



INSTRUCTIONS

J05614

2015-12-04



OWNERS MANUAL, SE120ST SCREAMIN' EAGLE CRATE ENGINE

GENERAL

Kit Number

19221-15

Models

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

NOTE

- Replacement engines must be refitted with emission control devices and systems appropriate for the vehicle model and model year in order to verify emissions compliance. Failure to do so constitutes tampering under USA EPA guidelines, which can lead to substantial fines and penalties.
- Legal for use on public roads only when installed in the specified models. Not legal for use on public roads when installed in models other than the ones specified. Not eligible for the P&A 24-month warranty. This engine does include a one-year warranty when installed in appropriate models as specified with appropriate compliant calibration download to ECM. Contact a Harley-Davidson dealer for warranty statement.
- **For 2016 Models:** A new production information label (EO: M-005-0220) is required. Locate the VIN label on the frame tube below the handlebars. Place the new product information label below the VIN label on the frame tube of the vehicle. The partial emissions label with **Engine Family: GHDXC1.96AEG** included in this kit is a requirement for emissions regulations for 2016 models. Locate the emissions label on the frame tube below the handlebars. Install the partial label from this kit over the **top portion** of the label on the vehicle.
- **For 2015 Models:** A new production information label (EO: M-005-0208) is required. Locate the VIN label on the frame tube below the handlebars. Place the new product information label below the VIN label on the frame tube of the vehicle. The partial emissions label with **Engine Family: FHDXC1.96AEG** included in this kit is a requirement for emissions regulations for 2015 models. Locate the emissions label on the frame tube below the handlebars. Install the partial label from this kit over the **top portion** of the label on the vehicle.
- **For 2010-2014 Models:** A new production information label (EO: D-338-81) is required. Locate the VIN label on the frame tube below the handlebars. Place the new product information label below the VIN label on the frame tube of the vehicle.

Warranty Statement

See the vehicle owner's manual for Emissions Warranty information.

See a Harley-Davidson dealer for a copy of the Harley-Davidson Street Performance Crate Engine Limited Warranty: 12 Months/Unlimited Mileage.

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Installation Requirements

- **Recommended synthetic engine oil:** Screamin' Eagle SYN3[®] 20W50 (Part No. 99824-03/00QT).
- **2010 Touring Models:** Installation of SE High Capacity Compensator Kit (Part No. 40100061) is **required** for installation of this engine.
- **2011-2013 Touring models:** Installation of Screamin' Eagle High Capacity Compensator Kit (Part No. 42200064A) is required for installation of this engine.
- A clutch kit that supports a minimum of 189.8 N·m (140 ft-lbs) of torque is required. Harley-Davidson recommends installation of a Screamin' Eagle pressure clutch (Part No. 37000121) and diaphragm spring (Part No. 37951-98).
- A Screamin' Eagle exhaust gasket kit (Part No. 17048-98) is needed.
- An oil cooler is recommended. See the P&A retail catalog or the Parts and Accessories section of www.harley-davidson.com.
- A download using Digital Technician. See a Harley-Davidson dealer.
- See the service manual for 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 refers to service manual information. A service manual for this year/model motorcycle is required for this installation. One is available from a Harley-Davidson dealer.

Kit Contents

See:

- Figure 5 and Table 13,
- Figure 6 and Table 14,
- Figure 7 and Table 15,
- Figure 8 and Table 16,
- Figure 9 and Table 17,
- Figure 10 and Table 18,
- Figure 11 and Table 19.

PREPARATION

1. Position the motorcycle on a suitable lift.

▲ 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)

▲ 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)

2. See the service manual to perform the following steps:
 - a. Remove seat.
 - b. Purge and disconnect fuel supply line.

▲ WARNING

To prevent accidental vehicle start-up, which could cause death or serious injury, remove main fuse before proceeding. (00251b)

NOTE

- **WITH security siren:** With security fob present, turn ignition switch ON. See the service manual. Disarm security system. **IMMEDIATELY** remove main fuse.
- **WITHOUT security siren:** See the service manual. Remove main fuse.

ALL models:

3. See the service manual to perform the following steps:
 - a. Remove instrument console (if present) from fuel tank.
 - b. Remove fuel tank.
4. Raise the motorcycle.

REMOVAL

Current Engine Removal

1. Remove engine from chassis. Refer to ENGINE section of service manual.

SE120ST ENGINE INSTALLATION

1. Before installing the engine, make sure that there is no debris or contaminants in the oiling system. Have the oil pan flushed out by a Harley-Davidson dealer or qualified technician.
2. Remove the oil passage caps or plugs at the engine to transmission interface.
3. See the ENGINE section of the service manual. Install the engine to the chassis.
4. **2010 Touring Models:** Install a Screamin' Eagle High Capacity Compensator Kit (Part No. 40100061, purchased separately), following instructions from **that** kit. **2011-2013 Touring Models:** Install a Screamin' Eagle High Capacity Compensator Kit (Part No. 42200064A, purchased separately) following the instructions from **that** kit.
5. Install throttle body and high flow injectors following instructions in **this** kit.

COMPLETION

1. Install fuel tank. See the service manual.
2. See the service manual. Install main fuse.
3. Install seat. See the service manual. After installing seat, pull up on the seat to be sure it is secure.

NOTICE

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

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

OPERATION

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

MAINTENANCE

1. Refer to the MAINTENANCE SCHEDULE in the vehicle service manual or owner's manual.
2. Refer to ENGINE section of service manual for proper service procedures.

SE120ST ENGINE SPECIFICATIONS

NOTE

The following sections provide unique information not available in the service manual ENGINE section for the Twin Cam 103™ alpha engines from Touring platforms.

Table 2. Engine: Screamin' Eagle Twin Cam SE120ST

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 103™ specifications in the service manual for any specification not shown in the following tables.

Table 3. 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 4. 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 5. Valve Spring 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 6. Pistons

Piston:	Clearance (in.)
Piston-to-cylinder fit (Loose)	0.0026-0.0036
Piston pin fit (Loose)	0.0003-0.0008
Top Ring End Gap	0.012-0.020
Second Ring End Gap	0.016-0.024
Oil Control Ring Rail Gap	0.008-0.0028
Top Ring Side Clearance	0.0010-0.0022
Second Ring Side Clearance	0.0010-0.0022
Oil Control Ring Side Clearance	0.0003-0.0072

Table 7. Cam Specifications - 259E

Intake	Specification
Opens	19° BTDC
Closes	47° ABDC
Duration	246°
Maximum Valve Lift	0.579 in.
Valve Lift @ TDC	0.182 in.
Exhaust	Specification
Opens	58° BBDC

Table 7. Cam Specifications - 259E

Intake	Specification
Closes	12° ATDC
Duration	250°
Maximum Valve Lift	0.579 in.
Valve Lift @ TDC	0.155 in.
Cam Timing @ 0.053 in. Tappet Lift in Crankshaft Degrees	

SERVICE WEAR LIMITS

Use wear limits as guide to part replacement.

