



INSTRUCTIONS

-J00835

REV. 3-27-00

Kit Number 77165-98

1998 FLHT/C CRUISE CONTROL KIT

GENERAL

This cruise control kit is designed for installation on 1998 and later FLHT/C model motorcycles.

See *Service Parts* for kit contents.

WARNING

Harley-Davidson, Inc. recommends that this kit be installed by a Harley-Davidson authorized dealer. Improper installation could cause cruise control malfunction, loss of control, and death or serious injury.

Service Manual Required

This Instruction Sheet refers the installer to the appropriate FLT Service Manual for many procedures. Therefore, Harley-Davidson recommends that you do not attempt to install this kit without having a copy of the FLT Service Manual applicable to your vehicle.

NOTE

A *Service Manual* for your vehicle is available from your Harley-Davidson dealer.

INSTALLATION

1. Review the "CRUISE CONTROL-Ultra MODELS" section in the applicable FLT Service Manual before attempting to install this kit.

NOTE

When connector numbers such as "[22A]" are referenced, they identify connectors on wiring diagrams. Wiring diagrams are located at the rear of the FLT Service Manual, on Wiring Diagram Wallcharts, and in the *Electrical Troubleshooting Manual*.

Cruise Control Module

WARNING

To avoid personal injury, do not smoke or allow open flame or sparks anywhere in the area when working on fuel system components. Gasoline is extremely flammable and highly explosive under certain conditions.

WARNING

To avoid accidental start-up of motorcycle, and possible personal injury, disconnect the battery cables (negative cable first) before performing any of the following procedures. If the positive cable should contact ground with the negative cable installed, the resulting sparks may cause a battery explosion resulting in death or serious injury.

2. Remove battery, left saddlebag, left sidecover, fuel tank, and air cleaner assembly following instructions in applicable Service Manual.
3. See Figure 1. Identify mounting holes for cruise control module on left side of battery box.
4. See Service Parts illustration. Place grommets (6) through holes shown in Figure 1 with large diameters on inside of battery box.

NOTE

The cruise cable will be installed on the cruise module in the kit. If cable is removed, refer to applicable Service Manual for correct reinstallation procedure.

5. See Figure 3. While feeding cruise cable and adjuster through hole in frame cross member, place cruise module (1) in position shown.
6. See Service Parts illustration. Install three flange nuts (17) to secure cruise control module to box. Tighten nuts to 9-11 ft-lbs.
7. From left side of motorcycle, route the cruise cable under rear cylinder spark plug wire; forward, above top engine stabilizer; and then down between cylinder heads and right to carburetor.
8. Follow Service Manual instructions to connect cruise cable to carburetor.
9. See Figure 2. Install wire harness retainer on cruise cable and insert barb on clip into hole in frame. On Calif. models, remove EVAP hose from cable clip and secure hose with T-stud cable strap from kit in location shown.

Idle Control Cable - Throttle Adjusting Screw

1. Remove outer fairing following the applicable Service Manual procedures.
2. Disconnect stock idle control cable from carburetor following instructions in Service Manual.
3. Remove upper and lower right handlebar switch housing screws.
4. See Figure 4. Loosen throttle adjusting screw (1), and remove friction spring (2) from groove in switch housing (3).
5. Remove retaining ring (4) from throttle adjusting screw (1) and remove spring (5) and screw (1) from lower switch housing (3).
6. Plug throttle adjusting screw tapped hole in switch housing (3) with pop rivet (6) and washer (7).
7. Discard throttle adjusting screw, spring, retaining ring and friction spring.

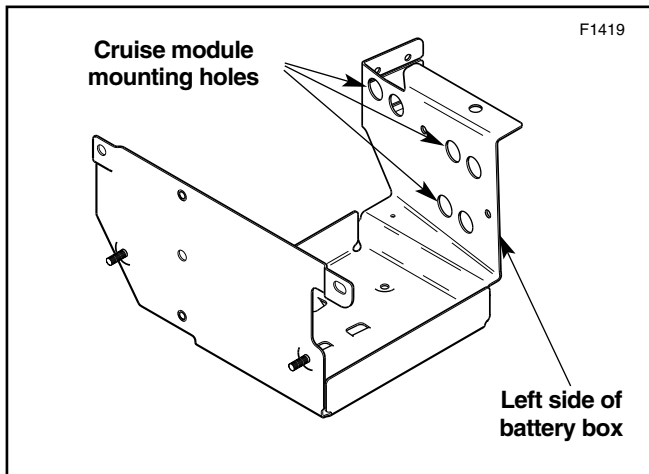


Figure 1. Cruise Module Mounting Holes

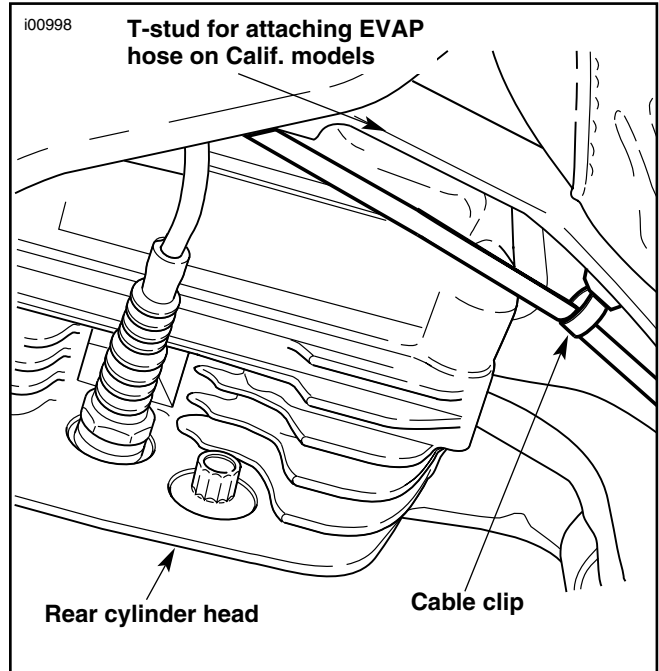


Figure 2. Attaching Cruise Cable Adjuster (Left Side View)

8. Remove idle control cable brass ferrule from notch in throttle grip. Retain brass ferrule for use later.
9. Follow instructions in Section 2 of applicable Service Manual to remove stock idle cable.
10. Follow instructions in Section 8, CRUISE CONTROL-THROTTLE CABLES, of applicable Service Manual and install the new idle control cable from kit.
11. Do not adjust throttle and idle cables now. The throttle, idle, and cruise cables will be adjusted after cruise control harness installation.

