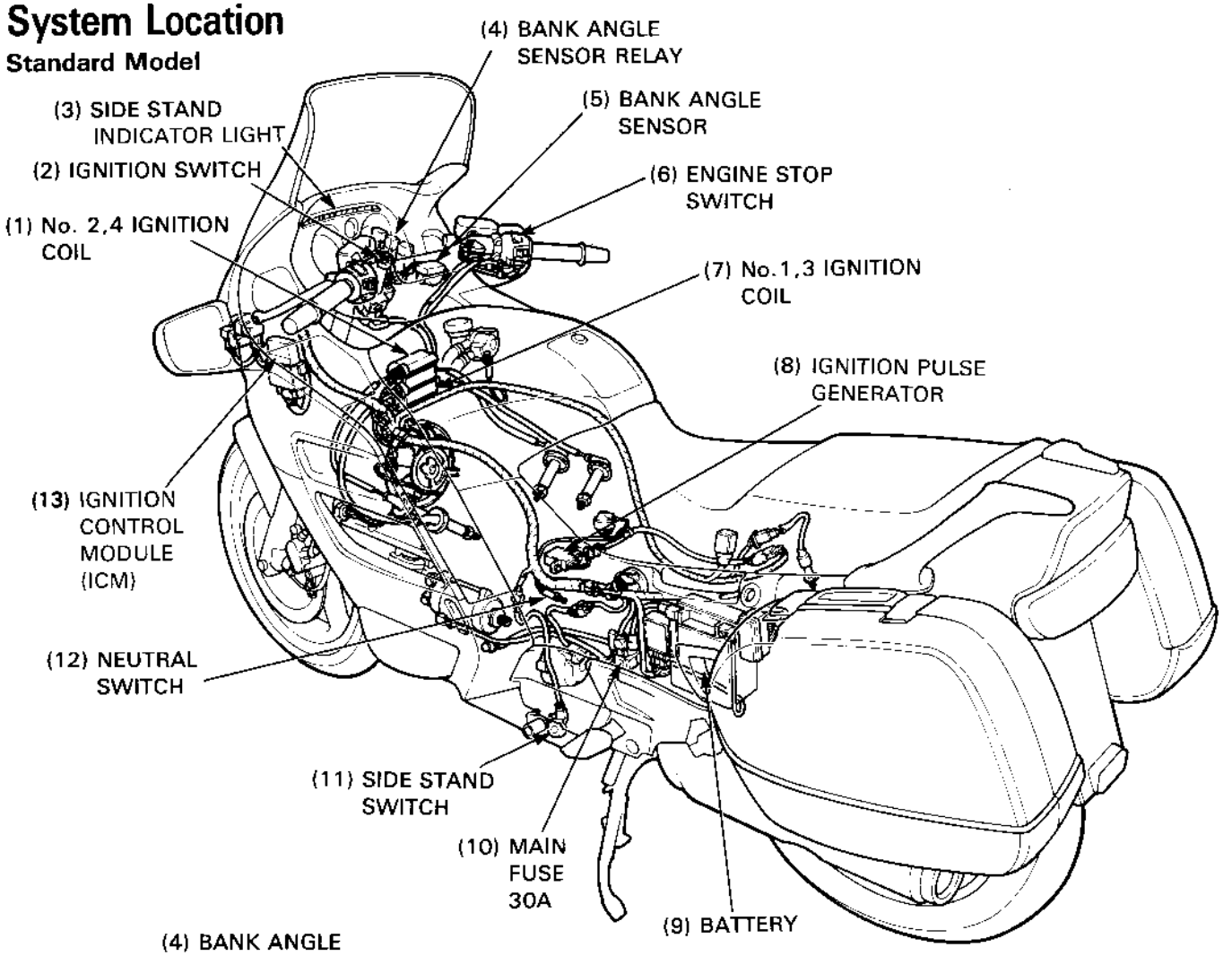
18. Ignition System

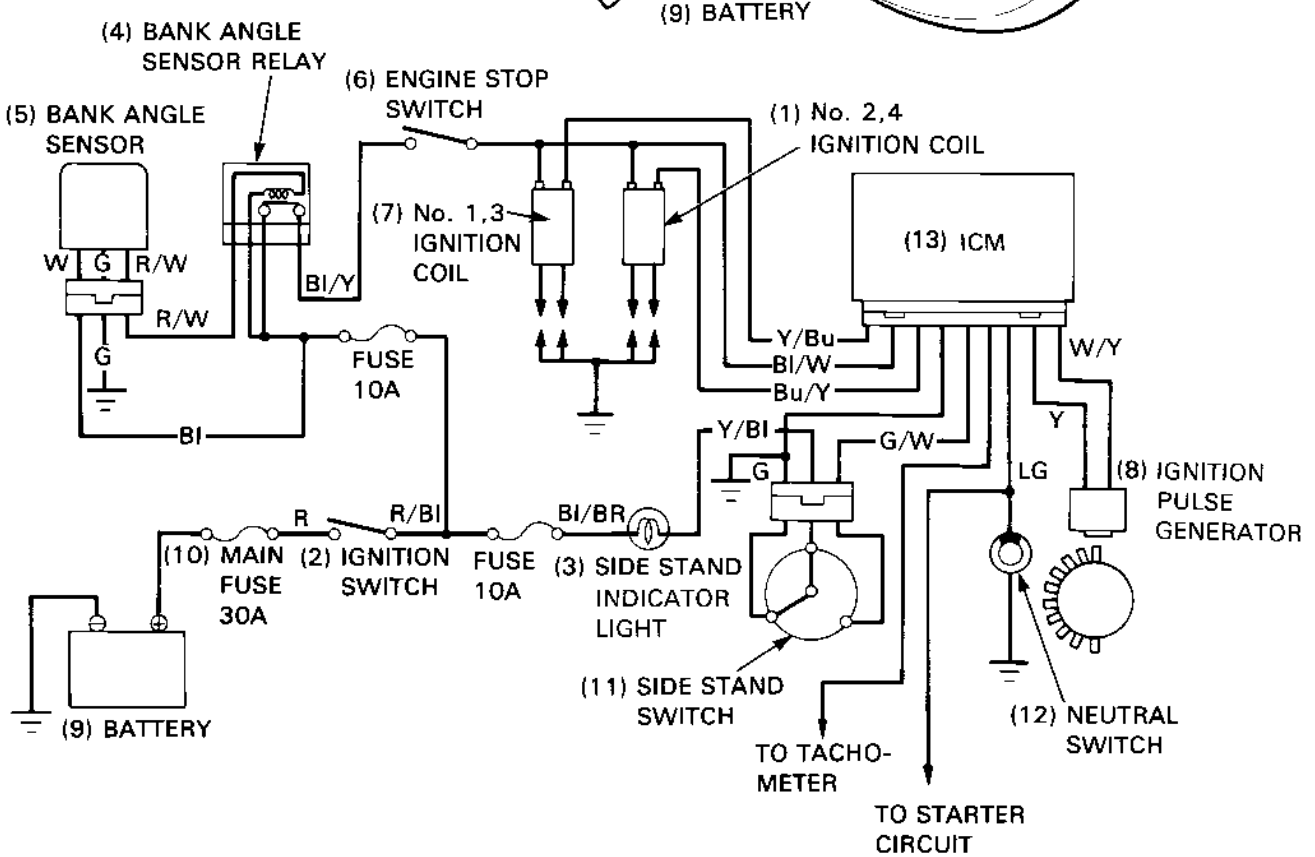
Service Information

- When checking the ignition system, always follow the steps in the troubleshooting flow chart (page 18-4).
- The digital transistorized ignition system uses an electrically controlled ignition timing system. No adjustments can be made to the ignition timing.
- A rough diagnosis can be made by identifying the cylinder whose spark timing is incorrect.
- The ignition control module (ICM) may be damaged if dropped. Also, if the connector is disconnected when current is flowing, the excessive voltage may damage the unit. Always turn off the ignition switch berore servicing.
- A faulty ignition system is often related to poorly connected connectors. Check those connections before proceeding.
- Make sure the battery is adequately charged. Using the starter motor with a weak battery results in a slower engine cranking speed as well as no spark at the spark plugs.
- Use spark plugs of the correct heat range. Using spark plugs with an incorrect heat range can damage the engine. Refer to section 2 of the Common Service Manual.
- For neutral switch inspection, refer to section 25 of the Common Service Manual; for switch location, see page 18-2 or 18-3 of this manual (System Location).
- For the ignition switch and engine stop switch inspection, check for continuity on the continuity chart of the Wiring Diagram (section 22). Refer to page 21-4 for side stand switch inspection.