NOTE

Refer to the Twin-Cam 103™ specifications in the service manual for any specification not shown in the following tables

Table 8. 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 9. Cylinder Bore

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

Table 10. Pistons

Piston-to-cylinder fit (Loose)	Wear Limit (in.)
Fit in cylinder (Loose)	0.0061
Piston Pin Fit (Loose)	0.0011
Top Ring End Gap	0.030
Second Ring End Gap	0.034
Oil Control Ring Rail Gap	0.038
Top Ring Side Clearance	0.0030
Second Ring Side Clearance	0.0030
Oil Control Ring Side Clearance	0.0079

SE120ST CYLINDERS

Preparation

- Position the motorcycle on a suitable lift.

⚠ 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)

⚠ 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)

2. See the service manual to perform the following steps:
 - a. Remove seat.
 - b. Purge and disconnect fuel supply line.

⚠ WARNING

To prevent accidental vehicle start-up, which could cause death or serious injury, remove main fuse before proceeding. (00251b)

NOTE

- **WITH security siren:** With security fob present, turn ignition switch ON. See the service manual. Disarm security system. **IMMEDIATELY** remove main fuse.
- **WITHOUT security siren:** See the service manual. Remove main fuse.

ALL models:

3. See the service manual to perform the following steps:
 - a. Remove instrument console (if present) from fuel tank.
 - b. Remove fuel tank.
4. Raise the motorcycle.

Remove Engine Components

1. See service manual. Remove existing air cleaner assembly.
2. Remove existing exhaust system per the service manual.
3. Disassemble engine top end. Refer to service manual engine sections.

Install Engine Top End Components

NOTE

- See Figure 1. The 103 mm (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 embossed side down and concave side up.

1. Refer to the service manual. Assemble the engine with the following change:
 - a. Assemble the top end of the engine using the base gaskets and head gaskets from the kit. Refer to ENGINE section of service manual.

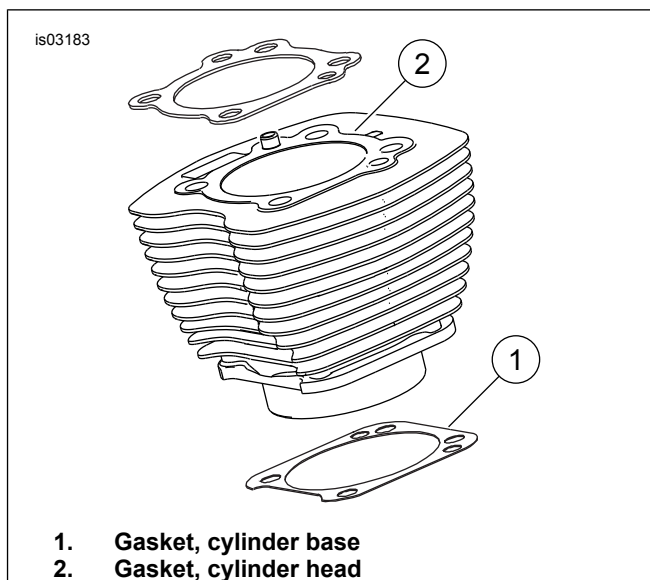


Figure 1. Cylinder Gaskets

Final Assembly

1. Install fuel tank. See the service manual.
2. See the service manual. Install main fuse.
3. Install seat. See the service manual. After installing seat, pull up on the seat to be sure it is secure.

SE120ST PISTONS

Refer to ENGINE section of service manual.

Piston 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. Remove seat. Disconnect both battery cables, negative battery cable first. Retain all seat mounting hardware.

⚠ 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.

- 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.
- 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 103 mm (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 11 is for reference.

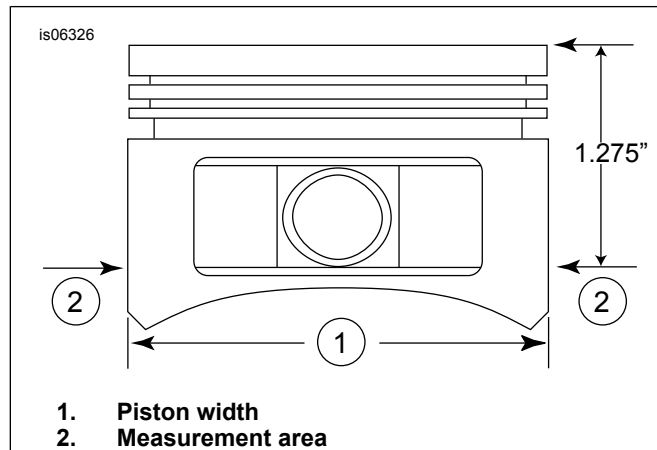


Figure 2. Piston Measurements

- Figure 2 Measure the piston width (1), 90 degrees horizontally from both sides of the piston pin hole and 32 mm (1.275 in) down from the deck (top) surface of the piston (2). See Table 11 for piston-to-cylinder fit at this location.
- The pistons in this kit are front and rear specific. Install the piston marked "FRONT" in the front cylinder with the arrow pointing toward the **front** of the engine. Install the piston marked "REAR" in the rear cylinder with the arrow pointing toward 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.

Table 11. Specifications

Piston:	Clearance (in.)
Piston-to-cylinder fit (Loose)	0.0026-0.0036
Piston pin fit (Loose)	0.0003-0.0008

Table 11. Specifications

Piston:	Clearance (in.)
Top Ring End Gap	0.012-0.020
Second Ring End Gap	0.016-0.024
Oil Control Ring Rail Gap	0.008-0.0028
Top Ring Side Clearance	0.0010-0.0022
Second Ring Side Clearance	0.0010-0.0022
Oil Control Ring Side Clearance	0.0003-0.0072

Table 12. Service Wear Limits

Piston-to-cylinder fit (Loose)	Wear Limit (in.)
Fit in cylinder (Loose)	0.0061
Piston Pin Fit (Loose)	0.0011
Top Ring End Gap	0.030
Second Ring End Gap	0.034
Oil Control Ring Rail Gap	0.038
Top Ring Side Clearance	0.0030
Second Ring Side Clearance	0.0030
Oil Control Ring Side Clearance	0.0079

Piston Pin Retaining Ring (Circlip) Installation

NOTE

Circlip gap must be at straight up or straight down 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 straight up or straight down position when installed.

