



INSTRUCTIONS

J05100

2021-01-18



SCREAMIN' EAGLE TWIN CAM 4.375 INCH STROKE, 3.875 INCH BORE FORGED PISTON KIT

GENERAL

Kit Number

22942-00A, 22944-00A

Models

Cylinder Heads: All SE and Original Equipment cylinder heads.

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

Flywheels: '07-later Original Equipment (4-3/8 inch stroke) flywheel assembly or Screamin' Eagle Pro 4-3/8 inch stroke flywheels.

NOTE

All dimensions listed on these instructions are in inches.

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

Always check piston-to-valve clearance with no-stock camshafts.

Table 1. Models

Kit	Application
22942-00	Standard (front & rear)
22944-00	+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.

Additional Parts Required

1550 Kits require separate purchase of two head gaskets (P/N 16787-99).

Service gasket kit (P/N 17052-99B) is required for assembly.

NOTE

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

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

NOTICE

You must recalibrate the ECM when installing this kit. Failure to properly recalibrate the ECM can result in severe engine damage. (00399b)

NOTE

ECM recalibration is required, which can be performed with the Screamin' Eagle Race Tuner Kit (Part Number 32107-01F). See a Harley-Davidson dealer.

⚠ 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.



- Follow the procedures in the ENGINE: CYLINDER AND PISTON, REPAIR, BORING AND HONING CYLINDER.
- See the ENGINE: CYLINDER AND PISTON INSTALLATION AND ASSEMBLY.
- See Figure 1. Measure the piston width (1), 90 degrees horizontally from both sides of the pin piston pin hole and at 0.285 in. above (2) the lowest portion of the skirt
- The pistons in this kit are not front and rear specific. Install the pistons in the front and rear cylinders with the arrow on the top of the piston pointing towards the front of the engine.

NOTE

Install piston rings having a dot and a bevel with the dots facing UP into the second ring groove. Rings with no markings can be installed either side up into the upper ring groove.

3-7/8 inch 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.

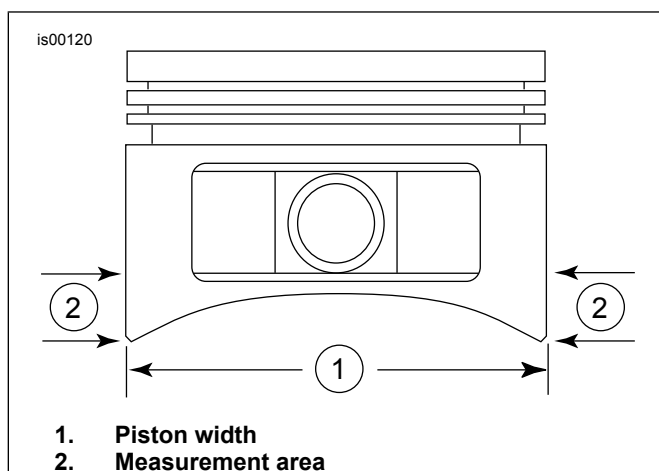


Figure 1. Piston Measurements

Table 2. Piston Manufacturing Tolerances

Piston:	Tolerance (in.)
Fit in cylinder	0.0025-0.0035
Compression ring gap	
Top	0.012-0.022
Second	0.012-0.022
Oil control rail gap	0.010-0.050

Table 3. Piston Service Wear Limits

Piston:	Wear Limit (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.

- 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.

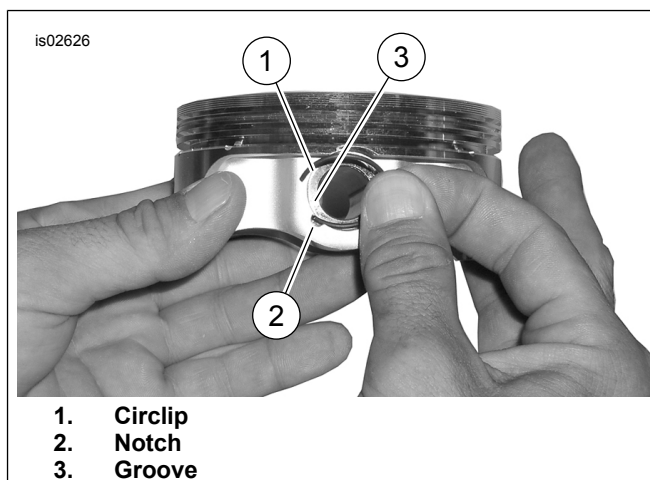


Figure 2. Circlip and Piston (generic piston shown)

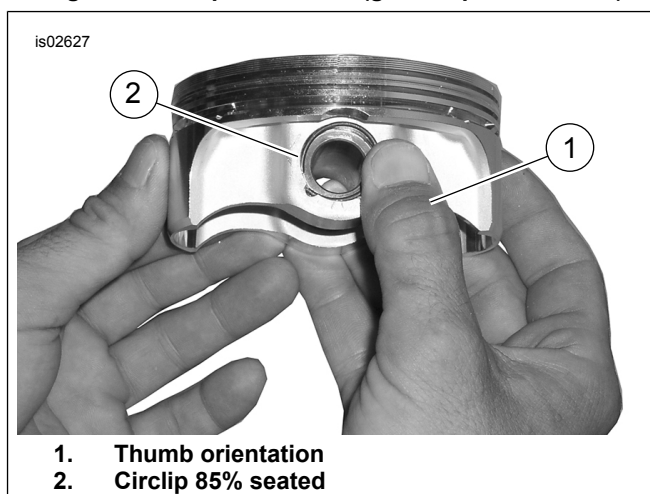


Figure 3. Install Circlip (generic piston shown)

- 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

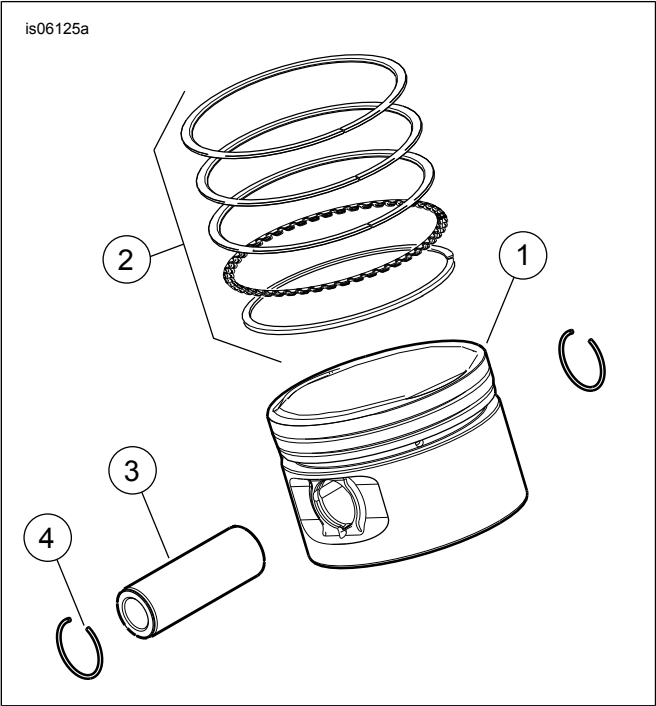


Figure 4. Service Parts: Front and Rear Piston Kits

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

Kit	Item	Description (Quantity)	Part Number
Kit 22942-00A Piston Kit Standard	1	Piston (standard)	Not sold separately
	2	Ring set (standard) (2)	22457-03
Kit 22944-00A 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)	22097-03