturally aspirated and supercharged engines and is carefully matched with COMP Cams® components, including high performance valve springs, retainers and COMP’s latest offering for these engines – the Cam Phaser Limiter Plates. Don’t settle for stock; make your Ford Mustang stand out from the crowd.

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