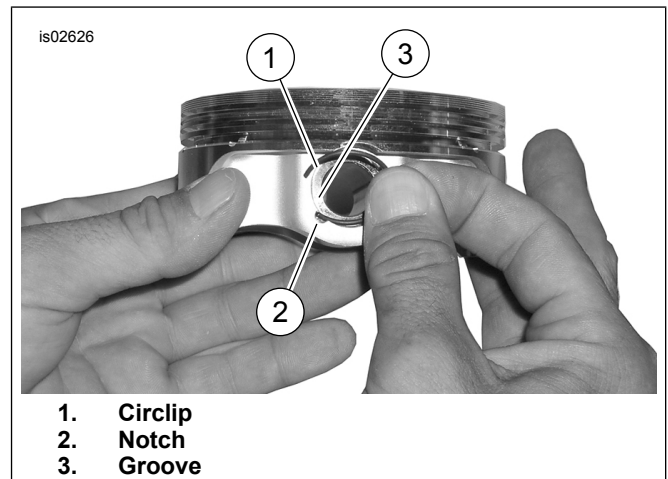


Figure 3. Circlip and Piston

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- 1. Thumb orientation
- 2. Circlip 85% seated

Figure 4. Install Circlip

- 2. See Figure 4. Position your thumb (1) as shown. Press firmly until approximately 85% of the circlip (2) is seated in the groove.
- 3. Do not scratch or mar the piston. Use a small-bladed screwdriver to wedge the circlip into the rest of the groove. Repeat for the remaining circlips.

NOTE

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

- 4. Refer to the ENGINE: ASSEMBLING MOTORCYCLE AFTER STRIPPING section of the service manual for final reassembly procedures.

SERVICE PARTS

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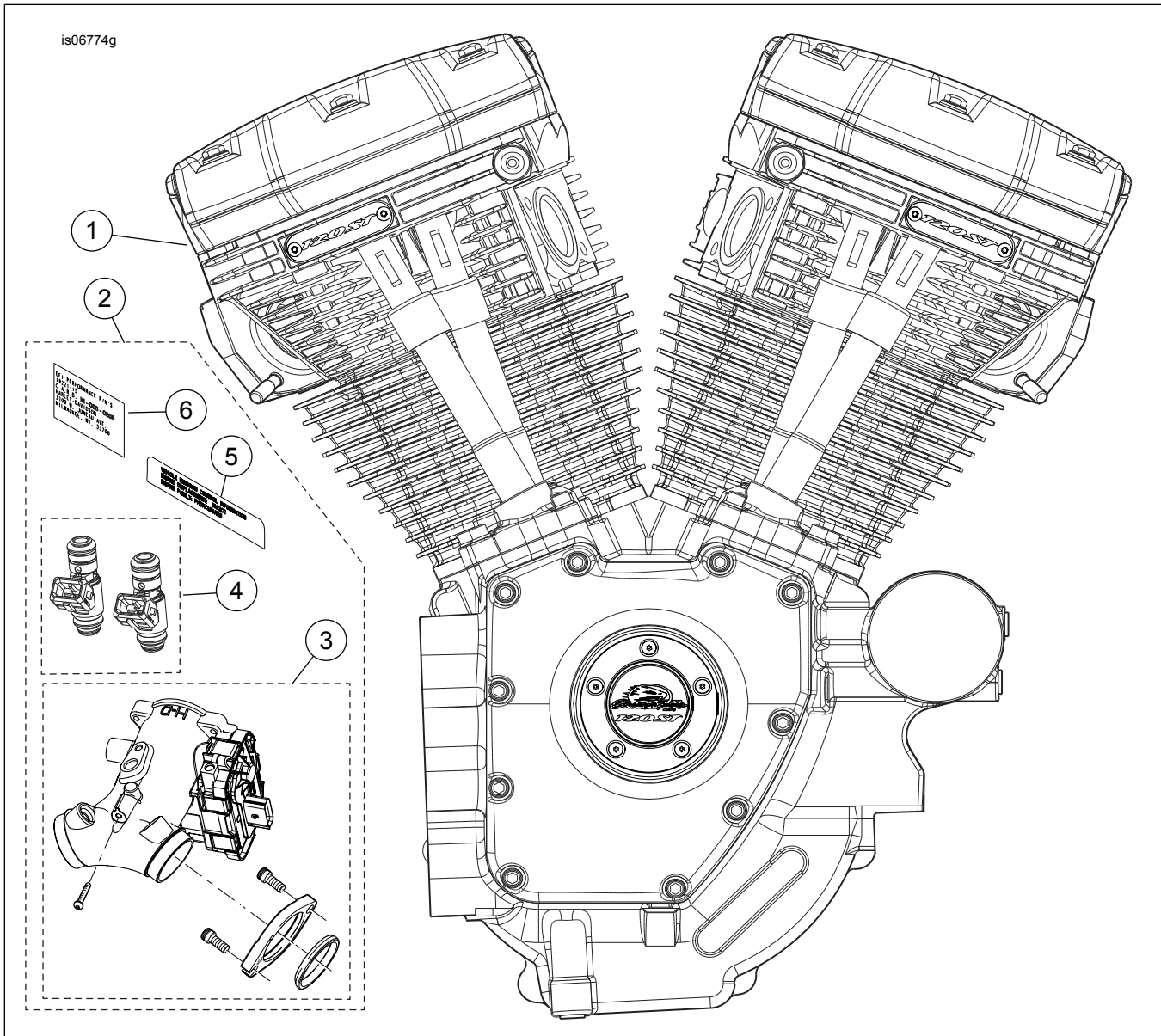


Figure 5. Engine Assembly, Screamin' Eagle 120ST Crate Engine Complete

Table 13. Service Parts, Screamin' Eagle 120ST Crate Engine

Item	Description (Quantity)	Part Number
1	Engine assembly, complete	19221-15
2	Induction Module and Hardware Kit (includes items 3-6)	Not sold separately
3	• Throttle Body Kit, Screamin' Eagle 58 mm	27713-08
4	• Screamin' Eagle High Flow Injector Kit	27796-08
5	• Partial Emission Label (Engine Family GHDXC1.96AEG) (required on 2016 models only)	Not sold separately
	• Partial Emission Label (Engine Family FHDXC1.96AEG) (required on 2015 models only)	Not sold separately
6	• New Product Information Label, " M-005-0220 " (required on 2016 models only)	Not sold separately
	• New Product Information Label, " M-005-0208 " (required on 2015 models only)	Not sold separately
	• New Product Information Label, " D-338-81 " (required on 2010-2014 models only)	Not sold separately

