

CHAPTER 3

BODY ELECTRICAL

Headlight Adjustment, Bulb Replacement	3.1-3.3
Electrical Test Equipment, Digital Multitester	3.3
Headlight Bulb Test	3.4
Lighting System Test, Unregulated and Regulated	3.4
Seat Harness Troubleshooting	3.5
Hi/Low Switch Testing	3.5
Ignition Switch Testing	
Non Battery Models	3.5
Electric Start and Fuel Injected	3.6
Speed Control Assurance Testing	3.7-3.8
Coolant Temperature Hot Light	3.9
Handlebar/Thumbwarmers	3.10-3.11
Wiring Diagram/Schematics	
1985 - Star - 100 Watt Alternator	3.12
1985 - SS, Long Track - 120 Watt Alternator	3.13
1985 - Indy Trail - 120 Watt Alternator	3.14
1985 - Indy 440 - 120 Watt Alternator	3.15
1985 - Indy 600, Indy 600 SE - 120 Watt Alternator	3.16
1986 - Star - 100 Watt Alternator	3.17
1986 - Sprint, SS, Long Track - 120 Watt Alternator	3.18
1986 - Indy Trail - 120 Watt Alternator	3.19
1986 - Indy 400 - 120 Watt Alternator	3.20
1986 - Indy 600, Indy 600 SE - 120 Watt Alternator	3.21
1987 - Star, StarTrak - 100 Watt Alternator	3.22
1987 - Sprint, LongTrack (RLR) - 120 Watt Alternator	3.23
1988 - Indy Sport, Indy Trail (133 SKS) - 120 Watt Alternator	3.24
1988 - Indy 400 (133 SKS), Indy 600 - 120 Watt Alternator	3.25
1988 - Star, StarTrak - 100 Watt Alternator	3.26

1988 - Sprint, LongTrak (RLR) - 120 Watt Alternator	3.27
1988 - Indy Sport, Indy Trail (All Except ES) - 120 Watt Alternator	3.28
1988 - Indy 400 Classic - 120 Watt Alternator	3.29
1988 - Indy 400 (SKS), Indy 650 (SKS) - 120 Watt Alternator	3.30
1989 - Star, StarTrak - 100 Watt Alternator	3.31
1989 - Sprint ES, LongTrak (LTR) - 120 Watt Alternator	3.32
1989 - Sport, Sport GT - 120 Watt Alternator	3.33
1989 - Indy 400, 500, 500 SP - 120 Watt Alternator	3.34
1989 - Indy 500 Classic - 120 Watt Alternator	3.35
1989 - Indy Trail ES, SP, SKS, Deluxe, SuperTrak - 120 Watt Alternator	3.36
1989 - Indy 650 (SKS) - 120 Watt Alternator	3.37
1990 - Star, StarTrak - 150 Watt Alternator	3.38
1990 - Sprint ES - 150 Watt Alternator	3.39
1990 - Indy Sport, Sport GT - 150 Watt Alternator	3.40
1990 - Indy WideTrak - 200 Watt Alternator	3.41
1990 - Indy Trail, Deluxe - 200 Watt Alternator	3.42
1990 - Indy 400, 500, 500 SP, SKS - 200 Watt Alternator	3.43
1990 - Indy 500 Classic - 200 Watt Alternator	3.44
1990 - Indy 650, SKS - 120 Watt Alternator	3.45
1991 - StarLite, Indy Lite - 150 Watt Alternator	3.46
1991 - Indy Sport, Sport GT - 200 Watt Alternator	3.47
1991 - Indy WideTrak - 200 Watt Alternator	3.48
1991 - Indy Trail, Deluxe, SuperTrak - 200 Watt Alternator	3.49
1991 - Indy 400, 500, 500 SP, SKS - 200 Watt Alternator	3.50
1991 - Indy 500 Classic - 200 Watt Alternator	3.51
1990-1991 - Indy RXL	3.52
1991 - Indy 650 - 180 Watt Alternator	3.53
1992 - StarLite, Indy Lite, Lite GT - 150 Watt Alternator	3.54
1992 - Lite Deluxe - 150 Watt Alternator	3.55
1992 - Indy Sport, Sport GT - 200 Watt Alternator	3.56
1992 - Indy Trail, Trail Deluxe, SuperTrak - 200 Watt Alternator	3.57
1992 - Indy 440, 500 - 200 Watt Alternator	3.58
1992 - Indy 440 XCR - 200 Watt Alternator	3.59
1992 - Indy 500 SP, SKS - 200 Watt Alternator	3.60

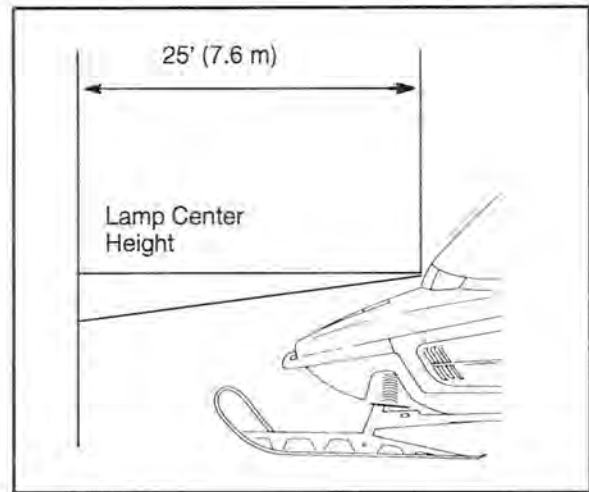
1992 - Indy 500 Classic - 200 Watt Alternator	3.61
1992 - Indy WideTrak - 200 Watt Alternator	3.62
1992 - Indy 650 - 180 Watt Alternator	3.63
1992 - Indy RXL, SKS - 180 Watt Alternator	3.64
1993 - Indy StarLite/GT, Lite/GT - 150 Watt Alternator	3.65
1993 - Indy Lite Deluxe - 150 Watt Alternator	3.66
1993 - Indy Sport - 200 Watt Alternator	3.67
1993 - Indy Trail, Trail Deluxe - 200 Watt Alternator	3.68
1993 - Indy 440, SKS - 200 Watt Alternator	3.69
1993 - Indy 440 XCR - 200 Watt Alternator	3.70
1993 - Indy 500 EFI, SKS - 200 Watt Alternator	3.71
1993 - Indy Classic - 200 Watt Alternator	3.72
1993 - Indy Classic Touring - 200 Watt Alternator	3.73
1993 - Indy WideTrak - 200 Watt Alternator	3.74
1993 - Indy XLT, SP, SKS - 170 Watt Alternator	3.75
1993 - Indy RXL, SKS - 180 Watt Alternator	3.76
1993 - Indy Storm, SKS - 180 Watt Alternator	3.77
1994 - Indy StarLite/GT, Lite/GT - 150 Watt Alternator	3.78
1994 - Indy Lite Deluxe -150 Watt Alternator	3.79
1994 - Indy Sport, SKS, Super Sport - 200 Watt Alternator	3.80
1994 - Indy Trail - 200 Watt Alternator	3.81
1994 - Indy Trail Deluxe - 200 Watt Alternator	3.82
1994 - Indy 440, SKS -200 Watt Alternator	3.83
1994 - Indy 600 XCR	3.84
1994 - Indy 440 XCR - 200 Watt Alternator	3.85
1994 - Indy 440 XCR SP	3.86
1994 - Indy 500 EFI, SKS - 250 Watt Alternator	3.87
1994 - Indy Classic - 200 Watt Alternator	3.88
1994 - Indy Classic Touring - 250 Watt Alternator	3.89
1994 - Indy WideTrak GT - 200 Watt Alternator	3.90
1994 - Indy WideTrak LX - 200 Watt Alternator	3.91
1994 - Indy XLT, SP, SKS, Special XTRA - 170 Watt Alternator	3.92
1994 - Indy RXL - 180 Watt Alternator	3.93
1994 - Indy RXL Touring - 180 Watt Alternator	3.94

1994 - Indy Storm, SKS - 180 Watt Alternator	3.95
1995 - Indy StarLite/Lite/Lite GT	3.96
1995 - Indy Lite Deluxe	3.97
1995 - Indy Sport/Super Sport/Sport Touring	3.98
1995 - Indy Trail	3.99
1995 - Indy Trail Deluxe	3.100
1995 - Indy 440/SKS	3.101
1995 - Indy 440 XCR	3.102
1995 - Indy 600 XCR	3.103
1995 - Indy 500 EFI/SKS/PT	3.104-3.105
1995 - Indy 500	3.106
1995 - Indy Classic	3.107
1995 - Indy WideTrak GT	3.108
1995 - Indy WideTrak LX	3.109
1995 - Indy XLT/XLT SP/SKS/PT	3.110
1995 - Indy XLT Touring	3.111
1995 - Indy RXL	3.112
1995 - Indy RXL Touring	3.113
1995 - Indy Storm/SKS/PT	3.114

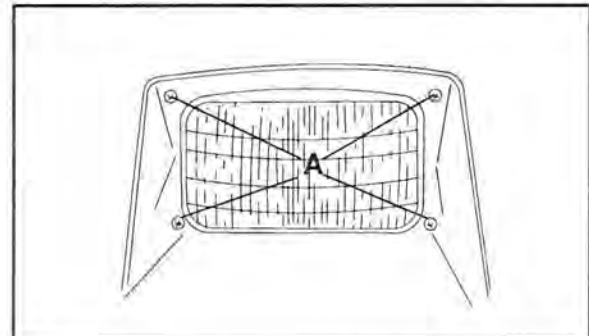
Headlight Adjustment

Headlights may be adjusted for both horizontal and vertical aim using the following procedure.

1. Place the snowmobile on a level surface with the headlight approximately 25' (7.6 m) from a wall.
2. Measure the distance from the floor to the center of the headlight and make a mark on the wall.
3. Start the engine and turn the headlight switch to high beam.
4. Observe the headlight aim. The most intense part of the headlight beam should be aimed 2" (5.1 cm) below the mark placed on the wall in Step 2.
NOTE: Rider weight must be included on the seat.



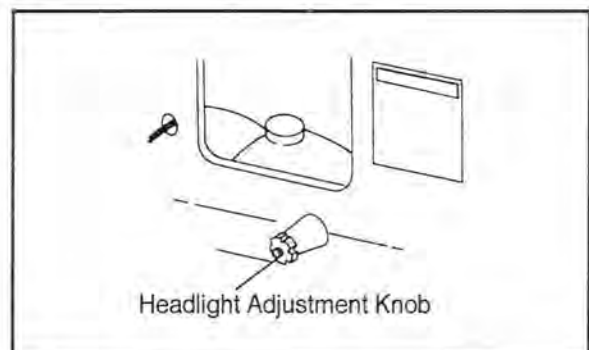
5. If necessary, the headlight aim can be adjusted by turning the four headlight mounting screws either in or out as needed for proper aim.



1994 and Newer Liquid Twins

Headlight Adjustment

1. If necessary, the headlight vertical aim can be adjusted by turning the adjustment knob located inside the hood just below the headlamp opening. Turn knob in or out as needed for proper aim.

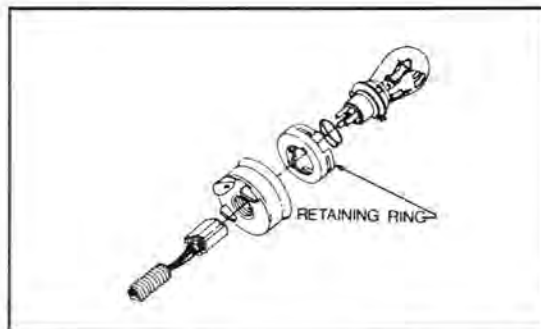


BODY ELECTRICAL

Standard Indy Models

Headlight Bulb Removal (Models with Metal Retaining Ring)

1. Pull rubber boot back.
2. Release the retaining ring by depressing and rotating it counter clockwise.
3. Grasp the plastic harness connector and carefully remove the harness, retaining ring and bulb assembly from the reflector assembly.
4. Grasp the bulb by its metal base and carefully disconnect the bulb from the harness.



Headlight Bulb Installation (Models with Metal Retaining Ring)

1. While holding the metal base of the bulb, connect it to the wire harness. Make sure the bulb blades are properly positioned in the socket.
2. While holding the plastic harness connector, align the bulb tabs with the slots in the socket. Slide the bulb into the reflector assembly.
3. Reinstall the bulb retaining ring with the word "TOP" toward the top of the reflector.
4. Align the retaining ring mounting tabs. Push the ring in, compressing the spring, and rotate the ring clockwise to lock it in place.
5. Reinstall the rubber boot.

NOTE: Due to possible differences in bulbs, re-check headlight aim whenever a bulb or reflector is replaced.

1994 and Newer Liquid Twins

Removing the Center Bulb

1. Push down on spring until it releases from spring retainer.
2. With wire harness attached to bulb, withdraw bulb from housing.
3. Grasp bulb by metal base and carefully separate bulb from harness.

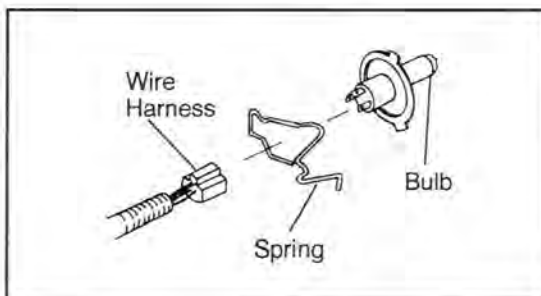
Installing the Center Bulb

NOTE: Do not touch a halogen bulb with bare fingers. Oil from skin leaves a residue, causing a hot spot which will shorten the life of the lamp.

1. Hold bulb by metal base and install into wire harness.
2. Insert bulb into housing.
3. Push spring down until it is secured by spring retainer.
4. Verify headlight aim.

Removing the Side Bulbs

1. Disconnect terminal from back of bulb.
2. Turn bulb assembly 1/8 turn to left and withdraw from housing.



Installing the Side Bulbs

NOTE: Do not touch a halogen bulb with bare fingers. Oil from skin leaves a residue, causing a hot spot which will shorten the life of the lamp.

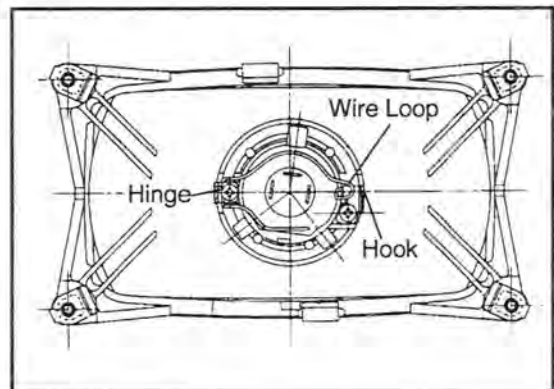
1. Hold bulb assembly by plastic base and plug into wire terminal.
2. Insert bulb assembly into housing.
3. Turn bulb assembly 1/8 turn to right to secure in housing.
4. Verify headlight operation.

Headlight Bulb Removal (Models with Wire Bulb Retainer)

1. Push down on left side of spring until it releases from spring retainer.
2. Lift spring carefully around wire harness and flip to outside of housing.
3. With wire harness attached to bulb, withdraw bulb from housing.
4. Grasp bulb by metal base and carefully separate bulb from harness.

Headlight Bulb Installation (Models with Wire Bulb Retainer)

1. Hold bulb by metal base and install into wire harness.
2. Insert bulb into housing.
3. Carefully flip spring back into housing placing it around wire harness.
4. Push spring down until it is secured by spring retainer.
5. Verify headlight aim.



Electrical Testing

The easiest and most accurate method for testing modern electrical components is with a digital multimeter. Any good quality multimeter will work. However, due to ease of operation and durability, Polaris recommends the Fluke Model 73 (PN 2870659). See photo at right. This instrument will provide a digital readout of the measured value of the test being performed.

Listed below are the dial symbols, their meaning and what the dial setting can be used for.

Off = Instrument Off

V~ = Volts AC - measuring alternator output

V --- = Volts DC - measuring battery voltage, volt drop, etc.

300mv --- = Milli Volts DC - measuring small DC voltages

Ω = Ohms, resistance - measuring component resistance values - testing coils, wiring, etc.

$\rightarrow +$ = Diode check - checking the condition of rectifier diodes, cannot be used for testing except when the diodes are out of circuit

A~ = Amps AC - not used for snowmobile service

A --- = Amps DC - used to check battery charge rate, system draws, etc.

NOTE: When using the Amp settings, the red test lead must be moved to the 10A (unfused) socket on the front of the instrument.

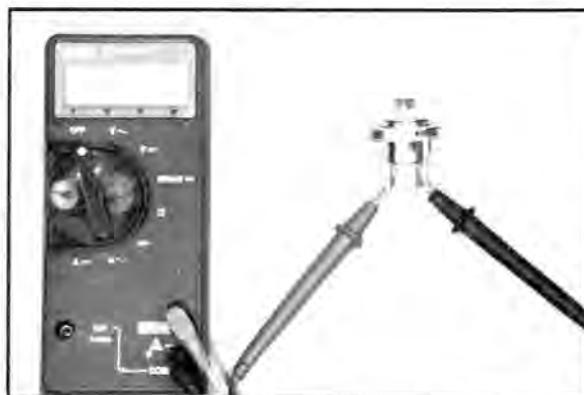


BODY ELECTRICAL

Electrical Testing

Headlight Bulb Filament Continuity Test

1. Turn the Multitester dial to the ohms (Ω) position.
2. Disconnect the wire harness from the headlight bulb.
3. Viewing the end of the bulb with the terminal blades at the 9, 12 and 3 o'clock position, connect the black multitester lead to the 9 o'clock blade.
4. Touch the red tester lead to the 12 o'clock terminal and then to the 3 o'clock terminal, noting the resistance value of each. A reading of between 2 and 5 ohms is good. An open reading indicates a bad element.



Lighting System Test (Unregulated Voltage)

1. Turn the multitester dial to the Volts AC ($V\sim$) position.
2. Disconnect the alternator to main harness connector at engine.
3. Connect one of the tester leads to the yellow alternator wire and the other lead to the brown alternator wire.
NOTE: On floating alternators, the yellow/red stator wire should connect to the brown stator wire. If it does not, the system will not have a ground and will not operate.
4. Start the engine. While observing the voltage reading, increase the engine speed to about 3000 RPM. Readings of between 15 and 45 VAC are considered normal. If there is no output, refer to the Stator Testing section under Section 4, Engine Electrical.

Regulated Voltage:

1. Reconnect the alternator to main harness connector.
2. Insert one of the tester leads along the side of the yellow regulator wire connector between the insulation and the terminal. **NOTE:** Do not disconnect the regulator from the system.
3. Ground the other tester lead.
4. Start the engine. While observing the voltage reading, increase the engine speed to about 3000 RPM. An acceptable reading will be between 10 and 15 VAC. Voltages lower than 10 VAC may indicate an excessive system load, poor flywheel magnets, lighting coil problems, wiring problems or a bad voltage regulator. Voltage readings higher than 15 VAC indicate a voltage regulator problem or a poor ground at the regulator heat sink.

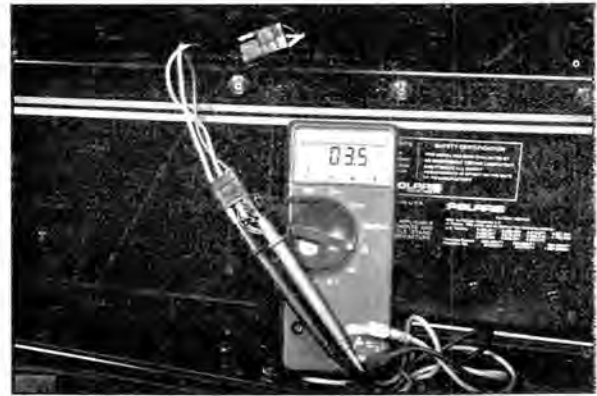


NOTE: Fuel injected models have two regulators; one for lighting and one for charging the battery. Battery charging is discussed in Section 4, Engine Electrical.

NOTE: Regulator PN 4060090 (ID mark LR 11) should not be used on machines with halogen headlamps.

Seat Harness Troubleshooting

1. Remove the taillight lens.
2. Remove the two taillight bulbs and the brakelight bulb.
3. Separate the seat harness from the main harness by unplugging the connector at the right rear of the tank.
4. With the multimeter dial set on ohms (Ω) connect either meter test lead to the brown seat harness wire.
5. Touch the other tester lead to first the yellow wire and then the orange wire. Observe the readings. Readings other than an open circuit indicate a shorted harness or bulb socket. **NOTE:** The bulb socket tangs sometimes short to ground with the bulb removed.
6. Check between the yellow and orange wires in the same manner to check for a short between the brake and running lights. If damaged wiring is found, remove the seat.
7. Tip the seat over and remove the right side seat cover staples. Locate and repair the harness problem.
8. Reinstall the staples and re-check the seat harness.



Hi/Lo Beam Switch Testing

1. Set the multimeter dial to the ohms (Ω) position.
2. If the Hi/Lo switch has not been removed from the machine, disconnect the switch to harness plug in connector.
3. With the Hi/Lo switch in the *Lo beam* position, check the resistance between the yellow and the green switch wires. The reading should be less than .4 ohms.
4. Turn the Hi/Lo switch to the *Hi beam* position and the multimeter should indicate an open circuit (OL) reading.
5. Move one of the tester leads from the green to the red switch wire. The multimeter should now read less than .4 ohms.
6. Turn the Hi/Lo Switch back to the *Lo beam* position and the meter should again read an open circuit (OL).



	Low	High
Grn		
Yel		
Yel/Rd		

High/Low Switch

Ignition Switch Testing (Non-Electric Starter)

1. Set the multimeter dial to the ohms (Ω) position. Connect one of the tester leads to either of the switch terminals and the other tester lead to the other switch terminal.
2. With the switch off, the reading should be less than .4 ohms. With the switch on, the reading must be an open circuit (OL).
3. Check the resistance between each of the switch terminals and the switch body. With the switch still in the on position, there must be an open circuit (OL) reading. Readings other than those listed indicate a defective switch.



	Off	On
Blk		
Brn		

Ignition Switch

BODY ELECTRICAL

Ignition Switch Testing

Ignition Switch Testing (Electric Start Models)

NOTE: Refer to the appropriate model and year wiring diagram for ignition switch wire colors and connections.

1. Disconnect wires. Set the multimeter dial to the ohms (Ω) position.
2. With the key in the off position, check the resistance between the G (Ground, brown) terminal and the M (Mag, black) terminal. This reading must be less than .4 ohms.
3. Turn the key to the on position. The multimeter should now read an open circuit (OL).
4. Move the tester lead from the G terminal to the switch housing and re-check the reading. It should also be an open circuit (OL).
5. Place one of the tester leads on the B (Battery, red) terminal and the other tester lead on the S (Starter, blue) terminal. With the key in the on position, there must be an open circuit (OL) reading.
6. Turn the key to the start position. The reading should be less than .4 ohms. Readings other than the ones listed indicate a defective switch.

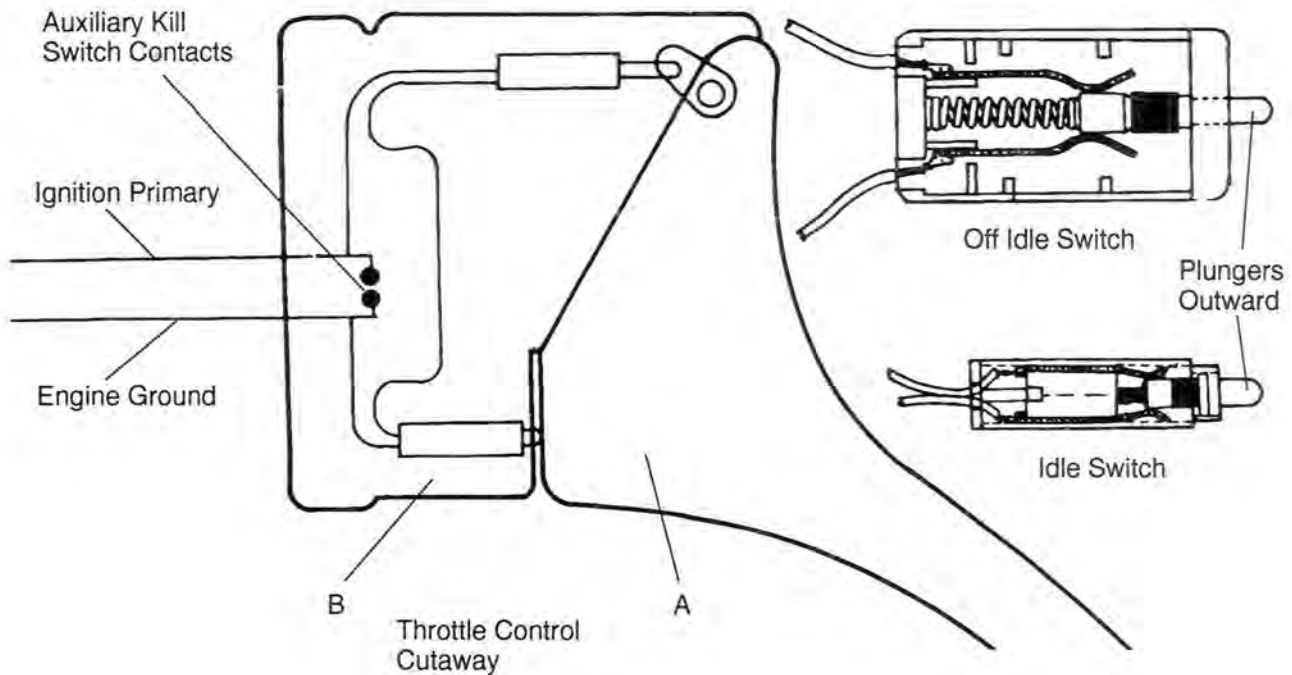


Ignition Switch Testing (Fuel Injected Models)

1. Disconnect wires. Set the multimeter dial to the ohms (Ω) position.
2. With the key in the off position, connect one of the tester leads to the G terminal.
3. Randomly connect the other tester lead to the other terminals. The only terminal that should show other than an open circuit (OL) is the M terminal. The M terminal should read less than .4 ohms.
4. Turn the key switch to the run position. Check the resistance between the M terminal and each of the other terminals, and the M terminal and the switch housing. All of these readings must be an open circuit (OL).
5. Return the key to the off position.
6. Connect a tester lead to the B terminal. Randomly connect the other tester lead to each terminal. The readings must be an open circuit (OL).
7. Turn the key to the run position and repeat the test. All of the readings must be an open circuit (OL), except between the B and L terminals. This reading must be less than .4 ohms.
8. With one tester lead connected to the B terminal and the other to the S terminal and with the switch in any position except start, the reading should be an open circuit (OL). In the start position, the reading must be less than .4 ohms.

BODY ELECTRICAL

Speed Control Assurance Operation



The speed control assurance consists of two series connected switches. If one or both switch plungers are positioned inward, the circuit is open and the engine will run.

At idle, with the throttle lever properly adjusted, the bottom switch circuit is open and the plunger is inward. The top switch circuit is closed, and the plunger is outward. The speed control circuit is open, allowing the engine to run.

As the throttle lever is actuated to an off idle position, the top switch circuit is opened (plunger in) and the bottom switch circuit is closed (plunger out). The speed control circuit is still open, allowing the engine to run.

In the event the carburetor or controls malfunction and allow the throttle cable to become slack, the circuit will close (both switch plungers out), grounding the ignition system and causing the engine to stop.

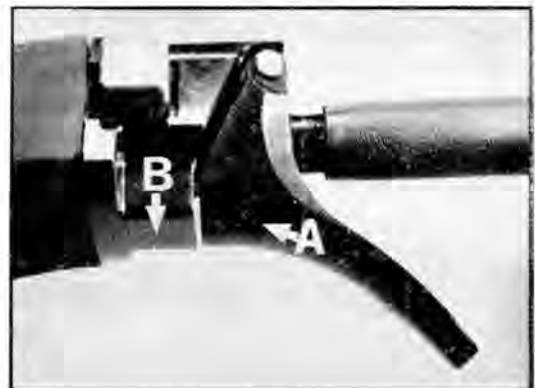
Speed Control Assurance Adjustment

Throttle lever free play must always provide a .010-.030" (.25-.8 mm) clearance between throttle lever (A) and throttle block (B). This clearance is controlled by the throttle cable sleeve(s) and the idle speed screw(s).

If the idle speed screw(s) is adjusted inward and the cable sleeve(s) is not adjusted to take up the throttle lever to throttle block clearance, the engine may misfire or kill upon initial throttle opening.

CAUTION: After any idle speed adjustments are made, the throttle lever to throttle block clearance must be checked and adjusted.

NOTE: When adjustments are made on models which have more than one carburetor, refer to Section 6, Carburetion, for proper carburetor synchronization adjustments.



BODY ELECTRICAL

Speed Control Assurance Testing

1. Set the multimeter in the ohms (Ω) position.
2. Disconnect the switch harness from the main wire harness.
3. Connect the two multimeter test leads to the two switch wires.

Test 1 - Open Circuit - Run

With the auxiliary shut-off switch in the on position, the multimeter should read an open circuit (OL). As the throttle lever is moved from idle to off idle, the tester should continue to read an open circuit. If the tester fluctuates and the throttle lever to throttle block clearance is adjusted properly, the switch assembly needs to be replaced.

Test 2 - Closed Circuit - Kill

The two speed control switches must make a complete circuit to kill the engine. To check the switches, pull the throttle lever out away from the throttle block. With the switch plungers outward and the auxiliary shut-off switch in the on position, the multimeter must read less than .4 ohms resistance or the switch assembly needs to be replaced.



Test 3 - Auxiliary Shut-Off

The multimeter should read less than .4 ohms in the off position and an open circuit in the on position. If not, the switch assembly needs replacement.

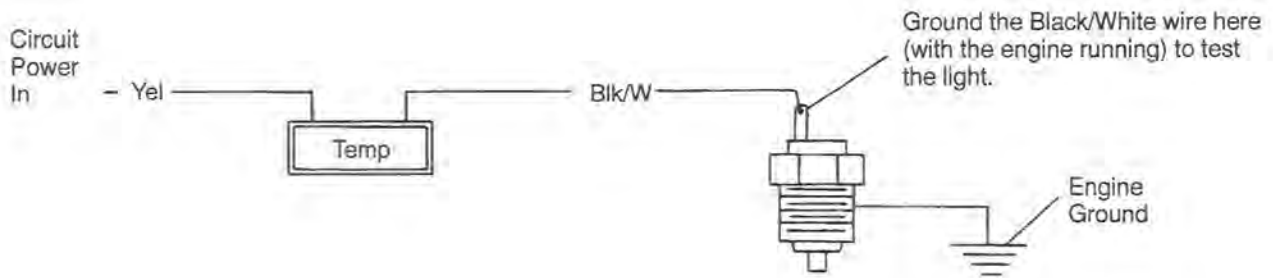
Speed Control Assurance Testing

Auxiliary shut-off and speed control assurance switches are connected and replaced as a unit from the back side of the throttle block.

1. Remove the handlebar pad and/or throttle block backing plate.
2. Slide out the auxiliary shut-off portion of the switch.
3. Remove the two screws securing the two speed control assurance switches.
4. Remove the switches noting their placement in the throttle block.
5. Replace the assembly and check its operation.

BODY ELECTRICAL

Coolant High Temperature Indicator Testing



The indicator light is controlled by a temperature/warning switch installed into the engine cooling system. When engine coolant temperature reaches approximately 205° F, the switch closes, completing the circuit through the indicator light to ground. The system should be tested periodically for proper operation.

Lamp Circuit Test

1. Remove wire from temperature sensing switch located under thermostat housing.
2. With engine idling, ground wire to engine. The temperature warning lamp on the console should light. If not, replace the lamp assembly or inspect wiring for shorts or open circuit.

Temp Light Temperature Sensor Test

The temperature/warning switch is normally open.

1. Set the multimeter on the ohms (Ω) scale.
2. Disconnect the lamp wire.
3. Connect one test probe to the switch terminal and the other to engine ground. The meter should show an open circuit (OL). This indicates a normally open switch. If the switch were heated to approximately 205° F, the contact in the switch would close and the reading would be less than .4 ohms.

CAUTION: If attempting to heat the sensor to close the contacts, heat only in a water bath. Never subject the sensor to an open flame to attempt to close the contacts as sensor damage will result.

Handlebar Warmer Testing

Polaris has used four different types of handlebar warmers. They are all similar in that when on Hi, they are each 15 watt warmers. Each type must be wired differently from one another due to internal resistance difference. Use the wiring diagrams on the following pages whenever troubleshooting, repairing or replacing any handlebar warmer.

The warmers are broken down into the following types:

- Type I - Single element, stick on grid
- Type II - Dual element (Hi/Lo) stick on grid with diode
- Type III - Dual element (Hi/Lo) stick on grid
- Type IV - Polaris Hot Grips™

BODY ELECTRICAL

Handlebar Warmer Testing

Type I

The Type I warmer grid is used as standard equipment on single heat units such as the Trail. Individual grid resistance is approximately 10 ohms when measured between the two element leads (1 or 2). There must also be an open circuit (OL) between either lead and ground with the element totally disconnected.

Type I System Check

1. Remove the yellow power in wire from the toggle switch.
2. Read the resistance between the switch terminal and ground. The resistance with the switch on should be about 5 ohms. With the switch off it should be an open circuit.

NOTE: Individual grid resistance may vary slightly (10%) due to temperature and element manufacturing differences.

Type II

The Type II warmer grid was used as standard equipment on the 1989 dual heat units such as the Classic and 650 Indy. Individual grid resistance between the common lead (1), and either of the two grid leads, (2 and 3), is approximately 20 ohms. These grids must be wired with the 2 and 3 leads connected together and mounted on the middle switch terminal.

The diode kit (PN 2200315) must be installed as a jumper between the upper and lower switch terminal. Refer to Service Bulletin S-89-01. The common grid connection 1 must be grounded.

Type II System Check

1. Remove the yellow power in wire (switch center).
2. Measure the resistance in the Hi position (switch up). The resistance will be approximately 5 ohms with all grids connected parallel. See illustration at right.

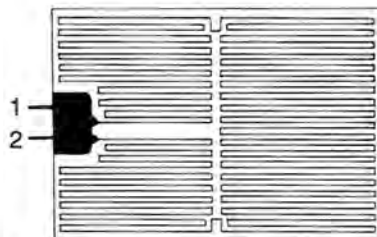
Type III

The Type III warmer grid is used as standard equipment on 1990 and newer dual heat units such as the Classic and 650. Individual grid resistance between the common lead (1), and either of the two grid leads (2 and 3), is approximately 10 ohms.

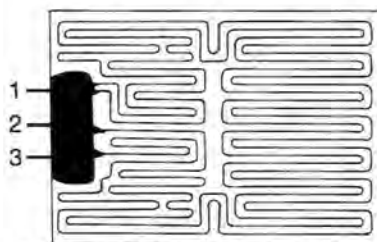
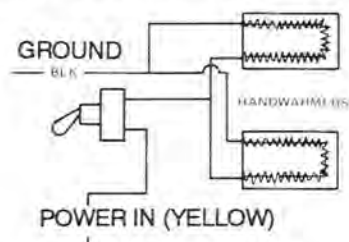
These grids are wired parallel between the left and right handlebar, and are wired in series for low heat on an individual grid. Example: Low heat on each grip would have the power in to wire 2. Wire 3 would be the ground. Resistance between 2 and 3 is 20 ohms.

Type III System Check

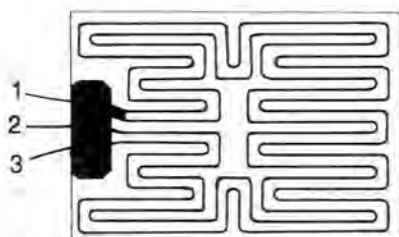
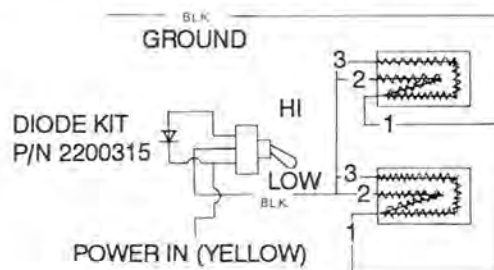
1. Remove the yellow power in wire from the center of the toggle.
2. Measure the resistance between the switch terminal and ground. With the switch in the Hi position the resistance should be approximately 5 ohms. In the Lo position the resistance should be approximately 10 ohms.



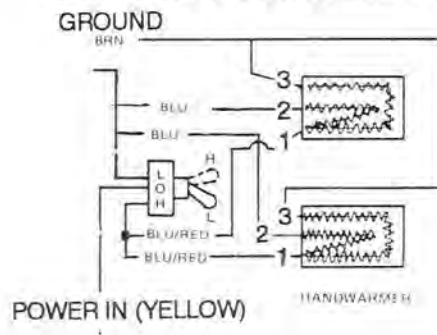
GRID IDENTIFICATION NUMBER: 2536C



GRID IDENTIFICATION NUMBER: 3866B



GRID IDENTIFICATION NUMBER: 4010A

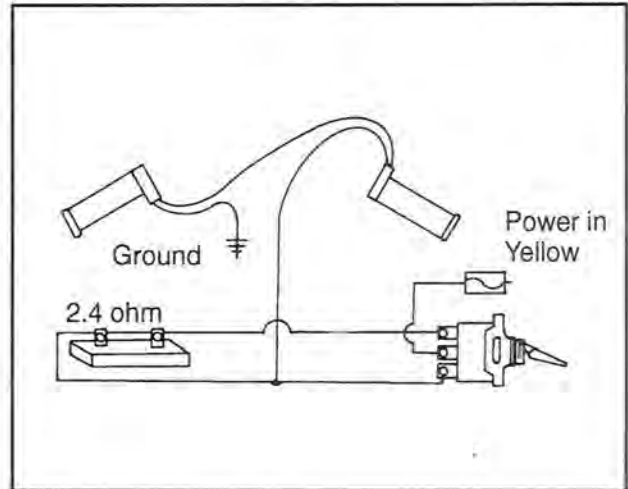


TYPE IV

The Type IV handlebar warmer is a complete grip assembly mounted on the end of each handlebar. The dual heat version is a series connected circuit between the grips. It has an additional ballast resistor added in series to provide low heat. The resistance of each grip is approximately 2.5 ohms. The combined series resistance is 5 ohms in the high position. **CAUTION:** The grip kit must be properly installed and wired as shown or electrical system overloading will result.

SYSTEM CHECK

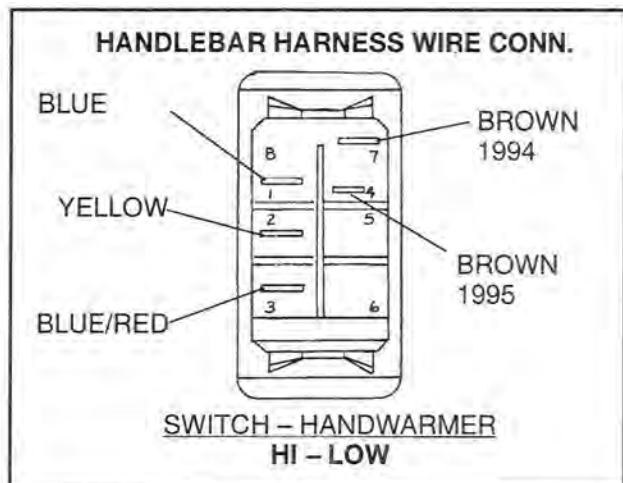
Remove switch center connection. With a digital multimeter set in the ohms (Ω) position, measure resistance between switch center terminal and ground. In the off (center) position, meter should indicate an open circuit (OL). In the high position, meter should read approximately 5 ohms. In the low position, meter should read approximately 7.4 ohms. With ground terminal lifted, meter should indicate an open circuit (OL).