12. See Figure 5. Install the coiled tubing on the throttle cable from front to rear. Open the split in the tubing, place the tubing on the cable and feed tubing back through the frame clamp until the tubing end contacts the induction module cable guide.

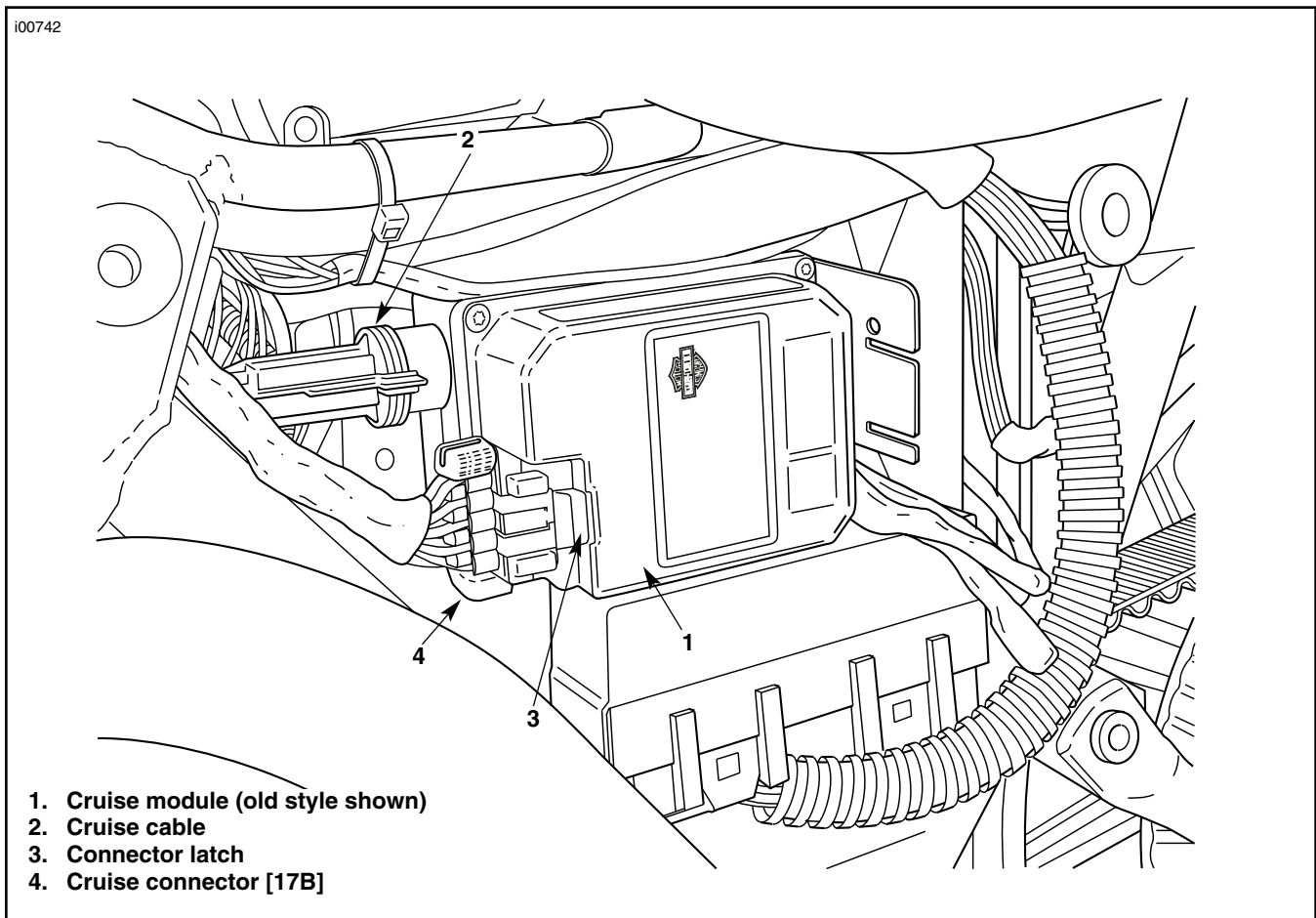


Figure 3. Mounting Cruise Module

Cruise Control ON/OFF Switch

NOTE

Cruise control ON/OFF switch installs in fairing cap right side, next to ACC switch. Removal of ignition switch on International models requires removing switch position decal and tamper-proof plugs. See applicable Service Manual for detailed REMOVAL/INSTALLATION instructions.

1. See Figure 6. Remove ignition switch and fairing cap according to Service Manual instructions.
2. See Figure 7. Remove screws (1) holding switch bracket (2) in place.
3. Remove switch hole plug.
4. Install cruise control switch wires through bracket. Place cruise switch in opening of bracket and engage tabs on switch into slots on bracket latches.

CAUTION

Make certain socket terminals are correctly oriented in the next step. The slot and crimp tails must face toward the release button on the socket housing. Any other orientation will not allow terminal to lock in position.

5. Refer to FAIRING CAP SWITCHES in applicable Service Manual. Open secondary lock on 12-place socket housing [105B] located behind the fairing cap. Connect the Orange/Violet wire to cavity number 4. Connect the Red/Green wire to cavity number 5. Connect one Black/Green wire to cavity number 12 in the 12-place socket housing. Terminate the 2nd Black/Green wire, it is not used.

