



INSTRUCTIONS

J03607

2006-05-17



SE PRO TWIN CAM 103 (1690 CC) CYLINDER HEAD KITS

GENERAL

Kit Numbers

17071-03B (Black) and 17072-03B (Silver)

Models

These kits fit 1999 and later Twin Cam models equipped with Big-Bore Cylinders. EFI models require ECM recalibration through applicable calibration cartridge or through EFI Race Tuner Kit. See EFI Race Tuner Kit for fitment and calibration matrix for possible applications.

⚠ WARNING

Rider and passenger safety depend upon the correct installation of this kit. Use the appropriate service manual procedures. If the procedure is not within your capabilities or you do not have the correct tools, have a Harley-Davidson dealer perform the installation. Improper installation of this kit could result in death or serious injury. (00333b)

NOTE

This instruction sheet references Service Manual information. A Service Manual is required for this installation and is available from a Harley-Davidson Dealer. We recommend the current year FL Touring model Service Manual.

Additional Parts Required

On engines with stroker flywheels, stroker pistons **must be used**.

2005-earlier models require the separate purchase of two Intake Flanges (26993-06). 2006-later models reuse stock intake flanges.

Each head requires one 12 mm spark plug. We recommend Screamin' Eagle Performance Spark Plugs (32321-91).

On all models, a Top End Overhaul Gasket Kit (17052-99B) and adjustable or Screamin' Eagle Perfect Fit pushrods **must be used**.

All of the above items must be purchased separately and are available from a Harley-Davidson dealer.

Kit Contents

See Figure 2 and Table 1.

INSTALLATION

NOTE

These kits are intended for High Performance or Racing applications only. These engine related performance parts are not legal for sale or use on pollution controlled motor vehicles. This kit may reduce or void the limited vehicle warranty. Engine

related performance parts are intended for the experienced rider only.

Due to the increased compression ratio, gasoline with a rating of at least 91 Octane must be used. The Octane Rating is usually displayed on the gas pump.

NOTICE

Do not exceed the maximum safe RPM specified below under any conditions. Exceeding the maximum safe engine RPM can result in equipment damage. (00248a)

NOTE

The valve springs in these cylinder head assemblies work with cams with up to 0.650 in. (16.51 mm) lift, and up to 7000 rpm.

Refer to ENGINE section of Service Manual for all removal/disassembly and assembly/installation procedures.

1. Remove the existing cylinder head assemblies.

NOTE

It is important to check valve-to-piston clearance as described in the following steps. We recommend that this inspection be performed by a Harley-Davidson dealer.

Valves must be properly adjusted to zero valve lash when claying pistons. Use adjustable pushrods and fully-bottom the hydraulic lifters for accurate measurements.

2. Apply 1/8 in. (3.2 mm) thick layer of clay to crowns of both pistons (in the areas where valves meet pistons).
3. Install **new** cylinder heads from this kit using **new** gaskets from Top End Overhaul Gasket Kit (purchased separately). Assemble heads and valve train, and tighten headbolts to torque specifications listed in Service Manual.
4. Turn engine (by hand) through two complete revolutions.
5. Remove heads and measure the clay at its thinnest point.

NOTE

- *Clay must measure 0.080 in. (2.03 mm) at the thinnest point. If this measurement does not meet the minimum thickness, the depth of the valve notches must be increased; however, the depth of the notches must not exceed 0.135 in. (3.43 mm).*
- *Since oversized valves are used, radial clearance should also be checked. Radial clearance of 0.050 in. (1.27 mm) is recommended.*

NOTE

The valve springs on these cylinder heads have an installed spring height of 1.835 in. (46.61 mm), which equals 180 lbs (81.6 kg) of seat pressure.

- Seat pressure can be **increased** by placing shims 18224-98 (0.015 in.) or 18225-98 (0.030 in.) under lower spring collars. Every 0.015 in. (0.38 mm) reduction in spring height equals 7.5 lbs (3.4 kg) more of seat pressure. Shim to the desired seat pressure by placing shims under the lower collar, but maintain a minimum of 0.70 in. (17.78 mm) travel to coil bind.
- Seat pressure can be **decreased** by machining the surface of the cylinder heads in the area under the valve spring lower collar. Every 0.015 in. (0.38 mm) increase in spring height equals 7.5 lbs (3.4 kg) less of seat pressure. Machine to the desired seat pressure by machining the spring pockets in the cylinder heads, but maintain a minimum of 0.70 in. (17.78 mm) travel to coil bind.