HIGH-LOW HANDWARMER TOGGLE SWITCH

Below are the correct wire to PIN numbers:

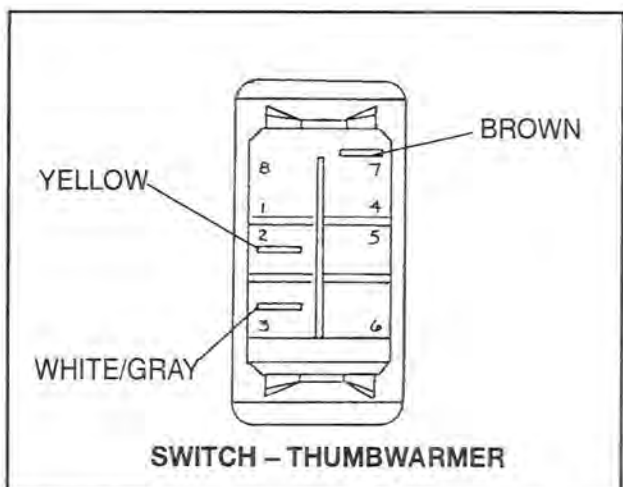
- | | |
|-------------|--------------------------|
| 1. Blue | – High Circuit |
| 2. Yellow | – Regulated Power (A.C.) |
| 3. Blue/Red | – Low Circuit |
| 4. Blank | |
| 5. Blank | |
| 6. Blank | |
| 7. Brown | – Ground Circuit |
| 8. Blank | |



THUMBWARMER TOGGLE SWITCH

Below are the correct wire to PIN numbers:

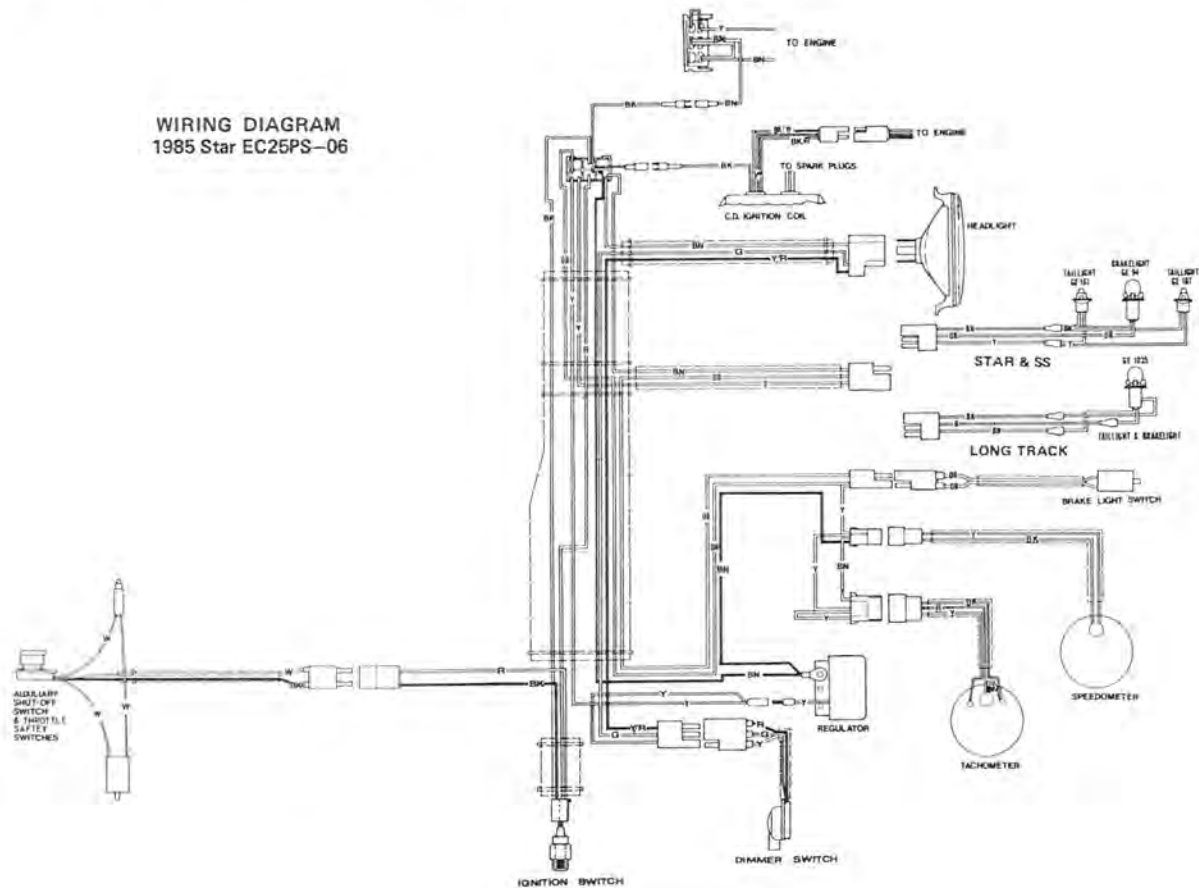
- | | |
|---------------|--------------------------|
| 1. Blank | |
| 2. Yellow | – Regulated Power (A.C.) |
| 3. White/Gray | – To Thumbwarmer |
| 4. Blank | |
| 5. Blank | |
| 6. Blank | |
| 7. Brown | – Ground Circuit |
| 8. Blank | |



BODY ELECTRICAL

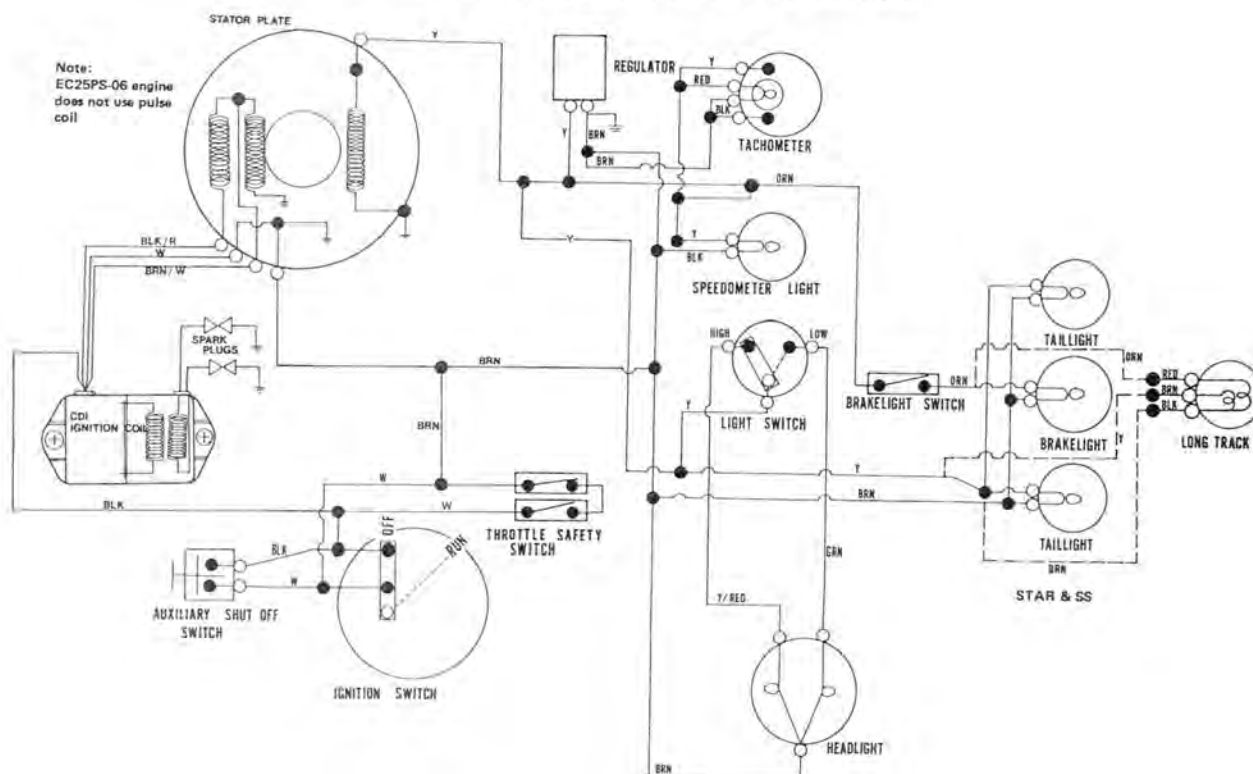
1985 Wiring Diagram/Schematic - Star

WIRING DIAGRAM
1985 Star EC25PS-06



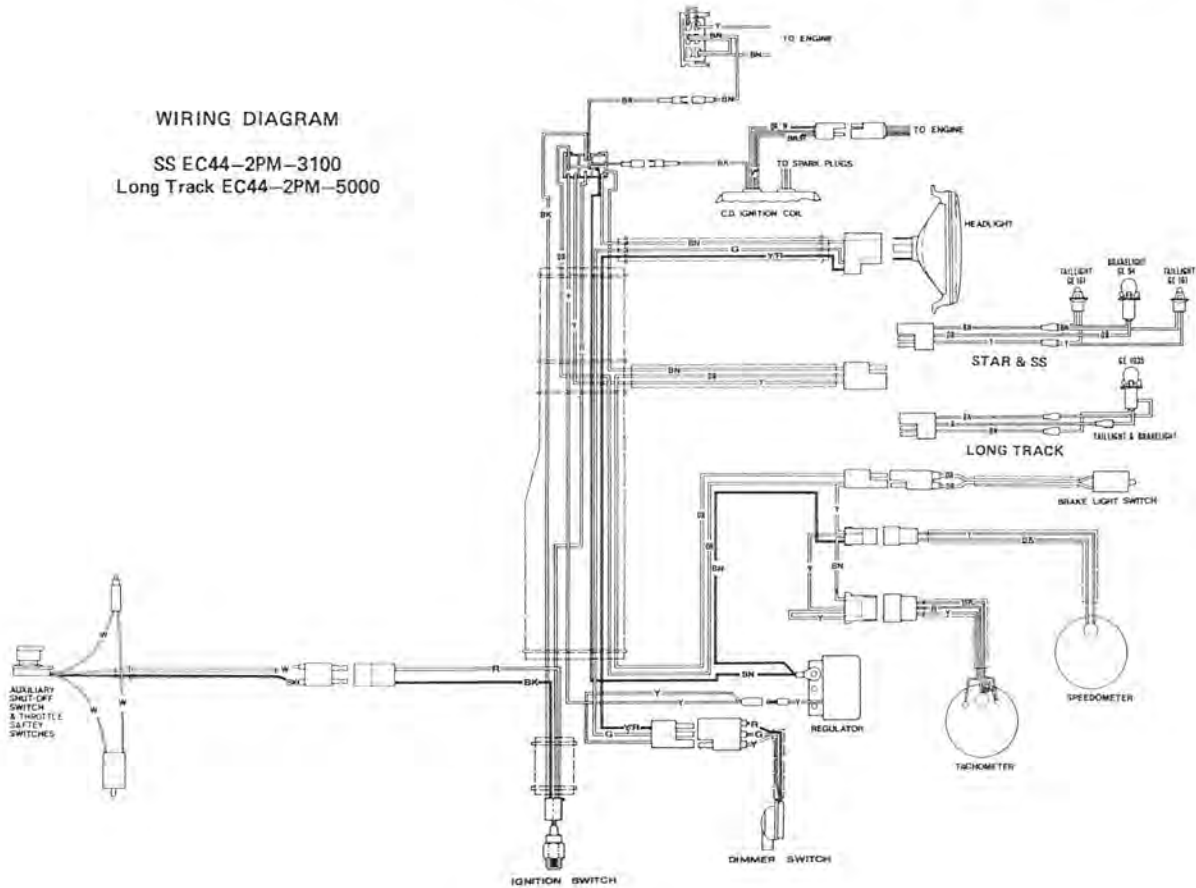
SCHEMATIC DIAGRAM

1985 STAR EC25PS-06 (100 WATT ALTERNATOR)



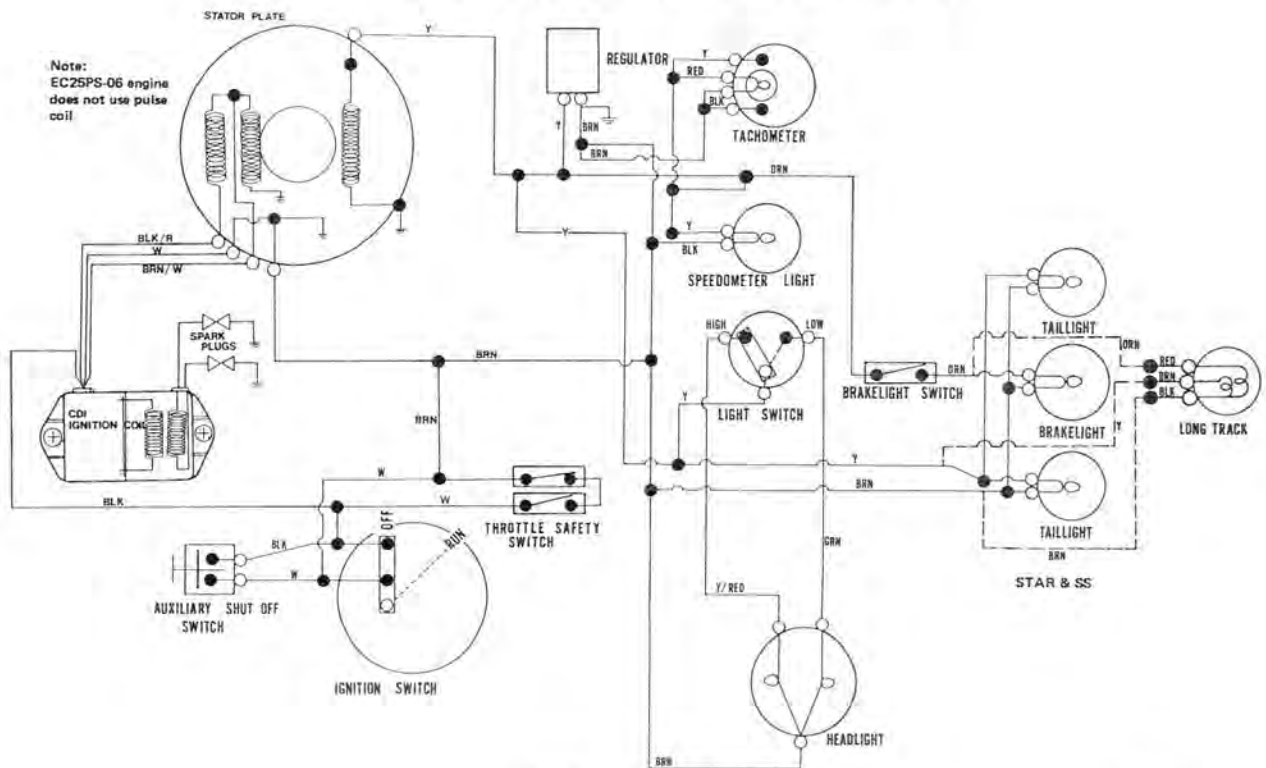
BODY ELECTRICAL 1985 Wiring Diagram/Schematic - SS, Long Track

WIRING DIAGRAM
SS EC44-2PM-3100
Long Track EC44-2PM-5000



SCHEMATIC DIAGRAM

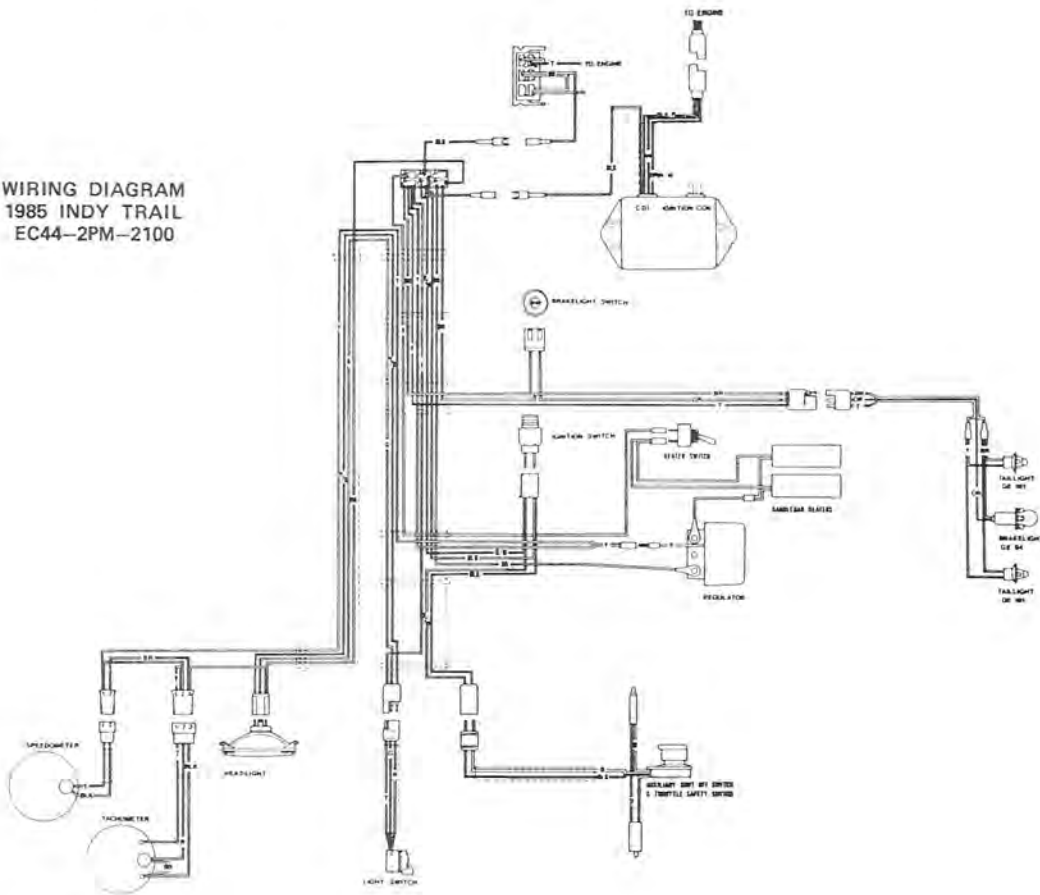
SS EC44-2PM-3100 (120 WATT ALTERNATOR)
LONG TRACK EC44-2PM-5000 (120 WATT ALTERNATOR)



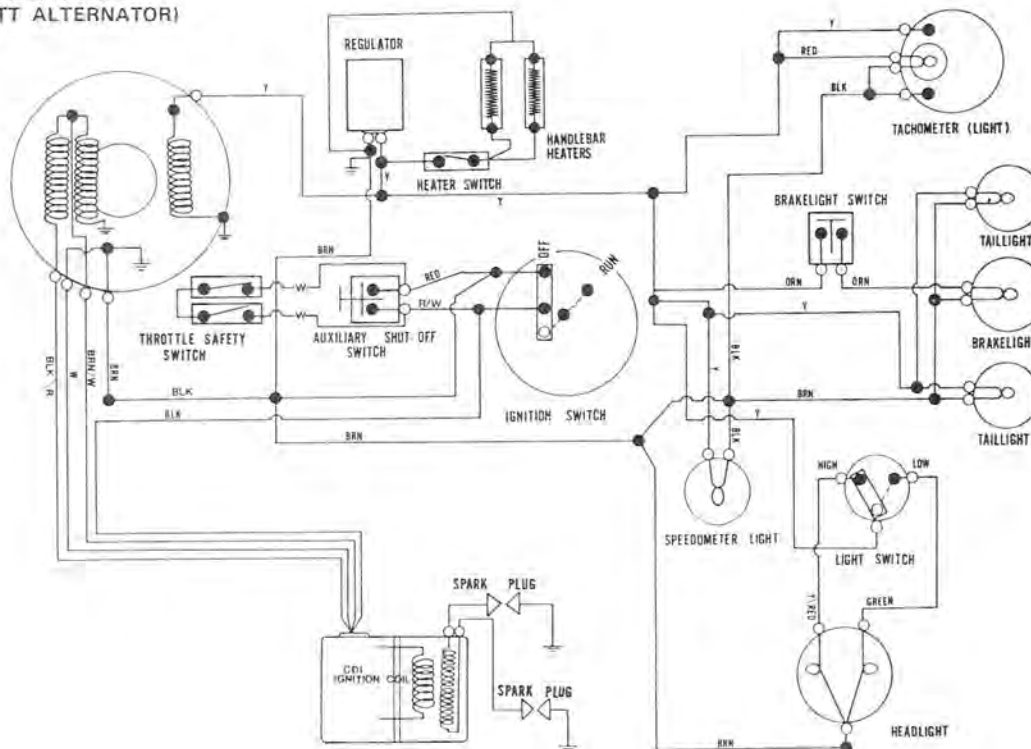
BODY ELECTRICAL

1985 Wiring Diagram/Schematic - Indy Trail

WIRING DIAGRAM
1985 INDY TRAIL
EC44-2PM-2100

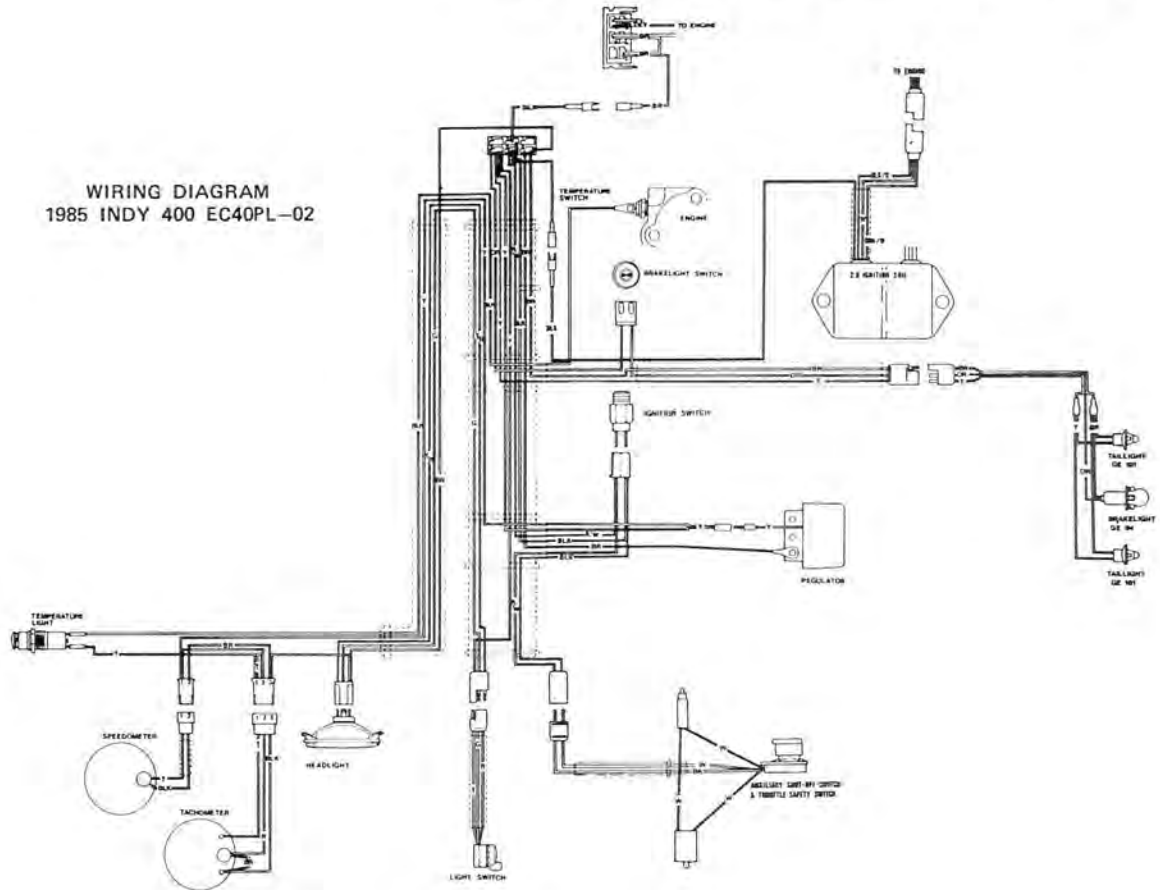


SCHEMATIC DIAGRAM
1985 INDY TRAIL
EC44-2PM-2100
(120 WATT ALTERNATOR)



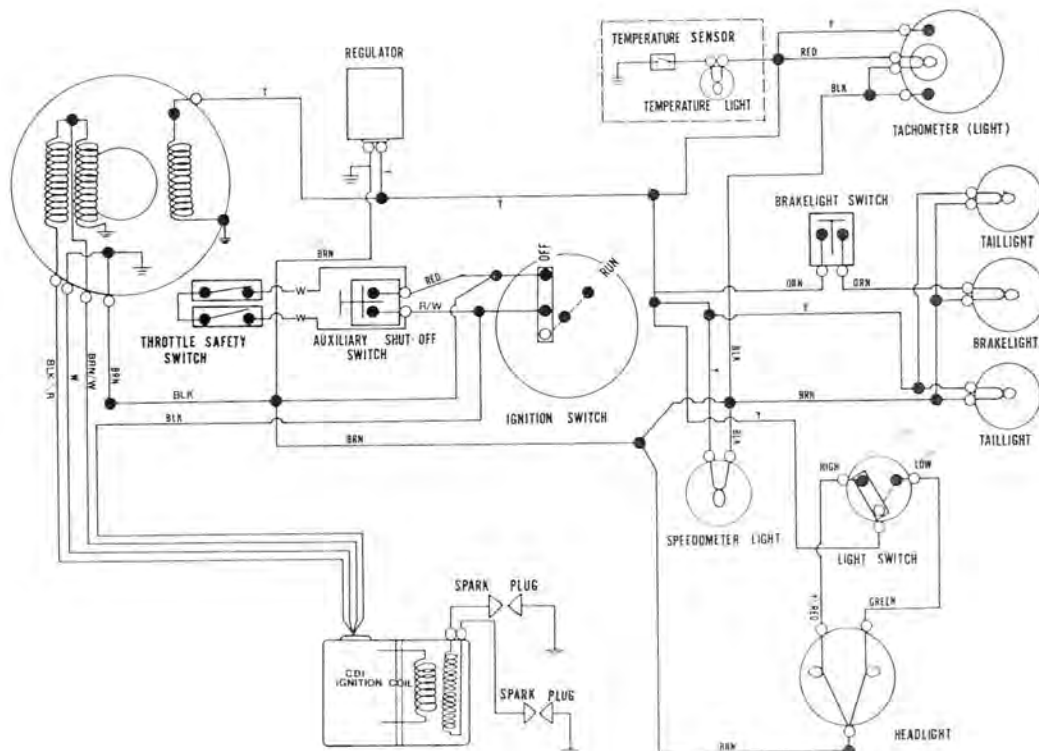
BODY ELECTRICAL 1985 Wiring Diagram/Schematic - Indy 400

WIRING DIAGRAM
1985 INDY 400 EC40PL-02



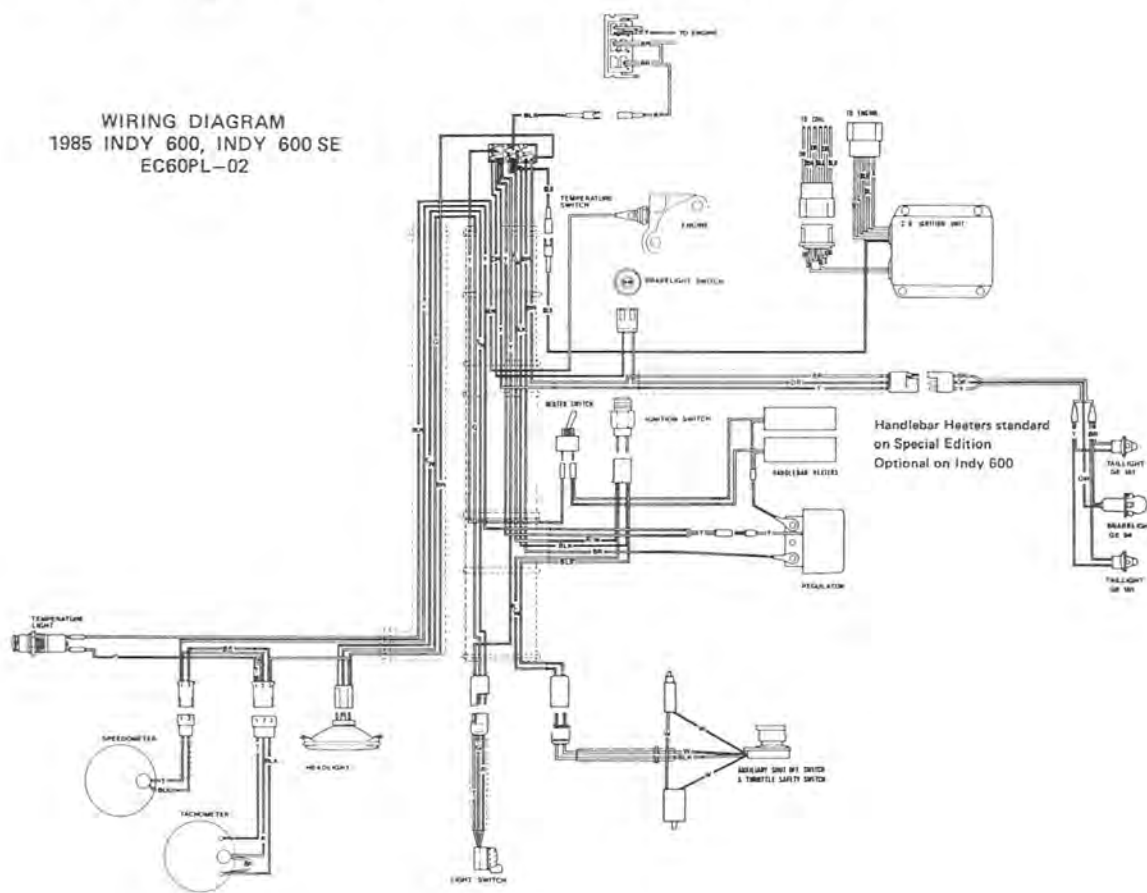
SCHEMATIC DIAGRAM

1985 INDY 400 EC40PL-02
(120 WATT ALTERNATOR)



BODY ELECTRICAL 1985 Wiring Diagram/Schematic - Indy 600, Indy 600 SE

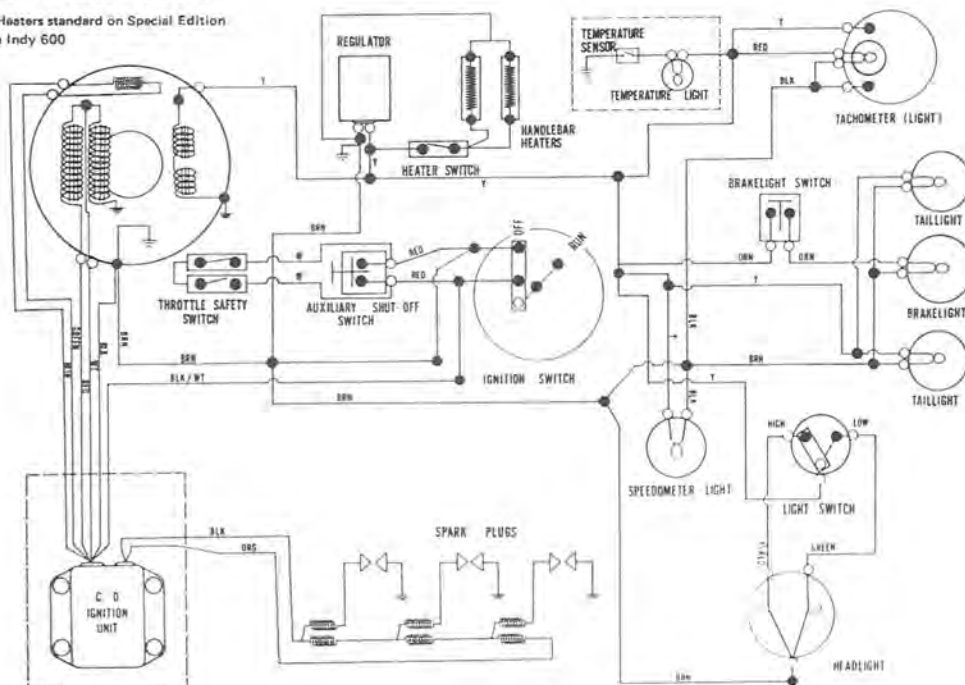
WIRING DIAGRAM
1985 INDY 600, INDY 600 SE
EC60PL-02



SCHEMATIC DIAGRAM

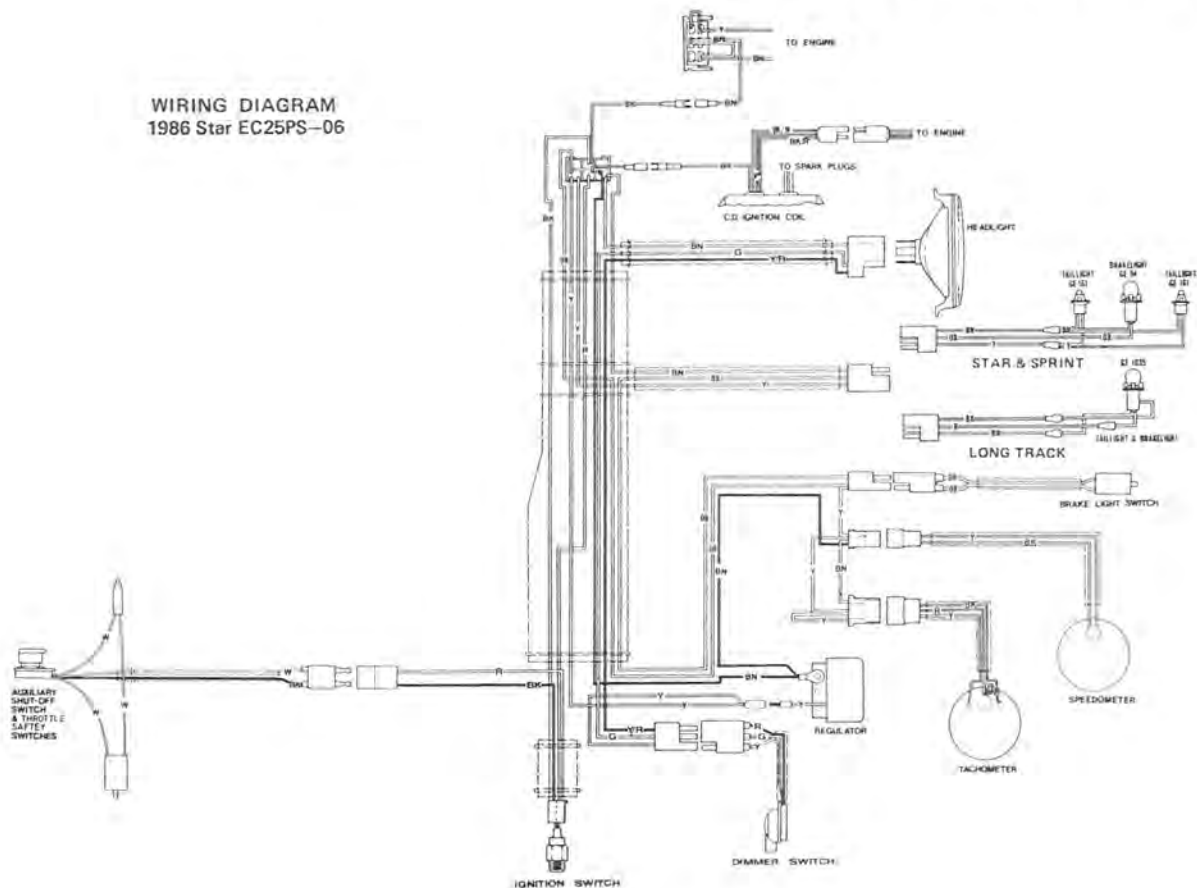
1985 INDY 600, INDY 600 SE
EC60PL-02
(120 WATT ALTERNATOR)

Handlebar Heaters standard on Special Edition
Optional on Indy 600

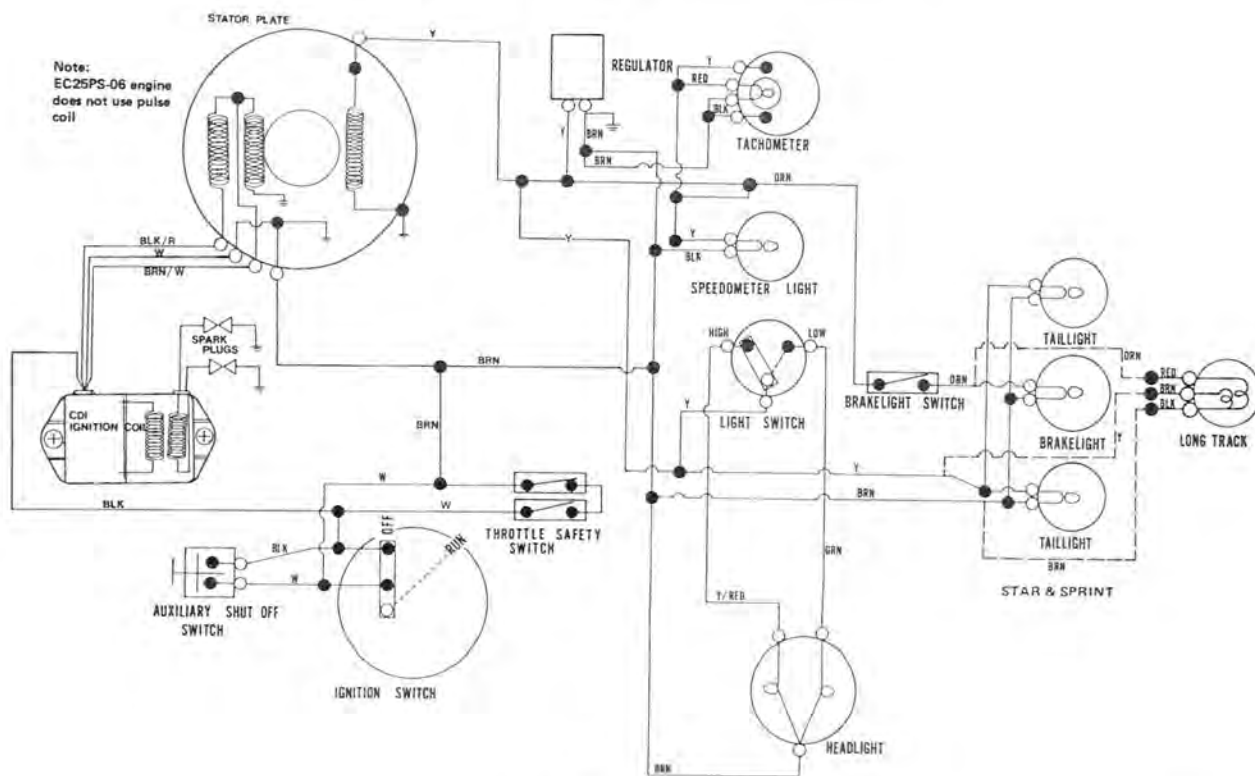


BODY ELECTRICAL 1986 Wiring Diagram/Schematic - Star

WIRING DIAGRAM
1986 Star EC25PS-06



SCHEMATIC DIAGRAM
1986 STAR EC25PS-06 (100 WATT ALTERNATOR)

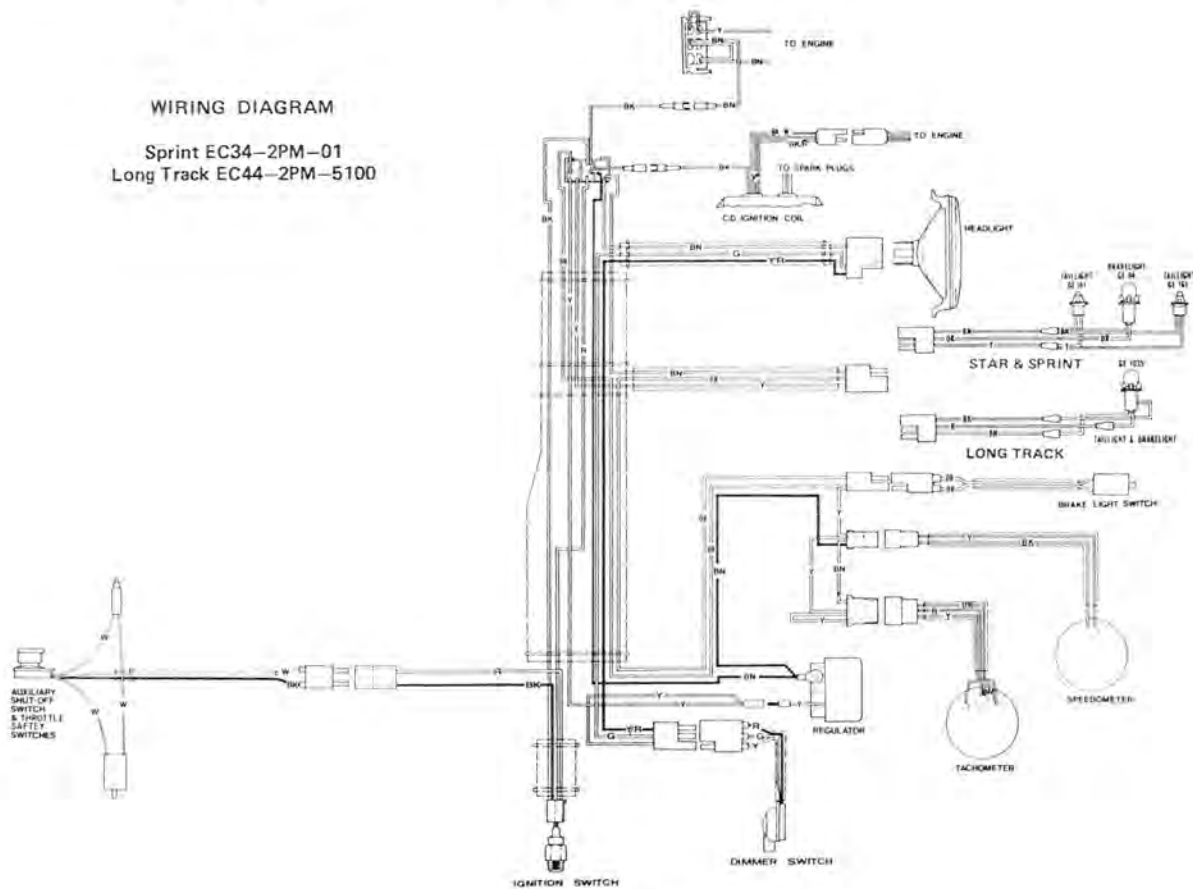


BODY ELECTRICAL

1986 Wiring Diagram/Schematic - Sprint, SS, Long Track

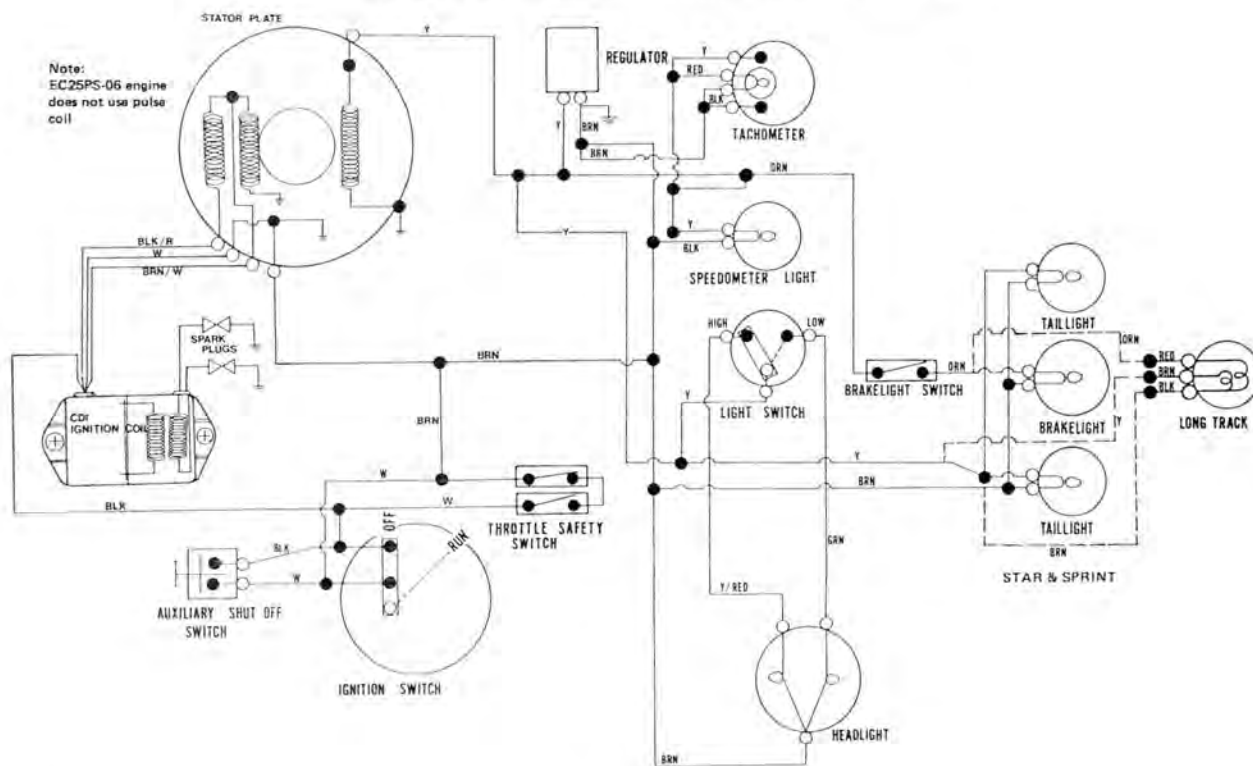
WIRING DIAGRAM

Sprint EC34-2PM-01
Long Track EC44-2PM-5100



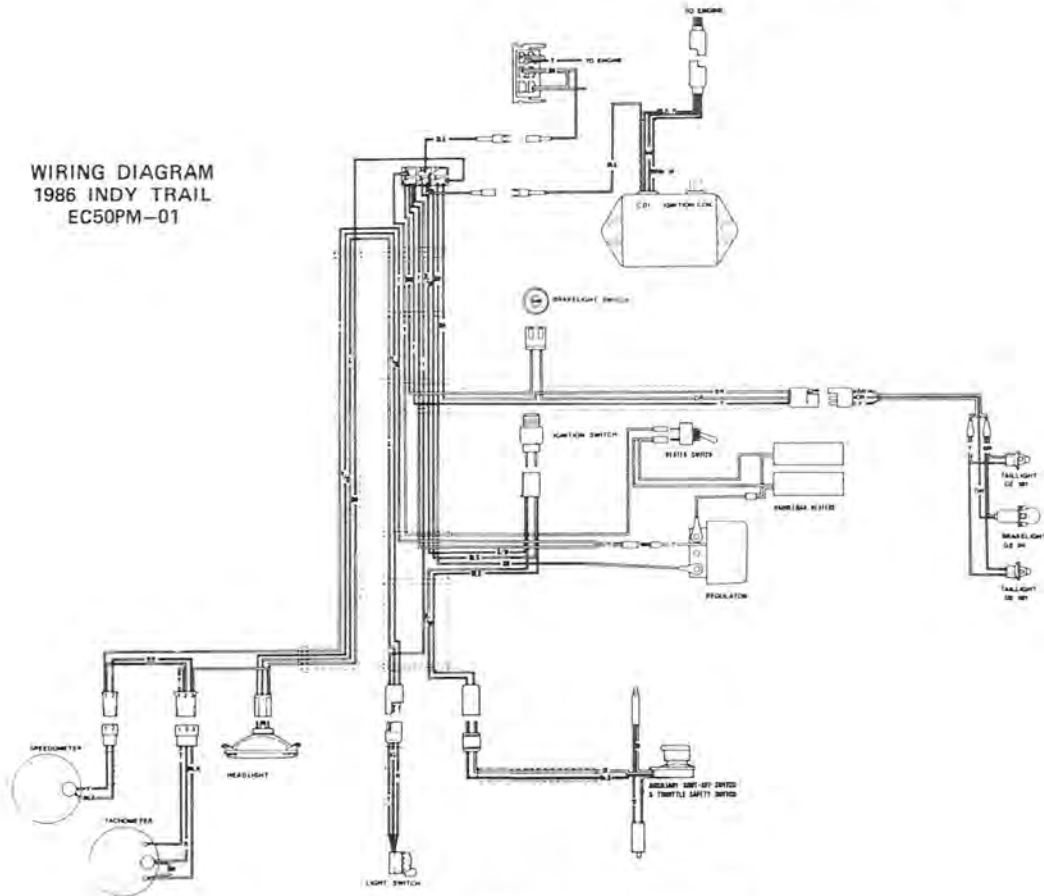
SCHEMATIC DIAGRAM

SPRINT EC34-2PM-01 (120 WATT ALTERNATOR)
LONG TRACK EC44-2PM-5000 (120 WATT ALTERNATOR)



