



INSTRUCTIONS

-J02108

REV. 2009-04-21

PISTON, 883 TO 1200 CONVERSION

GENERAL

Kit Numbers

22698-01, 22699-01, and 22700-01

Models

For model fitment information, see the Screamin' Eagle Pro catalog.

NOTE

This engine related performance part is intended for high performance or racing applications and is not legal for sale or use on pollution controlled motor vehicles. This kit will reduce or void the limited vehicle warranty. Engine related performance parts are intended for the experienced rider only.

Additional Parts Required

Service Gasket Kit 17032-91.

Cylinder torque plates (P/N HD-33446-A).

Torque bolts (P/N HD-33446-4).

Piston pin retaining ring installer (P/N HD-34623-C)

CAUTION

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

WARNING

The rider's safety depends 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. (00333a)

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 Figure 4 and Table 1.

REMOVAL

WARNING

Prevent accidental vehicle start-up, which could cause death or serious injury. First disconnect negative (-) battery cable at engine and then positive (+) cable from battery. (00280b)

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)

1. Follow the procedures in the ENGINE section of the service manual to remove cylinder heads, cylinders, and pistons.

Boring and Honing Procedure

NOTE

1986 - 2008 model year vehicles: Instead of boring out XL 883 cylinders, XL 1200cc cylinders are available from your Harley-Davidson dealer. See the Screamin' Eagle Pro catalog for available cylinders and fitment information.

2009 and later vehicles: The original cylinders cannot be bored to the necessary size. New XL 1200 cylinders must be purchased separately. See the Screamin' Eagle Pro catalog for available cylinders and fitment information.

2. See the following instructions for boring and honing and refer to the applicable ENGINE section of the service manual.
3. After removing the cylinders, check the head gasket and base gasket surfaces for flatness. Remove burrs from all gasket surfaces.
4. Install:
 - a. Original head and base gaskets.
 - b. Cylinder torque plates P/N HD-33446-A.
 - c. Torque bolts P/N HD-33446-4.

Tighten the torque bolts, following the tightening procedure in the ENGINE section of the service manual.

NOTE

Torque plates, properly tightened and installed with gaskets, simulate engine operating conditions. Measurements vary as much as 0.001 in. without torque plate.

5. Bore the cylinder with gaskets and torque plates attached. Bore the cylinder to **0.003 in. under the desired finished size.**

NOTE

Use the piston to determine finished size. Piston fit to the cylinder must be within the range 0.0015 in. to 0.0025 in.

6. See Figure 1. Measure the piston width (1), 90 degrees horizontally from both sides of the pin piston pin hole and at 1/2 in. above (2) the lowest portion of the skirt above the chamfer.

7. Hone the cylinder to its finished size using a 280 grit rigid hone followed by a 240 grit flexible ball hone. Honing must be done with torque plates attached. All honing must be done from the bottom (crankcase) end of the cylinder. Maintain a 60-degree crosshatch pattern in the piston travel area.
8. See Figure 2. After machining and honing, chamfer the bottom inner edge (1) of the cylinder liner. The chamfer provides a beveled surface for easier installation of the cylinder over the piston rings. Break leading edge of liner to a flat surface. The bottom edge of the liner (2) will be somewhat sharp after machining. This sharp edge could easily cause damage during installation of the cylinder.

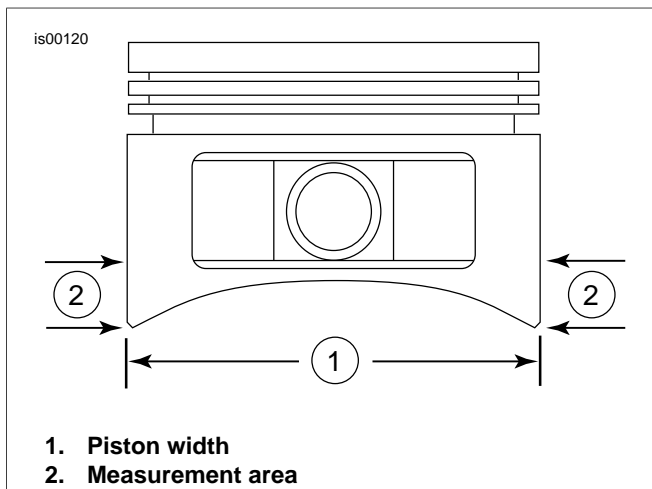


Figure 1. Piston Measurements

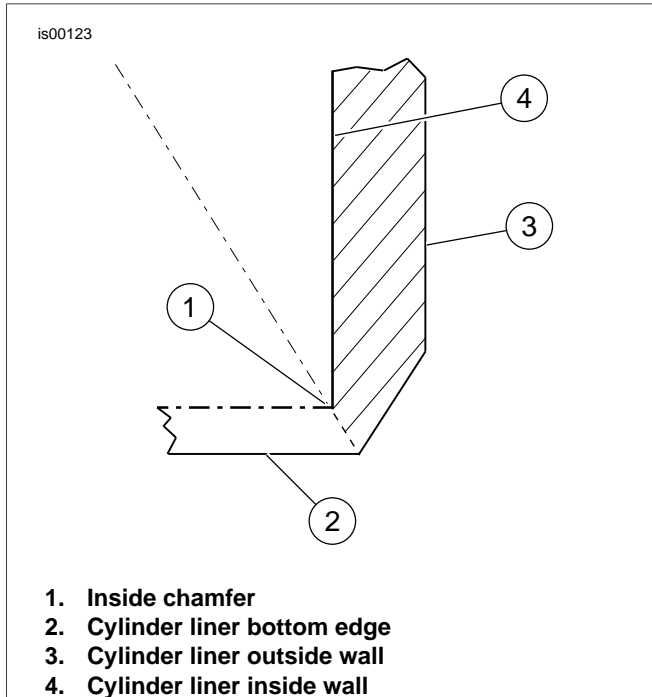


Figure 2. Inside Chamfer and Bottom Edge of Cylinder Liner

INSTALLATION

Piston Installation

NOTES

The new 1200cc pistons can be installed with either thrust surface facing the front of the engine. New pistons are not specific to front or back cylinders. Install any new piston in either cylinder.