System Location

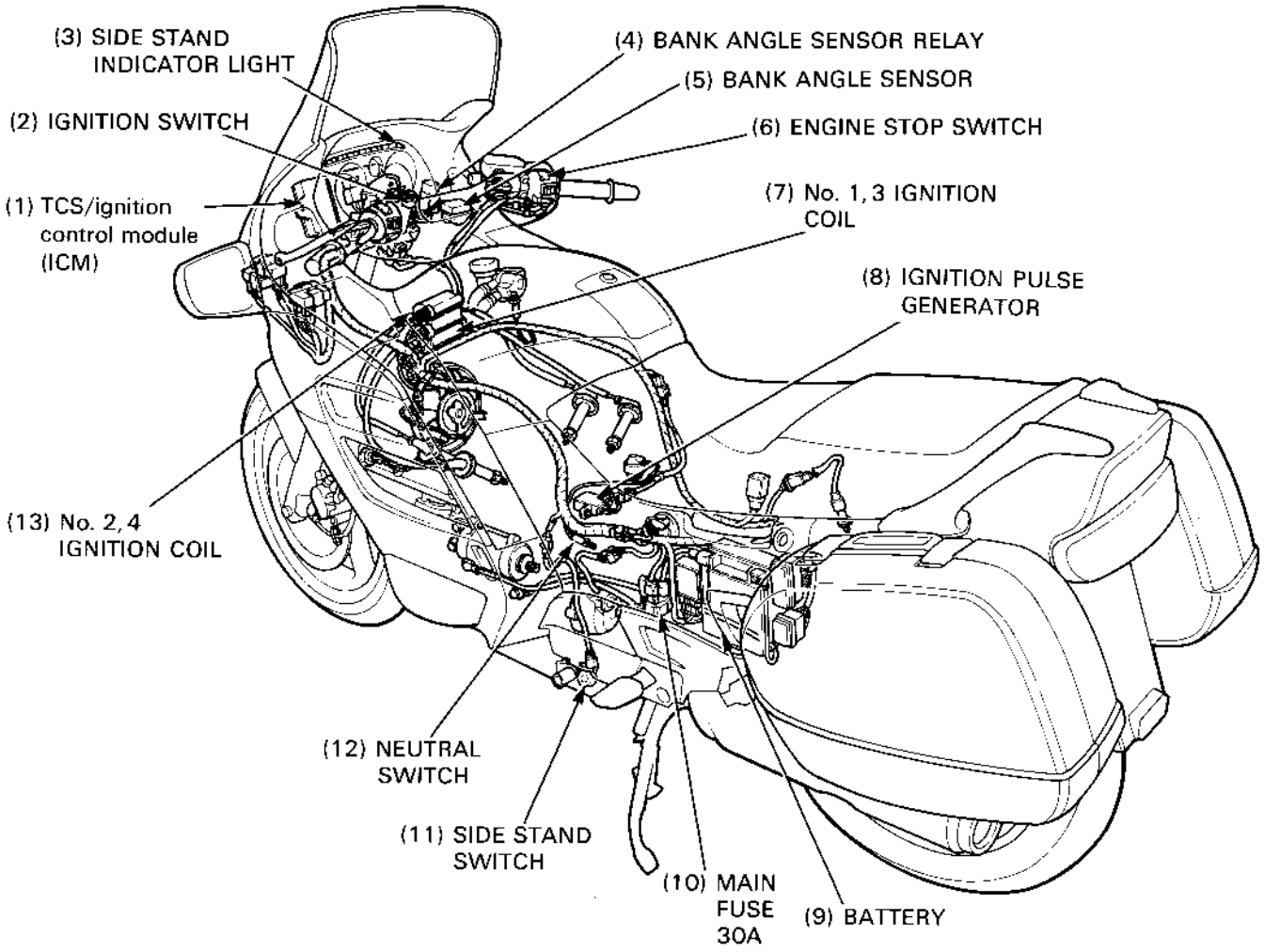
Standard Model

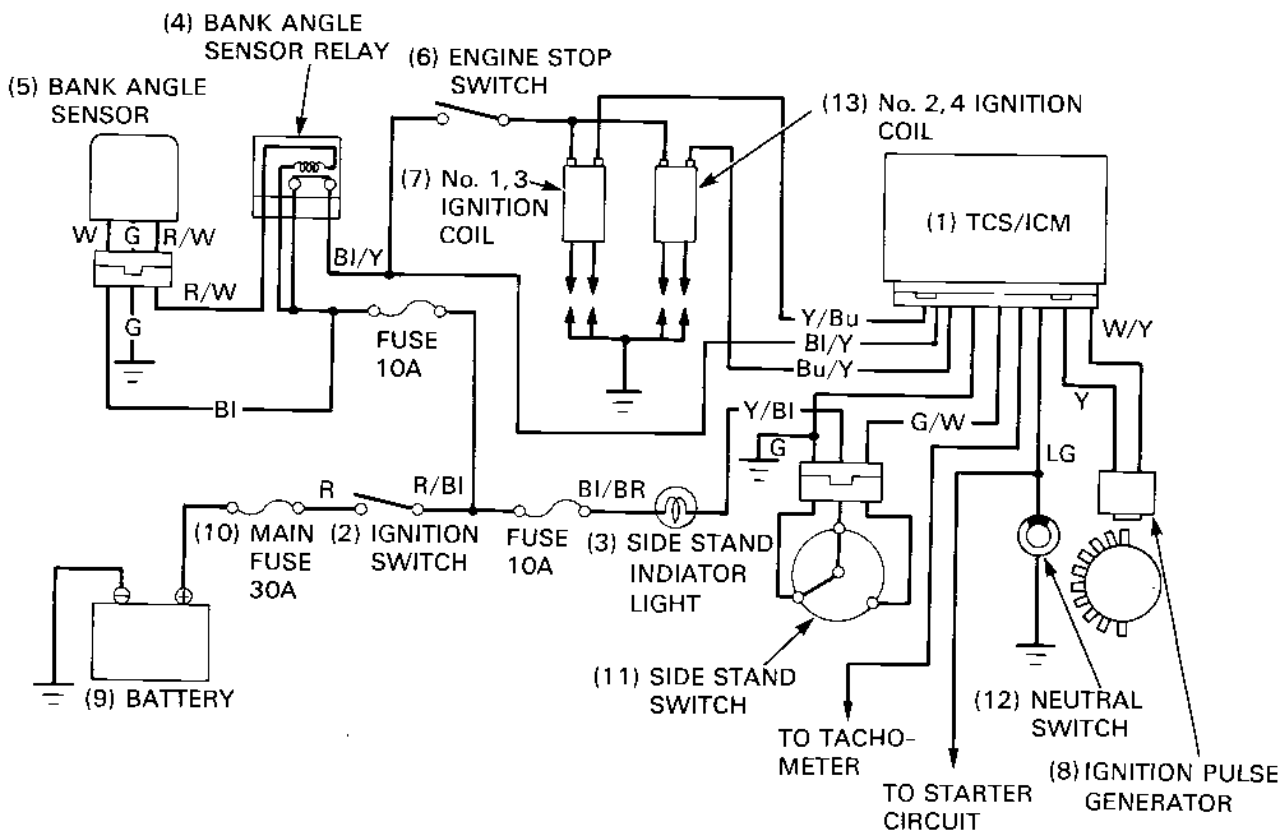




ABS/TCS or LBS-ABS/TCS Model

ABS/TCS model shown:





Troubleshooting

No spark at all plugs (Faulty input system)

- If there is no spark at all plugs, the problem could be at the input of the ignition system (ignition pulse generator, power input circuit of the ignition control module (ICM), neutral switch, side stand switch or ICM).

Check for loose or poorly connected ICM connector.
- Abnormal → • Poorly connected connector
- Normal ↓

Check for loose or poorly connected ignition coil 3P mini connector.
- Abnormal → • Poorly connected connector
- Normal ↓

Check for battery voltage between the power input line (Black/White: standard model, Black/Yellow: ABS•TCS model) and ground (Green) at the ICM connector with the engine stop switch at RUN (except ABS•TCS model) and the ignition switch ON (page 18-6).
