



INSTRUCTIONS

-J02648

2009-02-20

SCREAMIN' EAGLE SUPER BORE 51 MM CV CARBURETOR KIT

GENERAL

Kit Number

27928-07

Models

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

Additional Parts Required

This kit requires the separate purchase of the following parts which are available at a Harley-Davidson dealer.

- Intake Manifold Kit 29414-07 or 27927-07
- **Optional items to service the air cleaner element:** Air Cleaner/Degreaser (99883-88T) Air Cleaner Oil (99882-88T)

▲ 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 Figure 7, Table 1 and Figure 8, Table 2.

NOTE

This engine related performance part is intended for High Performance and 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.

REMOVAL

1. Softail, 2003-Earlier Dyna, and 2003-Earlier Touring Models:2004-Later Dyna and 2004-Later Touring Models:

- a. Remove seat according to the instructions in the Service Manual.
- b. Disconnect battery cables, negative (-) cable first.

- c. Remove maxi-fuse. Refer to MAXI-FUSE REMOVAL in Service Manual.

▲ 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)

2. Remove stock air cleaner, carburetor, and intake manifold. Refer to appropriate sections in Service Manual.
3. See Figure 8. Remove starter cap (42) and enricher assembly from stock carburetor. Install original cable to enricher assembly of the new carburetor.
4. Remove MAP sensor and manifold flanges following the instructions in the Service Manual.

INSTALLATION

Assemble Manifold

1. Refer to the instruction sheet in the manifold kit for assembly and installation.

Install Carburetor

NOTE

The fit between the carburetor and the intake manifold seal is tight. Apply liquid dish soap or tire mounting lube on the mating surfaces, carburetor body, and seals to ease installation and reduce surface friction.

This procedure should also be used for attaching the fuel line.

NOTE

See Figure 1. This carburetor is equipped with an external vent (1). Blocking or attaching a hose to the vent will affect carburetor operation.

1. See Figure 7. Insert carburetor (15) into manifold following the instructions in the Service Manual. As the carburetor is being inserted, make sure the choke cable is not being kinked.
2. See Figure 1. Install fuel petcock vacuum line to vacuum fitting (2) on carburetor.

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Many Harley-Davidson® Parts & Accessories are made of plastics and metals which can be recycled. Please dispose of materials responsibly.

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3. Slip fuel hose onto carburetor fuel fitting (3) and secure with hose clamp from kit.

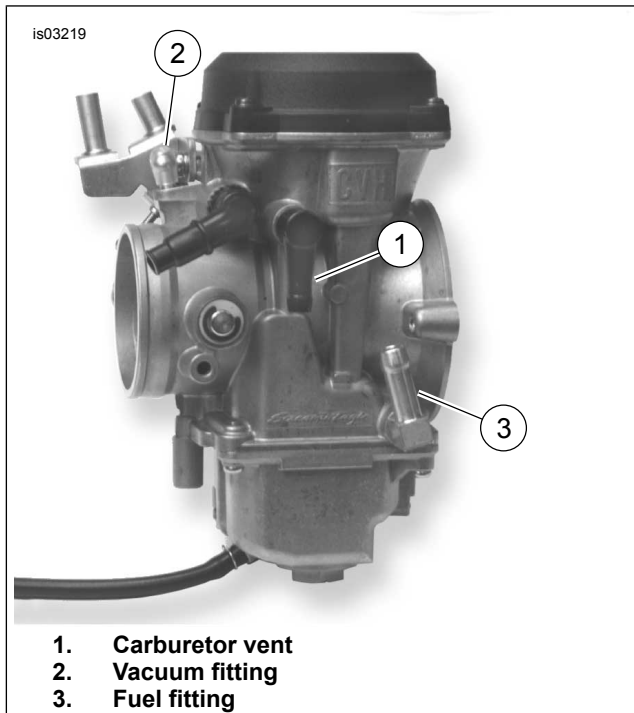


Figure 1. Carburetor Fittings

▲ WARNING

Install proper length throttle cables. Incorrect cable length can adversely affect motorcycle operation, which could cause loss of control resulting in death or serious injury. (00396b)

NOTE

The overflow line can be cut to improve fit. It should not hang below the lowest engine/transmission surface. Doing so would expose the end of the hose to excessive air flow, which could affect carburetor operation.

