



# INSTRUCTIONS

-J00588

REV. 11-19-96

Kit Number 46029-97

## HERITAGE SPRINGER FRONT END KIT

### GENERAL

This kit is designed for installation on 1996 and later Softail motorcycles. See Service Parts illustrations for kit contents.

#### NOTE

*We recommend this kit be installed by a factory trained technician at an authorized Harley-Davidson Dealership.*

#### NOTE

*When installing this front end kit on FLSTC models, a turn signal kit, Part No. 68409-97, must also be installed.*

#### WARNING

Do not install this front end kit on any non-approved motorcycle. Installation of the FLSTS Springer front end on anything other than Softail models could lead to possible personal injury. Do not install on three-wheeled vehicles of any kind.

This kit is designed for use with the supplied 16 in. front wheel. Do not use any other front wheel with this kit. Use of a different front wheel could adversely affect handling and result in personal injury.

Use only the fender that comes with the kit. Other fenders may not fit properly and can endanger the rider.

#### WARNING

The rider's safety depends on the correct installation of this kit. **USE THE APPROPRIATE SERVICE MANUAL PROCEDURES.** If the procedure is not within your capabilities or if you do not have the correct tools, have your Harley-Davidson Dealer perform the installation.

#### WARNING

The components of your FLSTS Springer front end and their design relationship to each other are very important. Altering these relationships by modifying the FLSTS Springer front end could adversely affect the handling of the motorcycle and cause personal injury.

Use only Dunlop D402F tires with this kit. Using any other tire, or a tire with a higher aspect ratio, could allow the front wheel to bind on the fender during hard stops or big bumps.

**DO NOT** alter the fender to modify the fender location relative to the tire. Doing this could allow the front wheel to bind on the fender during hard stops or big bumps or adversely affect the handling characteristics of this motorcycle.

**DO NOT** change the front brake hardware. The FLSTS Springer front brake hardware was designed to hold the brake components in position under any foreseeable circumstance.

**DO NOT** use front end components that have been remanufactured (straightened, plated, welded) in any way. There can be no certainty that remanufactured front end components will have the strength of the original, unchanged components.

Harley-Davidson has designed and manufactured this custom front end according to our very stringent and well-tested standards. If you modify the FLSTS Springer front end in any way that changes our original design, Harley-Davidson cannot and does not assume responsibility for mishaps resulting from these changes.

#### WARNING

The FLSTS motorcycle was **NOT** designed for sidecar use. The FLSTS Springer fork was **NOT** designed for sidecar use. **DO NOT** use either the motorcycle or any FLSTS Springer fork equipped vehicle for this purpose. Use of any FLSTS Springer fork equipped vehicle for this purpose could cause personal injury.

### DISASSEMBLY

#### NOTE

*See applicable Service Manual for detailed disassembly procedures.*

*A Service Manual for your motorcycle is available from your Harley-Davidson Dealer.*

#### WARNING

To avoid accidental start-up of vehicle and possible personal injury, disconnect the battery cables before proceeding. Always disconnect the negative cable first. If the positive cable should contact ground with the negative cable installed, the resulting sparks may cause a battery explosion resulting in personal injury.

1. Remove seat and disconnect battery (negative cable first).

## WARNING

Gasoline is extremely flammable and highly explosive under certain conditions. Be sure engine is cold and do not smoke or allow open flame or sparks anywhere in the area when refueling or servicing fuel system. Doing so could result in fire or explosion causing personal injury.

2. Drain gas and remove fuel tanks.
3. Remove air cleaner and backplate and disconnect throttle cables from carburetor.
4. Disconnect front end wiring systems at connectors located between fuel tanks. Feed wires through upper fork bracket.
5. Remove hand controls, switch housings and turn signals from handlebar.
6. Remove the following original parts: front wheel, inner tube, fork, upper and lower fork brackets, risers, handlebar, axle, headlight, throttle cables, steering head bearings, bearing races, front brake line and wheel spacers.

## INSTALLATION

### Bearing Races and Fork Assembly

1. See Service Parts illustration on page 9. Install new bearing races (27) from kit using Kent-Moore tool Part No. HD-39302.
2. Pack new top and bottom bearings with Special Purpose Grease, Part No. 99857-97, available at your Harley-Davidson dealer. (Bottom bearing is installed on new fork assembly).
3. Install fork assembly into frame steering head with new upper bearing (28) and new upper dust shield (29). Secure fork assembly to frame with hex bearing retainer (23). Tighten hex bearing retainer to 40-45 ft-lbs to seat bearings, then back off retainer. Retighten retainer to 10-12 ft-lbs for initial steering head adjustment.
4. Fill steering head with Special Purpose grease by pumping grease into fitting, located on left side of steering head, until grease comes out by top and bottom dust cover. Wipe off excess grease.

#### NOTE

*Be certain to maintain recommended steering head bearing lubrication intervals. FLSTS steering head bearings should be lubricated through the neck fitting with Special Purpose grease at every 2500 mile service interval; and remove, inspect, and repack bearings at every 20,000 mile service interval.*

### Risers and Handlebar

1. See Service Parts illustration on page 9. Install upper triple clamp (22) and riser studs (32). Tighten studs to 60-65 ft-lbs.

#### NOTE

*Install riser studs (32) in the following three steps:*

- a. Start threads of both studs in fork leg.
  - b. Tighten both studs securely.
  - c. Torque both studs to 60-65 ft-lbs.
2. Apply anti-seize to upper triple clamp pinch bolt (21), install and tighten to 25-30 ft-lbs.
  3. Lubricate outside of riser bushings (33) and install one on each rigid fork leg stud. Install one into the top of each riser (34).
  4. Place risers in position over riser studs.

#### NOTE

*Be certain the risers are installed correctly oriented to the handlebars.*

5. Install washers (35) and new locknuts (36). Tighten locknuts to 25-30 ft-lbs. Place ground spring (37) in one of the risers.
6. Place handlebars on risers and put riser caps (38) in position. Install socket head screws (39). Adjust handlebars and tighten socket head screws to 12-15 ft-lbs, making gap between caps and risers even, front and rear.
7. Install new handgrip on left handlebar. To install handgrip, apply Fellobond 205 adhesive to inside surface of handgrip.
8. Install original hand controls, master cylinder, and switch housings on handlebars. Install new throttle cables into right handlebar control and leave cable ends that attach to carburetor loose for now.
9. Install turn signals on handlebars.

