



INSTRUCTIONS

J05483

2014-07-16



SE120R SCREAMIN' EAGLE PRO RACE-USE CRATE ENGINE

GENERAL

Kit Number

19289-12

Models

For model fitment information, see the P&A Retail Catalog or the Parts and Accessories section of www.harley-davidson.com (English only).

NOTICE

Installation of this kit requires jetting changes or recalibration for proper function. Failure to do so may cause a lean fuel condition, which may result in engine damage. (00623b)

NOTE

This engine is for race use only! Remove the emissions label and license plate from the factory chassis.

This engine has been assembled with a Dyna Sprocket Shaft Spacer (Part No. 24038-03).

KIT CONTENTS

See Figure 7 through Figure 13 and Table 11 through Table 17.

Installation Requirements

- Recommended synthetic engine oil, Screamin' Eagle SYN3[®] 20W50 (Part No. 99824-03/00QT).
- Touring models require replacement of Sprocket Shaft Spacer with Part No. 24008-03 for 2002-2005 models or Part No. 24009-06 for 2006 models.
- The cylinder heads in this kit are machined for use with symmetric intake flanges (original equipment since 2006). 1999-2005 models require separate purchase of symmetric intake seal flanges (Part No. 26993-06), quantity 2.
- Installation of compression releases is required. Refer to Screamin' Eagle Pro Catalog or contact a Harley-Davidson dealer.
- A clutch kit that supports a minimum of 190 N·m (140 ft·lbs) of torque. Harley-Davidson recommends installation of Screamin' Eagle pressure clutch (Part No. 37000121) and diaphragm spring (Part No. 37951-98). Drag racing applications use clutch kit (Part No. 37976-08A).
- SE throttle body, Air Cleaner and High Flow injectors. Refer to the Screamin' Eagle Pro Catalog or contact a Harley-Davidson dealer.
- SE exhaust gaskets kit (Part No. 17048-98).

- Oil cooler is recommended. See P&A Retail Catalog or the Parts and Accessories section of www.harley-davidson.com.
- **EFI Models:** SE Pro Super Tuner - refer to Screamin' Eagle Pro Catalog or contact a Harley-Davidson dealer.
- See appropriate sections in service manual for the special tools required to install this kit.

⚠ 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. One is available from a Harley-Davidson dealer.

PREPARATION

NOTE

For vehicles equipped with security siren:

- Verify that the hands-free Fob is present.
- With security fob present, turn ignition switch ON.

EFI Models:

⚠ WARNING

To prevent spray of fuel, purge system of high-pressure fuel before supply line is disconnected. Gasoline is extremely flammable and highly explosive, which could result in death or serious injury. (00275a)

Purge and disconnect fuel supply line.

For ALL Vehicles:

⚠ 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. See the service manual to remove the seat. See the service manual to disconnect the battery cables, negative cable first. Retain all seat mounting hardware.

For Carbureted Models:

▲ WARNING

Gasoline can drain from the carburetor fuel line when disconnected from fuel valve fitting. Gasoline is extremely flammable and highly explosive, which could result in death or serious injury. Wipe up spilled fuel immediately and dispose of rags in a suitable manner. (00256a)

1. Turn the fuel supply valve to OFF. Remove the fuel line from the valve.

REMOVAL

Remove OE Engine

1. Raise the motorcycle.

▲ 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. Remove the fuel tank according to the instructions in the service manual.
3. Refer to ENGINE section of the appropriate service manual for removal of engine from chassis.

SE120R ENGINE INSTALLATION

1. Before installing the engine, make sure that there is no debris or contaminants in the oiling system. See service manual to flush-out the oil tank. Have the tank flush-out performed by an authorized dealer or qualified technician.
2. Remove the oil passage caps/plugs at the engine to transmission interface.
3. Refer to the ENGINE section of the appropriate service manual for installation of the engine to the chassis.
4. **For Touring Models:** Remove sprocket shaft spacer and replace with appropriate spacer listed in ADDITIONAL PARTS REQUIRED section.

Final Assembly

1. Install the fuel tank according to the instructions in the service manual.
2. Install the seat according to the instructions in the service manual.

▲ WARNING

After installing seat, pull upward on seat to be sure it is locked in position. While riding, a loose seat can shift causing loss of control, which could result in death or serious injury. (00070b)

NOTICE

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

3. Download the new ECM calibration when installing this kit. Refer to the Screamin' Eagle Pro Catalog or contact a Harley-Davidson dealer.
4. Start and run the engine. Repeat several times to verify proper operation.

OPERATION

1. Refer to BREAK-IN RIDING RULES in the owner's manual to break-in the new engine.

MAINTENANCE

1. Refer to the MAINTENANCE SCHEDULE in the appropriate service manual or owner's manual.
2. Refer to ENGINE section of service manual for assembly and disassembly.

SE120R ENGINE SPECIFICATIONS

NOTE

The following sections provide unique information not available in the service manual ENGINE section for the appropriate Twin Cam 96™ alpha engines from Touring or Dyna platforms.

Table 1. Engine: SE Twin Cam 120R

Item	Specification	
Compression Ratio	10.5:1	
Bore	4.060 in	103.12 mm
Stroke	4.625 in	117.48 mm
Displacement	119.75 cu in	1962.39 cc
Lubrication system	Pressurized dry sump with oil cooler	

MANUFACTURING TOLERANCES

Refer to the Twin-Cam 96™ specifications in the service manual for any specification not shown in the following tables.

Table 2. Cylinder Heads

ITEM	IN.	MM
Valve guide in head (tight)	0.0020-0.0033	0.051-0.084
Intake valve seat in head (tight)	0.004-0.0055	0.102-0.140
Exhaust valve seat in head (tight)	0.004-0.0055	0.102-0.140

Table 3. Valves

ITEM	IN.	MM
Fit in guide (intake and exhaust)	0.0011-0.0029	0.028-0.074
Seat width	0.034-0.062	0.86-1.57
Stem protrusion from cylinder head boss	1.990-2.024	50.55-51.41

Table 4. Valve Springs Specifications

ITEM	PRESSURE	DIMENSION
Closed	180 lbs (79 kg)	1.800 in. (45.7 mm)
Open	500 lbs (196 kg)	1.177 in. (29.9 mm)
Free length	n/a	2.210 in. (56.1 mm)

Table 5. Pistons

Piston Clearance:	IN.	MM
Piston-to-cylinder fit (Loose)	0.0026-0.0036	0.066-0.091
Piston pin fit (Loose)	0.0003-0.0008	0.007-0.020
Top Ring End Gap	0.012-0.020	0.304-0.505
Second Ring End Gap	0.016-0.024	0.406-0.609
Oil Control Ring Rail Gap	0.008-0.028	0.203-0.711
Top Ring Side Clearance	0.0010-0.0022	0.025-0.055
Second Ring Side Clearance	0.0010-0.0022	0.025-0.055
Oil Control Ring Side Clearance	0.0003-0.0072	0.007-0.182

Table 6. Cam Specifications - SE266E

Intake	Specification
Opens	24 BTDC
Closes	58 ABDC
Duration	262°
Max. Valve Lift	0.658 in (16.713 mm)
Valve Lift @ TDC	0.208 in (5.283 mm)
Exhaust	Specification
Opens	69 BBDC
Closes	17 ATDC
Duration	266°
Max. Valve Lift	0.658 in (16.713 mm)
Valve Lift @ TDC	0.178 in (4.521 mm)
Cam Timing @ 0.053 in (1.346 mm) of Tappet Lift in Crankshaft Degrees	

SERVICE WEAR LIMITS

Use wear limits as guide to part replacement.