4. Route overflow line behind rear cylinder push rod tubes, behind rear cylinder, and on top of engine/transmission surface. It should then be routed down between engine/transmission and inner primary housing.

Install High Performance Air Cleaner

▲ WARNING

The element in this kit is specifically designed for use with the OE (original equipment) cover. Using this kit with an air cleaner cover other than the OE cover could lead to failure of the element faceplate. The kit may be used in conjunction with other H-D accessory covers provided the appropriate adapter recommended in those kits is used. If the element faceplate fails the cover could detach possibly distracting the rider which could result in death or serious injury. (00400b)

NOTE

When service air cleaner, apply Loctite 243 (blue) to threads of all fasteners.

Backplate and components shown in the figures may vary slightly from actual, but the hardware assembly is the same.

1. See Figure 7. Install one end of breather tube (2) onto fitting (1). Push until tube is tight up against the fitting body. Repeat for other breather tube and fitting.

2. See Figure 2. Lubricate breather tube (Figure 7, item 2) with soapy water and carefully insert it into rear of backplate (Figure 7, item 8). Continue to push until the first bend is clearly through the hole in the backplate. Repeat for other breather tube.
3. See Figure 3. Position breather tubes so the ends are pointing inward horizontally and banjo fittings are positioned as shown.

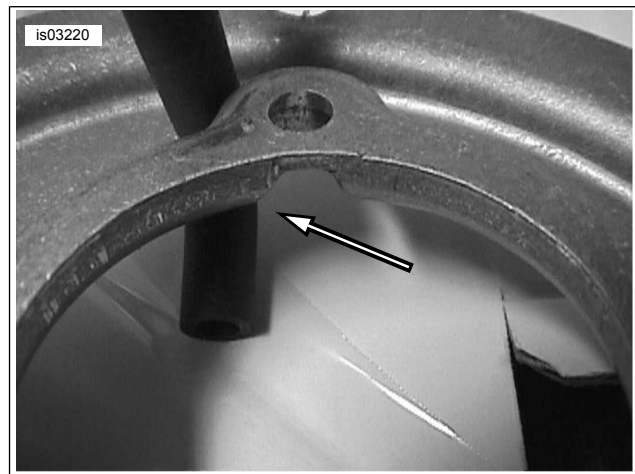


Figure 2. Install Breather Tubes into Rear of Backplate

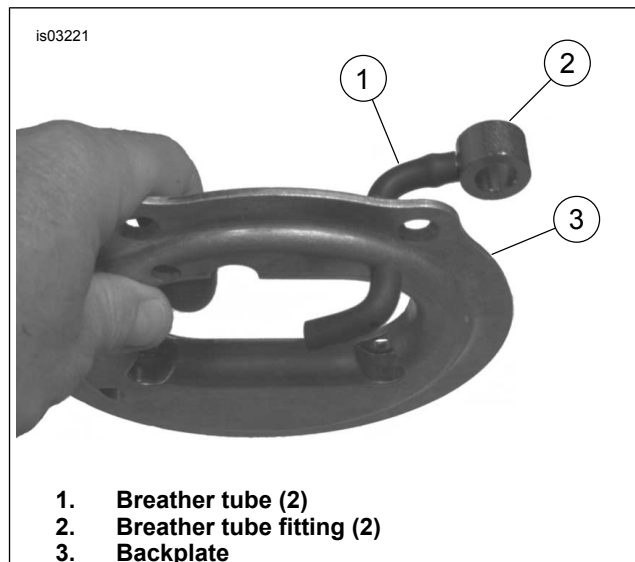
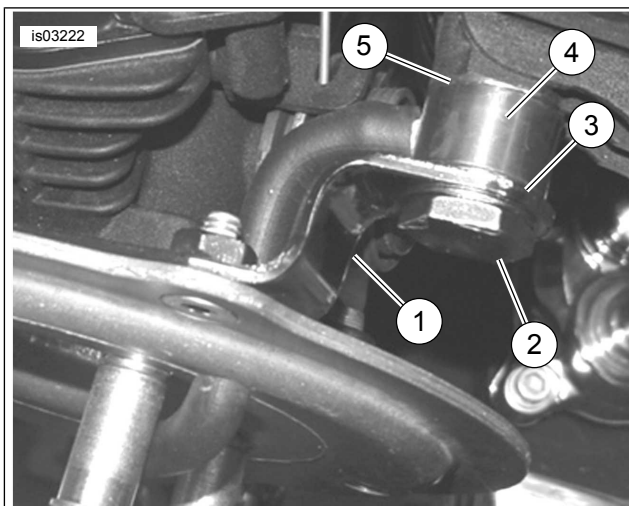