For constant operation at extreme RPMs, all four valve springs should be checked for matched, installed heights.

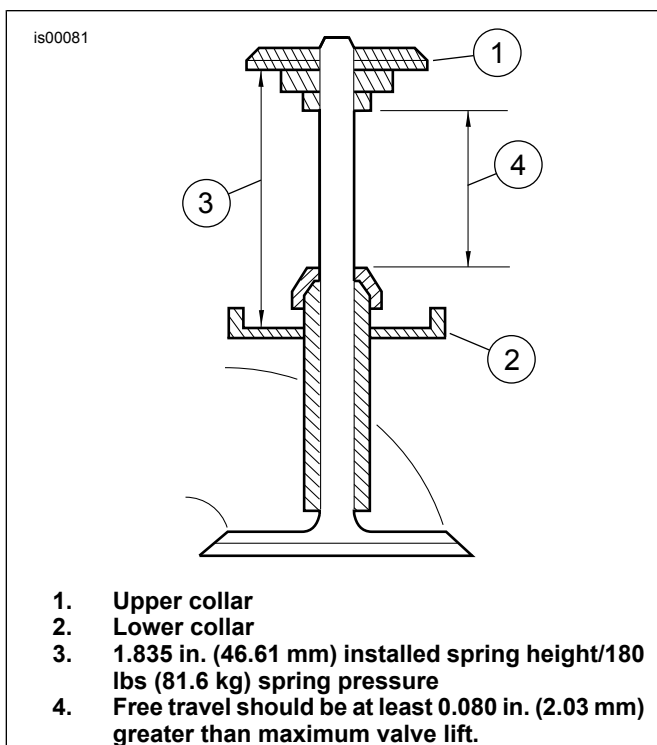


Figure 1. Valve Spring Travel

6. Change installed valve spring height (seat pressure) as follows:
 - a. Compress valve springs and remove valve collar retainers, upper collars, springs, valve seals, and lower collars on all four valves.
 - b. See Figure 1. Use shims or machine the cylinder heads as required to obtain desired seat pressure (see notes above). Install lower valve spring collars, valve springs (do not install valve seals at this time), upper collars, and collar keys. Check installed spring height.
 - c. If spring heights still do not match, repeat Steps 6a and 6b above as necessary to reach the desired installed spring height, again without installing valve seals.
 - d. When all spring heights match, remove valve collar retainers, upper collars, springs, and lower collars. Install using **new** valve seals (18046-98) purchased separately. Assemble the cylinder head assemblies.
 - e. Because of the large diameter of the springs in this kit, there may be slight interference between the spring and the rocker box. If interference is detected, the clearance in the rocker box bolts may allow enough movement to gain clearance. If not, it may be necessary to remove a small amount of material from the rocker box.
7. Install the new cylinder head assemblies.
8. Check assembled engine for proper installation and operation.

NOTE

The compression release plug can be removed for installation of a Screamin' Eagle Compression Release Kit (32076-04).