#### NOTE

*Turn signals are not supplied in this kit. If this kit is being installed on a FLSTC model, purchase and install Handlebar Mounted Turn Signal Kit, Part No. 68409-97.*

10. Use new harness clips from kit to secure switch and directional wires to handlebars.

### Link and Caliper Brackets

1. See Service Part illustration on page 10. Assemble link (42) to caliper bracket assembly (46) using screw (41), washer (60), and acorn nut (43). Tighten acorn nut to 35-40 ft-lbs.
2. Install rubber spacer (48) and thrust washer (47) onto pivot sleeve on left rocker. Gray surface of thrust washer should face inward.
3. Assemble link and caliper bracket by sliding caliper bracket onto pivot sleeve on rocker, and assemble link to fork leg bracket (44) using screw (40), washer (60), and acorn nut (43). Tighten acorn nut to 35-40 ft-lbs.

## Brake Line

### **⚠WARNING**

Brake line routing is critical. Brake line must not contact springs or spring fork components. Contact with any of these components could cause wear in brake line. This could cause leakage and brake failure, possibly resulting in personal injury.

1. See Service Parts illustration on page 12. Insert brakeline (96) through front fork assembly. Brakeline must go in behind left fork leg above the lower fork casting and come out in front of the right fork leg.

### **⚠WARNING**

Caution must be used not to bend or twist the brakeline. This could cause misalignment, leakage and brake failure, possibly resulting in personal injury.

3. Loosely assemble brakeline to lower fork casting on left side with screw (97). See Figure 1.
4. Assemble clamp (101) and throttle cable retainer wire clip to upper rigid fork casting using screw (92). See Figure 2.



Figure 1



Figure 2

### NOTE

Be certain that the straight end of the wire clip is under and in contact with the fork stop tab on the upper fork casting.

5. With brake line in place, tighten mounting screws.

## Fender

1. Fender should already be painted to match rest of motorcycle.

### NOTE

Special care must be taken to avoid getting paint in bearing bores or on threads.

2. See Service Parts illustration on page 13. Press spherical bearings (102) into fender. Race of bearings should be installed flush with the inboard side of fender bushings.
3. Feed fender lamp assembly (113) wire harness into fender top hole and out through side hole.
4. Place harness into metal clip inside of fender and carefully close clip to hold harness in place.
5. Using alcohol, or glass cleaner, lubricate the rubber grommet of the lamp assembly and place it into position in the hole on top of the fender. Install small grommet (116) in side of fender.
6. Loosely install rear lamp housing screw (114).
7. Install front lamp housing screw (115) while holding nut from inside of fender, and tighten screw securely.
8. Tighten rear lamp housing screw securely.
9. Gently pull the wire harness out the side of the fender until there is a minimum of slack under the fender. Be sure that there is as much wire harness to tire clearance as possible.
10. Insert wire terminals into 2 place connector housing.
11. Install from outside the nylon insert assemblies (104 and 105) into each fender bushing and push assemblies up against spherical bearing races.

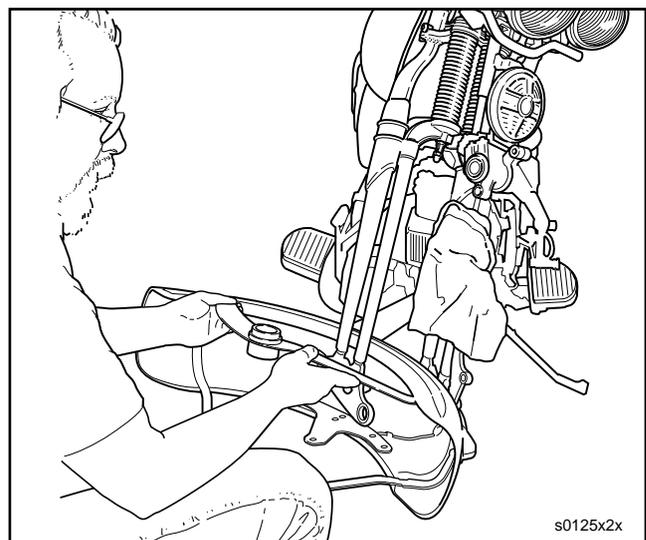


Figure 3

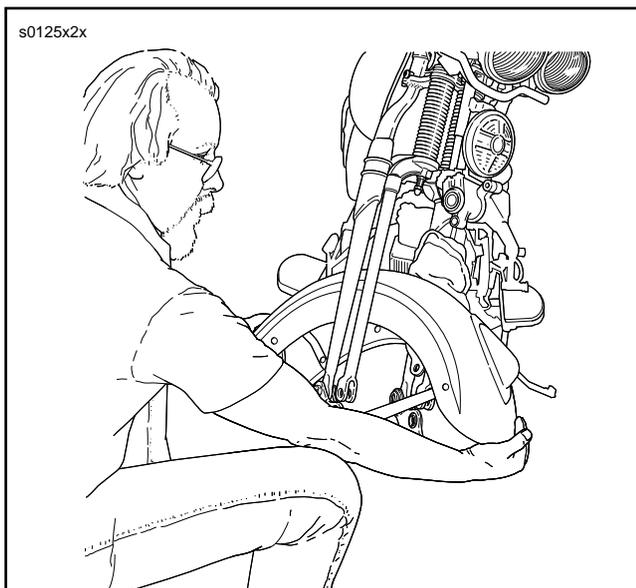


Figure 4

**CAUTION**

Installation of the front fender on FLSTS front end is different from other models due to tight clearances. Use a clean shop rag to protect fender paint from damage.

12. See Figures 3 and 4. Slide fender into position keeping right fork leg between fender and struts.
13. Raise fender until fender holes are aligned with fork holes for axle.
14. While holding fender in position, slide axle through the fender and front end to temporarily support assembly.
15. Install screw (117), washer (118), and nut (120). Tighten nut to 18-22 ft-lbs (24-30 Nm). Install spring clip (119) on screw.

## Wheel

1. Mount tire, balance wheel, and install original disc on new wheel. Refer to applicable Softail Service Manual for detailed procedure.

**WARNING**

Do not replace the specified Dunlop D402F tire with a higher aspect ratio tire. Doing this could adversely affect the handling of the motorcycle and cause personal injury.

2. Remove front axle.
3. See Service Parts illustration on page 10. Place right hand conical spacer (62) and left hand flat spacer (70) into wheel hub.
4. See Service Parts illustration on page 13. Install thin spacer (106) onto axle with large O.D. end of spacer contacting axle head.
5. Install front wheel assembly and slide axle through fender, rockers, and wheel from the right side of the motorcycle.

6. Install thick spacer (107) onto axle with large O.D. of spacer to outside of bushing.
7. Install castlenut (108). Tighten castlenut to 60 ft-lbs (81 Nm) and check to see if special clip (109) can be installed. If required, tighten nut just enough to align hole and nut slots.
8. Insert special pin through axle hole.

**WARNING**

**DO NOT operate motorcycle without special pin installed or handling may be adversely affected resulting in personal injury.**

9. Install left and right hub cap seals (110) and right and left hub caps (111). Tighten until hubcap makes contact, then tighten 1/4 turn more.

