



RIVA RACING

PERFORMANCE PRODUCTS & ACCESSORIES

Adjustable Cam Sprocket Kit

PART# - RY19040-ACS

We strongly recommend the use of a service manual to familiarize yourself with the various components and procedures involved with this installation. Please note that some of the original hardware removed in the disassembly process will be used in the installation process. These instructions have been written in step-by-step format and refer to illustrations. We suggest reading through the instructions entirely before performing installation. Please follow these step-by-step instructions and illustrations carefully.

APPLICATION(S): 2008-2012 Yamaha 1.8L Engines

***** ALLOW ENGINE TO COOL COMPLETELY BEFORE PERFORMING INSTALLATION *****

Required Specialty Tools

Accurate, High-quality Torque Wrench
Small Slotted Screwdrivers (2)

Part#

N/A
N/A

- INSTALLATION INSTRUCTIONS -

Removal & Installation:

Following the steps outlined in your O.E.M. service manual remove the stock cam shaft sprockets.

Select the timing tabs applicable to your performance requirements using the supplied reference chart. **NOTE: Timing tabs fit one way only. Shoulder on back side is radiused to match machined opening in cam sprocket.**

Following the steps outlined in your O.E.M. service manual install the supplied Adjustable Cam shaft Sprockets. **NOTE:** Recessed side faces rear of engine, smooth side faces front of engine.

Timing Tabs:

Remove the pump reduction nozzle, steering nozzle and reverse gate as one assembly.

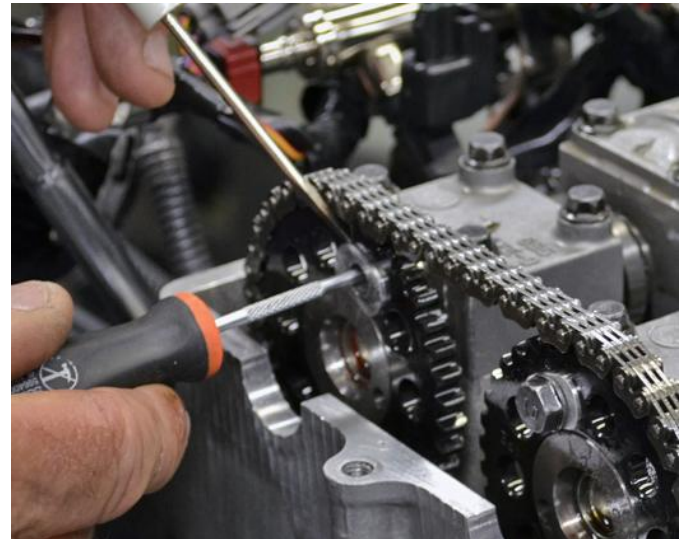
Remove pump stator tail cone (3 bolts).

Remove engine valve cover.

Working with one cam at a time remove one bolt securing adjustable cam sprocket to cam shaft.

Insert small screwdriver into center of timing tab.

Carefully remove timing tab sliding it onto screwdriver. **TIP:** Pry evenly on each side of tab with small slotted screwdriver.



Apply motor oil to bolt and replace. Screw into cam shaft, but do not torque.

Roll engine over using nut on end of drive shaft at pump until opposite cam sprocket bolt is accessible.

Remove bolt.

Insert small screwdriver into center of timing tab.

Carefully remove timing tab sliding it onto screwdriver. **TIP:** Pry evenly on each side of tab with small slotted screwdriver.

Install new timing tab. **NOTE: Timing tabs fit one way only. Shoulder on back side is radiused to match machined opening in cam sprocket.**

Apply motor oil to bolt and replace. Screw into cam shaft, but do not torque.

Roll engine over using nut on end of drive shaft at pump until opposite cam sprocket bolt is accessible.

Remove bolt.

Install new timing tab. **NOTE: Timing tabs fit one way only. Shoulder on back side is radiused to match machined opening in cam sprocket.**

Move to opposite cam. Repeat timing tab removal and installation process.