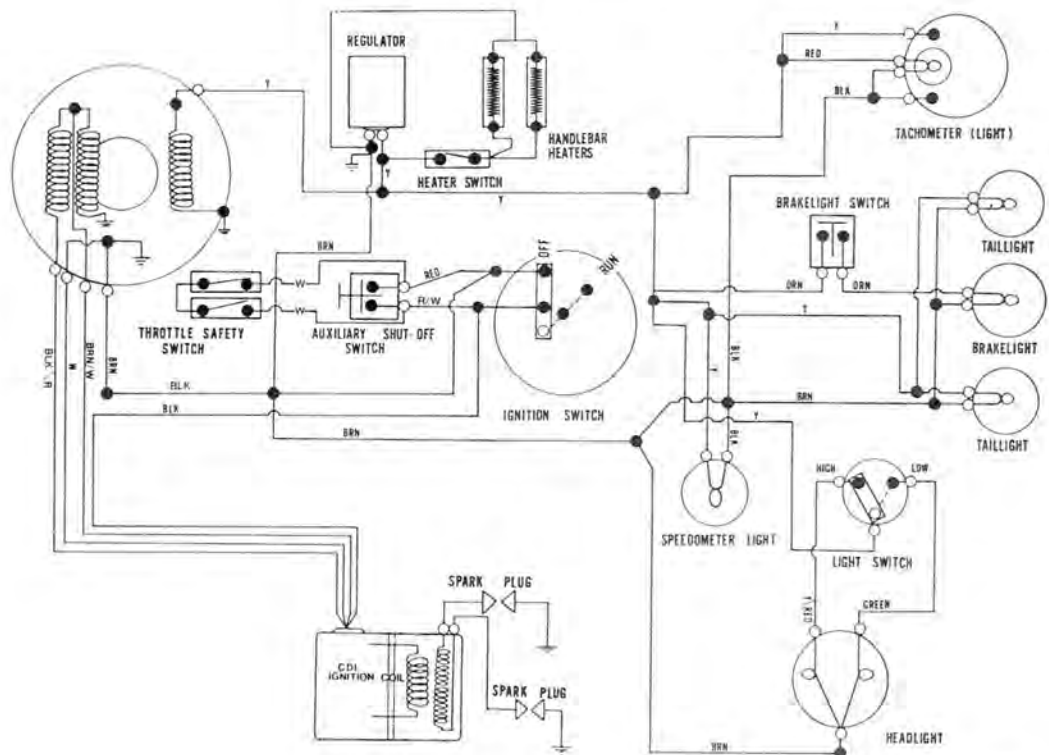
BODY ELECTRICAL 1986 Wiring Diagram/Schematic - Indy Trail

WIRING DIAGRAM
1986 INDY TRAIL
EC50PM-01



SCHEMATIC DIAGRAM

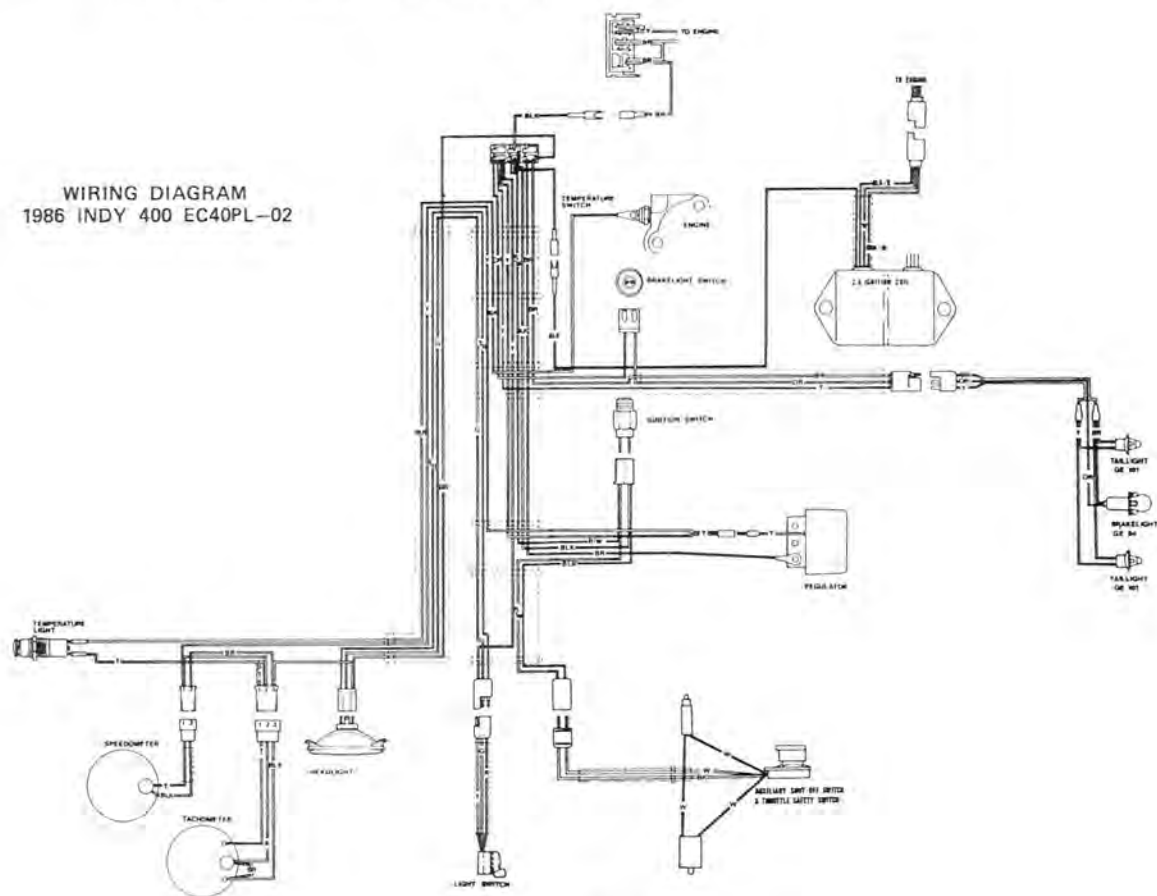
1986 INDY TRAIL
EC50PM-01
(120 WATT ALTERNATOR)



BODY ELECTRICAL

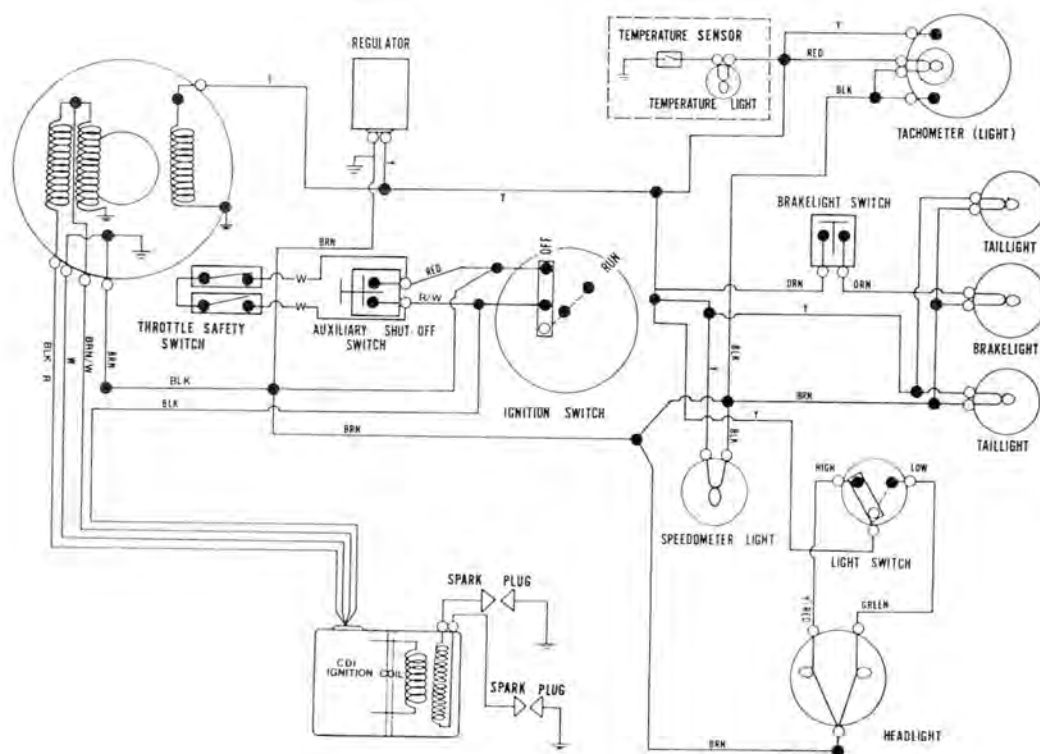
1986 Wiring Diagram/Schematic - Indy 400

WIRING DIAGRAM
1986 INDY 400 EC40PL-02



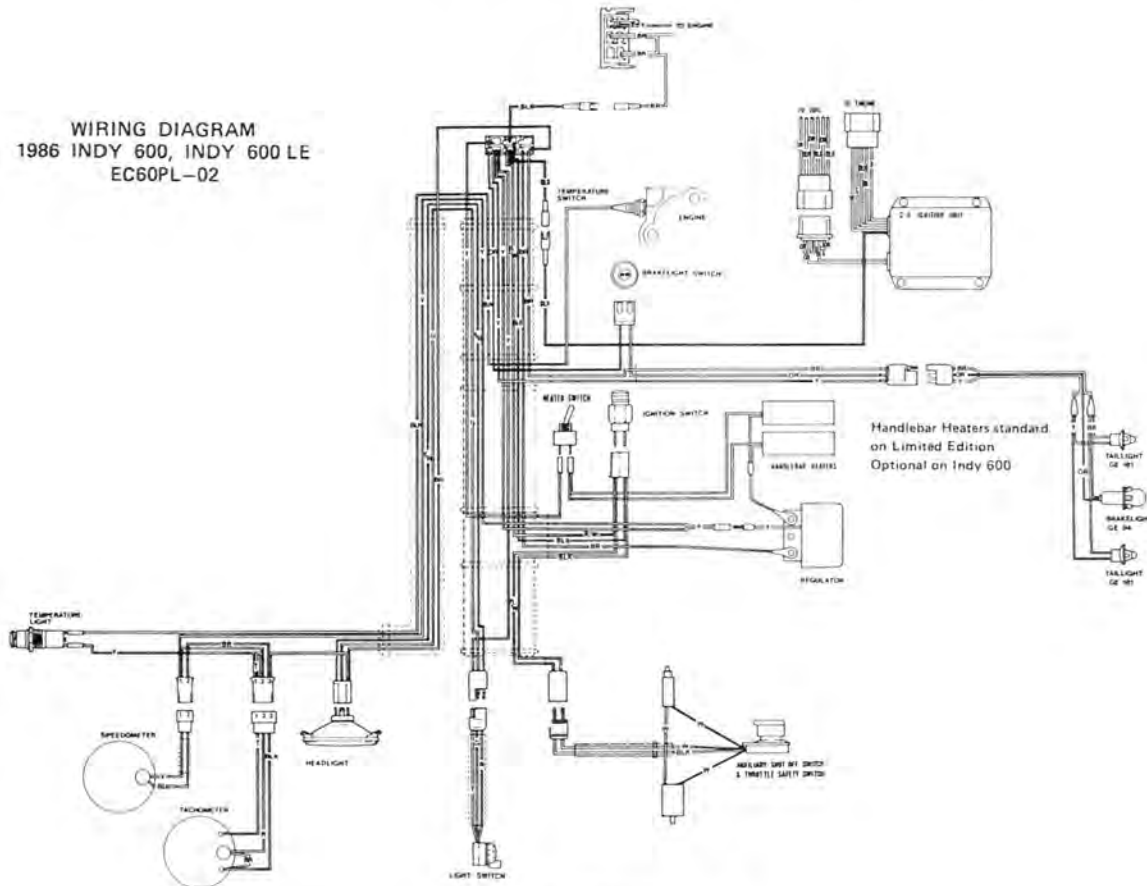
SCHEMATIC DIAGRAM

1986 INDY 400 EC40PL-02
(120 WATT ALTERNATOR)



1986 Wiring Diagram/Schematic - Indy 600, Indy 600 SE

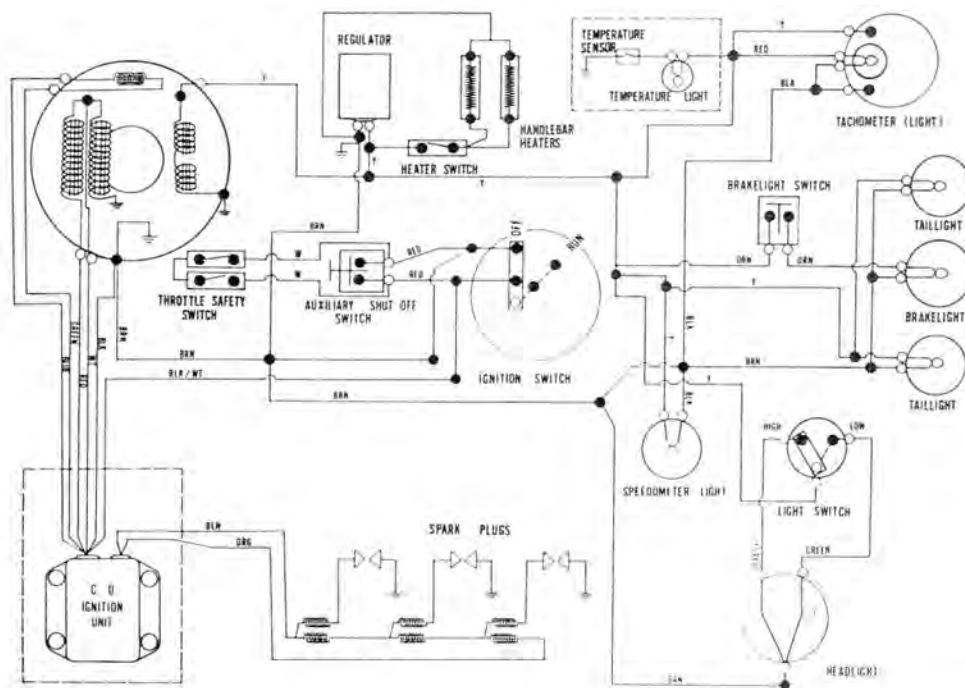
WIRING DIAGRAM
1986 INDY 600, INDY 600 LE
EC60PL-02



SCHEMATIC DIAGRAM

INDY 600, INDY 600 LE
EC60PL-02
(120 WATT ALTERNATOR)

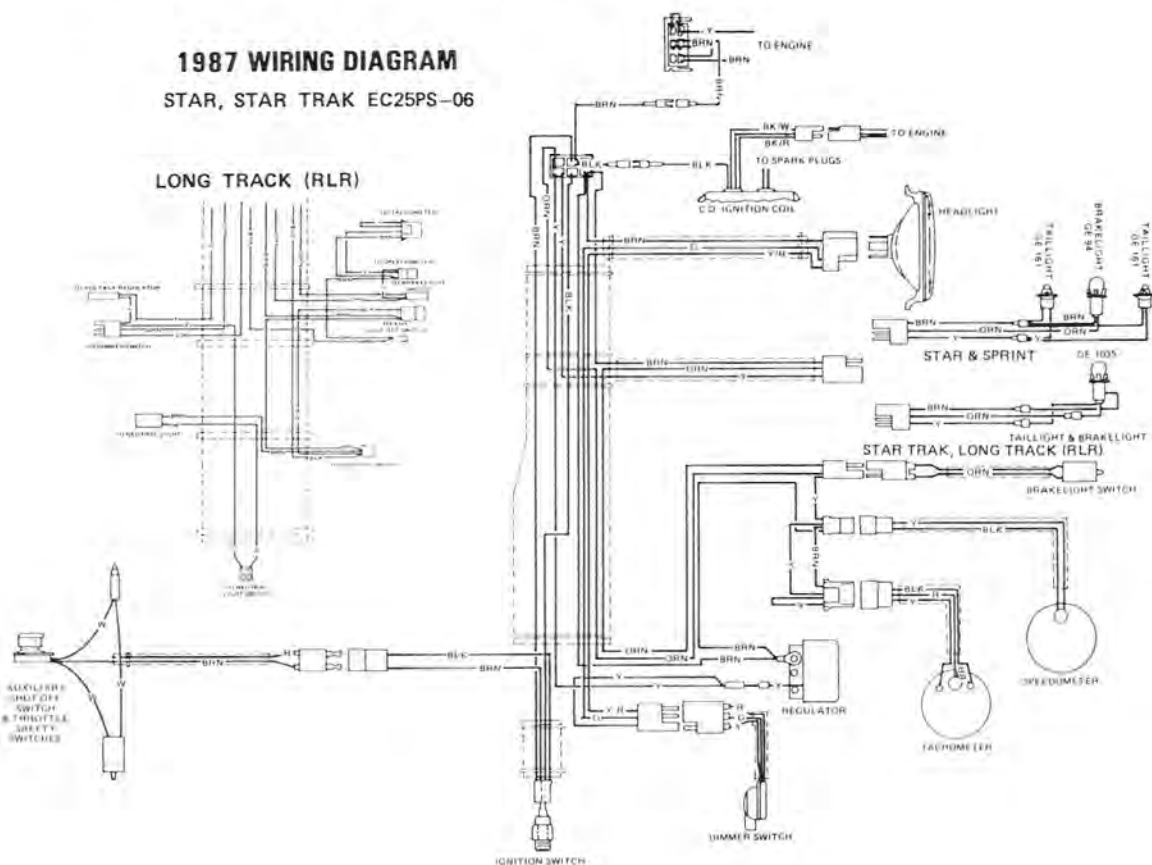
Handlebar Heaters standard on Limited Edition
Optional on Indy 600



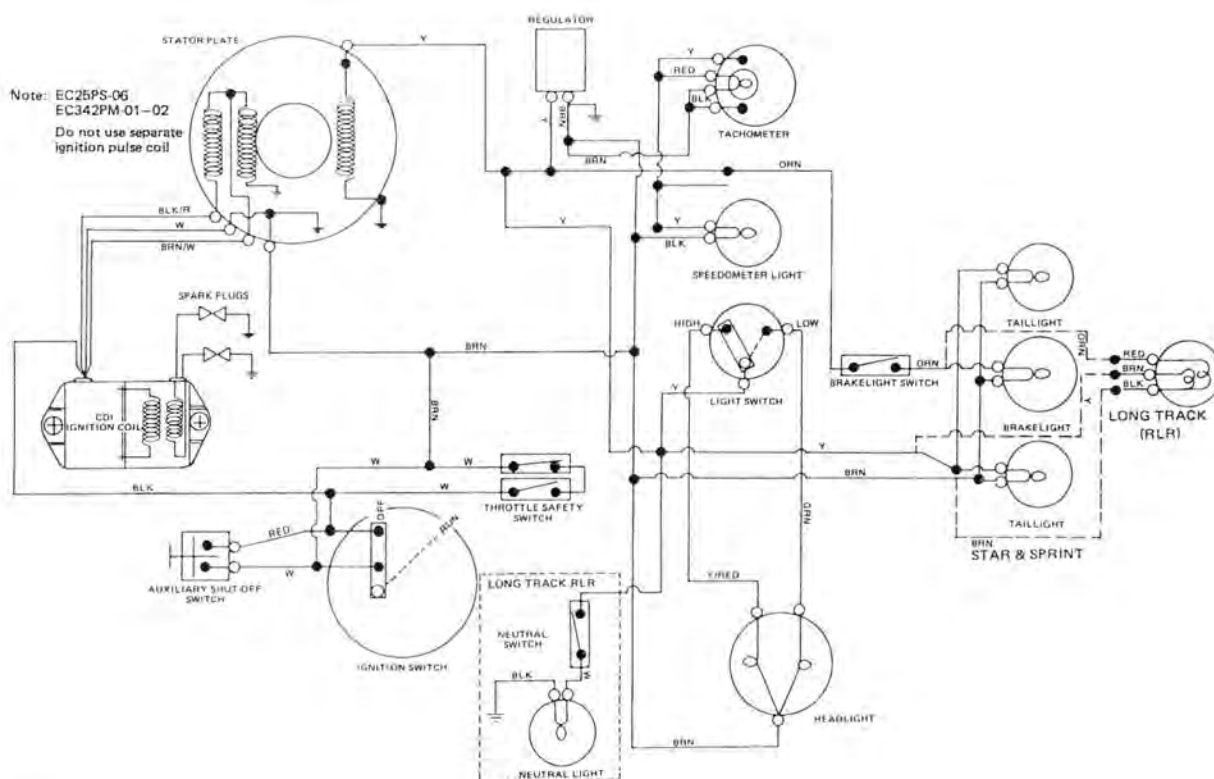
BODY ELECTRICAL

1987 Wiring Diagram/Schematic - Star, Star Trak

1987 WIRING DIAGRAM STAR, STAR TRAK EC25PS-06



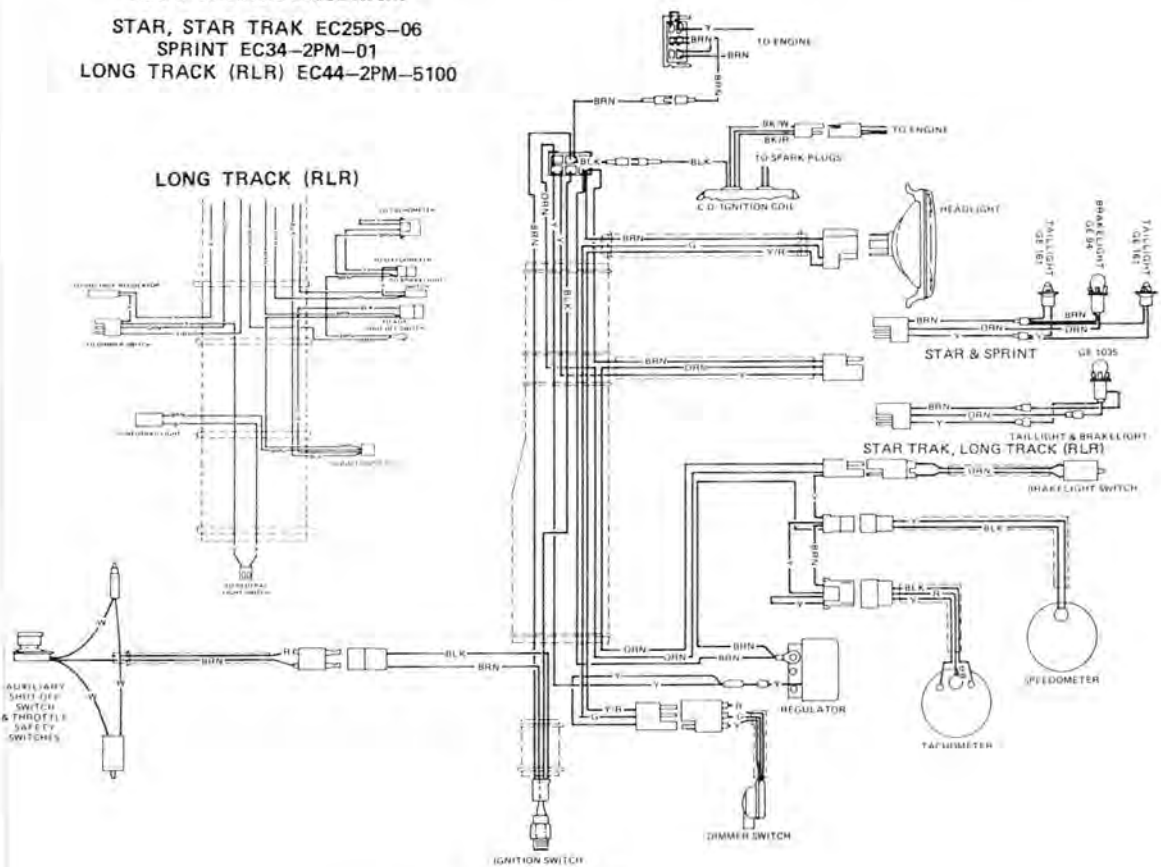
1987 SCHEMATIC DIAGRAM STAR, STAR TRAK EC25PS-06 (100 WATT ALTERNATOR)



BODY ELECTRICAL 1987 Wiring Diagram/Schematic - Sprint, Long Track (RLR)

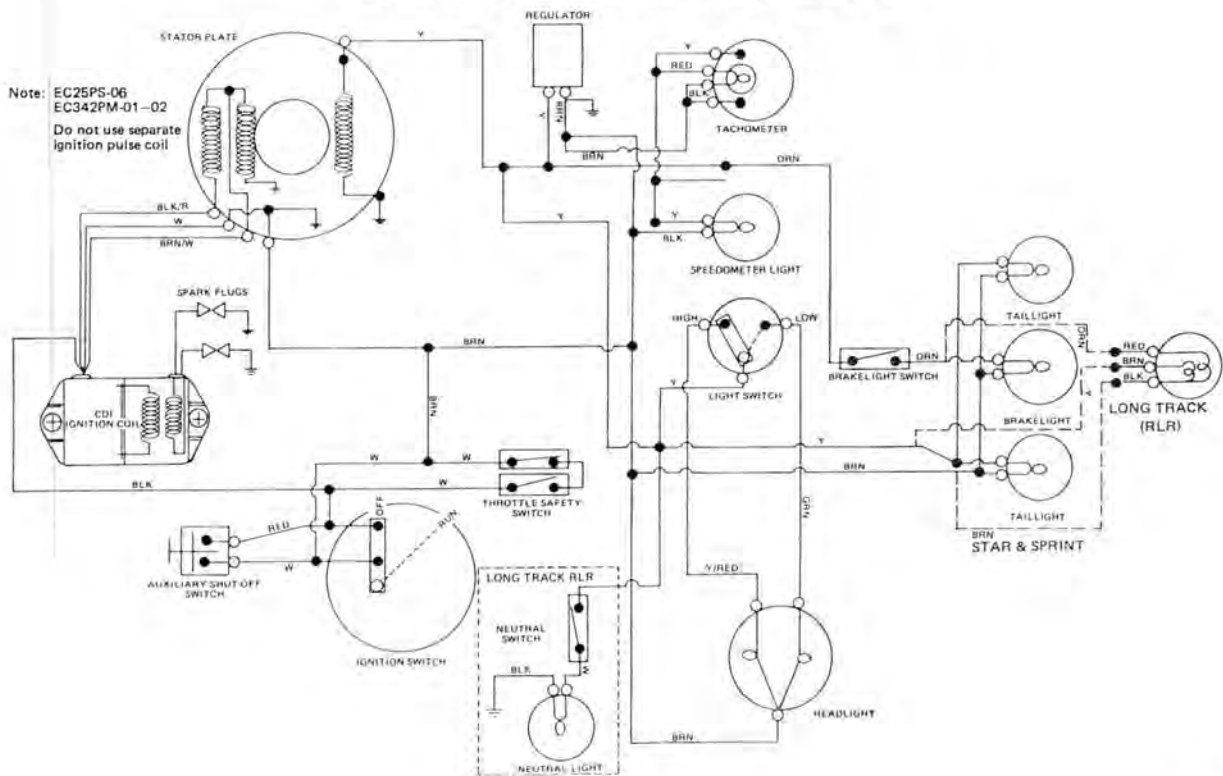
1987 WIRING DIAGRAM

STAR, STAR TRAK EC25PS-06
SPRINT EC34-2PM-01
LONG TRACK (RLR) EC44-2PM-5100



1987 SCHEMATIC DIAGRAM

SPRINT EC34-2PM-01 (120 WATT ALTERNATOR)
LONG TRACK (RLR) EC44-2PM-5100 (120 WATT ALTERNATOR)
Refer to page 20k for Sprint Electric Start Schematic Diagram

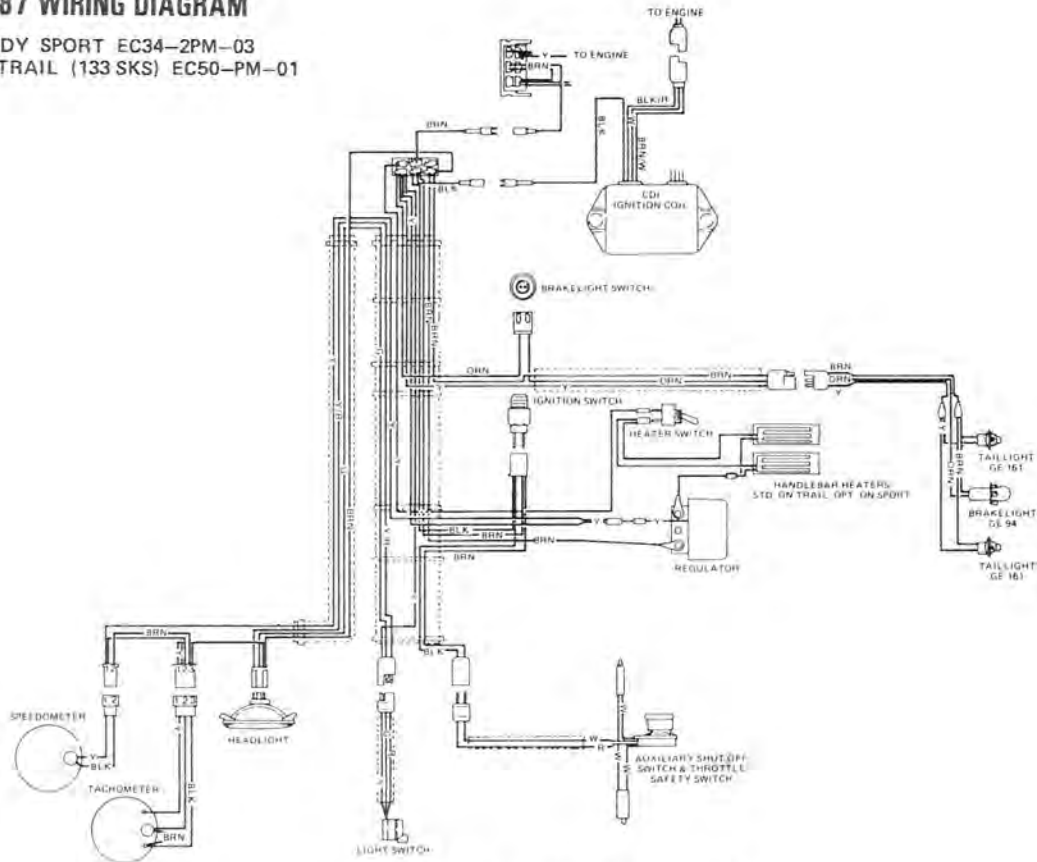


BODY ELECTRICAL

1987 Wiring Diagram/Schematic - Indy Sport, Indy Trail (133 SKS)

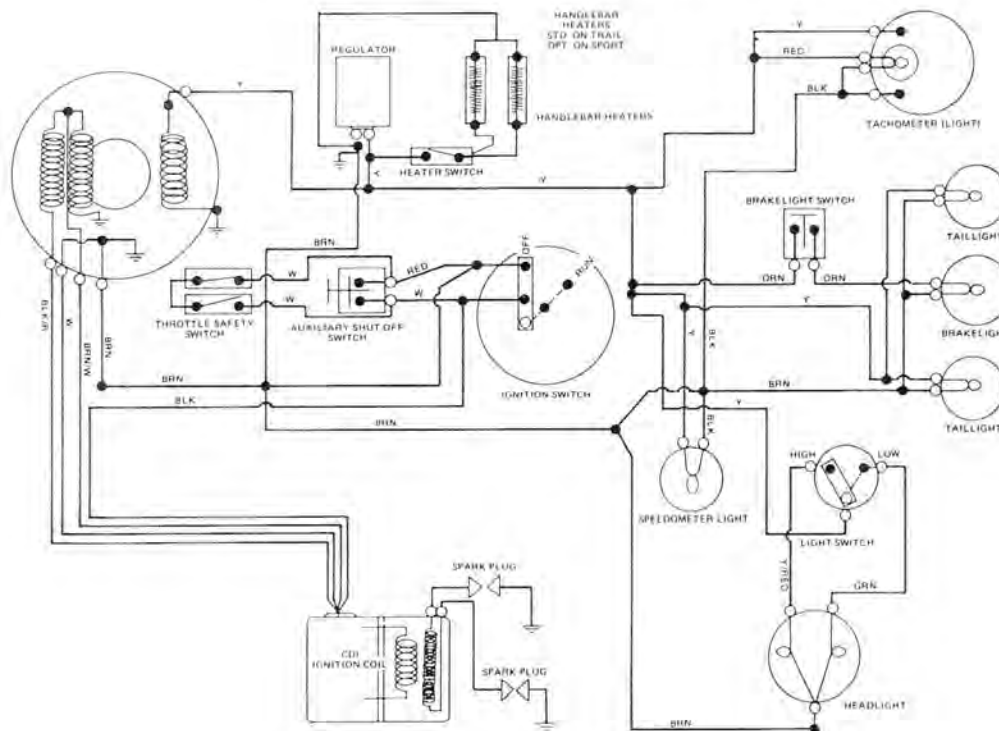
1987 WIRING DIAGRAM

INDY SPORT EC34-2PM-03
INDY TRAIL (133 SKS) EC50-PM-01



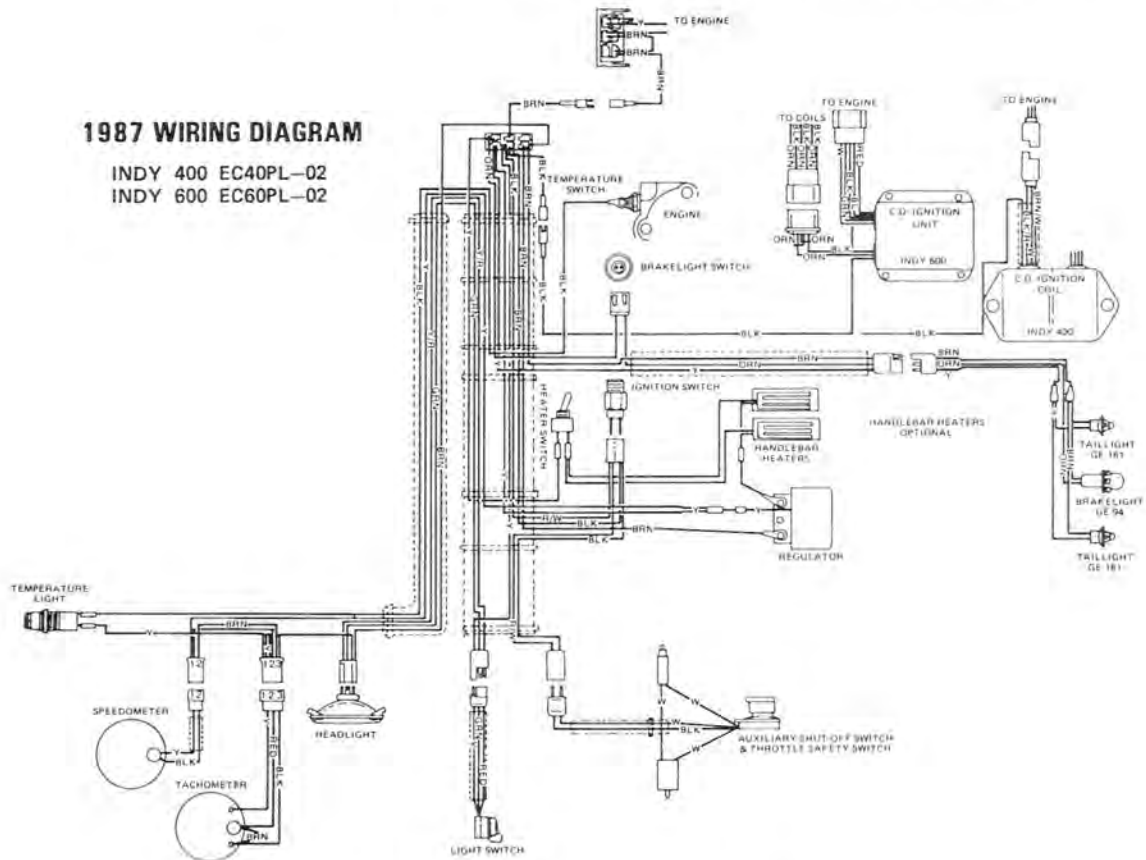
1987 SCHEMATIC DIAGRAM

INDY SPORT EC34-2PM-03 (120 WATT ALTERNATOR)
INDY TRAIL (133 SKS) EC50-PM-01 (120 WATT ALTERNATOR)
Indy Trail Electric Start Schematic reference page 20k

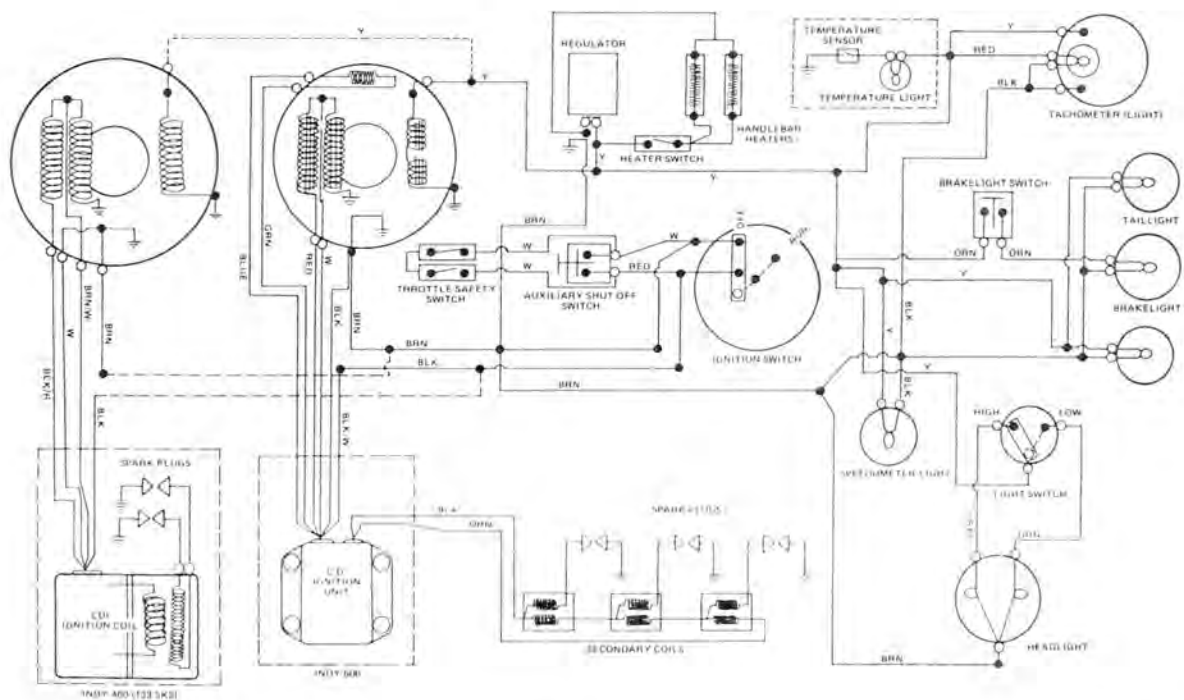


BODY ELECTRICAL

1987 Wiring Diagram/Schematic - Indy 400 (133 SKS), Indy 600



1987 SCHEMATIC DIAGRAM
 INDY 400 (133 SKS) EC40PL-02 (120 WATT ALTERNATOR)
 INDY 600 EC60PL-02 (120 WATT ALTERNATOR)
 Handlebar heaters optional on both models