- Abnormal →
  - Faulty ignition switch
  - Faulty engine stop switch (except ABS•TCS model) For the engine stop switch inspection of ABS•TCS model, see page 18-1.
  - Open circuit in wire harness
  - Loose or poor contact of related circuit connectors
  - Faulty bank angle sensor relay
  - Faulty bank angle sensor
- Normal ↓

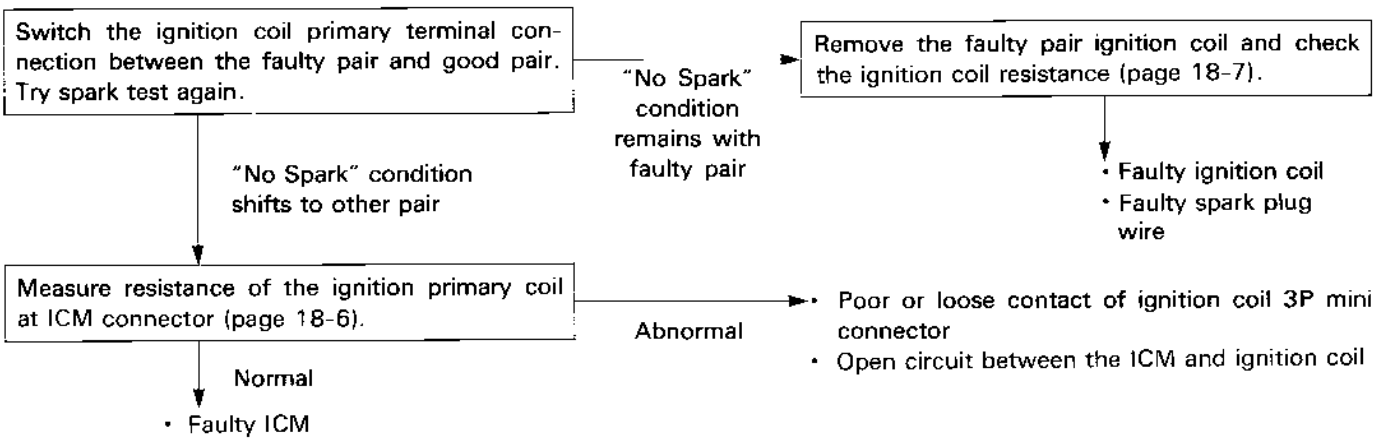
Measure the ignition pulse generator resistance at the ICM connector (page 18-6).
- Abnormal → Check the ignition pulse generator (page 18-7).
  - Normal →
    - Open circuit between the ICM and ignition pulse generator
    - Loose or poor contact of the ignition pulse generator connector
  - Abnormal →
    - Faulty ignition pulse generator
- Normal ↓

