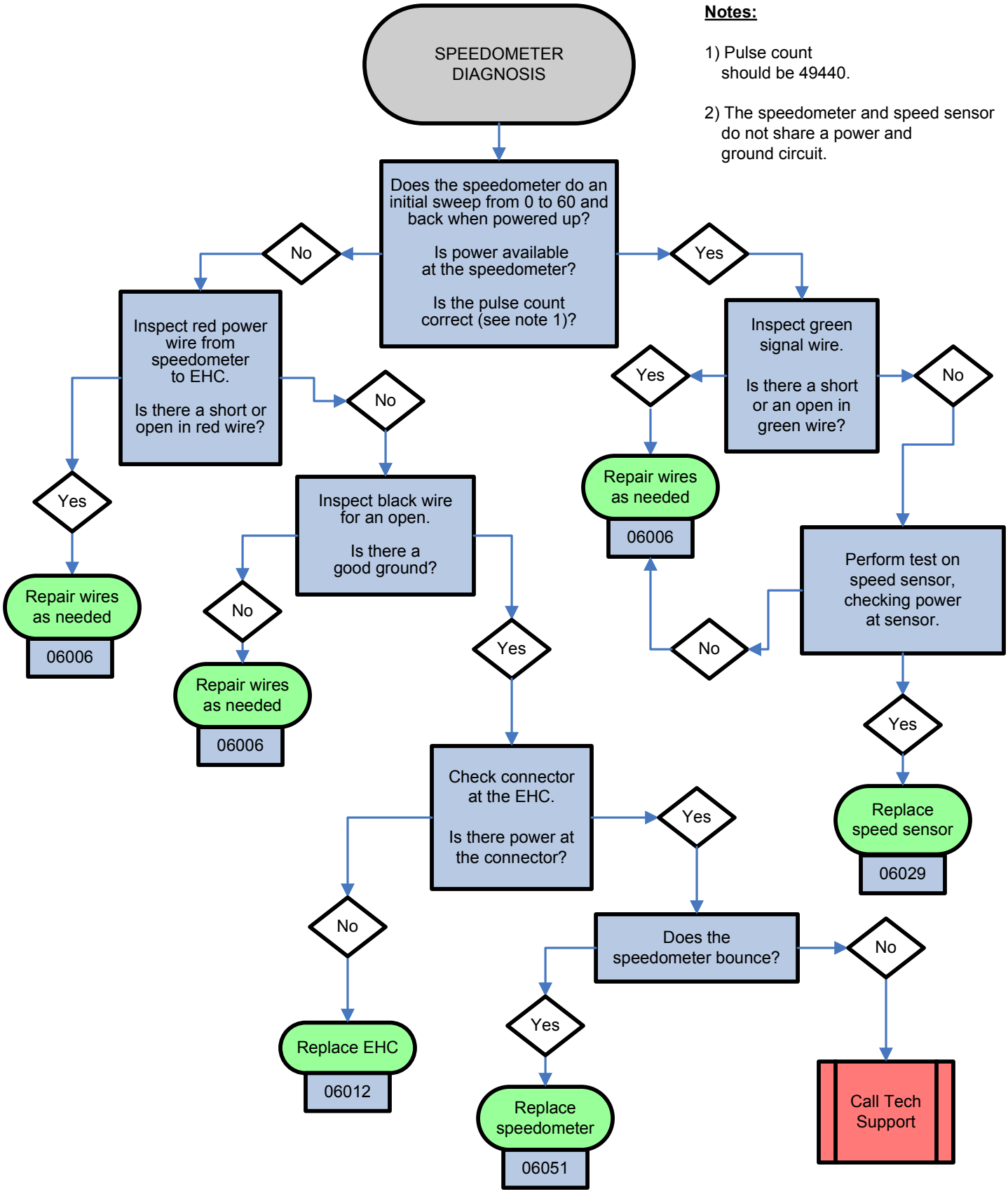
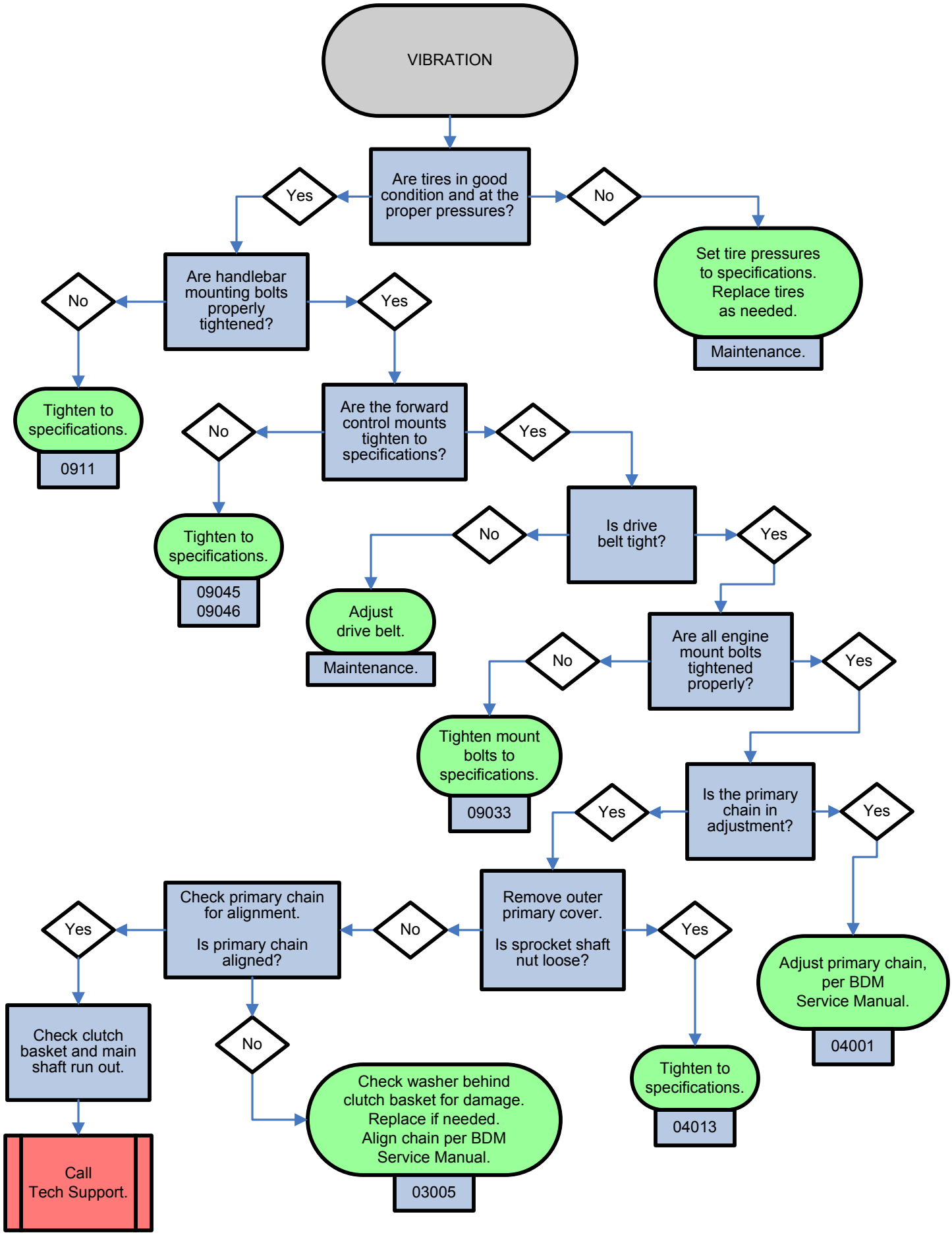
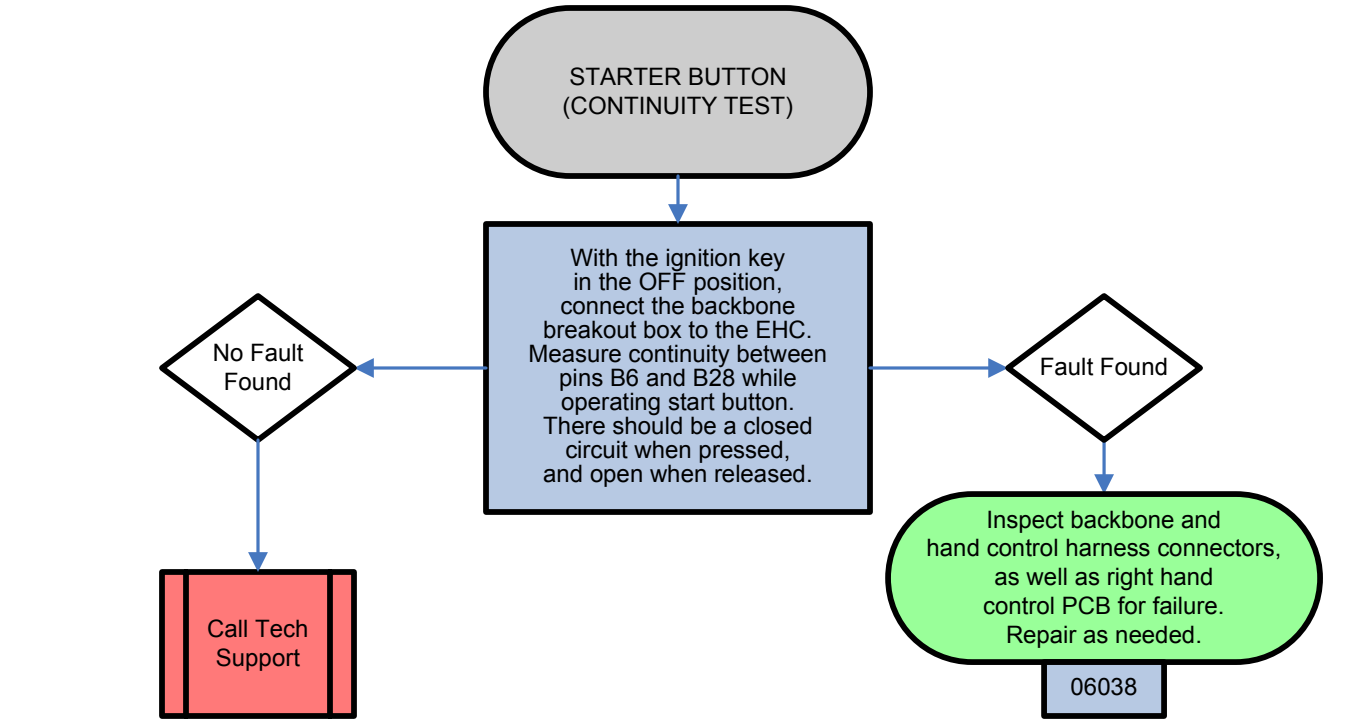
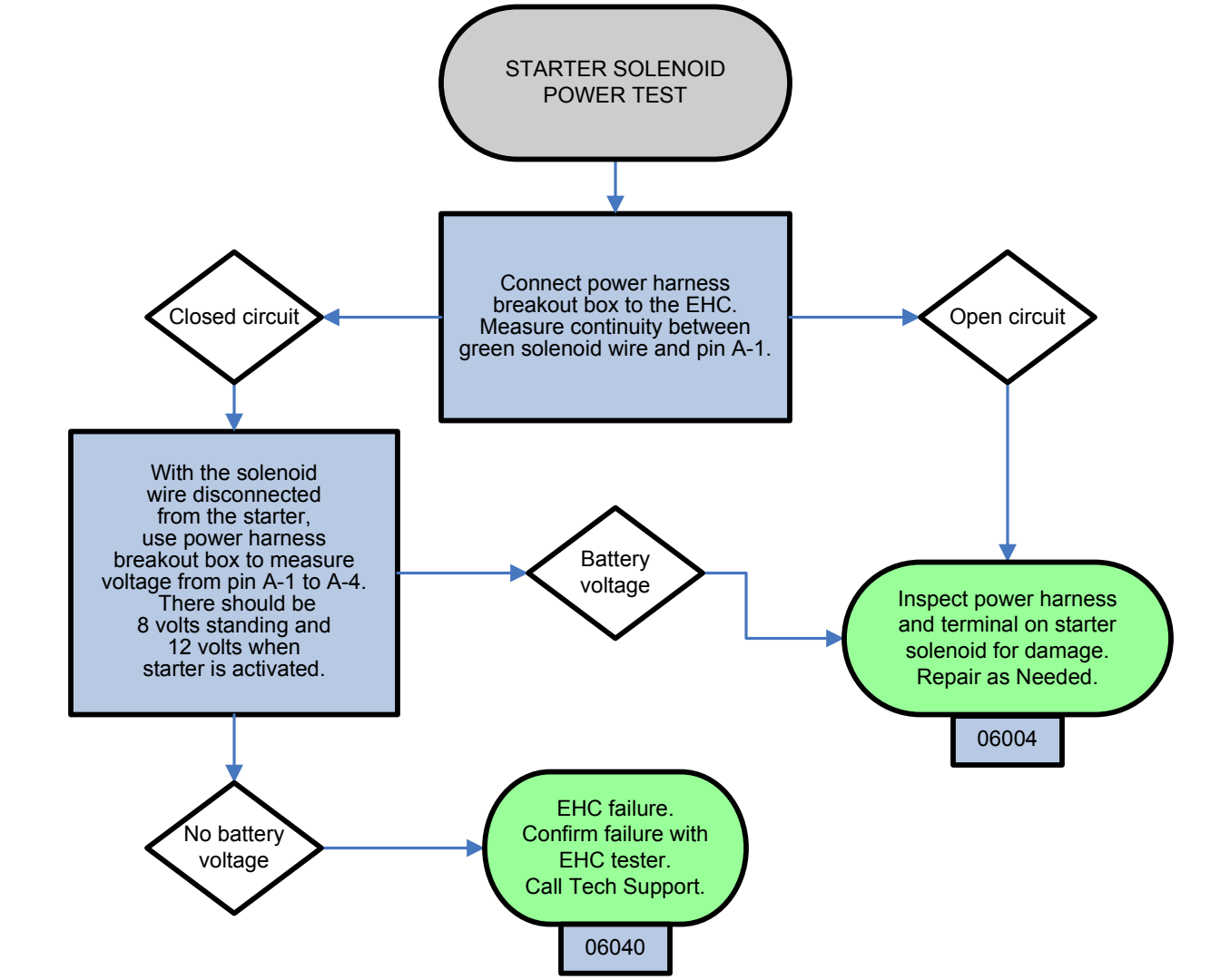
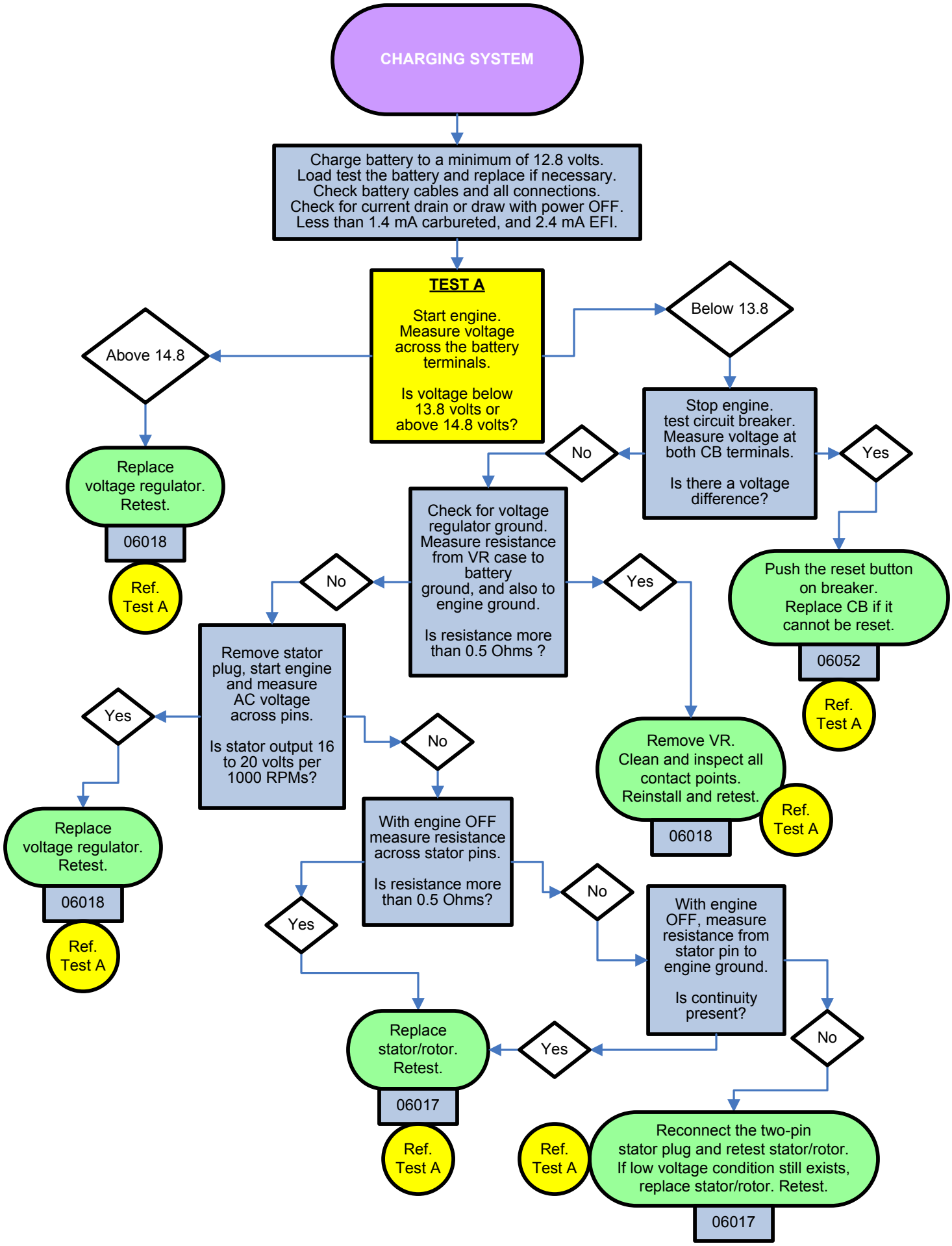
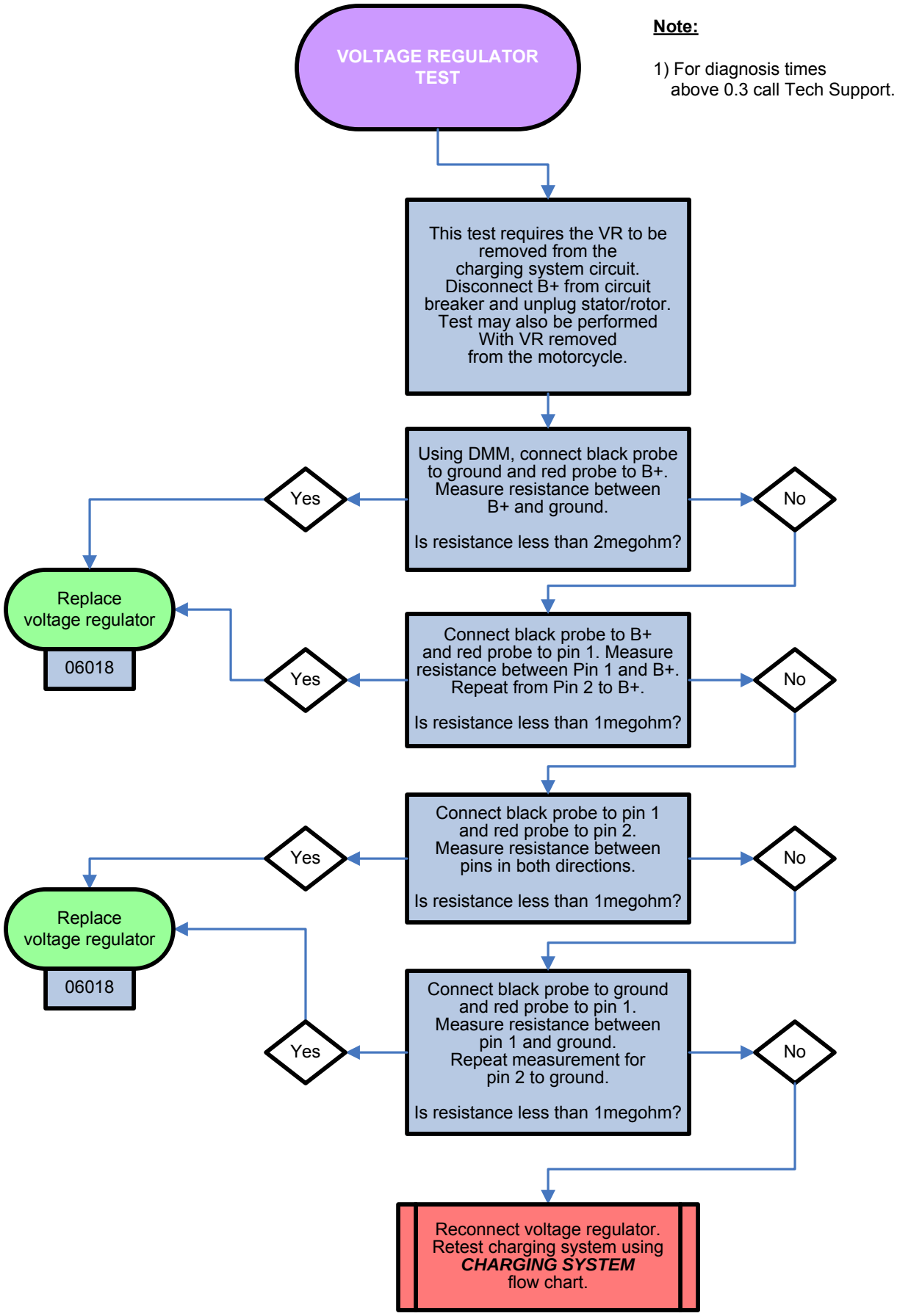

SPEEDOMETER DIAGNOSIS
Notes:
1) Pulse count should be 49440.
2) The speedometer and speed sensor do not share a power and ground circuit.
Does the speedometer do an initial sweep from 0 to 60 and back when powered up?
Is power available at the speedometer?
Is the pulse count correct (see note 1)?
No
Yes
Inspect red power wire from speedometer to EHC.
Is there a short or open in red wire?
Yes
No
Repair wires as needed
06006
Inspect black wire for an open.
Is there a good ground?
No
Yes
Repair wires as needed
06006
Inspect green signal wire.
Is there a short or an open in green wire?
Yes
No
Repair wires as needed
06006
Perform test on speed sensor, checking power at sensor.
No
Yes
Replace speed sensor
06029
Check connector at the EHC.
Is there power at the connector?
No
Yes
Replace EHC
06012
Does the speedometer bounce?
Yes
No
Replace speedometer
06051
Call Tech Support