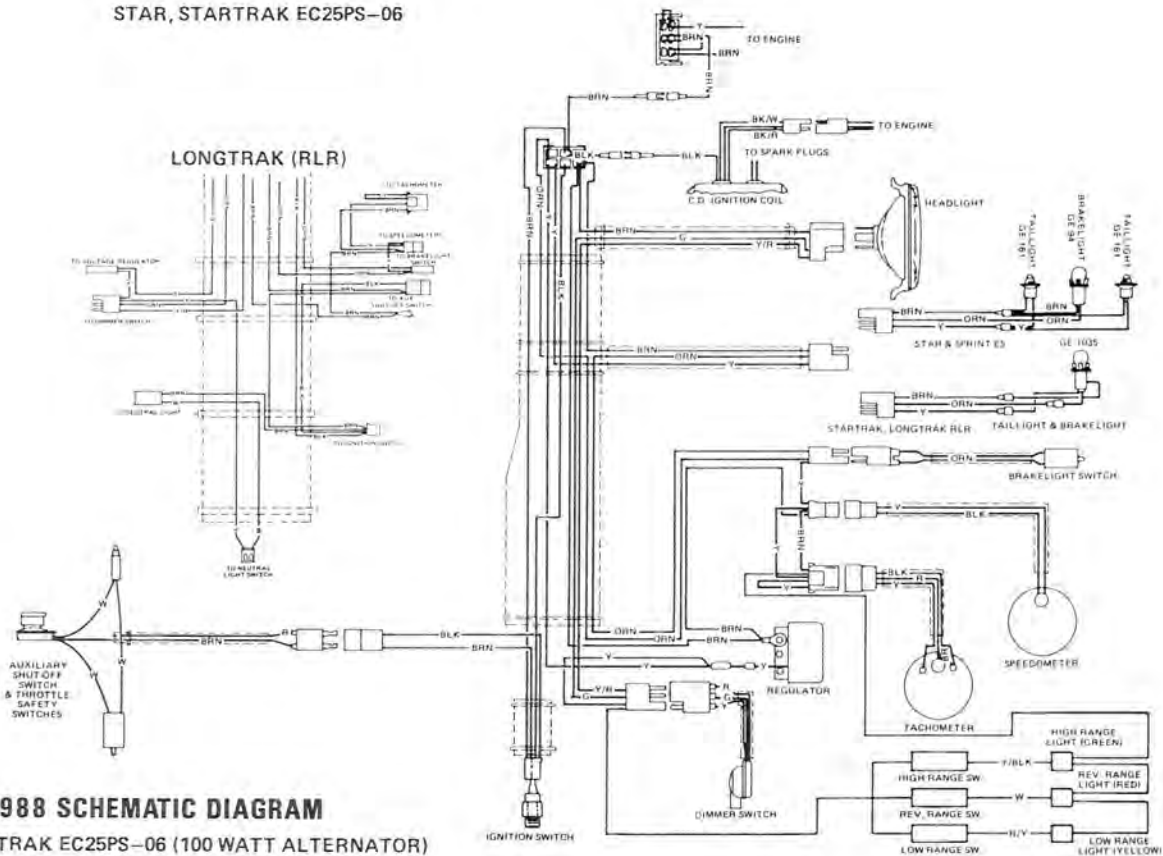


BODY ELECTRICAL

1988 Wiring Diagram/Schematic - Star, Star Trak

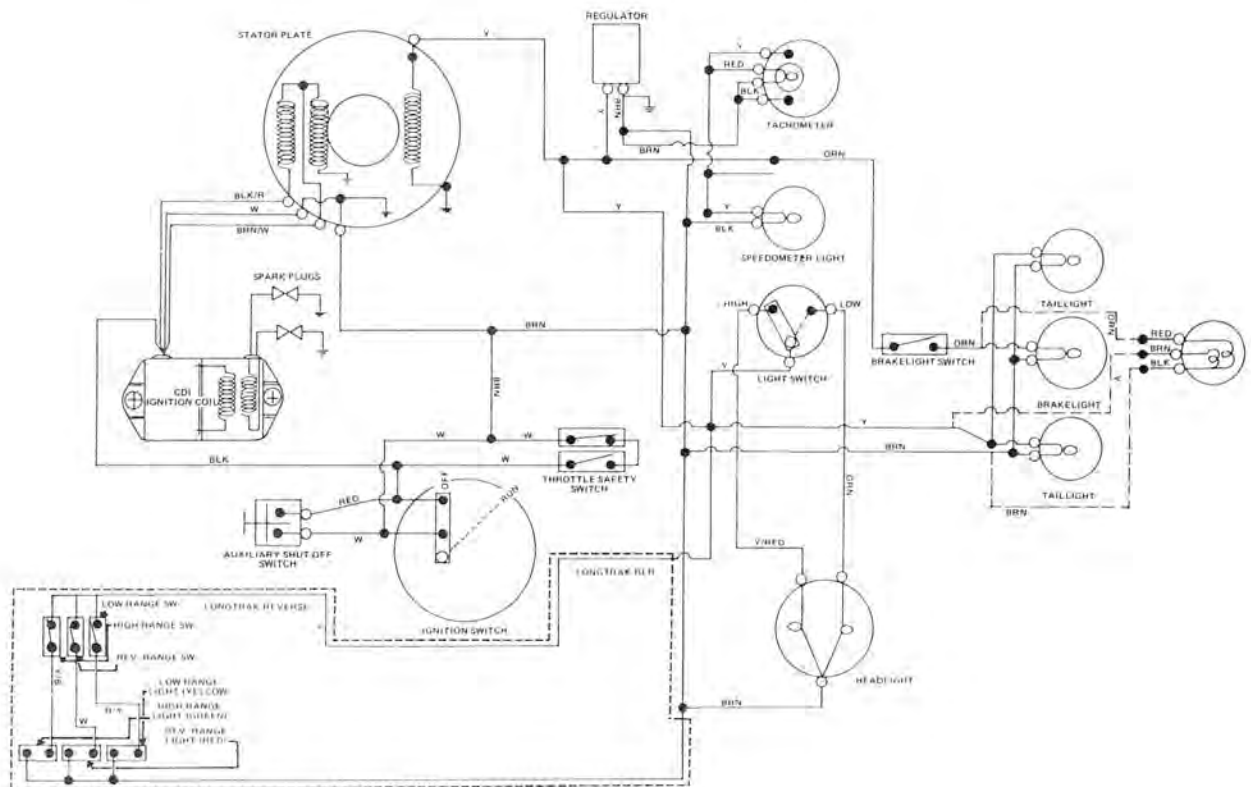
1988 WIRING DIAGRAM

STAR, STARTRAK EC25PS-06

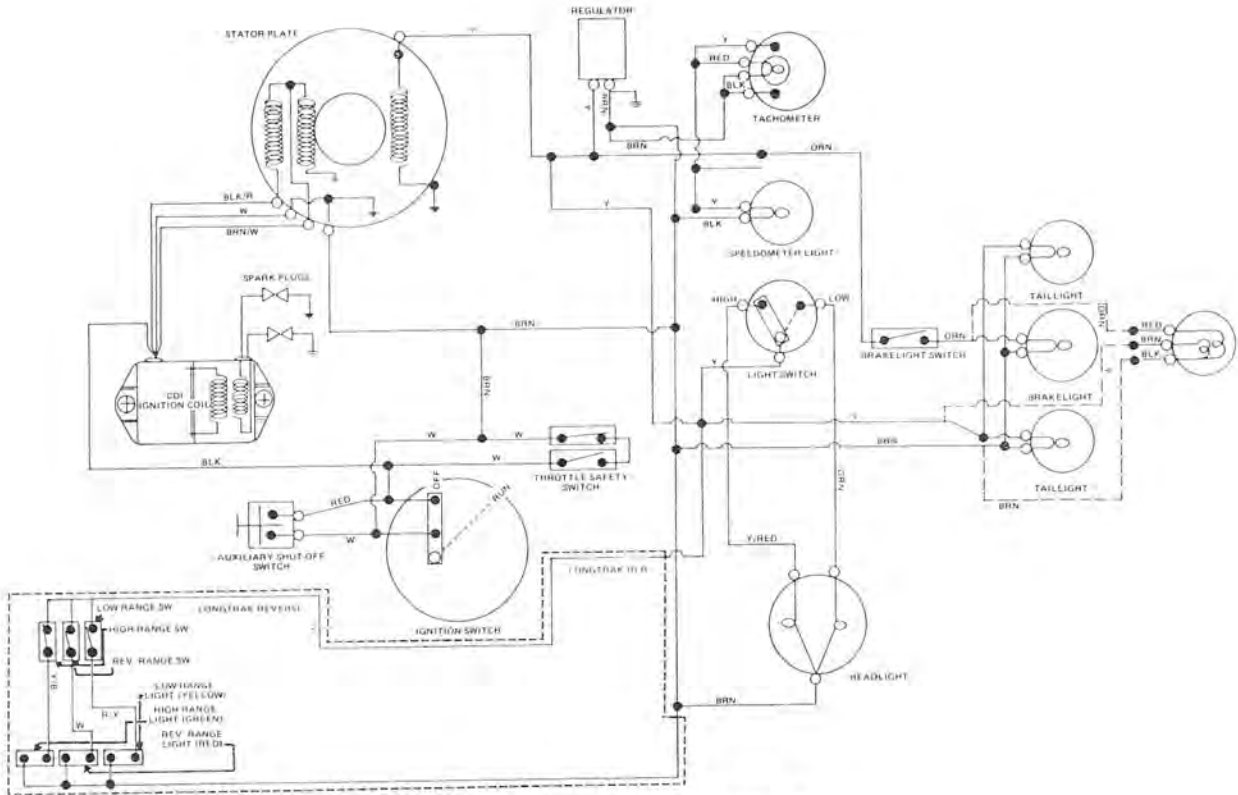


1988 SCHEMATIC DIAGRAM

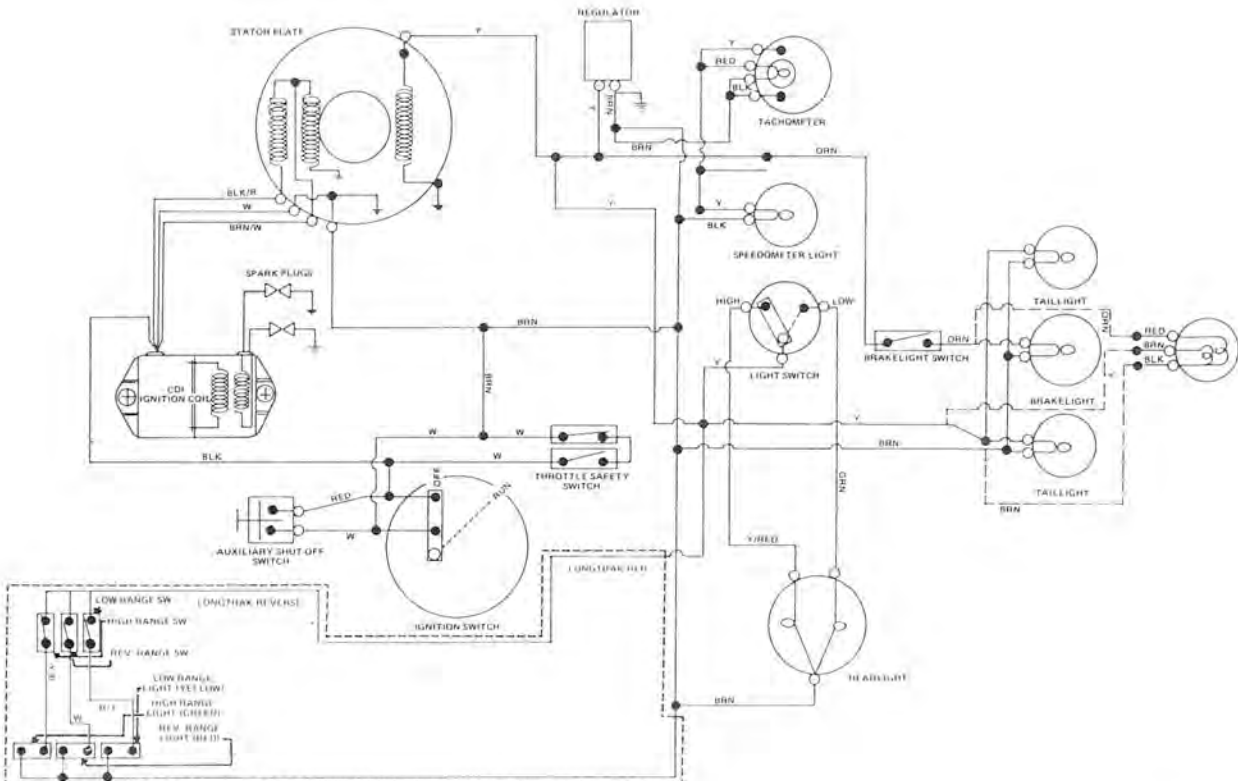
STAR, STARTRAK EC25PS-06 (100 WATT ALTERNATOR)



1988 Wiring Diagram/Schematic - Sprint, Long Trak RLR



1988 SCHEMATIC DIAGRAM

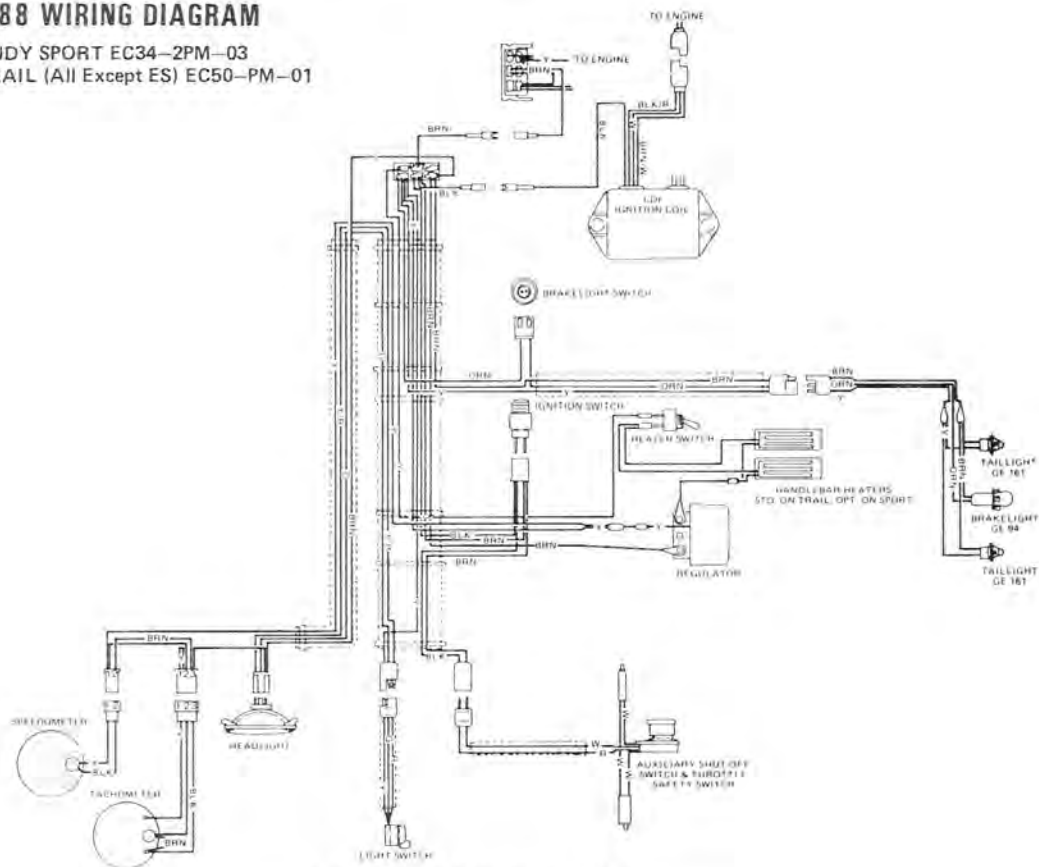


BODY ELECTRICAL

1988 Wiring Diagram/Schematic - Indy Sport, Indy Trail (All Except ES)

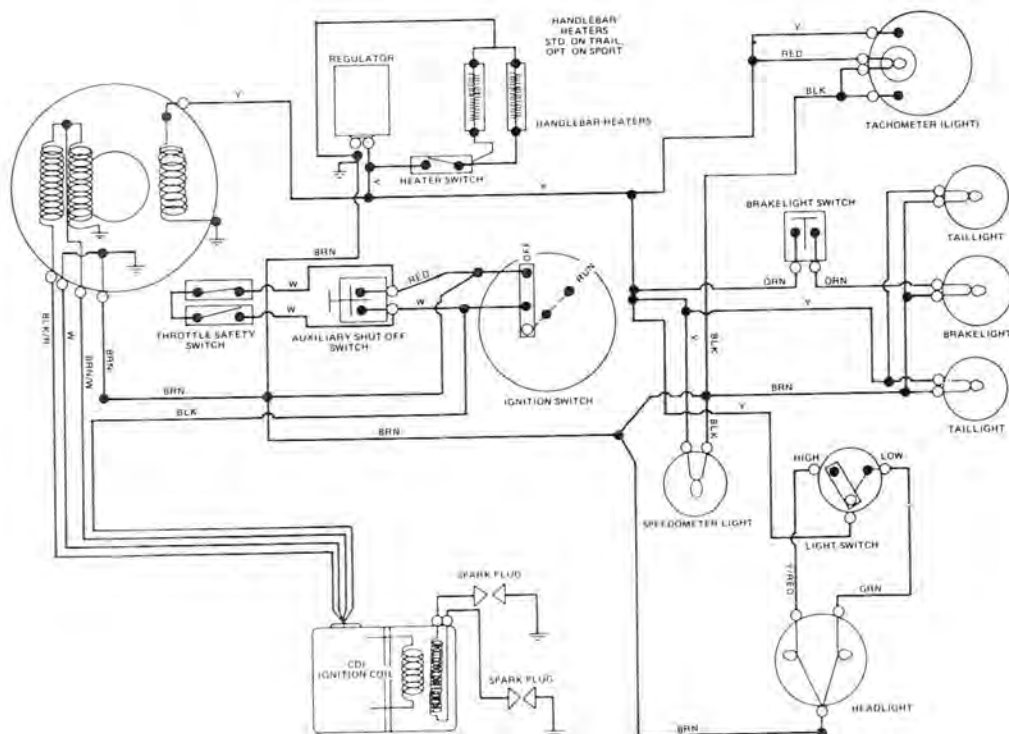
1988 WIRING DIAGRAM

INDY SPORT EC34-2PM-03
INDY TRAIL (All Except ES) EC50-PM-01



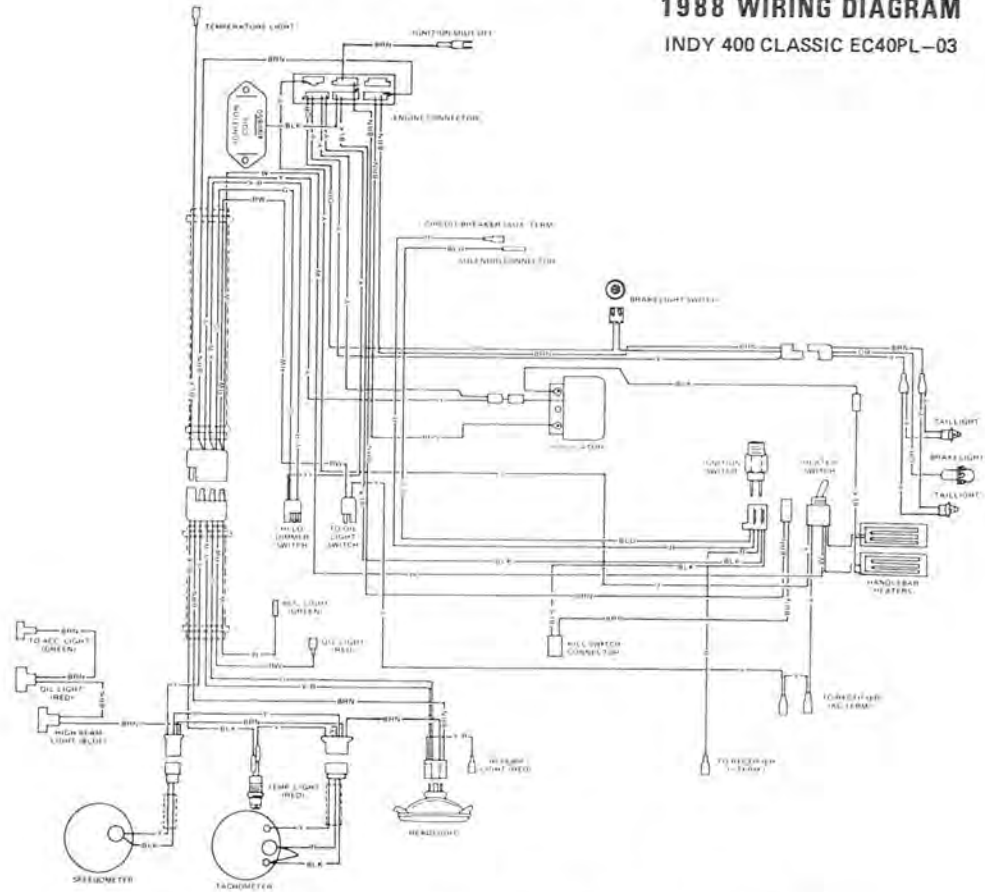
1988 SCHEMATIC DIAGRAM

INDY SPORT EC34-2PM-03 (120 WATT ALTERNATOR)
INDY TRAIL (All Except ES) EC50PM-01 (120 WATT ALTERNATOR)
Indy Trail Electric Start Schematic reference page 20k

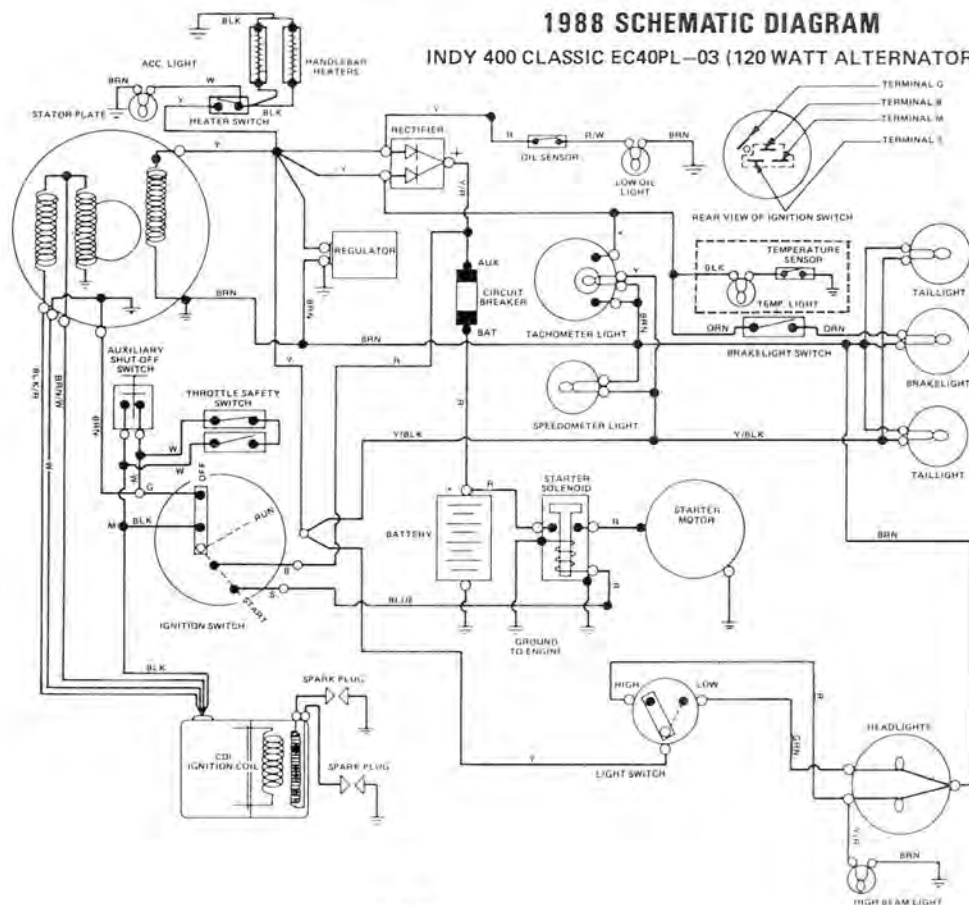


BODY ELECTRICAL 1988 Wiring Diagram/Schematic - Indy 400 Classic

1988 WIRING DIAGRAM INDY 400 CLASSIC EC40PL-03

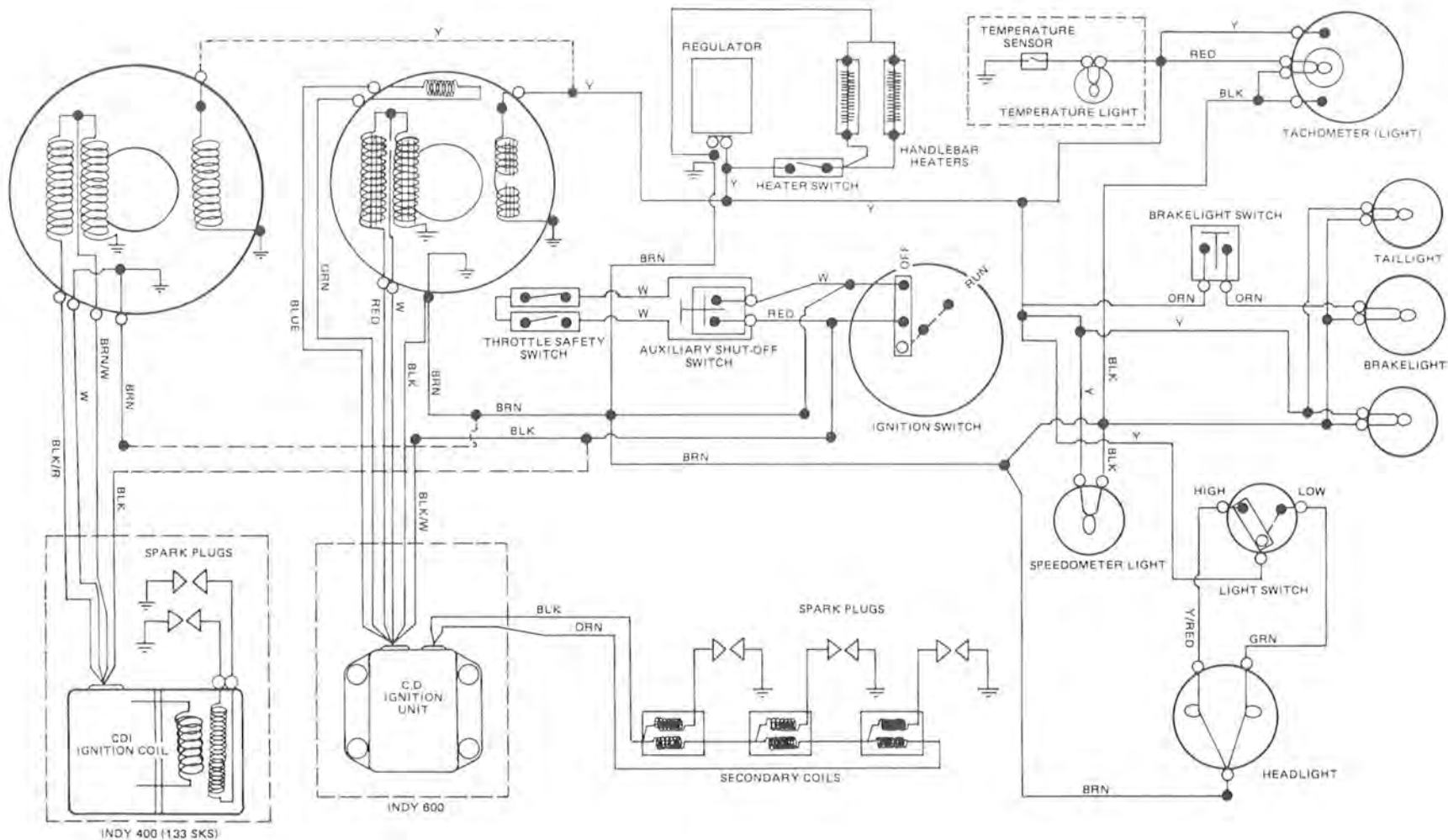


1988 SCHEMATIC DIAGRAM INDY 400 CLASSIC EC40PL-03 (120 WATT ALTERNATOR)

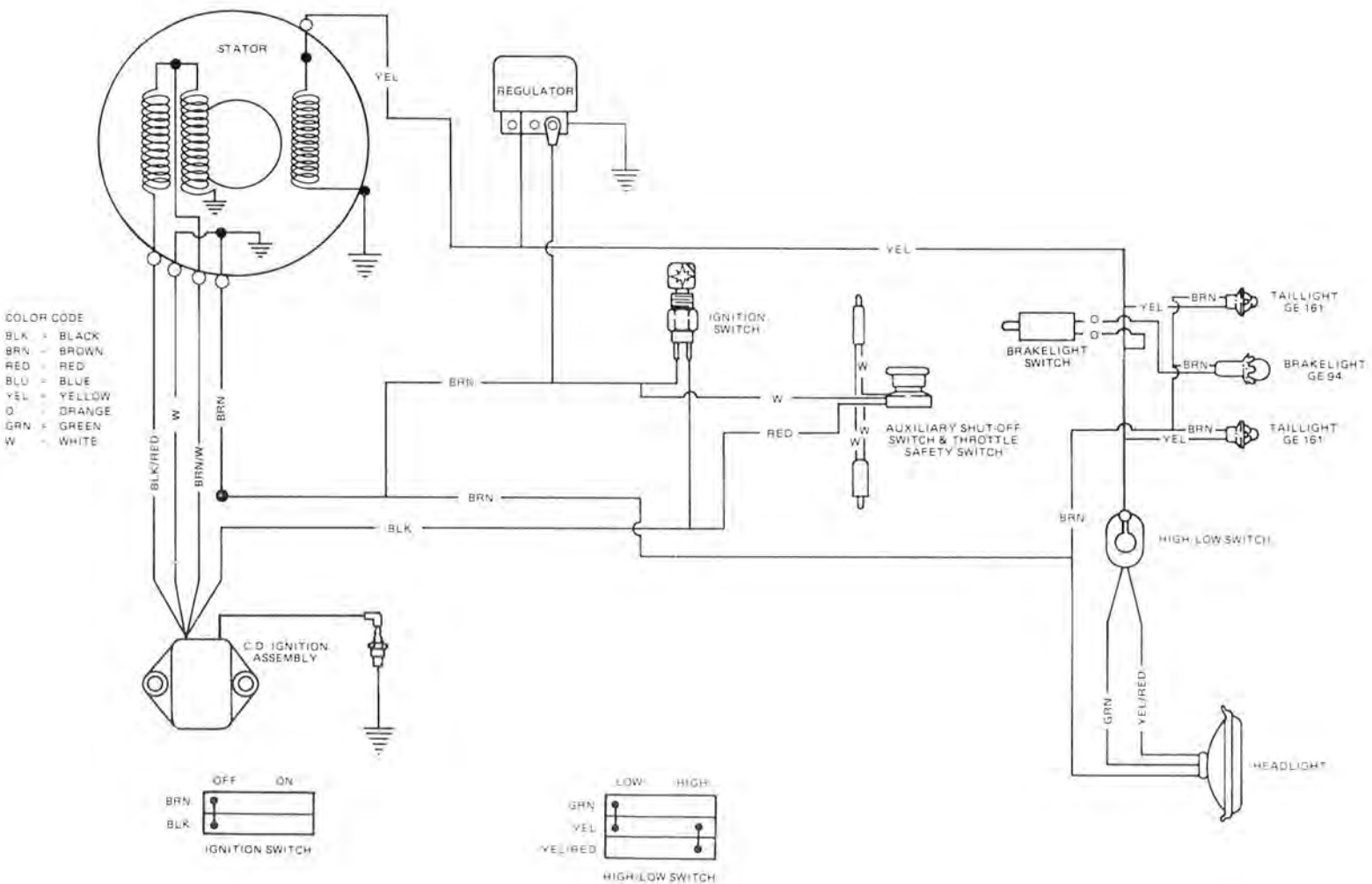


1988 SCHEMATIC DIAGRAM

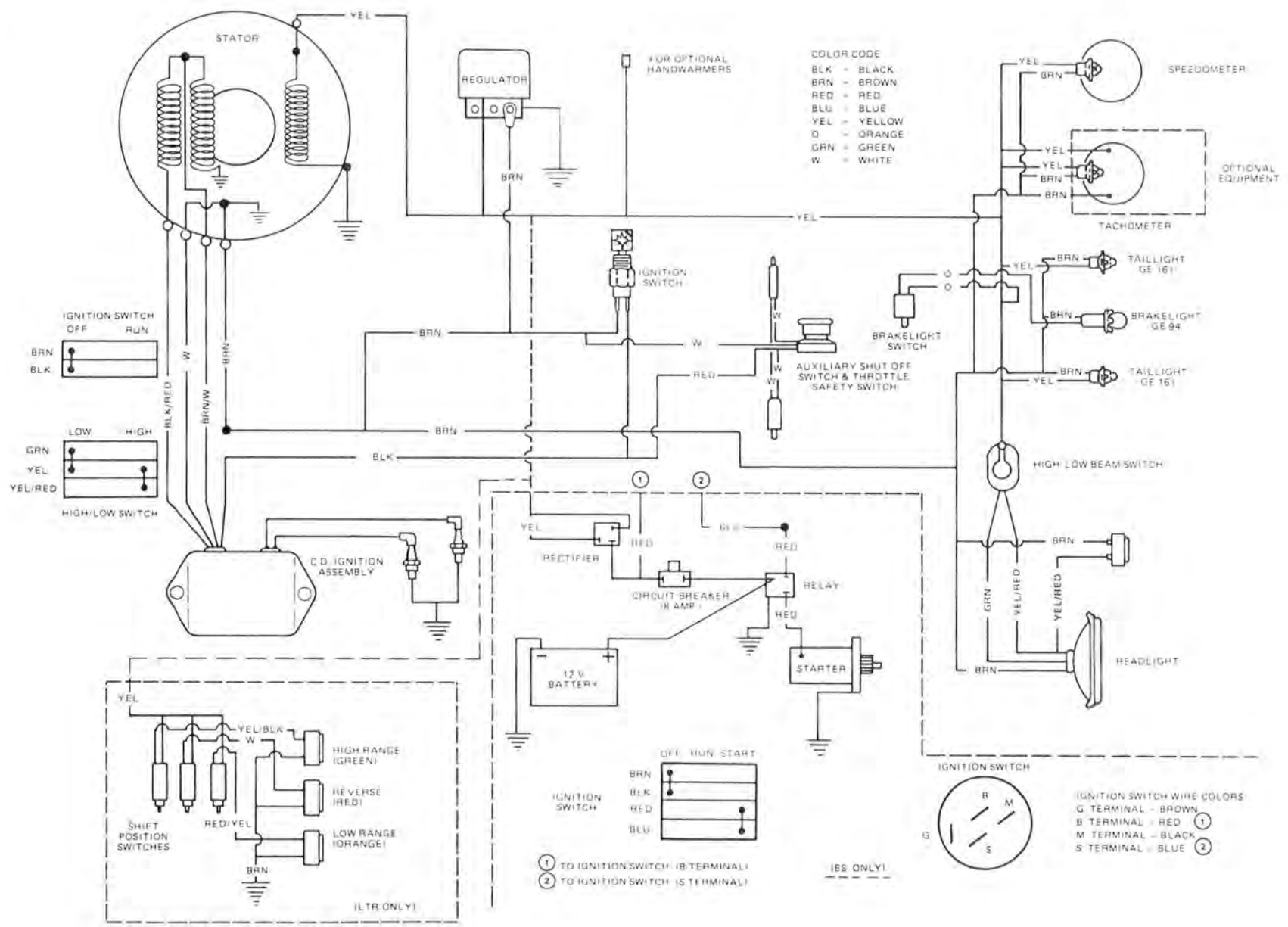
INDY 400 (SKS) EC40PL-02 (120 WATT ALTERNATOR)
 INDY 650 (SKS) EC65PL-01 (120 WATT ALTERNATOR)