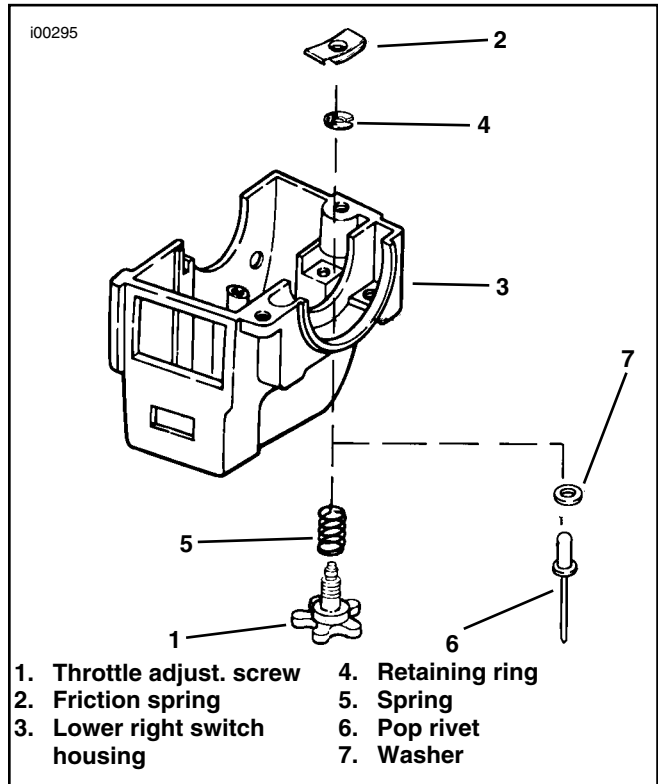


Figure 4. Throttle Adjusting Screw and Tapped Hole

6. Close secondary lock on socket housing.
7. Place Accessory and Cruise switches in fairing cap openings. Install screws holding switch bracket.

NOTE

Do not install fairing cap or ignition switch now.