NOTE

Refer to the Twin-Cam 96 specifications in the service manual for any specification not shown in the following tables

Table 7. Cylinders

ITEM	REPLACE IF WEAR EXCEEDS	
	IN.	MM
Taper	0.002	0.051
Out of round	0.002	0.051
Warpage of gasket or O-ring surfaces: top	0.006	0.152
Warpage of gasket or O-ring surfaces: base	0.004	0.102

Table 8. Cylinder Bore

ITEM	REPLACE IF WEAR EXCEEDS	
	IN.	MM
Standard	4.062	103.17
0.010 in. oversize	4.072	103.43

Table 9. Pistons

Piston-to-cylinder Fit Wear Limit (Loose)	IN.	MM
Fit in cylinder (Loose)	0.0061	0.155
Piston Pin Fit (Loose)	0.0011	0.028

Table 9. Pistons

Piston-to-cylinder Fit Wear Limit (Loose)	IN.	MM
Top Ring End Gap	0.030	0.762
Second Ring End Gap	0.034	0.863
Oil Control Ring Rail Gap	0.038	0.965
Top Ring Side Clearance	0.0030	0.076
Second Ring Side Clearance	0.0030	0.076
Oil Control Ring Side Clearance	0.0079	0.200

SERVICING OR REPLACING SE120R CYLINDERS

1. Raise the motorcycle.

NOTE

Disarm security system.

2. Remove seat according to the instructions in the service manual.

▲ 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)

3. Remove main fuse. Refer to service manual for your motorcycle.
4. Remove fuel tank according to the instructions in the service manual.

Remove Engine Components

1. Refer to service manual to remove existing air cleaner assembly.
2. Remove the existing exhaust system following service manual procedures.
3. Disassemble the engine top end. Refer to the appropriate engine sections in the service manual.

Install Engine Top End Components

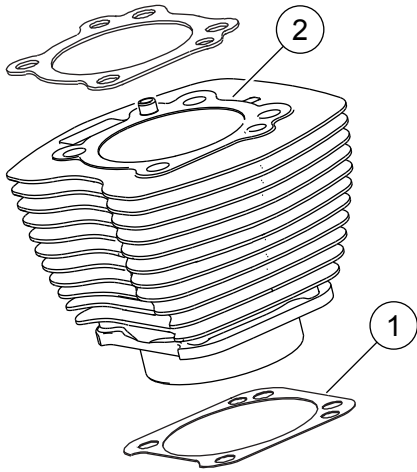
NOTE

See Figure 1. The 4.060 in cylinder base gasket (1) and cylinder head gasket (2) eliminate the need for O-rings. Do not use O-rings on cylinder dowels or cylinder spigots.

When installing new base gasket (1), install with the embossed side down and the concave side up.

1. Refer to the appropriate service manual and assemble the engine with the following changes:
 - a. Assemble the top end of the engine using the base gaskets and head gaskets provided in the kit. Refer to the appropriate engine section in the service manual.

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1. Gasket, cylinder base
2. Gasket, cylinder head

Figure 1. Cylinder Gaskets

Final Assembly

1. Install the fuel tank according to the instructions in the service manual.
2. Refer to the service manual to install the main fuse.

⚠ WARNING

After installing seat, pull upward on seat to be sure it is locked in position. While riding, a loose seat can shift causing loss of control, which could result in death or serious injury. (00070b)

3. Install the seat according to the instructions in the service manual.

SERVICING OR REPLACING SE120R PISTON

1. Refer to ENGINE section of service manual.

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. See the service manual to remove the seat. See the service manual to 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 SERVICE and TOP END OVERHAUL, DISASSEMBLY sections of the service manual for cylinder head, cylinder and piston removal procedures.
3. Follow the procedures in the ENGINE: SUB-ASSEMBLY SERVICE AND REPAIR, TOP END/ CYLINDER/ UPPER CONNECTING ROD sections of the service manual for inspection of parts.
4. See the ENGINE: SUB-ASSEMBLY SERVICE AND REPAIR, CYLINDER section of the service manual for boring and honing instructions.

NOTE

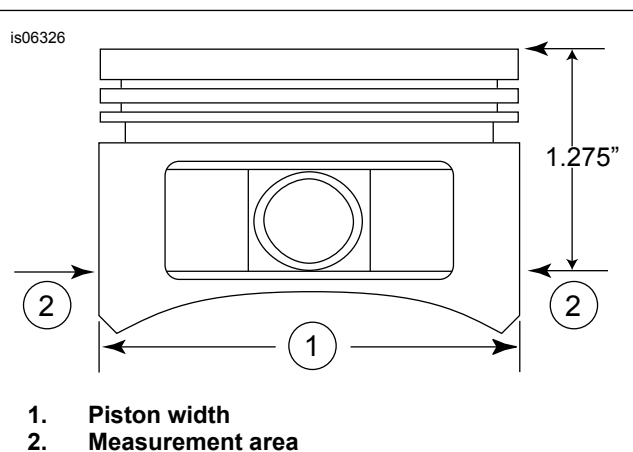
Install the top ring (barrel-faced) and second ring (taper-faced Napier) with the "N" marking facing up. Oil ring rails can be installed either side up.

The 4.060 in cylinder base gaskets and cylinder head gaskets included in the kit eliminate the need for O-rings (Part No. 11273). **Do not** use O-rings on cylinder dowels or cylinder spigots.

When installing new base gasket, install with the embossed side down and the concave side up.

NOTE

Checking piston-to-cylinder fit at this location per Table 5 for reference.



1. Piston width
2. Measurement area

Figure 2. Piston Measurements

5. See Figure 2. Measure the piston width (1), 90 degrees horizontally from both sides of the piston pin hole and 1.275 in down from the deck surface (top) of the piston (2). See Table 5 for piston-to-cylinder fit at this location.
6. The pistons in this kit are front and rear specific. Install the piston marked "FRONT" in the front cylinder with the arrow pointing towards the **front** of the engine. Install the piston marked "REAR" in the rear cylinder with the arrow pointing towards the **front** of the engine.