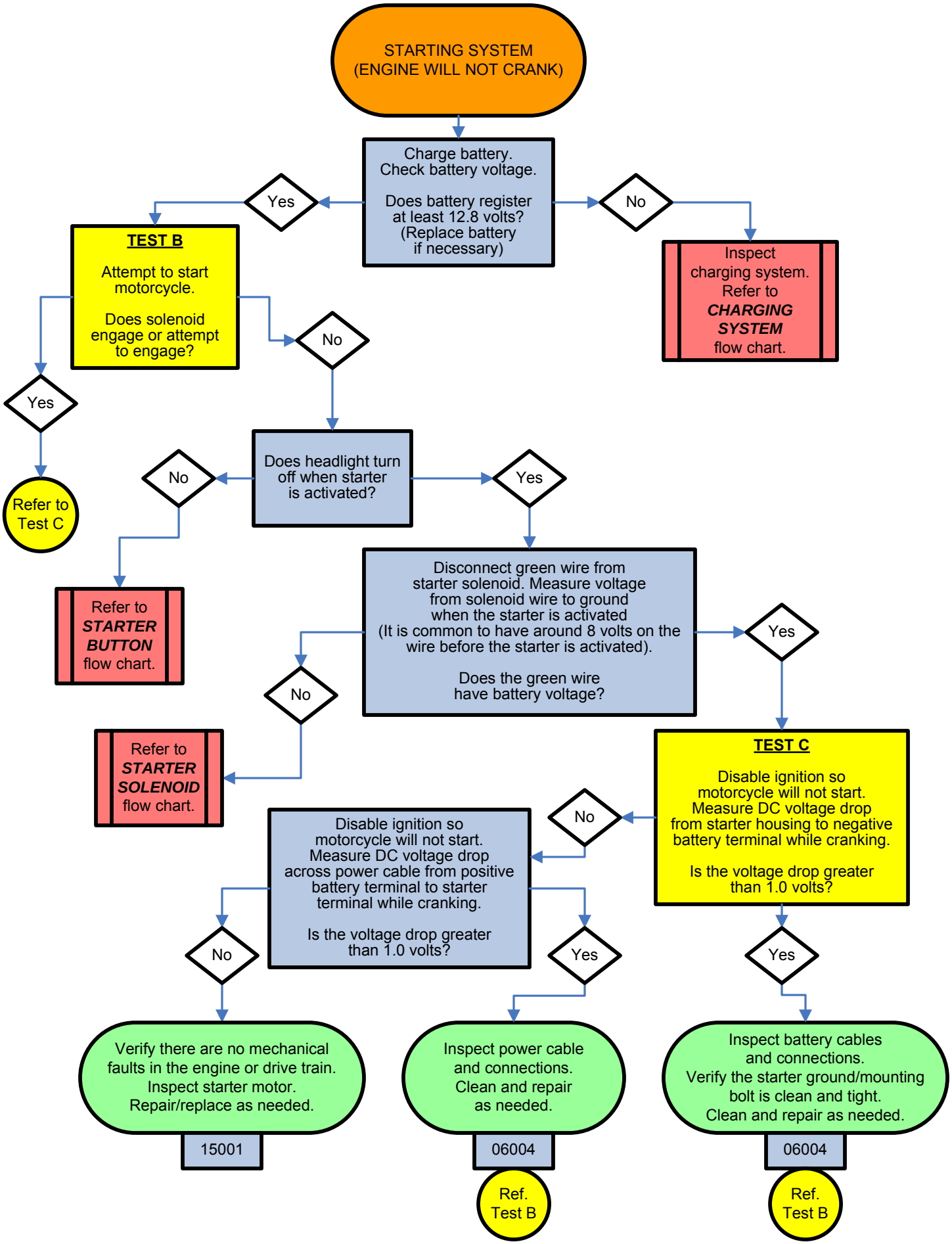

VIBRATION
Are tires in good condition and at the proper pressures?
Yes
No
Set tire pressures to specifications. Replace tires as needed.
Maintenance.
Are handlebar mounting bolts properly tightened?
No
Yes
Tighten to specifications.
0911
Are the forward control mounts tighten to specifications?
No
Yes
Tighten to specifications.
09045
09046
Is drive belt tight?
No
Yes
Adjust drive belt.
Maintenance.
Are all engine mount bolts tightened properly?
No
Yes
Tighten mount bolts to specifications.
09033
Is the primary chain in adjustment?
Yes
Yes
Remove outer primary cover.
Is sprocket shaft nut loose?
Yes
Adjust primary chain, per BDM Service Manual.
04001
Check primary chain for alignment.
Is primary chain aligned?
No
Yes
Check clutch basket and main shaft run out.
Call Tech Support.
No
Check washer behind clutch basket for damage. Replace if needed. Align chain per BDM Service Manual.
03005
Tighten to specifications.
04013

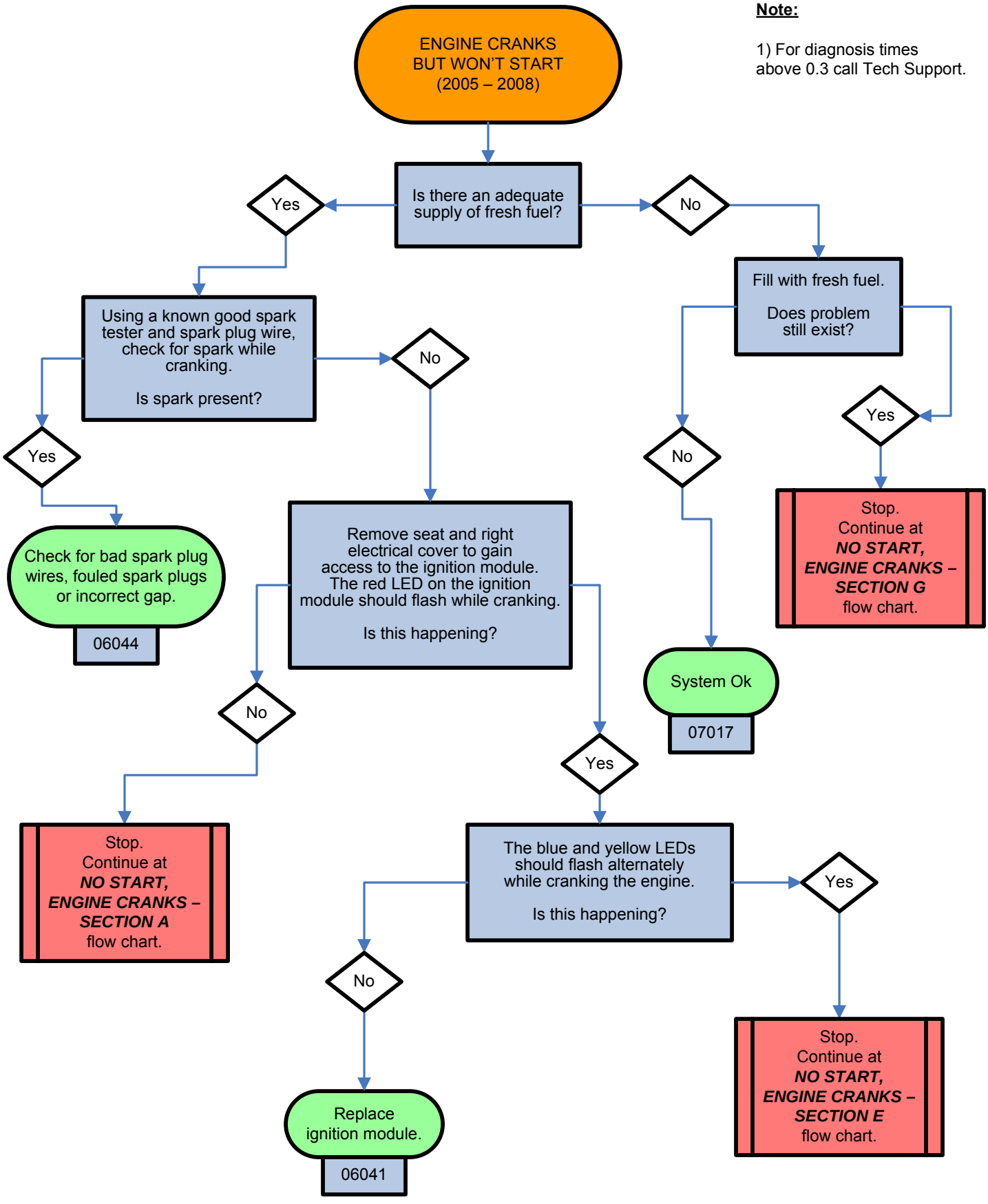

STARTER BUTTON
(CONTINUITY TEST)
With the ignition key in the OFF position, connect the backbone breakout box to the EHC. Measure continuity between pins B6 and B28 while operating start button. There should be a closed circuit when pressed, and open when released.
No Fault Found
Call Tech Support
Fault Found
Inspect backbone and hand control harness connectors, as well as right hand control PCB for failure. Repair as needed.
06038


STARTER SOLENOID
POWER TEST
Connect power harness breakout box to the EHC. Measure continuity between green solenoid wire and pin A-1.
Closed circuit
With the solenoid wire disconnected from the starter, use power harness breakout box to measure voltage from pin A-1 to A-4. There should be 8 volts standing and 12 volts when starter is activated.
Battery voltage
No battery voltage
EHC failure. Confirm failure with EHC tester. Call Tech Support.
06040
Open circuit
Inspect power harness and terminal on starter solenoid for damage. Repair as Needed.
06004


CHARGING SYSTEM
Charge battery to a minimum of 12.8 volts.
Load test the battery and replace if necessary.
Check battery cables and all connections.
Check for current drain or draw with power OFF.
Less than 1.4 mA carbureted, and 2.4 mA EFI.
TEST A
Start engine.
Measure voltage across the battery terminals.
Is voltage below 13.8 volts or above 14.8 volts?
Above 14.8
Below 13.8
Replace voltage regulator. Retest.
06018
Ref. Test A
Stop engine.
test circuit breaker.
Measure voltage at both CB terminals.
Is there a voltage difference?
No
Yes
Push the reset button on breaker.
Replace CB if it cannot be reset.
06052
Ref. Test A
Check for voltage regulator ground.
Measure resistance from VR case to battery ground, and also to engine ground.
Is resistance more than 0.5 Ohms ?
No
Yes
Remove stator plug, start engine and measure AC voltage across pins.
Is stator output 16 to 20 volts per 1000 RPMs?
Yes
No
Remove VR.
Clean and inspect all contact points.
Reinstall and retest.
06018
Ref. Test A
Replace voltage regulator. Retest.
06018
Ref. Test A
With engine OFF measure resistance across stator pins.
Is resistance more than 0.5 Ohms?
Yes
No
With engine OFF, measure resistance from stator pin to engine ground.
Is continuity present?
Yes
No
Replace stator/rotor. Retest.
06017
Ref. Test A
Ref. Test A
Reconnect the two-pin stator plug and retest stator/rotor.
If low voltage condition still exists, replace stator/rotor. Retest.
06017

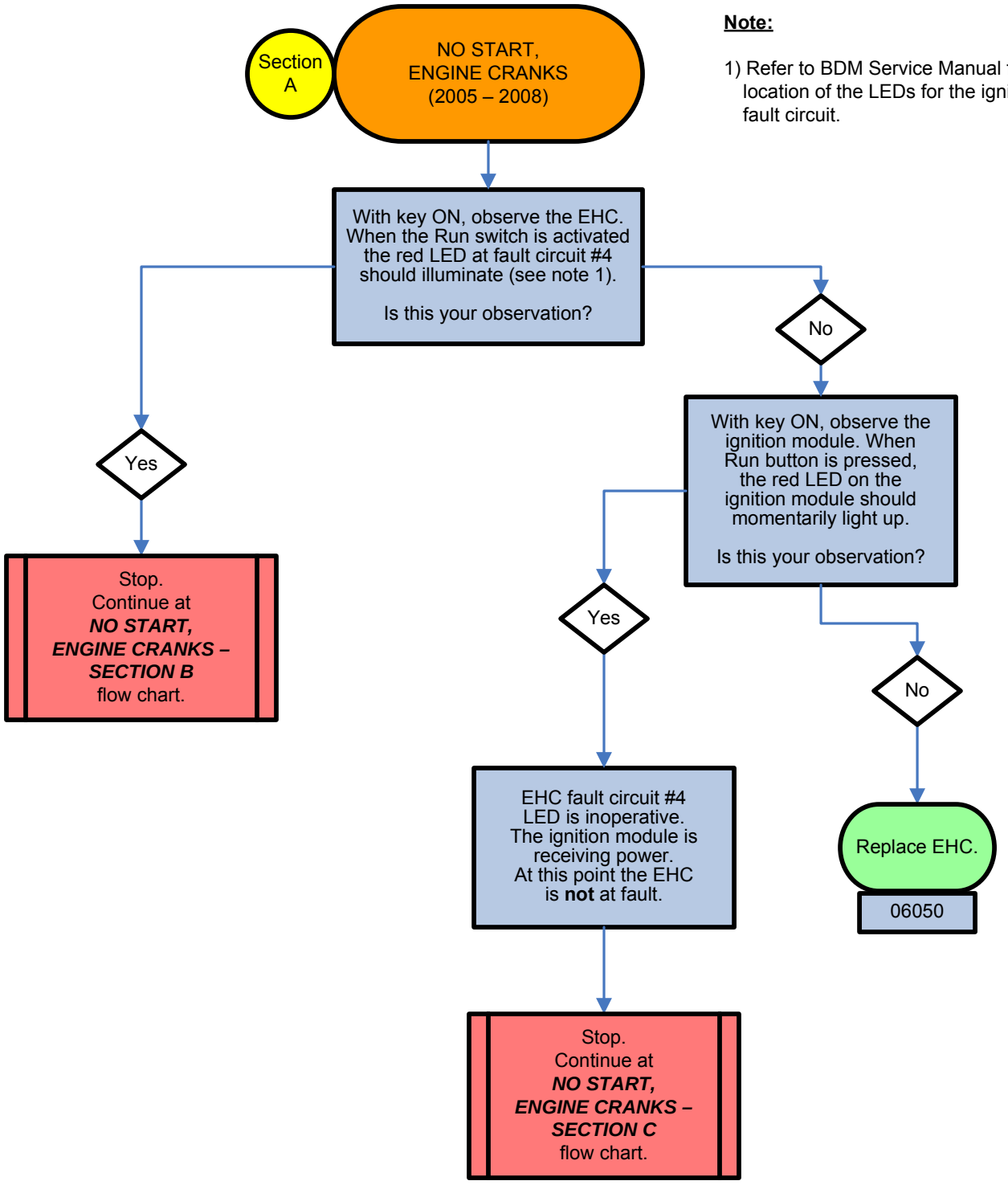

VOLTAGE REGULATOR TEST
Note:
1) For diagnosis times above 0.3 call Tech Support.
This test requires the VR to be removed from the charging system circuit. Disconnect B+ from circuit breaker and unplug stator/rotor. Test may also be performed With VR removed from the motorcycle.
Using DMM, connect black probe to ground and red probe to B+. Measure resistance between B+ and ground.
Is resistance less than 2megohm?
Yes
No
Replace voltage regulator
06018
Connect black probe to B+ and red probe to pin 1. Measure resistance between Pin 1 and B+. Repeat from Pin 2 to B+.
Is resistance less than 1megohm?
Yes
No
Connect black probe to pin 1 and red probe to pin 2. Measure resistance between pins in both directions.
Is resistance less than 1megohm?
Yes
No
Replace voltage regulator
06018
Connect black probe to ground and red probe to pin 1. Measure resistance between pin 1 and ground. Repeat measurement for pin 2 to ground.
Is resistance less than 1megohm?
Yes
No
Reconnect voltage regulator. Retest charging system using CHARGING SYSTEM flow chart.


STARTING SYSTEM
(ENGINE WILL NOT CRANK)
Charge battery.
Check battery voltage.
Does battery register at least 12.8 volts? (Replace battery if necessary)
Yes
No
TEST B
Attempt to start motorcycle.
Does solenoid engage or attempt to engage?
Inspect charging system. Refer to CHARGING SYSTEM flow chart.
Yes
No
Refer to Test C
Does headlight turn off when starter is activated?
No
Yes
Refer to STARTER BUTTON flow chart.
Disconnect green wire from starter solenoid. Measure voltage from solenoid wire to ground when the starter is activated (It is common to have around 8 volts on the wire before the starter is activated).
Does the green wire have battery voltage?
Yes
No
Refer to STARTER SOLENOID flow chart.
TEST C
Disable ignition so motorcycle will not start. Measure DC voltage drop from starter housing to negative battery terminal while cranking.
Is the voltage drop greater than 1.0 volts?
No
Disable ignition so motorcycle will not start. Measure DC voltage drop across power cable from positive battery terminal to starter terminal while cranking.
Is the voltage drop greater than 1.0 volts?
Yes
Yes
No
Verify there are no mechanical faults in the engine or drive train. Inspect starter motor. Repair/replace as needed.
15001
Inspect power cable and connections. Clean and repair as needed.
06004
Ref. Test B
Inspect battery cables and connections. Verify the starter ground/mounting bolt is clean and tight. Clean and repair as needed.
06004
Ref. Test B



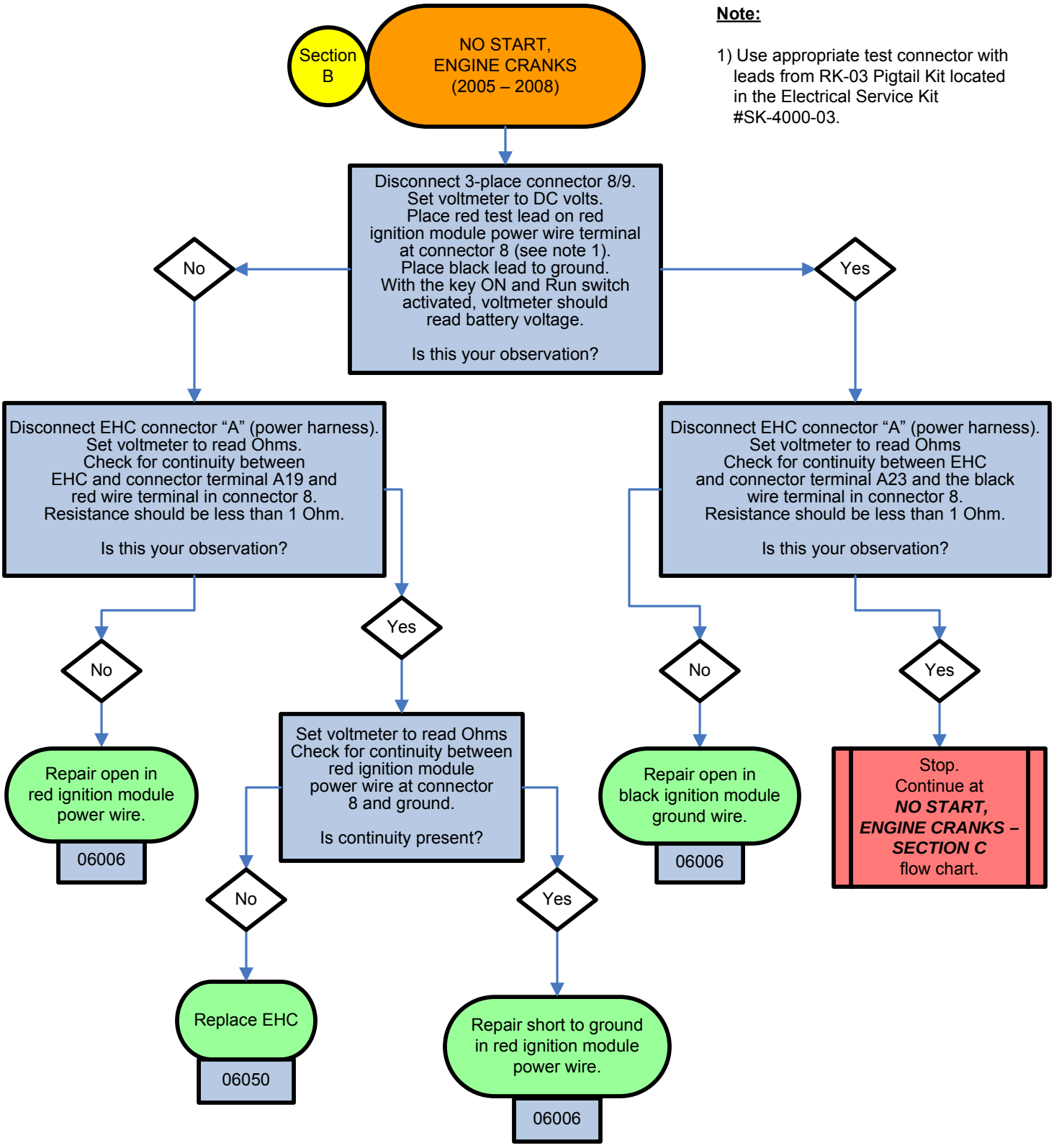
Note:

1) For diagnosis times above 0.3 call Tech Support.



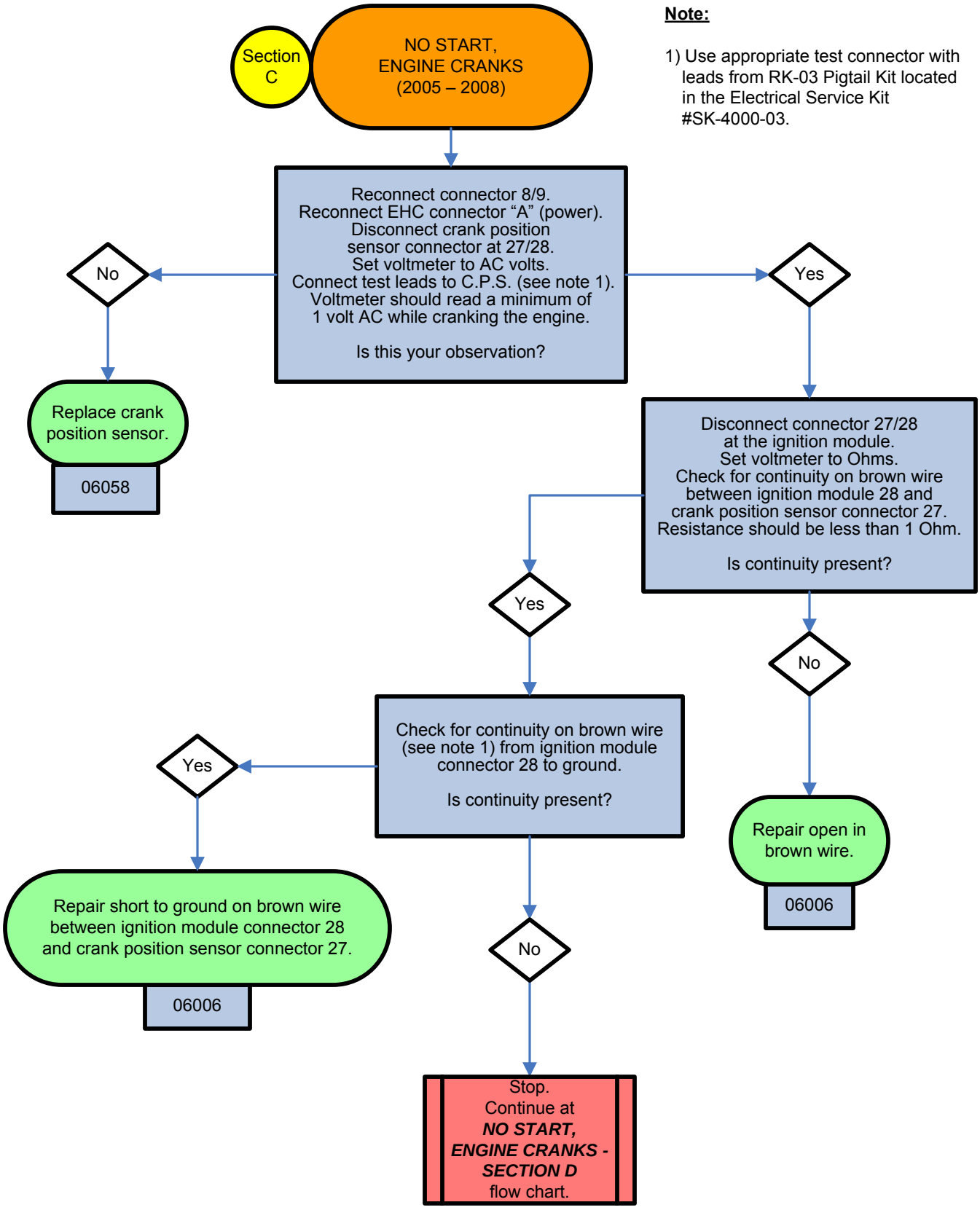
Note:

1) Refer to BDM Service Manual for location of the LEDs for the ignition fault circuit.



