



# INSTRUCTIONS

-J04181

REV. 2006-05-05

## SCREAMIN' EAGLE® PRO TWIN CAM 96 BIG BORE FLAT TOP CAST PISTON KITS

### GENERAL

#### Kit Number

21966-07, 21967-07, 21968-07

#### Models

These kits fit 2007 Harley-Davidson Twin Cam models with stock compression.

#### Additional Parts Required

#### 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.*

#### NOTES

*Top End Service Gasket Kit (Part Number 17052-99), required for assembly, must be purchased separately.*

*Big Bore 96 Kits require separate purchase of two head gaskets (Part Number 16787-99.)*

*If Screamin' Eagle® Intake Manifold or Carburetor are installed, replace one-piece manifold seals with new manifold seals (Part Number 26995-86B) and flanges Front (Part Number 27009-86A), Rear (Part Number 27010- 86A.)*

*For optimal performance, exhaust seals should be replaced with seals (Part Number 17048-98.)*

#### Kit Contents

See Figure 1 and Table 3.

#### 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 may reduce or void the limited vehicle warranty. Engine related performance parts are intended for the experienced rider only.***

### 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)

#### 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)

#### CAUTION

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

Cast pistons should not be used when engine speeds are expected to exceed 6000 RPM. Failure to do so may result in engine damage.

1. **Disassembly** - Follow the procedures in the ENGINE section of the Service Manual to remove cylinder heads, cylinders and pistons.
2. **Inspection Of Parts** - Follow the procedures in the ENGINE section of the Service Manual for Inspection of Parts.
3. **Boring And Honing** - Follow the procedures in the ENGINE section of the Service Manual for Boring and Honing instructions.
4. **Assembly** - Follow the procedures in the ENGINE section of the Service Manual to install cylinder heads, cylinders and pistons.

#### NOTE

*1690 Cylinders do not use O-rings (Part Number 11273) on the top cylinder dowels. Therefore, do not install them when using torque plates or at final assembly of engine.*

**Table 1. Kit Sizes: 1690 Flat Top Piston Kit**

Piston Kit Part Number	Finished cylinder bore sizes, after honing
21966-07 Standard	3.87525+/-0.00025 in. (98.431+/-0.00635 mm)
21967-07 0.005 Oversize bore (0.13 mm)	3.88025+/-0.00025 in. (98.558+/-0.00635 mm)
21968-07 0.010 Oversize bore (0.25 mm)	3.88525+/-0.00025 in. (98.685+/-0.00635 mm)

**CAUTION**

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

**Table 2. Specifications: 1690 Flat Top Piston Kit**

Description	Dimensions
Fit in cylinder	0.0006-0.0017 in. (0.015-0.043 mm)
Compression ring gap: Top	0.012-0.022 in. (0.30-0.56 mm)
Second	0.015-0.025 in. (0.38-0.635 mm)
Oil control rail gap	0.010-0.050 in. (0.25-1.27 mm)
<b>Service Wear Limits</b>	Replace if wear exceeds:
Fit in cylinder	0.005 in. (0.13 mm)
Compression ring gap: Top	0.032 in. (0.81 mm)
Second	0.035 in. (0.89 mm)
Oil control rail gap	0.050 in. (1.27 mm)

SERVICE PARTS

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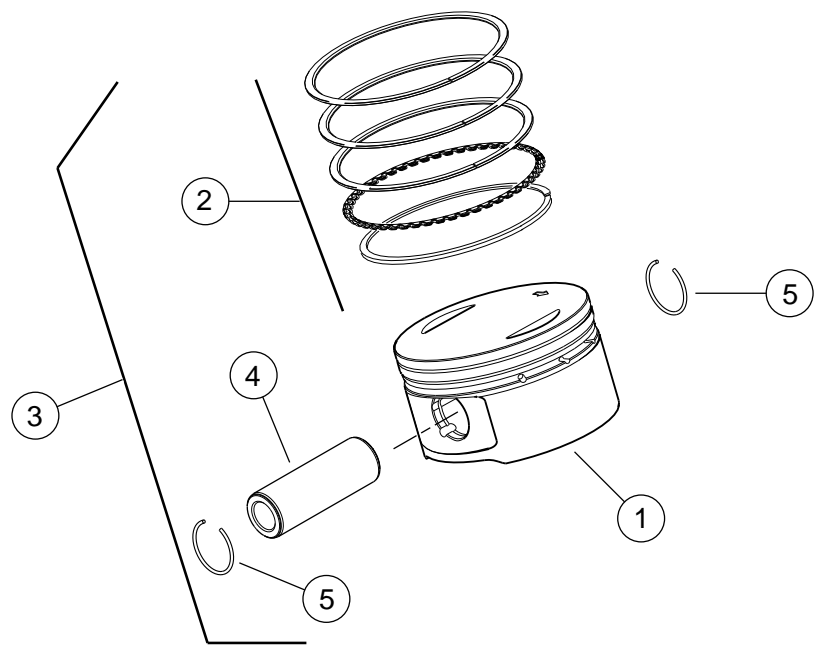


Figure 1. Service Parts: Twin Cam 88 Flat Top Piston Kit

Table 3. Service Parts: Screamin' Eagle Twin Cam 88 Flat Top Piston Kit

Item	Description (Quantity)	Part Number	Item	Description (Quantity)	Part Number
1	Piston (1690)	Not Sold Separately	3	<b>1690 Piston and Ring Set Kits</b> (Includes items 1, 2, 4 and 5)	
2	<b>1690 Ring Set</b>			Piston and ring set (Standard)	21989-07
	Standard (2)	21918-99		Piston and ring set (+.005)	22087-07
	+.005 (2)	21919-99		Piston and ring set (+.010)	22088-07
	+.010 (2)	21945-99		<b>Piston Pin and Circlip</b>	
			4	Piston pin (2)	22132-99
			5	Piston pin circlip (4)	22097-99