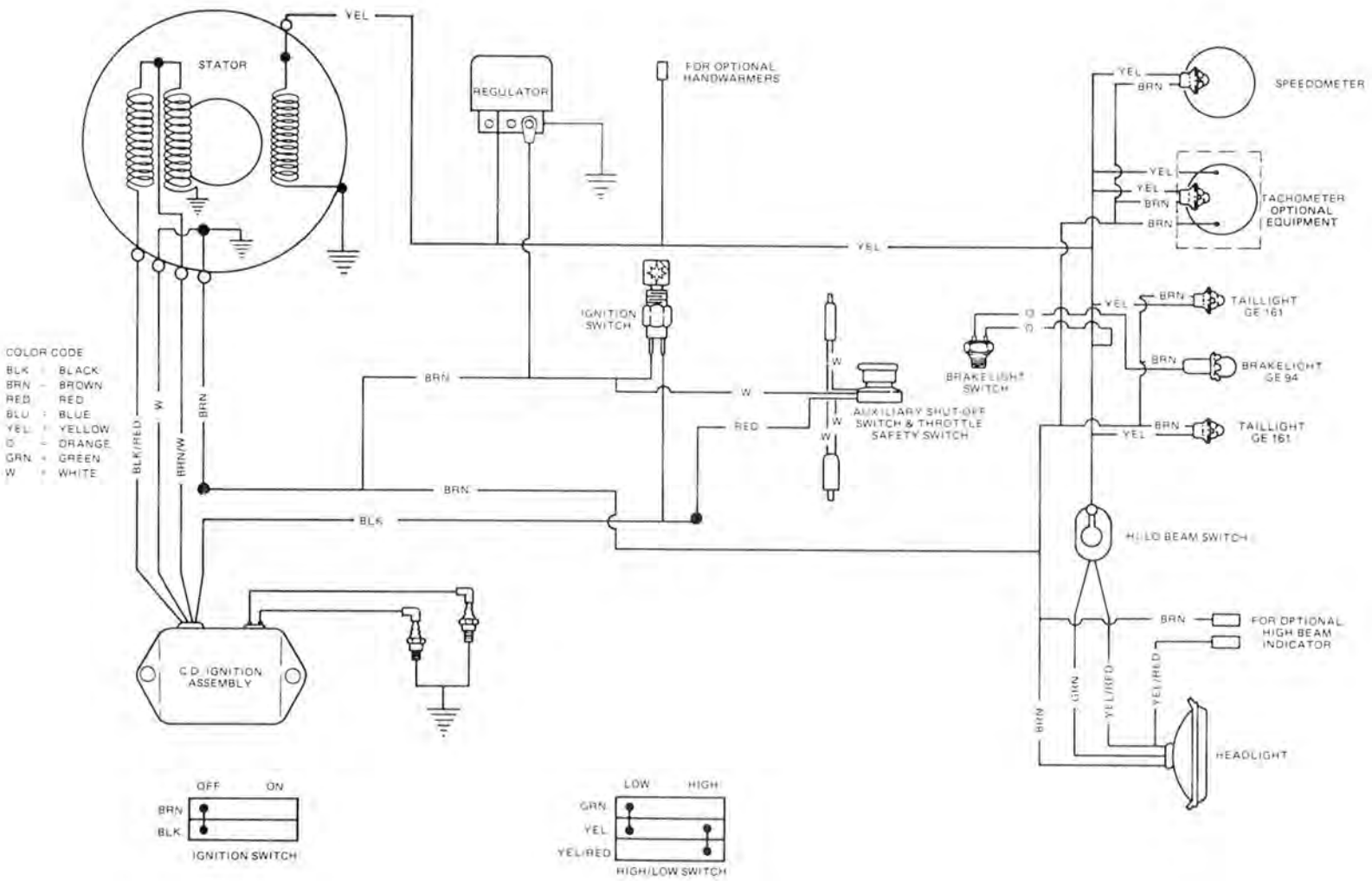


BODY ELECTRICAL **1989 Wiring Diagram - Star, Star Trak**

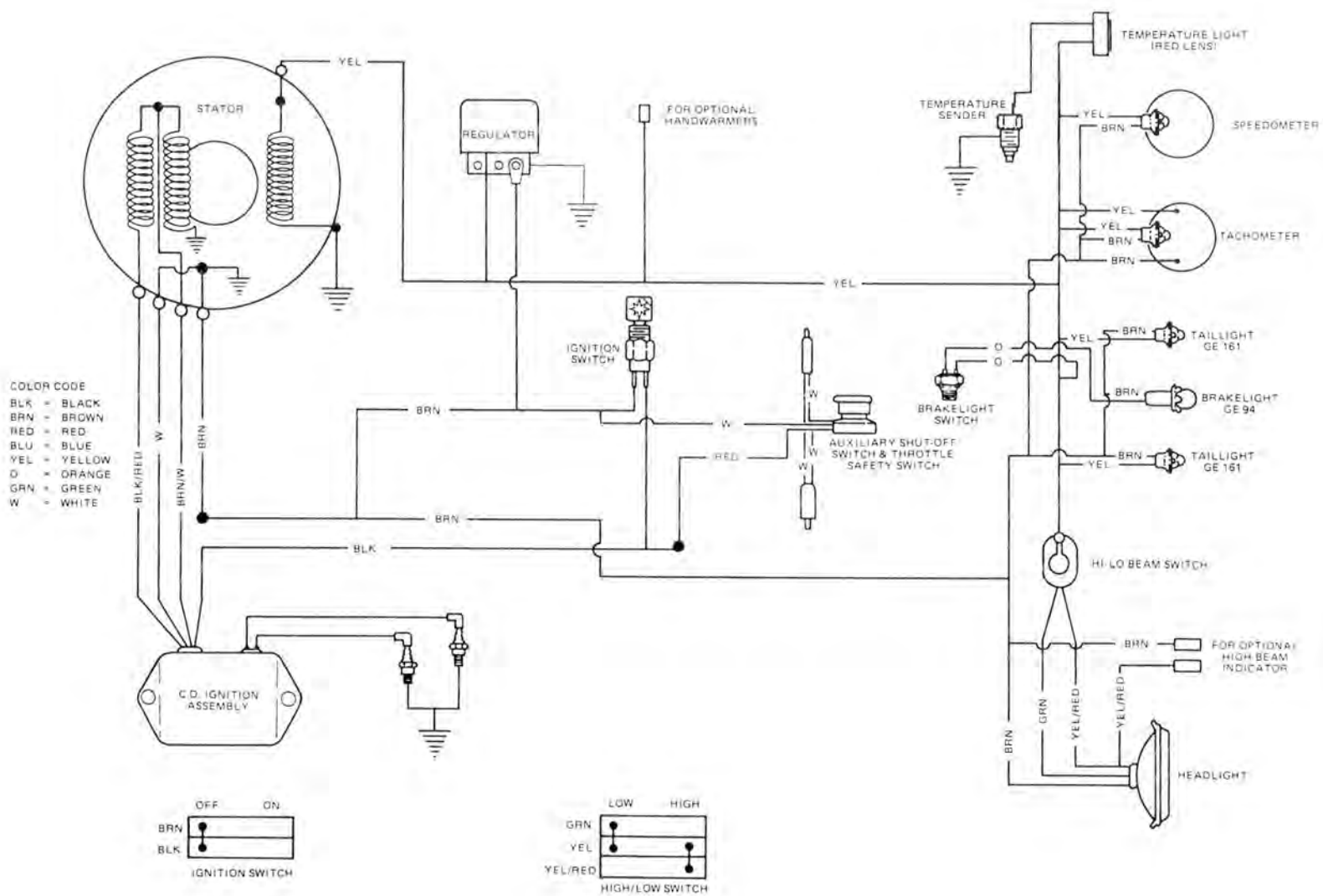


BODY ELECTRICAL **1989 Wiring Diagram - Sprint ES, LongTrak (LTR)**

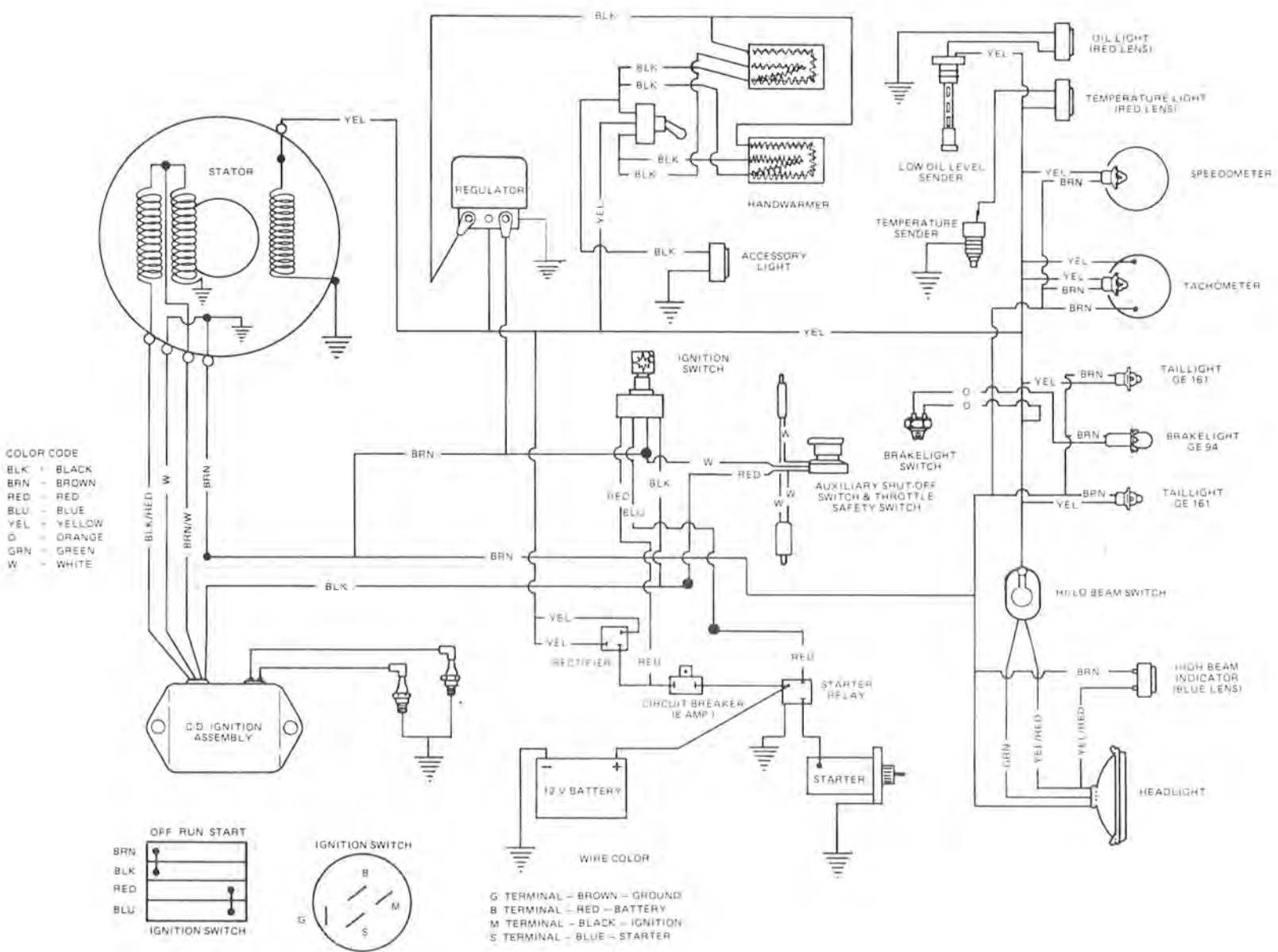




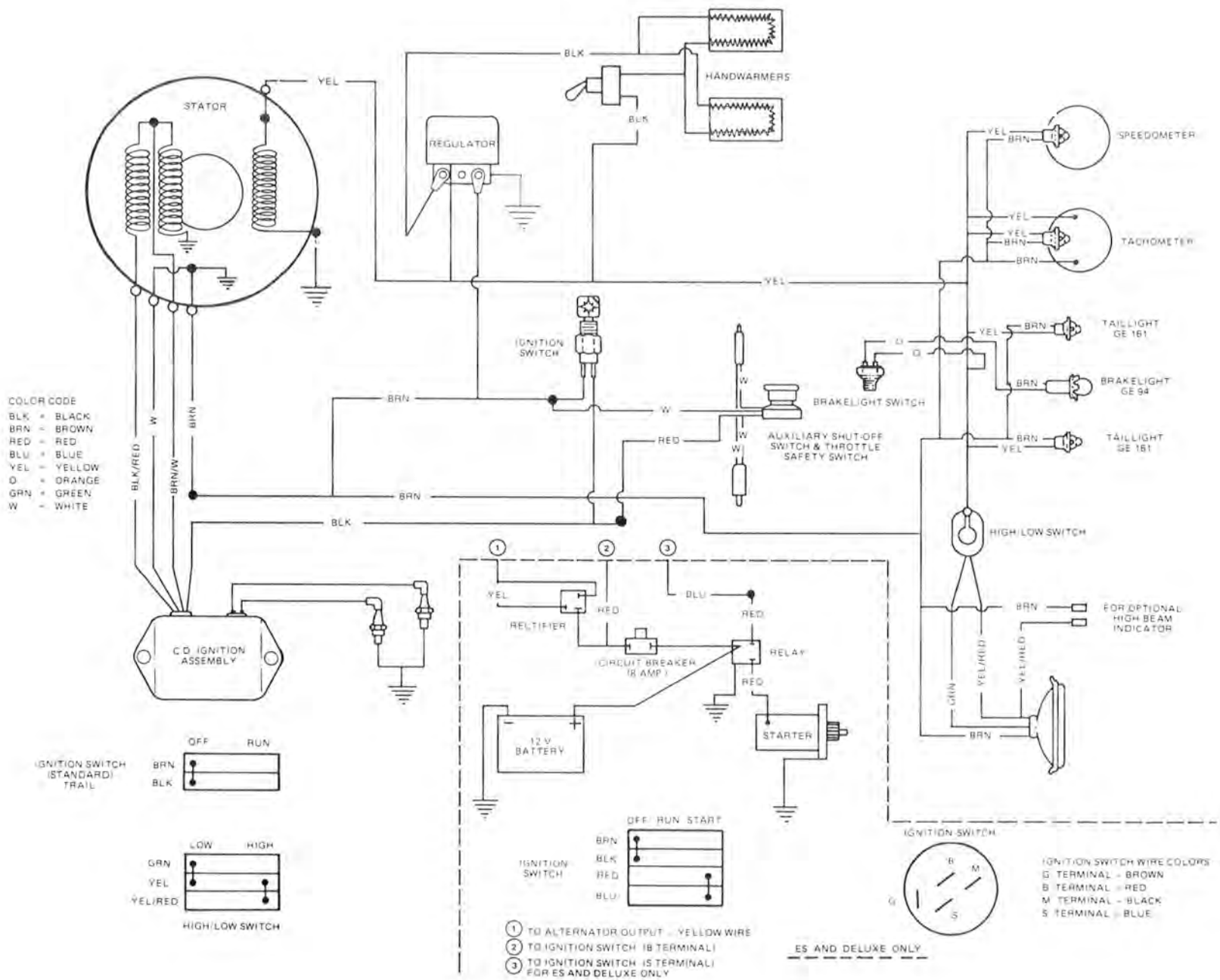
BODY ELECTRICAL 1989 Wiring Diagram - Indy 400, 500, 500 SP



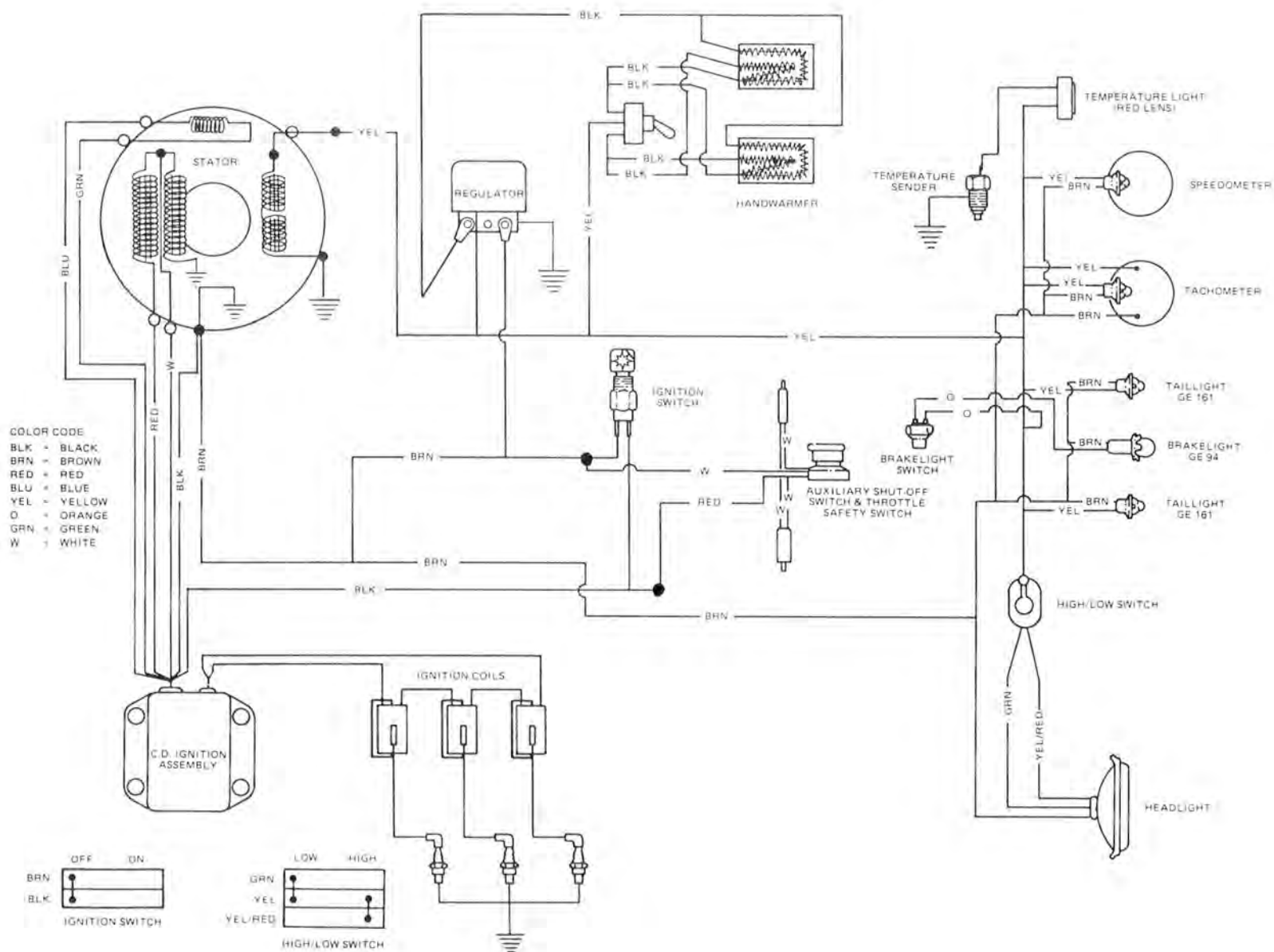
BODY ELECTRICAL **1989 Wiring Diagram - 500 Classic**



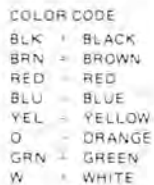
BODY ELECTRICAL **1989 Wiring Diagram - Indy Trail ES, SP, SKS, Deluxe, SuperTrak**



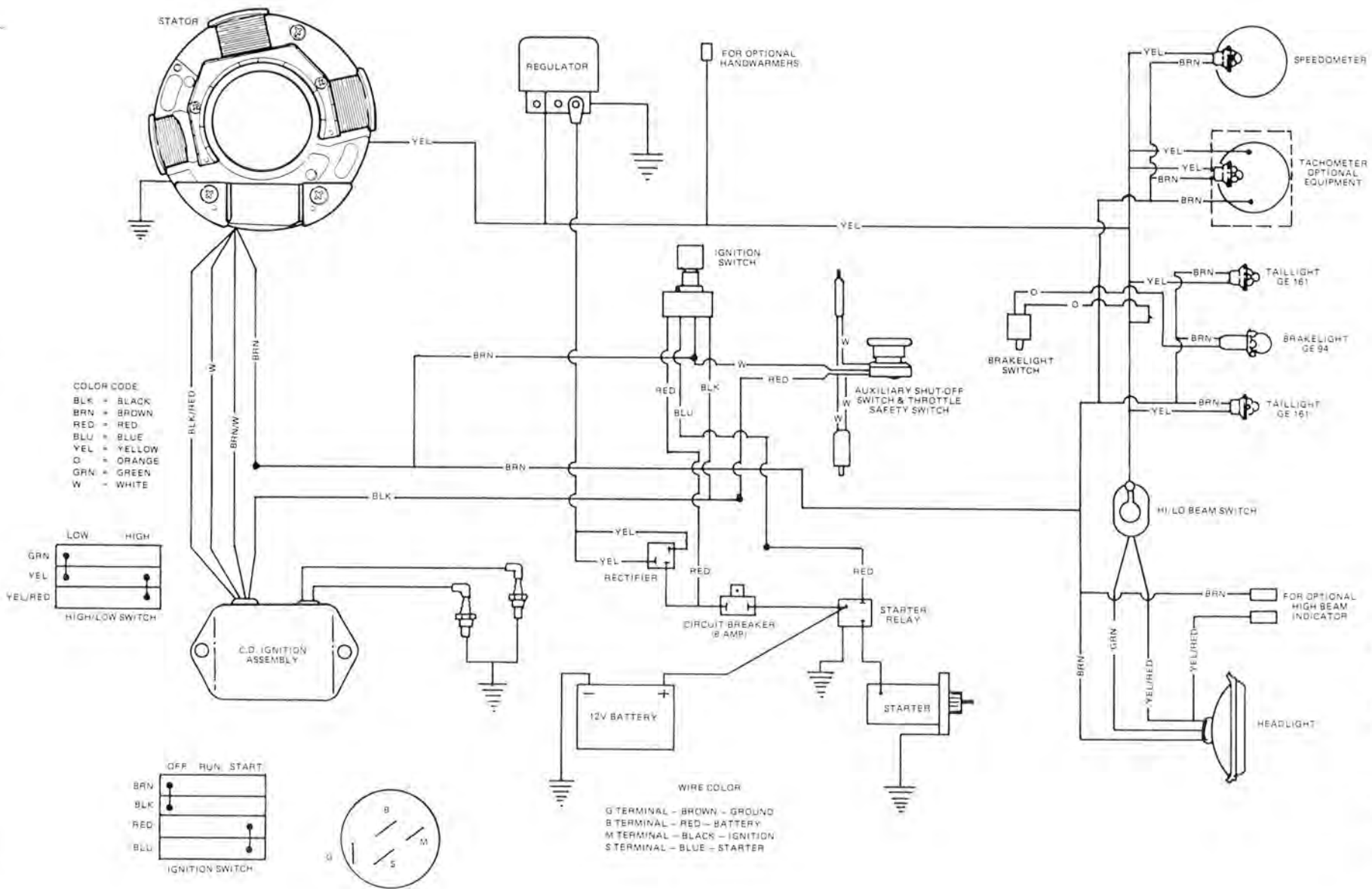
BODY ELECTRICAL **1989 Wiring Diagram - Indy 650 (SKS)**



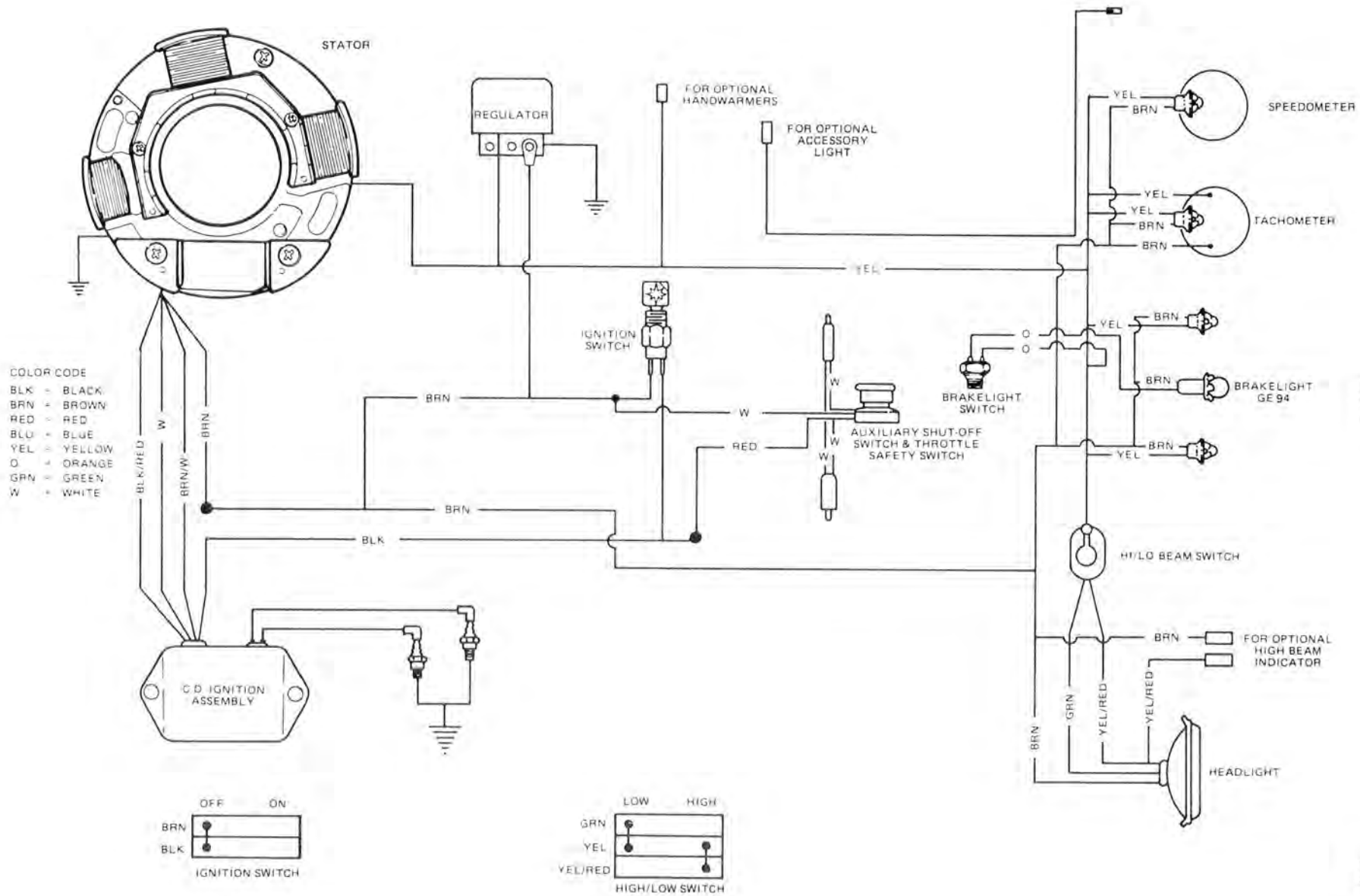
BODY ELECTRICAL



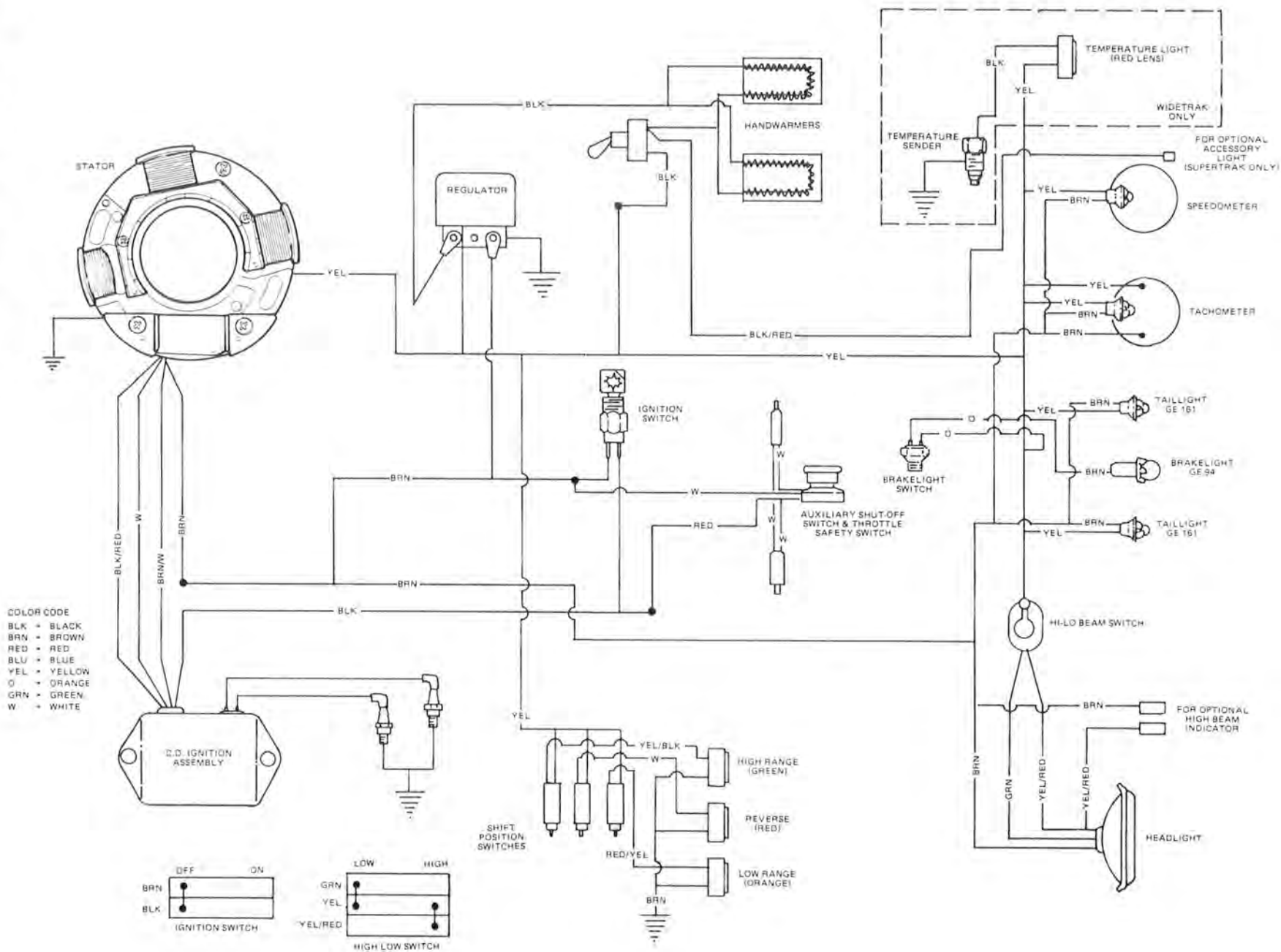
BODY ELECTRICAL **1990 Wiring Diagram - Sprint ES**



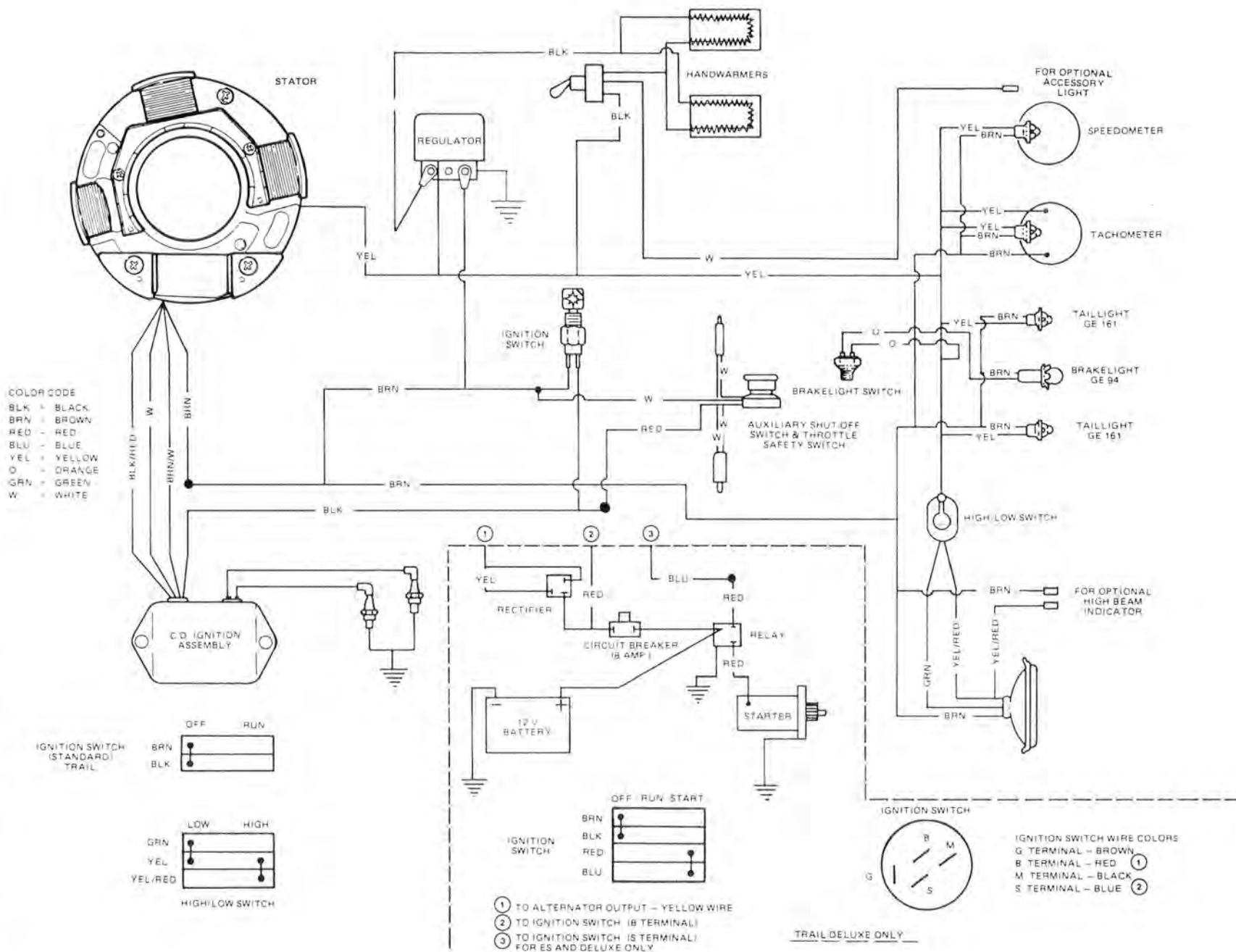
BODY ELECTRICAL 1990 Wiring Diagram - Indy Sport, Sport GT



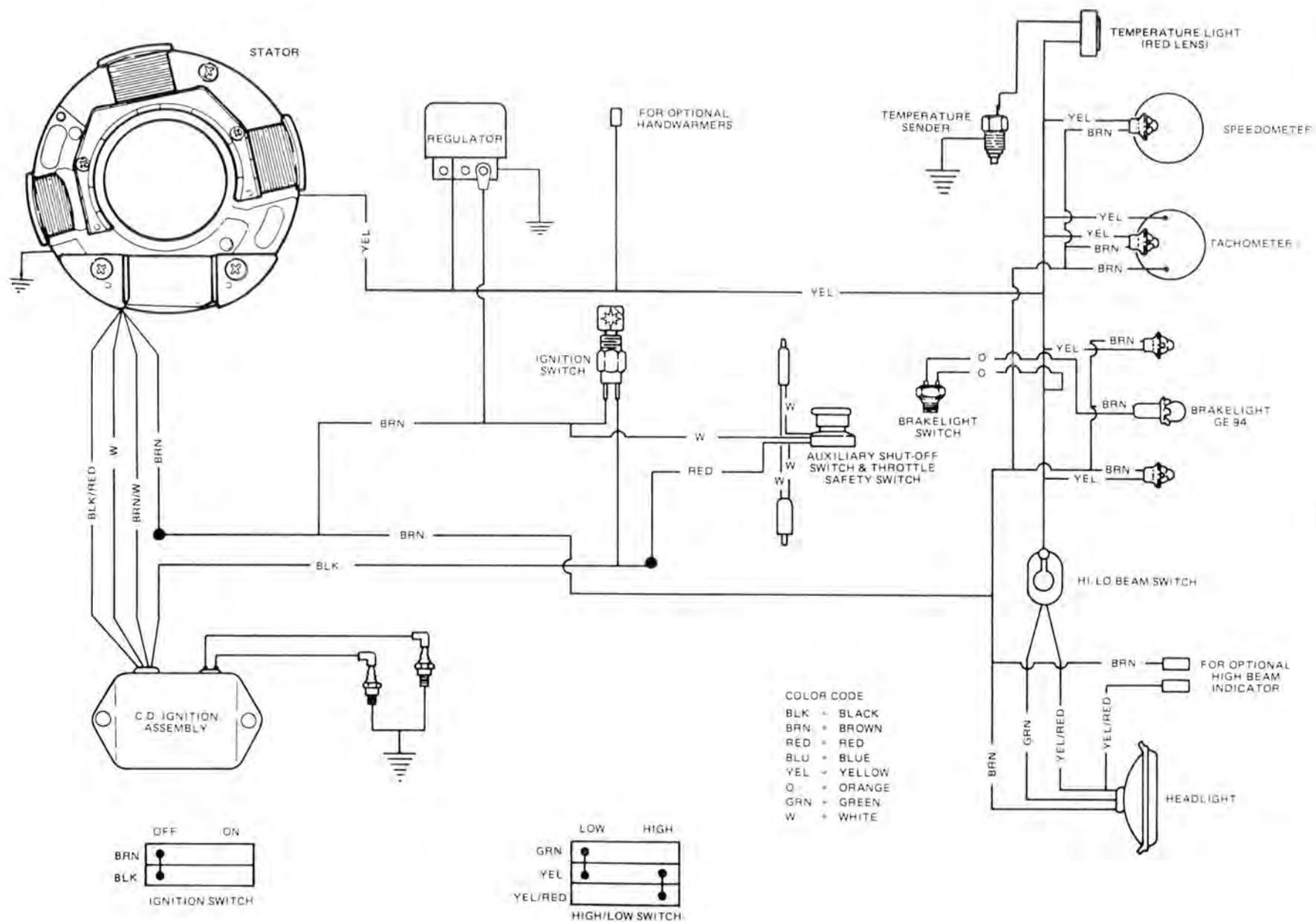
BODY ELECTRICAL 1990 Wiring Diagram - Indy WideTrak



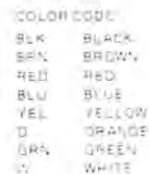
BODY ELECTRICAL 1990 Wiring Diagram - Indy Trail, Deluxe



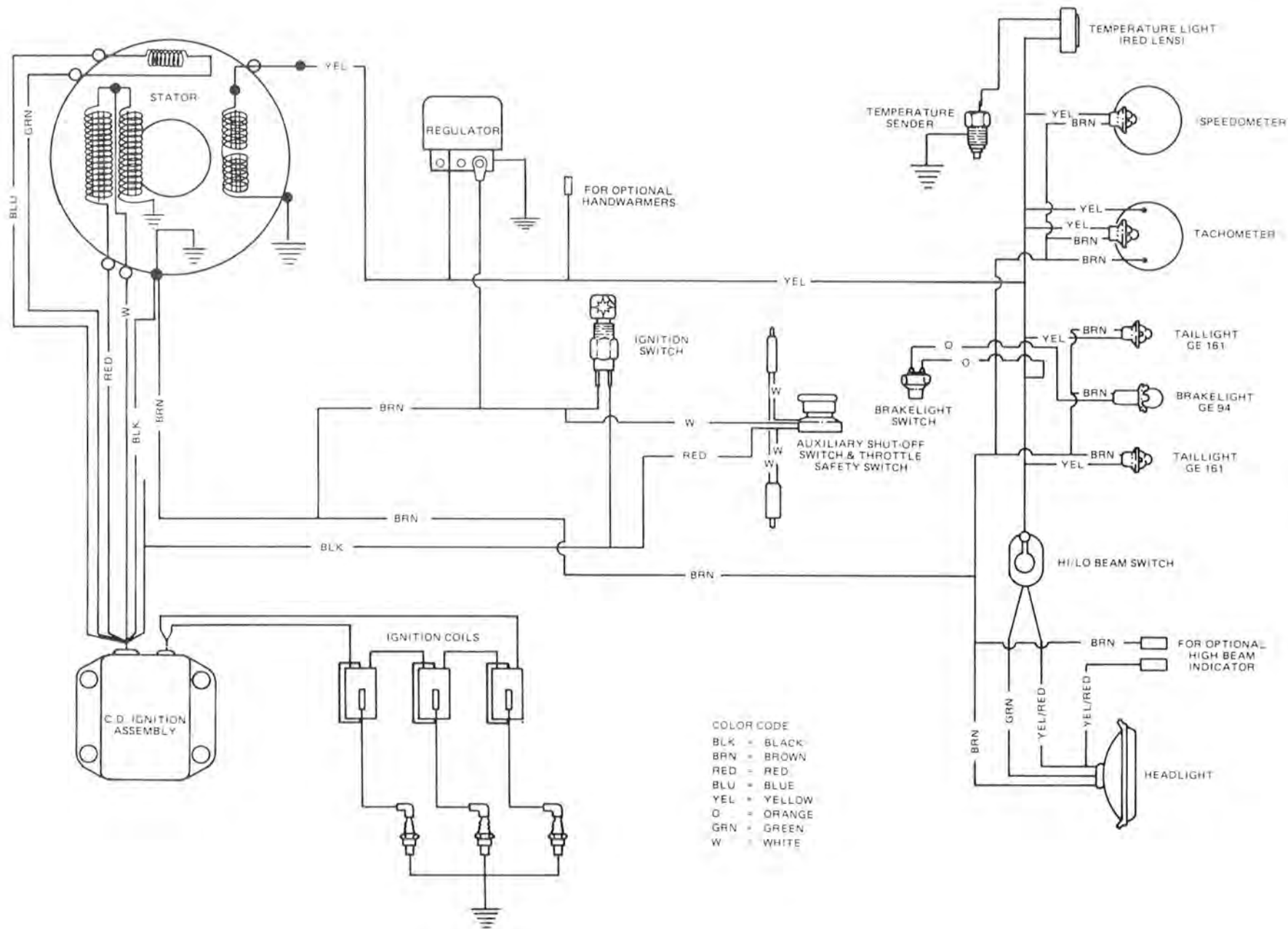
BODY ELECTRICAL **1990 Wiring Diagram - Indy 400, 500, 500 SP, SKS**



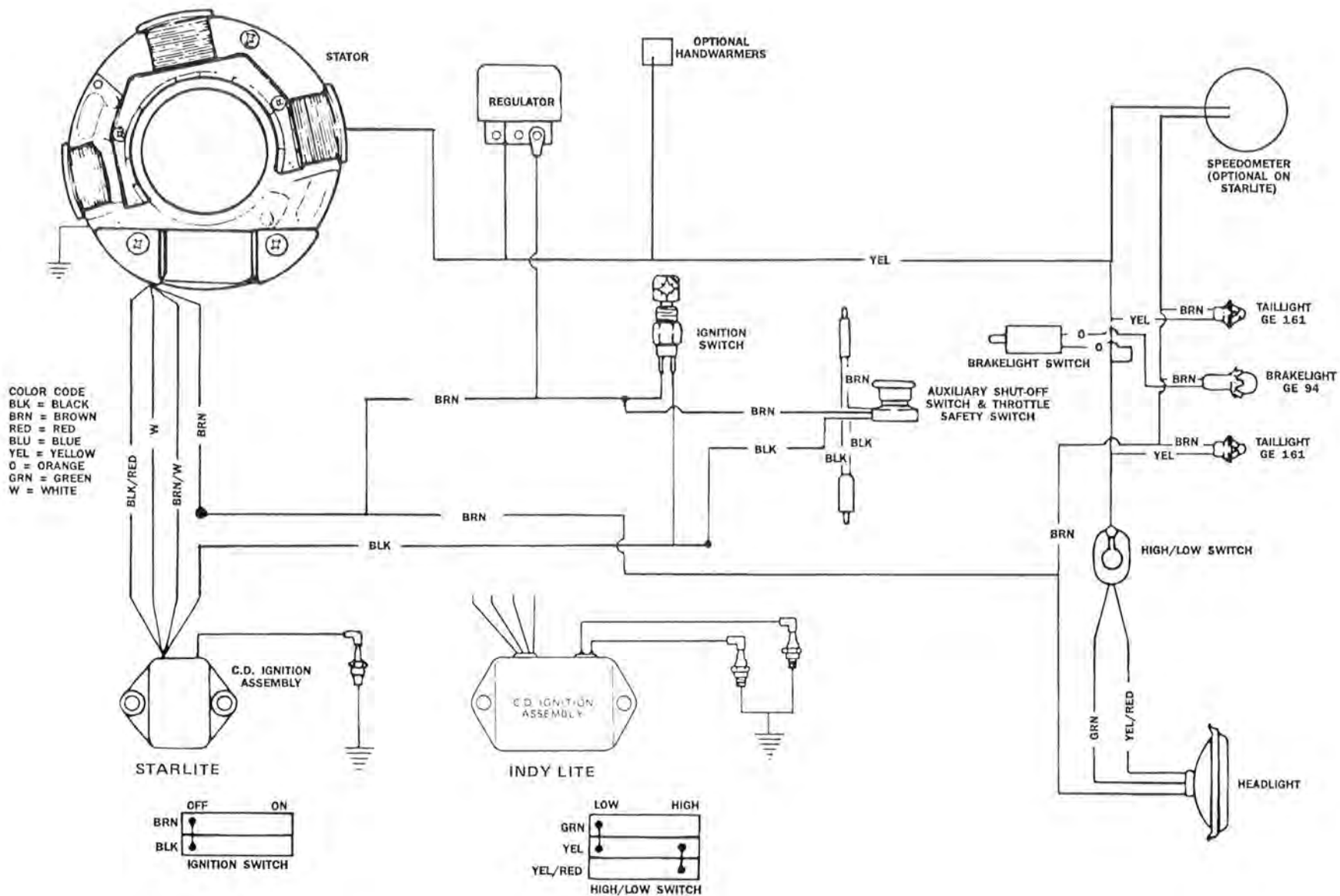
BODY ELECTRICAL



BODY ELECTRICAL 1990 Wiring Diagram - Indy 650, SKS

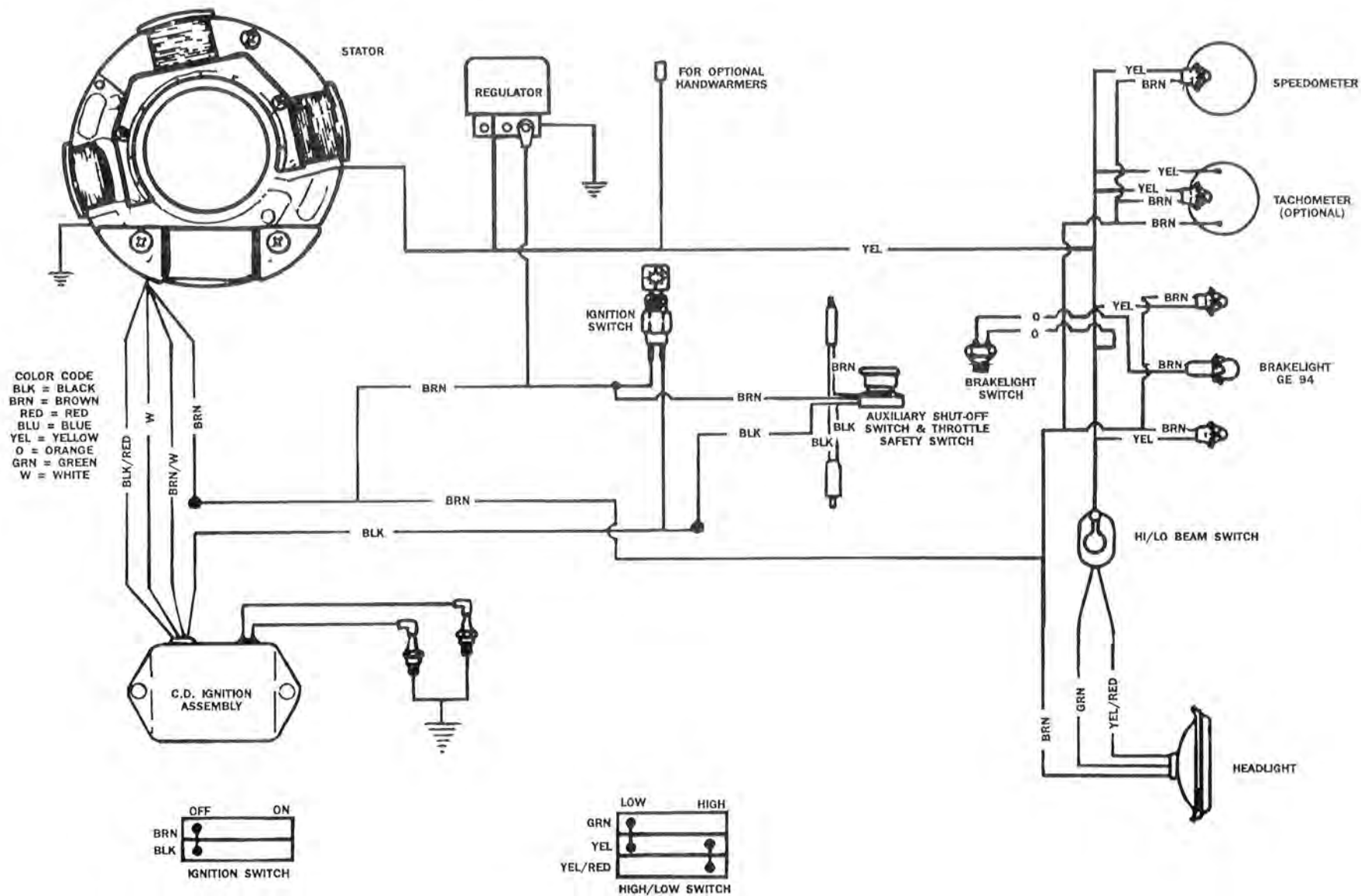


BODY ELECTRICAL 1991 Wiring Diagram - Starlite, Indy Lite

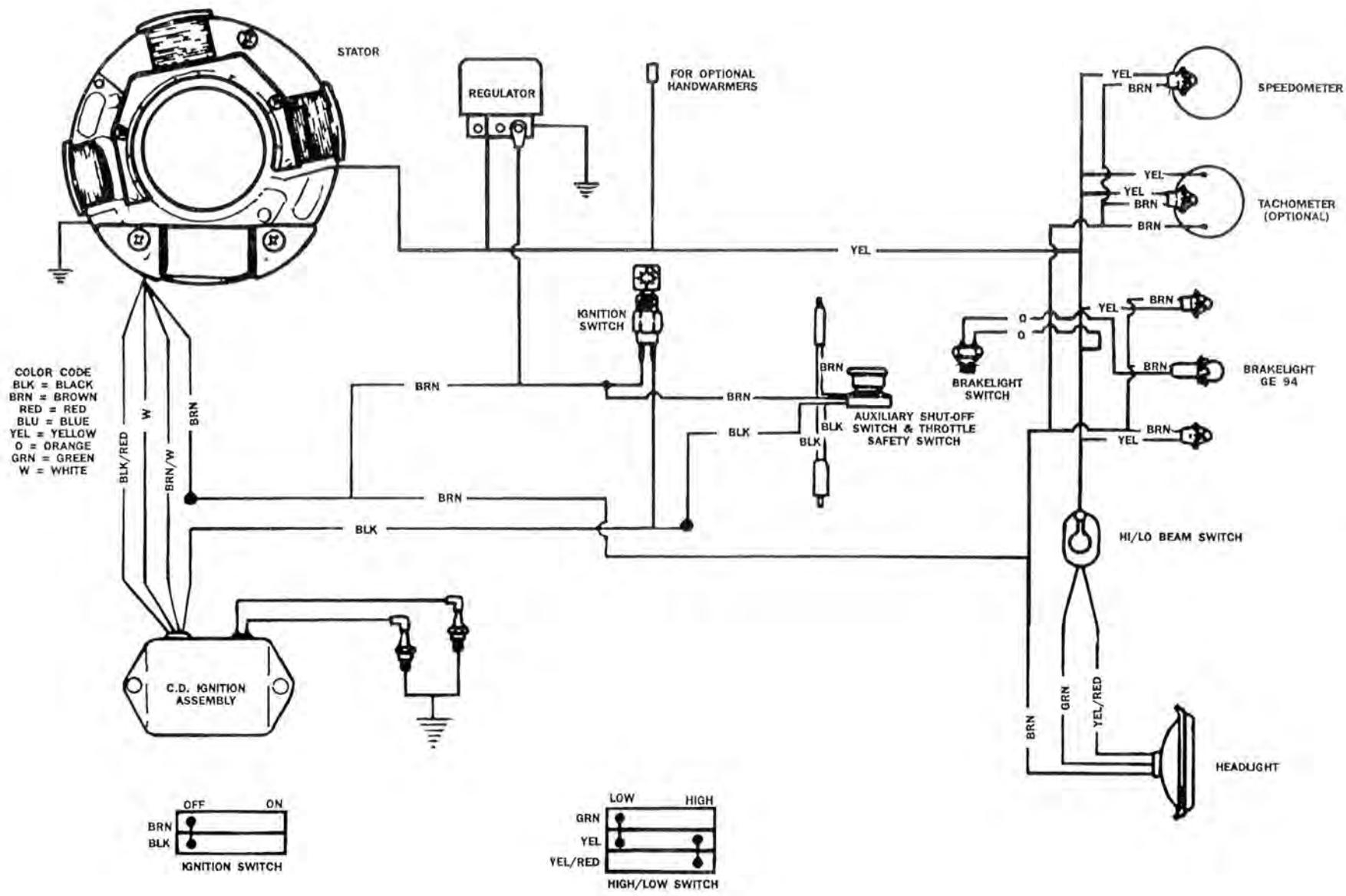


BODY ELECTRICAL

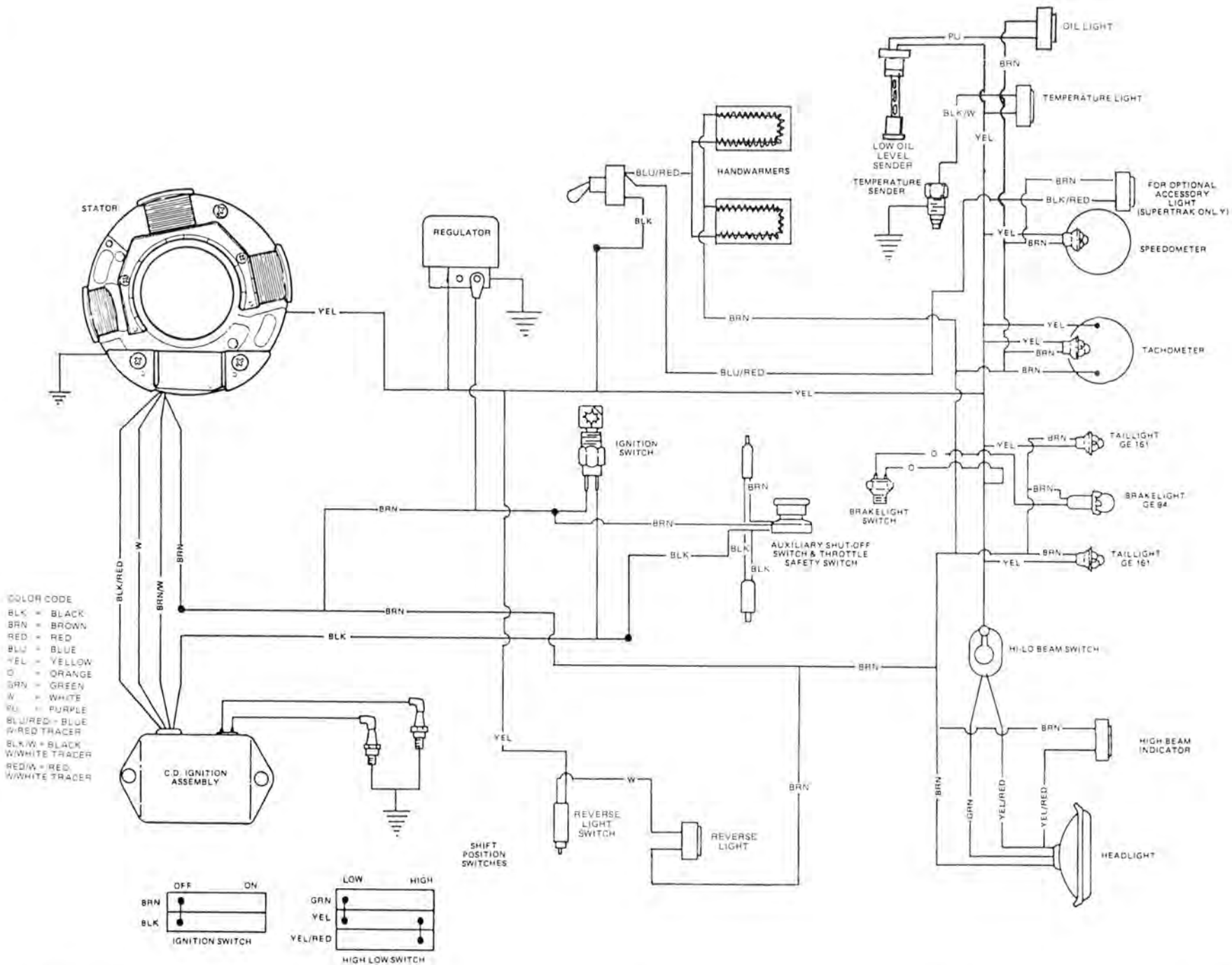
1991 Wiring Diagram - Indy Sport, Sport GT