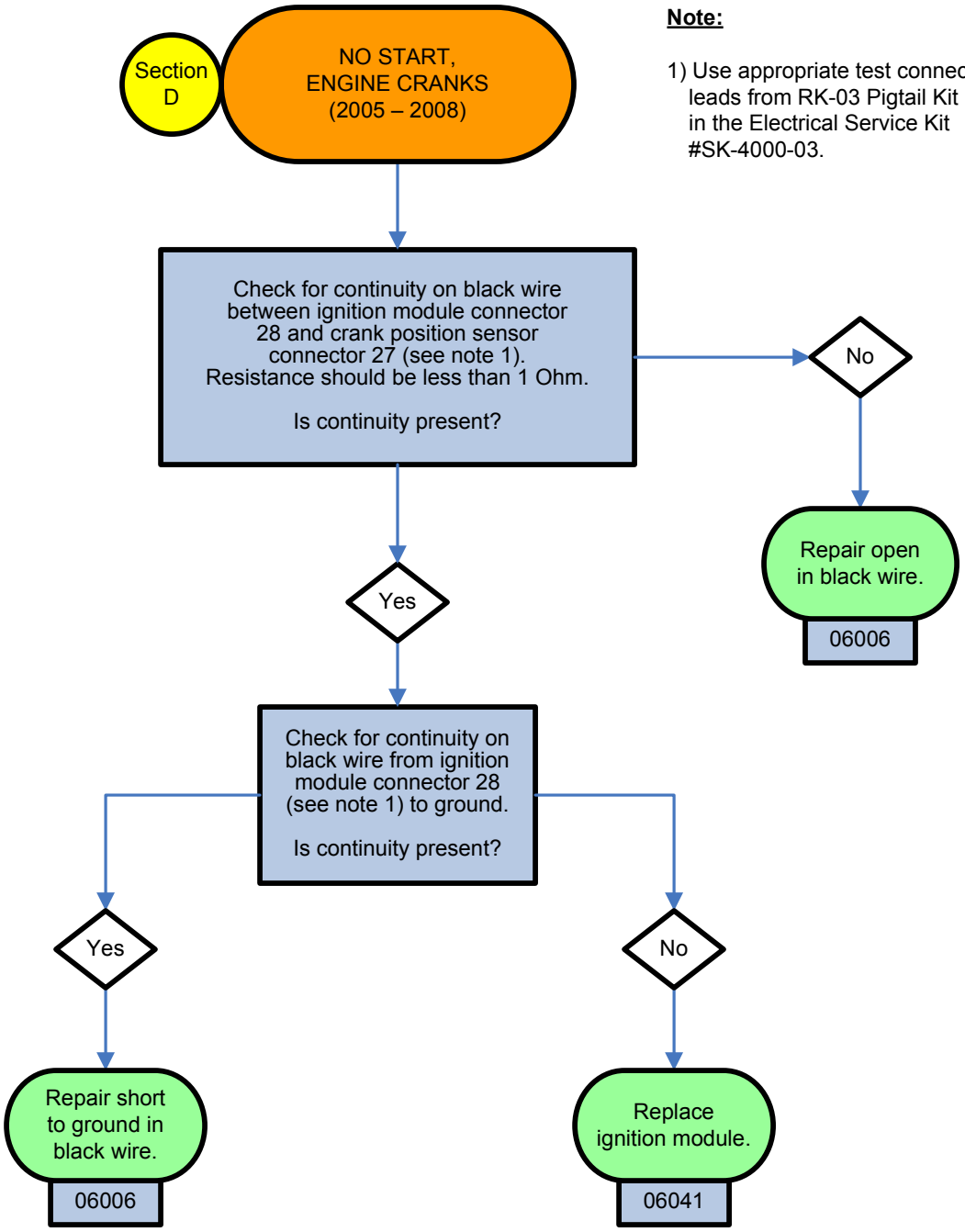
Note:

1) Use appropriate test connector with leads from RK-03 Pigtail Kit located in the Electrical Service Kit #SK-4000-03.



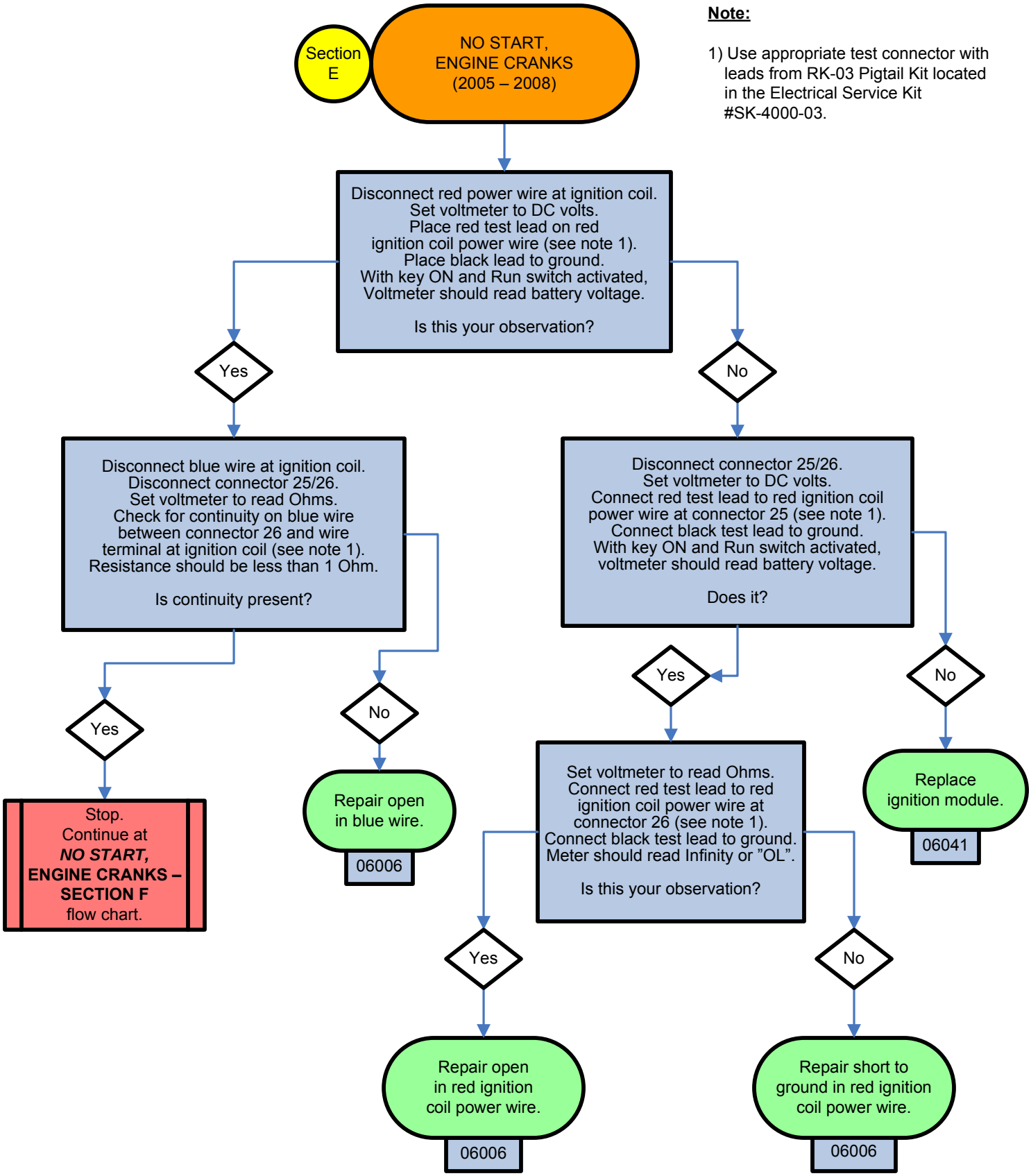
Note:

1) Use appropriate test connector with leads from RK-03 Pigtail Kit located in the Electrical Service Kit #SK-4000-03.



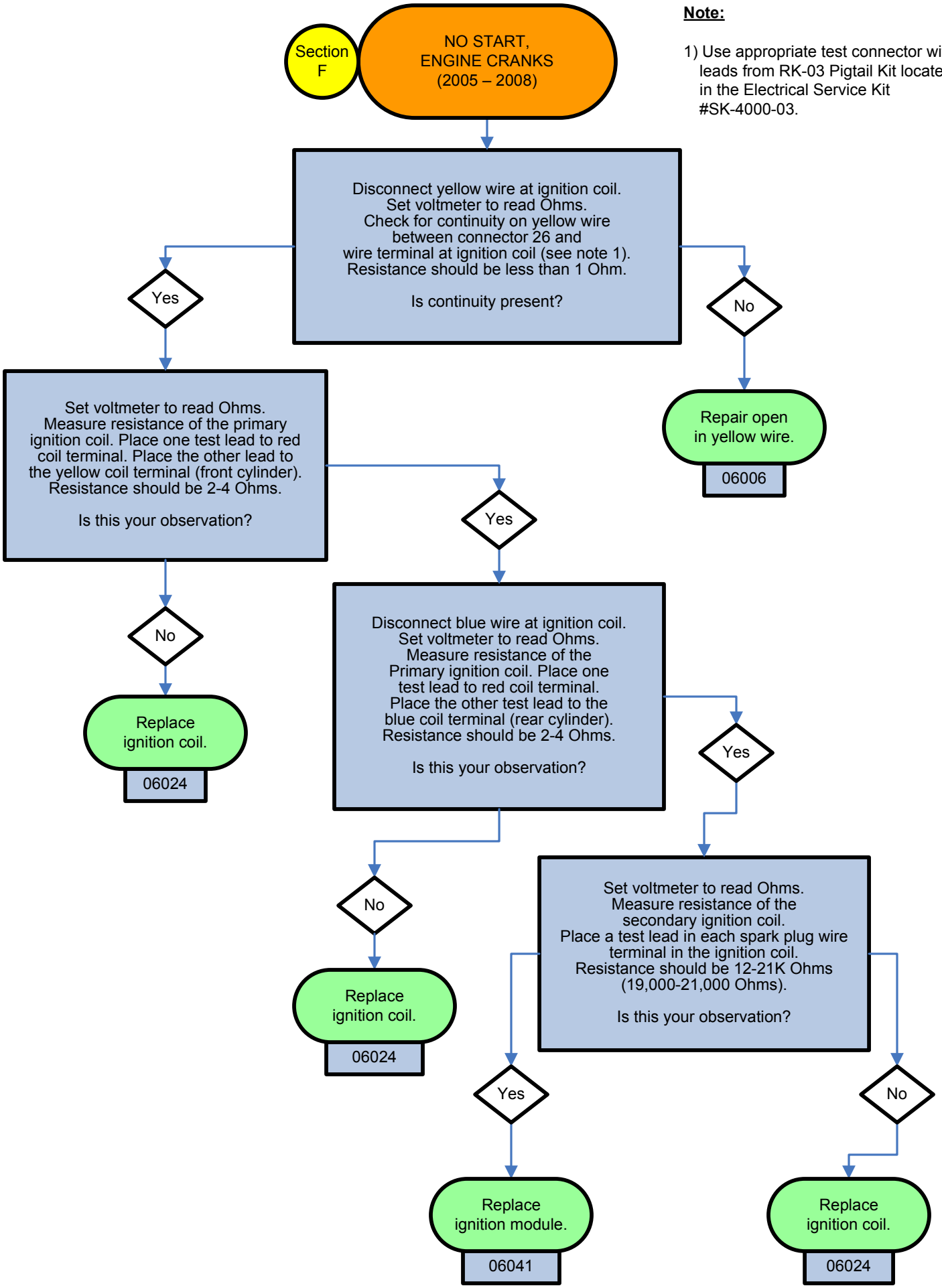
Note:

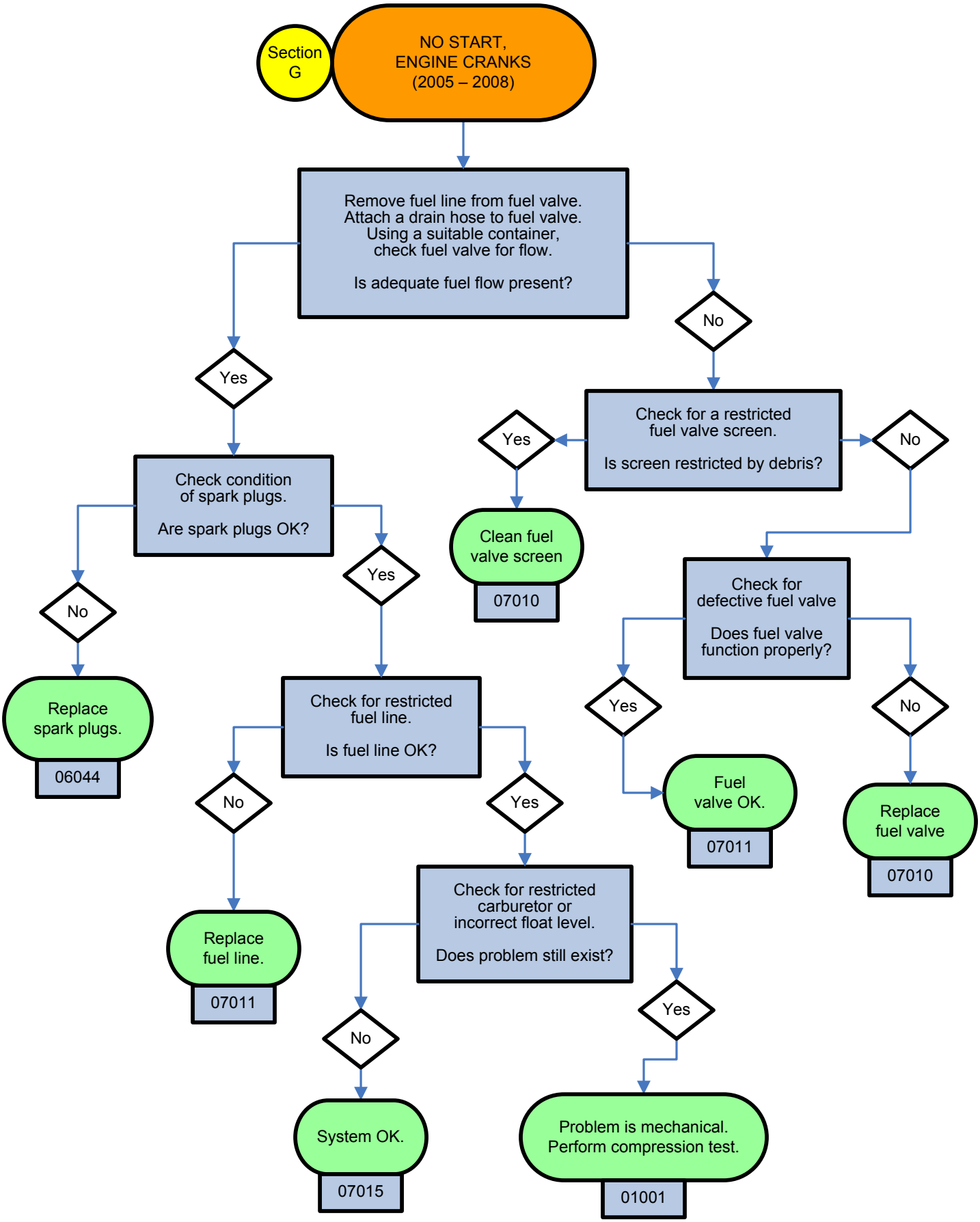
1) Use appropriate test connector with leads from RK-03 Pigtail Kit located in the Electrical Service Kit #SK-4000-03.

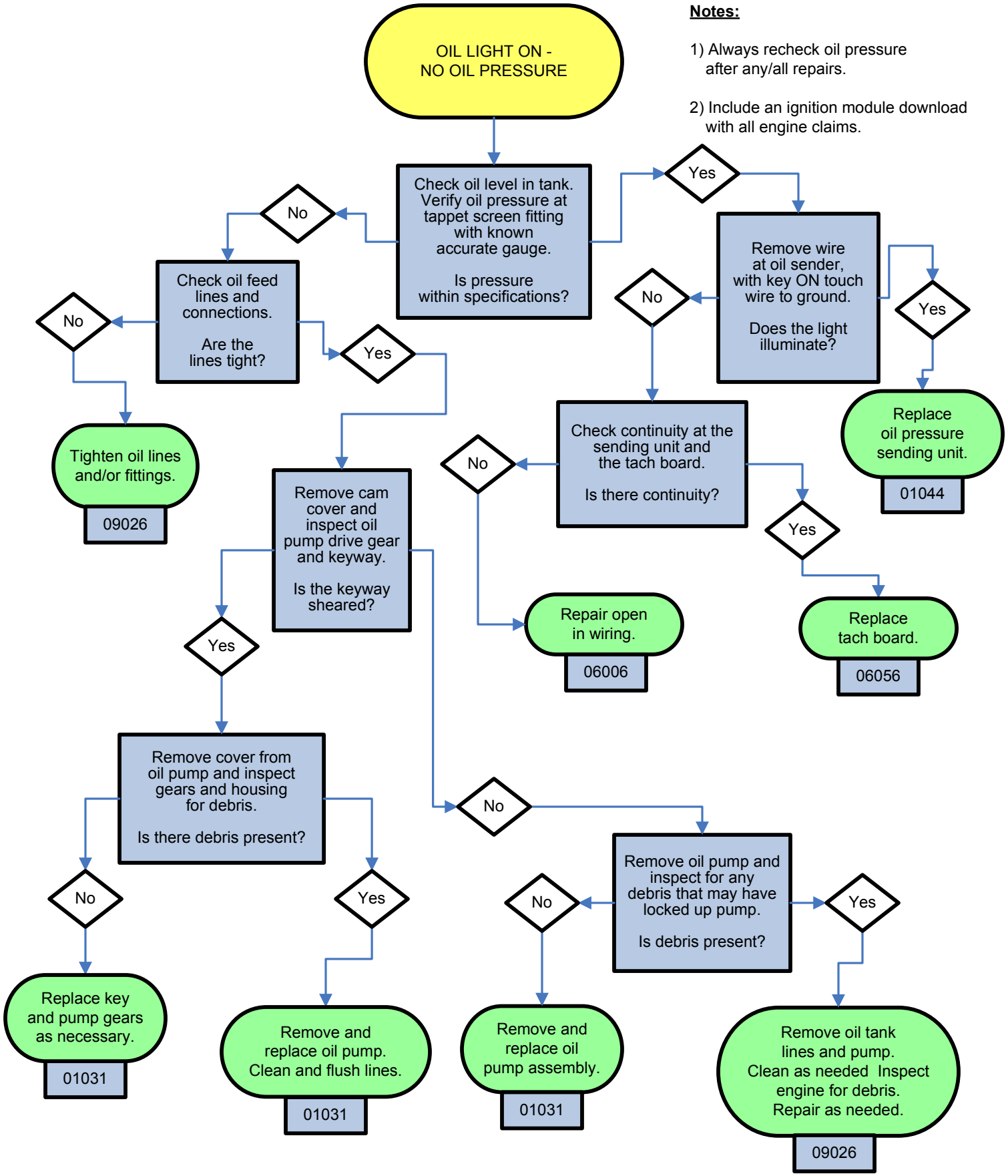


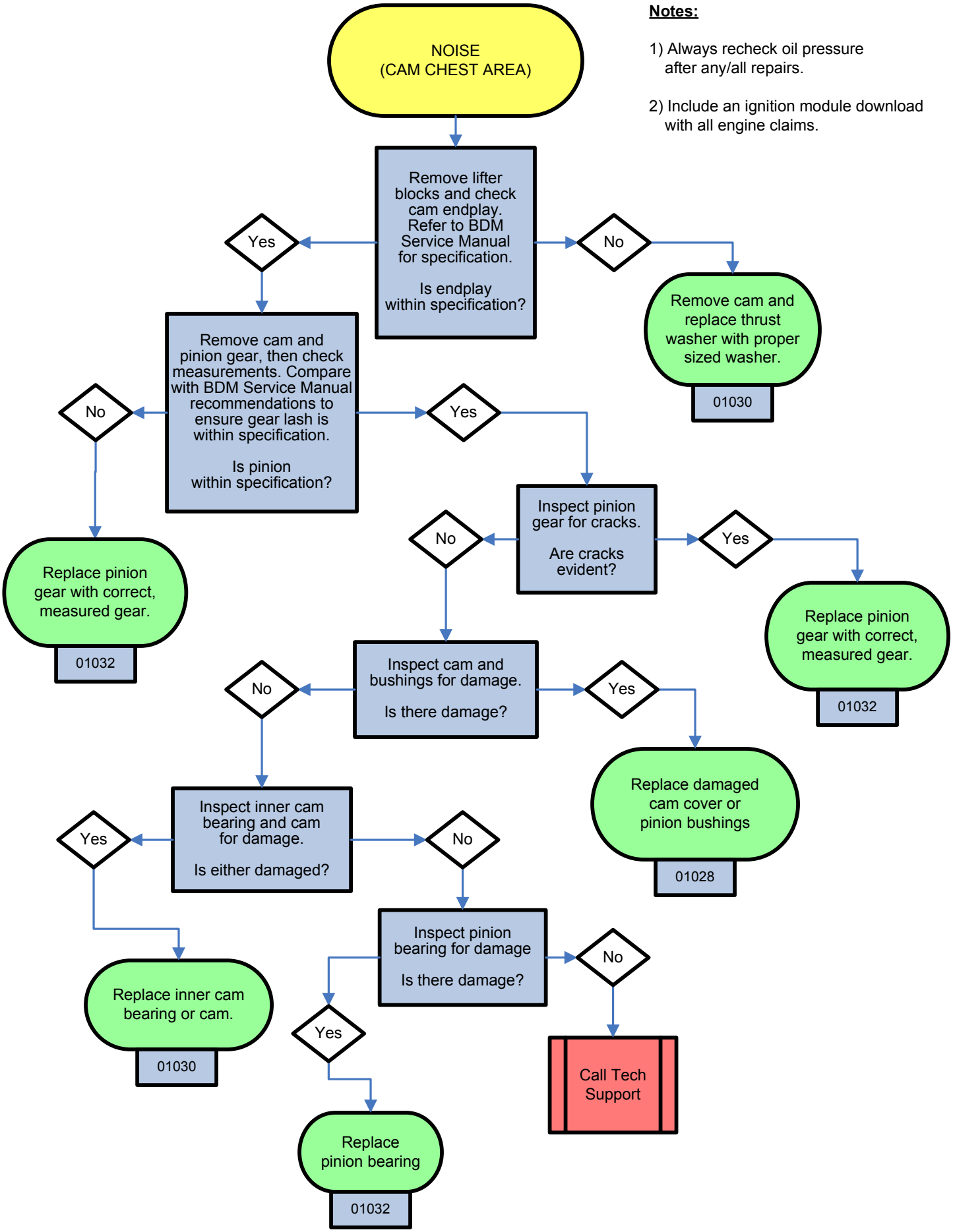
Note:

1) Use appropriate test connector with leads from RK-03 Pigtail Kit located in the Electrical Service Kit #SK-4000-03.


