

ATTENTION



PLEASE READ

THIS CAMSHAFT WAS DESIGNED TO BE USED WITH SPECIAL **WEB-CAM** HIGH PERFORMANCE LIFTERS AND IS NOT COMPATIBLE WITH STOCK OR REGROUND PARTS. YOUR WARRANTY COULD BE VOID AND YOUR CAMSHAFT DAMAGED IF PROPER LIFTERS ARE NOT USED.

THE CAM GEAR BOLTS SUPPLIED SHOULD BE TORQUED TO **14 FT. - LBS.**

IF YOU HAVE ANY QUESTIONS, PLEASE CONTACT **WEB-CAM** DIRECTLY.

1815 MASSACHUSETTS AVE • RIVERSIDE CA 92507
PHONE 951.369.5144 • FAX 951.369.7266
WEBCAMSHAFTS.COM



CONGRATULATIONS, you have purchased the finest, most advanced performance camshafts available. WEB-CAM PERFORMANCE CAMSHAFTS are designed in our facilities, tested on a dyno, and proven every weekend by national champions and record holding racers. WEB-CAM camshafts are precision ground, either hard welded or double heat treated, then coated with a dry film moly lubricant to insure long life.

CAUTION - PLEASE READ!

When assembling a high performance engine, the use of aftermarket components - such as cams, pistons, valves, valve guides, and springs - requires caution and clearance checks during assembly. Since these components were not designed and tested by the engine manufacturer, it is your responsibility to ensure that these high performance parts will work together without interference! Some points to check are listed below. The following notes are based on an overhead cam, rocker arm, single cylinder engine. Bucket type cam followers require all the same check listed here, plus bucket-to-head clearance at maximum lift, but techniques will vary slightly. Pushrod engines also require all these checks listed here, plus checking that the pushrods do not rub the pushrod housings or interfere with rocker arms.

- 1) Start at the top of the engine, check rocker arm to top clearance (.040" Minimum) through one revolution of the cam.
- 2) Stop at maximum lift and check top retainer to valve guide seal clearance. (.030" Minimum)
- 3) While at maximum lift, be sure to check for valve spring coil bind. Minimum of .010" between each coil all the way around each coil.
- 4) Stop at overlap position (Both intake and exhaust valves open) and check clearances between intake and exhaust valves. (.040" Minimum) This is vital with oversized valves and high performance cams.
- 5) Check piston to cylinder head and head gasket clearance. (.030" Minimum) This is important with big bore pistons.
- 6) Check piston to intake and exhaust valve clearance. (.050" Minimum on the intake, .080" Minimum on the exhaust.) This step is vital with high compression pistons, high lift cams, and oversized valves used singularly or together.

Be certain that you are using the proper gear flange bolts and that the bolts can be threaded in easily by hand to firmly secure gears. If slotted gears are used, make sure the slots are not sloppy or too wide. NEVER hammer, tap on, or shock the gear flange or bolts while you degree or install cams. Torque bolts to proper specs. Gear flanges can break and are not covered under the warranty. Some camshafts have a reduced base circle radius and require lash caps, shims, longer valve stems or longer adjusting screws for proper valve adjustment. Suzuki and Kawasaki pro-stock grinds are an example.

Please use a premium grade (SAE 30) petroleum based racing motor oil such as Kendall or Valvoline. We do not recommend any type of synthetic oil. Use new followers, shims, rockers, etc. with new camshafts, failing to do so will cause premature failure of you camshaft. Camshafts require special break-in procedures. For the first 10-15 minutes of use, we recommend setting your engine at a high idle (2000 RPM) to insure proper lubrication.

CORE REQUIREMENTS (Applies to hard welded products only)

If you did not send your cam for processing and purchased a cam core, you may return a stock cam for a core refund. All cam cores must be returned within six months of purchase. Although the lobes of a hardwelded cam are totally re-worked, the rest of the cam is not in order to receive a full core refund, you must return a good core, a copy of your original invoice, and it must be received within 6 months of your invoice date. The following are some reasons that would cause your core to not be accepted.