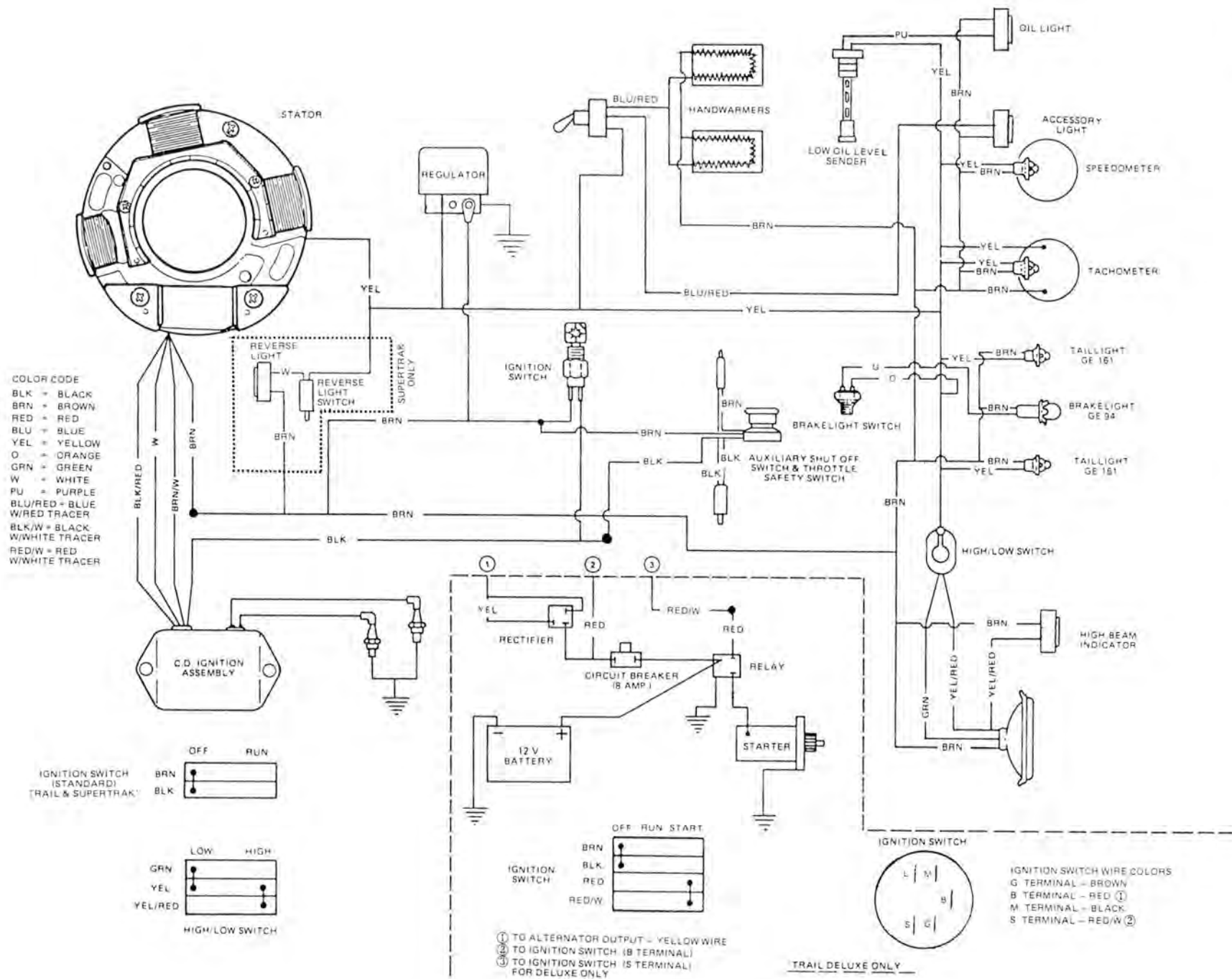
BODY ELECTRICAL 1991 Wiring Diagram - Indy Sport, Sport GT



BODY ELECTRICAL 1991 Wiring Diagram - Indy WideTrak



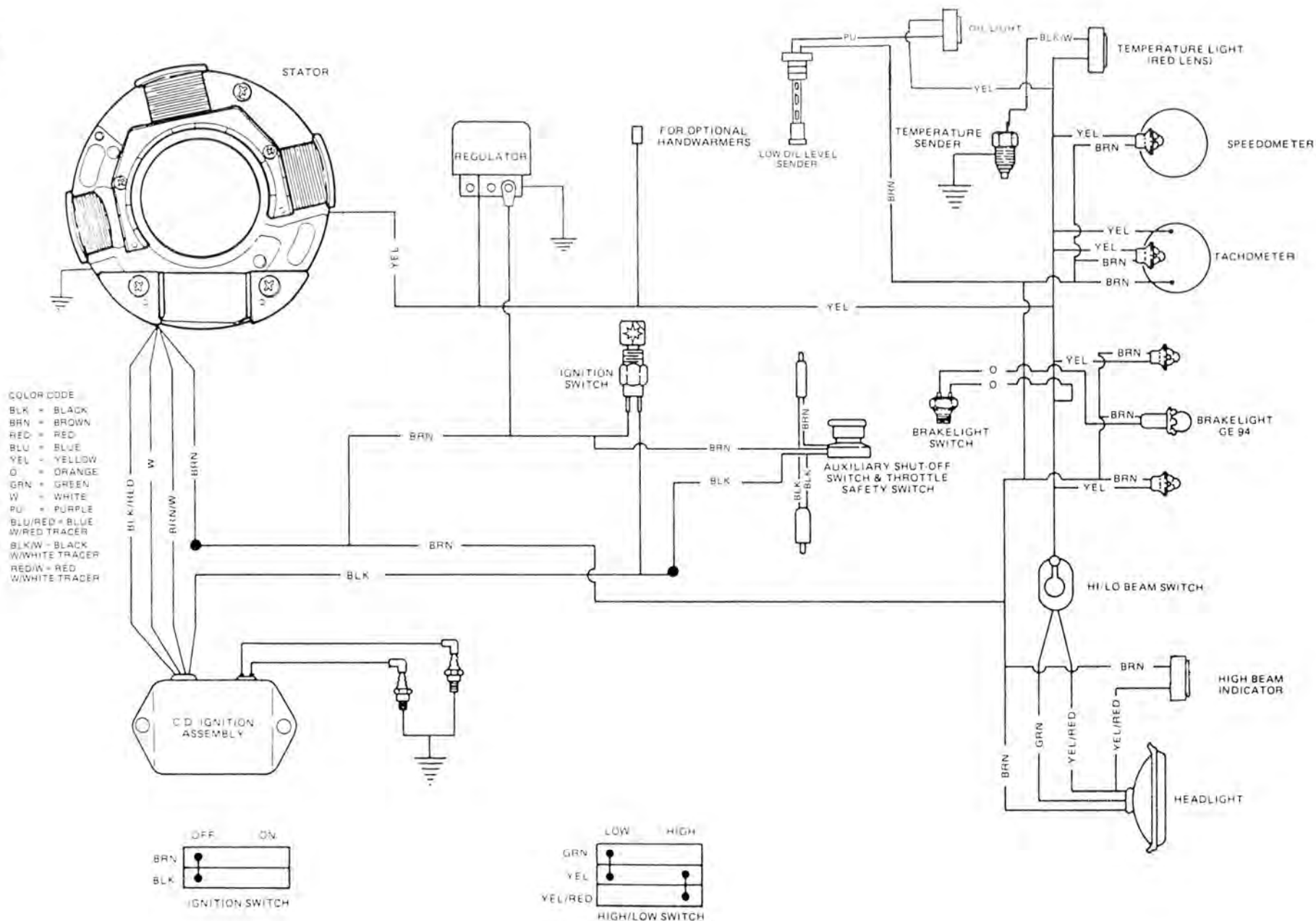
BODY ELECTRICAL **1991 Wiring Diagram - Indy Trail, Deluxe, SuperTrak**



BODY ELECTRICAL **1991 Wiring Diagram - Indy 400, 500, 500 SP, SKS**

8/94

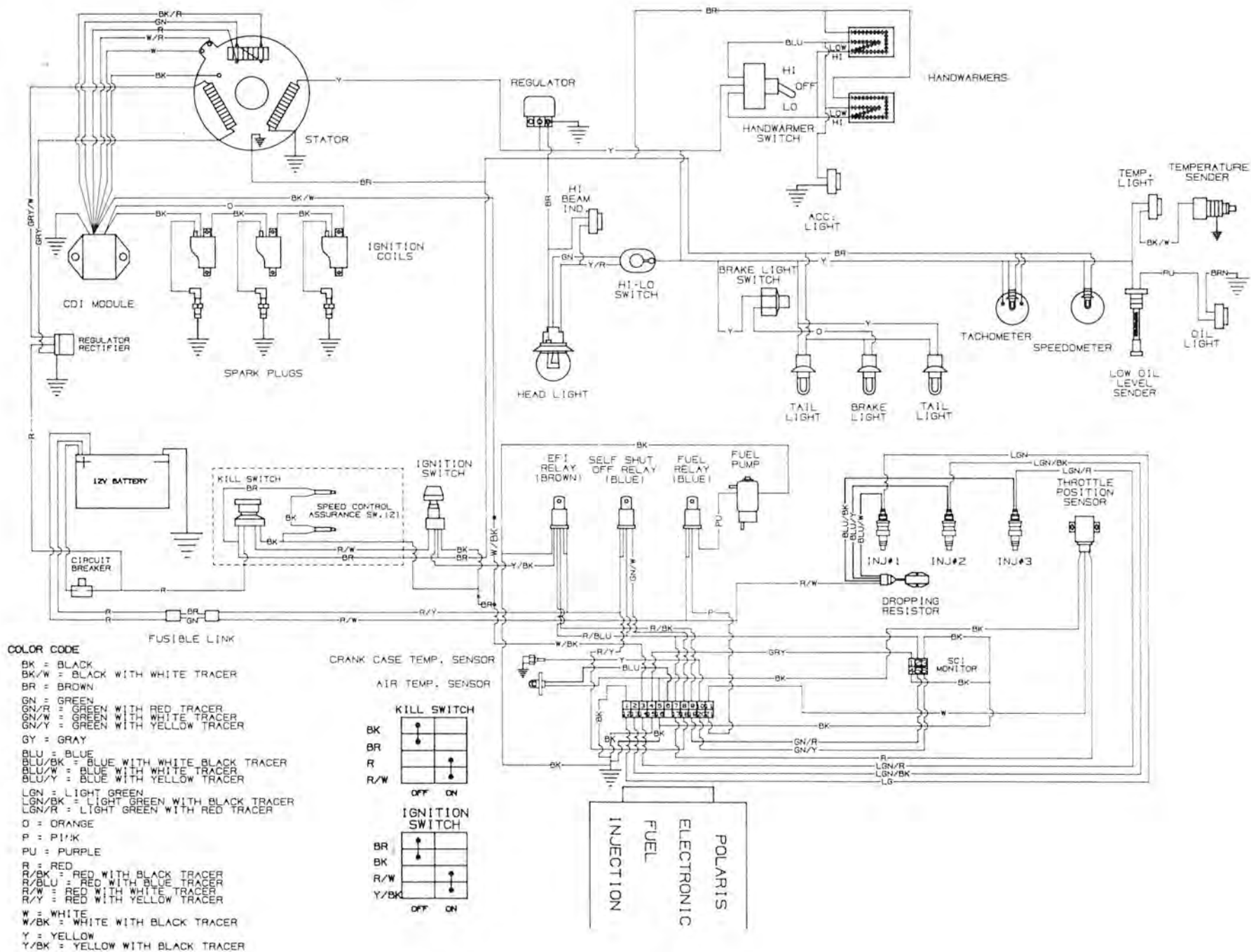
3.50



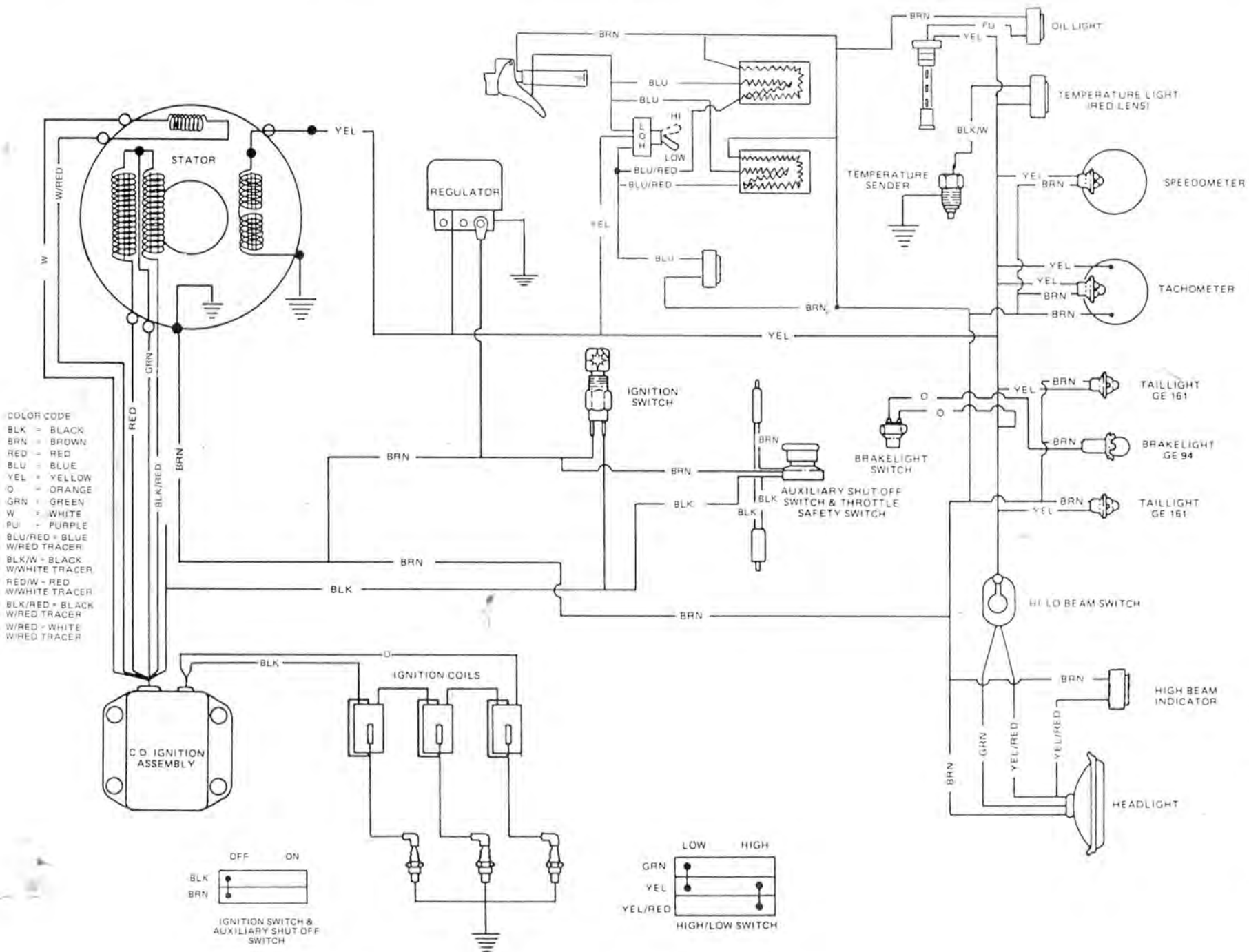
BODY ELECTRICAL



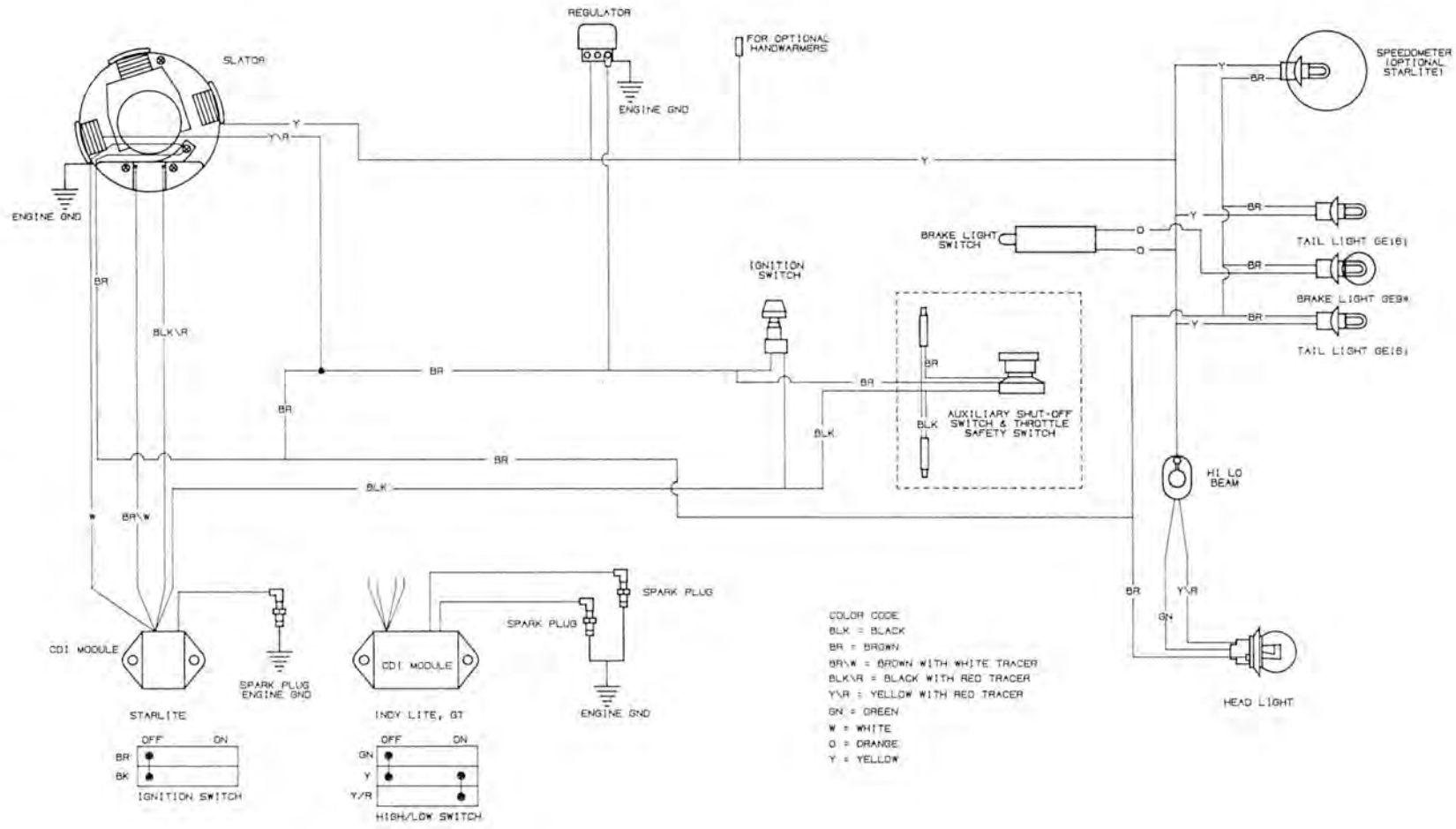
BODY ELECTRICAL **1990-91 Wiring Diagram - Indy RXL**

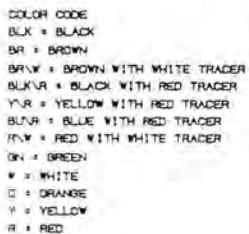


BODY ELECTRICAL **1991 Wiring Diagram - Indy 650**



BODY ELECTRICAL **1992 Wiring Diagram - StarLite, Indy Lite, Lite GT**





WIRE COLOR
G TERMINAL - BROWN - GROUND
B TERMINAL - RED - BATTERY
M TERMINAL - BLACK - IGNITION
S TERMINAL - RED/WHITE - STARTER

OFF RUN START

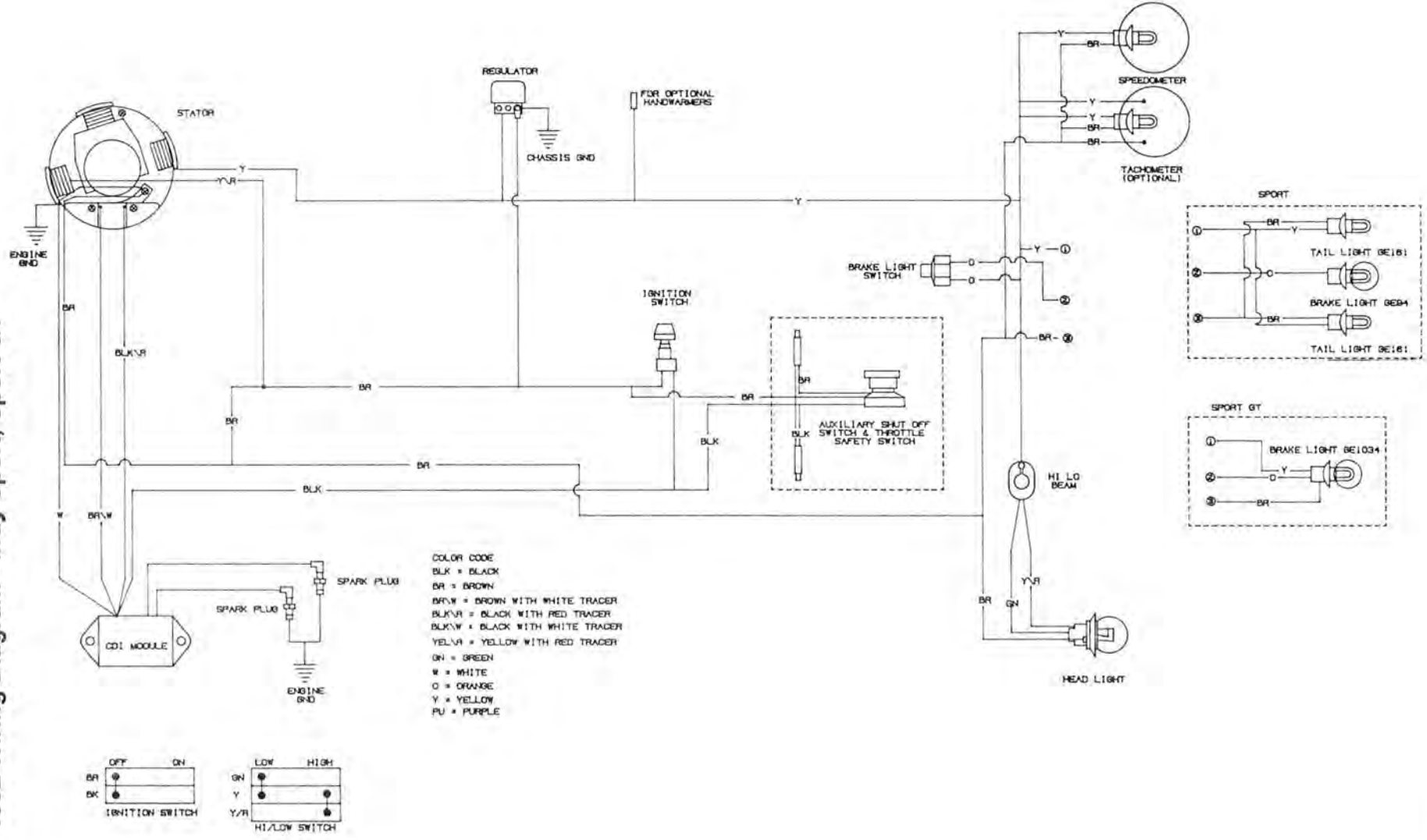
BR	●			G
BK	●			M
R			●	B
FLY			●	S

IGNITION SWITCH

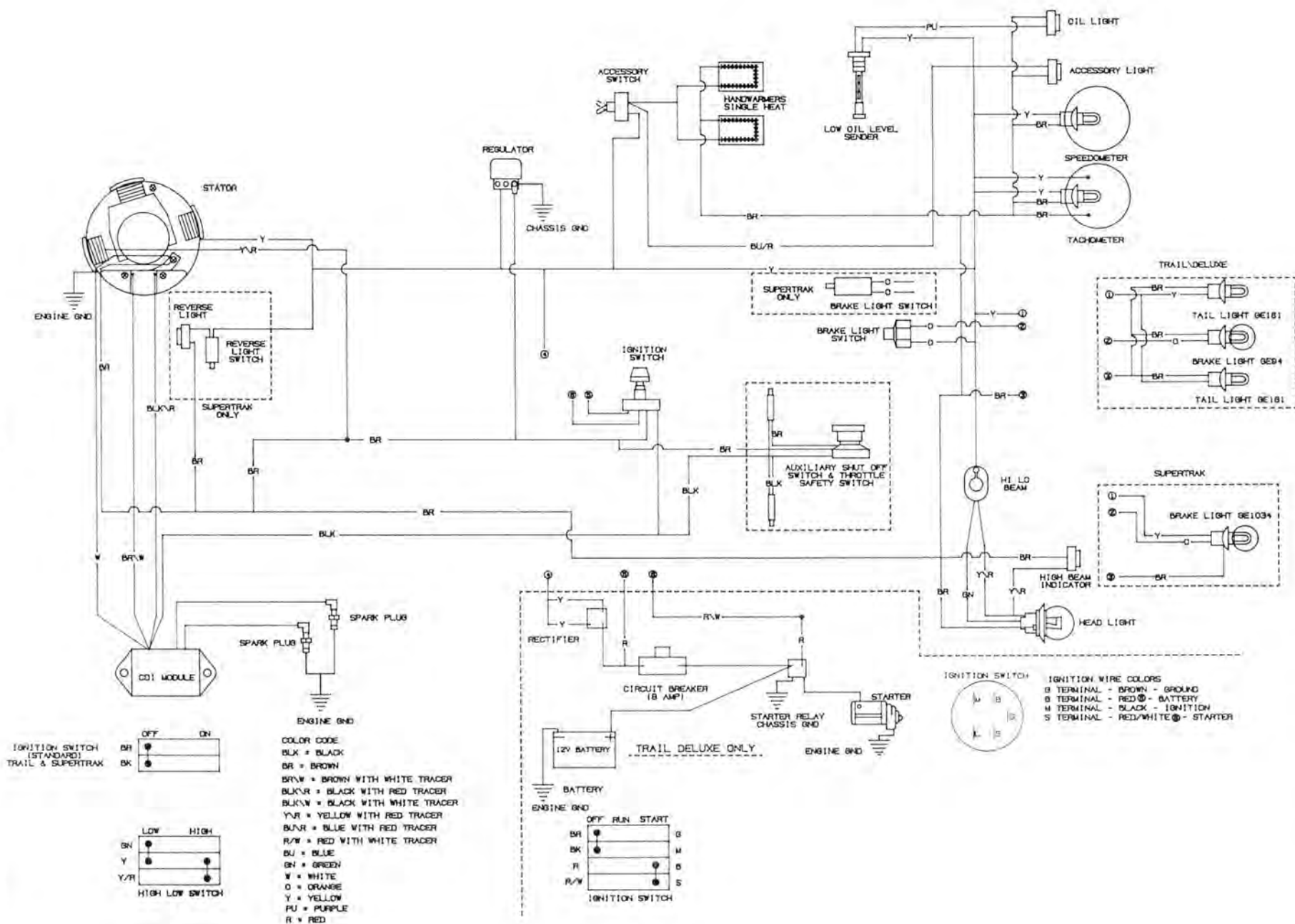


Wiring diagram for the ignition switch. The switch has four positions: OFF, RUN, START, and a fourth unlabeled position. The OFF position is connected to ground (G). The RUN position is connected to the motor (M). The START position is connected to the battery (B). The fourth position is connected to the solenoid (S).

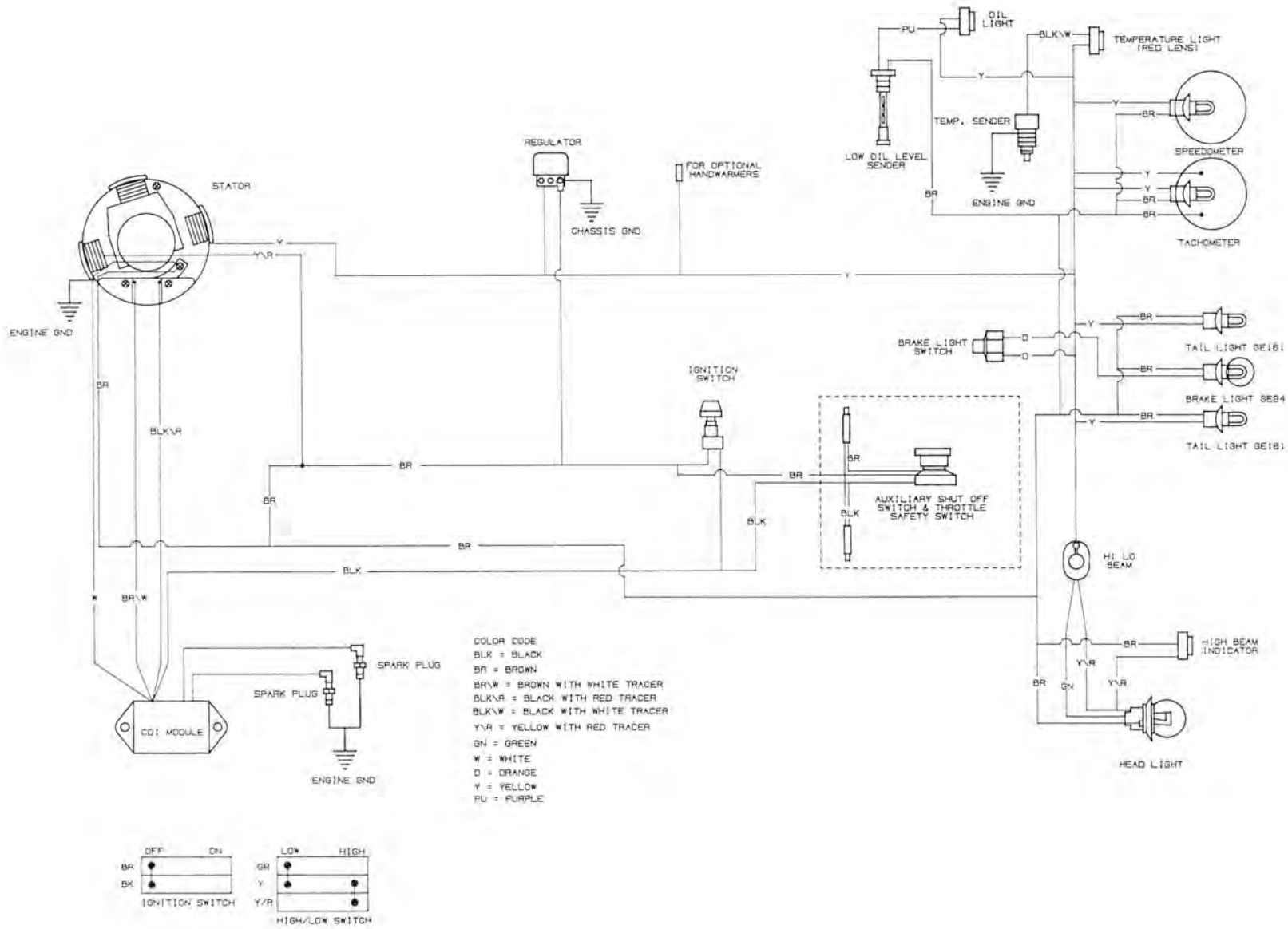
BODY ELECTRICAL **1992 Wiring Diagram - Indy Sport, Sport GT**



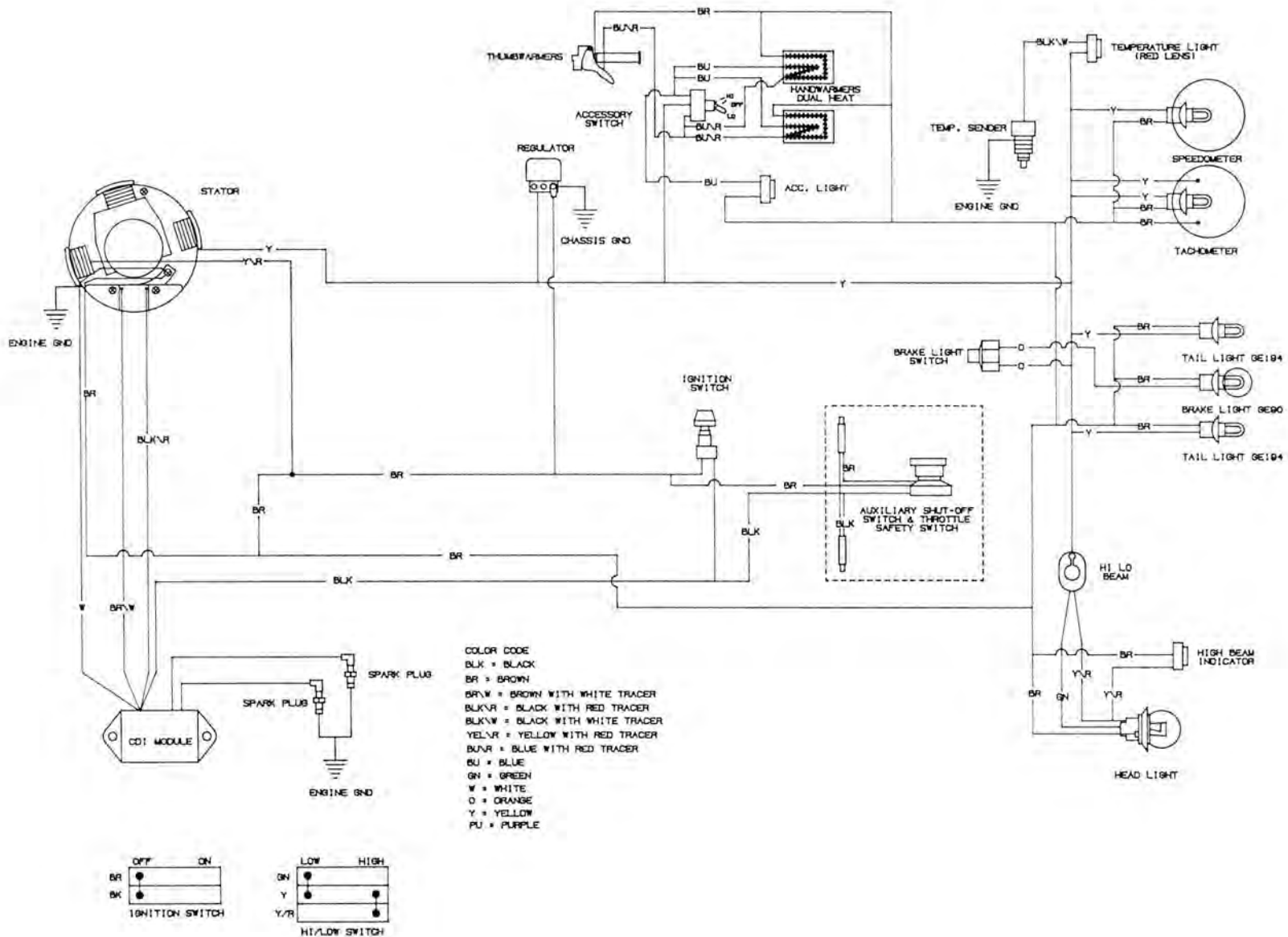
BODY ELECTRICAL **1992 Wiring Diagram - Indy Trail, Trail Deluxe, SuperTrak**



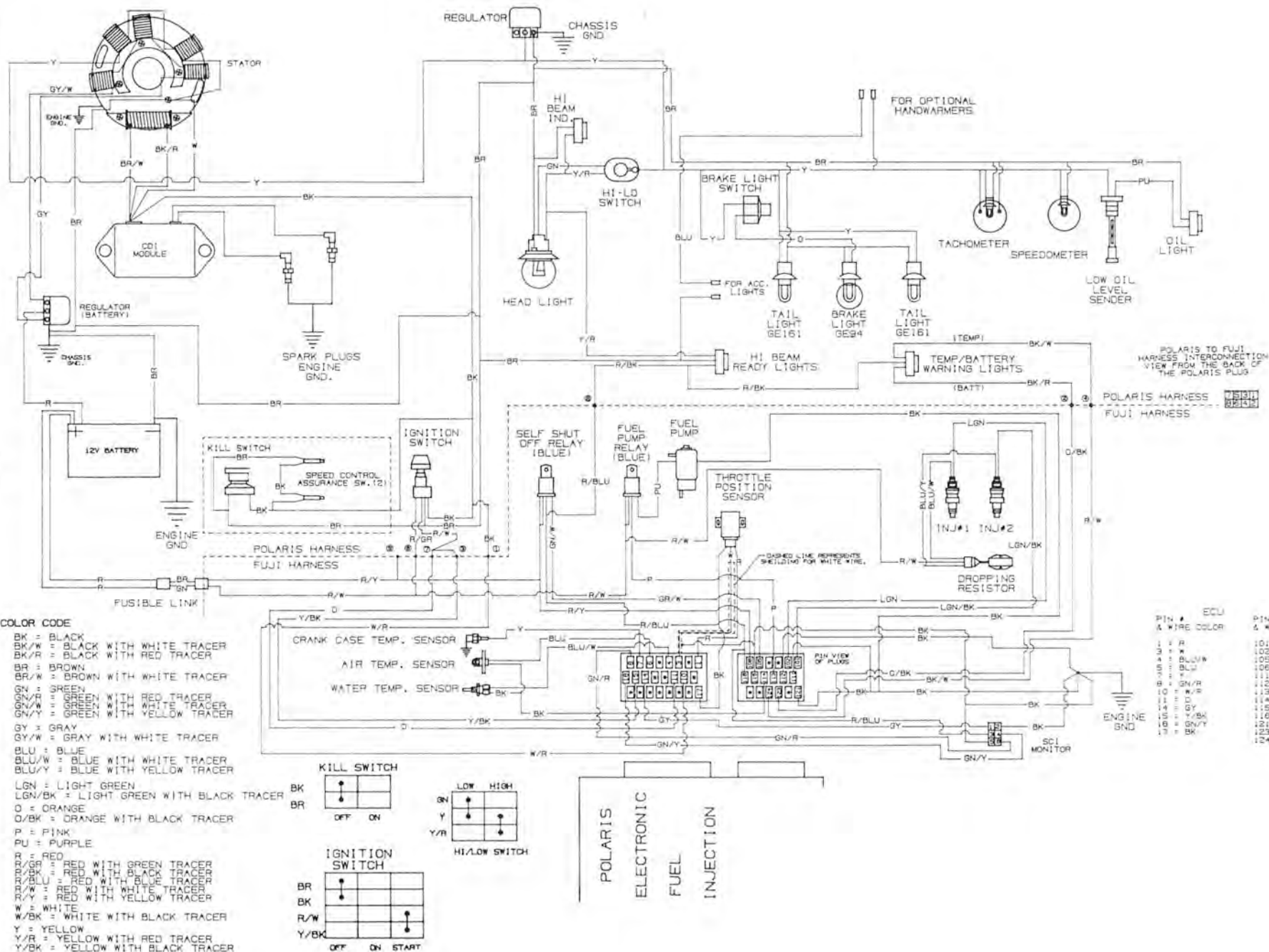
BODY ELECTRICAL 1992 Wiring Diagram - Indy 440, 500