Check the neutral switch for continuity at the ICM connector (page 18-6).
- Abnormal → Check the neutral switch.
  - Normal →
    - Open circuit between the ICM and neutral switch
    - Loose or poor contact of the neutral switch connectors
  - Abnormal →
    - Faulty neutral switch
- Normal ↓

Check the side stand switch at the ICM connector (page 18-6).
- Abnormal → Check the side stand switch (page 21-4).
  - Normal →
    - Open circuit between the ICM and side stand switch
    - Loose or poor contact of the side stand switch connector
  - Abnormal →
    - Faulty side stand switch
- Normal ↓
  - Faulty ICM

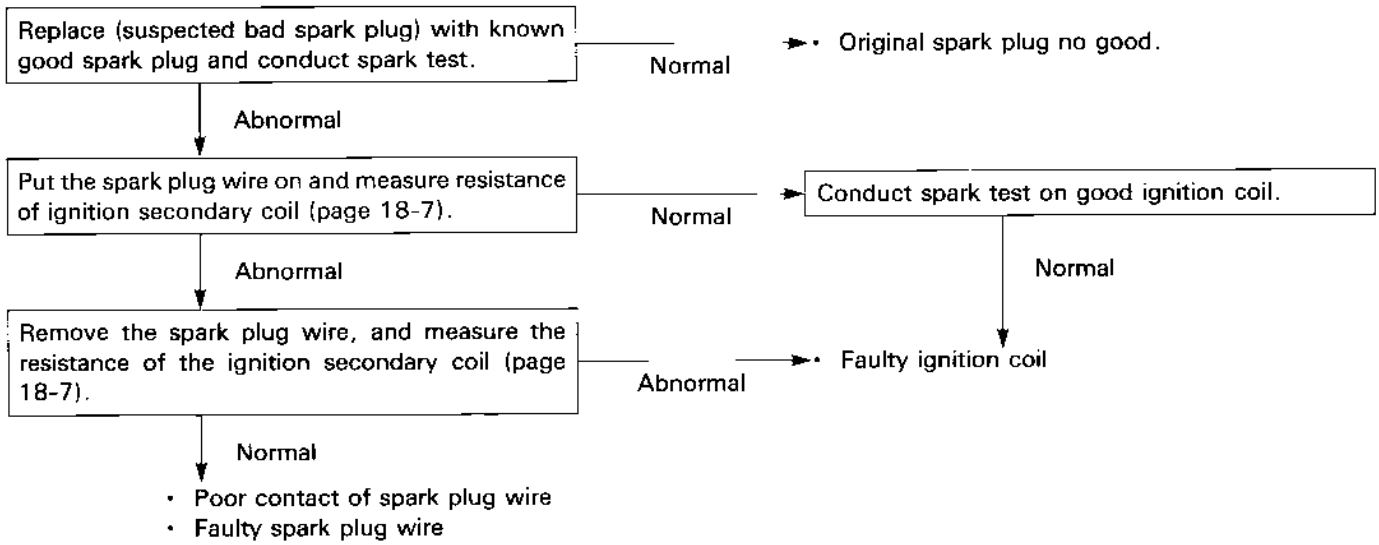
No spark at either ignition group

- If there is no spark at either group, the problem is suspected in the primary coil side of the ignition system (ignition coil, or ignition control module (ICM) and ignition coil circuit).