Section F
NO START, ENGINE CRANKS (2005 – 2008)
Note:
1) Use appropriate test connector with leads from RK-03 Pigtail Kit located in the Electrical Service Kit #SK-4000-03.
Disconnect yellow wire at ignition coil. Set voltmeter to read Ohms. Check for continuity on yellow wire between connector 26 and wire terminal at ignition coil (see note 1). Resistance should be less than 1 Ohm.
Is continuity present?
Yes
No
Repair open in yellow wire.
06006
Set voltmeter to read Ohms. Measure resistance of the primary ignition coil. Place one test lead to red coil terminal. Place the other lead to the yellow coil terminal (front cylinder). Resistance should be 2-4 Ohms.
Is this your observation?
Yes
No
Replace ignition coil.
06024
Disconnect blue wire at ignition coil. Set voltmeter to read Ohms. Measure resistance of the Primary ignition coil. Place one test lead to red coil terminal. Place the other test lead to the blue coil terminal (rear cylinder). Resistance should be 2-4 Ohms.
Is this your observation?
Yes
No
Replace ignition coil.
06024
Set voltmeter to read Ohms. Measure resistance of the secondary ignition coil. Place a test lead in each spark plug wire terminal in the ignition coil. Resistance should be 12-21K Ohms (19,000-21,000 Ohms).
Is this your observation?
Yes
No
Replace ignition module.
06041
Replace ignition coil.
06024


Section G
NO START, ENGINE CRANKS (2005 – 2008)
Remove fuel line from fuel valve. Attach a drain hose to fuel valve. Using a suitable container, check fuel valve for flow.
Is adequate fuel flow present?
Yes
No
Check condition of spark plugs.
Are spark plugs OK?
Yes
No
Replace spark plugs.
06044
Check for restricted fuel line.
Is fuel line OK?
No
Yes
Replace fuel line.
07011
Check for restricted carburetor or incorrect float level.
Does problem still exist?
No
Yes
System OK.
07015
Problem is mechanical. Perform compression test.
01001
Check for a restricted fuel valve screen.
Is screen restricted by debris?
Yes
No
Clean fuel valve screen
07010
Check for defective fuel valve
Does fuel valve function properly?
Yes
No
Fuel valve OK.
07011
Replace fuel valve
07010

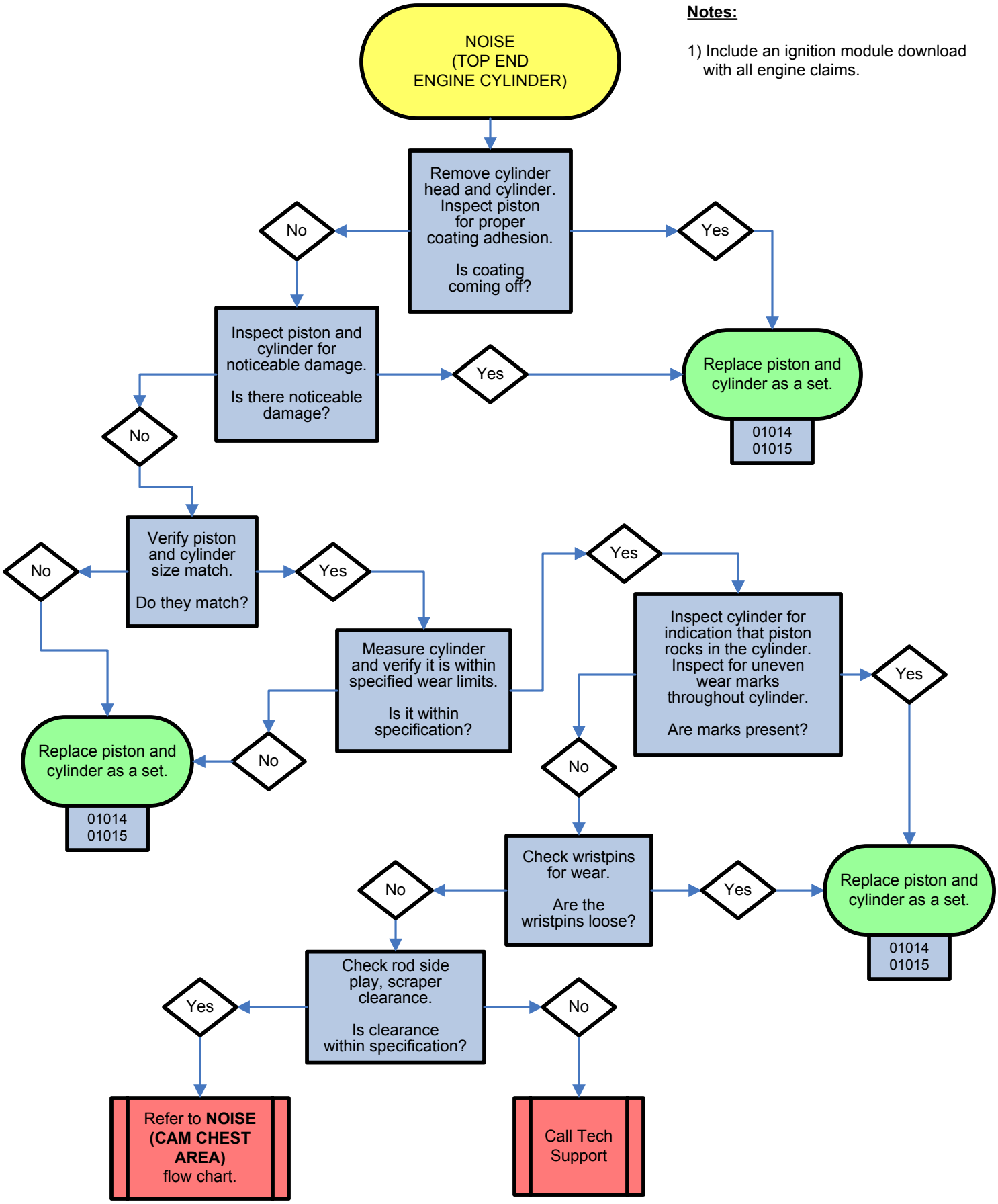

OIL LIGHT ON -
NO OIL PRESSURE
Notes:
1) Always recheck oil pressure after any/all repairs.
2) Include an ignition module download with all engine claims.
Check oil level in tank. Verify oil pressure at tappet screen fitting with known accurate gauge.
Is pressure within specifications?
No
Yes
Check oil feed lines and connections.
Are the lines tight?
No
Yes
Tighten oil lines and/or fittings.
09026
Remove wire at oil sender, with key ON touch wire to ground.
Does the light illuminate?
No
Yes
Replace oil pressure sending unit.
01044
Check continuity at the sending unit and the tach board.
Is there continuity?
No
Yes
Repair open in wiring.
06006
Replace tach board.
06056
Remove cam cover and inspect oil pump drive gear and keyway.
Is the keyway sheared?
Yes
No
Remove cover from oil pump and inspect gears and housing for debris.
Is there debris present?
No
Yes
Replace key and pump gears as necessary.
01031
Remove and replace oil pump. Clean and flush lines.
01031
Remove oil pump and inspect for any debris that may have locked up pump.
Is debris present?
No
Yes
Remove and replace oil pump assembly.
01031
Remove oil tank lines and pump. Clean as needed Inspect engine for debris. Repair as needed.
09026



Notes:

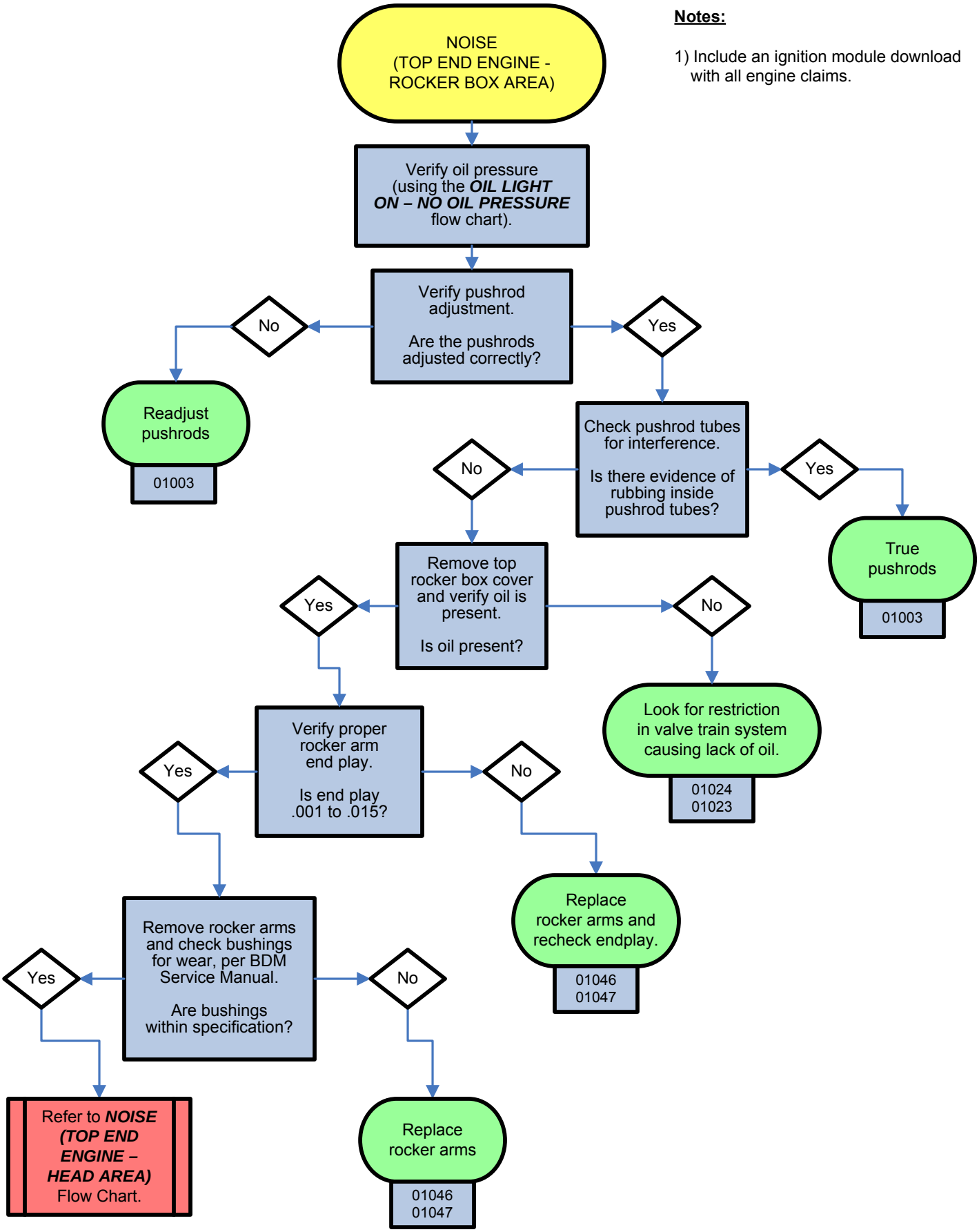
1) Always recheck oil pressure after any/all repairs.

2) Include an ignition module download with all engine claims.



Notes:

1) Include an ignition module download with all engine claims.



Notes:

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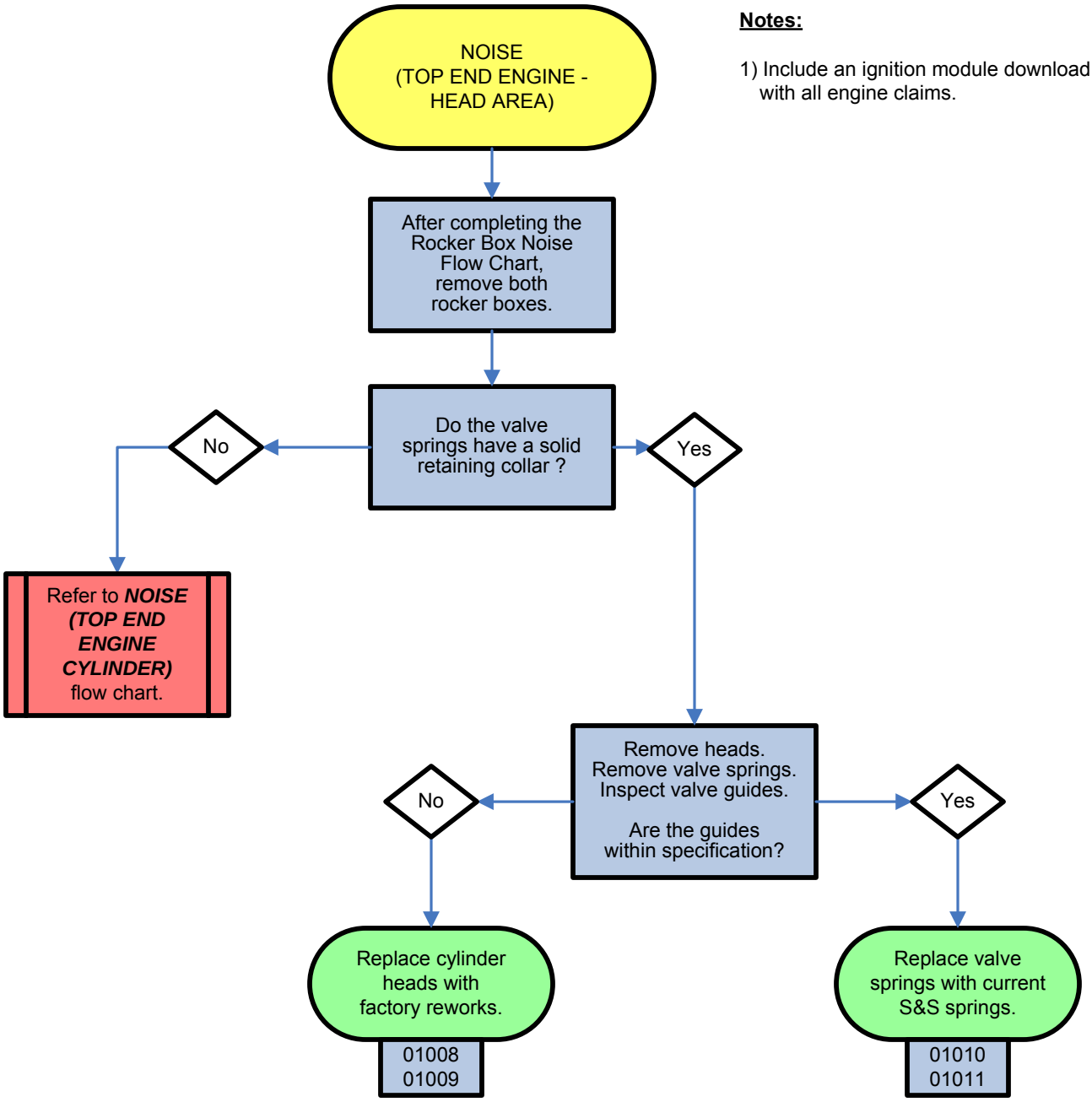
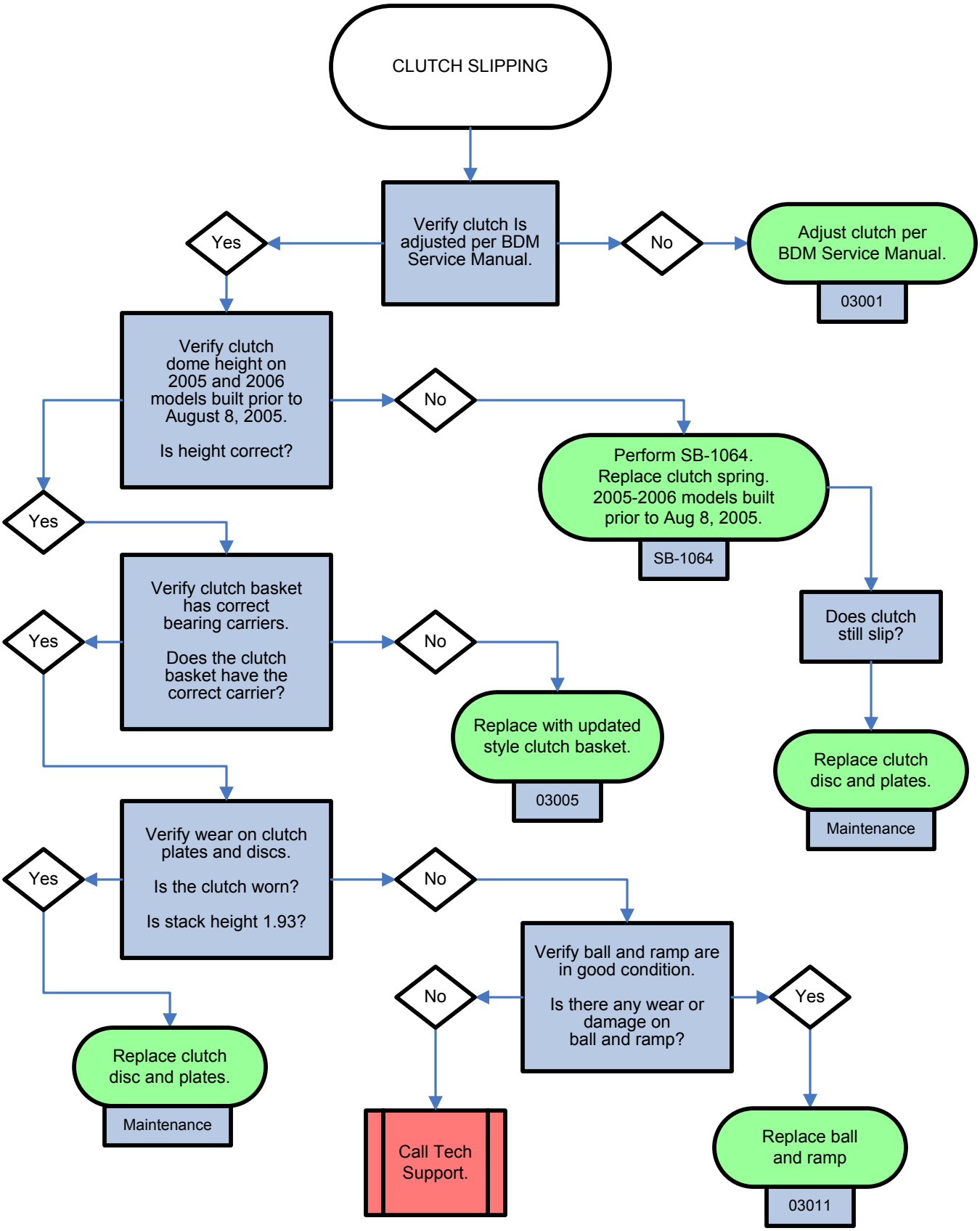
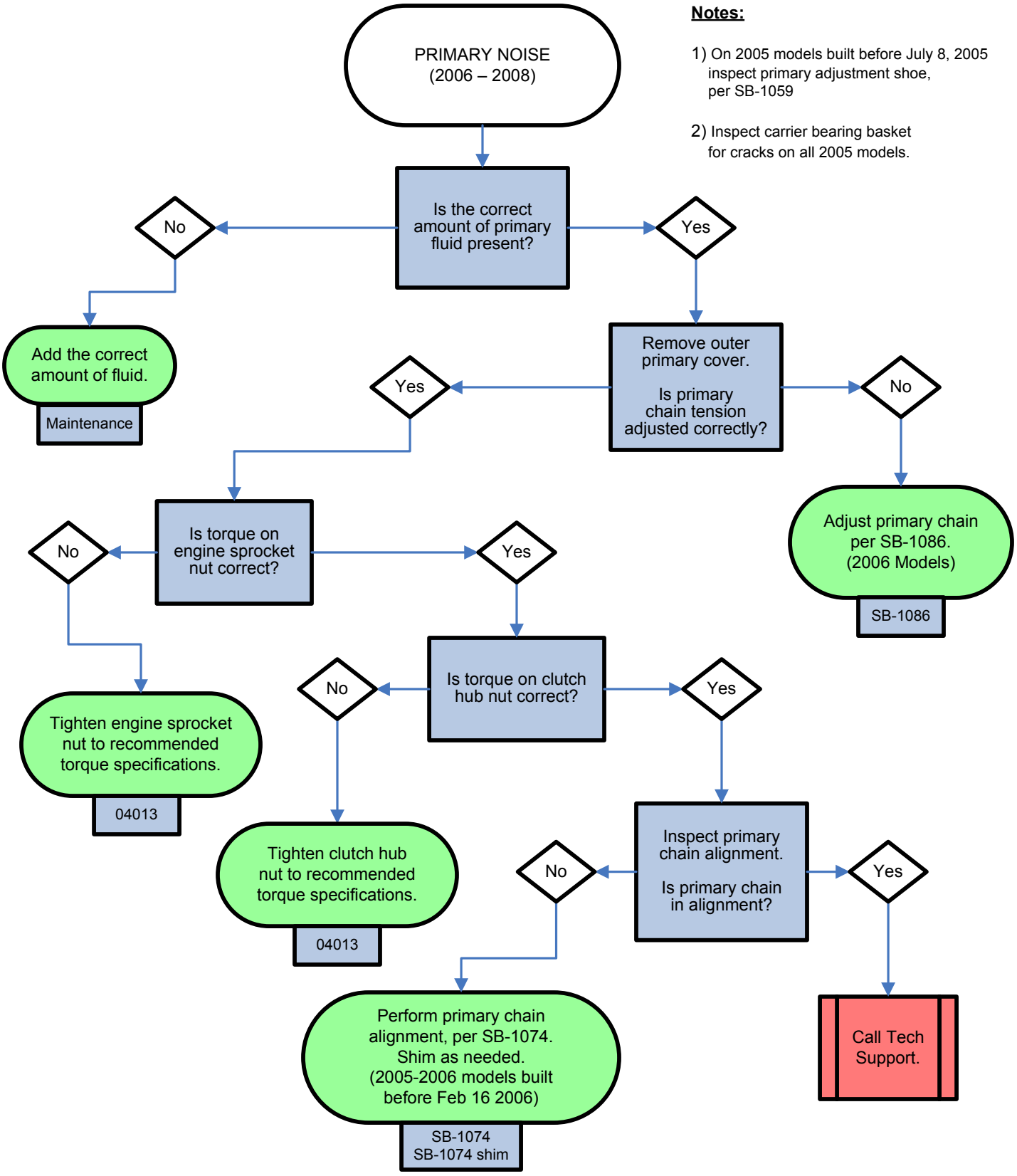
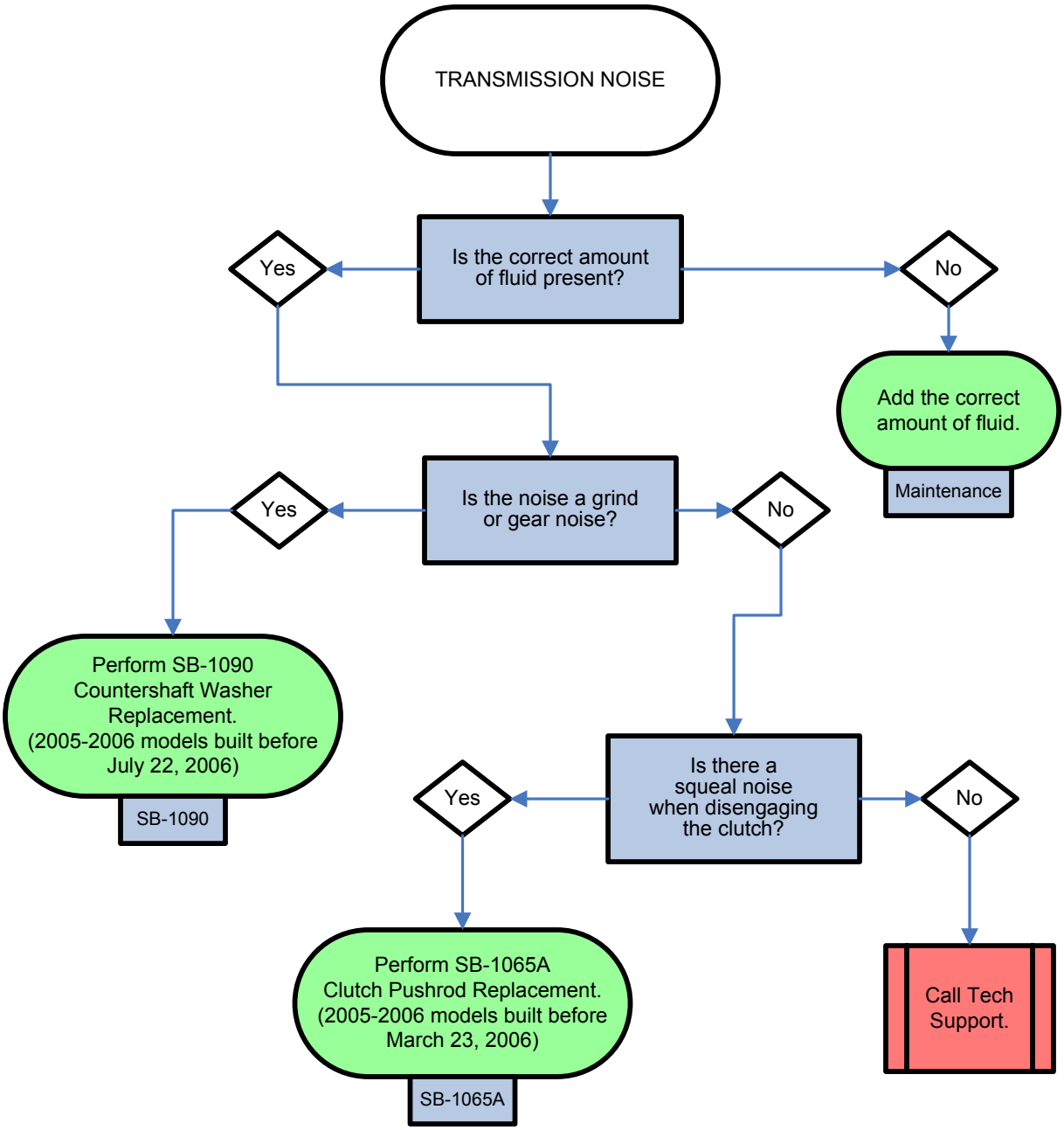