- Refer to the ENGINE: TOP END OVERHAUL, ASSEMBLY section of the service manual for piston, cylinder and cylinder head installation procedures.

Piston Pin Retaining Ring (Circlip) Installation

NOTE

Circlip gap must be at 12 or 6 o'clock position when installed.

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

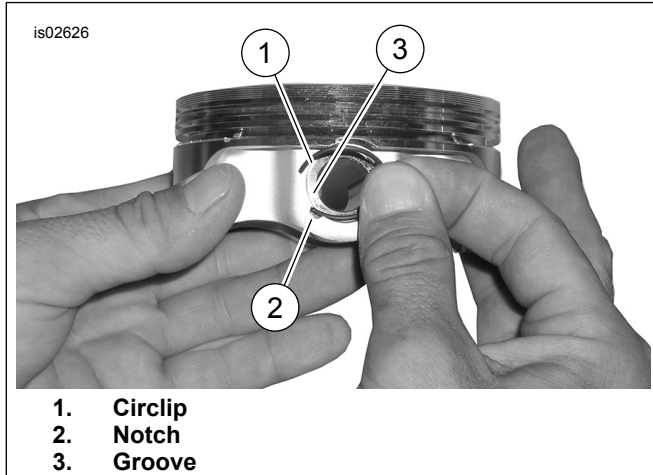


Figure 3. Circlip and Piston

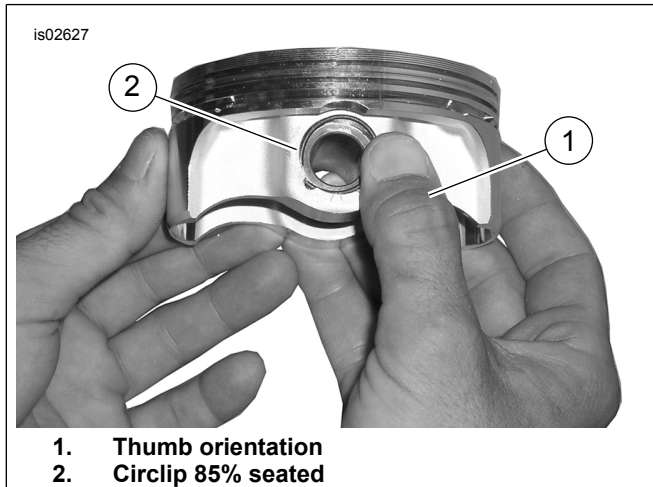


Figure 4. Install Circlip

- See Figure 4. Position your thumb (1) as shown. Press firmly until approximately 85% of the circlip (2) is seated in the groove.
- Do not 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 that 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 reassembly procedures.

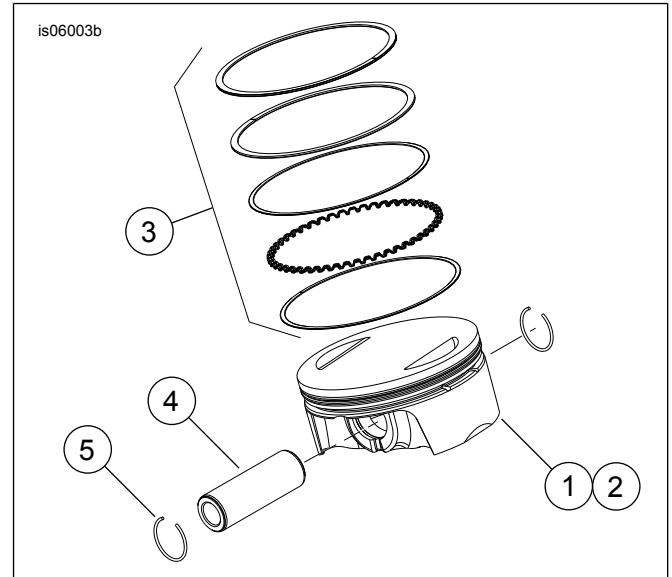


Figure 5. Piston Assembly

Table 10. Piston Assembly

Item	Description (Quantity)
1	Piston (front, standard)
2	Piston (rear, standard)
3	• Ring set, standard (2)
4	• Piston pin (2)
5	• Circlip (4)
1	Piston (front, +0.010)
2	Piston (rear, +0.010)
3	• Ring set, +0.010 (2)
4	• Piston pin (2)
5	• Circlip (4)

REPLACING/SERVICING PUSHRODS

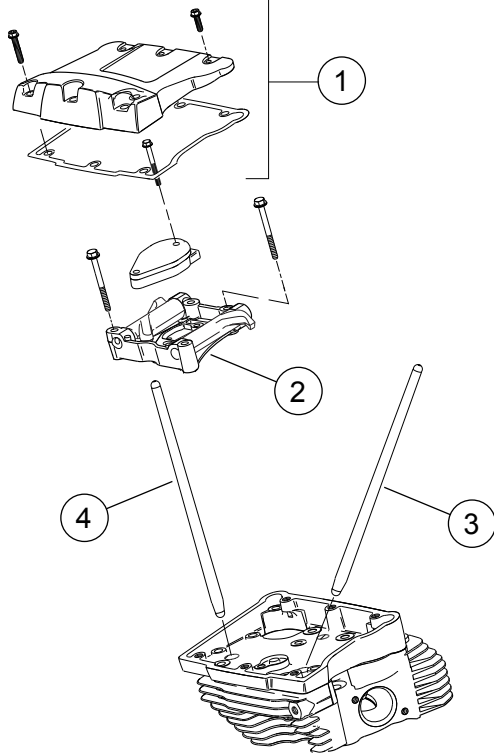
- Refer to ENGINE section of service manual.

NOTE

Follow the appropriate service manual procedures for installing or removing the pushrods. The pushrods are marked Intake and Exhaust.

The pushrods are directional. Verify that the larger ends of the pushrods are installed down in the lifter sockets.

is06297



- 1. Rocker cover assembly
- 2. Rocker arm support plate assembly
- 3. Rear intake pushrod
- 4. Rear exhaust pushrod

Figure 6. Push Rods

REPLACING/SERVICING CYLINDER HEADS

1. Refer to ENGINE section of service manual.

NOTE

See Figure 9. Replacement cylinder heads (1) have "CNC PORTED" medallions. If desired, reuse or purchase new "120R" medallions (12).

