



INSTRUCTIONS

J05085

2009-12-04



SCREAMIN' EAGLE TWIN CAM HIGH COMPRESSION FORGED 4.00" STROKE, 3.875" BORE PISTON KIT

GENERAL

Kit Numbers

(1550 cylinders) 22868-00A, 22870-00A

Models

These kits fit '99-'06 Harley-Davidson Twin Cam equipped with the following items:

Cylinder Heads: SE MCR Performance or Kompressor heads and original equipment cylinder heads.

Cylinders: Screamin' Eagle Pro 3-7/8 inch Big Bore cylinders.

Flywheels: '99-'06 original equipment (4 inch stroke) flywheel assembly.

NOTE

All dimensions listed on these instructions are in inches.

Table 1. Models

Piston Kit	Application
22868-00A	Standard (front & rear)
22870-00A	+0.010 (front & rear)

NOTE

Harley-Davidson motorcycles equipped with some Screamin' Eagle high-performance engine parts may not be used on public roads, and in some cases must be restricted to closed course competition. This engine related performance part is intended for racing applications, and is not legal for sale or use on pollution-controlled motor vehicles.

High compression piston applications require installation of appropriate compression release in cylinder heads.

Always check piston-to-valve clearance with non-stock camshafts.

Additional Parts Required

1550 Kits require separate purchase of two head gaskets (P/N 16787-99). These are available from your Harley-Davidson Dealer.

Service Gasket Kit (P/N 17052-99) is required for assembly.

For optimal performance, exhaust seals should be replaced with seals (P/N 17048-98).

NOTE

ECM recalibration is required, which can be performed with the Screamin' Eagle Race Tuner Kit. See a Harley-Davidson dealer.

Re-jetting or re-timing of the engine may be required to realize the full potential of this performance product.

⚠ 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 for your model motorcycle is required for this installation and is available from a Harley-Davidson Dealer.

Kit Contents

See Table 4, and Figure 4.

INSTALLATION

⚠ WARNING

To prevent accidental vehicle start-up, which could cause death or serious injury, disconnect battery cables (negative (-) cable first) before proceeding. (00307a)

⚠ WARNING

Disconnect negative (-) battery cable first. If positive (+) cable should contact ground with negative (-) cable connected, the resulting sparks can cause a battery explosion, which could result in death or serious injury. (00049a)

1. Refer to the service manual and follow the instructions given to remove the seat and disconnect the battery cables, **negative cable first**.

⚠ WARNING

When servicing the fuel system, do not smoke or allow open flame or sparks in the vicinity. Gasoline is extremely flammable and highly explosive, which could result in death or serious injury. (00330a)

2. Refer to the ENGINE: STRIPPING MOTORCYCLE FOR ENGINE REPAIR, CYLINDER HEAD REMOVAL sections of the service manual.
3. Follow the procedures in the ENGINE: CYLINDER AND PISTON, REPAIR, BORING AND HONING CYLINDER.
4. See the ENGINE: CYLINDER AND PISTON INSTALLATION AND ASSEMBLY.

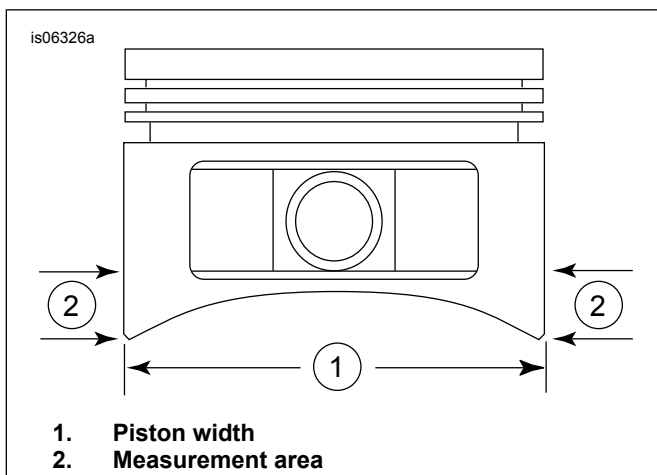


Figure 1. Piston Measurements

- See Figure 1. Measure the piston width (1), 90 degrees horizontally from both sides of the piston pin hole and at 0.465 in. above (2), the lowest portion of the skirt. See Table 2 for piston-to-cylinder fit at this location.

NOTE

Install piston rings having dots or bevels with the dots or bevels facing **UP**. Rings with no markings can be installed either side up.

1550 cylinders do not use O-rings on the top cylinder dowels. Do not install them when using torque plates or at final assembly of engine.

Table 2. Piston Manufacturing Tolerances

Piston:	1550 (in.)
Fit in cylinder	0.0025-0.0035
Compression ring gap	
Top	0.12-0.022
Second	0.12-0.022
Oil control rail gap	0.010-0.050

Table 3. Service Wear Limits

Piston:	1550 (in.)
Fit in cylinder	0.005
Compression ring gap	
Top	0.032
Second	0.032
Oil control rail gap	0.060

Piston Pin Retaining Ring (Circlip) Installation

NOTE

Circlip gap must be at 12:00 or 6:00 position when installed.

- The pistons in this kit are not front and rear specific. Install the pistons in the front and rear cylinders with the arrow on top of the piston pointing towards the front of the engine.