Figure 3. Position Breather Tubes for Installation

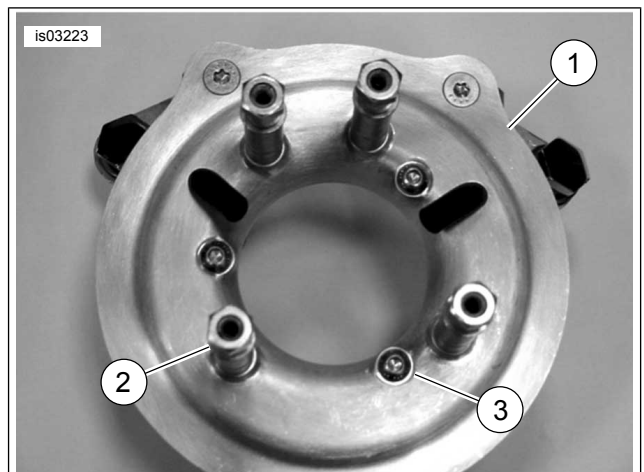
4. See Figure 7. Place large washer (6) onto banjo bolt (5), then apply Loctite 243 (blue) (15) to threads. Repeat for other banjo bolt and large washer.
5. See Figure 4 and Figure 7. Install each banjo bolt (with washer) through bracket, large washer, breather fitting, and small washer. Thread banjo bolts into tapped holes in cylinder head but do not tighten.



1. Bracket
2. Banjo bolt (2)
3. Large washer (2)
4. Breather tube fitting (2)
5. Small washer (2)

Figure 4. Secure Bracket to Cylinder Head (right side shown)

6. See Figure 7. Remove protective backing from backplate gasket (7) to expose the adhesive. Align gasket around opening in backplate (8) and smooth into place.
7. Thread screws (10) through backplate and gasket until screws are captured in plate. Apply Loctite 243 (blue) to threads and loosely install screws into carburetor flanges.
8. Apply Loctite 243 (blue) to threads of screws (9). Using a T-30 TORX drive head, secure backplate (8) to bracket (4). Tighten screws (9) to 55-60 **in-lbs** (6.2-6.8 Nm).
9. Tighten screws (10) to 55-60 **in-lbs** (6.2-6.8 Nm).
10. Reposition breather tubes (2) and fittings (1) previously installed as needed to provide adequate clearance for intake mechanisms behind backplate (16). See Figure 4. The barbed portion of fittings should be near horizontal, and breather tubes in front of backplate should be facing inward. Tighten banjo bolts (Figure 7, item 5) to 10-12 ft-lbs (14-16 Nm).
11. Tighten manifold flange screws (2, 3) to 8-12 ft-lbs (10.9-16.3 Nm).



1. Backplate
2. Stud (3)
3. Screw (3)

Figure 5. Secure Backplate to Bracket

Install Air Cleaner Element and Cover

NOTE

Crankcase ventilation is critical for proper oil system operation. If the tubes appear kinked anywhere, reposition the tubes. If necessary, loosen the banjo bolts and reposition the tubes.

Whenever the air cleaner cover is installed, apply Loctite 243 (blue) to the air cleaner cover screw.