## Brake Caliper

**WARNING**

Whenever a caliper is installed, BEFORE moving motorcycle, you must pump brake fluid pressure back up until the pistons push the pads against the brake disc. If you don't pump fluid pressure up again, the brakes will not be available to stop the motorcycle, possibly resulting in personal injury.

**WARNING**

**D.O.T. brake fluid can cause eye irritation. In case of contact with eyes, flush with plenty of water and get medical attention. KEEP BRAKE FLUID OUT OF THE REACH OF CHILDREN!**

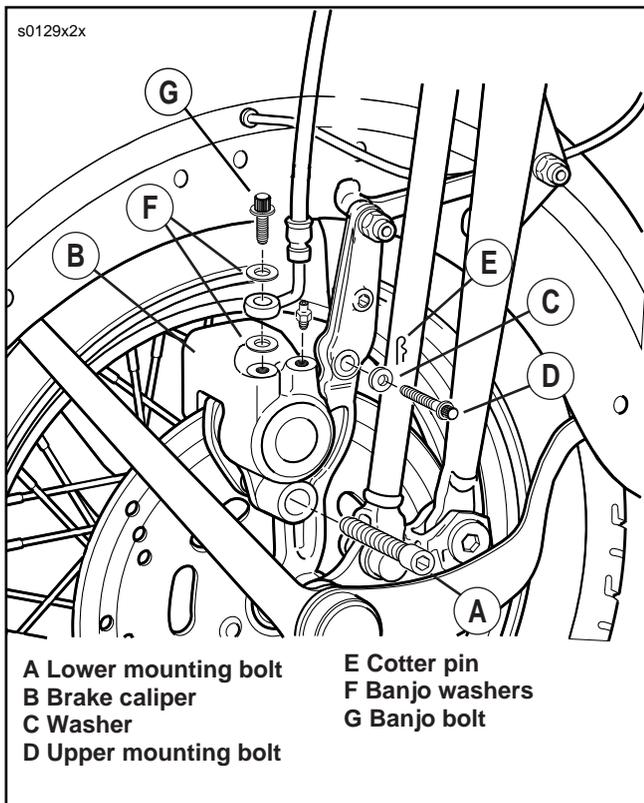
**WARNING**

Whenever a hydraulic brake line or fitting is opened, the fitting should be flushed with brake fluid and the brake system must be bled. Do this to eliminate any air or contaminants from the brake system. Air in the fluid will cause the brake pedal to have a spongy feel. If a contaminant becomes lodged in the seat of a fitting or the sealing surface, leakage of fluid could occur and air could be drawn into the system, possibly causing brake failure and personal injury.

**WARNING**

Do not re-use brake pad mounting plate. Use of original brake pad mounting plate could cause front brake failure and possible result in personal injury. Use new brake caliper assembly from kit with brake pads. Refer to Softail Service Manual for detailed procedure.

1. Place caliper mounting plate, with disc pad, on disc.
2. See Figure 5. Install brake caliper (B) on brake disc. The brake bracket has a cast-in nub that engages a hole in the mounting plate.
3. Position the caliper with the disc between the friction pads. Slide the caliper mounting plate into brake caliper from the rear. Be sure that the spring clip on the caliper mounting plate is properly positioned on the brake caliper.



**Figure 5**

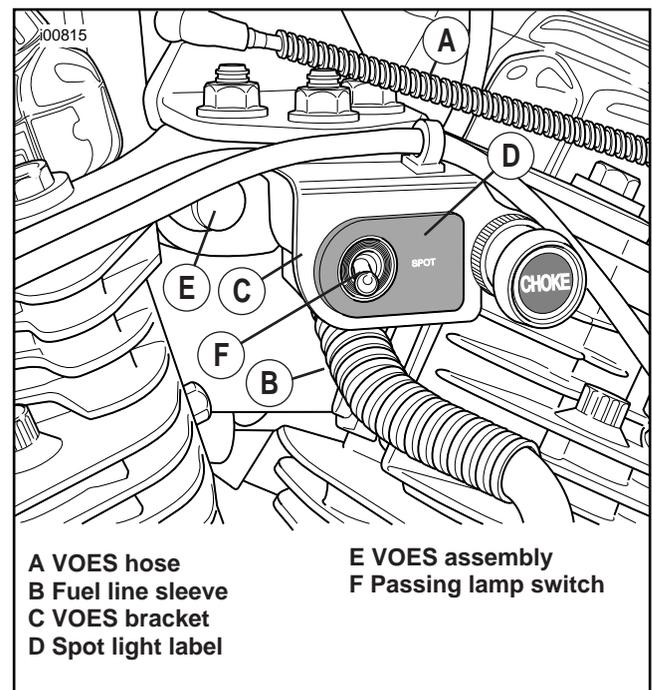
4. Place flat washer (C) on upper mounting bolt (D), then insert the bolt through the bracket holes and the mounting plate. Screw the bolt into the threaded bushing.
5. Coat the outside diameter of lower mounting bolt (A) with Dow Corning MOLY 44 grease. Insert the lower mounting bolt through the caliper and the bracket hole. Thread the bolt into the tapped hole at the lower end of the mounting plate. Tighten lower mounting bolt to 25-30 ft-lbs (34-41 Nm).
6. Tighten upper mounting bolt (D) to 42-46 ft-lbs (57-62 Nm). Install cotter pin (E).
7. Install brake line on caliper with banjo washers (F). Hold brake line in place and tighten banjo bolt (G) to 17-22 ft-lbs (23-30 Nm). Install brake line clamp and brake line clamp bolt.
8. Turn handlebars so master cylinder is level. Fill reservoir with D.O.T. 5 HYDRAULIC BRAKE FLUID to 1/8 in. (3.2 mm) below top.
9. Install the master cylinder cover. Actuate the master cylinder and check for leaks. Bleed the brakes following instructions in your Service Manual.

## Headlamp

1. See Service Parts Diagram, page 12. Fasten headlamp mounting block (82) behind upper shock mount, applying Loctite 242 (blue) to socket head screw (85). Attach headlamp to mounting block.

## Passing Lamps and Horn

1. Disconnect VOES hose (A) from carburetor.
2. Slide fuel line protection sleeve (B) off of fuel line.
3. Loosen hex nut on back of enricher knob and disconnect from VOES/horn bracket.
4. Remove horn by removing acorn nut and flange nut at horn bracket. Disconnect horn wire and horn ground wire from horn and remove wires from retainer clip on back of horn.
5. Trace horn ground wire back to termination and remove from motorcycle.
6. Disconnect VOES connector.
7. Remove VOES/horn bracket by removing 3 screws and sliding bracket off of fuel hose.
8. Remove VOES with hoses from bracket. Remove fuel line grommet and install grommet in new VOES bracket (C).
9. Apply spot light label (D) to new VOES bracket. The hole in the label should be concentric with the hole in the bracket.
10. Assemble VOES assembly (E) to new bracket using new clip.
11. Insert screw used to mount bracket to motorcycle into outer most hole on VOES bracket. This may not be possible once the switch is assembled.
13. Assemble passing lamp switch (F) to VOES bracket. Position switch so wires are in rearward position. Tighten nuts on both sides of VOES bracket to lock switch into place.