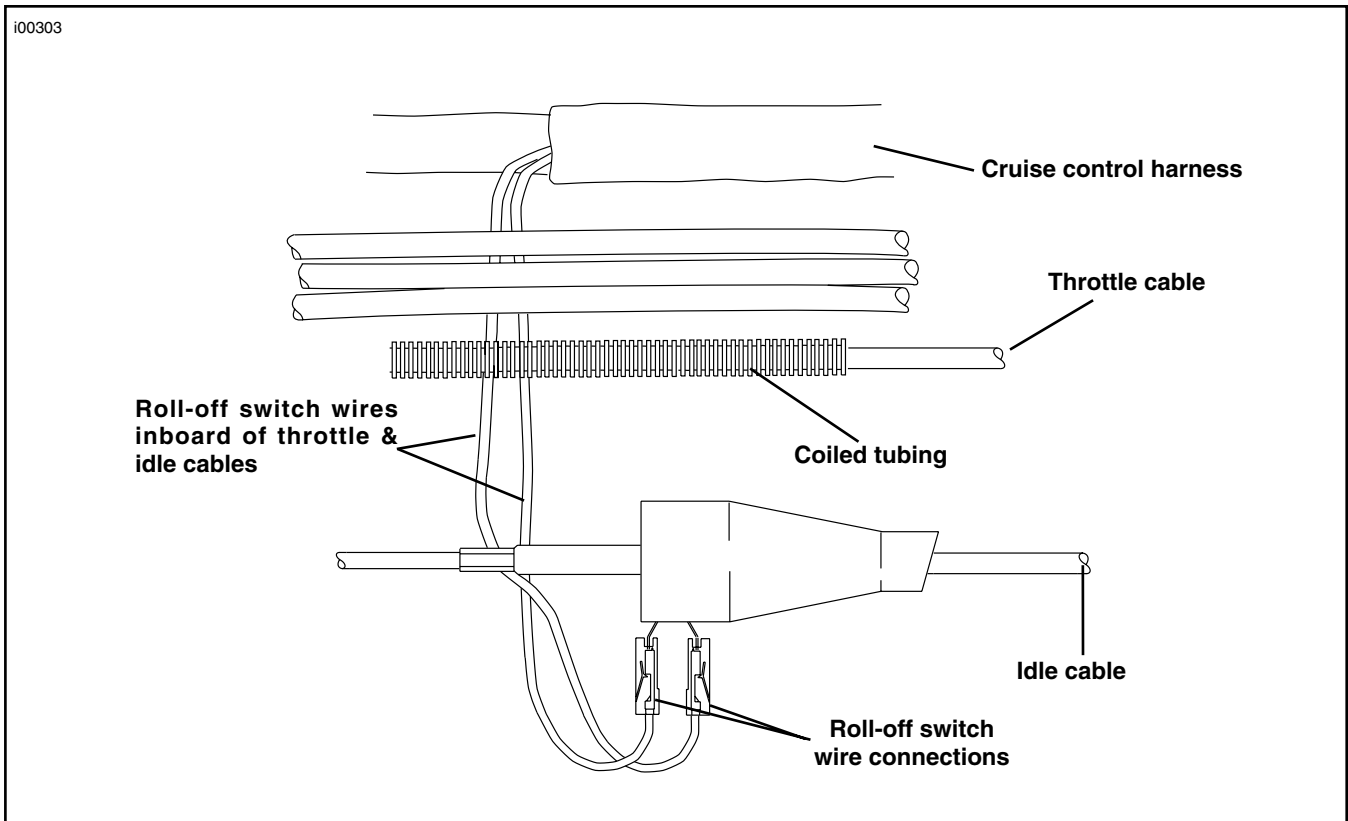


Figure 5. Throttle / Idle Cable and Roll-off Switch Configuration

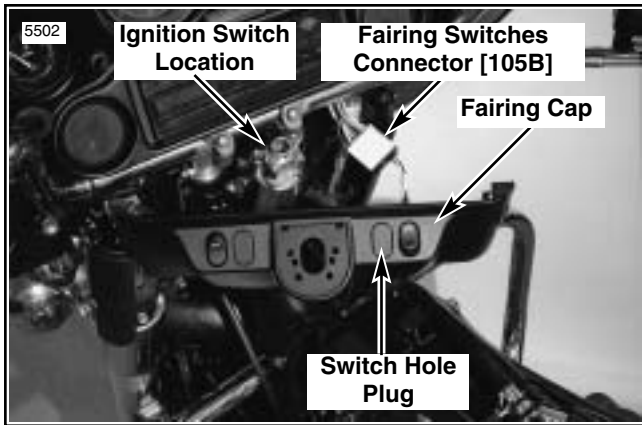


Figure 6. On / Off Switch Location, 1996 and Later

Set/Resume Switch Placement Into Handlebar Clamp

CAUTION

Do not disconnect or remove the switch housing assembly without first placing a 5/32 inch thick cardboard insert or cable strap eyelet between the brake lever and lever bracket. Housing removal without an insert may result in damage to the rubber boot and plunger of the front brake light switch.

1. See Figure 9. Remove the two screws and washers (1) that secure the master cylinder clamp (2) and master cylinder (3) to the handlebar and remove master cylinder clamp (2). Discard the two screws and retain the washers for use later.
2. Remove from the kit and insert the escutcheon (4) into the Set/Resume handlebar clamp (5).

3. Insert switch (6) with side having two tabs (7) positioned as shown.
4. Press switch (6) into escutcheon (4) until it latches into position.
5. Install speednut (8), place actuator (9) on switch rod and press until actuator pins enter holes in switch tabs (10).

Set/Resume Switch Attachment to Handlebar Clamp

1. Cut the cable strap securing harnesses to right handlebar.
2. Route the Set/Resume harness along the handlebar and forward of the inner fairing.
3. Replace cable strap with one from kit.
4. See Figure 8. Attach handlebar clamp to master cylinder with the stock washers and two 1/4 -20 x 1-5/8 in. hex socket button head screws from kit.

Set/Resume Switch Electrical Connections

1. Cut connectors off ends of Blue/Black wires. Following instructions in Service Manual under "Deutsch Electrical Connectors", crimp sockets (P/N 72191-94) onto each wire end.
2. Install Set/Resume switch wires into cavities 11 and 12 of connector [22] as follows (see Figure 11 for connector location):

See Figure 10. Remove the connector's secondary locking wedge. Grasp each crimped pin approximately 1 inch behind the contact barrel. Gently push pins through holes in wire seal into their respective locations shown in figure. Feed each pin into chamber until it "clicks" in place.

NOTE

If secondary locking wedge does not slide into position easily, verify that all terminals are fully inserted into the housing.

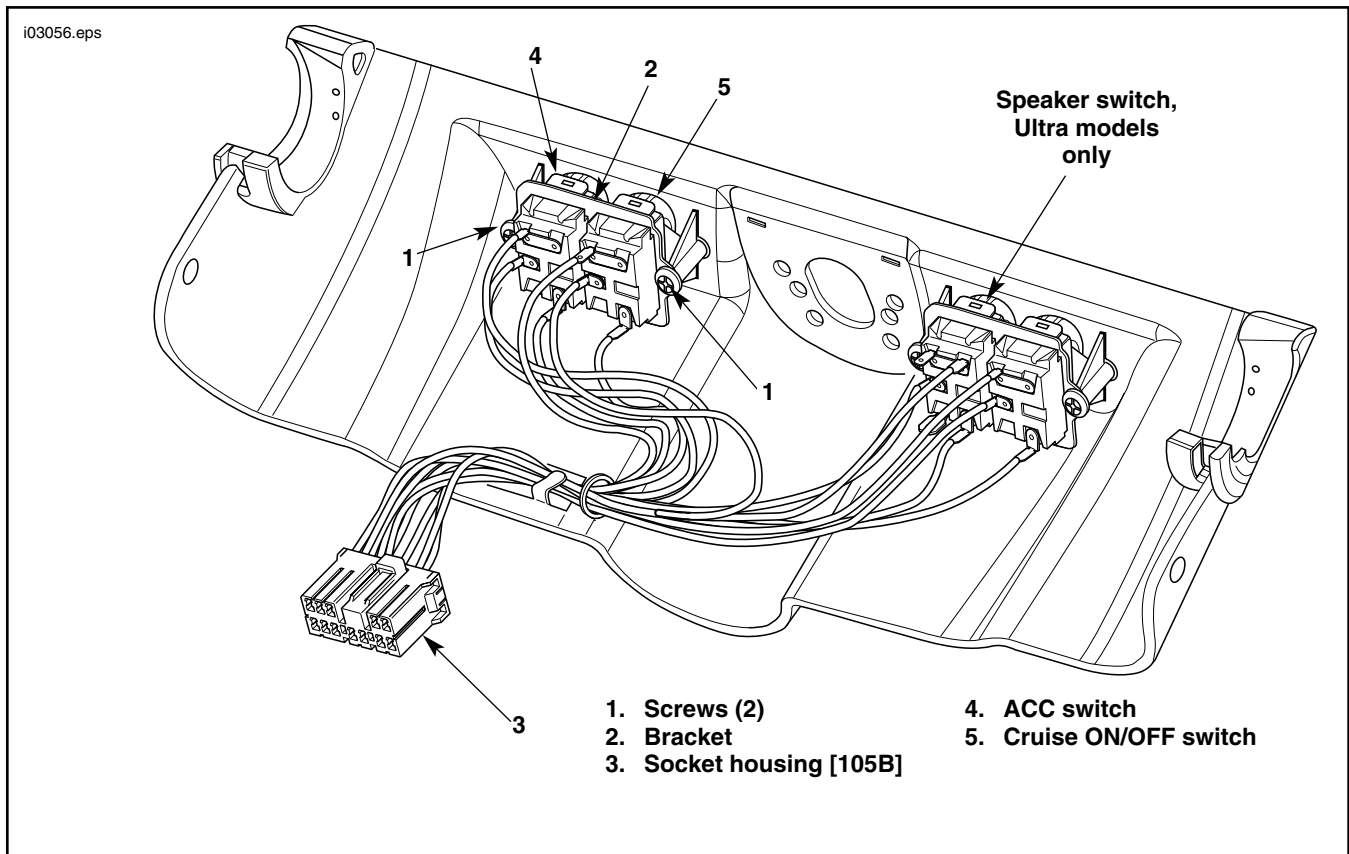


Figure 7. Fairing Cap Switches (Ultra shown)