- Damage to the journal areas.
- Journal areas out of round.
- Previously Hard welded cam. (Call for more information)
- Stripped or broken bolt holes.
- Excessive overheating.
- Inferior aftermarket Taiwan cores

LIABILITY RELEASE

The purchaser releases the parts manufacturer, and WEB-CAM Inc. from all liabilities pertaining to the installation and use of purchased parts. Purchaser recognizes that any alteration and/or modifications to the vehicle may increase the risk of injury or accident, and may also render the vehicle illegal for use on public roads.

THANK YOU

Please read the warranty and installation information on your enclosed timing card. If you have any questions, do not hesitate to call us @ 951.369.5144. Thank you for choosing WEB-CAM Racing Cams and Quality Valve Train Components.

WARRANTY INFORMATION

WEB-CAM, Inc. warrants all hard-welded and new camshafts against excessive cam lobe wear for a period of six (6) months from date of purchase. This warranty covers cam lobe wear only and does not cover broken cams, lifters, tappets, rocker arms, or any other engine parts. WEB-CAM camshafts are considered racing parts and as such this warranty does not cover abnormal wear due to insufficient lubrication, excessive engine heat, valve spring coil bind, and cylinder head or guide interference. In no event shall WEB-CAM, Inc. be liable for labor or service charges from the replacement, removal, installation or shipping of camshafts or related parts.

Should your cam lobes wear excessively during the warranty period, return it to WEB-CAM, with proof of purchase. WEB-CAM will inspect your cam and repair or replace (at WEB-CAM's discretion), under the terms of the warranty, at a cost not to exceed 50% of list price plus postage.

These warranties do not apply to reground cams or components. WEB-CAM warranties are void where the WEB-CAM product has been physically altered and/or used and/or installed improperly.

**PERFORMANCE CAMS ARE NOT LEGAL OF SALE
ON POLLUTION CONTROLLED VEHICLES!**

WEB-CAM
RACING CAMS

WARRANTY, INSTALLATION AND VALVE TIMING INFORMATION

WEB-CAM, Inc. 951.369.5144
1815 Massachusetts Ave. • Riverside, CA 92507

WWW.WEBCAMSHAFTS.COM

INSTALLATION INFORMATION

Upon installation of your WEB-CAM camshaft, check the following. These operations are very important to engine life, please follow instructions! If your cam is described as a "bolt-in" in the WEB-CAM catalog, you may skip 1-5 below.

1. Check piston to valve clearance. Provide the necessary clearance by removing material from the piston. Minimum .050" intake, .080" exhaust.
2. Check valve to valve clearance. It may be necessary to remove material from the valves or sink valve seat height in head.
3. Check the valve spring retainer to valve guide clearance at maximum lift. Remove material from the top of valve guides to provide a minimum of .030" clearance.
4. Check for valve spring coil bind at maximum valve lift. Clearance at every coil should be at least .015"
5. Be certain that cam and/or rocker arms rotate freely in head or block. Remove material from head, block, or rocker arms where necessary.
6. Engine and cam life depend on proper installation. New or reground followers should be used when installing WEB-CAM profiles. Apply the provided assembly lube to cam lobe and follower surfaces.
7. For proper break-in, after installation of a new camshaft, do not allow your engine to idle below 2000 RPM for the first 15 minutes of use.

VALVE TIMING INFORMATION

Engine: Porsche 912 E ; 914 ; Volkswagen Type 4 8v

Grind #: 163

	<u>Intake</u>	<u>Exhaust</u>
Valve Lash:	.006	.006
Valve Lift:	0.500	0.500
Duration:	284°	284°
Duration @ 0.050:	249°	249°
Lobe Center:	108°	108°

Intake Opens	16.5°	Before TDC	Exhaust Opens	52.5°	Before BDC
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Intake Closes	52.5°	After BDC	Exhaust Closes	16.5°	After TDC
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Valve Timing Is Checked With Zero Valve Lash @ 0.050 Inches Of Valve Lift.