**Figure 6**

14. Reinsert fuel hose back through grommet in bracket, and slide bracket back in place.
15. Insert remaining two screws through VOES bracket and reassemble bracket to motorcycle with original nuts. Torque nuts to 30 ft-lbs (41 Nm).
16. Reconnect VOES connector.
17. Locate Yellow/Black horn wire. Notice it is looped over and restrained with black tear tape. Grab horn wire close to tape and pull firmly outward to release the extra horn wire.
18. Route horn wire forward under upper triple clamp, between upper rebound springs, to horn.
19. Reinstall enricher knob into VOES bracket and tighten hex nut.
20. Slide fuel line protective sleeve back over the fuel line.
21. Reconnect VOES switch hose to carburetor.
22. See Service Parts illustration on page 12. Assemble horn to passing lamp assembly as follows:
  - a. Assemble horn ground wire to right hand terminal on horn.
  - b. Assemble horn to lamp assembly using screws (90) and nuts (91), trapping horn ground wire between back of horn bracket and left horn mounting nut.
23. See Service Parts illustration on page 9. Place shock (2) into position on motorcycle with with top fastener left loose.
24. Place passing lamp bracket onto motorcycle and tighten top shock absorber fastener.
25. Finish wire connections as follows:
  - a. Route passing lamp wires back between upper rebound springs and under upper triple clamp to passing lamp harness connector [73] and mate connector halves.
  - b. Route headlamp harness back between upper rebound springs and under upper triple clamp and mate headlamp harness connector [38].
  - c. connect Yellow wire spade terminal to Yellow passing lamp switch harness wire [connector 74].
  - d. Mate fender tip wire connector [32].

After making wire connections, cable strap any loose wires and check that no wires are pulled or pinched when front end travels from full left to full right position.

**⚠WARNING**

**Always connect the positive battery cable first. If the positive cable should contact ground with the negative cable installed, the resulting sparks may cause a battery explosion producing personal injury.**

26. Install fuel tanks, connect battery, positive cable first, and install seat.

**⚠WARNING**

**After installing seat, pull upward on front of seat to be sure it is locked in position. If seat is loose, it could shift position during vehicle operation and startle the rider, causing loss of control and personal injury.**

27. Check all electrical circuits, including brake lights, headlamp and turn signals, for proper operation. Follow procedure in Softail Service Manual to aim headlamp.

## Springer Steering Head Bearing Adjustment

*NOTE*

*The fork has more weight on the left side than the right side. The balance point is just right of center.*

1. Raise motorcycle so that wheels are off the floor an equal amount.
2. See Service Parts illustration on page 9. Remove the acorn nut (19) and washer (20). Loosen, but do not remove, the upper triple clamp pinch bolt (21).
3. Place a suitable marking material, such as masking tape, over the front fender tip.
4. Find the balance point of the front end.
5. Install a pointer so the base is stationary on the floor and the pointer is centered on the fender.
6. Tap the fender on one side until the front end begins to fall away by itself. Mark this point on the marking material. Repeat on the other side.

*NOTE*

*The correct distance between the fall away marks must be 1-2 inches (25-50 mm).*

7. Tighten or loosen the hex bearing retaining nut (23) as necessary until the fall away distance is 1-2 inches.
8. Tighten the triple clamp pinch bolt (21) to 25-30 ft-lbs (34-41 Nm).
9. Install the rubber washer (20) and acorn nut (21). Tighten acorn nut to 30-35 **in-lbs** (3.4-4.0 Nm).
10. Repeat measurement to verify adjustment is correct.
11. Install and adjust new throttle cables, and original clutch cable following applicable Service Manual procedures.