1. See Figure 7. Thread studs (11) into backplate (8) and tighten to 55-60 **in-lbs** (6.2-6.8 Nm).
2. Secure air filter element (12) to studs with screws (13). Tighten to 55-60 **in-lbs** (6.2-6.8 Nm).
3. Carefully remove and discard the original air cleaner cover insert from air cleaner cover (A). Remove any residual adhesive on the cover with mineral spirits.
4. Clean the insert area with a mixture of 50 to 70% isopropyl alcohol and 30 to 50% distilled water. Allow to dry thoroughly.
5. Peel liner from adhesive backing of air cleaner cover insert (14). Position insert over air cleaner cover (A) without touching adhesive on cover surface. Line up top of insert with top of oval air cleaner cover.
6. Press air cleaner cover insert firmly against the cover all around, and hold pressure for 30 seconds. After releasing pressure, avoid direct contact with the insert for about 20 minutes.

NOTE

Allow at least 24 hours after applying the insert before exposing the area to vigorous washing, strong water spray, or extreme weather. The adhesive bond will increase to maximum strength after about 72 hours at normal room temperatures.

7. Apply Loctite 243 (blue) (15) to air cleaner cover screw (B). Secure air cleaner cover (A) to air filter element (12) with screw.
8. Align air cleaner cover horizontally for best appearance, then tighten screw securely. Tighten to 36-60 **in-lbs** (4.1-6.8 Nm).

Final Assembly

▲ WARNING

Connect positive (+) 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. (00068a)

1. **Softail, 2003-Earlier Dyna, and 2003-Earlier Touring Models:2004-Later Dyna and 2004-Later Touring Models:**
 - a. Connect battery cables, positive (+) cable first.
 - b. Install seat according to the instructions in the Service Manual.
 - c. Install maxi-fuse. Refer to MAXI-FUSE INSTALLATION in 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)

2. Start the engine and idle until warm (primary case should be fully warm).
3. Check engine performance. If performance is unsatisfactory, tune the carburetor.

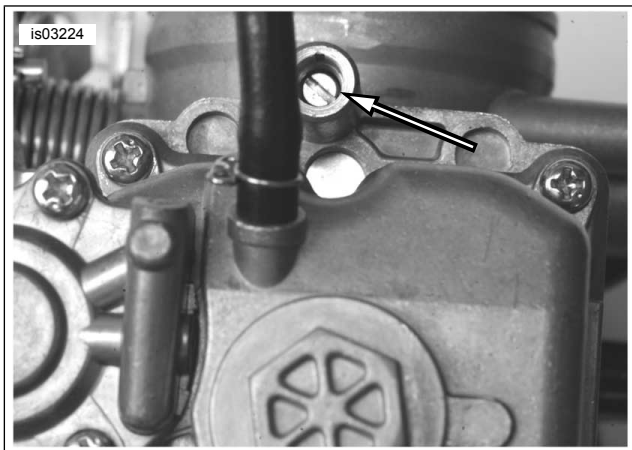


Figure 6. Idle Mixture Screw (IMS) Location (viewed from carburetor bottom)

MAINTENANCE

Tuning the Carburetor

If the engine exhibits a rich or lean condition at idle and up to 1/4 throttle opening, adjusting the idle mixture screw (IMS, Figure 6) will likely correct the condition.

The IMS is a fuel flow adjuster. It is set at the factory at 1-1/2 turns out. Turning the screw:

- in (clockwise) leans the fuel mixture, and
- out (counterclockwise) enriches the fuel mixture.

Gently bottom the screw before making adjustments. Do not over tighten. The IMS should then be adjusted within a range from 1/2 to 3-1/2 turns out.

NOTE

Do not adjust the IMS "out" further than 3-1/2 turns.

- *If the engine idles best with the screw less than 1/2 turn out, the slow jet is too large and should be replaced with a smaller (leaner) slow jet.*
- *If the engine does not idle well with the screw 3-1/2 turns out, the slow jet is too small and should be replaced with a larger (richer) slow jet.*

Additional jets and needles for tuning are included in the Tuner Kit.

Replace the jet, then reset the IMS away from the extreme positions.