2. Apply Loctite 246 Medium Strength/High Temperature Threadlocker and Sealer (purchased separately) to screws and install the "120R" medallions. Tighten to 1.1–2.3 N·m (10–12 in-lbs)

SERVICE PARTS

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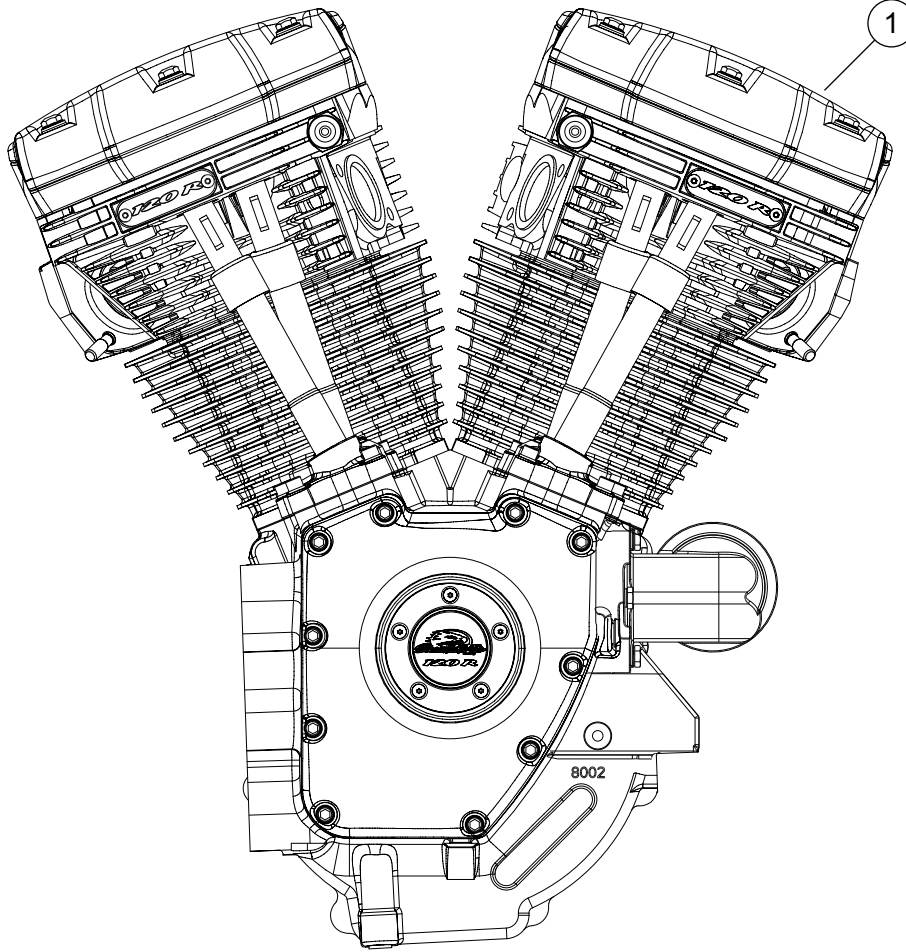


Figure 7. Engine Assembly, SE120R Complete

Table 11. SE120R Screamin' Eagle Pro Race-Use Crate Engine

Item	Description (Quantity)	Part Number
1	Engine assembly, complete	19289-12

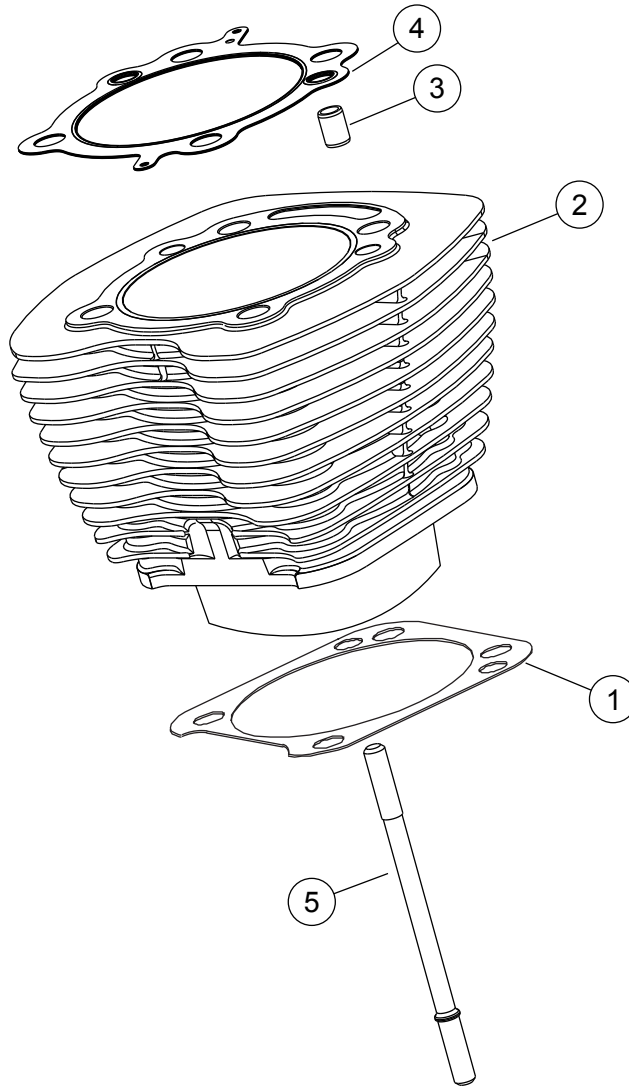


Figure 8. Service Parts: SE120R Screamin' Eagle Pro Race-Use Crate Engine

Table 12. Service Parts: SE120R Screamin' Eagle Pro Race-Use Crate Engine

Item	Description (Quantity)	Part Number
1	Base gasket, cylinder (2)	16736-04A
2	SE cylinder kit, 4.060 in., (black) (includes items 1, 3, 4, 1105 and 1086A)	16550-04C
3	Dowel pin, ring (4)	16595-99A
4	Gasket, cylinder head (2)	16104-04
5	Stud, cylinder (8)	16834-99A
6	Gasket kit, engine overhaul (does not include cylinder head gasket, base gasket or valve stem seals) (Not Shown)	17053-99C
7	Gasket kit, top-end, (does not include cylinder head gasket, base gasket or valve stem seals) (Not Shown)	17052-99C