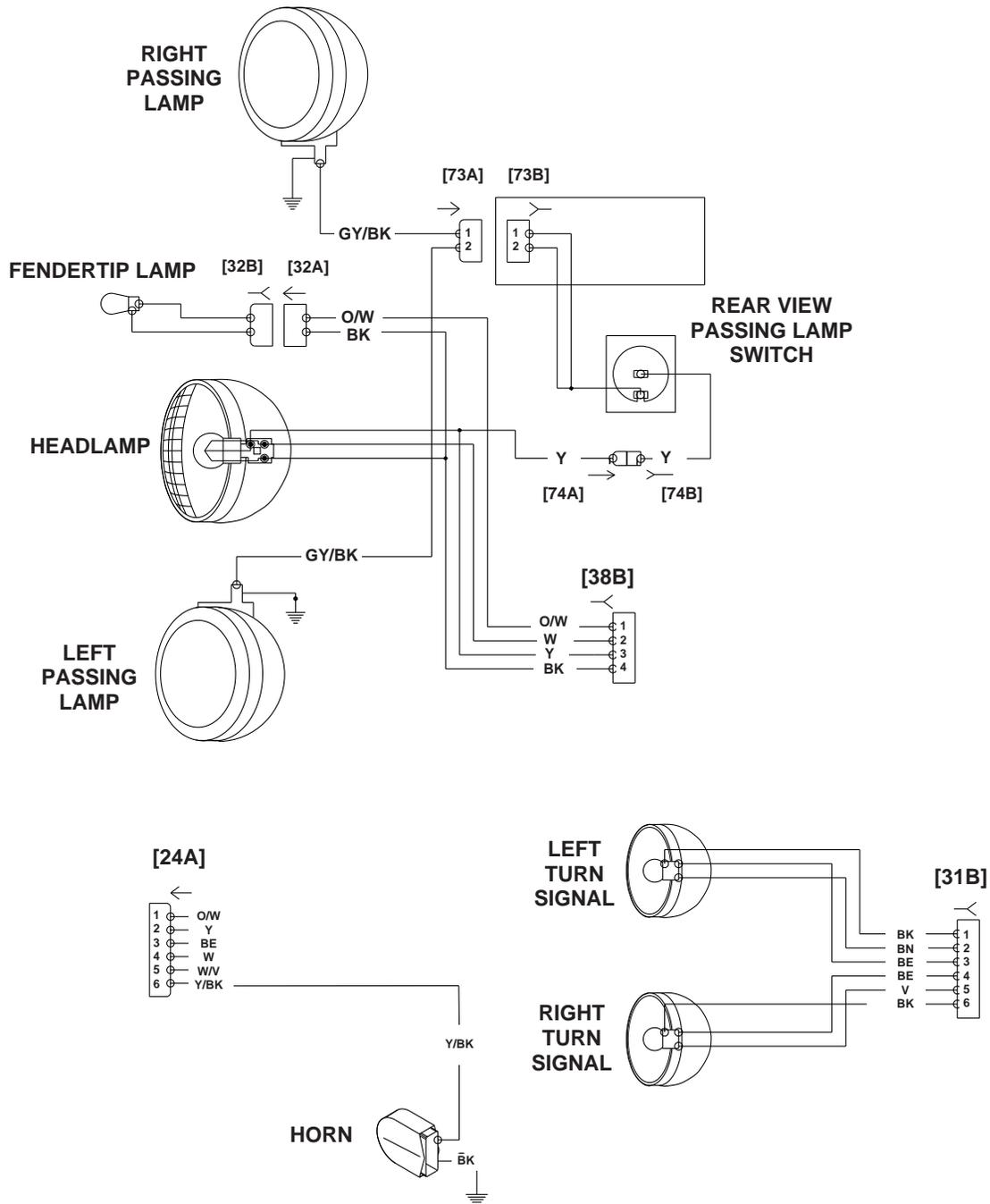


Figure 7





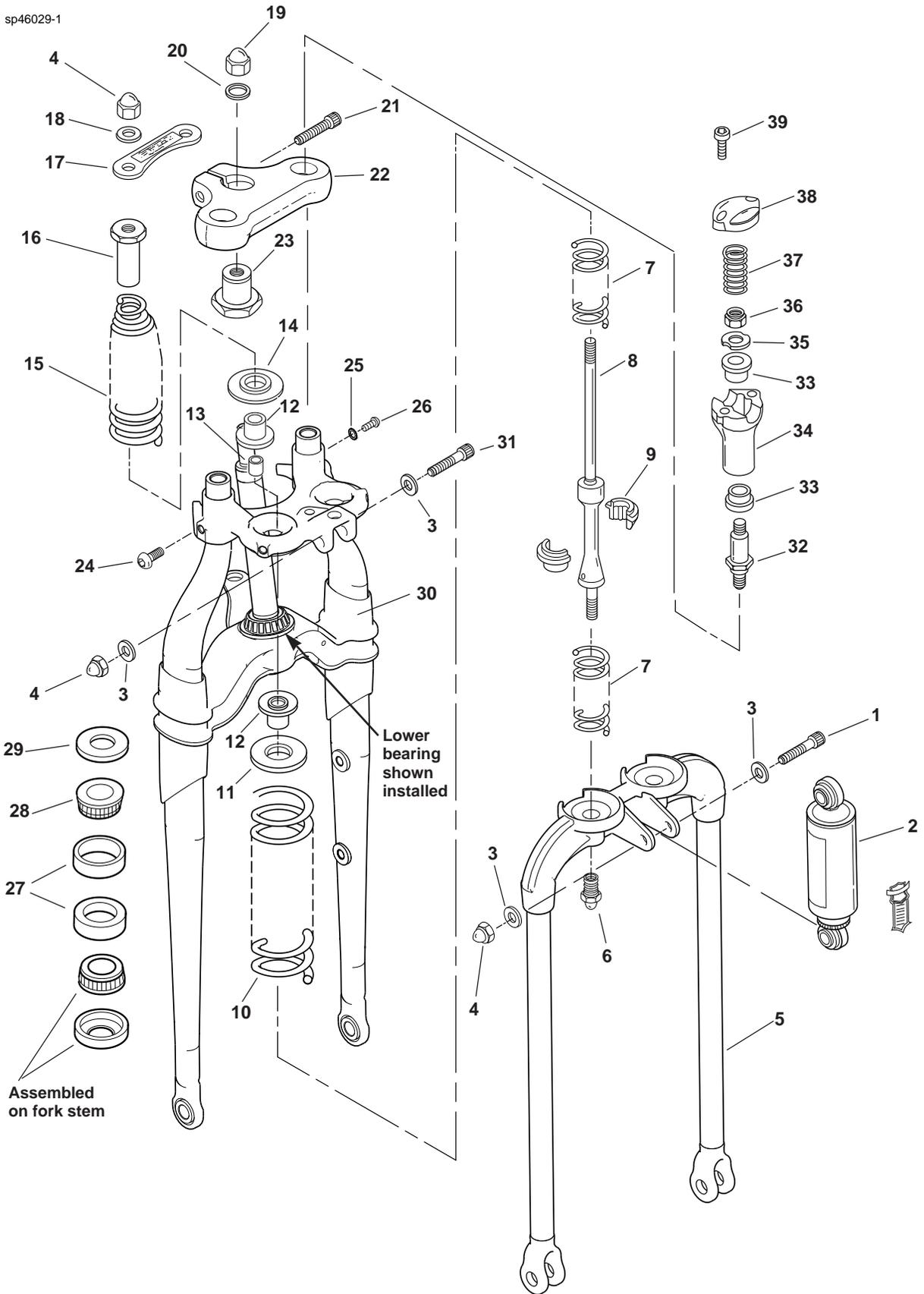
# Service Parts

Part No. 46029-97

Date 11/96

## Springer Front End Kit

sp46029-1





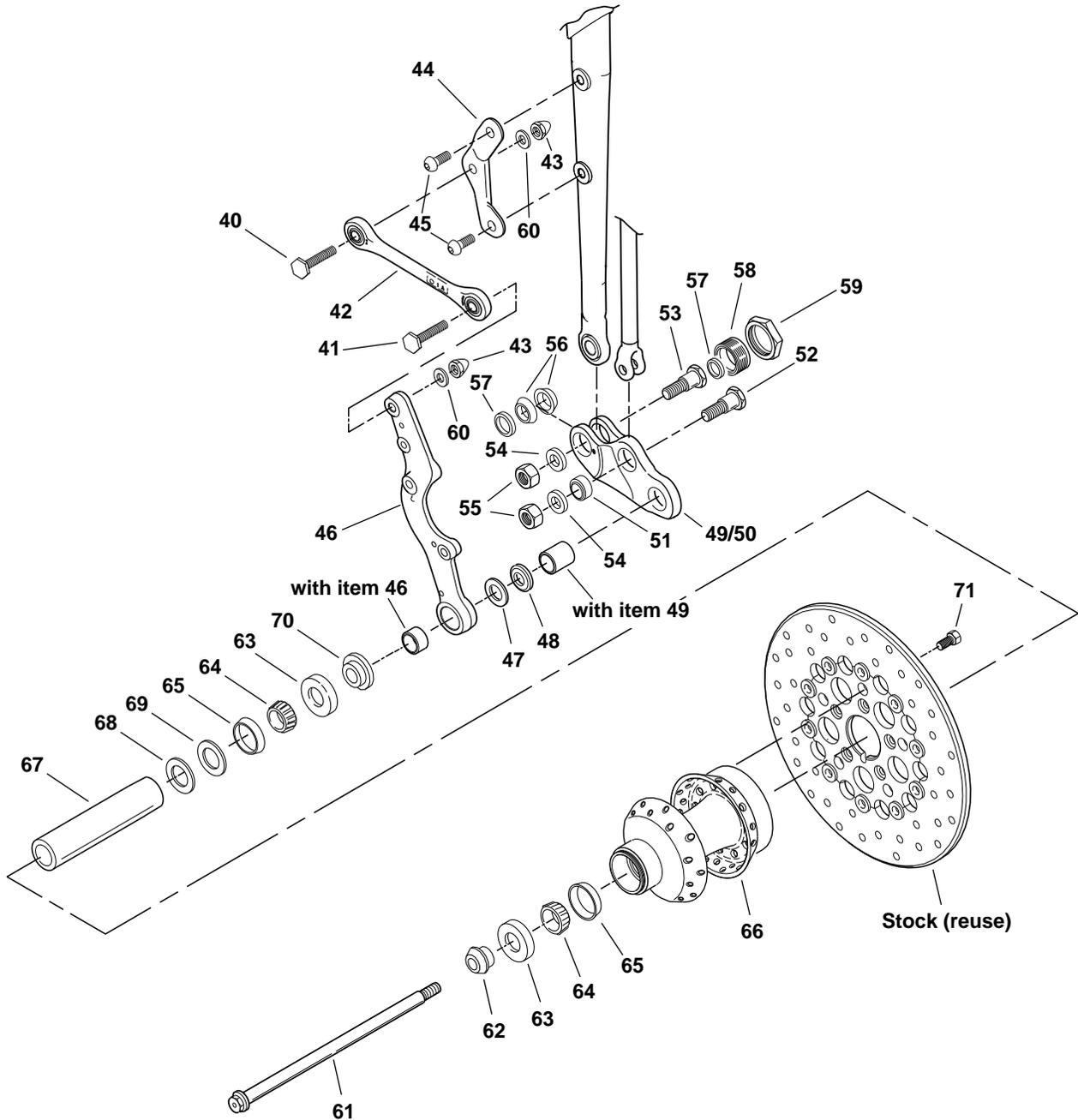
# Service Parts

Part No. 46029-97

Date 11/96

## Springer Front End Kit

46029-2



## Service Parts, pages 12 and 13, Illustration legend

ITEM	DESCRIPTION	PART NO.	ITEM	DESCRIPTION	PART NO.
Handlebar (not shown)		55933-97	<b>Fender Components</b>		
Handlebar grip (not shown)		56206-94A	102	Spherical bearings (2)	9194
Handlebar clips (4) (not shown)		56073-83	103	Fender	59164-97
Throttle cable assembly (not shown)		56338-96	104	O-rings (2)	11261
129 Throttle cable ferrules		56508-76	105	Nylon inserts (2)	9207
<b>Headlamp/Passing Lamps/Horn Components</b>			106	Spacer, right side	9196
72 Headlamp Assembly		67906-97	107	Spacer, left side	9268
73 Passing Lamps (2)		68758-97	108	Nut	7987
74 Cable straps (2) (for securing fendertip lamp wiring to front brake line)		10065	109	Clip	508
75 Wire connector sockets (2)		73191-96	110	Hub cap seals (2)	43467-97
76 Connector housing		73152-96WE	111	Hub caps (2)	43466-97
77 Passing lamp bracket		58089-97	112	Mounting pad	59355-97
78 Clamp blocks (2)		68720-62	113	Fender lamp assembly (bulb is P.N. 52441-95)	59357-97