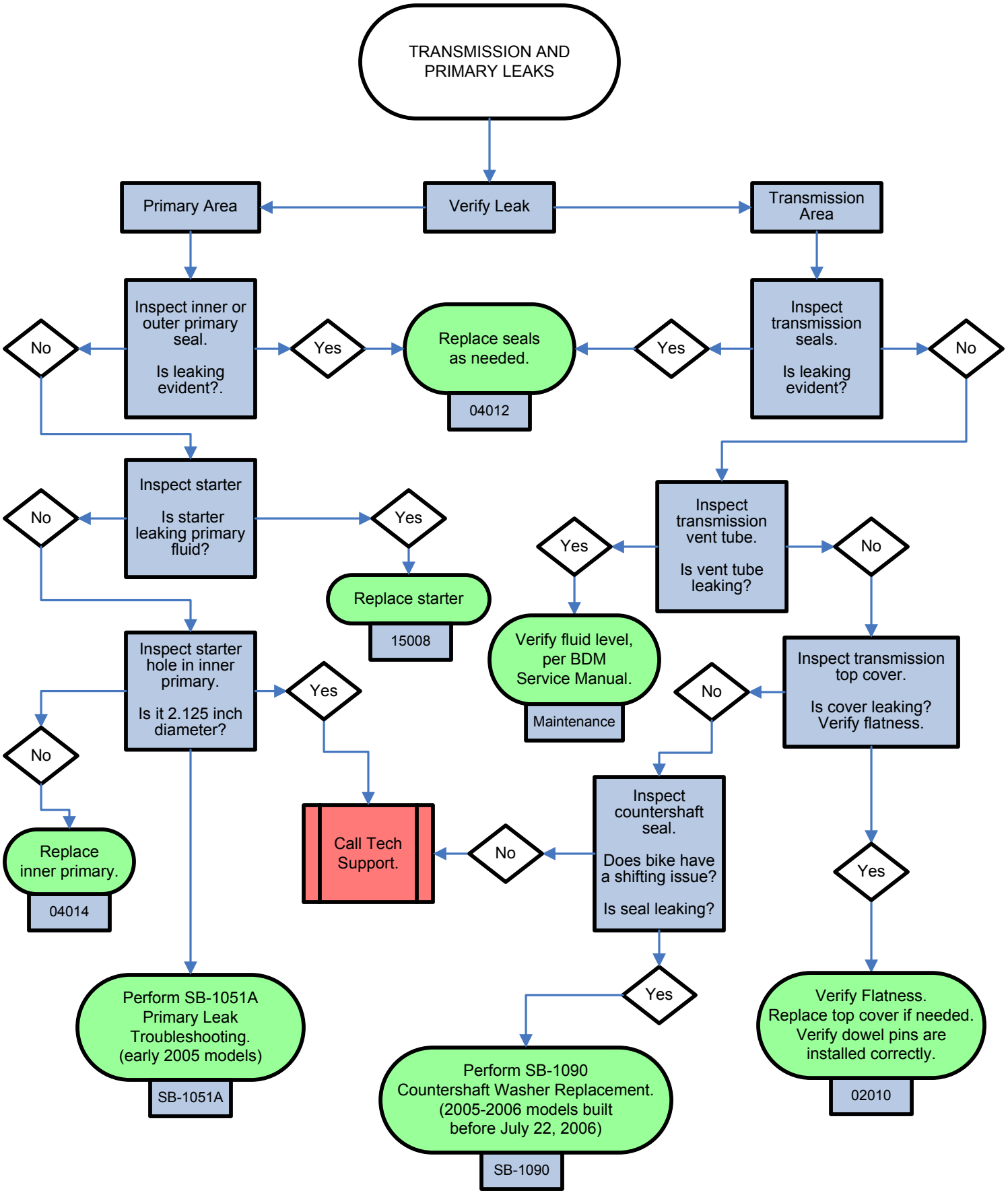
Notes:

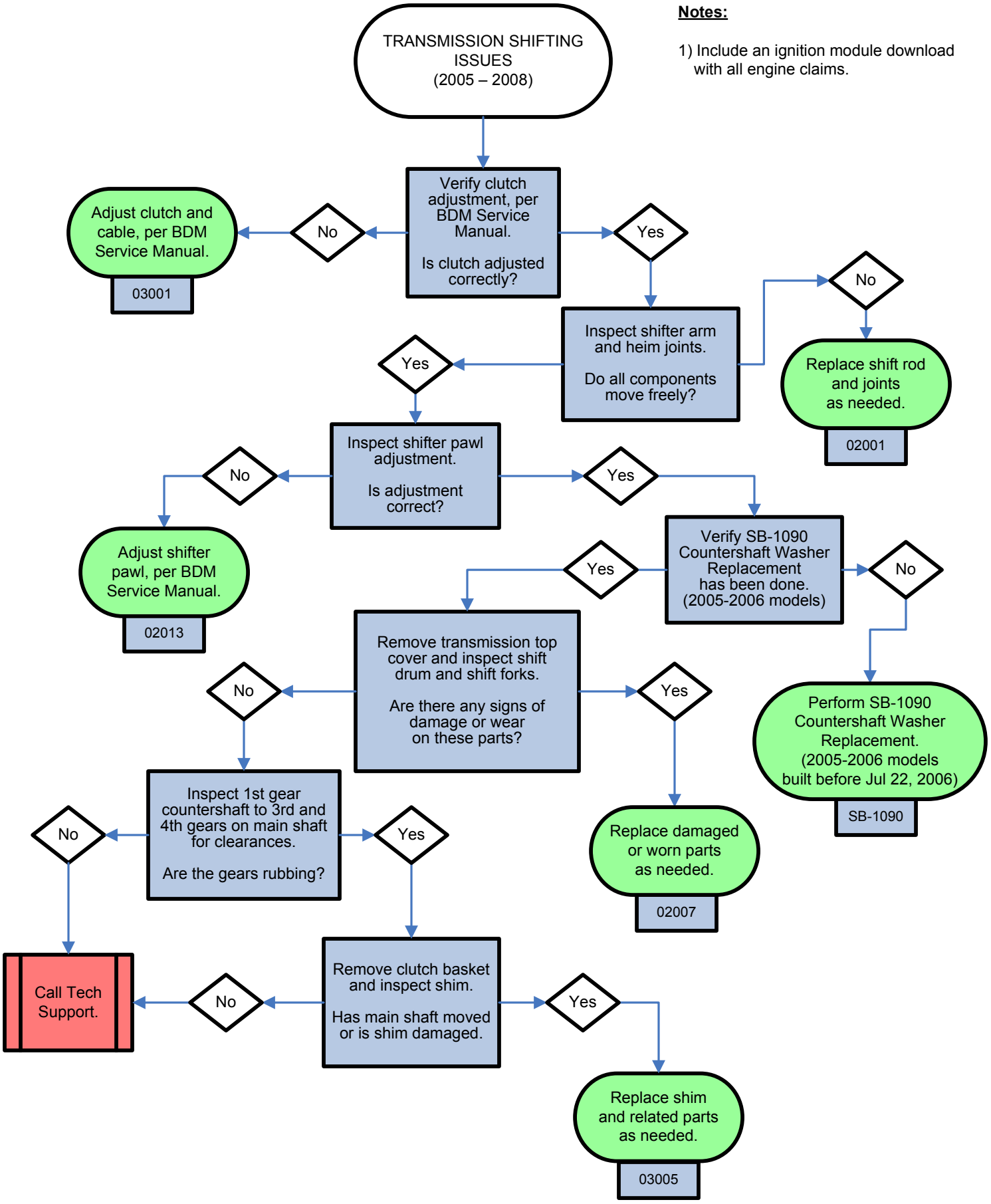
1) Include an ignition module download with all engine claims.

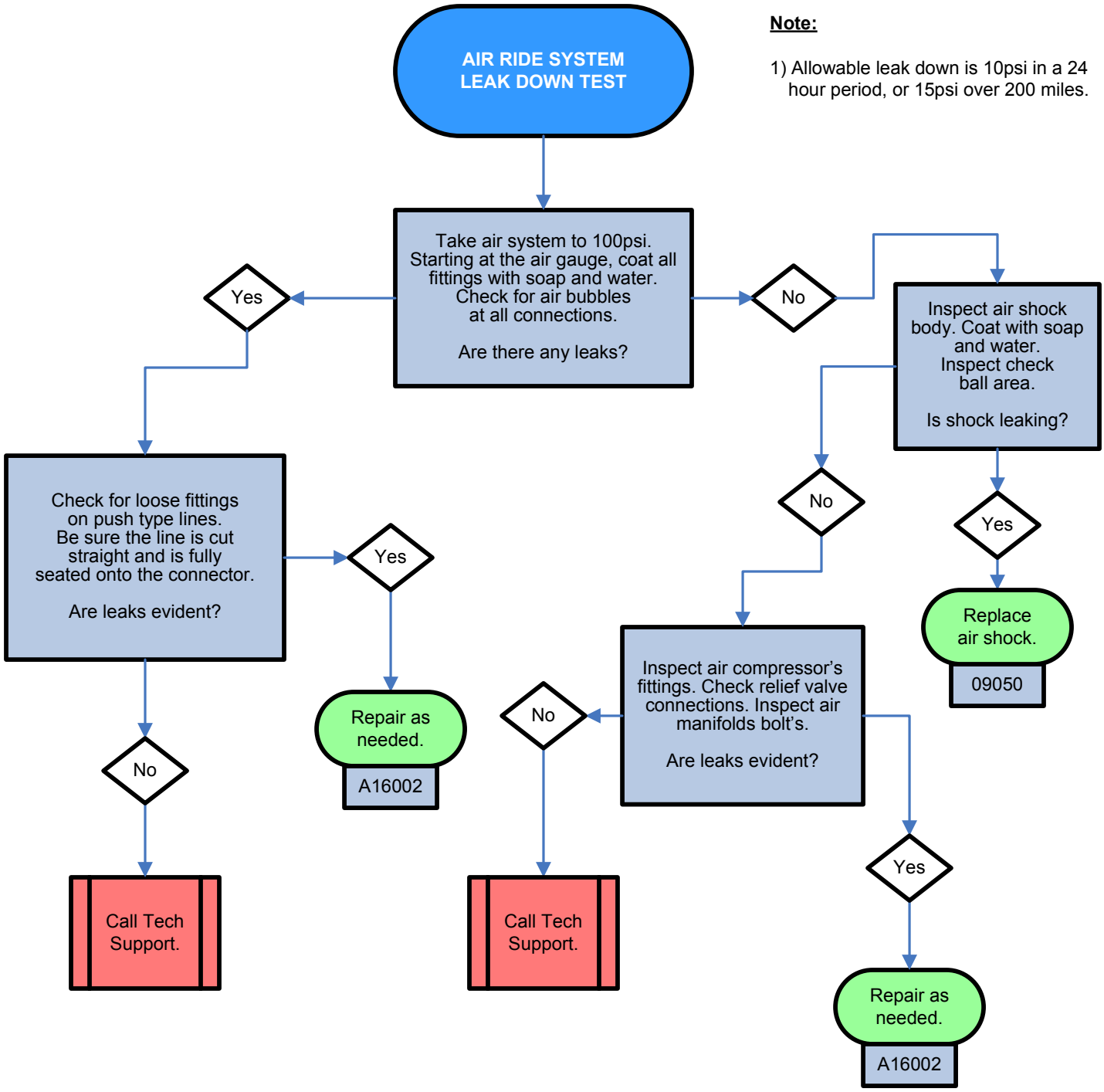

CLUTCH SLIPPING
Verify clutch Is adjusted per BDM Service Manual.
Yes
No
Adjust clutch per BDM Service Manual.
03001
Verify clutch dome height on 2005 and 2006 models built prior to August 8, 2005.
Is height correct?
Yes
No
Perform SB-1064. Replace clutch spring. 2005-2006 models built prior to Aug 8, 2005.
SB-1064
Does clutch still slip?
Replace clutch disc and plates.
Maintenance
Verify clutch basket has correct bearing carriers.
Does the clutch basket have the correct carrier?
Yes
No
Replace with updated style clutch basket.
03005
Verify wear on clutch plates and discs.
Is the clutch worn?
Is stack height 1.93?
Yes
No
Replace clutch disc and plates.
Maintenance
Verify ball and ramp are in good condition.
Is there any wear or damage on ball and ramp?
No
Yes
Call Tech Support.
Replace ball and ramp
03011

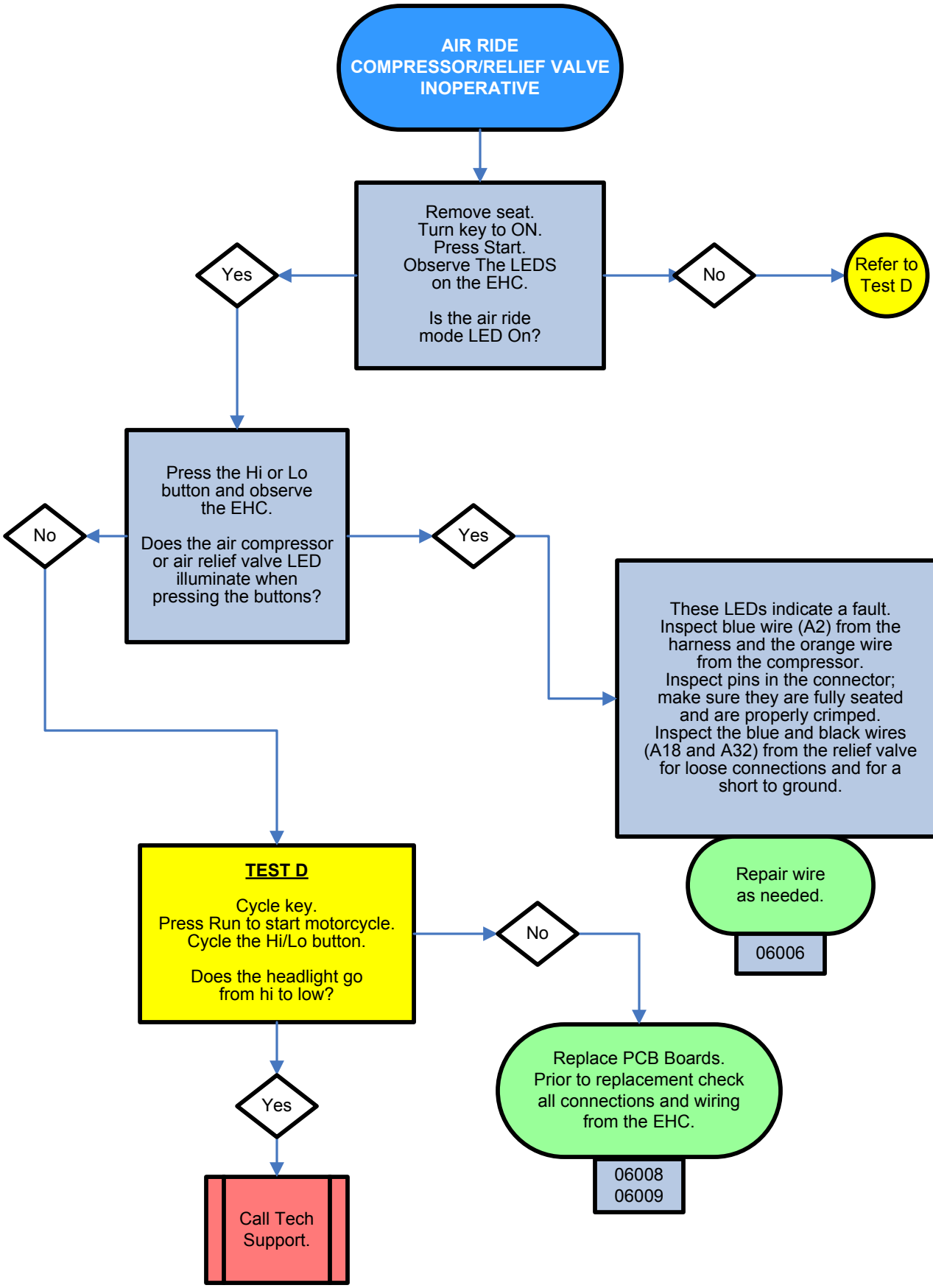

PRIMARY NOISE
(2006 – 2008)
Notes:
1) On 2005 models built before July 8, 2005 inspect primary adjustment shoe, per SB-1059
2) Inspect carrier bearing basket for cracks on all 2005 models.
Is the correct amount of primary fluid present?
No
Yes
Add the correct amount of fluid.
Maintenance
Remove outer primary cover.
Is primary chain tension adjusted correctly?
Yes
No
Adjust primary chain per SB-1086. (2006 Models)
SB-1086
Is torque on engine sprocket nut correct?
No
Yes
Tighten engine sprocket nut to recommended torque specifications.
04013
Is torque on clutch hub nut correct?
No
Yes
Tighten clutch hub nut to recommended torque specifications.
04013
Inspect primary chain alignment.
Is primary chain in alignment?
No
Yes
Perform primary chain alignment, per SB-1074. Shim as needed. (2005-2006 models built before Feb 16 2006)
SB-1074
SB-1074 shim
Call Tech Support.