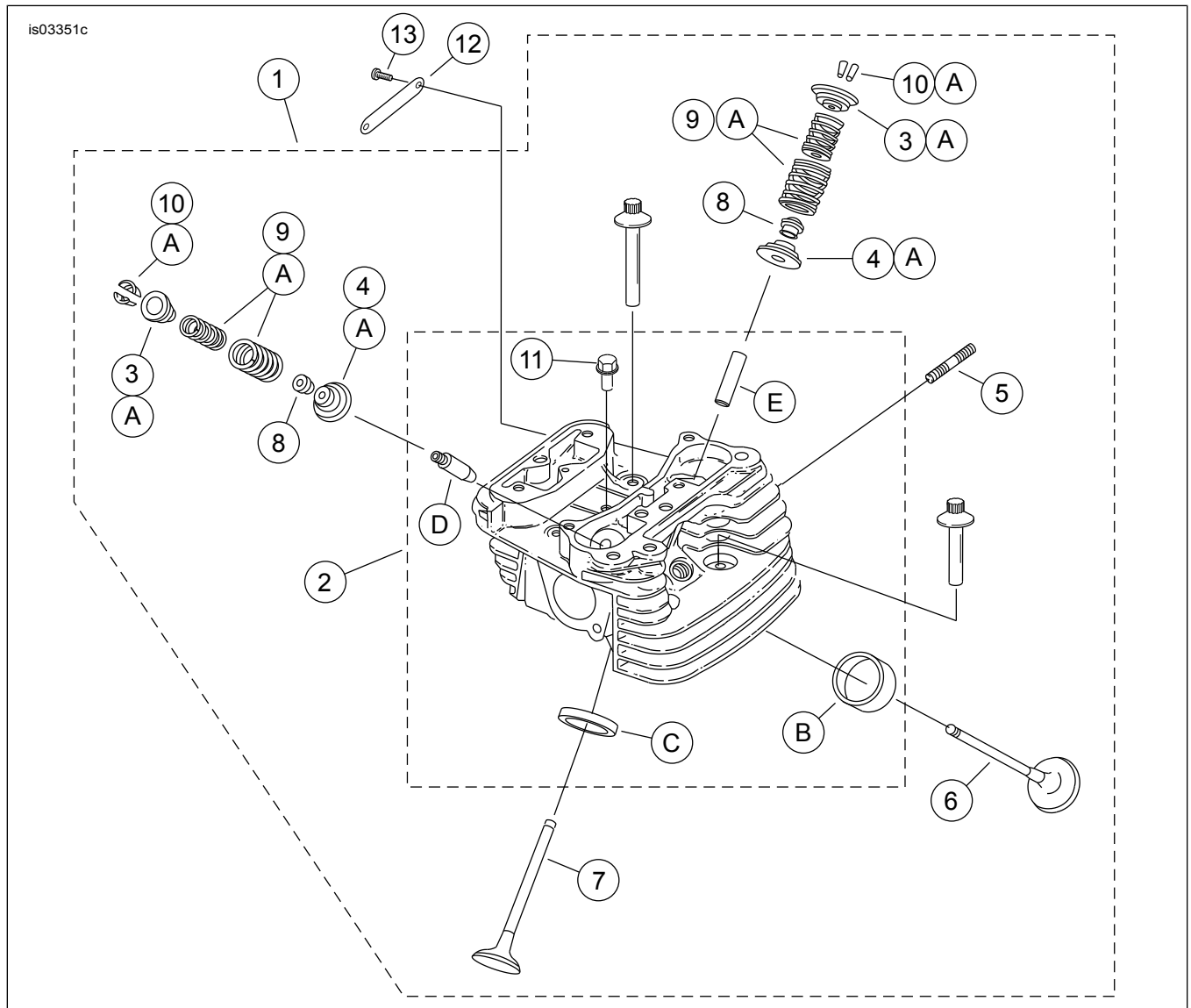


Figure 9. Service Parts: SE120R Screamin' Eagle Pro Race-Use Crate Engine

Table 13. Service Parts: SE120R Screamin' Eagle Pro Race-Use Crate Engine

Item	Description (Quantity)	Part Number
1	Cylinder head assembly, rear with "CNC PORTED" medallion (includes items 2 through 11)	16921-11
	Cylinder head assembly, front with "CNC PORTED" medallion (includes items 2 through 11)	16917-11
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)	18190-08
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	• Automatic compression release plug (2)	16648-08
12	Medallion, "120R"	17136-10
13	Screw, button head, TORX (2)	94634-99
14	Screw, internal thread, 3-3/16 inch (4)	16478-85A

Table 13. Service Parts: SE120R Screamin' Eagle Pro Race-Use Crate Engine

Item	Description (Quantity)	Part Number
15	Screw, internal thread, 1-7/8 inch (4)	16480-92A
16	Spark plugs (not shown) (2)	32186-10
Service Kits:		
A	Valve Spring Kit, Screamin' Eagle	18281-02A
The following Screamin' Eagle parts are available separately:		
B	Valve seat, intake	18191-08
C	Valve seat, exhaust	18048-98A
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