79 Nuts (2)		7892	114	Screw	2447
80 Grommets (2)		11410	115	Screw	2448
81 Screws (2)		3538	116	Grommet	11437
82 Mounting block		67892-93	117	Screw/with hole for spring clip	3268
83 Screws (2)		2917	118	Washer	6109
84 Washers (2)		6379W	119	Spring pins (2)	509
85 Screw		3214	120	Locknut	7739
86 Horn		69070-97	128	Nut, keps	7838
87 Horn ground wire (not shown)		70410-97	<b>VOES/Passing Lamp Bracket Assembly Components</b>		
88 Horn cover		69069-97	121	Passing lamp switch	67915-97
89 Screws (3)		2939	122	Spotlight label	68798-97
90 Screws (2)		2447	123	Bracket	69127-97
91 Locknuts (2)		7624	124	Retaining nut (item 121-124 not shown, see Figure 6)	11192
<b>Brake Components</b>			<b>For Fuel Tank Installation</b>		
92 Screw		3538	125	Fuel line clamp	10014
93 Throttle cable retainer (not shown)		10190			
94 Banjo bolt (master cylinder)		41739-84A			
95 Seal washers (2) (master cylinder)		41733-88	126	Cable Straps (4) (for securing wiring to frame)	10006
96 Brake line		45091-97			
97 Screw		4091			
98 Banjo bolt (caliper)		41747-82A			
99 Seal washers (2)(caliper)		41731-88A			
100 Flange screw (not shown)		44215-97			
101 Clamp		10076			
127 Washer (not shown)		6019			
Caliper Assembly (not shown, see Figure 5)		44079-97			