- See Figure 2. Insert the open end of the circlip (1) into the notch (3) on the groove (2) around the piston pin boss so that the gap is at the 12:00 or 6:00 position when installed.

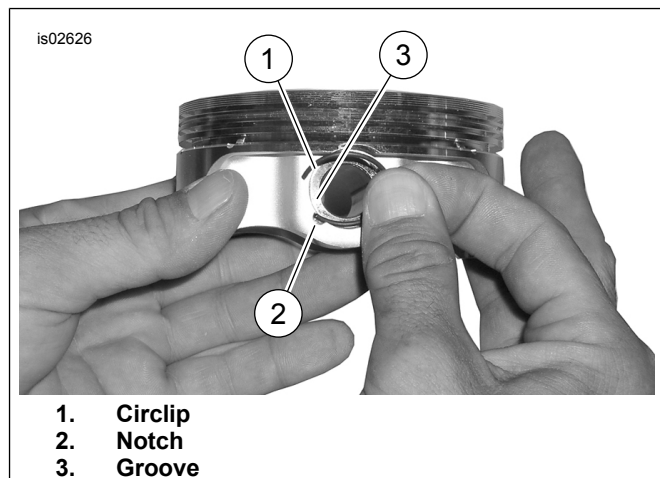


Figure 2. Circlip and Piston (generic piston shown)

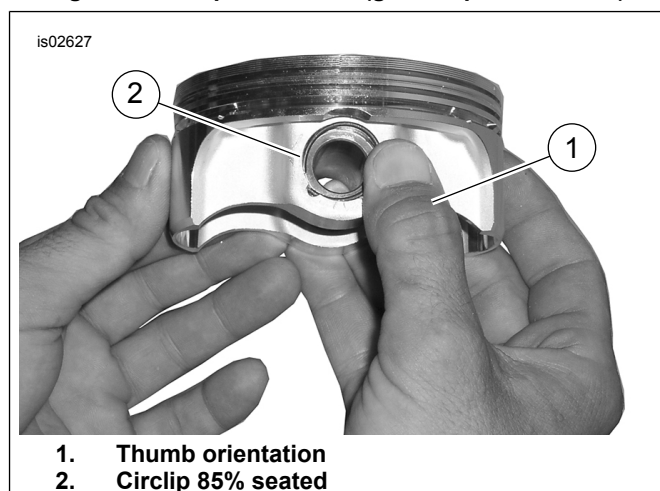


Figure 3. Install Circlip (generic piston shown)

- See Figure 3. Position your thumb (1) as shown, and press firmly until approximately 85% of the circlip (2) is seated in the groove.
- Being careful not to scratch or mar the piston, use a small-bladed screwdriver to wedge the circlip into the remainder of the groove. Repeat for the remaining circlips.

NOTE

Make sure the piston circlip is fully seated, or **ENGINE DAMAGE WILL OCCUR**.

- Refer to the **ENGINE: ASSEMBLING MOTORCYCLE AFTER STRIPPING** section of the service manual for final re-assembly procedures.

NOTE

Always follow the break-in procedure outlined in the appropriate Owner's Manual after rebuilding an engine.

SERVICE PARTS

is02628a

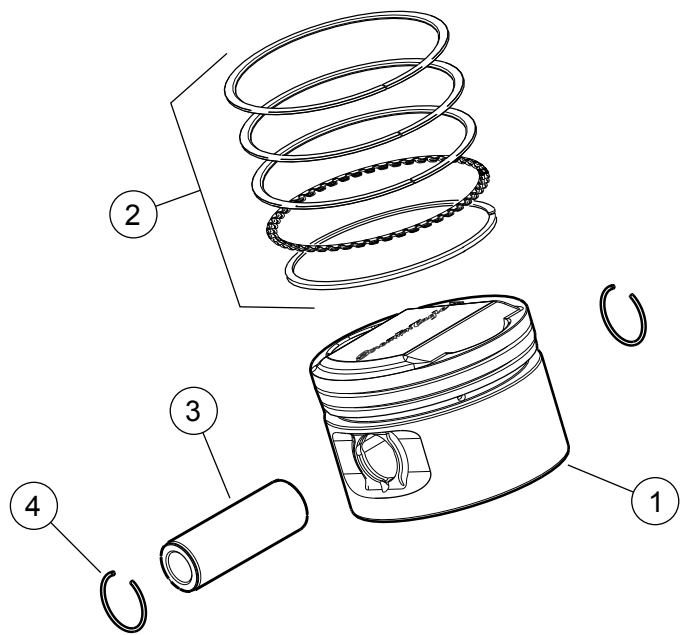


Figure 4. Service Parts: Piston Kits

Table 4. Service Parts Table, Front and Rear Piston Kits

Kit	Item	Description (Quantity)	Part Number
Kit 22868-00A 1550 Piston Kit (Standard)	1	Piston (standard)	Not sold separately
	2	Ring set (standard) (2)	22457-03
Kit 22870-00A 1550 Piston Kit (+0.010)	1	Piston (+0.010)	Not sold separately
	2	Ring set (+0.010) (2)	22459-03
Items common to all Piston Kits:			
	3	Piston pin (2)	22455-03
	4	Retaining ring (Circlip) (4)	22097-99