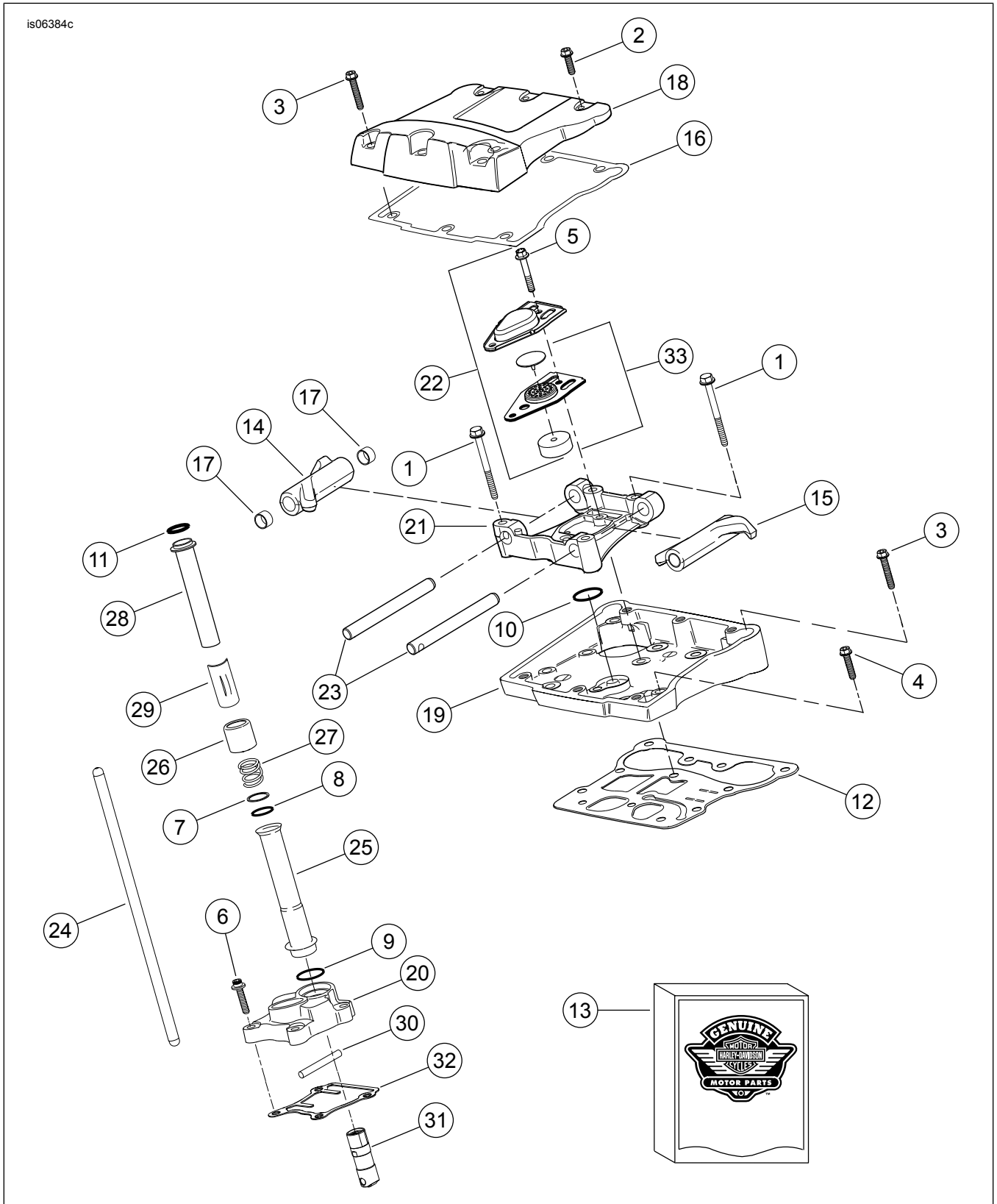


Figure 10. SE120R Screamin' Eagle Pro Race-Use Crate Engine

Table 14. Service Parts: SE120R Screamin' Eagle Pro Race-Use Crate Engine

Item	Description (Quantity)	Part Number
1	Screw 5/16-18 X 2-1/2 hex flange head (grade 8) (8)	1039
2	Screw 5/16-18 X 1.0 hex head, with lockpatch (6)	3692A
3	Screw 5/16-18 X 1-3/4 hex head, with lockpatch (10)	3693A

Table 14. Service Parts: SE120R Screamin' Eagle Pro Race-Use Crate Engine

Item	Description (Quantity)	Part Number
4	Screw 5/16-18 X 1-1/4 hex flange head, with lockpatch (8)	3736B
5	Screw 1/4-20 X 1-11/16 hex head (grade 8), with lockpatch, (4)	4400
6	Screw 1/4-20 X 1 socket head, with lockpatch (8)	4741A
7	Washer 11/16 X 29/32 X 1/32 (4)	6762B
8	O-ring, push rod cover (4)	11132A
9	O-ring, push rod cover (4)	11145A
10	O-ring (2)	11270
11	O-ring (4)	11293
12	Gasket, rocker housing (2)	16719-99B
13	Gasket kit, cam service	17045-99D
14	Rocker arm, front intake, rear exhaust, with bushings (2)	17360-83A
15	Rocker arm, rear intake, front exhaust, with bushings (2)	17375-83A
16	Gasket, rocker cover (2)	17386-99A
17	Bushing, rocker arm (8)	17428-57
18	Rocker cover, (chrome) (2)	17572-99
19	Rocker housing, (chrome) (2)	17578-10
20	Lifter cover, front (chrome) Lifter cover, rear (chrome)	17964-99 17966-99
21	Support, rocker arm (2)	17594-99
22	Breather assembly (2)	17025-03A
23	Shaft, rocker arm (4)	17611-83
24	Perfect Fit push rod kit (+0.030 inch)	18401-03
25	Cover, push rod, lower (4)	17939-99
26	Cap, cover spring (4)	17945-36B
27	Spring, push rod cover (4)	17947-36
28	Cover, push rod upper (4)	17948-99
29	Retainer, spring cap (4)	17968-99
30	Pin, anti-rotation (2)	18535-99
31	Hydraulic lifter kit (Includes 4 lifters)	18572-13
32	Gasket, lifter cover (2)	18673-07
33	Baffle assembly, breather (2)	26500002