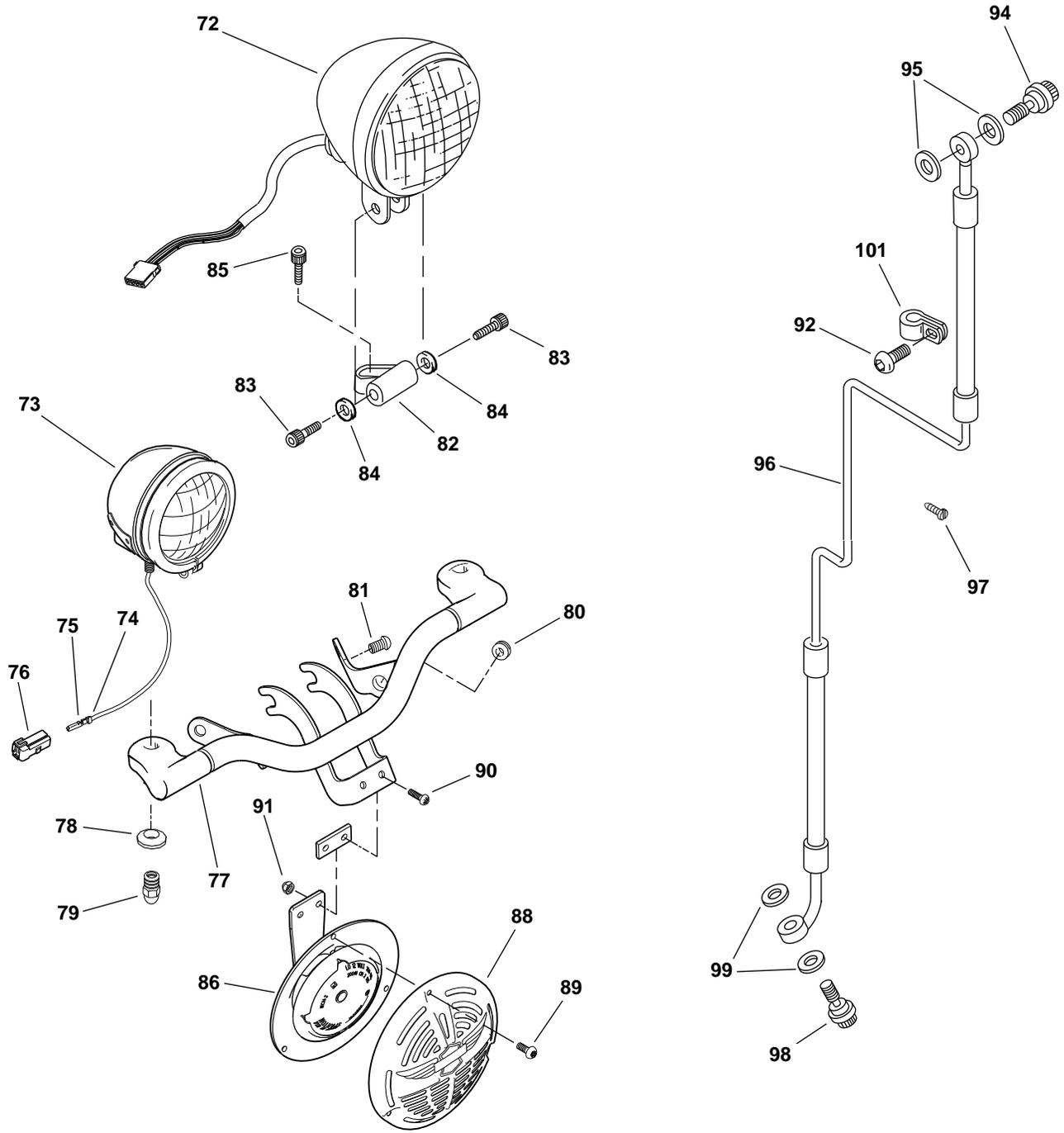
# Service Parts

Part No. 46029-97

Date 11/96

## Springer Front End Kit

sp46029-3





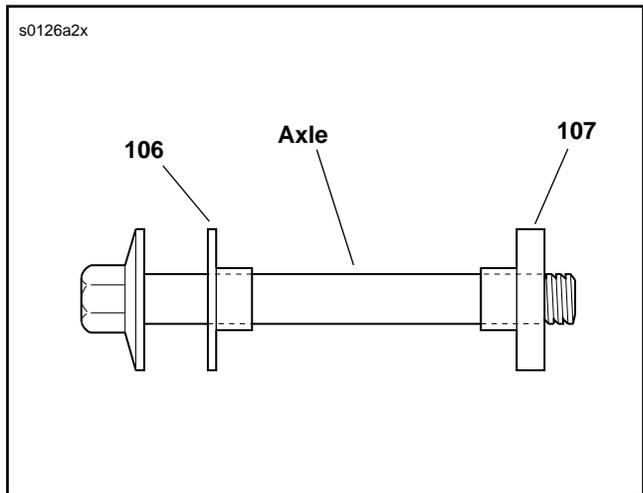
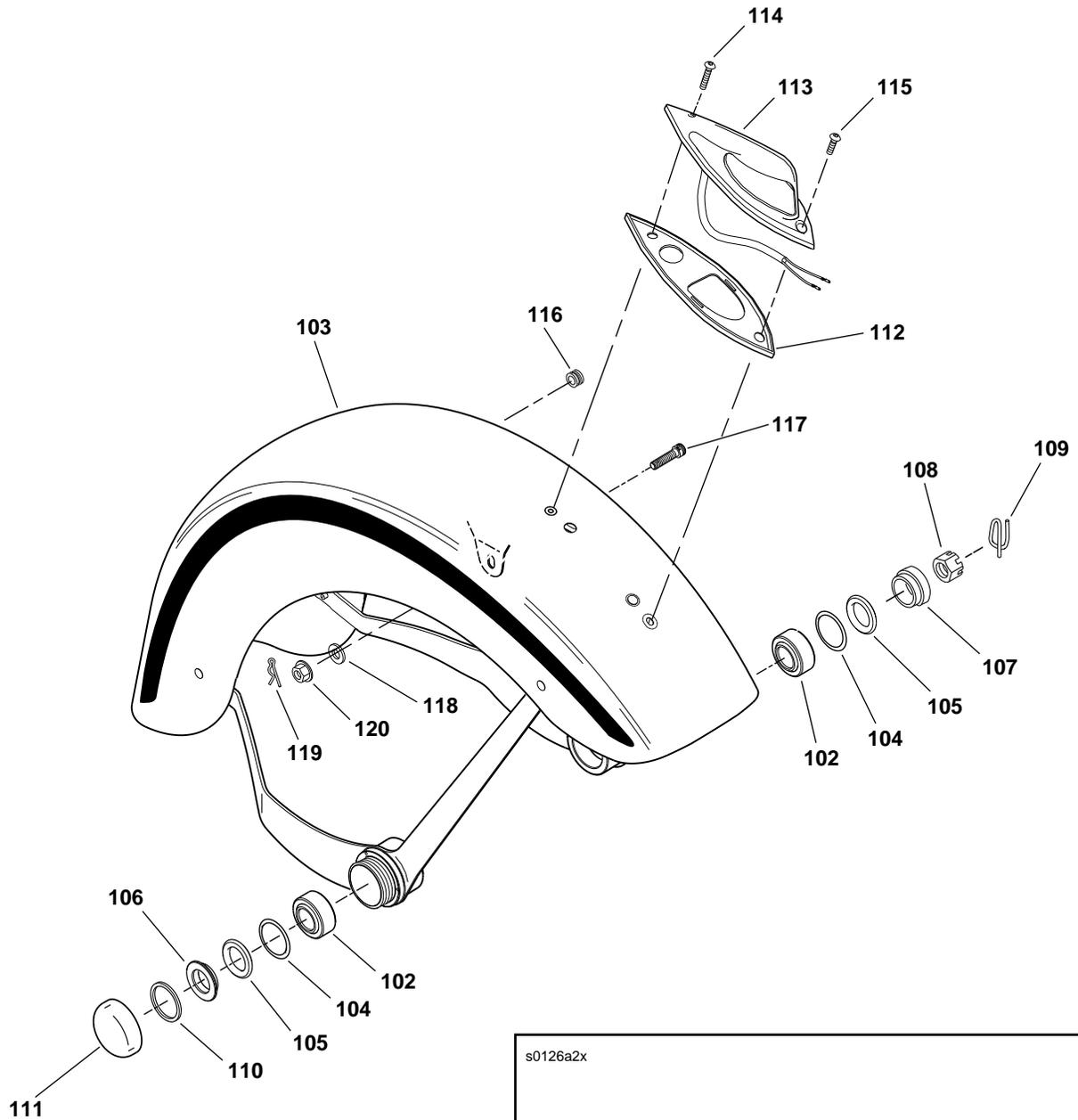
# Service Parts