3. Connect power wire (O/V) of Set/Resume switch to cigarette lighter as follows:
 - a. Cut connector off of end of O/V switch wire.
 - b. Follow procedures under **Sealed Butt Splice Connectors** in Service Manual to connect O/W wire in kit (item 30) to O/V wire of Set/Resume switch using heat sealed connector in kit (item 5).
 - c. Crimp 2-into-1 terminal in kit (item 29) onto end of O/W wire and route wire to cigarette lighter (see Figure 11 for location of lighter).
 - d. Remove existing O/W wire from back of cigarette lighter, connect O/W from Set/Resume switch to lighter, then reconnect original O/W wire to spade on 2-into-1 terminal.

Cruise Control Harness Installation

1. See Figure 12. The cruise control harness electrical connections are shown.
2. Refer to **CRUISE HARNESS, Installation** in applicable Service Manual and install cruise control harness following the instructions given.

NOTE

The 3-place socket connector containing orange/blue, black/green and red/orange wires is only used on "Ultra" models. Secure the 3-place connector to frame tube behind cruise module with cable strap.

3. Install cable straps at the locations specified in the **CRUISE HARNESS, Installation** procedure in the Service Manual.
4. Check that all wires and harnesses are located away from hot or moving parts.

J-Clamp and Throttle Cable

1. See Figure 13. Using the sharp edge of a knife, carefully pull out the plastic plug in forward area of frame.

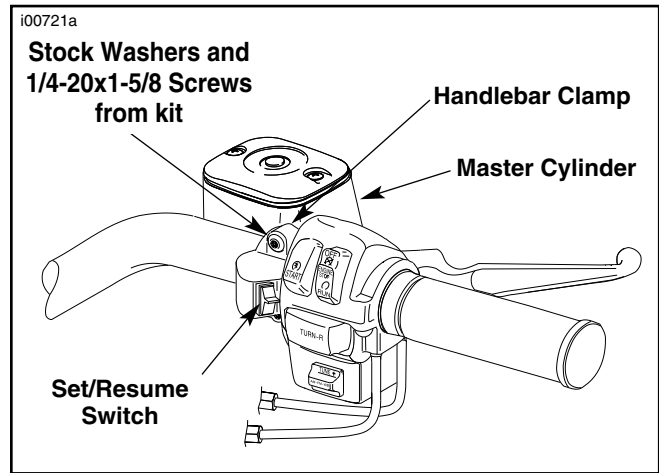


Figure 8. Set / Resume Switch Attachment

2. See Service Parts illustration. Install well nut (9) from kit in hole. Install flat washer (10) and J-clamp (1) on screw. Start screw into well nut. With the loop of the clamp orientated at the top, tighten the clamp screw until snug.
3. Position the throttle control and idle control cables within the J-clamp. Pinch or press ends of clamp closed to contain cables.

Adjust Throttle, Idle, and Cruise Control Wire Harness

1. Refer to the "CRUISE CONTROL - THROTTLE CABLES" section in Section 8 of the applicable Service Manual and adjust the throttle, idle control cable and cruise cables.
2. Perform cruise cable adjustment. See "Cable Lash Initialization" in applicable Service Manual.