SERVICE PARTS

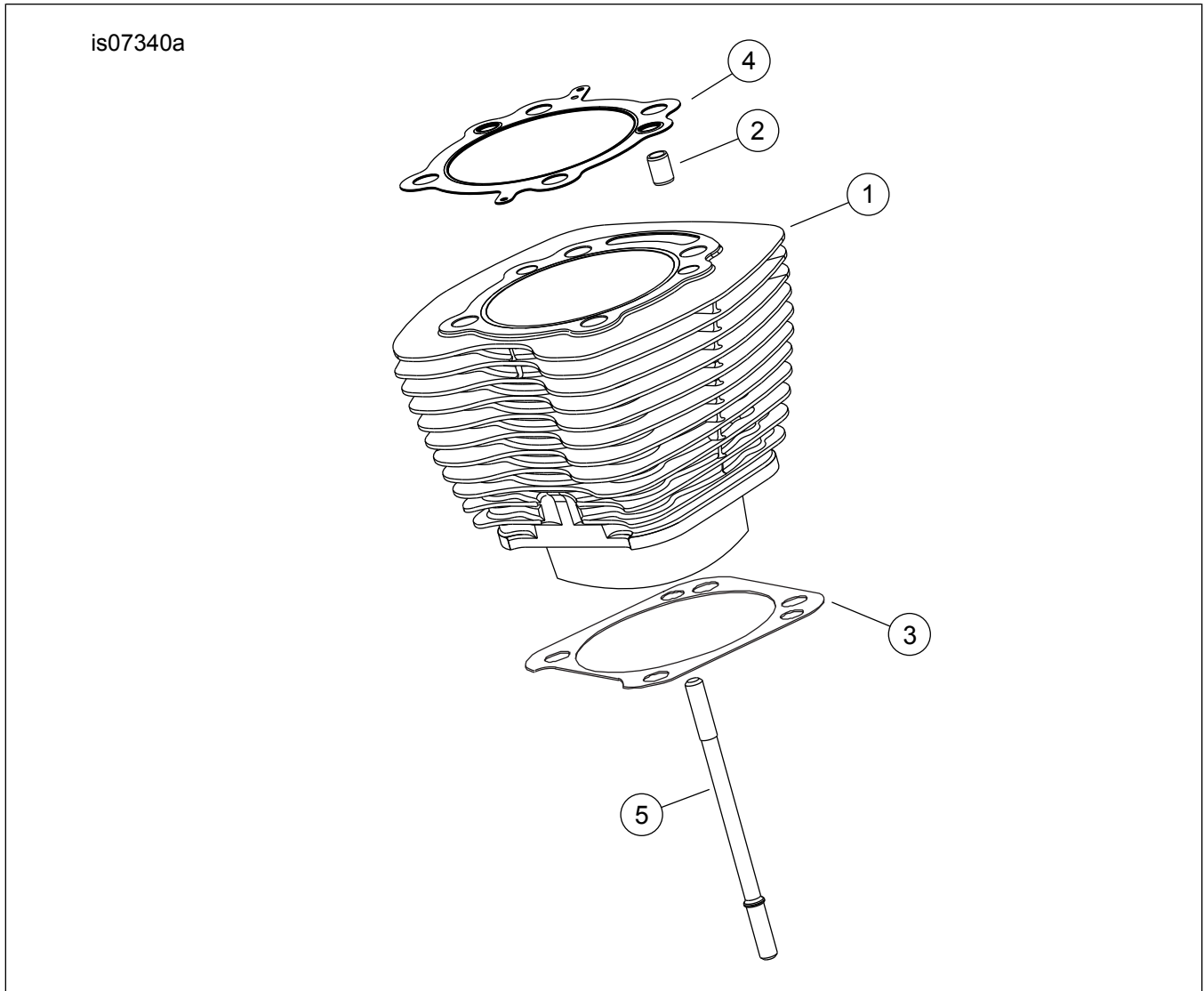


Figure 6. SE120ST Screamin' Eagle Crate Engine Cylinders

Table 14. Service Parts, SE120ST Screamin' Eagle Crate Engine Cylinders

Item	Description (Quantity)	Part Number
1	SE cylinder kit, 4.060 in (black). Includes front and rear cylinders, items 2-4, flanged hex head screw (Part No. 1105) and sealing washer (Part No. 1086A).	16550-04C
2	• Dowel pin, ring (4)	16595-99A

Table 14. Service Parts, SE120ST Screamin' Eagle Crate Engine Cylinders

Item	Description (Quantity)	Part Number
3	• Gasket, cylinder base (2)	16736-04A
4	• Gasket, cylinder head (2)	16104-04
5	Stud, cylinder (8)	16834-99A
6	Gasket kit, engine overhaul (not shown). DOES NOT include cylinder head gasket, base gasket or valve stem seals.	17053-99C
7	Gasket kit, top-end (not shown) DOES NOT include cylinder head gasket, base gasket or valve stem seals.	17052-99C