Part No. 46029-97

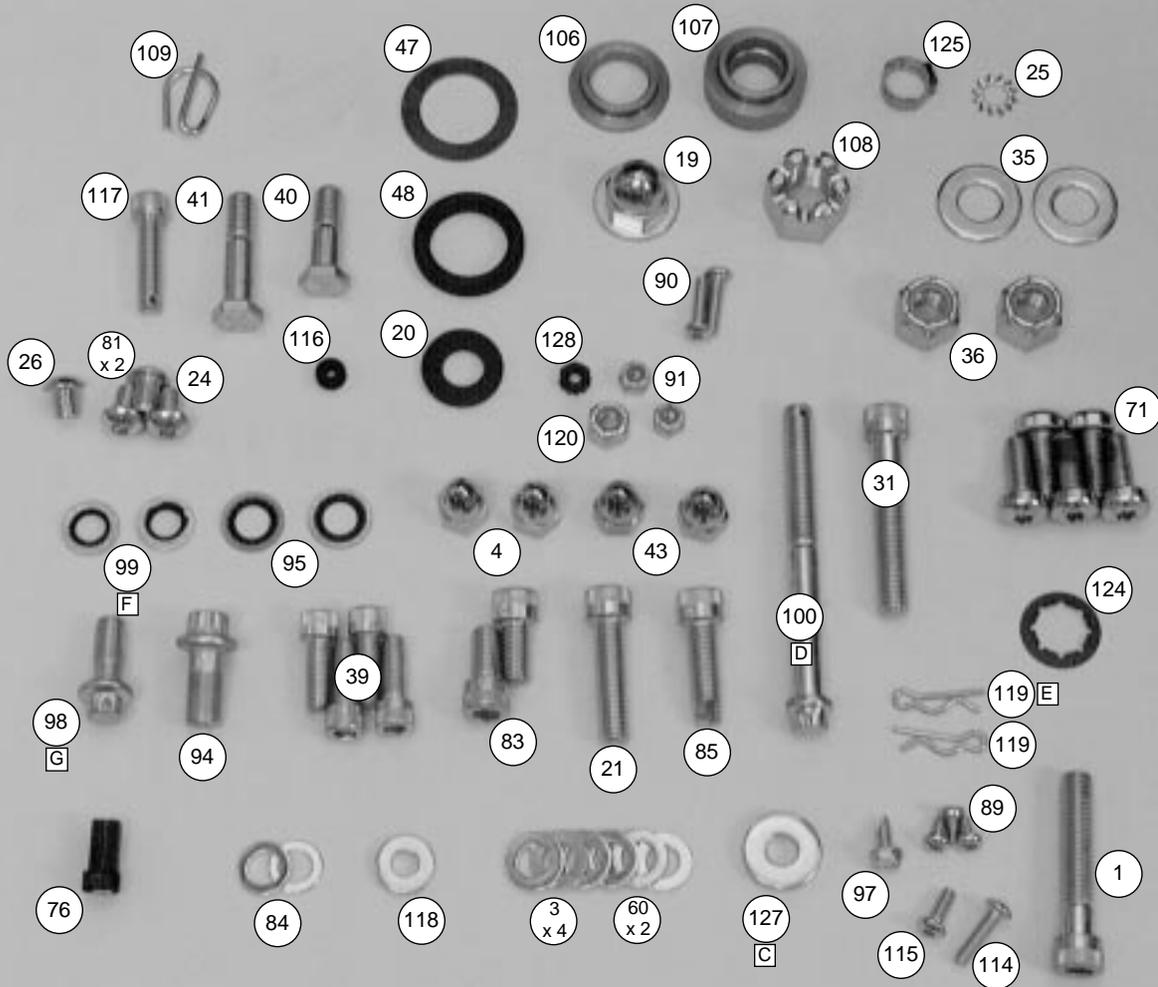
Date 11/96

## Springer Front End Kit

sp46029-4



Spacer Orientation



(numbers correspond to index numbers on Service Parts pages, letters correspond to Figure 5)

**Common Hardware Specifications and Notes (parts and special hardware not listed)**

- |    |   |     |  |
|----|---|-----|--|
| 1  | Screw, 3/8-16 x 2 socket head               | 71  | Screw, 5/16-18 x 7/8 Torx pan head                 |
| 3  | Washer, 13/32 x 11/16 x 1/16                | 81  | Screw, 5/16-24 x 1/2 button head                   |
| 4  | Acorn nut, 3/8-16                           | 83  | Screw, 3/8-16 x 3/4 socket head                    |
| 21 | Screw, 3/8-16 x 1-1/2 socket head           | 84  | Washer, 3/8 x 5/8 x 3/64                           |
| 24 | Screw, 5/16-24 x 1/2 button head            | 85  | Screw, 3/8-16 x 1-1/4 socket head (thread cutting) |
| 25 | Lockwasher, 5/16 external tooth             | 91  | Locknut, # 10-24 x 1/4 x 3/8 hex                   |
| 26 | Screw, 5/16-24 x 3/8 button head            | 97  | Screw, # 10-24 x 1/2 washer head (self-tapping)    |
| 31 | Screw, 3/8-16 x 2-1/4 socket head           | 108 | Castle nut, 5/8-18 x 15/16 hex                     |
| 35 | Washer, 1/2 x 1-1/16 x 3/32                 | 118 | Washer, 5/16 x 11/16 x 1/8                         |
| 36 | Locknut, 1/2-13 x 19/32 x 3/4 hex           | 120 | Locknut, 5/16-18 x 11/32 x 1/2 hex                 |
| 39 | Screw, 5/16-18 x 7/8 socket head            | 128 | Hex nut, # 10-24 (keps)                            |
| 43 | Acorn nut, 3/8-16, locking (dimple on side) |     |  |
| 60 | Washer, 13/32 x 11/16 x 1/16                |     |  |

Identification Photo for Loose Hardware and Small Parts