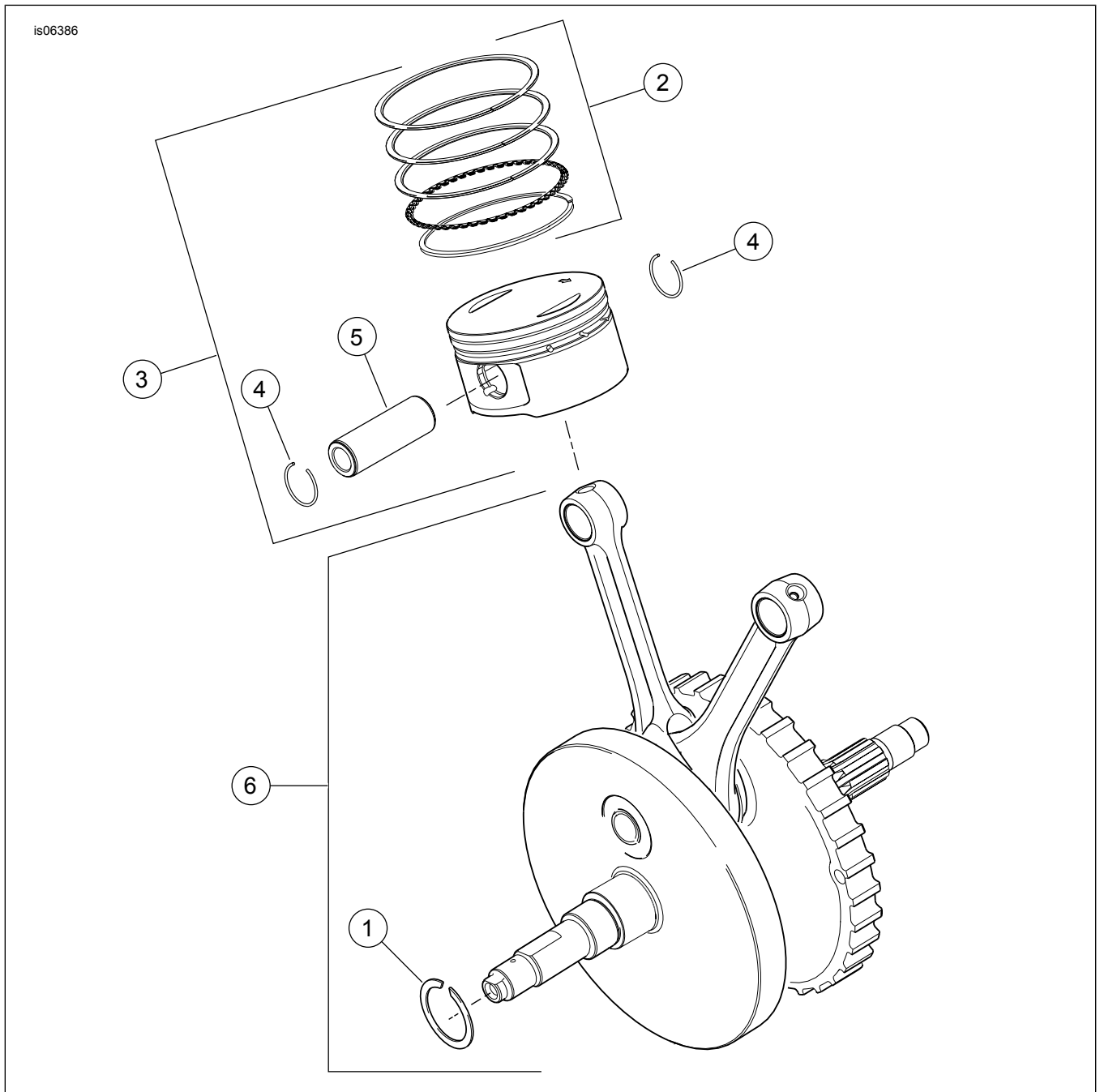


Figure 11. Service Parts; SE120R Screamin' Eagle Pro Race-Use Crate Engine

Table 15. Service Parts: SE120R Screamin' Eagle Pro Race-Use Crate Engine

Item	Description (Quantity)	Part Number
1	Retaining ring	11177A
2	Piston ring set, standard (2)	22526-10
	Piston ring set, 0.010 inch over size (2)	22529-10
3	Piston kit, front and rear, with ring sets, piston pin and lock rings, standard	22574-10
	Piston kit, front and rear, with ring sets, piston pin and lock rings, 0.010 inch over size	22576-10
4	Lock ring, piston pin (4)	22097-99
5	Piston pin (2)	22310-10
6	Flywheel assembly kit	24100007

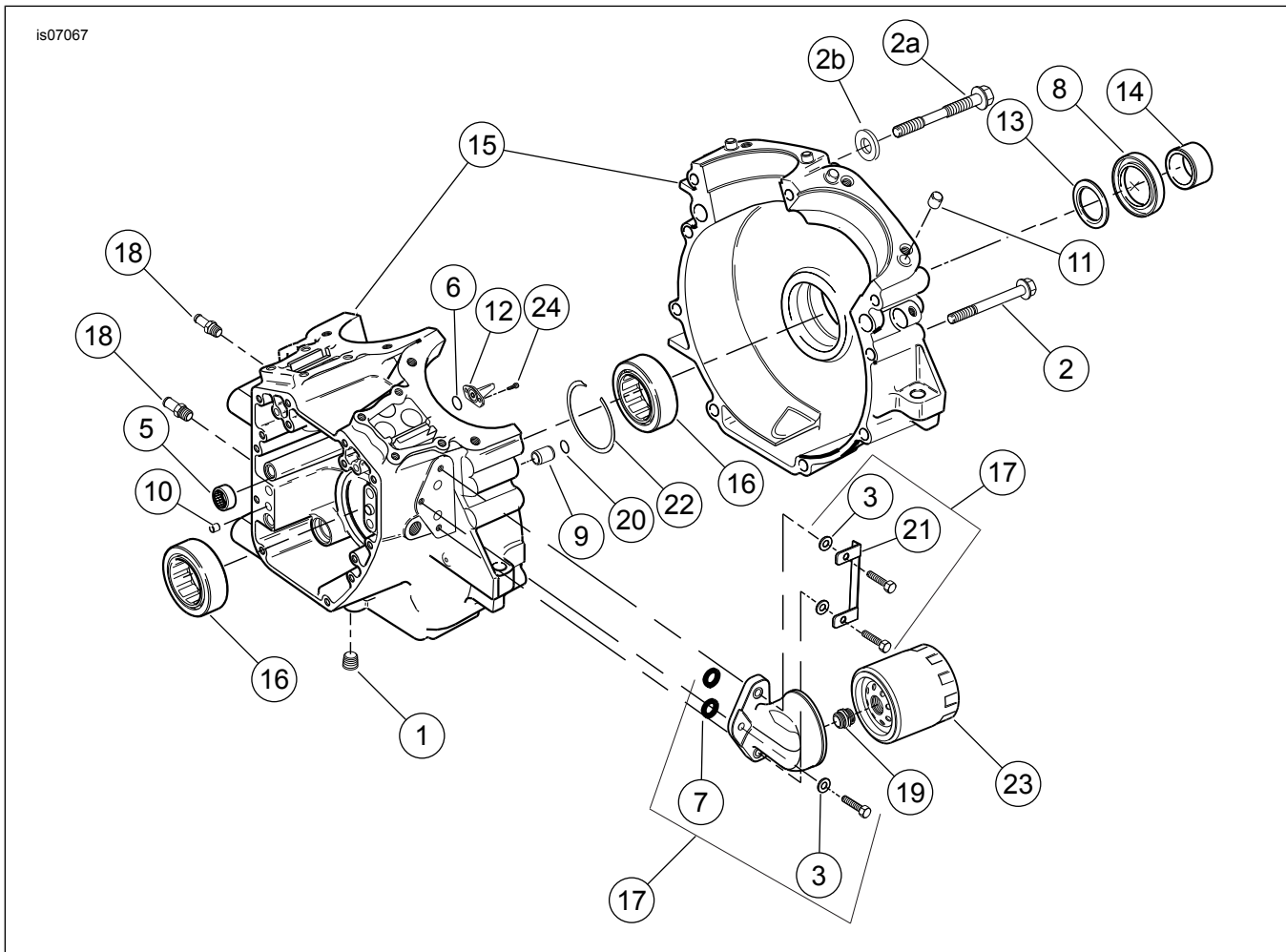


Figure 12. Service Parts: SE120R Screamin' Eagle Pro Race-Use Crate Engine

Table 16. Service Parts: SE120R Screamin' Eagle Pro Race-Use Crate Engine

Item	Description (Quantity)	Part Number
1	Plug (3)	765
2	Screw, 5/16-18 x 3.0 inch, hex flange head (8)	895
2a	Screw, top center crankcase	1105
2b	Washer, sealing	1086A
3	Washer (3)	6099
4	Washer 1-1/4 x 1-53/64 x 1/8 (2)	8972
5	Needle bearing kit, (kit contains 2)	24017-10
6	O-ring (2)	10930
7	O-ring (2)	11293
8	Oil seal	12068
9	Dowel pin (2)	16574-99A
10	Dowel pin (2)	16589-99A
11	Dowel pin (4)	16595-99A
12	Piston cooling jet, with 10930 (2)	22315-06A
13	Bearing kit, left side with 8972, 24605-07, 35114-02, and inner race	24004-03B
14	Spacer, sprocket shaft (Dyna models only)	24038-03
15	Crankcase set, (black) with 5, 12, 13, 16, 22, 24 and 3983 bolts (not shown)	24400031
16	Bearing, main (2)	24605-07
17	Oil filter mount kit, with lockplate kit, adapter and O-rings	26261-99
18	Fitting, straight (3)	26314-99
19	Adapter, oil filter	26352-95A
20	O-Ring (2)	26432-76A
21	Lockplate kit with screws, O-rings and washers	35071-99
22	Retaining ring	35114-02
23	Oil filter (chrome)	63798-99A
24	Screw, TORX® 8-32 x 3/8 (4)	68042-99