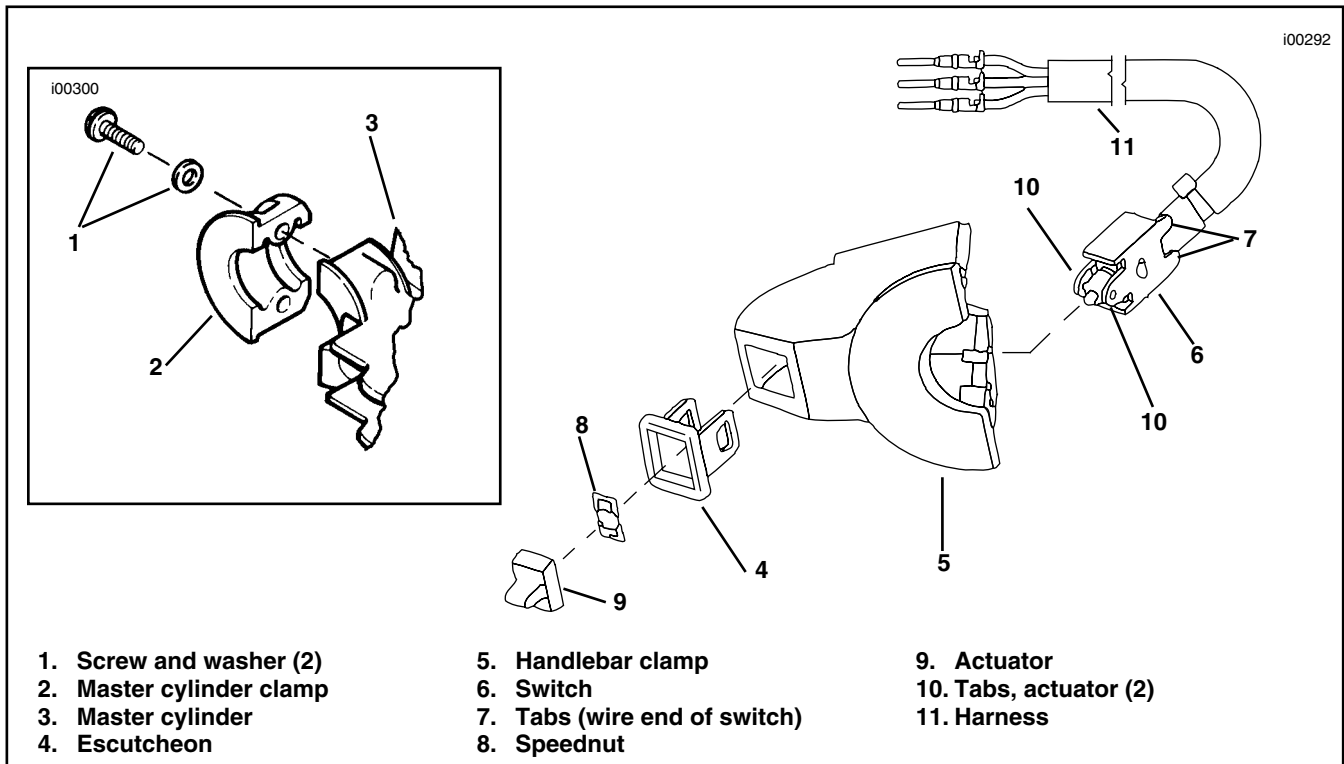


Figure 9. Installing Set / Resume Switch

FINAL CHECK AND TEST RIDE

1. Check that all connections have been made and that all wiring is properly secured with cable straps.
2. Perform the "Switch Diagnostic Sequence", in the applicable Service Manual, before installing fuel tank, outer fairing, left side cover, and left saddlebag.

⚠ 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 resulting in death or serious injury.

3. To perform the tests, reconnect battery, positive cable first.

⚠ WARNING

To avoid accidental start-up of motorcycle, and possible personal injury, disconnect the battery cables (negative cable first) before performing any of the following procedures. If the positive cable should contact ground with the negative cable installed, the resulting sparks may cause a battery explosion resulting in death or serious injury.

4. After tests are completed disconnect battery, negative cable first.
5. Install fuel tank, air cleaner backplate, air cleaner filter and cover, left side cover, outer fairing and left saddlebag.

⚠ 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 resulting in death or serious injury.

6. Connect battery, positive cable first.
7. 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 death or serious injury.

8. Refer to cruise control section in Owner's Manual for cruise control operating instructions.
9. Test ride motorcycle and verify cruise control is operating properly.