SERVICE PARTS

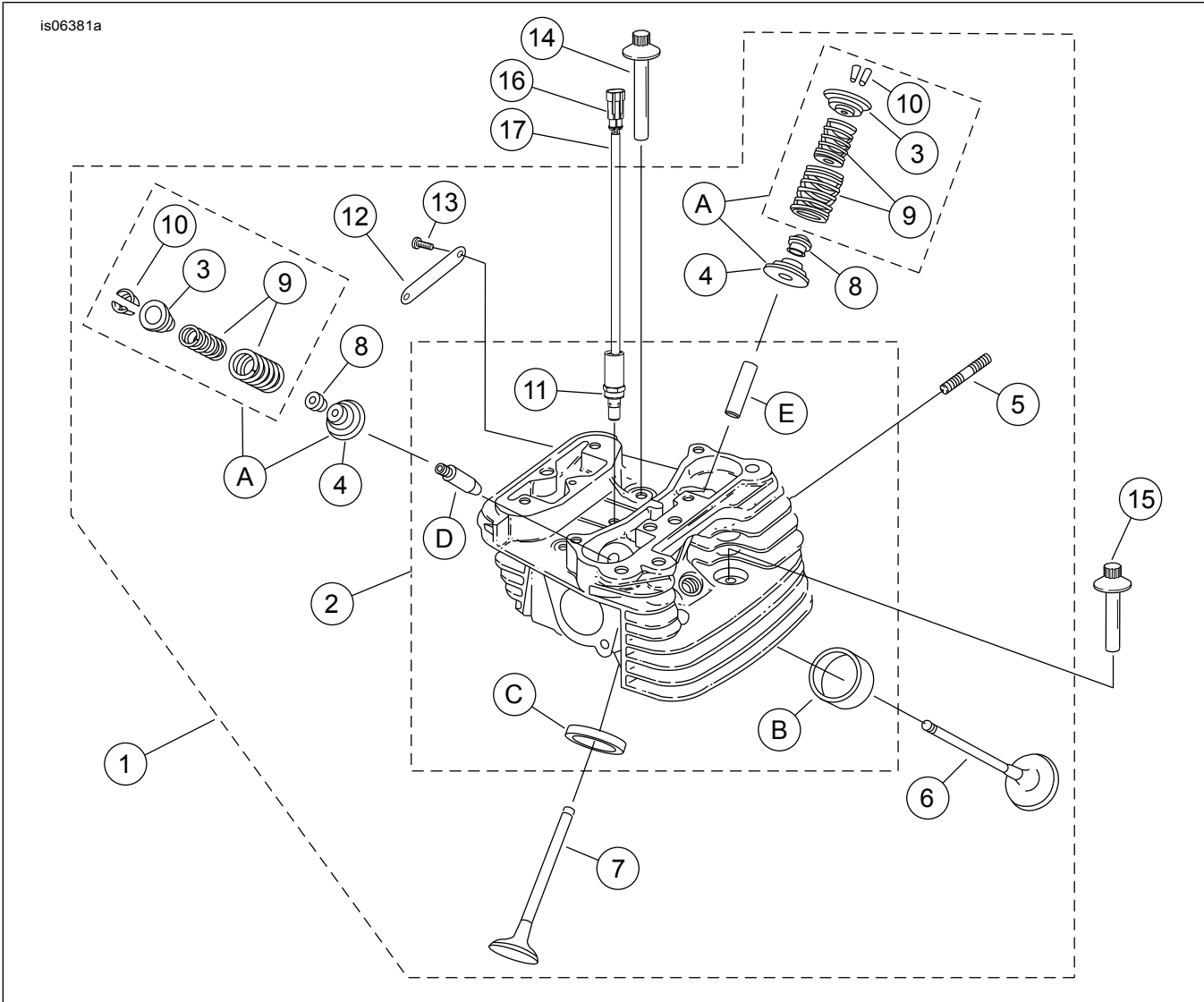


Figure 7. SE120ST Screamin' Eagle Crate Engine Cylinder Heads and Valves

SERVICE PARTS

Table 15. Service Parts, SE120ST Screamin' Eagle Crate Engine Cylinder Heads and Valves

Kit	Item	Description (Quantity)	Part Number
Kit 19221-15 (Crate Engine)	1	Cylinder head assembly, rear (includes Items 2-13) Cylinder head assembly, front (includes Items 2-13) (NOTE: Heads are provided with "120R" medallions installed. Replace with "120ST" medallions (Item 12) and screws (Item 13), purchased separately.)	17444-10 17443-10
	2	• Cylinder head (machined, with items 11, B, C, D and E installed)	Not sold separately
	3	• Collar, valve spring upper (4). Also included with Item "A".	18213-10
	4	• Collar, valve spring, lower (4). Included with Item "A".	Not sold separately
	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). Included with Item "A".	Not sold separately
	10	• Retainer, valve collar (8). Also included with Item "A".	18240-98
	11	• Automatic compression release (2)	28861-07A
	12	• Medallion, "120ST" (2)	14100436
	13	• Screw, button head, TORX (4)	25800017
	14	Screw, internal thread, 81 mm (3.19 in) long (4)	16478-85A
	15	Screw, internal thread, 48 mm (1.88 in) long (4)	16480-92A
	16	Pin housing, two-way	72009-05
	17	Wire seal, 16-20 AWG (4)	72011-05
	18	Spark plug, Screamin' Eagle (2) (not shown)	32186-10
Service Kit:			
	A	Valve Spring Kit, Screamin' Eagle (includes Items 3, 4, 9, 10)	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
		• (+ 0.001 in)	18154-05
	E	Valve guide, exhaust (for service)	
		• (+ 0.003 in)	18157-05
		• (+ 0.002 in)	18155-05
		• (+ 0.001 in)	18153-05

SERVICE PARTS

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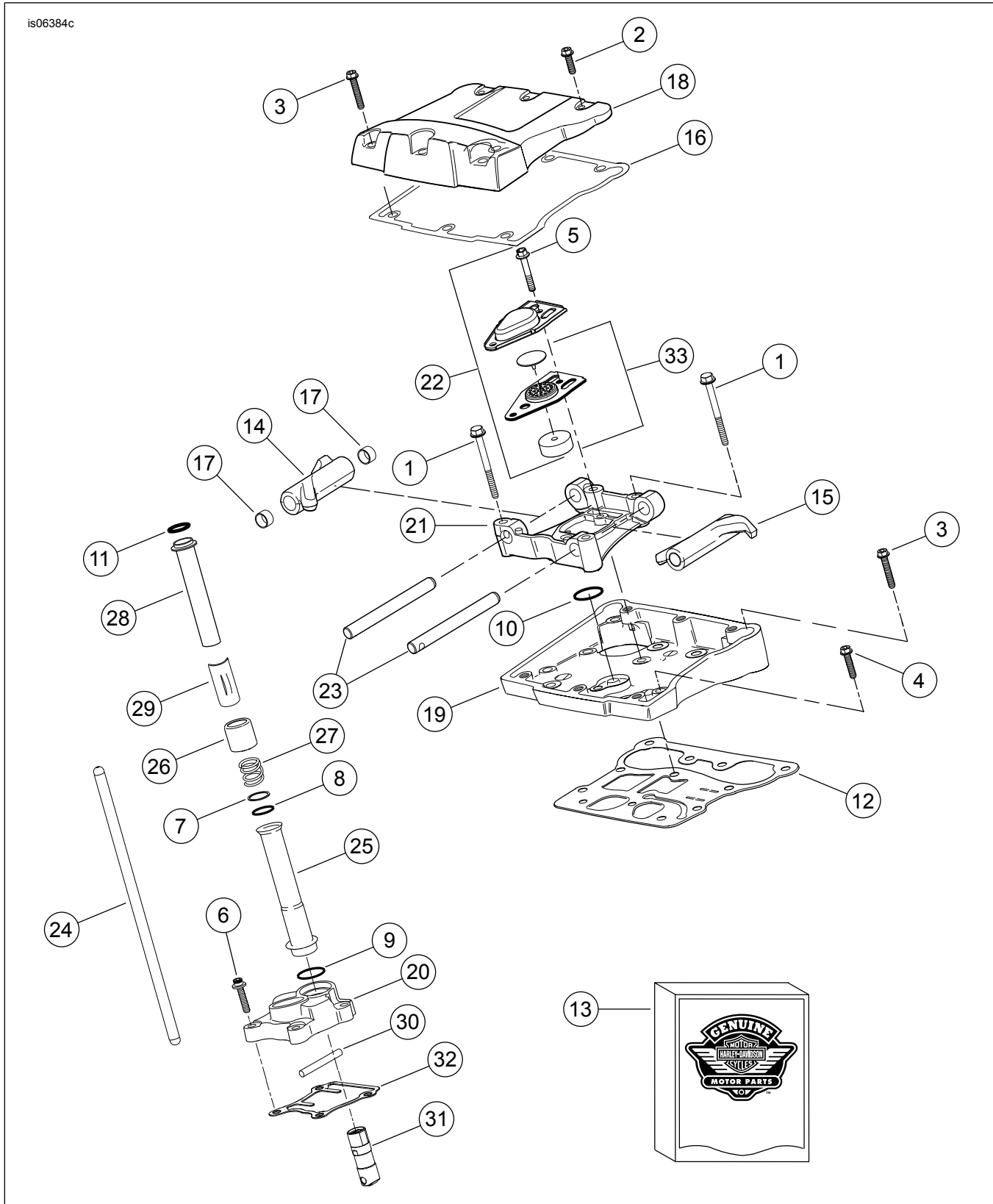