Torque cam shaft sprocket bolts to 13.3 ft•lb / 18 N•m.

Replace engine valve cover.

Replace pump stator tail cone. **NOTE: Apply blue Loctite to threads. Do not over tighten.**

Replace pump reduction nozzle. **NOTE: Apply silicone sealant to mating surface. Apply red Loctite to bolt threads. Torque bolts to 30 ft•lb / 40 N•m.**

Check bilge for tools, rags, etc. Run craft on a flush kit to check for proper operation.

Timing Tab Key

Color	Degree
Black =	Plus 5-degrees
Blue =	Plus 7-degrees
Gold =	Negative 5-degrees
Red =	Negative 2-degrees
Silver =	Stock (0-degrees)

Tuning Recommendations:

Supercharged Engine Cam Shafts on SHO Engine

Intake	Exhaust	Peak HP Gain	Fuel Requirement
+7	- 2	Max power throughout.	Race Fuel
+5	0	Low~Mid Range (3,000~6,000rpm)	91+ Pump Fuel *
+5	- 2	Mid~Top Range (6,000~8,000rpm)	91+ Pump Fuel *
0	0	Stock	Based upon boost. *

Normally Aspirated Engine Cam Shafts or Yamaha Racing Cam Shafts (Part# RY19040-CS-628) on SHO Engine

Intake	Exhaust	Peak HP Gain	Fuel Requirement
+7	- 5	Low~Mid Range (3,500~6,500rpm)	Race Fuel
+7	- 2	Mid~Top Range (6,500~8,500rpm)	Race Fuel
+5	0	Mid~Top Range (6,500~8,500rpm)	91+ Pump Fuel *
0	0	Stock	Based upon boost. *

Normally Aspirated Engine Cam Shafts on HO Engine

Intake	Exhaust	Peak HP Gain	Fuel Requirement
+7	- 5	Low~Mid Range (3,500~6,500rpm)	91+ Pump Fuel *
+7	- 2	Mid~Top Range (6,500~8,500rpm)	91+ Pump Fuel *
+5	0	Mid~Top Range (6,500~8,500rpm)	91+ Pump Fuel
0	0	Stock	87+ Pump Fuel

* = May require higher octane fuel if aggressive timing maps are utilized. RIVA/Vi-PEC ECU users refer to specifications provided with Base Maps on ECU Manager Web Site. All other aftermarket ECU's refer to manufacturer's recommendations.

***Remember, the water belongs to everyone.
Please ride responsibly and respect the environment!***

Technical Support

For answers to questions regarding installation or trouble shooting RIVA Performance Products contact:
RIVA Technical Support directly at (954) 247-0705 or by e-mail at tech_support@rivamotorsports.com.

Limited Warranty

RIVA Adjustable Cam Sprocket Kits carry a 90-day limited warranty to the original purchaser. They are warranted to be free of defects in materials and workmanship under normal use and service. Customer modified components will be void of warranty. This warranty is limited to defects in the primary components only. Finish and/or wear marks in or on primary components are not covered under this warranty.

RIVA Racing's liability is expressly limited to the repair or replacement of the components contained within or associated with this kit. RIVA Racing agrees to repair or at RIVA's option, replace any defective unit without charge, if product is returned to RIVA Racing freight prepaid within the warranty period. Any equipment returned which, in RIVA's opinion, has been subjected to misuse, abuse, overheating or accident shall not be covered by this warranty.

RIVA Racing shall have no liability for special, incidental or consequential damages or injury to persons or property from any cause arising from the sale, installation or use of this product.

No other warranty, express or implied, including, but not limited to the implied warranties of merchantability and fitness for a particular purpose, applies. Various states do not allow for the limitation of incidental or consequential damages and therefore the above exclusion or limitation may not apply to you.

Warranty does not include the expenses related to freight or transportation of parts or compensation for any inconvenience or loss of use while being repaired. A copy of the original invoice and a Return Authorization Number (RA#) must accompany all warranty claims.

Warranted replacement parts will be returned freight collect.