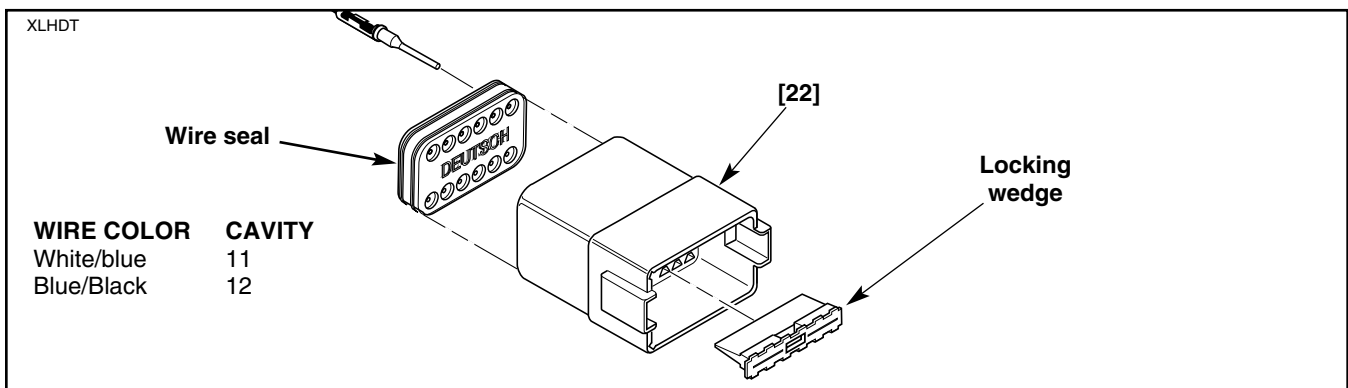


Figure 10. Set / Resume Switch Connections

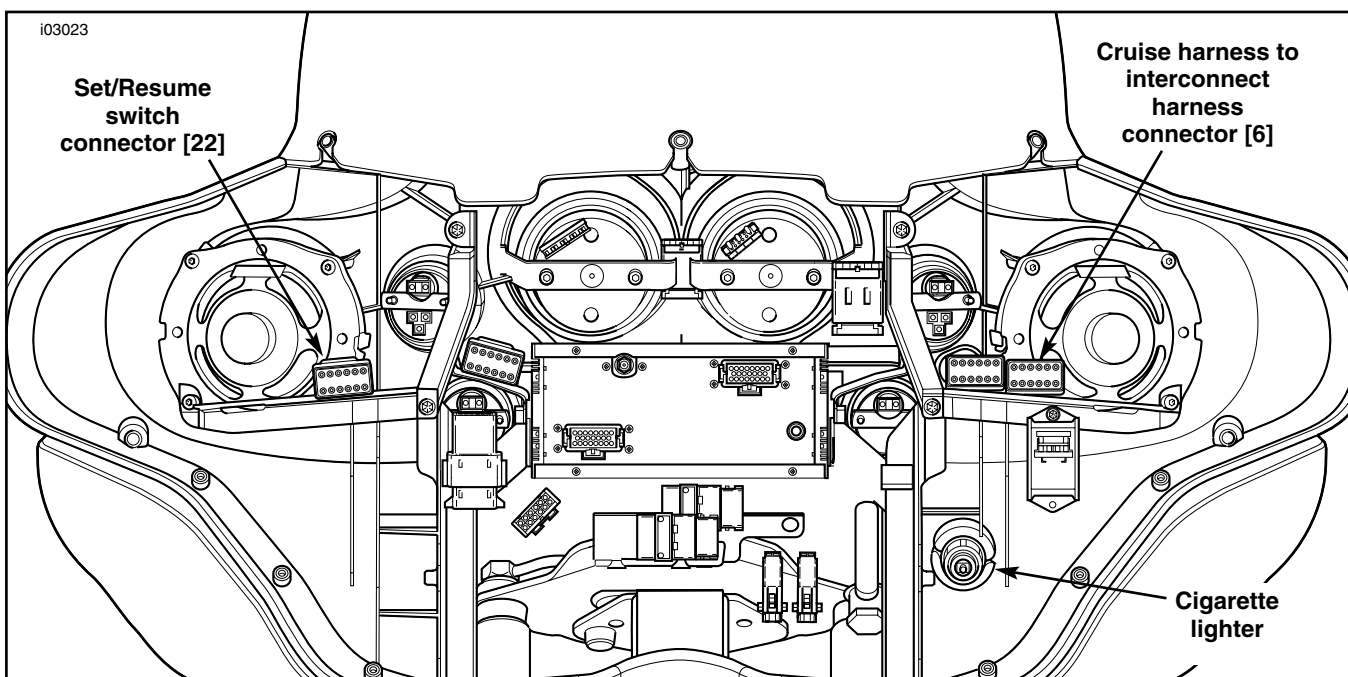


Figure 11. Cruise Harness Connections At Inner Fairing

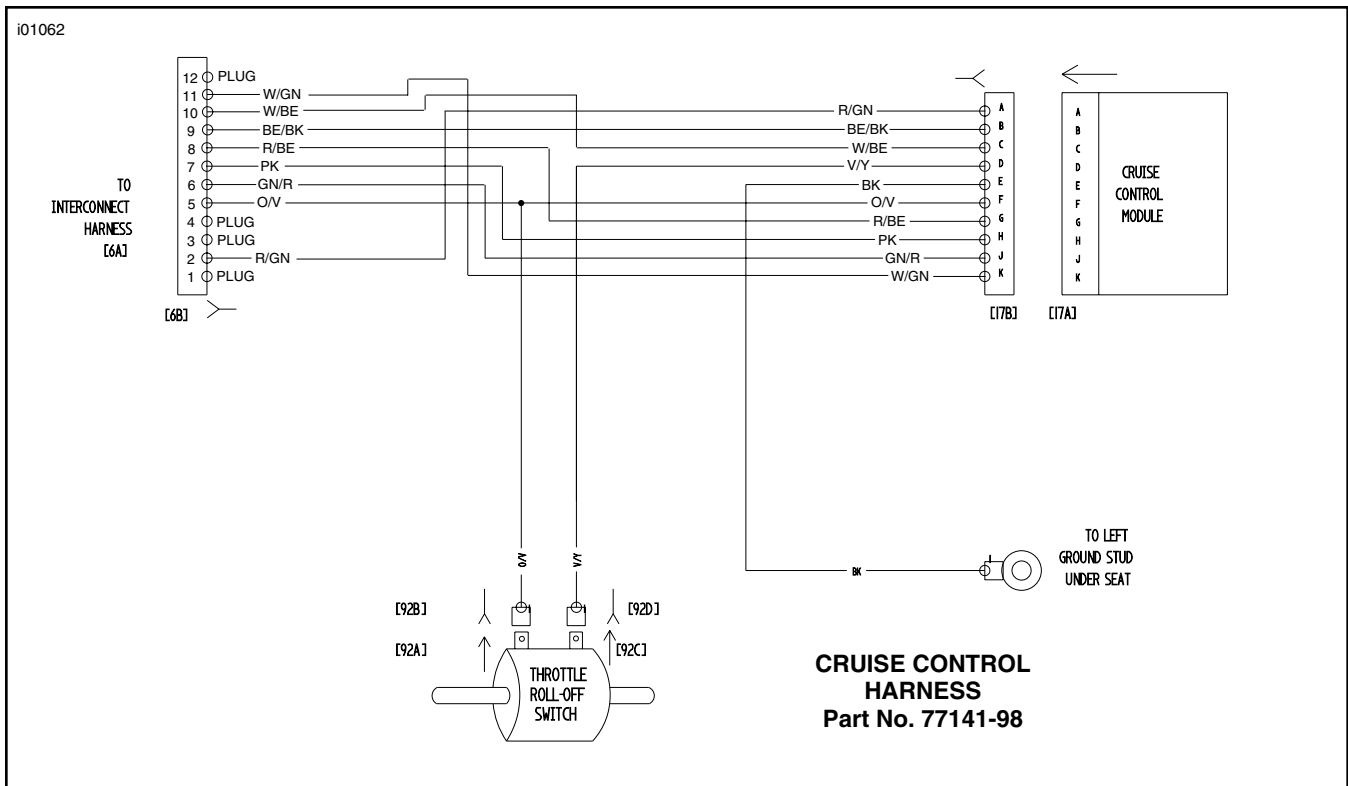


Figure 12. Electrical Connections

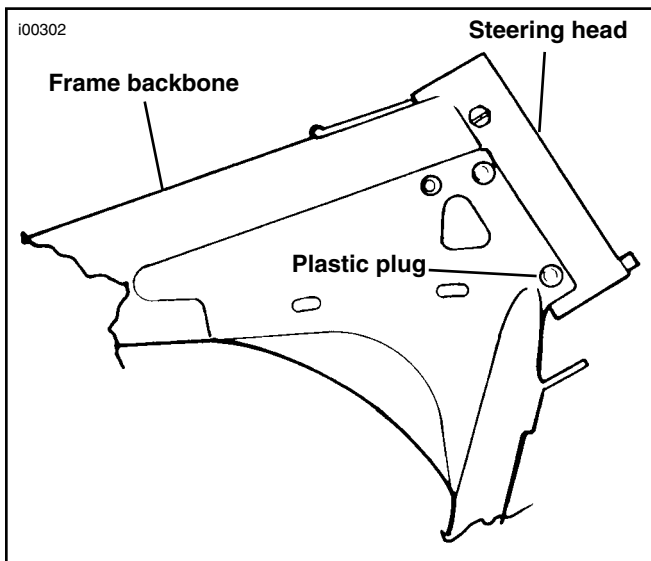


Figure 13. Remove Plug From Frame



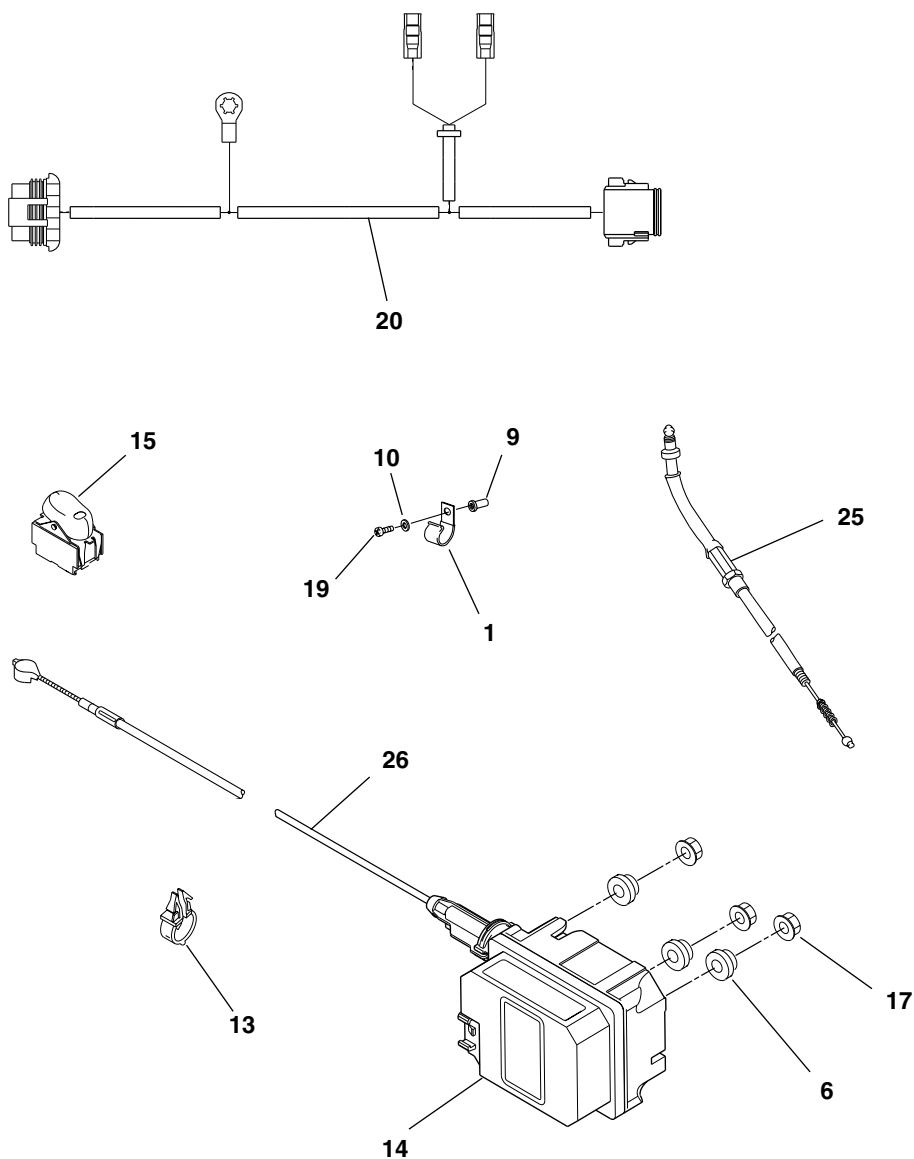
Service Parts

Part No. 77165-98

Date 3/00

1998 Cruise Control Kit

sp77166-98



| Item | Description | Part No. | Item | Description | Part No. |
|------|---|-----------|------|-----------------------------|----------|
| 1 | Clamp (J-type) | 10003 | 16* | Decal, ign. switch | 71537-96 |
| 2* | Cable straps, 5 in. (11) | 10039 | 17 | Flange nuts (3) | 7499 |
| 3* | Cable straps, 15 in. (3) | 10073 | 18* | Rivet, pop | 8625 |
| 4* | T-stud clip/strap (CA models) | 10133 | 19 | Screw, machine truss | 933 |