Figure 8. SE120ST Screamin' Eagle Crate Engine Rocker Arms and Push Rods

SERVICE PARTS

Table 16. Service Parts, SE120ST Screamin' Eagle Crate Engine Rocker Arms and Push Rods

Item	Description (Quantity)	Part Number
1	Cap screw, hex flanged head, 5/16-18 x 63.5 mm (2.5 in), Grade 8 with lock patch (8)	1039
2	Screw, internal/external hex flanged head, 5/16-18 x 25.4 mm (1.0 in), with lock patch (6)	3692A
3	Screw, internal/external hex flanged head, 5/16-18 x 44.4 mm (1.75 in), with lock patch (10)	3693A
4	Screw, hex flanged head SEMS, 5/16-18 x 31.8 mm (1.25 in), with lock patch (8)	3736B
5	Screw, hex flanged head, 1/4-20 x 42.9 mm (1.69 in), Grade 8, with lock patch, (4)	4400
6	Cap screw, hex socket head, heat treated washer, 1/4-20 x 25.4 mm (1.0 in), lock patch (6)	4741A
7	Washer, 0.79 mm (0.031 in) thick (4)	6762B
8*	O-ring, push rod cover, 17 mm (0.674 in) ID, brown (4)	11132A
9*	O-ring, push rod cover, 22 mm (0.862 in) ID, brown (4)	11145A
10*	O-ring, 15.5 mm (0.612 in) ID, black (2)	11270
11*	O-ring, 17 mm (0.671 in) ID, yellow (4)	11293
12	Gasket, rocker housing (2)	16719-99B
13	Gasket kit, cam service (contains items marked "**")	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)	17429-91
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	Push rod, exhaust, 26.8 cm (10.536 in) long, with two black stripes at each end (2) Push rod, intake, 26.5 cm (10.418 in) long, with NO stripes (2)	17922-99 17923-99
25	Cover, push rod lower (4)	17939-99
26	Retainer, push rod cover spring (4)	17945-36B
27	Spring, push rod cover (4)	17947-36
28	Cover, push rod upper (4)	17948-99
29	Keeper, push rod cover (4)	17968-99
30	Pin, anti-rotation (2)	18535-99
31	Hydraulic lifter kit (includes four lifters)	18572-13
32*	Gasket, lifter cover (2)	18635-99B
33	Baffle assembly, breather (2)	26500002

SERVICE PARTS

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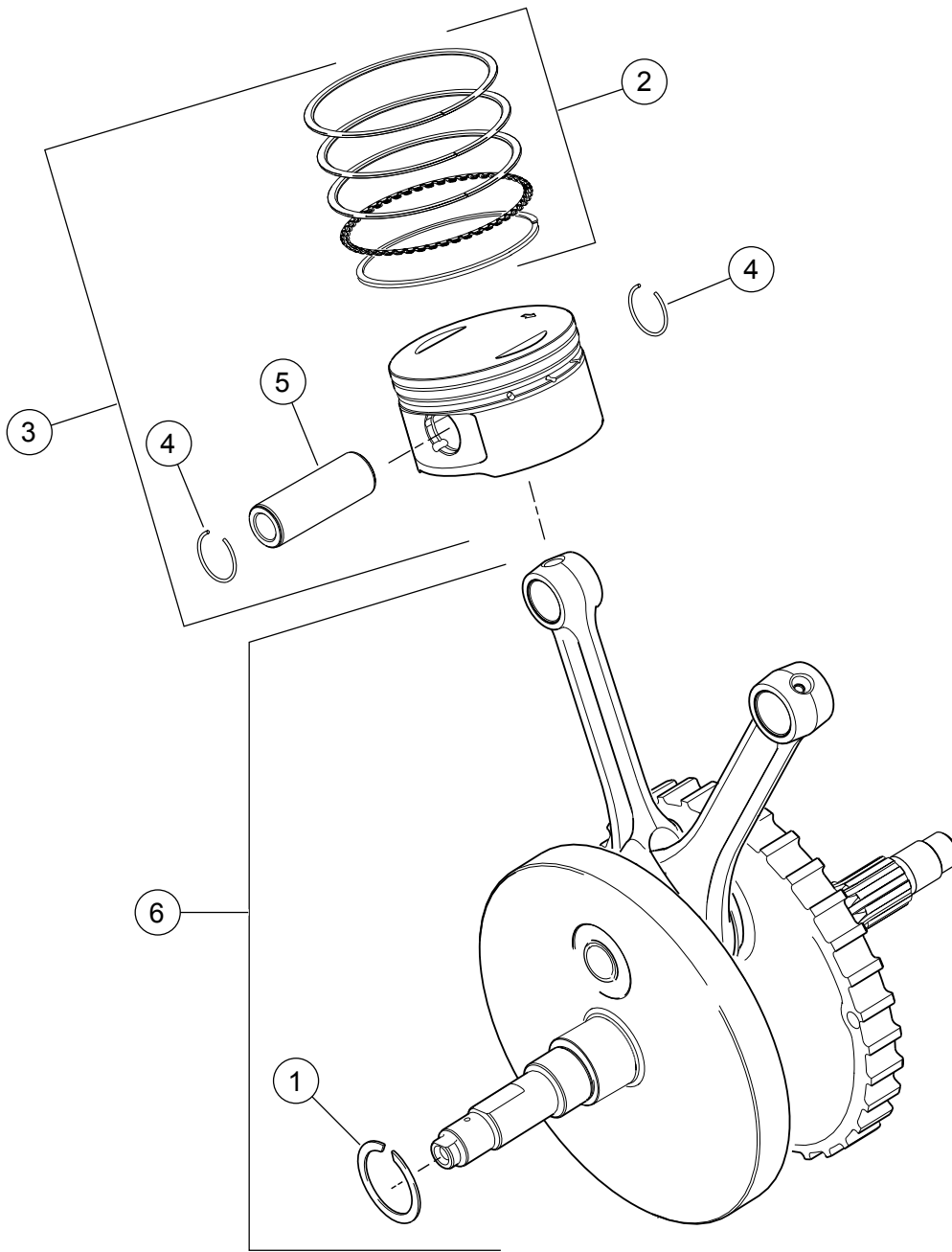