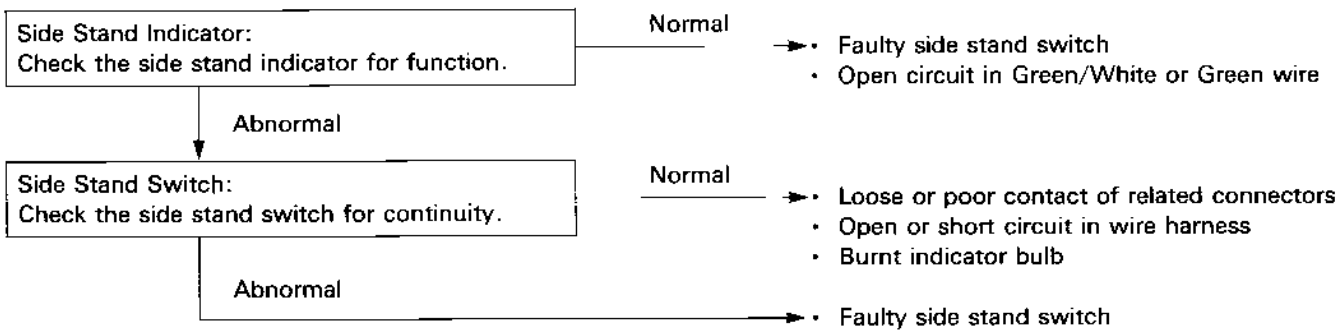


No spark at one plug (Trouble in secondary coil side)

- Faulty spark plug is most likely.



Side stand switch does not function at all.



Ignition System Inspection

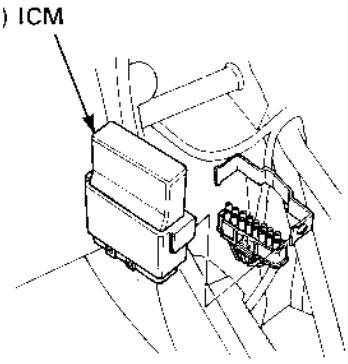
NOTE

- Check the system components and lines step-by-step according to the troubleshooting chart on pages 18-4 and 18-5.

Standard model:
Remove the left fairing pocket (page 2-6).

Remove the ignition control module (ICM) from the stay, disconnect the ICM connector and check it for loose or corroded terminals.

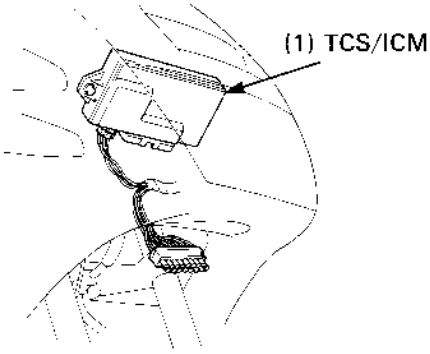
STANDARD MODEL:



ABS/TCS or LBS-ABS/TCS model:
Remove the middle fairing inner cover (page 2-7).
Disconnect the TCS/ignition control module (ICM) 16P connector and check it for loose or corroded terminals.

Measure the data between the connector terminals using the following chart.

ABS/TCS or LBS-ABS/TCS MODEL:



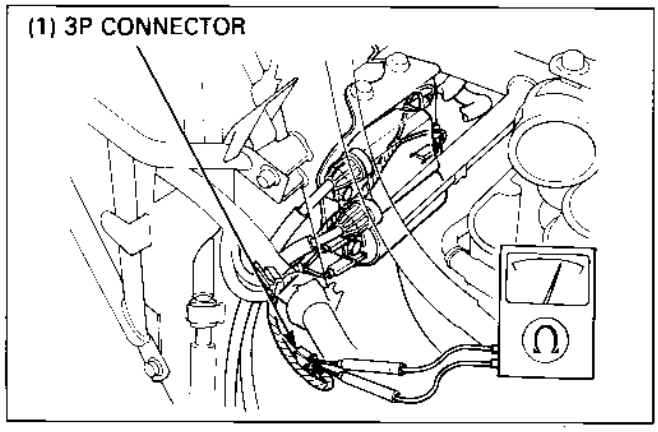
Item		Terminals	Standards (20°C/68°F)
Battery voltage input line		Black/white [ABS/TCS or LBS-ABS/TCS model: Black/Yellow] (+) and Ground (−) with the engine stop switch RUN (Standard model) and the ignition switch ON.	Battery voltage should register
Ignition pulse generator line		Yellow and White/yellow	405—495 Ω
Ignition primary coil line	No. 1,3	Yellow/blue and Black/white	2.16—3.19 Ω
	No. 2,4	Blue/yellow and Black/white	
Neutral switch line		Light green and Ground	Continuity in neutral No continuity in any gear
Side stand switch line		Green/white and Ground	Continuity with the stand up No continuity with the stand down
Ground line		Green and Ground	Continuity
Tachometer line		Yellow/green and Green wire connector of the harness side at the instruments	Continuity

Ignition Coil

Inspection

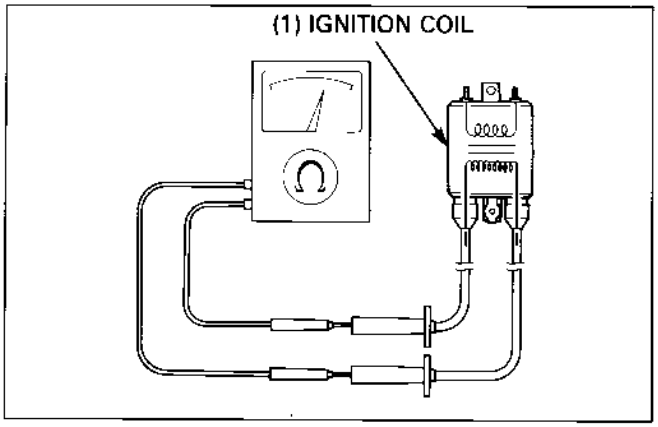
Remove the upper fairing (page 2-9).
Disconnect the ignition primary coil 3P connector (white) and measure the primary coil resistance between each ignition coil.