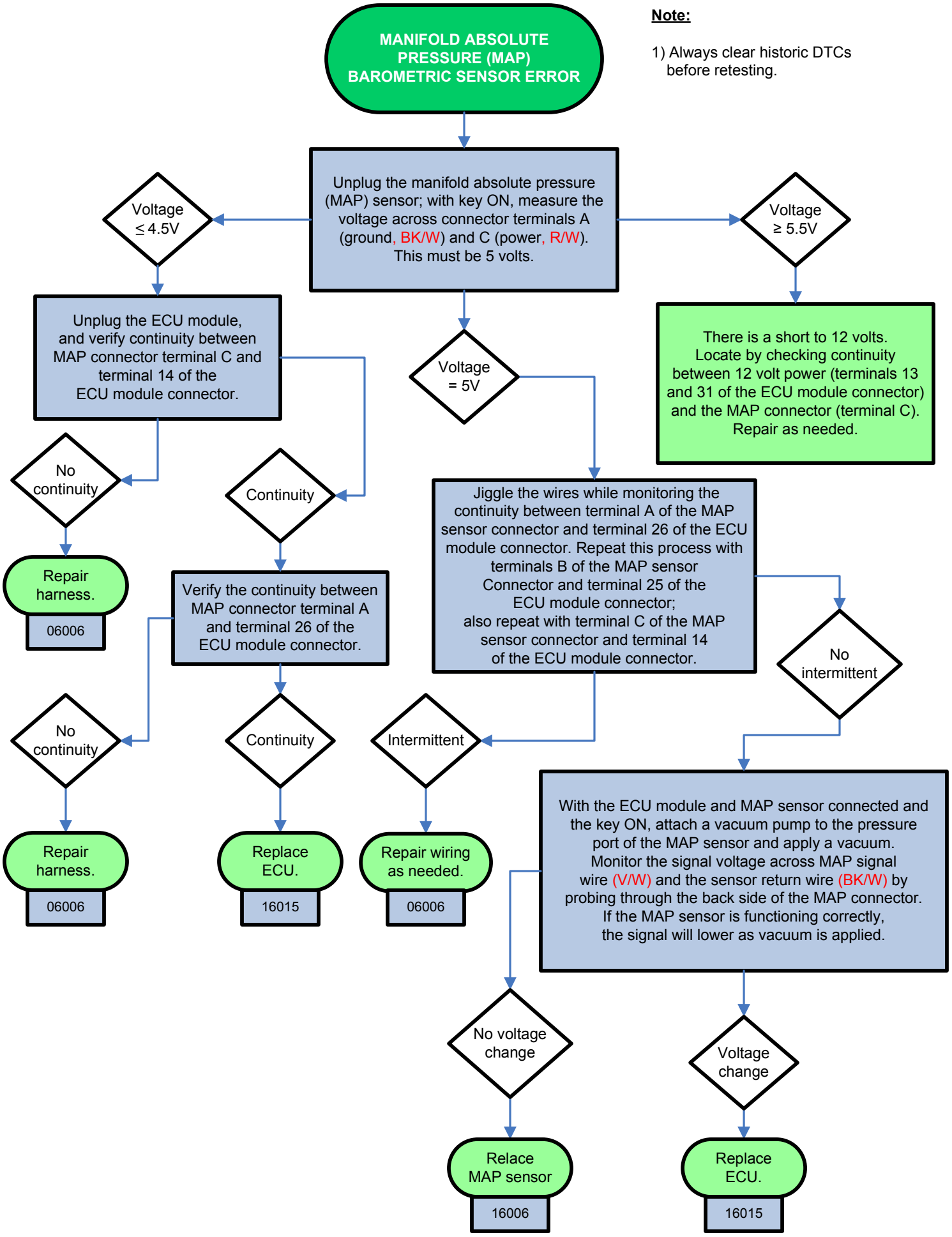

TRANSMISSION NOISE
Is the correct amount of fluid present?
Yes
No
Add the correct amount of fluid.
Maintenance
Is the noise a grind or gear noise?
Yes
No
Perform SB-1090 Countershaft Washer Replacement. (2005-2006 models built before July 22, 2006)
SB-1090
Is there a squeal noise when disengaging the clutch?
Yes
No
Perform SB-1065A Clutch Pushrod Replacement. (2005-2006 models built before March 23, 2006)
SB-1065A
Call Tech Support.

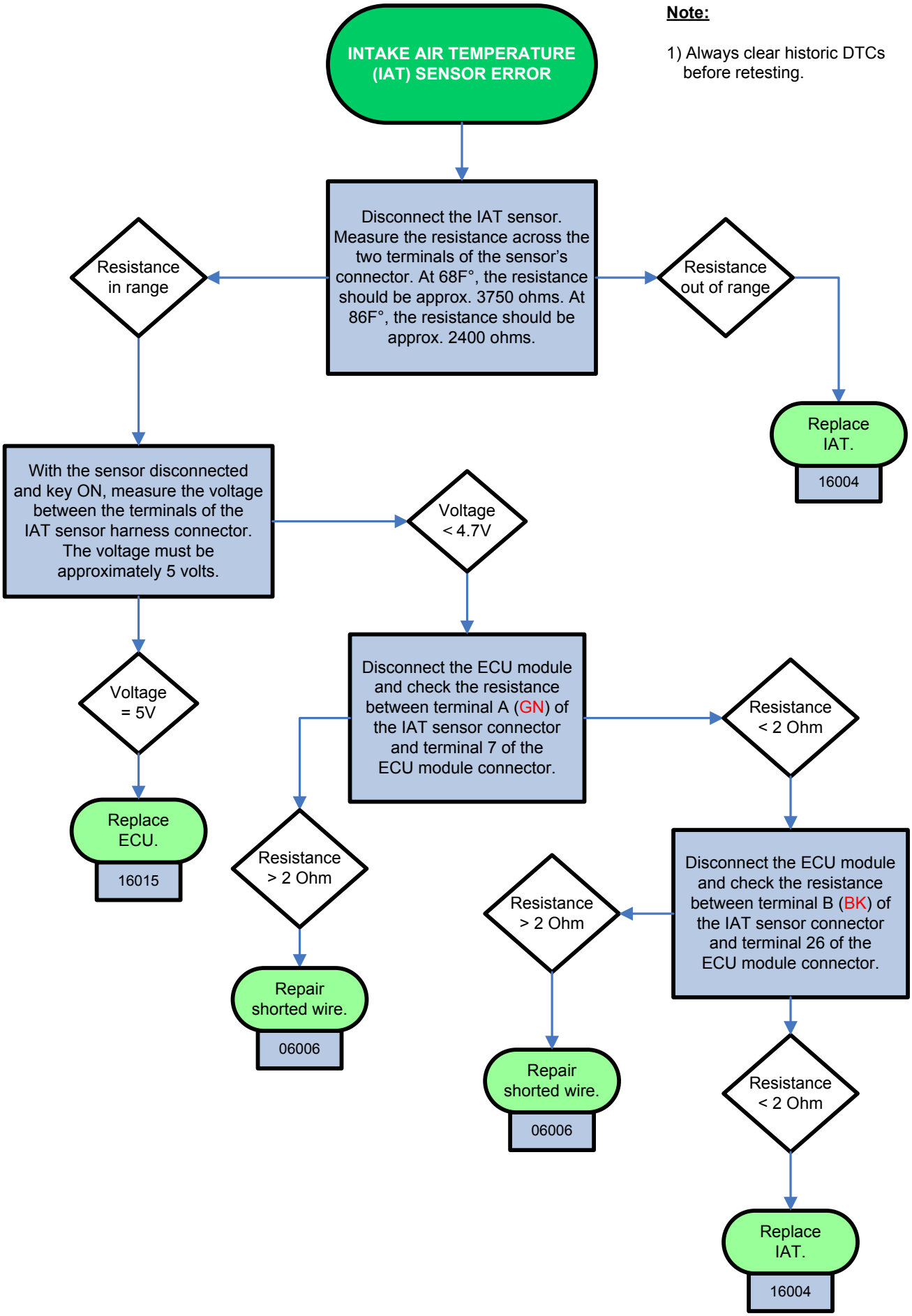

TRANSMISSION AND PRIMARY LEAKS
Verify Leak
Primary Area
Transmission Area
Inspect inner or outer primary seal.
Is leaking evident?.
No
Yes
Replace seals as needed.
04012
Yes
Inspect transmission seals.
Is leaking evident?
No
Inspect starter
Is starter leaking primary fluid?
No
Yes
Replace starter
15008
Inspect transmission vent tube.
Is vent tube leaking?
Yes
Verify fluid level, per BDM Service Manual.
Maintenance
No
Inspect transmission top cover.
Is cover leaking? Verify flatness.
Inspect starter hole in inner primary.
Is it 2.125 inch diameter?
No
Replace inner primary.
04014
Yes
Call Tech Support.
No
Inspect countershaft seal.
Does bike have a shifting issue?
Is seal leaking?
Yes
Perform SB-1090 Countershaft Washer Replacement. (2005-2006 models built before July 22, 2006)
SB-1090
Yes
Verify Flatness. Replace top cover if needed. Verify dowel pins are installed correctly.
02010
Perform SB-1051A Primary Leak Troubleshooting. (early 2005 models)
SB-1051A

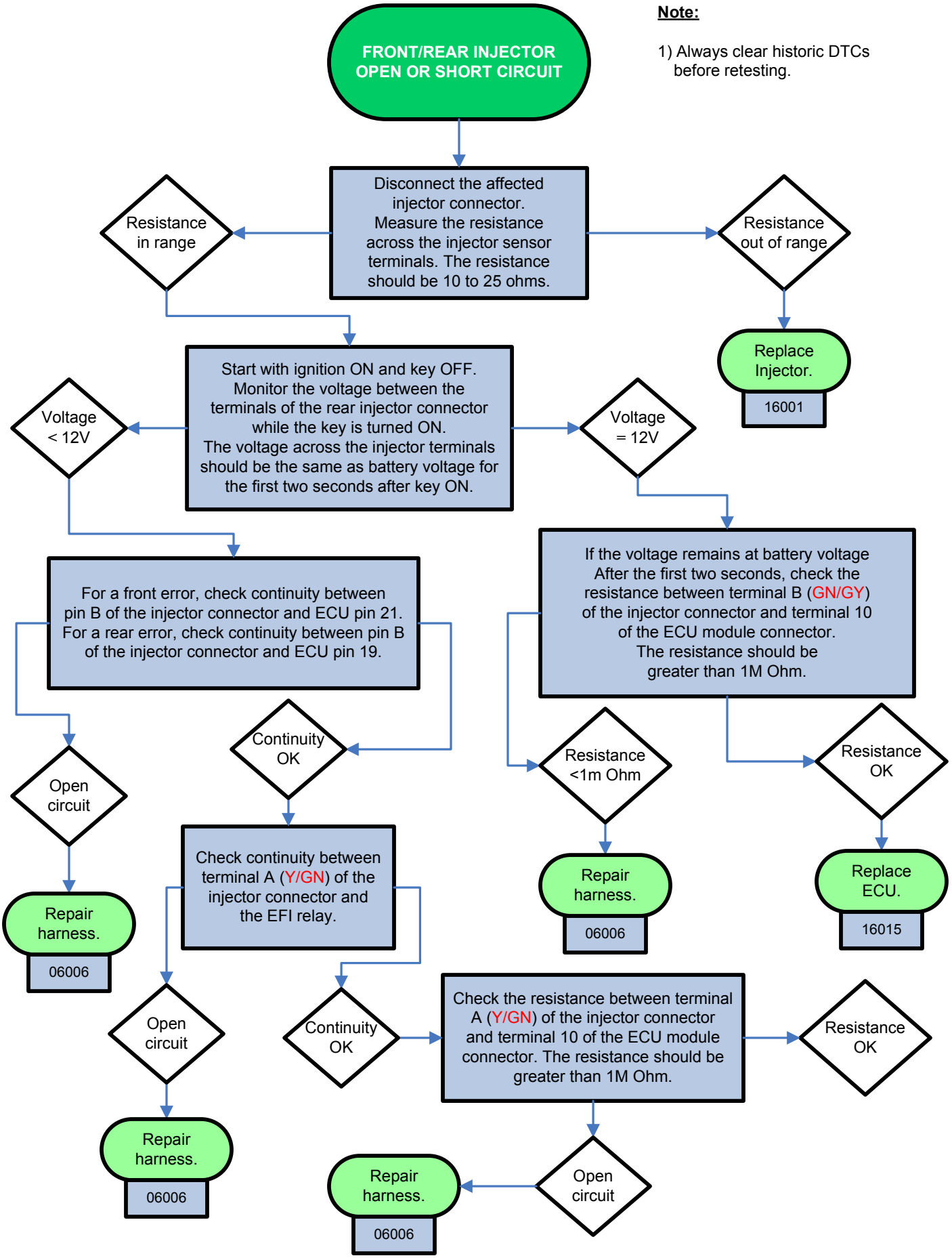

TRANSMISSION SHIFTING ISSUES (2005 – 2008)
Notes:
1) Include an ignition module download with all engine claims.
Verify clutch adjustment, per BDM Service Manual.
Is clutch adjusted correctly?
No
Adjust clutch and cable, per BDM Service Manual.
03001
Yes
Inspect shifter arm and heim joints.
Do all components move freely?
No
Replace shift rod and joints as needed.
02001
Yes
Inspect shifter pawl adjustment.
Is adjustment correct?
No
Adjust shifter pawl, per BDM Service Manual.
02013
Yes
Verify SB-1090 Countershaft Washer Replacement has been done. (2005-2006 models)
Yes
No
Perform SB-1090 Countershaft Washer Replacement. (2005-2006 models built before Jul 22, 2006)
SB-1090
Remove transmission top cover and inspect shift drum and shift forks.
Are there any signs of damage or wear on these parts?
No
Yes
Replace damaged or worn parts as needed.
02007
Inspect 1st gear countershaft to 3rd and 4th gears on main shaft for clearances.
Are the gears rubbing?
No
Call Tech Support.
Yes
Remove clutch basket and inspect shim.
Has main shaft moved or is shim damaged.
No
Yes
Replace shim and related parts as needed.
03005

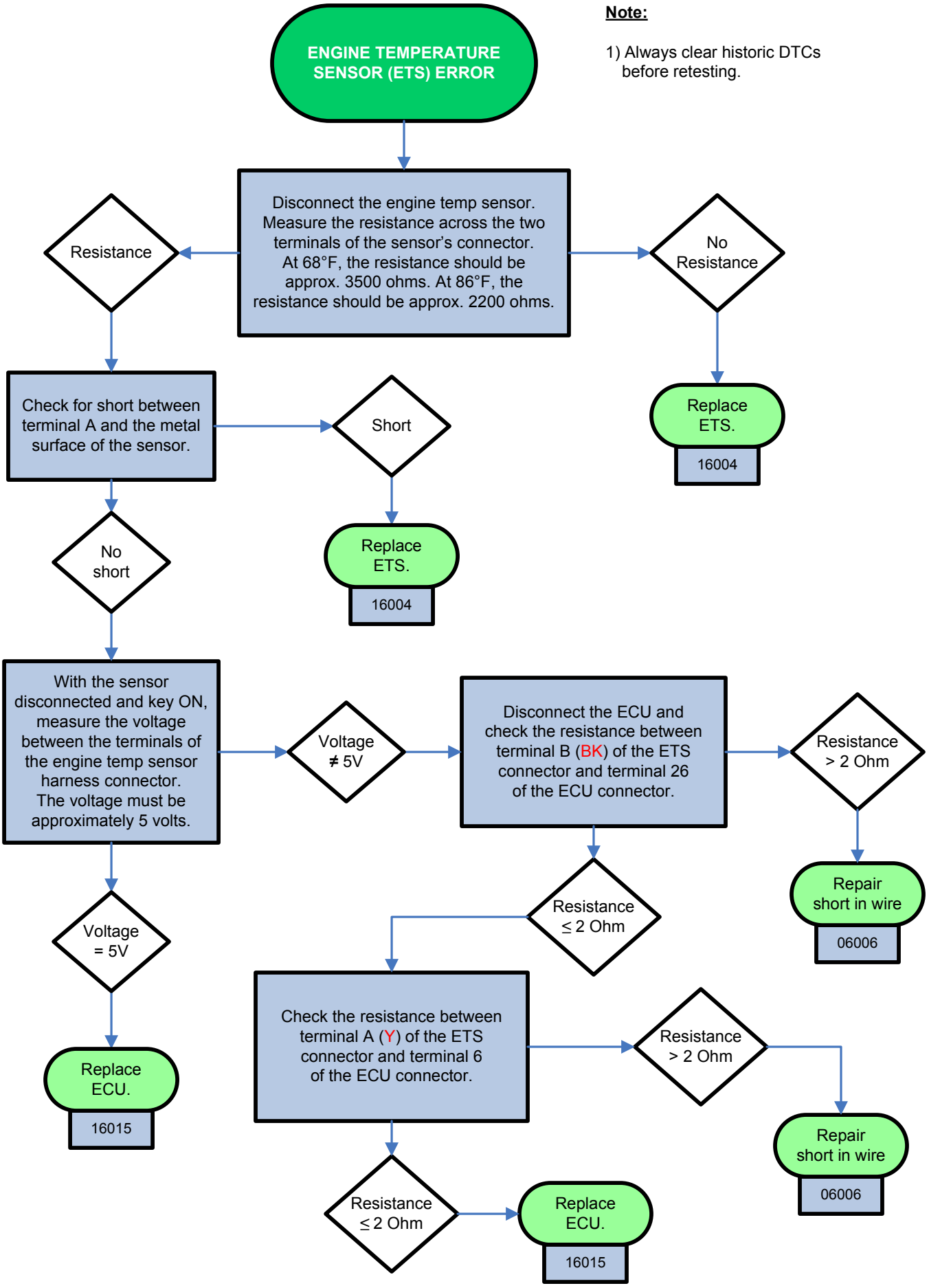

AIR RIDE SYSTEM
LEAK DOWN TEST
Note:
1) Allowable leak down is 10psi in a 24 hour period, or 15psi over 200 miles.
Take air system to 100psi. Starting at the air gauge, coat all fittings with soap and water. Check for air bubbles at all connections.
Are there any leaks?
Yes
No
Check for loose fittings on push type lines. Be sure the line is cut straight and is fully seated onto the connector.
Are leaks evident?
Yes
No
Repair as needed.
A16002
Call Tech Support.
Inspect air shock body. Coat with soap and water. Inspect check ball area.
Is shock leaking?
Yes
No
Replace air shock.
09050
Inspect air compressor's fittings. Check relief valve connections. Inspect air manifolds bolt's.
Are leaks evident?
No
Yes
Call Tech Support.
Repair as needed.
A16002

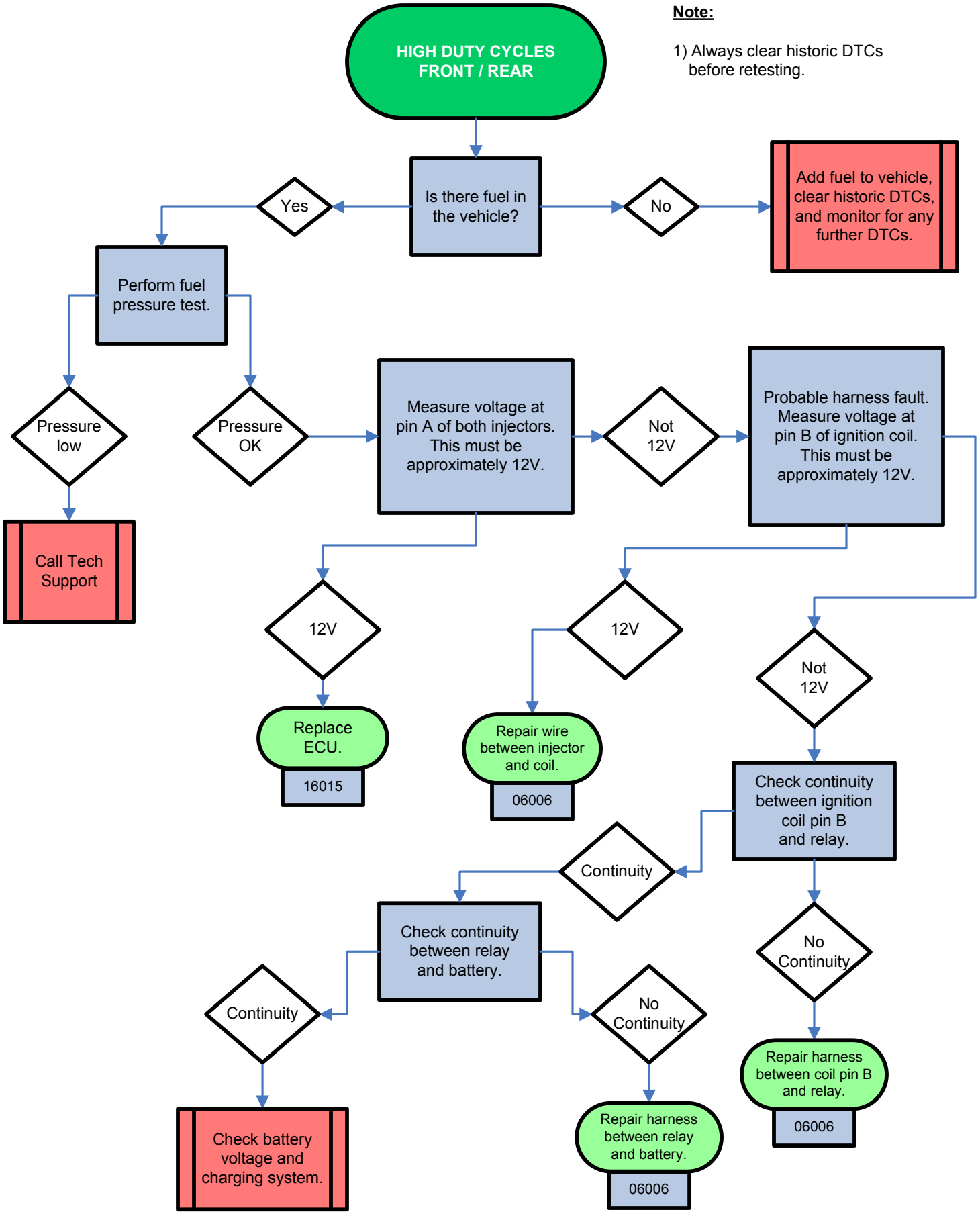

AIR RIDE COMPRESSOR/RELIEF VALVE INOPERATIVE
Remove seat.
Turn key to ON.
Press Start.
Observe The LEDS on the EHC.
Is the air ride mode LED On?
Yes
No
Refer to Test D
Press the Hi or Lo button and observe the EHC.
Does the air compressor or air relief valve LED illuminate when pressing the buttons?
No
Yes
These LEDs indicate a fault.
Inspect blue wire (A2) from the harness and the orange wire from the compressor.
Inspect pins in the connector; make sure they are fully seated and are properly crimped.
Inspect the blue and black wires (A18 and A32) from the relief valve for loose connections and for a short to ground.
Repair wire as needed.
06006
TEST D
Cycle key.
Press Run to start motorcycle.
Cycle the Hi/Lo button.
Does the headlight go from hi to low?
No
Yes
Replace PCB Boards.
Prior to replacement check all connections and wiring from the EHC.
06008
06009
Call Tech Support.