Check the piston rings for proper side clearance and end gap (see the applicable Sportster service manual). Be sure end gaps of adjacent rings are installed 90 degrees apart.

1. Follow the assembly and torque specifications in the ENGINE section of the applicable service manual.

Installing Piston Pin Circlips

2. See Figure 3. Insert the circlip (1) onto the Piston Pin Retaining Ring (circlip) Installer (2).
3. Squeeze handles of tool together and insert circlip into slot of the piston. Release the handles and remove tool.
4. Repeat steps for remaining circlips.

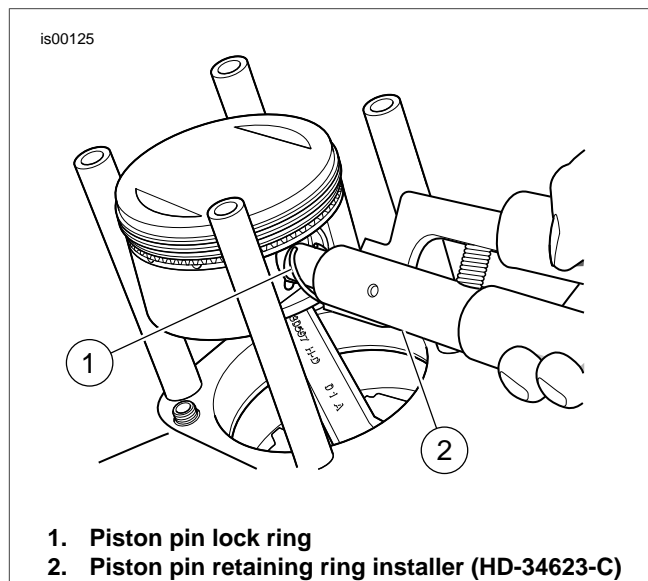


Figure 3. Seating Circlip

Engine Break-In

For the first 500 miles, to wear-in critical parts, observe the following driving rules:

1. During the first 50 miles, keep the engine speed below 2500 RPM in any gear.
2. Through the first 500 miles, vary the engine speed, avoiding steady speed for long distances. Engine speed up to 3000 RPM is permissible in any gear after the first 50 miles.
3. Avoid fast starts at wide-open throttle. Drive slowly until the engine warms up.
4. Avoid overloading the engine, such as running the engine at extremely low RPM in higher gears.

SERVICE PARTS

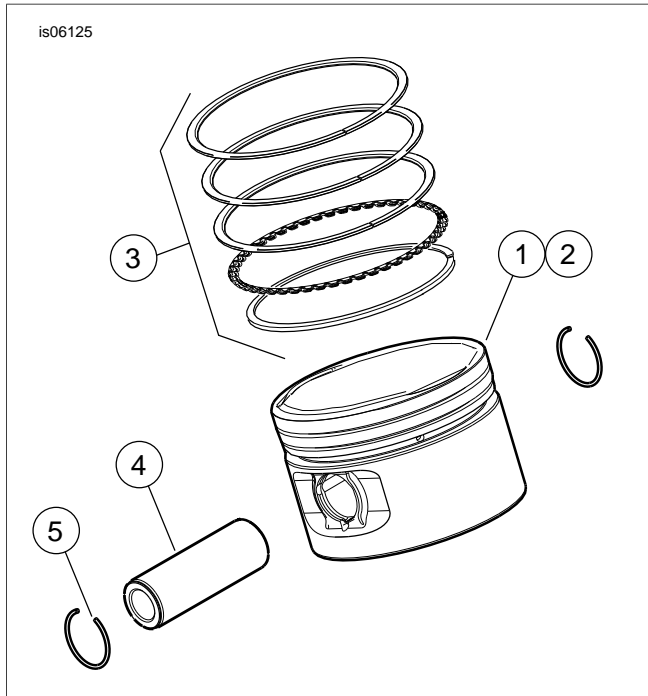


Figure 4. Service Parts: Piston, 883 to 1200 Conversion

Table 1. Service Parts Table, Front and Rear Piston Kits

Kit	Item	Description (Quantity)	Part Number
Kit 22638-01 Piston Kit Standard	1	Piston (front, standard)	Not sold separately
	2	Piston (rear, standard)	Not sold separately
	3	Ring set (standard) (2)	21920-83
Kit 22701-01 Piston Kit (+0.005)	1	Piston (front, +0.005)	Not sold separately
	2	Piston (rear, +0.005)	Not sold separately
	3	Ring set (+0.005) (2)	21921-83
Kit 22703-01 Piston Kit (+0.010)	1	Piston (front, +0.010)	Not sold separately
	2	Piston (rear, +0.010)	Not sold separately
	3	Ring set (+0.010) (2)	21922-83
Items common to all Piston Kits:			
	4	Piston pin (2)	22466-01
	5	Retaining ring (Circlip) (4)	22467-01