Figure 9. SE120ST Screamin' Eagle Crate Engine Pistons and Flywheel

Table 17. Service Parts, SE120ST Screamin' Eagle Crate Engine Pistons and Flywheel

Item	Description (Quantity)	Part Number
1	Retaining ring	11177A
2	Piston ring set, standard (2) Piston ring set, 0.254 mm (0.010 in) over size (2)	22526-10 22529-10
3	Piston kit, front and rear, with ring sets, piston pin and lock rings, standard Piston kit, front and rear, with ring sets, piston pin and lock rings, 0.254 mm (0.010 in) over size	22574-10 22576-10
4	Lock ring, piston pin (4)	22097-99
5	Piston pin (2)	22310-10
6	Flywheel assembly kit	23893-10A

SERVICE PARTS

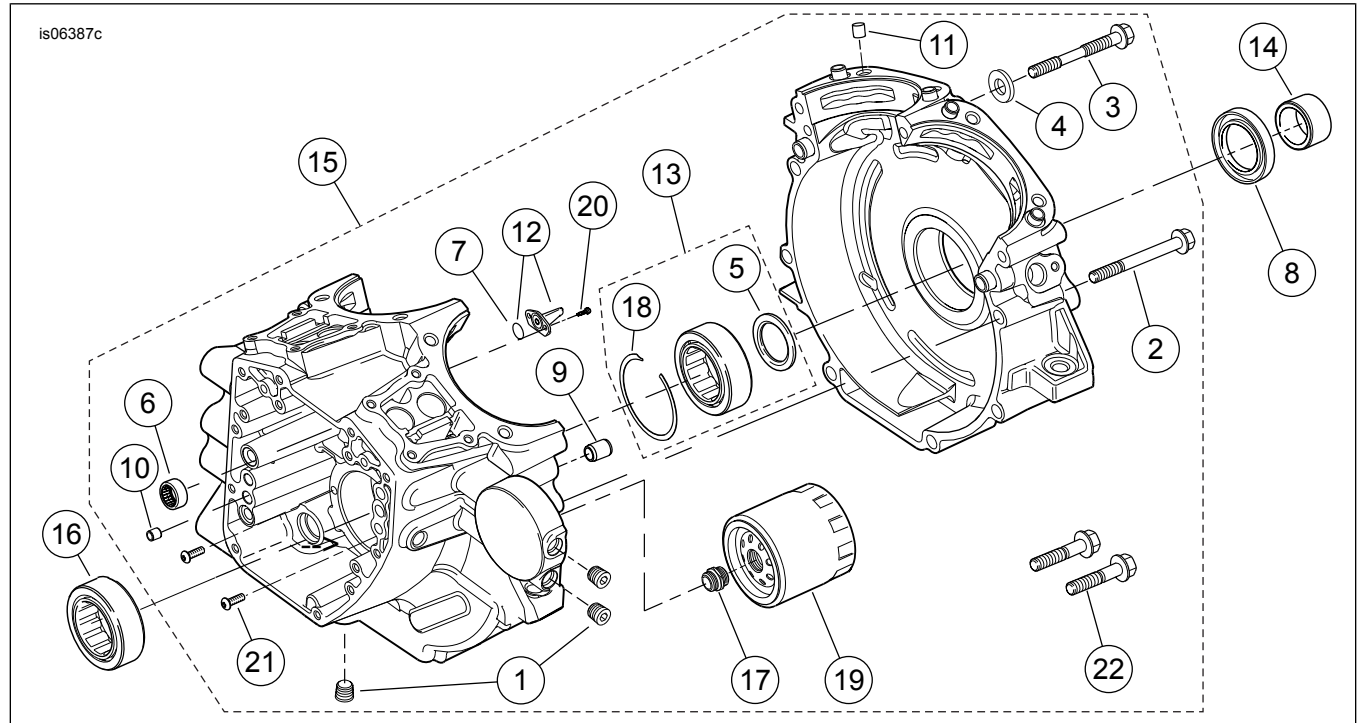


Figure 10. SE120ST Screamin' Eagle Crate Engine Crankcase, Engine Oil Filter and Cooler

Table 18. Service Parts, SE120ST Screamin' Eagle Crate Engine Crankcase, Engine Oil Filter and Cooler

Item	Description (Quantity)	Part Number
1	Plug (3)	765
2	Screw, hex flange head, 5/16-18 x 76 mm (3.0 in) long (8)	895
3	Screw, crankcase top center	1105
4	Sealing washer	1086A
5	Washer, 31.8 mm (1.25 in) ID x 46.4 mm (1.83 in) OD x 3.18 mm (0.12 in) thick (2).	8972
6	Needle bearing kit, camshaft (2) (Each kit includes two bearing assemblies)	24018-10
7	O-ring (2)	10930
8	Oil seal	12068
9	Dowel pin, 14.158 mm (0.557 in) D x 19 mm (0.75 in) long (2)	16574-99A
10	Dowel pin, 9.525 mm (0.375 in) D x 10.16 mm (0.40 in) long (2)	16589-99A
11	Dowel pin, 11.074 mm (0.436 in) D x 15.5 mm (0.61 in) long (4)	16595-99A
12	Piston cooling jet (2) (includes Item 7)	22315-06A
13	Bearing kit, left side (includes item 5, one item 16, item 18 and the bearing inner race)	24004-03B
14	Spacer, sprocket shaft	24009-06
15	Crankcase set (black) (includes Items 1, 2, 3, 4, 6, 7, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21 and 22)	24400057
16	Bearing, main (2). One is included in Item 13.	24605-07
17	Adapter, oil filter	26352-95A
18	Retaining ring	35114-02
19	Oil filter (chrome)	63798-99A
20	Screw, TORX® head, 8-32 x 9.5 mm (0.375 in) long (4)	68042-99
21	Screw, bearing retention, TORX® button head, 1/4-20 x 11.1 mm (0.44 in) long (2)	703B
22	Screw, hex flange head, with washer, 3/8-16 x 40.4 mm (1.59 in), Grade 8, with lock patch (2)	3983