Air Cleaner Element Maintenance

When servicing the air cleaner, apply Loctite 243 (blue) to threads of all fasteners.

1. See Figure 7. Remove air cleaner cover (A) and inspect the filter element (12) every 5000 mi (8000 km), or more often under dusty conditions.
2. To clean the element, remove and wash by immersing it, on edge, in a shallow pan containing enough Air Cleaner/Degreaser to cover **no more** than 3/4 the depth of the filter pleats. **Do not let dirty solution get inside the element.** Carefully "roll" the element in the solution around its perimeter until the entire outer surface of the filter pleats has been soaked.
3. Remove filter element from cleaner/degreaser and allow five minutes for the cleaner to dissolve the dirt.
4. Shake off excess water, and allow the element to air dry. **Do not dry with compressed air.**
5. Lubricate filter element using Air Cleaner Oil. Apply along the full length of each pleat, and allow to set until the element is a uniform color. Allow excess oil to drain.
6. Install air cleaner element and cover.

SERVICE PARTS

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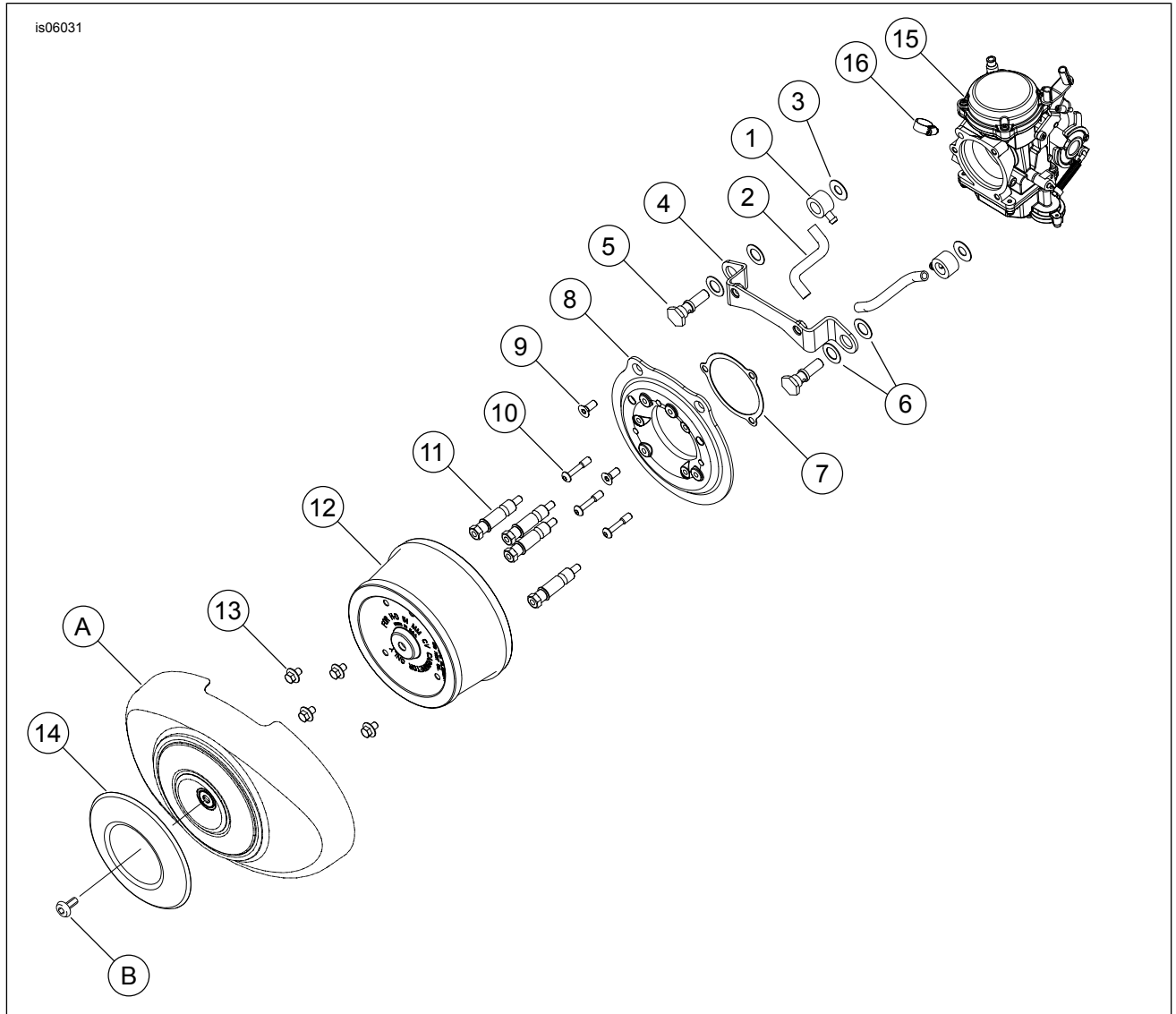