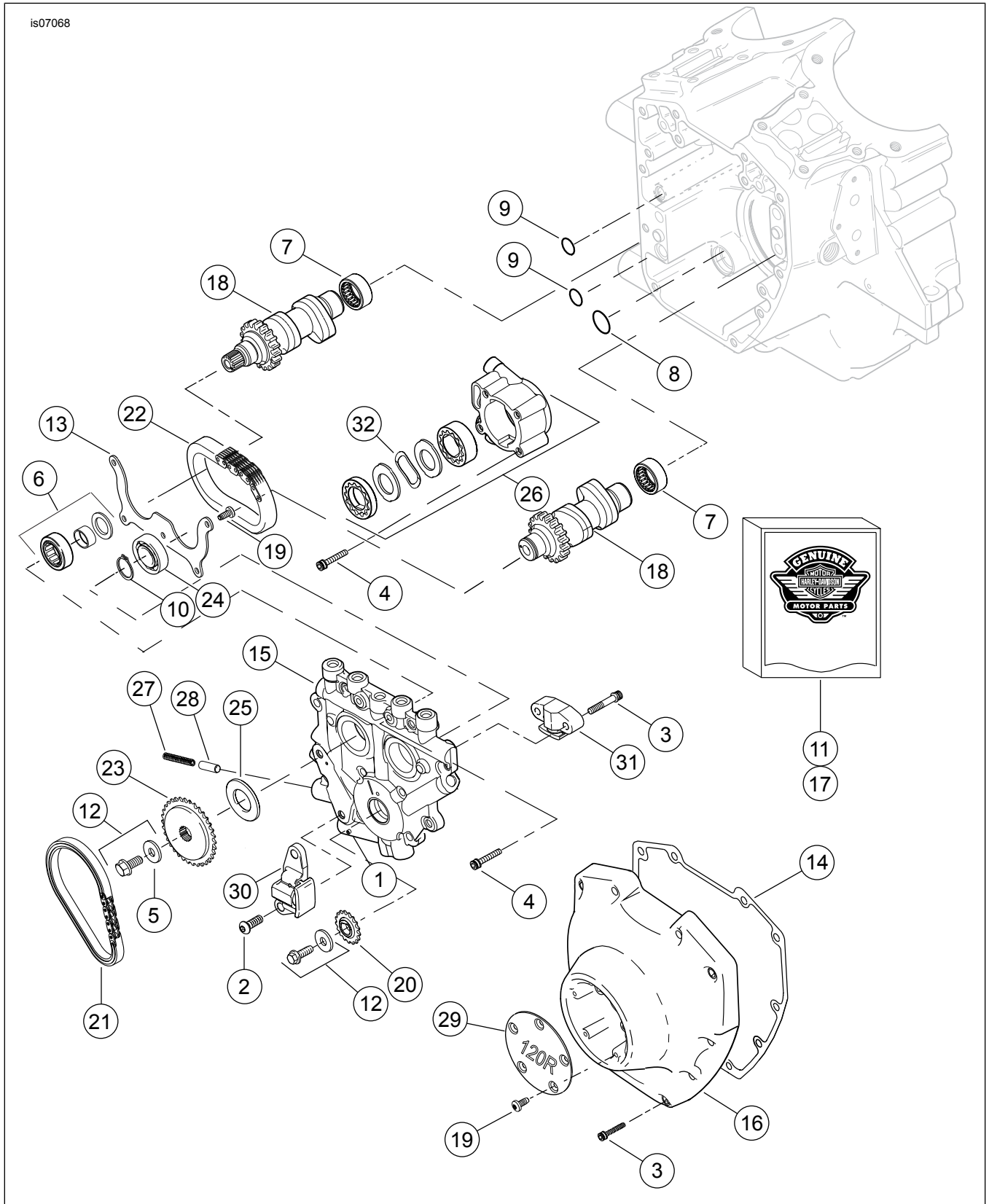


Figure 13. Service Parts: SE 120R Screamin' Eagle Pro Race-Use Crate Engine

Table 17. Service Parts: SE120R Screamin' Eagle Pro Race-use Crate Engine

Item	Description (Quantity)	Part Number
1	Roll pin	601
2	Screw, primary cam chain tensioner (2)	942

Table 17. Service Parts: SE120R Screamin' Eagle Pro Race-use Crate Engine

Item	Description (Quantity)	Part Number
3	Screw, cam cover, 1/4-20 x 1-1/4, knurled with lockpatch (grade 8), (10)	4740A
	Screw, secondary cam tensioner, 1/4-20 x 1-1/4, knurled with lockpatch (grade 8), (2)	4740A
4	Screw, 1/4-20 x 1, socket head, with lockpatch (8)	4741A
5	Washer, 3/8 x 1-1/8 x 7/32	6294
6	Bearing assembly with bearing, inner race, washer and O-ring	8983
7	Needle bearing kit, (kit contains 2)	24017-10
8	O-ring	11293
9	O-ring (2)	11301
10	Retaining ring	11494
11	Gasket kit, cam service	17045-99D
12	Cam drive sprocket retention kit, with 6294, screws and washer	25566-06
13	Plate, bearing retaining	1200018
14	Gasket, cam cover	25244-99A
15	Cam support plate, with bypass valve	25400018
16	Cam cover, (chrome)	25369-01B
17	Camshaft chain and fastener kit, with 25566-06, 25673-06, 25675-06 and 25728-06	25585-06
18	Camshaft, front and rear kit, SE266E	25400029
19	Screw, 8-32 x 3/8 TORX head (5)	68042-99
20	Sprocket, cam drive on crankshaft, 17 T	25673-06
21	Chain, primary cam drive	25675-06
22	Chain, secondary cam drive	25607-99
23	Sprocket, cam drive, 34 T	25728-06
24	Ball bearing	8990A
25	Spacer, cam drive sprocket alignment 0.287 inch thick	25722-00
	Spacer, cam drive sprocket alignment 0.297 inch thick	25723-00
	Spacer, cam drive sprocket alignment 0.307 inch thick	25721-00
	Spacer, cam drive sprocket alignment 0.317 inch thick	25719-00
	Spacer, cam drive sprocket alignment 0.327 inch thick	25717-00
	Spacer, cam drive sprocket alignment 0.337 inch thick	25725-00
	Spacer, cam drive sprocket alignment 0.347 inch thick	11889
	Spacer, cam drive sprocket alignment 0.357 inch thick	11890
26	Oil pump assembly	62400001
27	Spring, relief valve	26210-99
28	Relief valve, oil pump	26400-82B
29	Cover, 120R	25495-10
30	Chain tensioner, primary cam drive chain	39968-06
31	Chain tensioner, secondary cam drive chain	39969-06
32	Spring, separator	40323-00