BODY ELECTRICAL 1992 Wiring Diagram - Indy 440 XCR



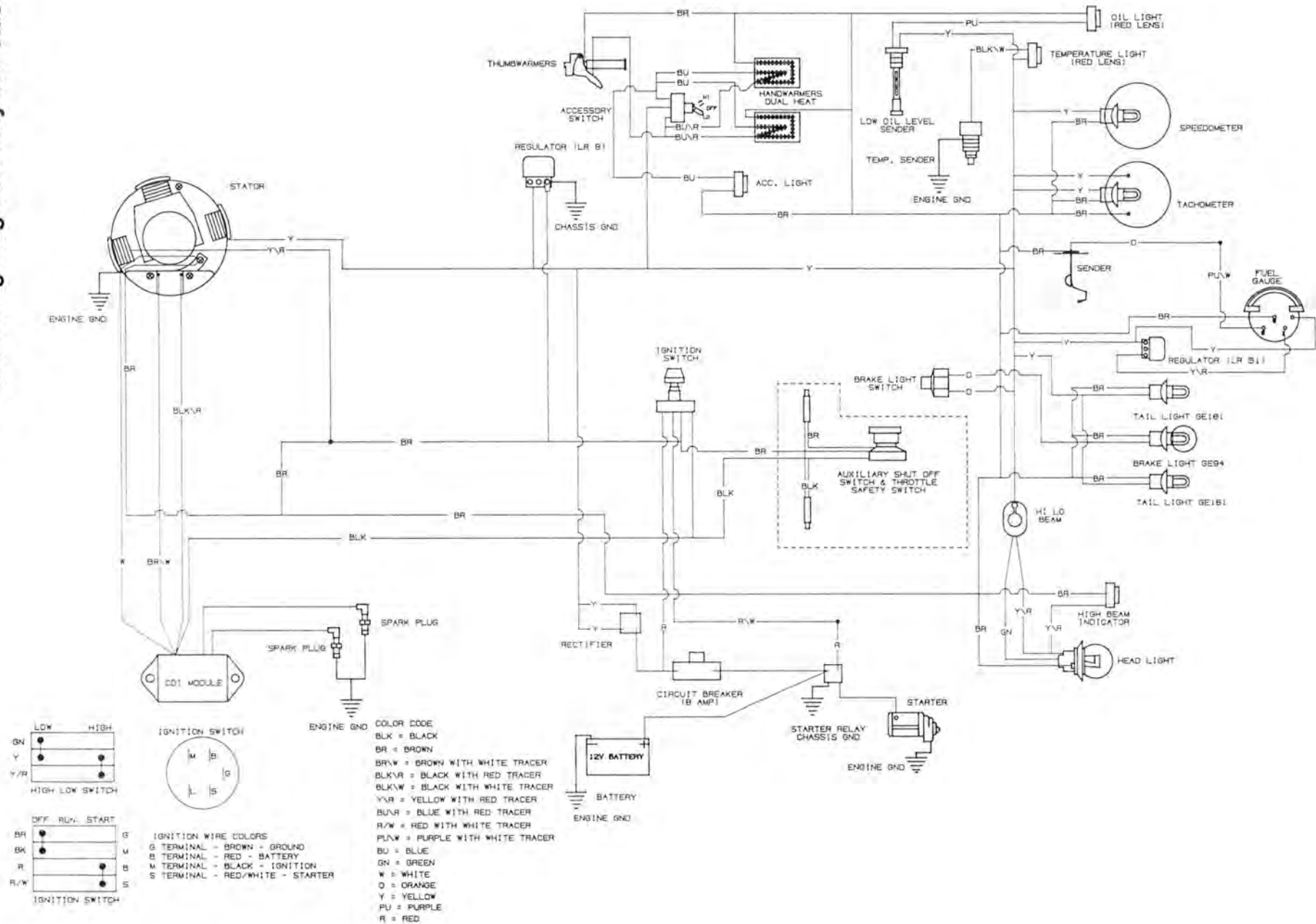
BODY ELECTRICAL **1992 Wiring Diagram - Indy 500 SP, SKS**



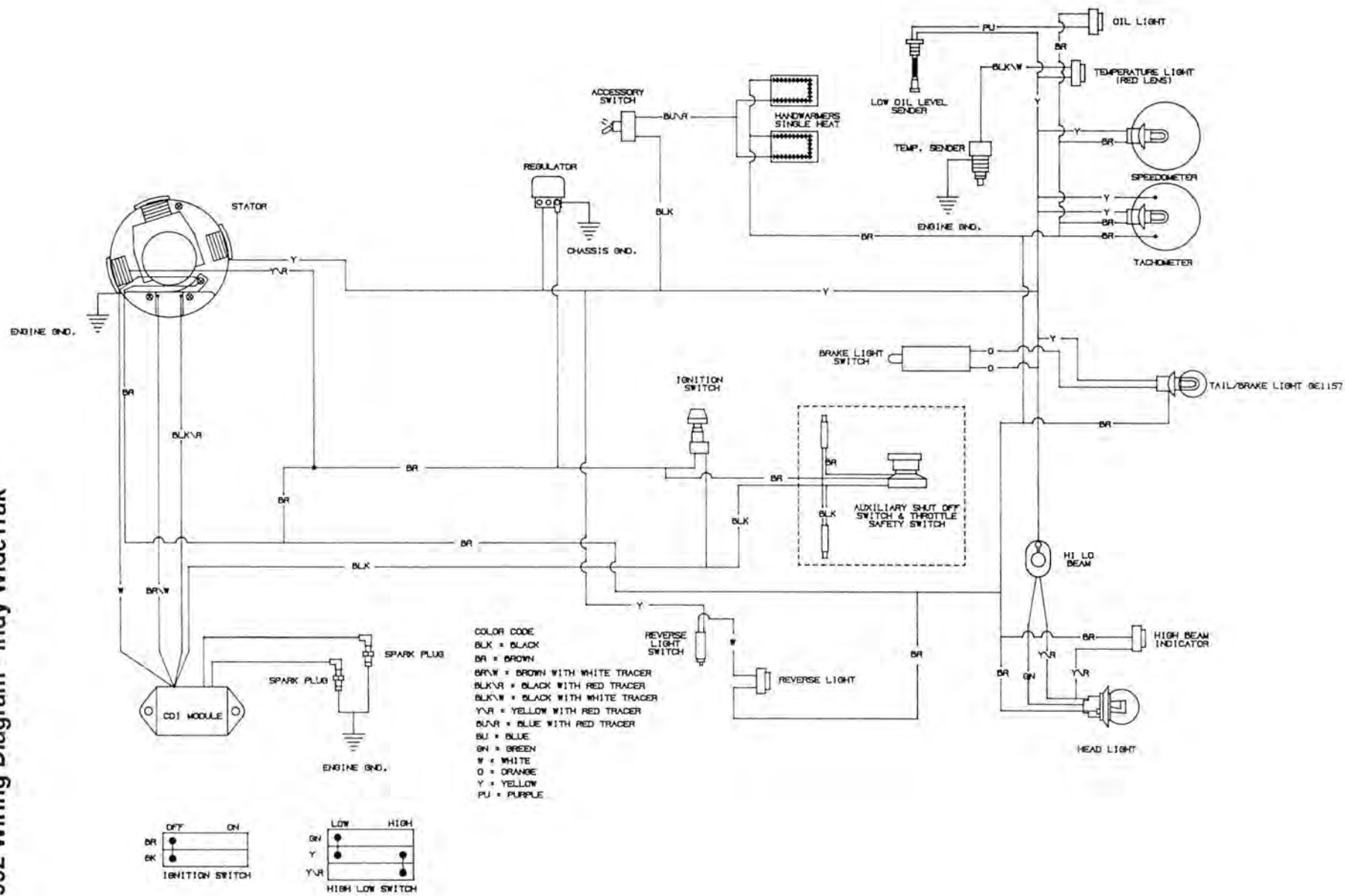
8/94

3.60

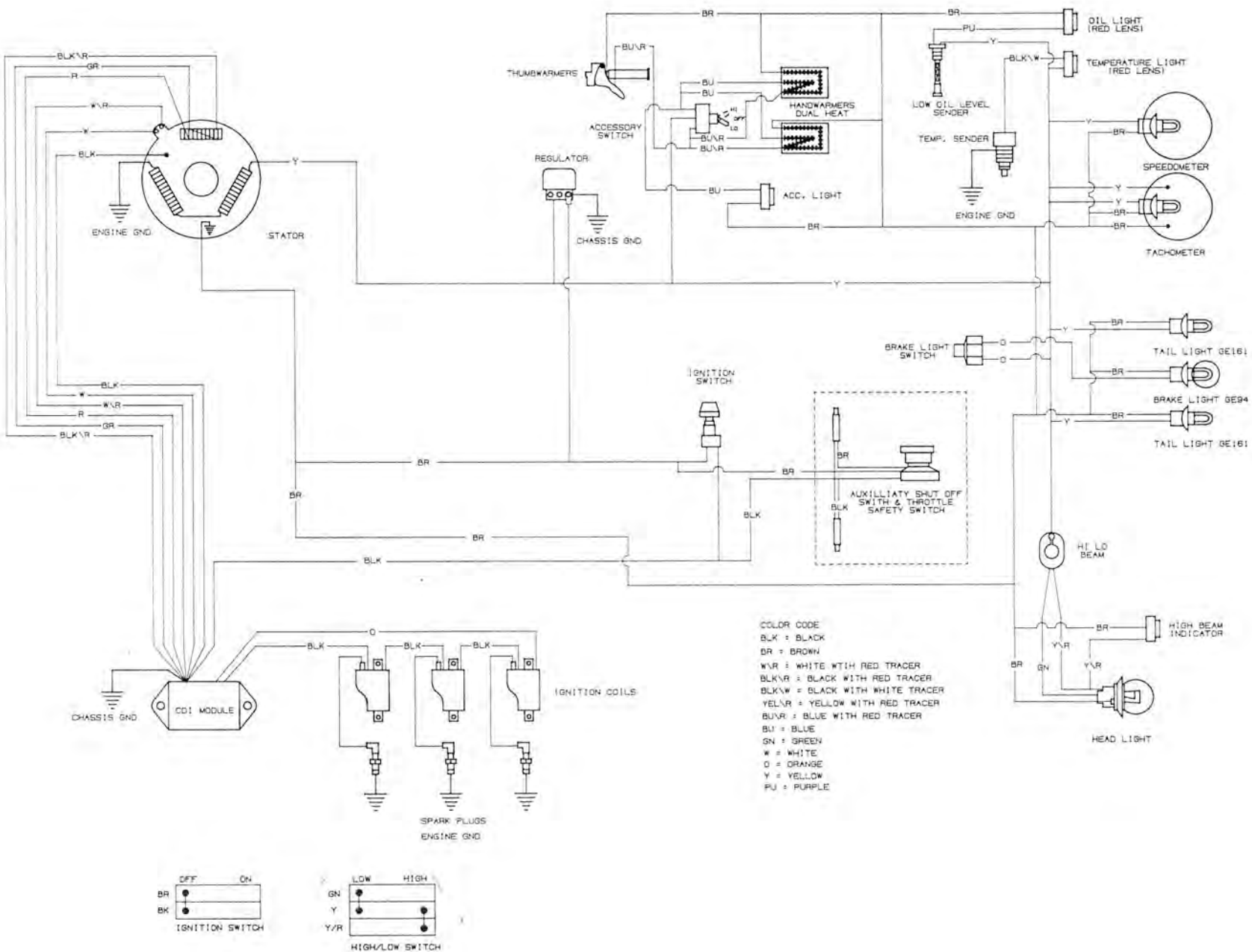
BODY ELECTRICAL 1992 Wiring Diagram - Indy 500 Classic



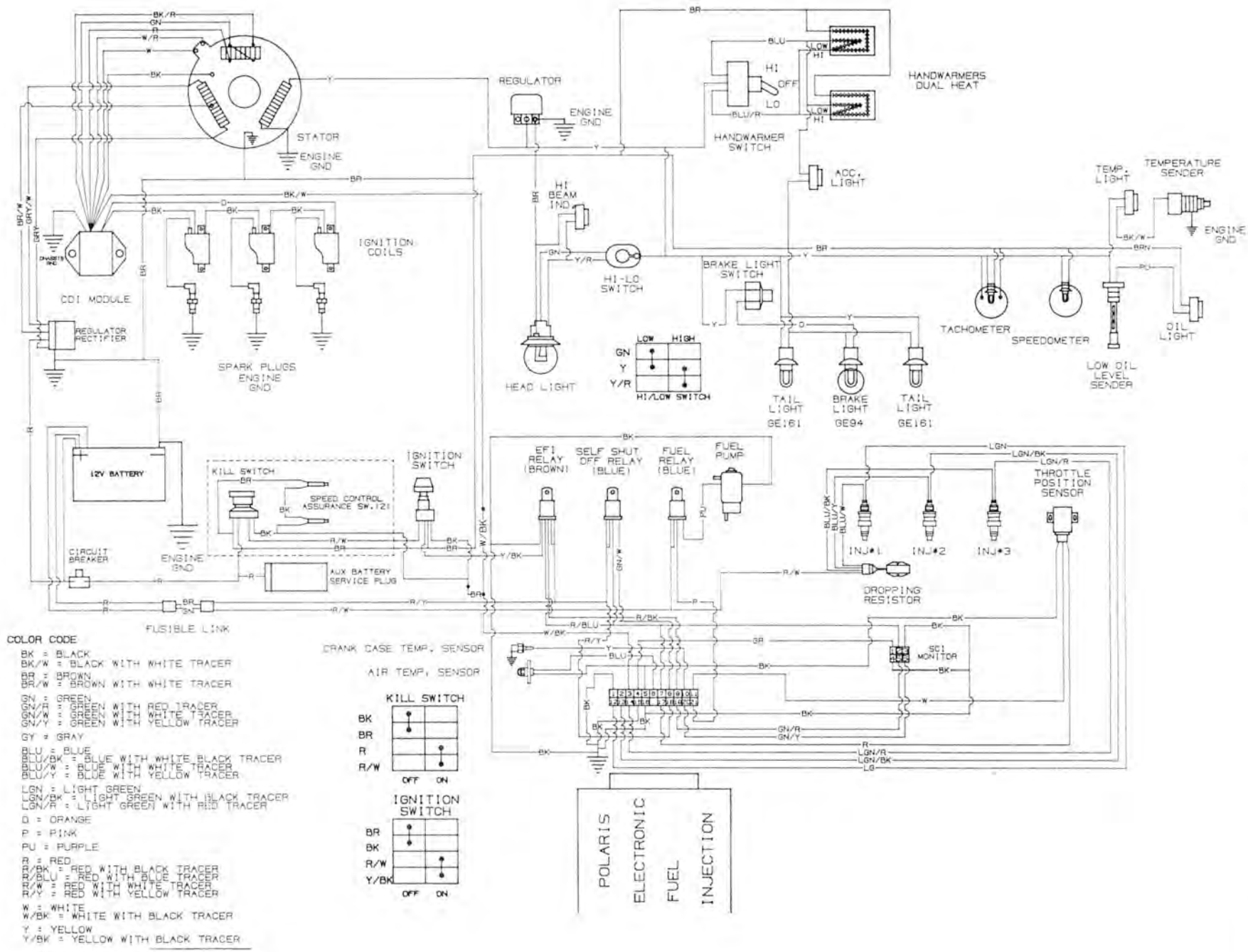
BODY ELECTRICAL 1992 Wiring Diagram - Indy WideTrak



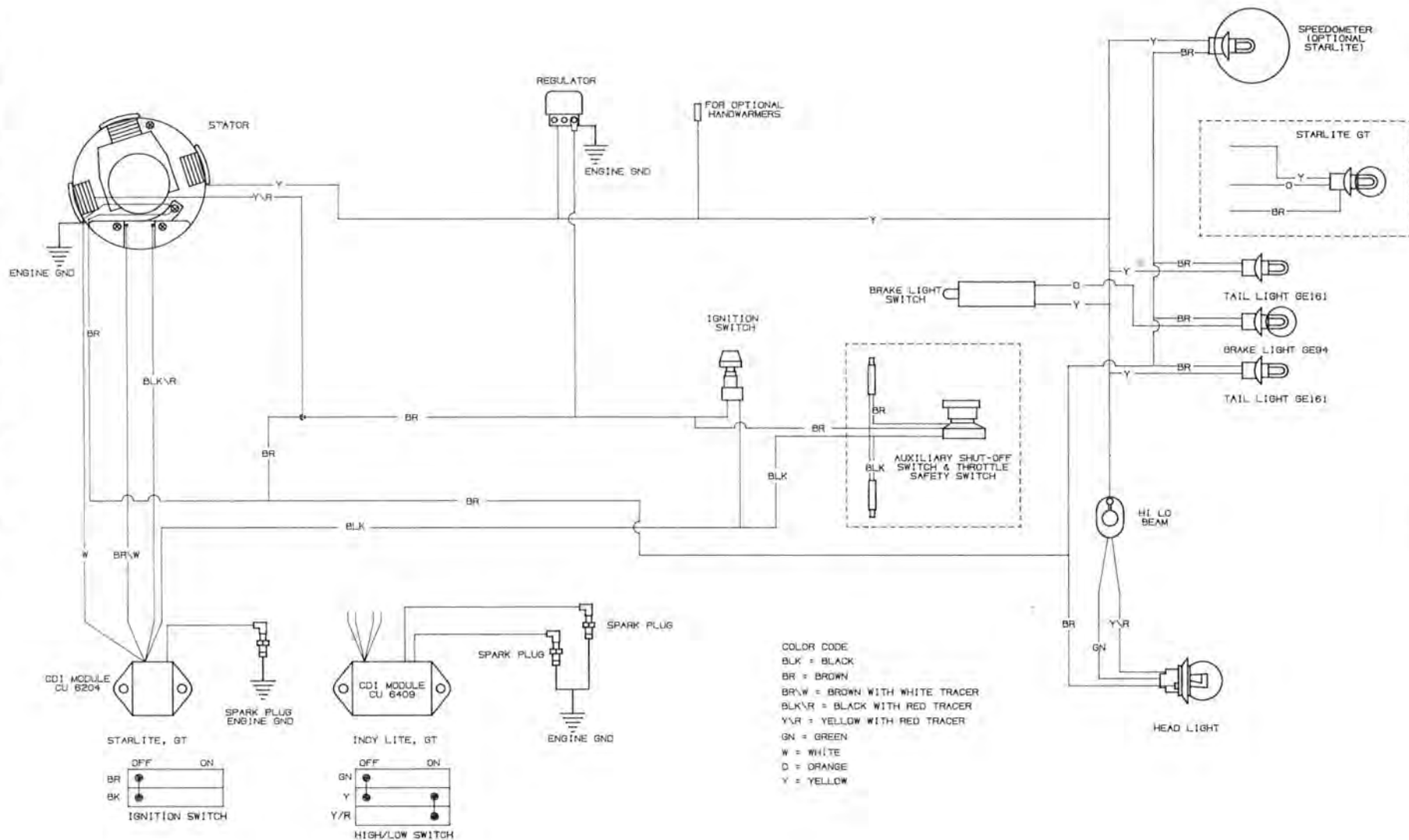
BODY ELECTRICAL **1992 Wiring Diagram - Indy 650**



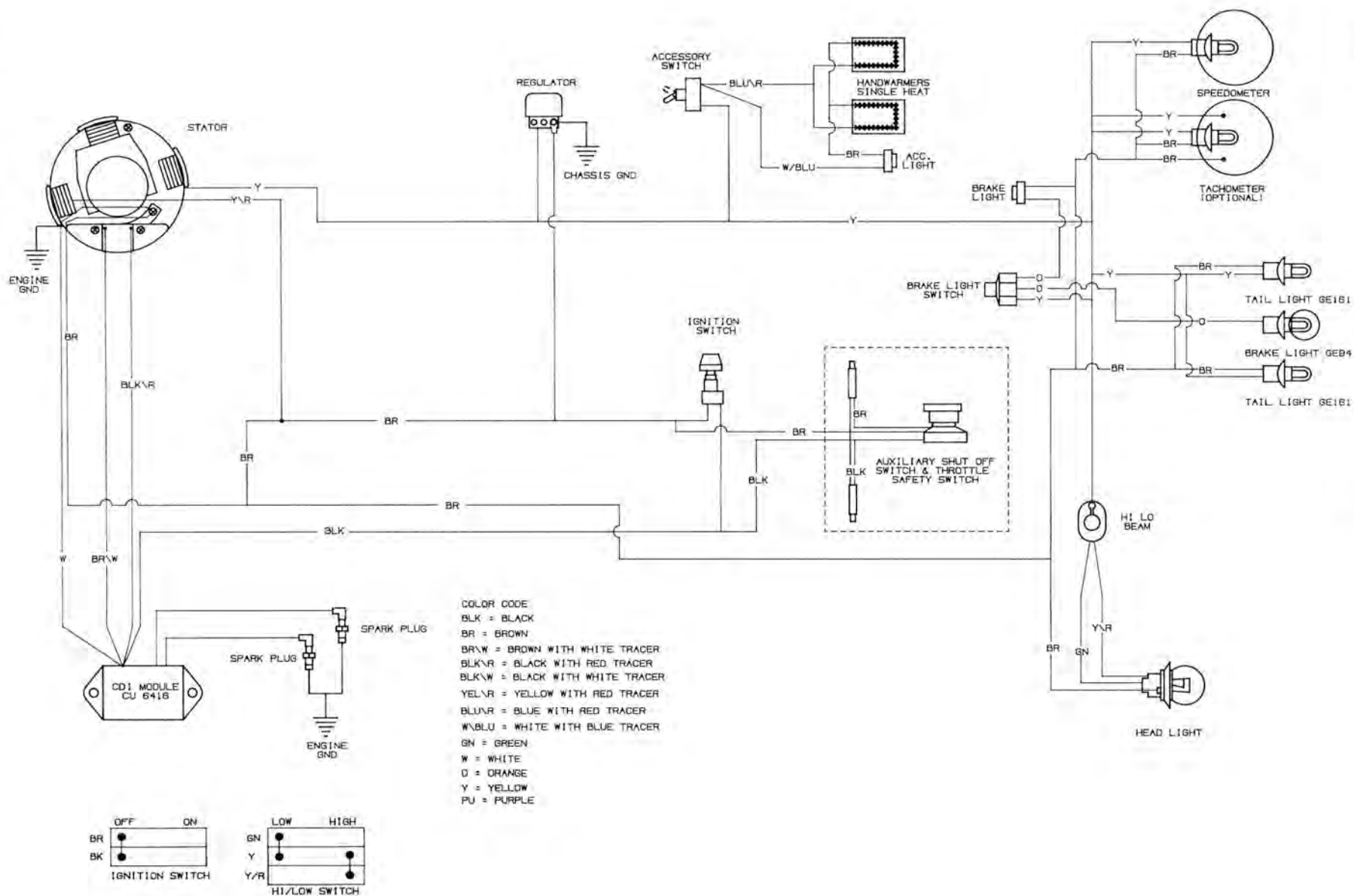
BODY ELECTRICAL **1992 Wiring Diagram - Indy RXL, SKS**



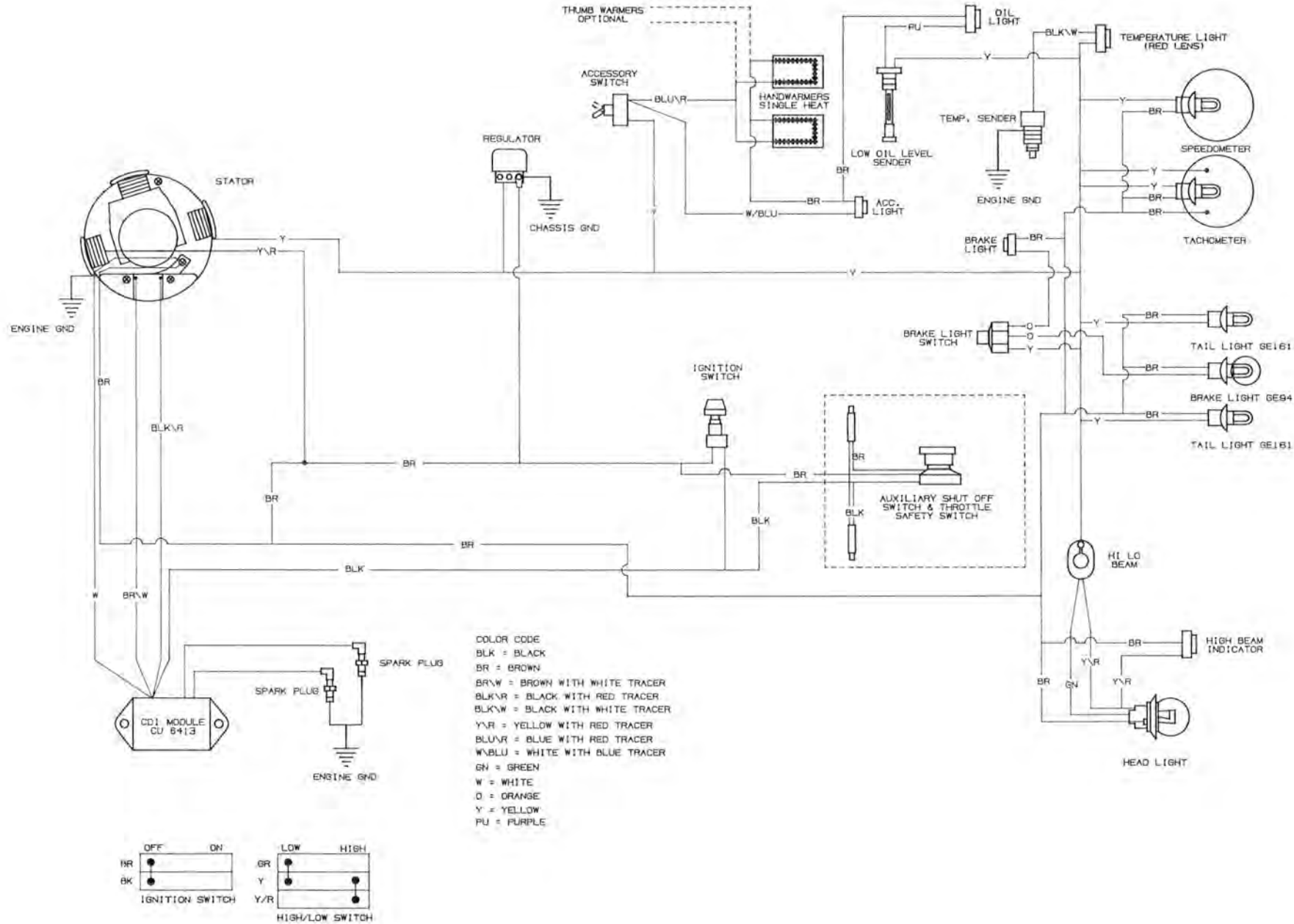
BODY ELECTRICAL **1993 Wiring Diagram - Indy StarLite/GT, Lite/GT**



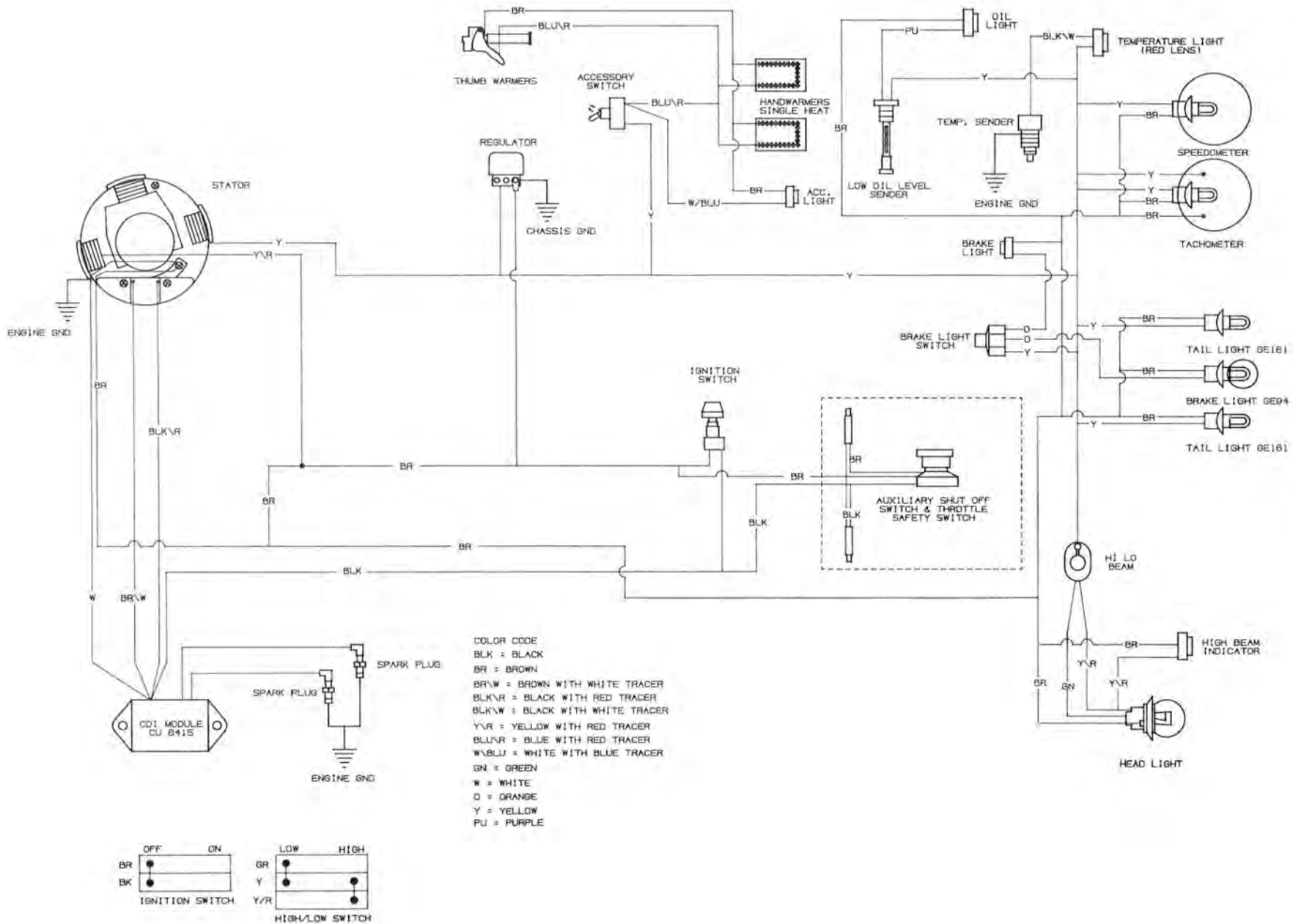
BODY ELECTRICAL 1993 Wiring Diagram - Indy Sport



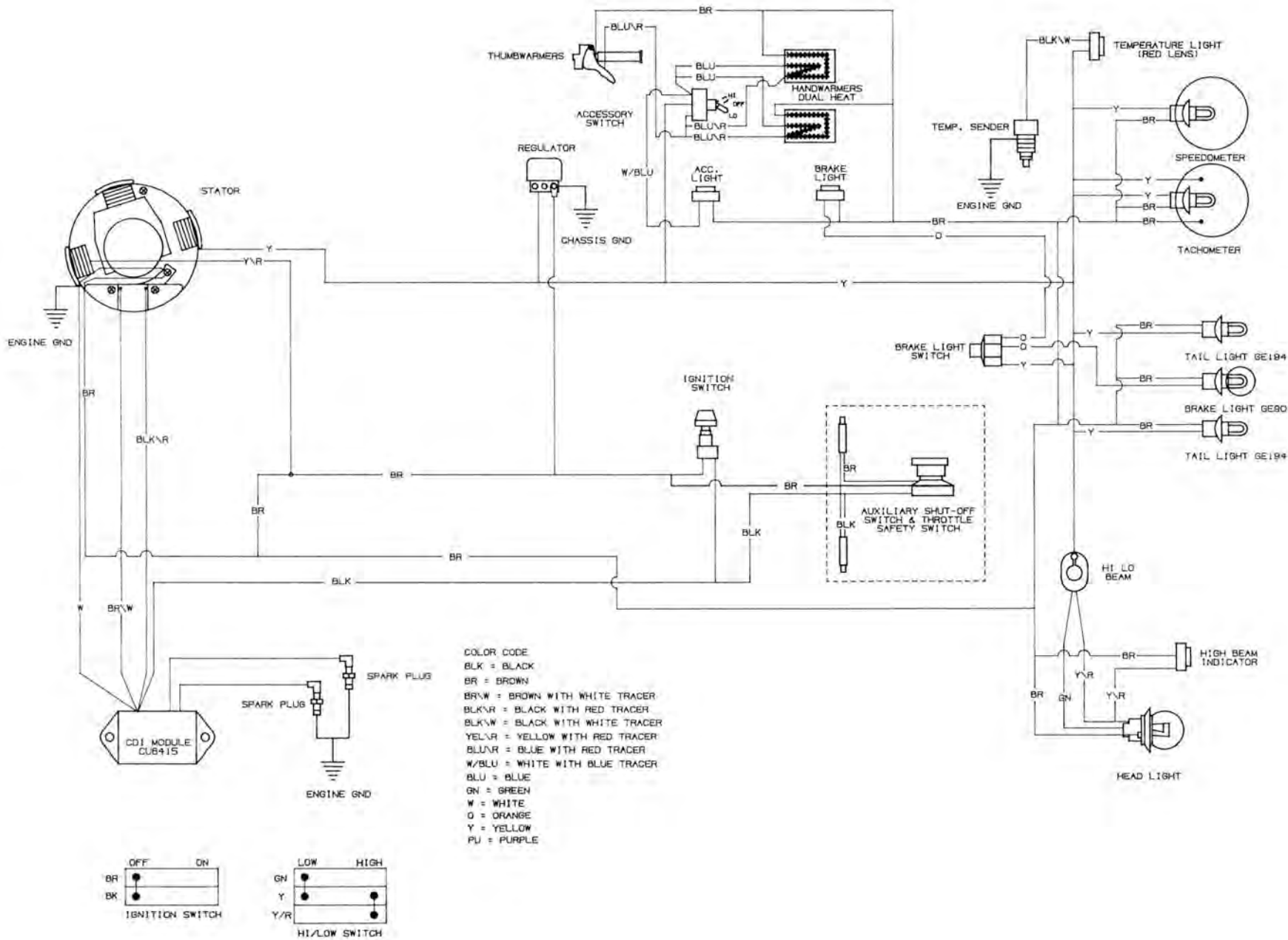
BODY ELECTRICAL 1993 Wiring Diagram - Indy Trail, Trail Deluxe



BODY ELECTRICAL 1993 Wiring Diagram - Indy 440, SKS



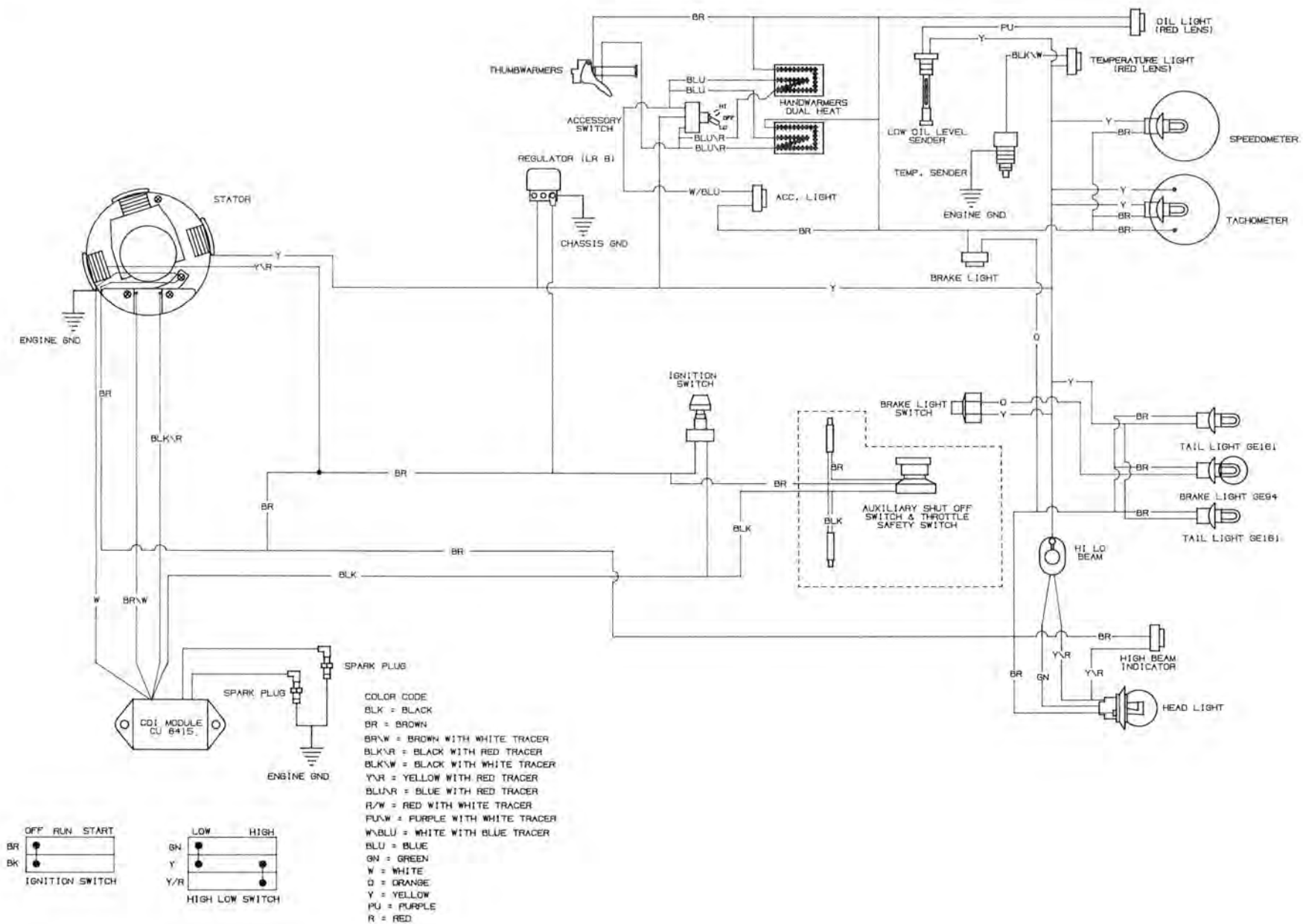
BODY ELECTRICAL 1993 Wiring Diagram - Indy XCR