Figure 7. Screamin' Eagle Super Bore 51mm CV Carburetor Kit

Table 1. Service Parts: Screamin' Eagle Super Bore 51 MM CV Carburetor Kit

Item	Description (Quantity)	Part Number	Item	Description (Quantity)	Part Number
1	Fitting, breather hose (2)	29445-02	11	Stud, air cleaner (4)	29447-99A
2	Tube, breather (2)	29476-99	12	Element, air filter	29468-02
3	Washer (2)	46465-99	13	Screw, air cleaner element (4)	3563
4	Bracket, air cleaner	29516-02	14	Insert, air cleaner cover	29450-99
5	Bolt, banjo (2)	45507-99	15	Carburetor, 51 mm CVH	27925-02
6	Washer (4)	45596-93	16	Clamp, worm drive	9946
7	Gasket, backplate	29518-02	17	Loctite 243 (blue), 0.5 ml packet (not shown)	Not Sold Separately
8	Backplate, air cleaner	29470-02	Items mentioned in text, but not included in kit:		

Table 1. Service Parts: Screamin' Eagle Super Bore 51 MM CV Carburetor Kit

Item	Description (Quantity)	Part Number	Item	Description (Quantity)	Part Number
9	Screw, Torx (2)	3793A	A	Cover, air cleaner, stock TC88 or TC96 only	
10	Screw, backplate (3)	869	B	Screw, air cleaner cover	