Primary coil resistance:
Standard: 2.16–3.19Ω (20°C/68° F)



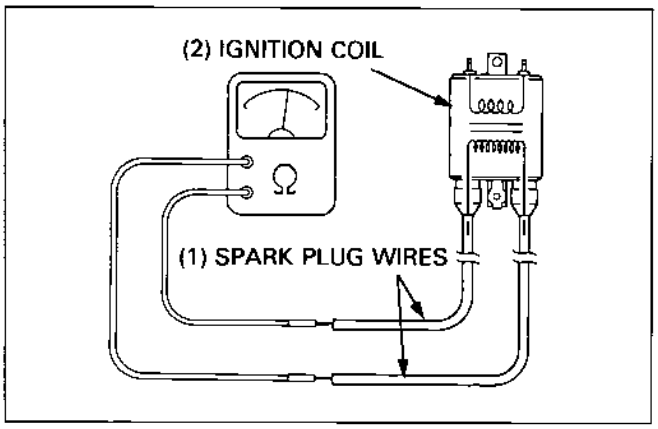
Disconnect the spark plug caps from the plugs and measure the secondary coil resistance with the spark plug caps in place.

Standard: 22.5–27.5kΩ (20°C/68° F)



If the resistance is out of the range, remove the spark plug caps and measure the resistance between the secondary coil terminals

Standard: 13.5–16.5kΩ (20°C/68° F)



Ignition Pulse Generator Inspection

NOTE

- It is not necessary to remove the ignition pulse generator to make this inspection.

Standard model:

Remove the right side cover (page 2-2).

ABS/TCS or LBS-ABS/TCS model:

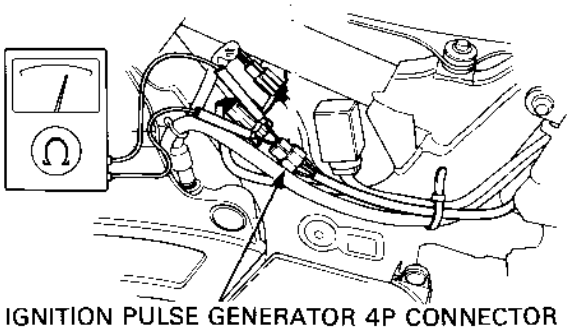
Remove the top shelter (page 2-5).

Disconnect the ignition pulse generator 4P connector and measure the resistance between the White/Yellow and Yellow wires.

Standard: 405—495Ω (20°C/68°F)

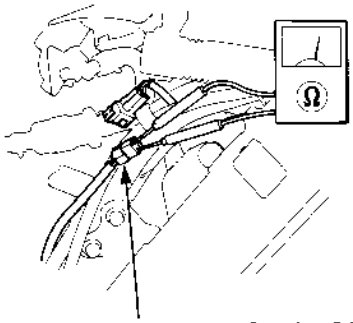
Refer to page 18-9 for ignition pulse generator replacement.

STANDARD MODEL:



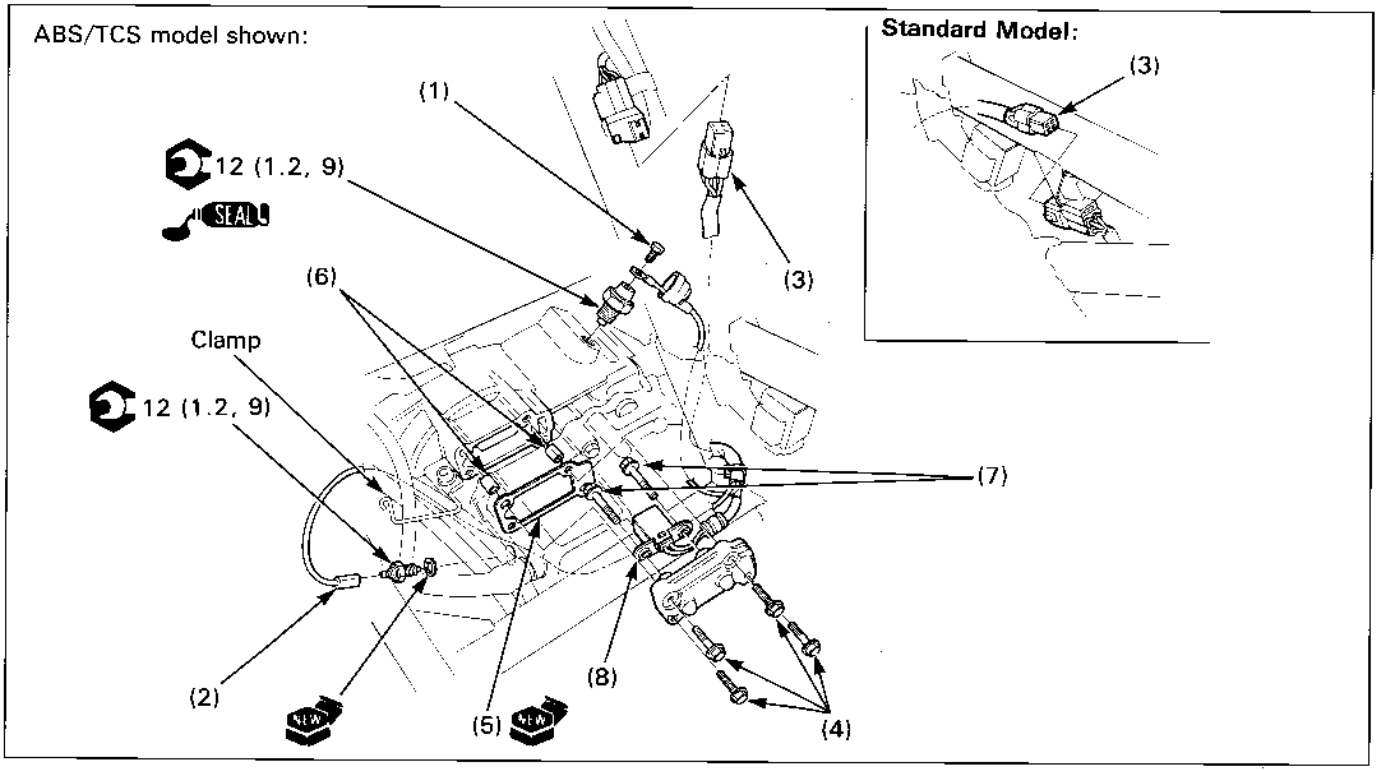
(1) IGNITION PULSE GENERATOR 4P CONNECTOR

ABS/TCS or LBS-ABS/TCS MODEL:



(1) IGNITION PULSE GENERATOR 4P CONNECTOR

Ignition Pulse Generator Removal/Installation



Requisite Service

- Fuel tank Removal/Installation (page 2-12).

	Procedure	Q'ty	Remarks
	Removal Order		Installation is in the reverse order of removal.
(1)	Oil pressure switch terminal	1	
(2)	Neutral switch connector	1	At installation, insert the neutral switch wire into the clamp as shown.
(3)	Waterproof connector (4P)	1	
(4)	Bolt	4	
(5)	Gasket	1	
(6)	Dowel pin	2	
(7)	Bolt	2	
(8)	Ignition pulse generator	1	

Symbols

The symbols used throughout this manual show specific service procedures. If supplementary information is required pertaining to these symbols, it would be explained specifically in the text without the use of the symbols.

	Replace the part(s) with new one(s) before assembly.
	Use special tool
	Use optional tool. Use the same procedure you use to order parts.
 10 (1.0, 7.2)	Torque specification. 10 N·m (1.0 kg-m, 7.2 ft-lb)
	Use recommended engine oil, unless otherwise specified.
	Use molybdenum oil solution (mixture of the engine oil and molybdenum grease in a ratio of 1 : 1).
	Use multi-purpose grease (Lithium based multi-purpose grease NLGI #2 or equivalent)
	Use molybdenum disulfide grease (containing more than 3% molybdenum disulfide, NLGI #2 or equivalent) Example: Molykote® BR-2 plus manufactured by Dow Corning, U.S.A. Multi-purpose M-2 manufactured by Mitsubishi Oil Japan
	Use molybdenum disulfide paste (containing more than 40% molybdenum disulfide, NLGI #2 or equivalent) Example: Molykote® G-n Paste manufactured by Dow Corning, U.S.A. Honda Moly 60 (U.S.A. only) Rocol ASP manufactured by Rocol Limited, U.K. Rocol Paste manufactured by Sumico Lubricant, Japan
	Use silicone grease
	Apply a locking agent. Use a middle strength locking agent unless otherwise specified.
	Apply sealant
	Use brake fluid, DOT 3 or DOT 4. Use the recommended brake fluid, unless otherwise specified.
	Use Fork or Suspension Fluid.