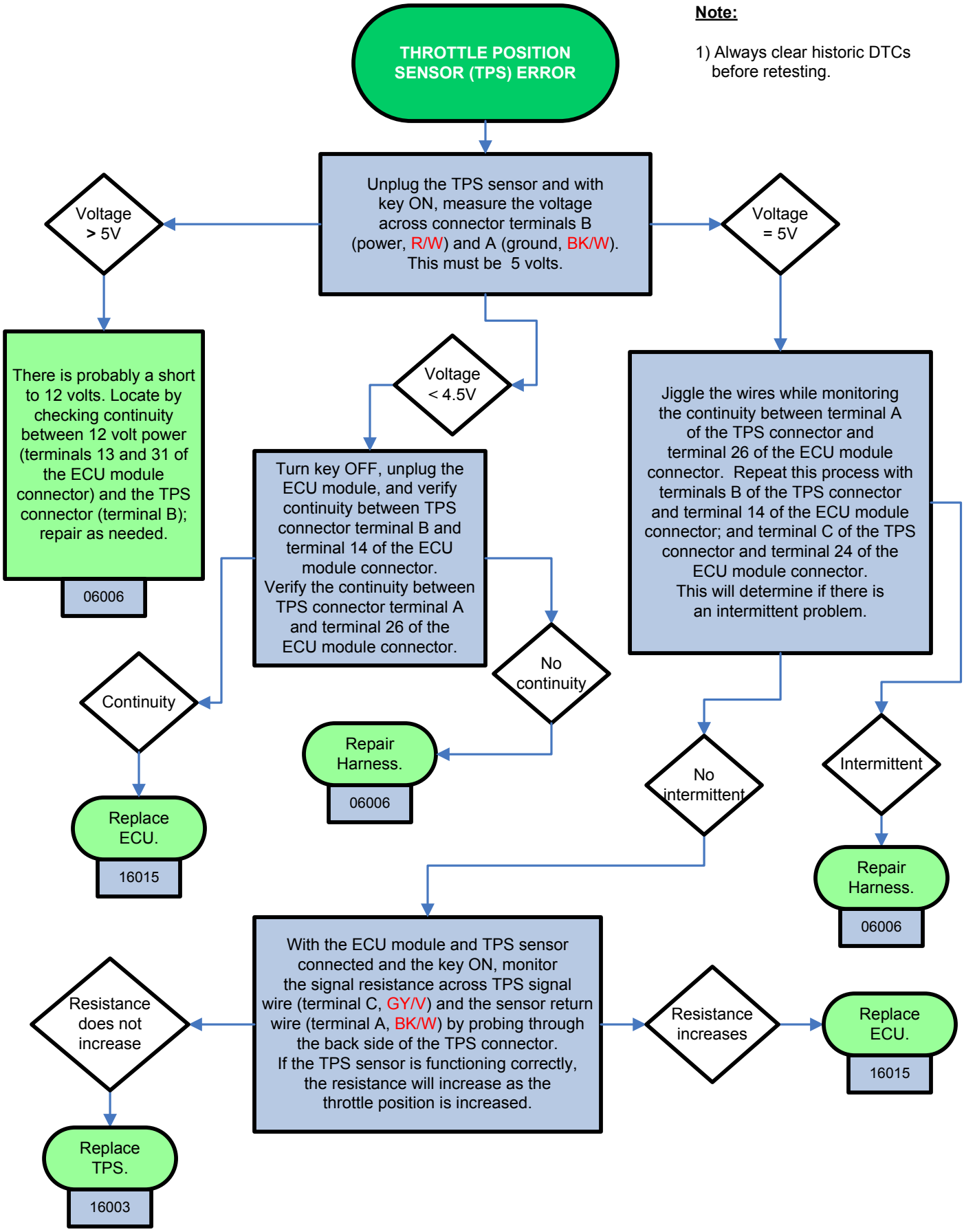

MANIFOLD ABSOLUTE PRESSURE (MAP) BAROMETRIC SENSOR ERROR
Note:
1) Always clear historic DTCs before retesting.
Unplug the manifold absolute pressure (MAP) sensor; with key ON, measure the voltage across connector terminals A (ground, BK/W) and C (power, R/W). This must be 5 volts.
Voltage ≤ 4.5V
Voltage ≥ 5.5V
Voltage = 5V
Unplug the ECU module, and verify continuity between MAP connector terminal C and terminal 14 of the ECU module connector.
There is a short to 12 volts. Locate by checking continuity between 12 volt power (terminals 13 and 31 of the ECU module connector) and the MAP connector (terminal C). Repair as needed.
No continuity
Continuity
Repair harness.
06006
Verify the continuity between MAP connector terminal A and terminal 26 of the ECU module connector.
Jiggle the wires while monitoring the continuity between terminal A of the MAP sensor connector and terminal 26 of the ECU module connector. Repeat this process with terminals B of the MAP sensor Connector and terminal 25 of the ECU module connector; also repeat with terminal C of the MAP sensor connector and terminal 14 of the ECU module connector.
No intermittent
No continuity
Continuity
Intermittent
Repair harness.
06006
Replace ECU.
16015
Repair wiring as needed.
06006
With the ECU module and MAP sensor connected and the key ON, attach a vacuum pump to the pressure port of the MAP sensor and apply a vacuum. Monitor the signal voltage across MAP signal wire (V/W) and the sensor return wire (BK/W) by probing through the back side of the MAP connector. If the MAP sensor is functioning correctly, the signal will lower as vacuum is applied.
No voltage change
Voltage change
Relace MAP sensor
16006
Replace ECU.
16015


INTAKE AIR TEMPERATURE (IAT) SENSOR ERROR
Note:
1) Always clear historic DTCs before retesting.
Disconnect the IAT sensor. Measure the resistance across the two terminals of the sensor's connector. At 68F°, the resistance should be approx. 3750 ohms. At 86F°, the resistance should be approx. 2400 ohms.
Resistance in range
Resistance out of range
Replace IAT.
16004
With the sensor disconnected and key ON, measure the voltage between the terminals of the IAT sensor harness connector. The voltage must be approximately 5 volts.
Voltage < 4.7V
Voltage = 5V
Replace ECU.
16015
Disconnect the ECU module and check the resistance between terminal A (GN) of the IAT sensor connector and terminal 7 of the ECU module connector.
Resistance < 2 Ohm
Resistance > 2 Ohm
Repair shorted wire.
06006
Disconnect the ECU module and check the resistance between terminal B (BK) of the IAT sensor connector and terminal 26 of the ECU module connector.
Resistance > 2 Ohm
Repair shorted wire.
06006
Resistance < 2 Ohm
Replace IAT.
16004


FRONT/REAR INJECTOR OPEN OR SHORT CIRCUIT
Note:
1) Always clear historic DTCs before retesting.
Disconnect the affected injector connector. Measure the resistance across the injector sensor terminals. The resistance should be 10 to 25 ohms.
Resistance in range
Resistance out of range
Replace Injector.
16001
Start with ignition ON and key OFF. Monitor the voltage between the terminals of the rear injector connector while the key is turned ON. The voltage across the injector terminals should be the same as battery voltage for the first two seconds after key ON.
Voltage < 12V
Voltage = 12V
For a front error, check continuity between pin B of the injector connector and ECU pin 21. For a rear error, check continuity between pin B of the injector connector and ECU pin 19.
If the voltage remains at battery voltage After the first two seconds, check the resistance between terminal B (GN/GY) of the injector connector and terminal 10 of the ECU module connector. The resistance should be greater than 1M Ohm.
Continuity OK
Open circuit
Repair harness.
06006
Check continuity between terminal A (Y/GN) of the injector connector and the EFI relay.
Resistance <1m Ohm
Resistance OK
Repair harness.
06006
Replace ECU.
16015
Open circuit
Continuity OK
Check the resistance between terminal A (Y/GN) of the injector connector and terminal 10 of the ECU module connector. The resistance should be greater than 1M Ohm.
Resistance OK
Repair harness.
06006
Open circuit
Repair harness.
06006

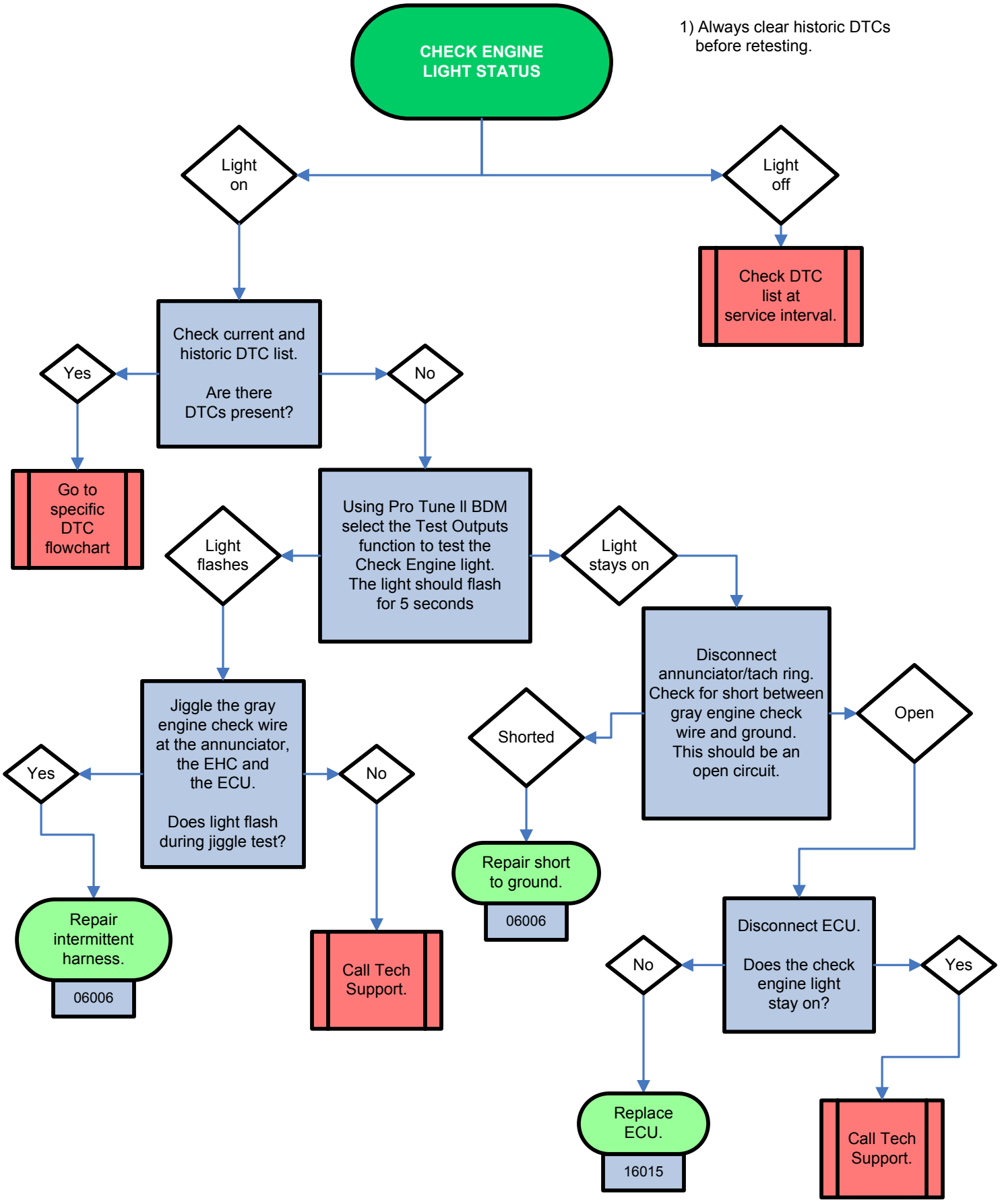

ENGINE TEMPERATURE SENSOR (ETS) ERROR
Note:
1) Always clear historic DTCs before retesting.
Disconnect the engine temp sensor. Measure the resistance across the two terminals of the sensor's connector. At 68°F, the resistance should be approx. 3500 ohms. At 86°F, the resistance should be approx. 2200 ohms.
Resistance
No Resistance
Replace ETS.
16004
Check for short between terminal A and the metal surface of the sensor.
Short
Replace ETS.
16004
No short
With the sensor disconnected and key ON, measure the voltage between the terminals of the engine temp sensor harness connector. The voltage must be approximately 5 volts.
Voltage ≠ 5V
Disconnect the ECU and check the resistance between terminal B (BK) of the ETS connector and terminal 26 of the ECU connector.
Resistance > 2 Ohm
Repair short in wire
06006
Resistance ≤ 2 Ohm
Voltage = 5V
Replace ECU.
16015
Check the resistance between terminal A (Y) of the ETS connector and terminal 6 of the ECU connector.
Resistance > 2 Ohm
Repair short in wire
06006
Resistance ≤ 2 Ohm
Replace ECU.
16015

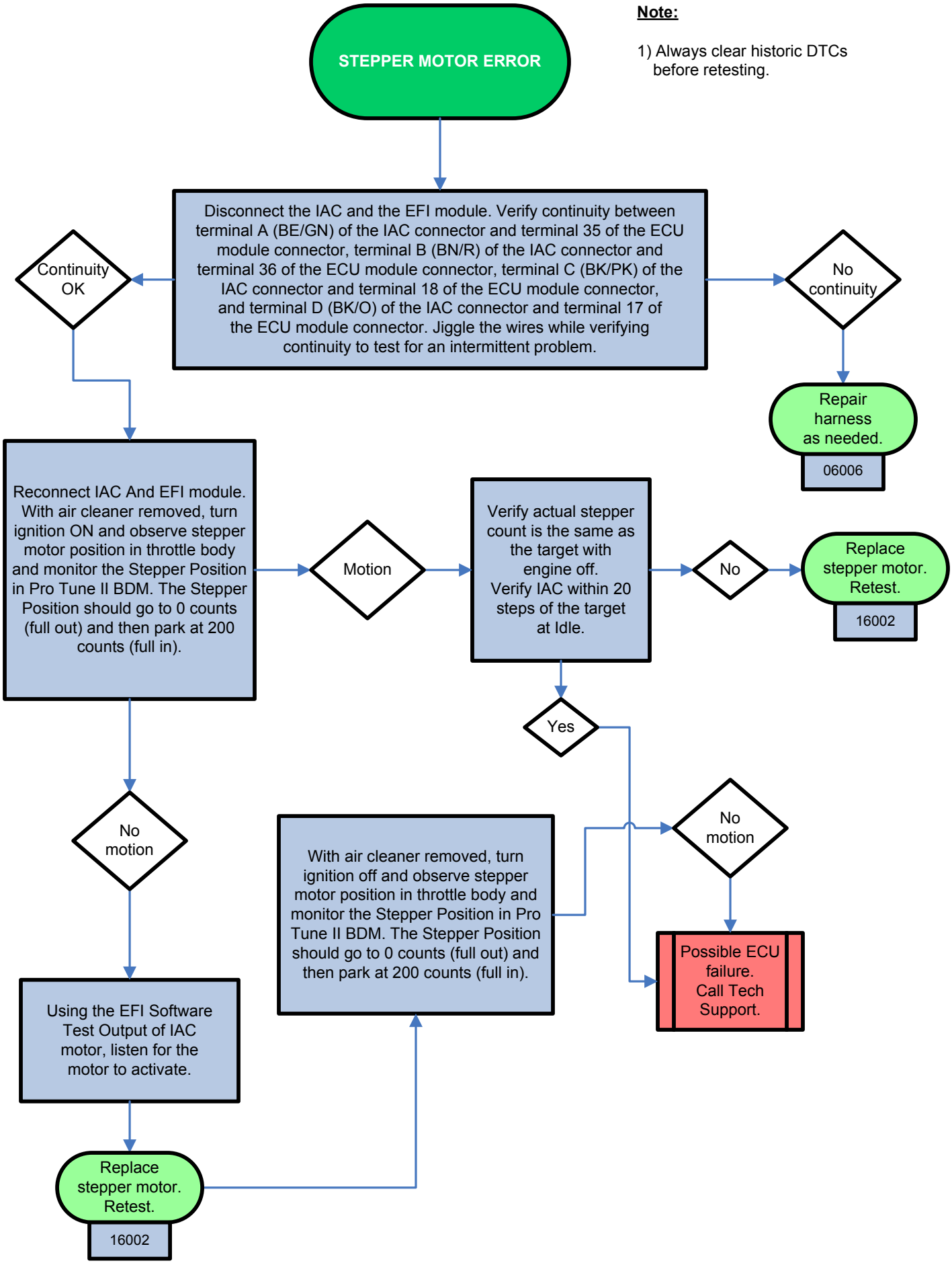

HIGH DUTY CYCLES FRONT / REAR
Note:
1) Always clear historic DTCs before retesting.
Is there fuel in the vehicle?
Yes
No
Add fuel to vehicle, clear historic DTCs, and monitor for any further DTCs.
Perform fuel pressure test.
Pressure low
Pressure OK
Call Tech Support
Measure voltage at pin A of both injectors. This must be approximately 12V.
Not 12V
Probable harness fault. Measure voltage at pin B of ignition coil. This must be approximately 12V.
12V
Replace ECU.
16015
12V
Repair wire between injector and coil.
06006
Not 12V
Check continuity between ignition coil pin B and relay.
Continuity
No Continuity
Repair harness between coil pin B and relay.
06006
Check continuity between relay and battery.
Continuity
Check battery voltage and charging system.
No Continuity
Repair harness between relay and battery.
06006

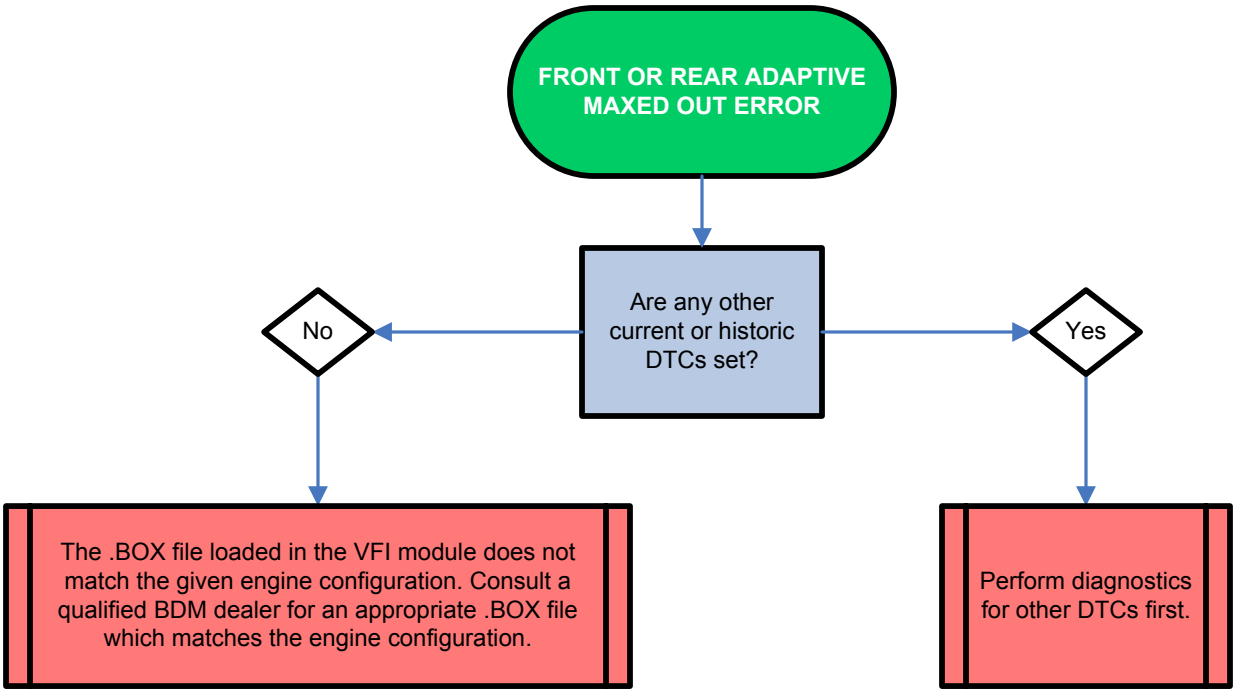

THROTTLE POSITION SENSOR (TPS) ERROR
Note:
1) Always clear historic DTCs before retesting.
Unplug the TPS sensor and with key ON, measure the voltage across connector terminals B (power, R/W) and A (ground, BK/W). This must be 5 volts.
Voltage > 5V
Voltage = 5V
There is probably a short to 12 volts. Locate by checking continuity between 12 volt power (terminals 13 and 31 of the ECU module connector) and the TPS connector (terminal B); repair as needed.
06006
Voltage < 4.5V
Turn key OFF, unplug the ECU module, and verify continuity between TPS connector terminal B and terminal 14 of the ECU module connector. Verify the continuity between TPS connector terminal A and terminal 26 of the ECU module connector.
Jiggle the wires while monitoring the continuity between terminal A of the TPS connector and terminal 26 of the ECU module connector. Repeat this process with terminals B of the TPS connector and terminal 14 of the ECU module connector; and terminal C of the TPS connector and terminal 24 of the ECU module connector. This will determine if there is an intermittent problem.
Continuity
No continuity
Repair Harness.
06006
Replace ECU.
16015
No intermittent
Intermittent
Repair Harness.
06006
With the ECU module and TPS sensor connected and the key ON, monitor the signal resistance across TPS signal wire (terminal C, GY/V) and the sensor return wire (terminal A, BK/W) by probing through the back side of the TPS connector. If the TPS sensor is functioning correctly, the resistance will increase as the throttle position is increased.
Resistance does not increase
Resistance increases
Replace ECU.
16015
Replace TPS.
16003

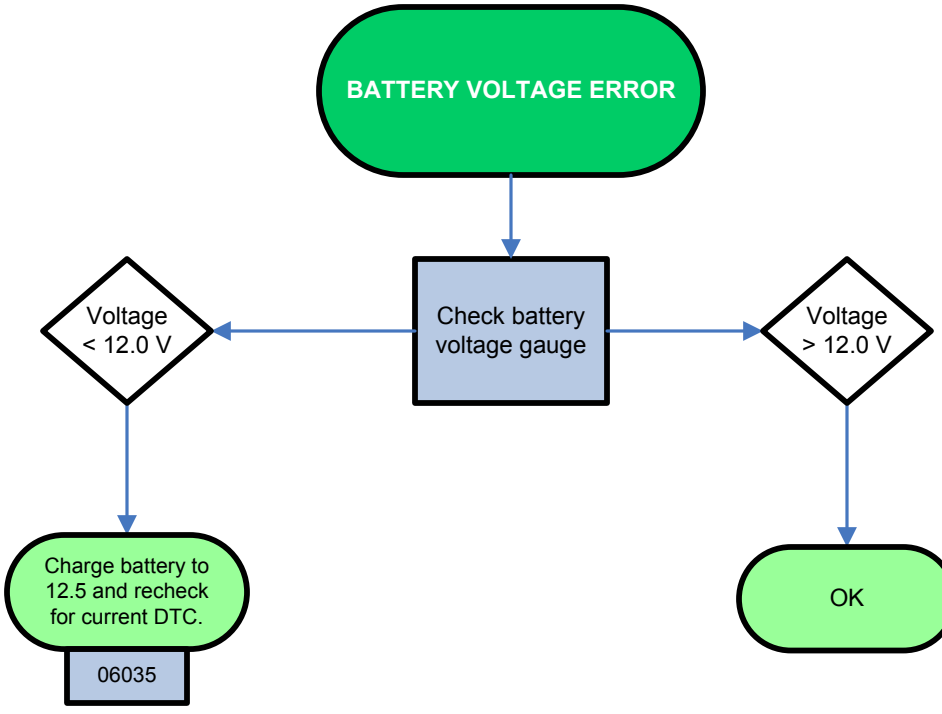
Note:

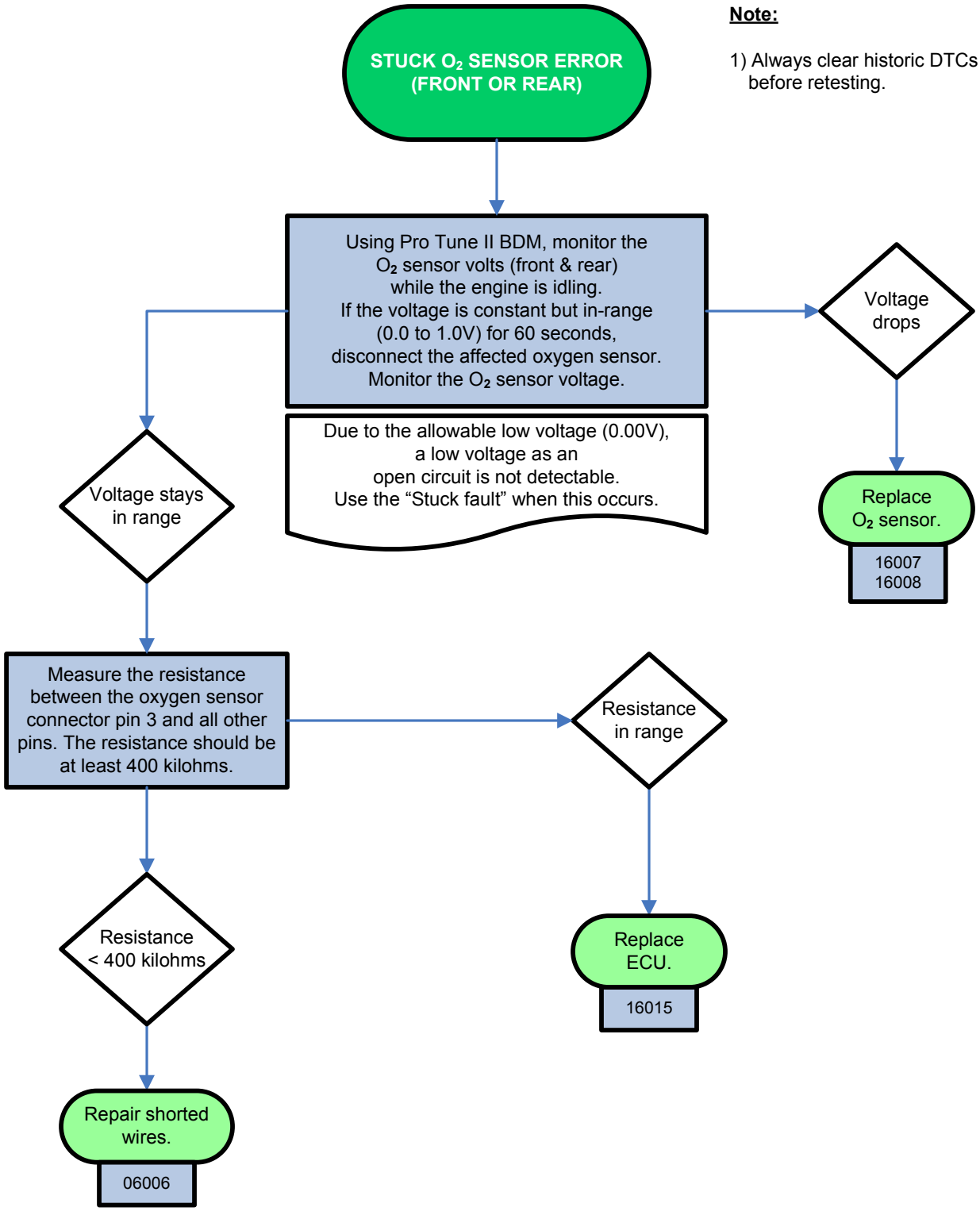
1) Always clear historic DTCs before retesting.