SERVICE PARTS

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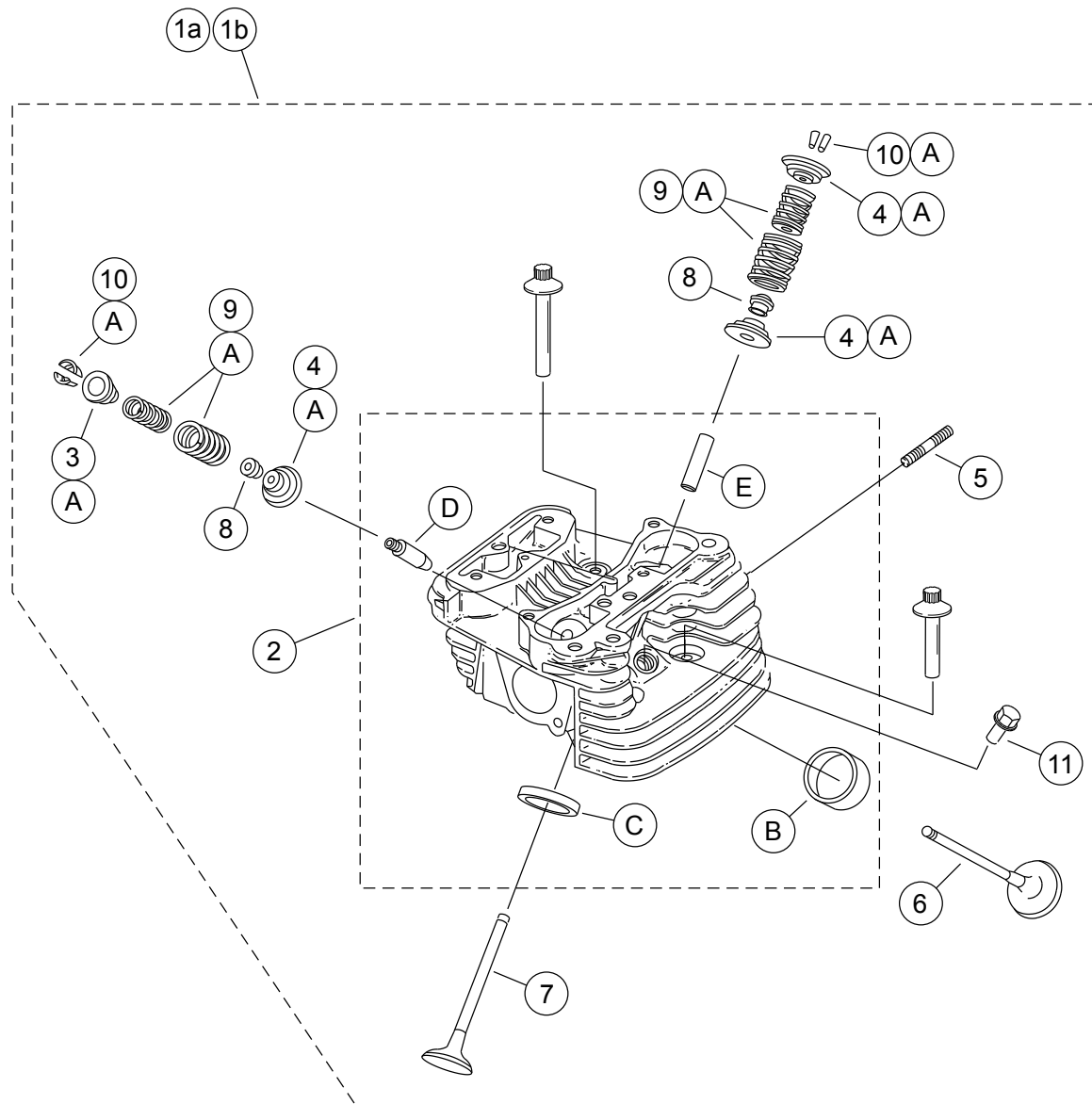


Figure 2. Service Parts: SE Pro Twin Cam 103 (1690 CC) Cylinder Head Kits

Table 1. Service Parts: SE Pro Twin Cam 103 (1690 CC) Cylinder Head Kits

Kit	Item	Description (Quantity)	Part Number
Kit 17071-03B Black	1a	Cylinder head assembly, rear (includes Items 2 through 11)	17204-05
	1b	Cylinder head assembly, front (includes Items 2 through 11)	17202-05
Kit 17072-03B Silver	1a	Cylinder head assembly, rear (includes Items 2 through 11)	17206-05
	1b	Cylinder head assembly, front (includes Items 2 through 11)	17205-05

Table 1. Service Parts: SE Pro Twin Cam 103 (1690 CC) Cylinder Head Kits

Kit	Item	Description (Quantity)	Part Number
	2	• Cylinder head (machined, with items B, C, D and E installed)	Not Sold Separately
	3	• Collar, valve spring, upper (4).	See Service Kits
	4	• Collar, valve spring, lower (4).	See Service Kits
	5	• Stud, exhaust port (4)	16715-83
	6	• Intake valve (2)	18184-03
	7	• Exhaust valve (2)	18183-03
	8	• Seal, valve (4)	18046-98
	9	• Valve spring unit (4).	See Service Kits
	10	• Retainer, valve collar (8). Also included with Kit 18281-02A.	18240-98
	11	• Plug, compression release (2)	32069-02
Service Parts:			
	A	Valve Spring Kit, Screamin' Eagle	18281-02A
The following Screamin' Eagle parts are available separately:			
	B	Valve seat, intake	18186-03
	C	Valve seat, exhaust	18048-98
	D	Valve guide, intake (for service)	
		• (+ 0.003 in)	18158-05
		• (+ 0.002 in)	18156-05
		• (+ 0.001 in)	18154-05
	E	Valve guide, exhaust (for service)	
		• (+ 0.003 in)	18157-05
		• (+ 0.002 in)	18155-05
		• (+ 0.001 in)	18153-05