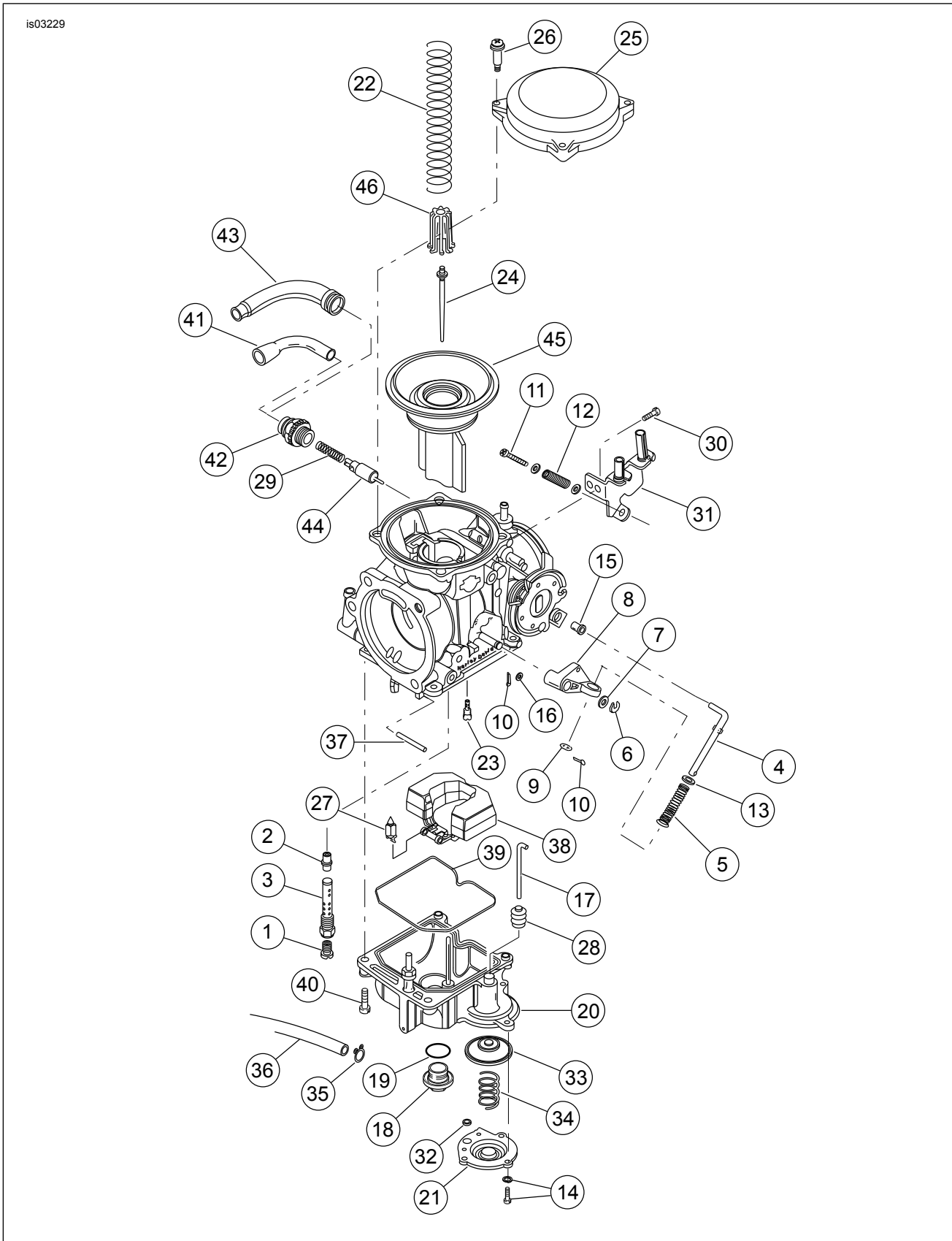


Figure 8. Service Parts: Screamin' Eagle Super Bore 51 MM CV Carburetor Kit

Table 2. Service Parts: Screamin' Eagle Super Bore 51 MM CV Carburetor Kit

Item	Description (Quantity)	Part Number	Item	Description (Quantity)	Part Number
1	Main jet, #230	27776-99	25	Top, carburetor	27740-03
2	Needle jet	27743-03	26	Screw, top	27262-96
3	Needle jet holder	27056-03	27	Valve with clip	27886-78A
4	Rod	Not Sold Separately	28	Boot, accelerator top	27311-76
5	Spring	Not Sold Separately	29	Spring	27315-88A
6	E-clip	27124-89	30	Screw (2)	27745-03
7	Washer	27125-89	31	Bracket, throttle cables	27741-03
8	Lever	27126-89	32	O-ring	27360-76
9	Washer	27127-89	33	Diaphragm, accelerator pump	27361-76A
10	Pin (2)	27128-89	34	Spring, diaphragm	27362-76
11	Idle screw	27130-90	35	Clip, overflow hose	27368-76
12	Spring	27136-90A	36	Hose, overflow	27553-99
13	Washer	27137-81	37	Pin	27575-88A
14	Screw with washer (3)	27146-89	38	Float	27576-92
15	Collar	Not Sold Separately	39	O-ring, float chamber	27577-92
16	Washer	27148-89	40	Screw (4)	27579-88A
17	Rod	27747-03	41	Cable guide	27580-88
18	Plug, bowl	27744-03	42	Starter cap	27581-88
19	O-ring, bowl plug	27556-03	43	Cable sealing cap	27582-88
20	Float chamber assembly	Not Sold Separately	44	Starter valve	27583-88
21	Pump housing	27260-00	45	Vacuum piston	27555-03
22	Spring (200/290 gram)	27162-89	46	Spring seat	27586-88
23	Slow jet, #48	27165-90			
24	Jet needle, #NDKS	27742-03			