| 5 | Butt splice connector* | 70585-93 | 20 | Cruise control wire harness | 70141-98 |
| 6 | Grommets (3) | 11497 | 21 | not used | |
| 7* | Screws, 1/4-20 x 1-5/8 in. (2) | 4033 | 22 | not used | |
| 8* | Handlebar/master cylinder clamp with Set/Resume switch hsng | 45043-89 | 23 | not used | |
| 9 | Nut, well | 5207 | 24* | Switch, Set/Resume | 77163-94 |
| 10 | Washer, approx 5/8 in. O.D. | 6047 | 25 | Idle control cable | 56351-96 |
| 11* | Conduit, 1/4 in. x 12 in. long | 63574-94 | 26 | Cruise cable | 56372-98 |
| 12* | Washer, approx 3/8 in. O.D. | 6717 | 27* | Plugs, lock (4) Int'l only | 90468-95 |
| 13 | Wire harness retainer | 56073-83 | 28* | Wire harness retainer | 70345-84 |
| 14 | Cruise Module | 70989-98A | 29* | 2-into-1 wire terminal* | 9938 |
| 15 | Cruise ON/OFF switch | 71513-98 | 30* | Wire, 16 in. long (O/W) | 70652-99 |
| | | | 31* | Terminal, socket (2) | 72191-94 |
| | | | 32* | Ring, retaining | 11193 |

*not shown in illustration