STEPPER MOTOR ERROR
Note:
1) Always clear historic DTCs before retesting.
Disconnect the IAC and the EFI module. Verify continuity between terminal A (BE/GN) of the IAC connector and terminal 35 of the ECU module connector, terminal B (BN/R) of the IAC connector and terminal 36 of the ECU module connector, terminal C (BK/PK) of the IAC connector and terminal 18 of the ECU module connector, and terminal D (BK/O) of the IAC connector and terminal 17 of the ECU module connector. Jiggle the wires while verifying continuity to test for an intermittent problem.
Continuity OK
No continuity
Repair harness as needed.
06006
Reconnect IAC And EFI module. With air cleaner removed, turn ignition ON and observe stepper motor position in throttle body and monitor the Stepper Position in Pro Tune II BDM. The Stepper Position should go to 0 counts (full out) and then park at 200 counts (full in).
Motion
Verify actual stepper count is the same as the target with engine off. Verify IAC within 20 steps of the target at Idle.
No
Replace stepper motor. Retest.
16002
Yes
No motion
With air cleaner removed, turn ignition off and observe stepper motor position in throttle body and monitor the Stepper Position in Pro Tune II BDM. The Stepper Position should go to 0 counts (full out) and then park at 200 counts (full in).
No motion
Possible ECU failure. Call Tech Support.
Using the EFI Software Test Output of IAC motor, listen for the motor to activate.
Replace stepper motor. Retest.
16002

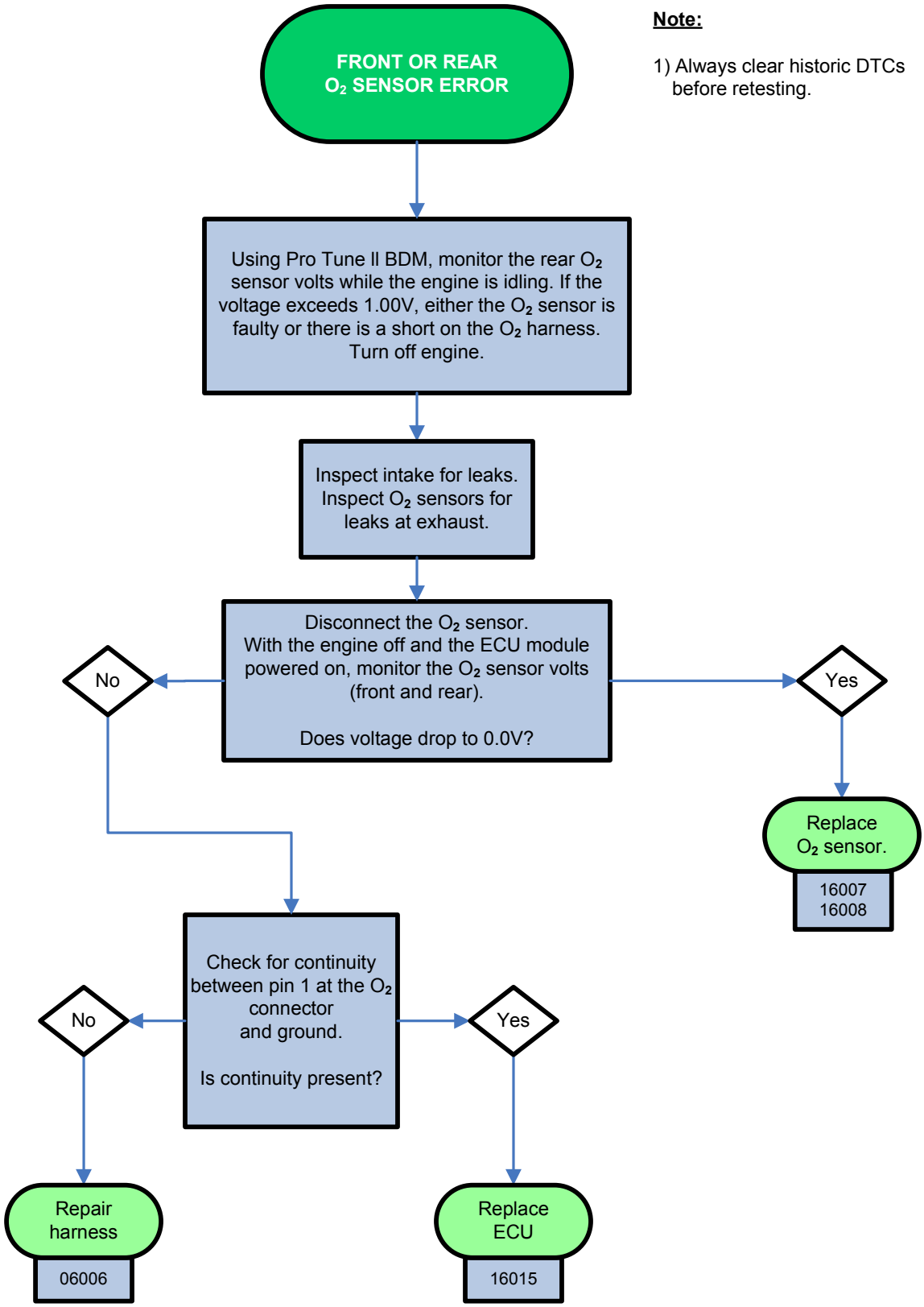

FRONT OR REAR ADAPTIVE MAXED OUT ERROR
Are any other current or historic DTCs set?
No
Yes
The .BOX file loaded in the VFI module does not match the given engine configuration. Consult a qualified BDM dealer for an appropriate .BOX file which matches the engine configuration.
Perform diagnostics for other DTCs first.


BATTERY VOLTAGE ERROR
Check battery voltage gauge
Voltage < 12.0 V
Voltage > 12.0 V
Charge battery to 12.5 and recheck for current DTC.
06035
OK



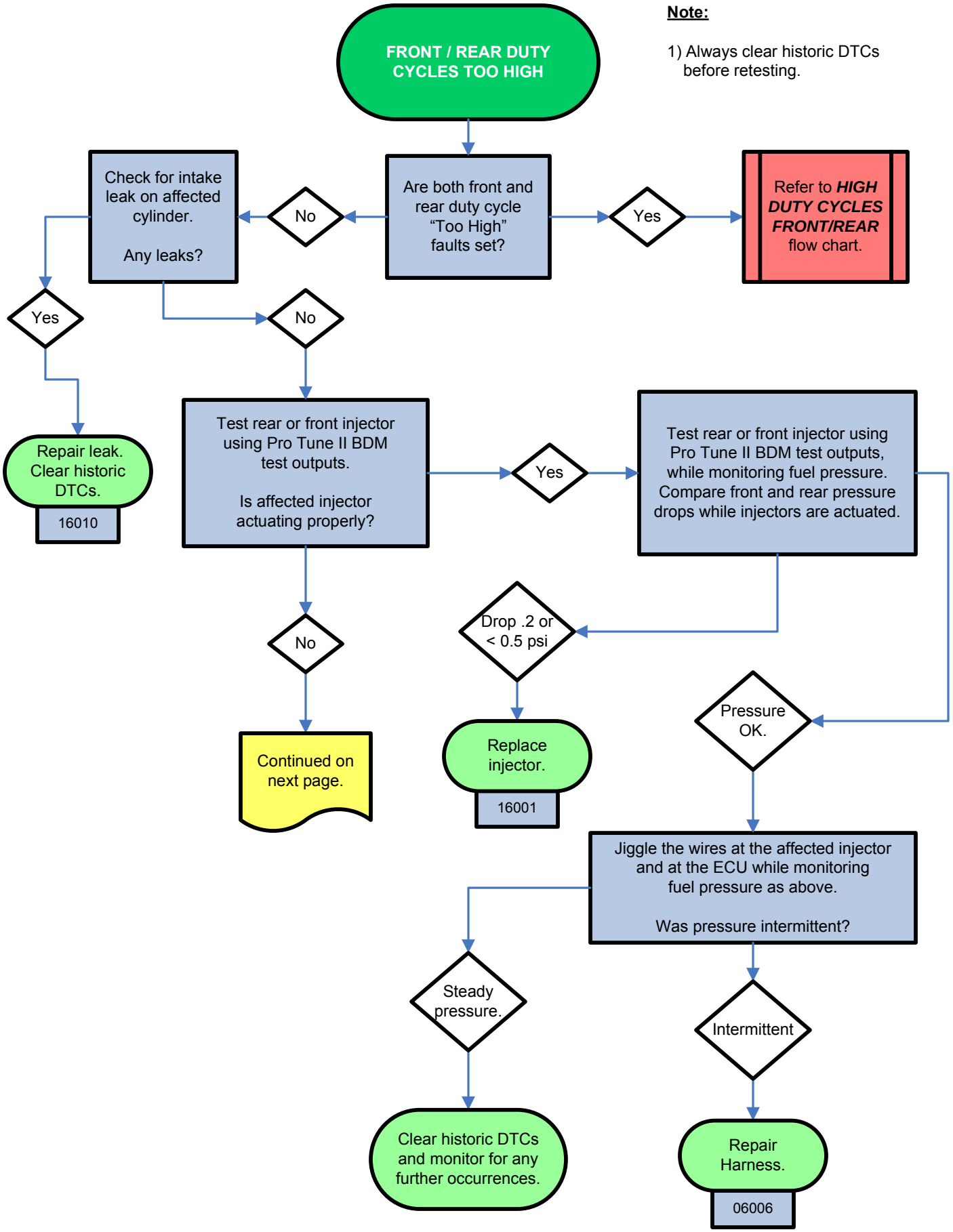
Note:

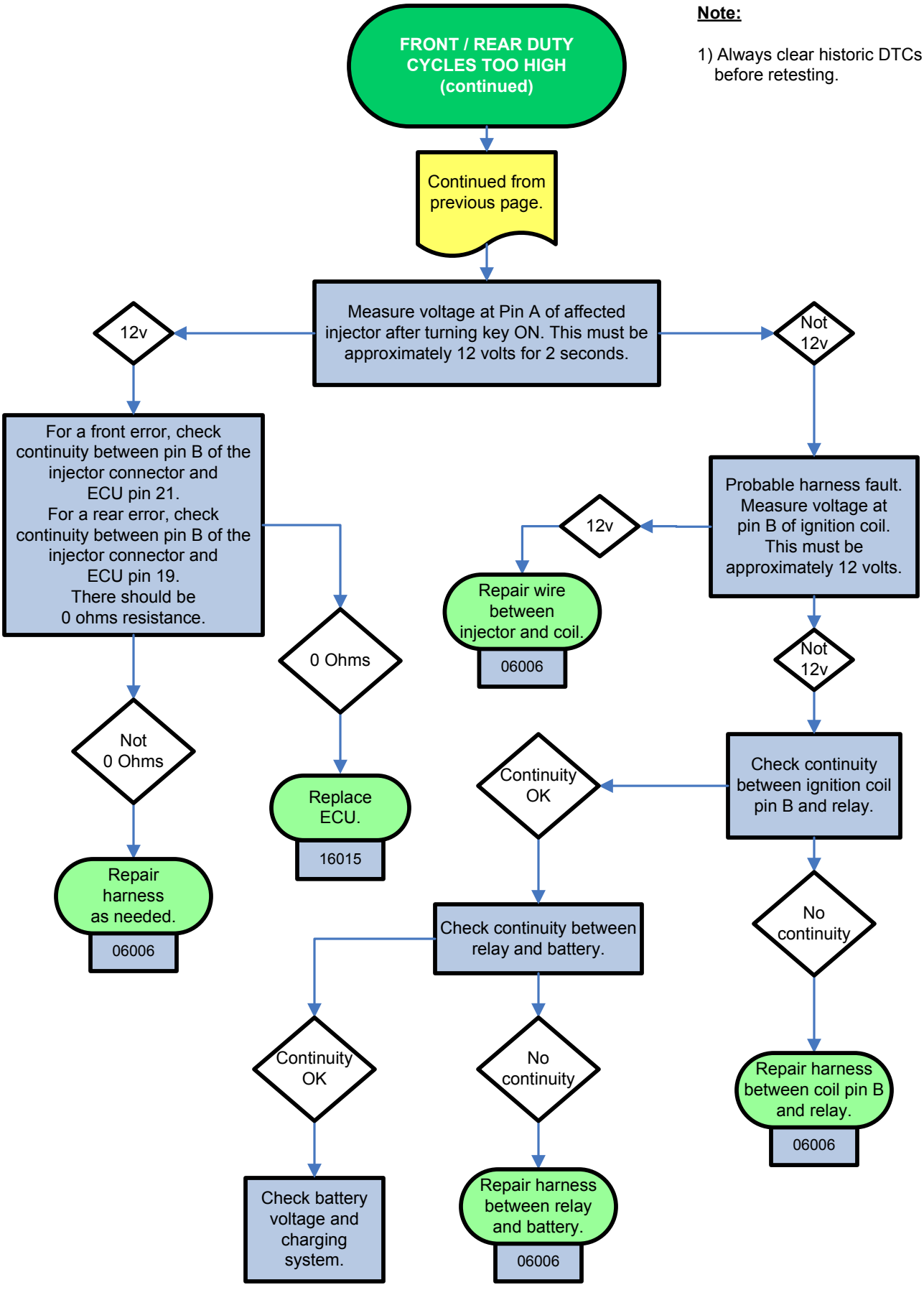
1) Always clear historic DTCs before retesting.

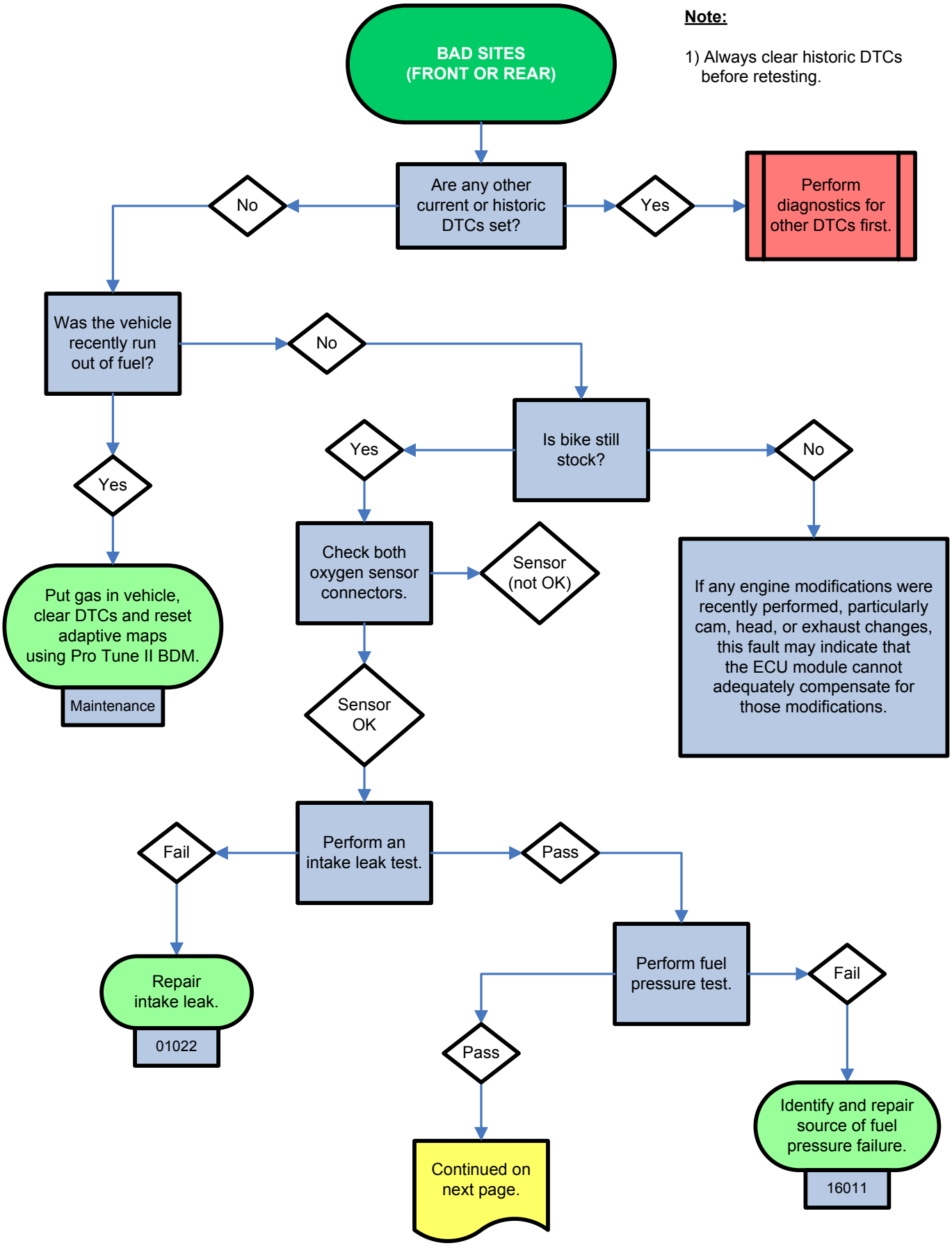


Note:

1) Always clear historic DTCs before retesting.


FRONT / REAR DUTY CYCLES TOO HIGH
Note:
1) Always clear historic DTCs before retesting.
Are both front and rear duty cycle "Too High" faults set?
No
Yes
Refer to HIGH DUTY CYCLES FRONT/REAR flow chart.
Check for intake leak on affected cylinder.
Any leaks?
Yes
No
Repair leak. Clear historic DTCs.
16010
Test rear or front injector using Pro Tune II BDM test outputs.
Is affected injector actuating properly?
Yes
Test rear or front injector using Pro Tune II BDM test outputs, while monitoring fuel pressure. Compare front and rear pressure drops while injectors are actuated.
No
Continued on next page.
Drop .2 or < 0.5 psi
Replace injector.
16001
Pressure OK.
Jiggle the wires at the affected injector and at the ECU while monitoring fuel pressure as above.
Was pressure intermittent?
Steady pressure.
Clear historic DTCs and monitor for any further occurrences.
Intermittent
Repair Harness.
06006


FRONT / REAR DUTY CYCLES TOO HIGH (continued)
Note:
1) Always clear historic DTCs before retesting.
Continued from previous page.
Measure voltage at Pin A of affected injector after turning key ON. This must be approximately 12 volts for 2 seconds.
12v
Not 12v
For a front error, check continuity between pin B of the injector connector and ECU pin 21.
For a rear error, check continuity between pin B of the injector connector and ECU pin 19.
There should be 0 ohms resistance.
Probable harness fault. Measure voltage at pin B of ignition coil. This must be approximately 12 volts.
12v
Repair wire between injector and coil.
06006
0 Ohms
Not 0 Ohms
Not 12v
Replace ECU.
16015
Continuity OK
Check continuity between ignition coil pin B and relay.
Repair harness as needed.
06006
Check continuity between relay and battery.
No continuity
Continuity OK
No continuity
Repair harness between coil pin B and relay.
06006
Check battery voltage and charging system.
Repair harness between relay and battery.
06006


BAD SITES
(FRONT OR REAR)
Note:
1) Always clear historic DTCs before retesting.
Are any other current or historic DTCs set?
No
Yes
Perform diagnostics for other DTCs first.
Was the vehicle recently run out of fuel?
No
Yes
Put gas in vehicle, clear DTCs and reset adaptive maps using Pro Tune II BDM.
Maintenance
Is bike still stock?
Yes
No
Check both oxygen sensor connectors.
Sensor (not OK)
If any engine modifications were recently performed, particularly cam, head, or exhaust changes, this fault may indicate that the ECU module cannot adequately compensate for those modifications.
Sensor OK
Perform an intake leak test.
Fail
Pass
Repair intake leak.
01022
Perform fuel pressure test.
Fail
Pass
Identify and repair source of fuel pressure failure.
16011
Continued on next page.

BAD SITES (FRONT OR REAR) (continued)

Note:

1) Always clear historic DTCs before retesting.