SERVICE PARTS

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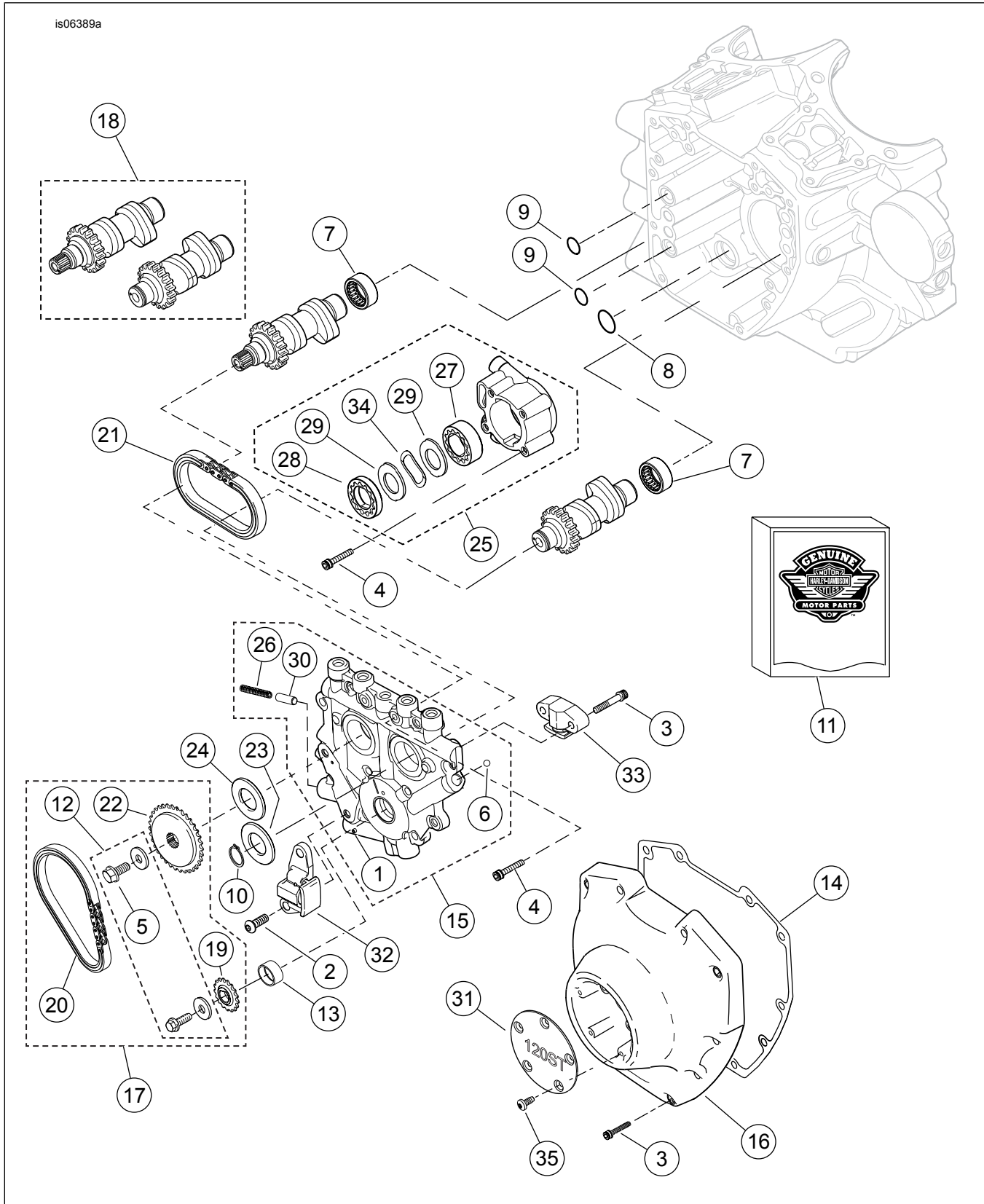


Figure 11. SE120ST Screamin' Eagle Crate Engine Camshafts and Camshaft Cover

SERVICE PARTS

Table 19. Service Parts, SE120ST Screamin' Eagle Crate Engine Camshafts and Camshaft Cover

Item	Description (Quantity)	Part Number
1	Roll pin	601
2	Screw, primary cam chain tensioner (2)	942
3	Screw, cam cover, 1/4-20 x 31.8 mm (1.25 in) long, Grade 8, knurled, with lockpatch (10)	4740A
	Screw, secondary cam tensioner, 1/4-20 x 1.25 in long, Grade 8, knurled, with lockpatch (2)	4740A
4	Screw, socket head, 1/4-20 x 25.4 mm (1.0 in) long, with lockpatch (8)	4741A
5	Washer, 9.5 mm (0.38 in) ID x 28.6 mm (1.13 in) OD x 5.6 mm (0.22 in) thick	6294
6	Ball	8873
7	Needle bearing kit, camshaft (2) (Each kit includes two bearing assemblies)	24018-10
8*	O-ring, 17 mm (0.671 in) ID, yellow	11293
9	O-ring, 9.2 mm (0.362 in) ID, brown (2)	11301
10	Retaining ring	11461
11	Gasket kit, cam service (contains items marked "*" in this table and Table 17)	17045-99D
12	Cam drive sprocket retention kit	25566-06
13	Bushing, crankshaft	25344-99
14	Gasket, cam cover	25244-99A
15	Cam support plate assembly (includes items 1, 6, 26 and 30)	25355-06A
16	Cam cover, (chrome)	25369-01B
17	Camshaft chain and fastener kit (includes items 12, 19, 20 and 22)	25585-06
18	Camshaft kit, front and rear, SE259E	25482-10
19	Sprocket, cam drive (on crankshaft), 17 T	25673-06
20	Chain, primary cam drive	25675-06
21	Chain, secondary cam drive	25683-06
22	Sprocket, cam drive, 34 T	25728-06
23	Spacer, cam drive sprocket alignment, 2.54 mm (0.100 in) thick	25729-06
24	Spacer, cam drive sprocket alignment, 2.54 mm (0.100 in) thick (use as required)	25729-06
	Spacer, cam drive sprocket alignment, 2.79 mm (0.110 in) thick (use as required)	25731-06
	Spacer, cam drive sprocket alignment, 3.05 mm (0.120 in) thick (use as required)	25734-06
	Spacer, cam drive sprocket alignment, 3.3 mm (0.130 in) thick (use as required)	25736-06
	Spacer, cam drive sprocket alignment, 3.56 mm (0.140 in) thick (use as required)	25737-06
	Spacer, cam drive sprocket alignment, 3.81 mm (0.150 in) thick (use as required)	25738-06
25	Oil pump assembly (includes items 27-29, 34)	26037-06
26	Spring, relief valve	26210-99
27	Gerotor assembly, scavenge	26278-06
28	Gerotor assembly, pressure	26281-06
29	Separator plate, gerotor (2)	26282-06
30	Relief valve, oil pump	26400-82B
31	Cover, timer, "120ST"	14100437
32	Chain tensioner, primary cam drive chain	39968-06
33	Chain tensioner, secondary cam drive chain	39969-06
34	Spring, separator	40323-00
35	Screw, TORX head, 8-32 x 9.5 mm (0.38 in) long (5)	68042-99