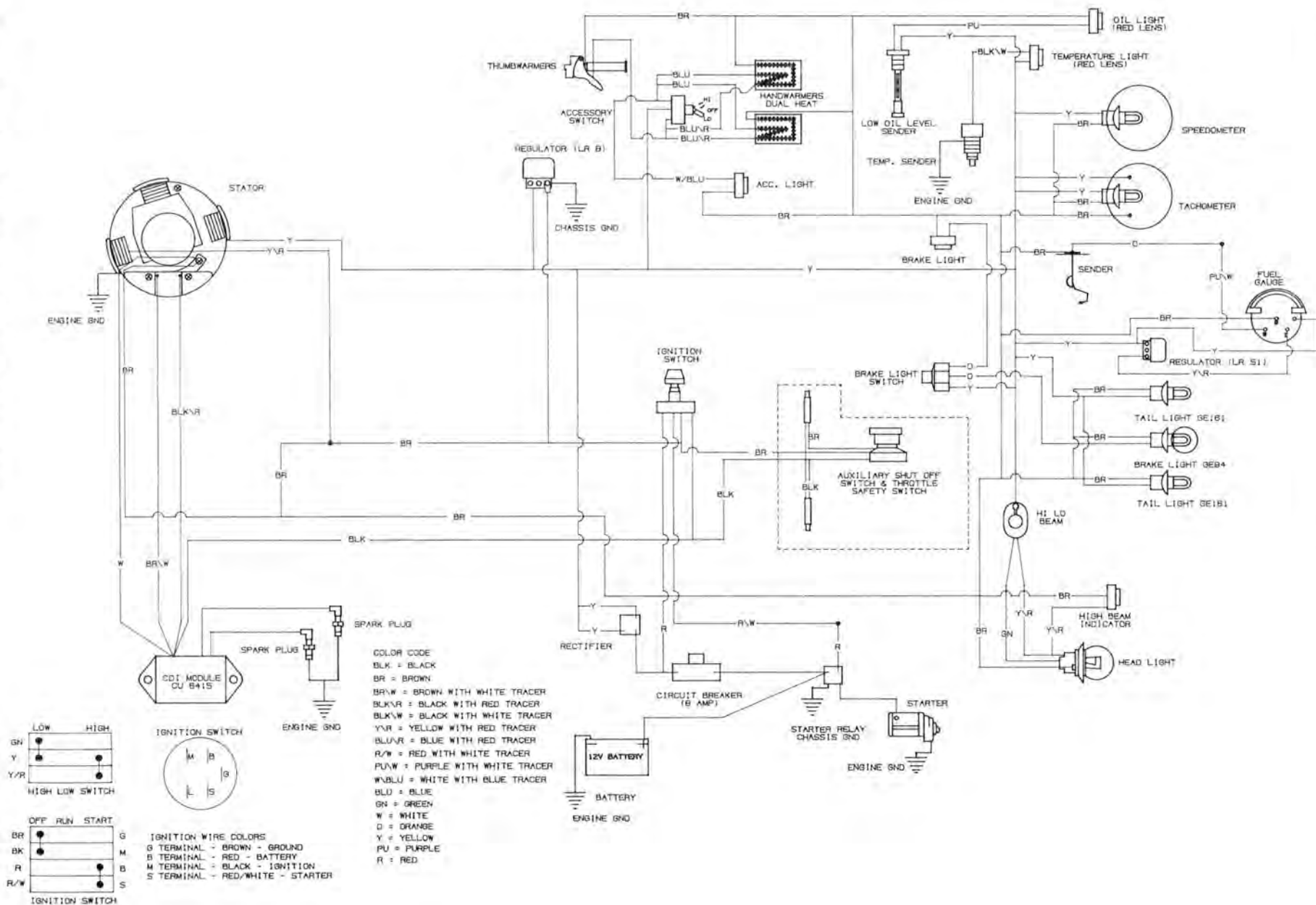
1993 Wiring Diagram - Indy 500 EFI, SKS



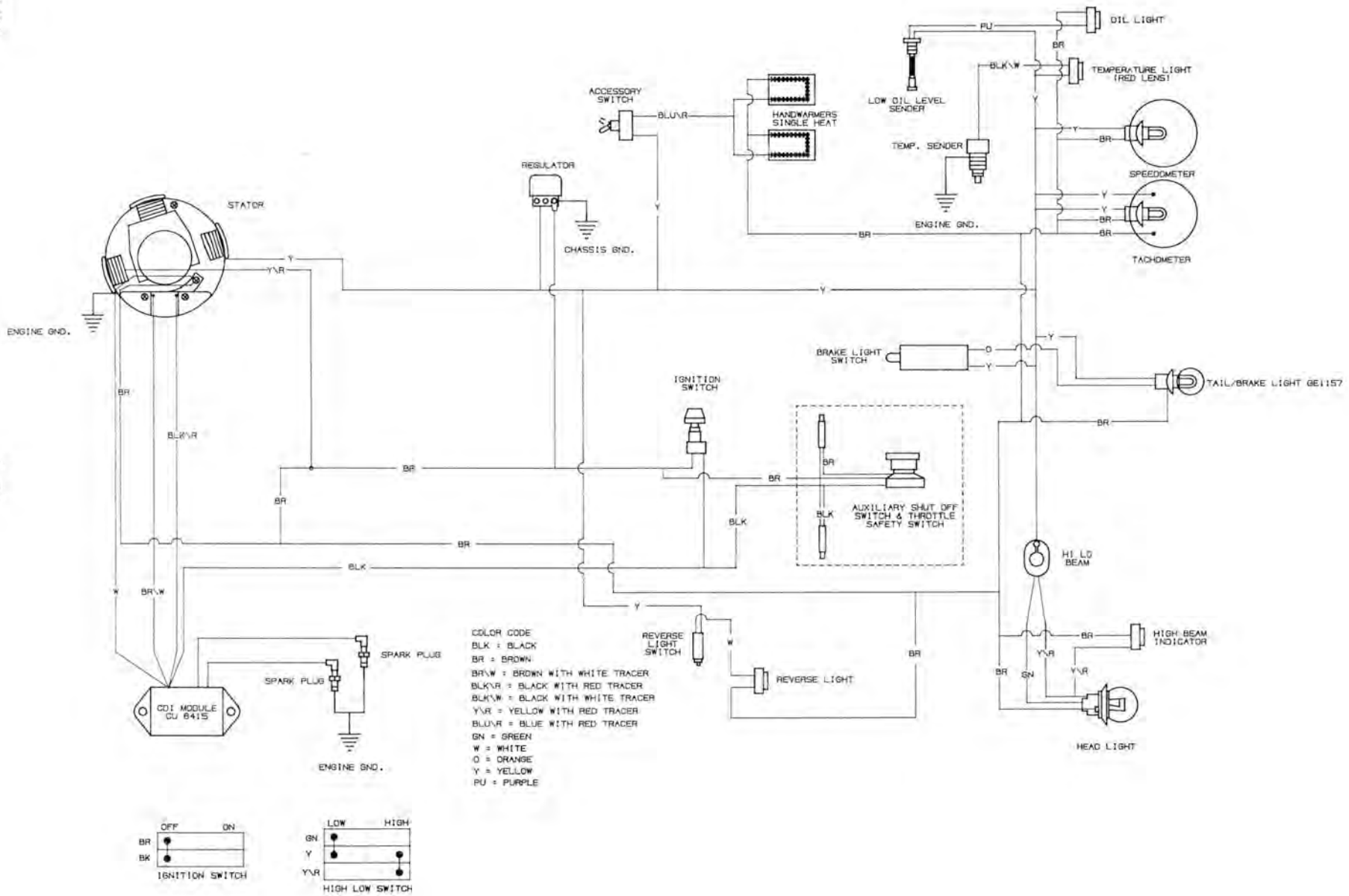
BODY ELECTRICAL 1993 Wiring Diagram - Indy Classic



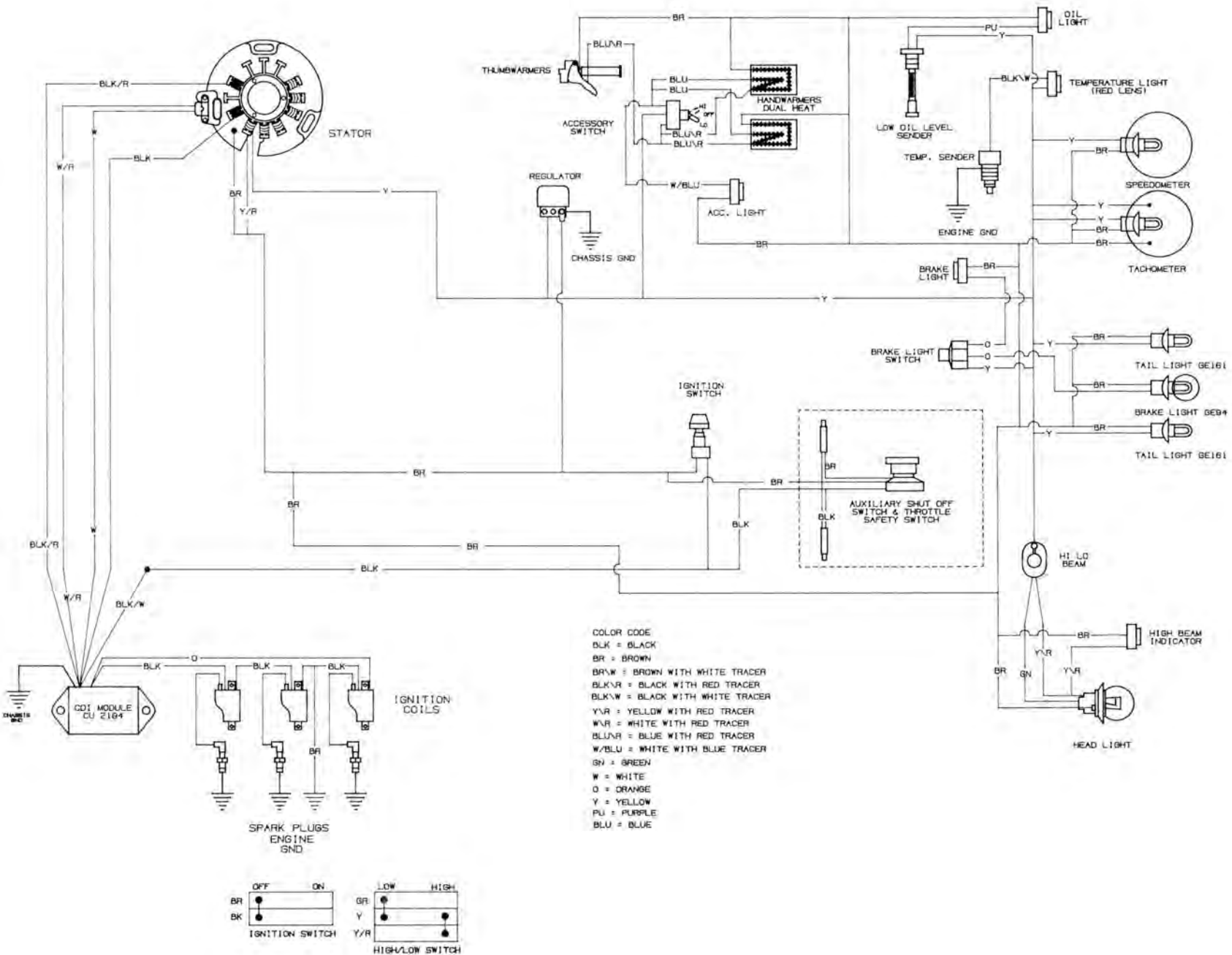
BODY ELECTRICAL 1993 Wiring Diagram - Indy Classic Touring



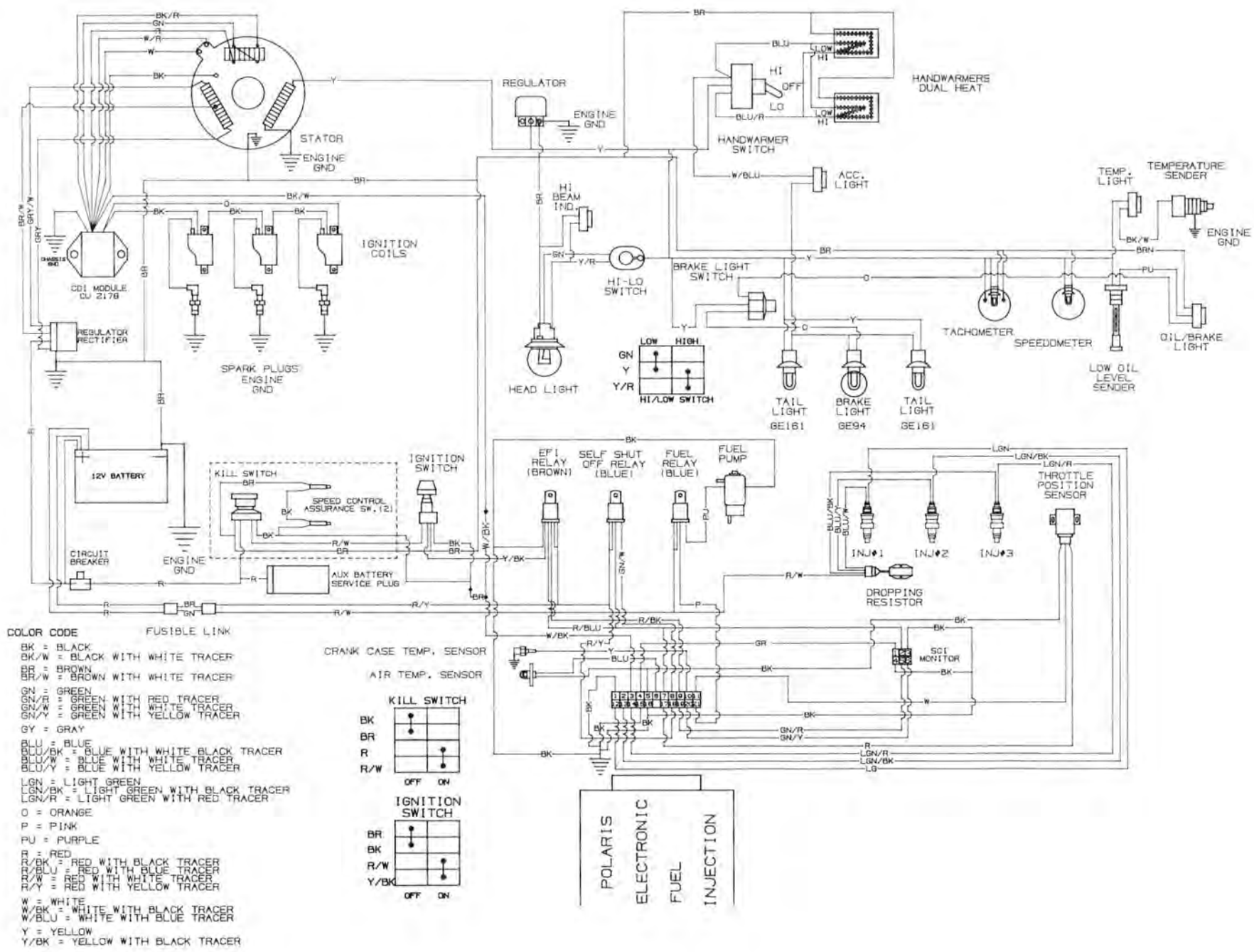
BODY ELECTRICAL



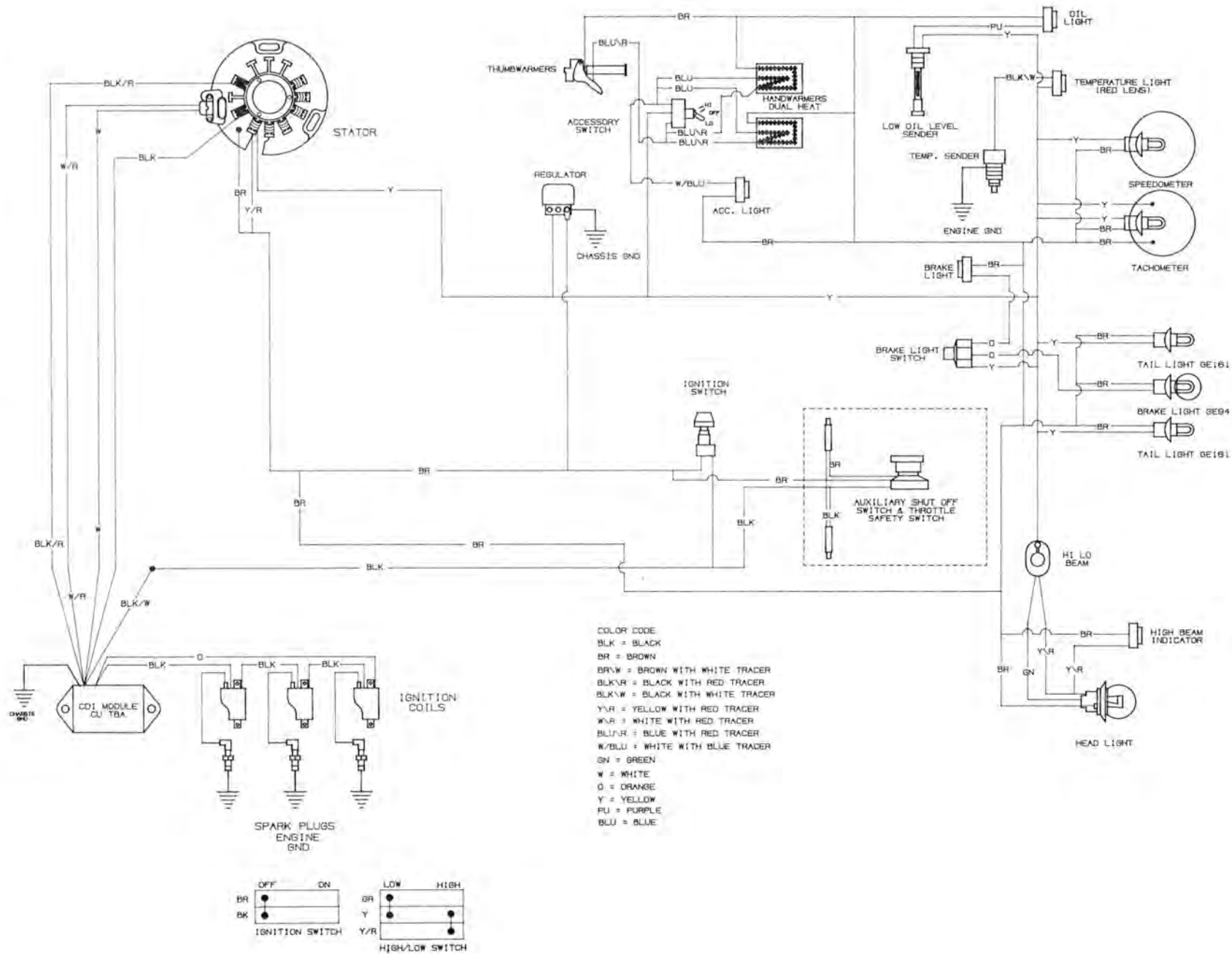
BODY ELECTRICAL **1993 Wiring Diagram - Indy XLT, SP, SKS**



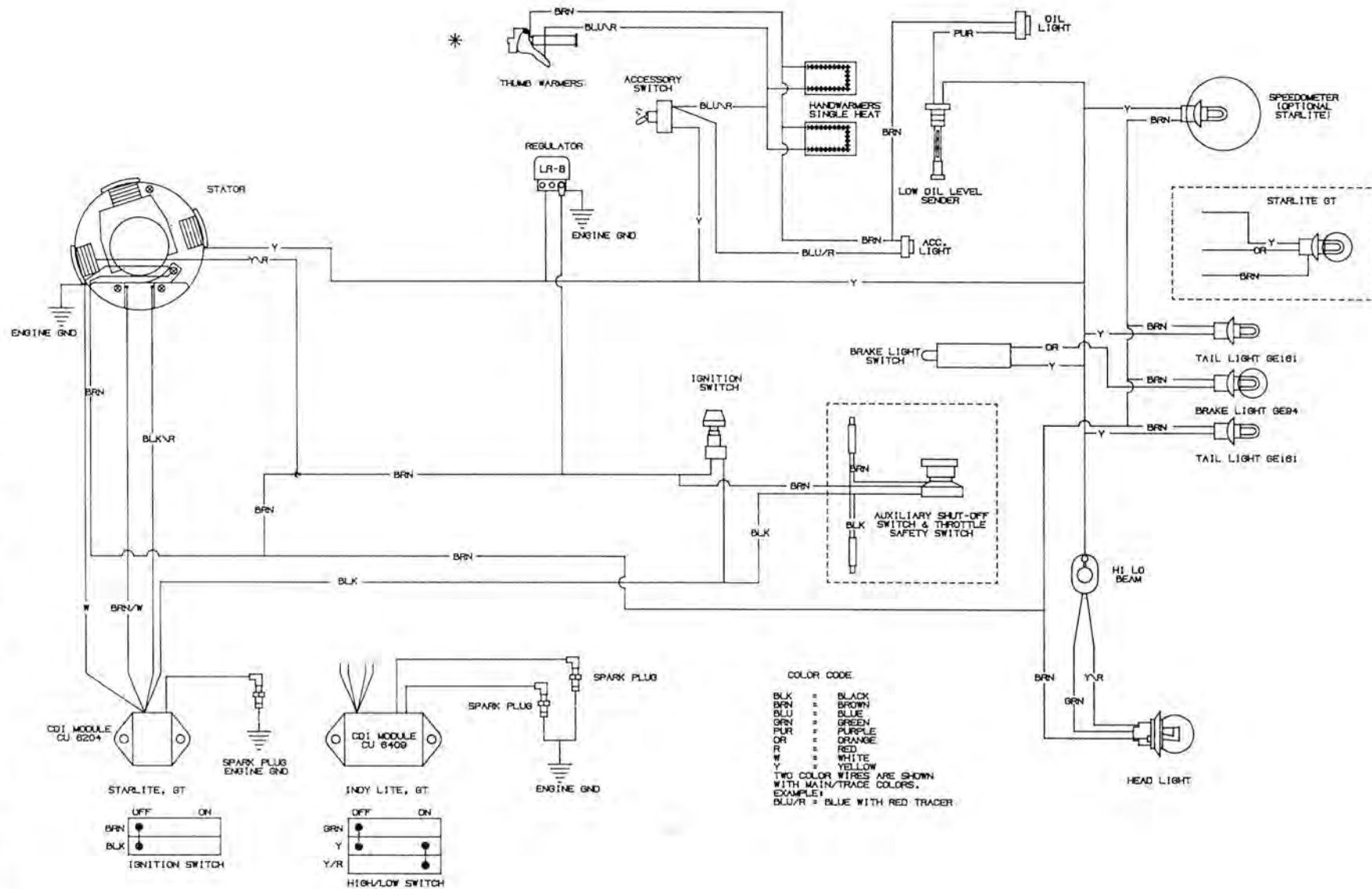
BODY ELECTRICAL 1993 Wiring Diagram - Indy RXL, SKS



BODY ELECTRICAL 1993 Wiring Diagram - Indy Storm / SKS



BODY ELECTRICAL **1994 Wiring Diagram - StarLite / GT, Lite / GT**

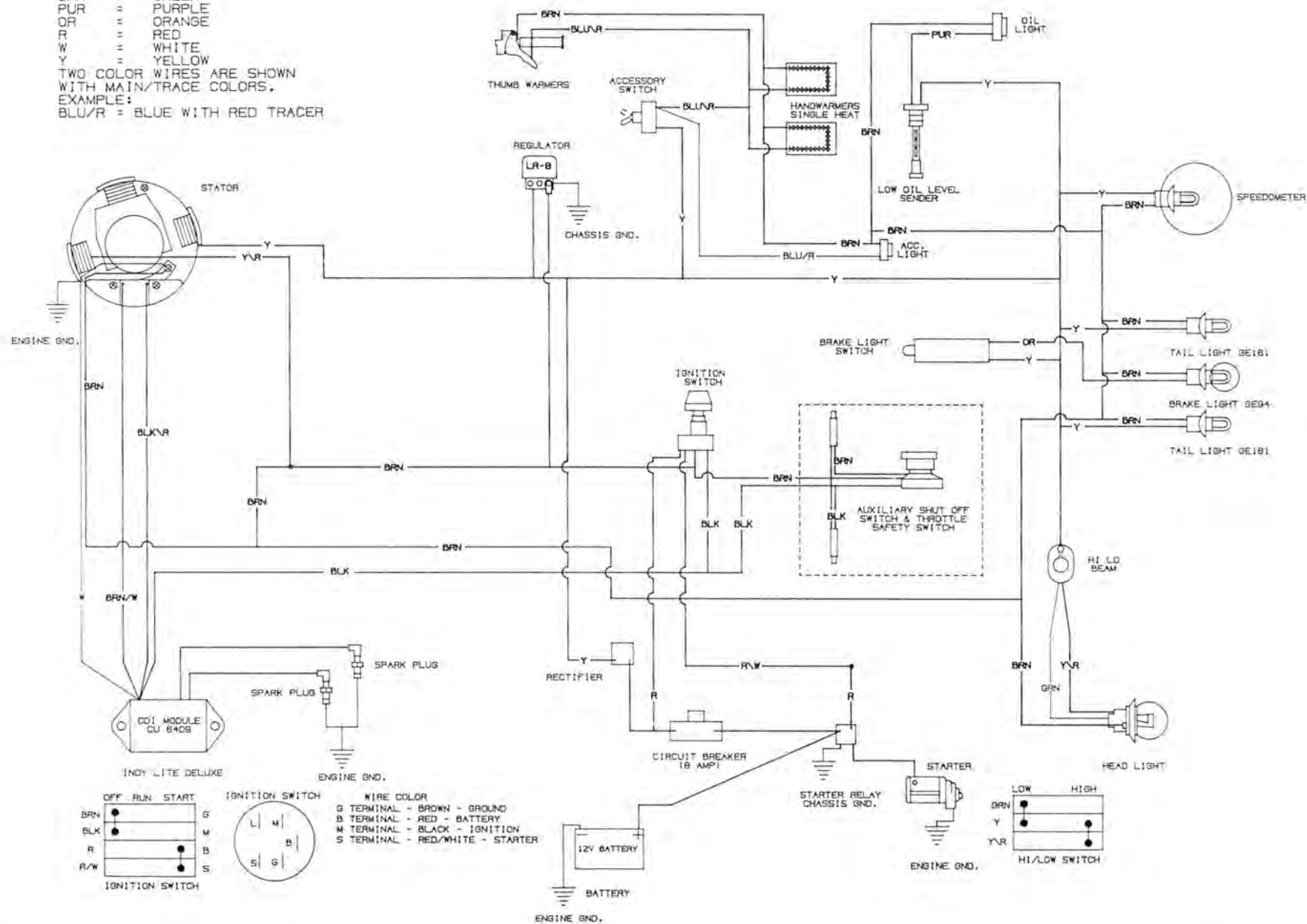


BODY ELECTRICAL 1994 Wiring Diagram - Lite Deluxe

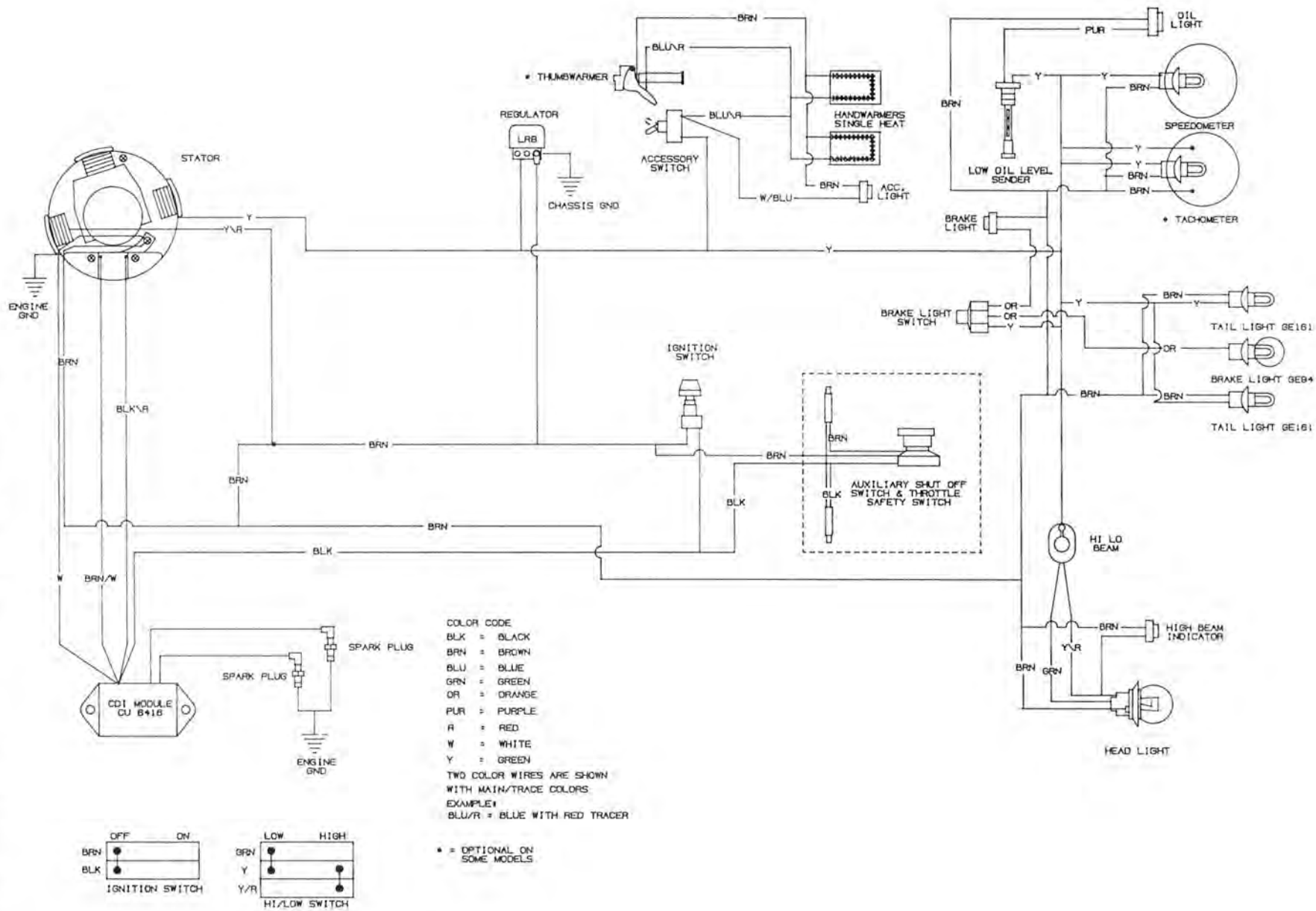
COLOR CODE

BLK = BLACK
BRN = BROWN
BLU = BLUE
GRN = GREEN
PUR = PURPLE
OR = ORANGE
R = RED
W = WHITE
Y = YELLOW

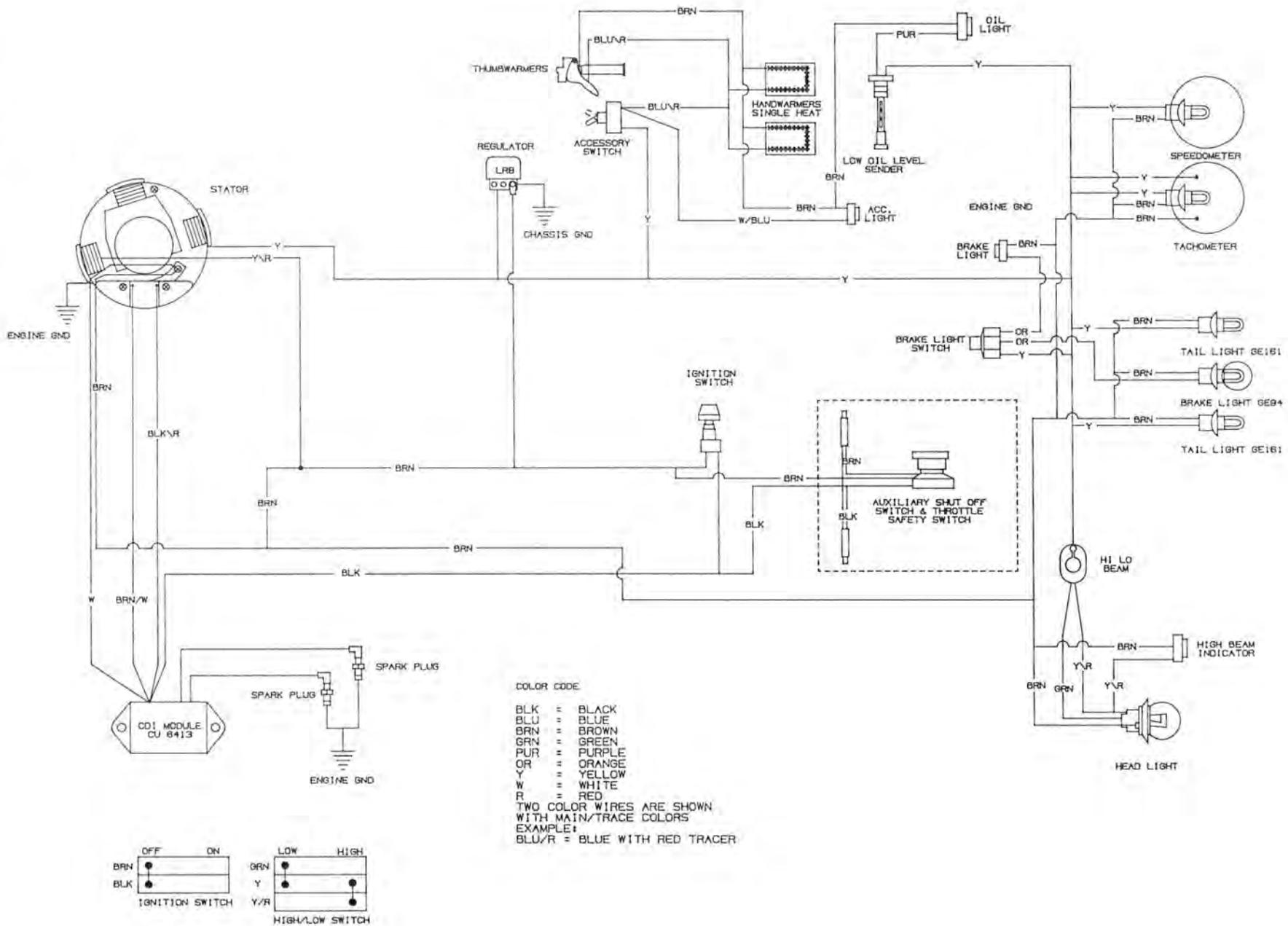
TWO COLOR WIRES ARE SHOWN
WITH MAIN/TRACE COLORS.
EXAMPLE:
BLU/R = BLUE WITH RED TRACER



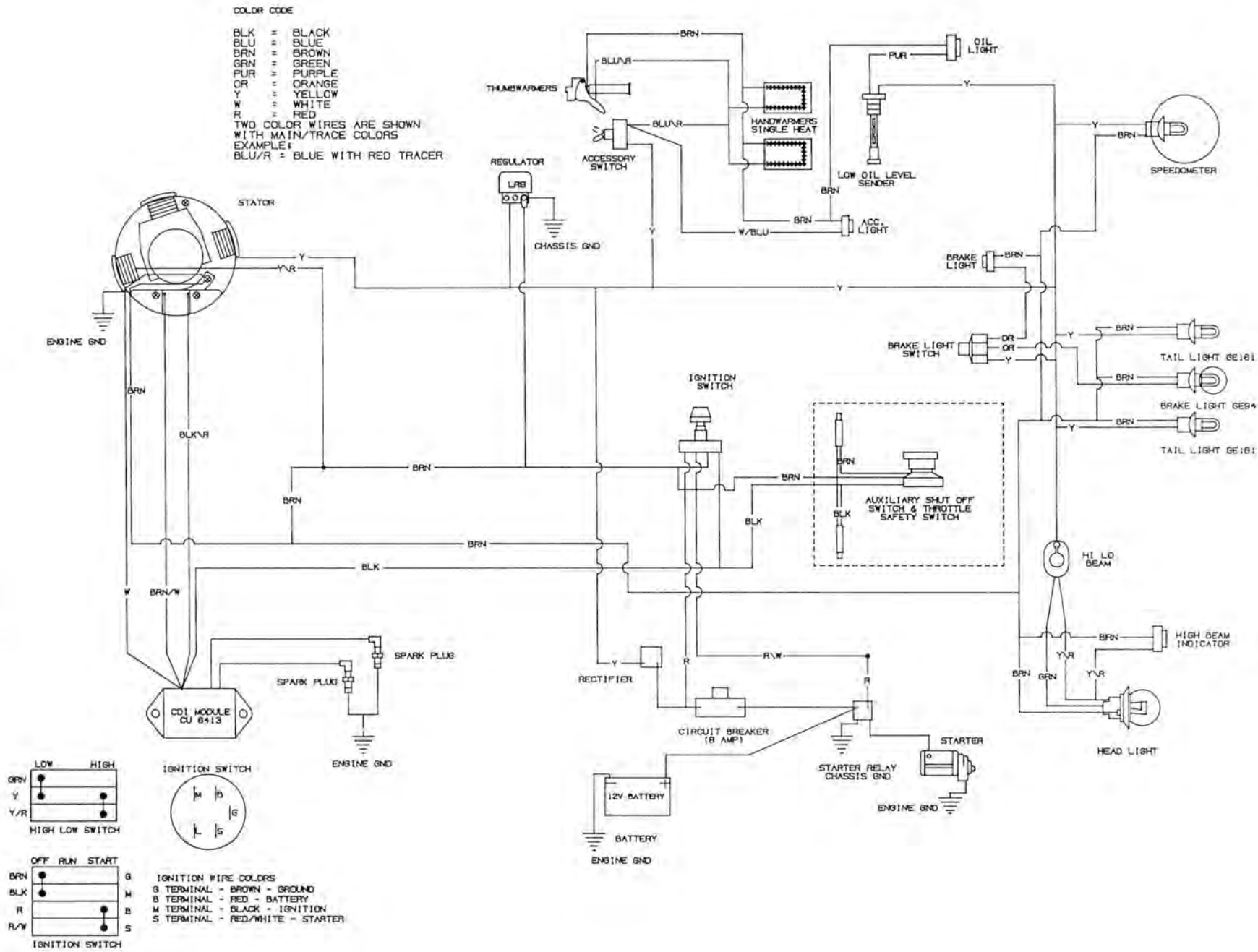
BODY ELECTRICAL **1994 Wiring Diagram - Sport / Super Sport / SKS**



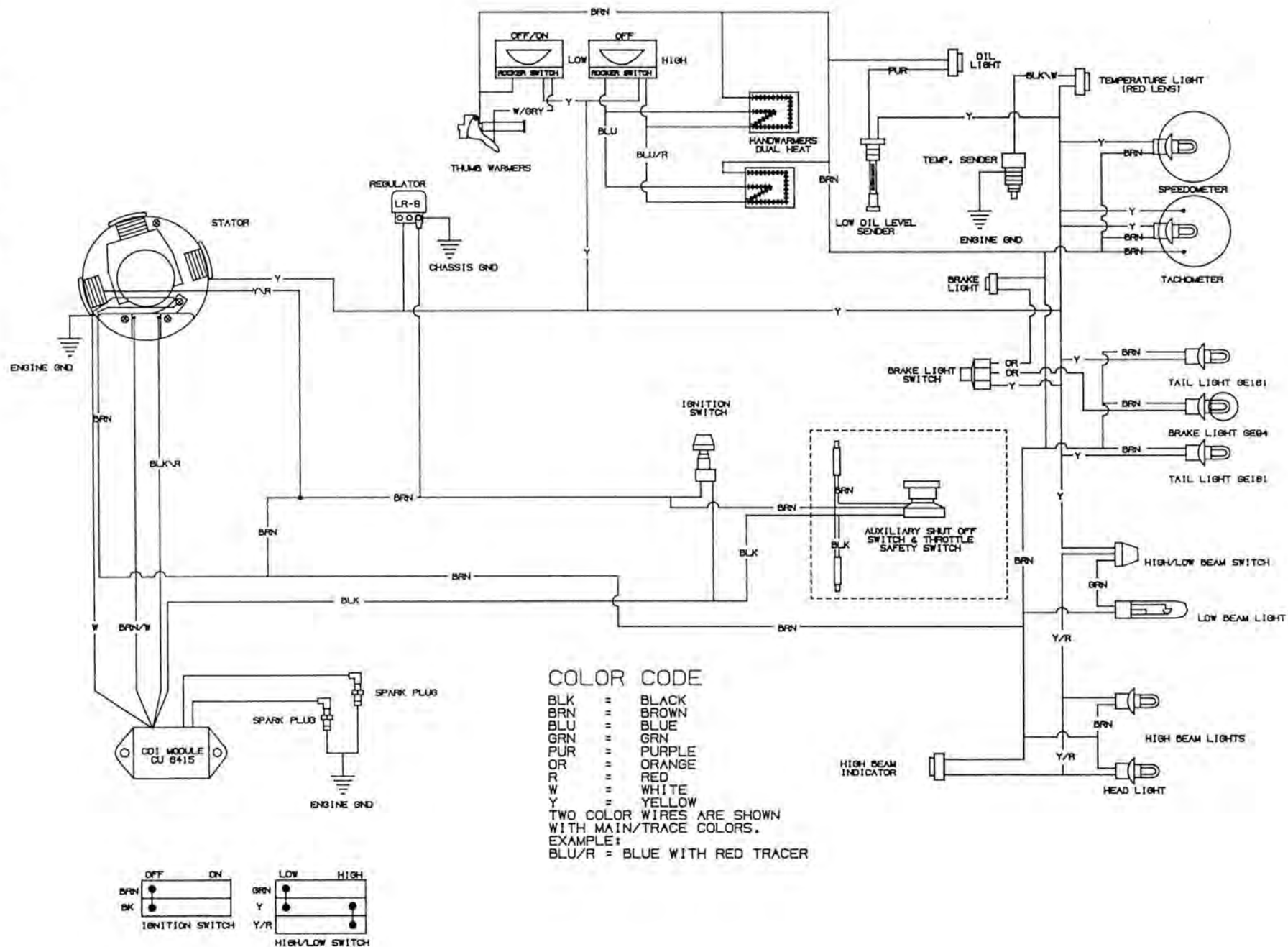
BODY ELECTRICAL



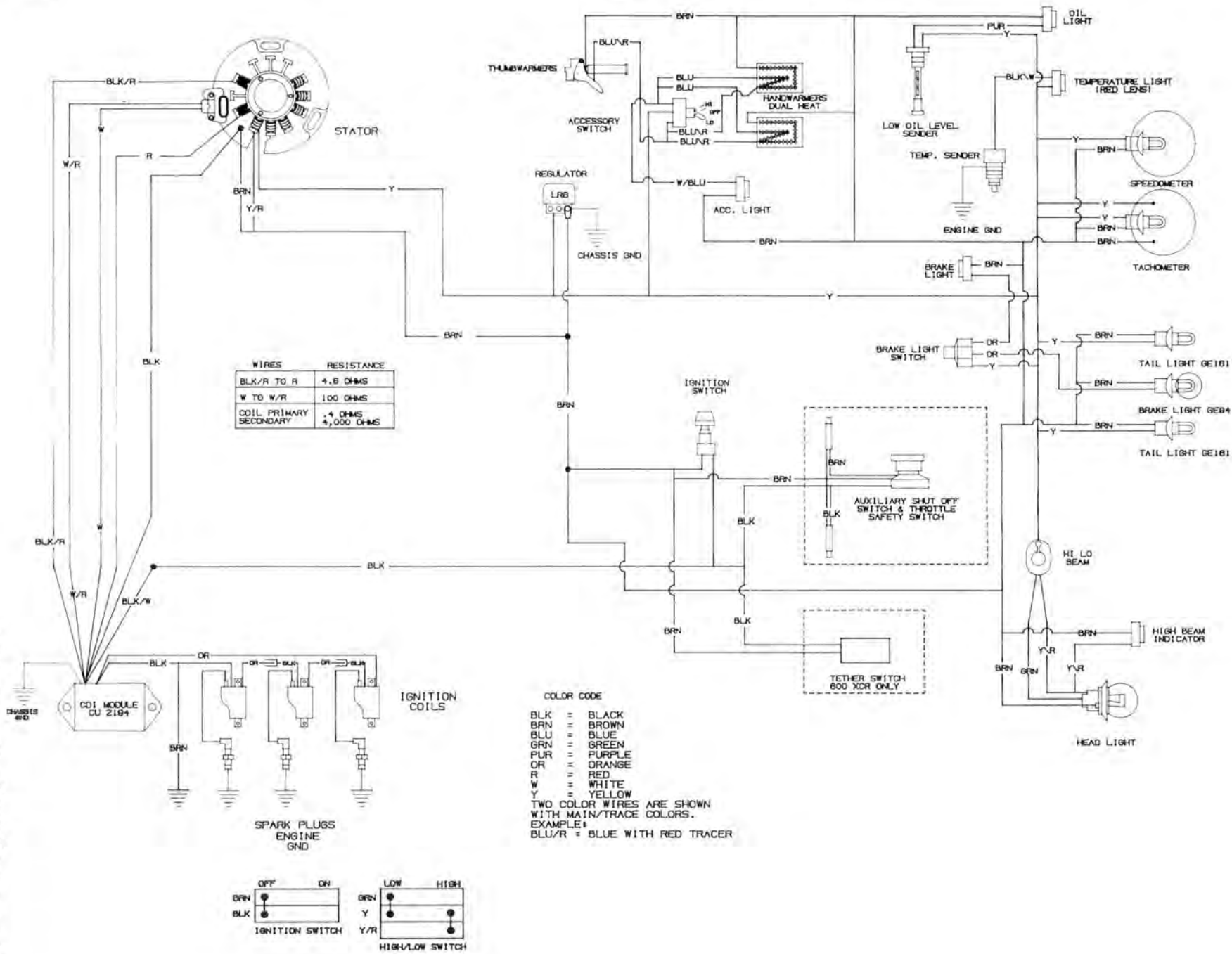
BODY ELECTRICAL 1994 Wiring Diagram - Trail Deluxe



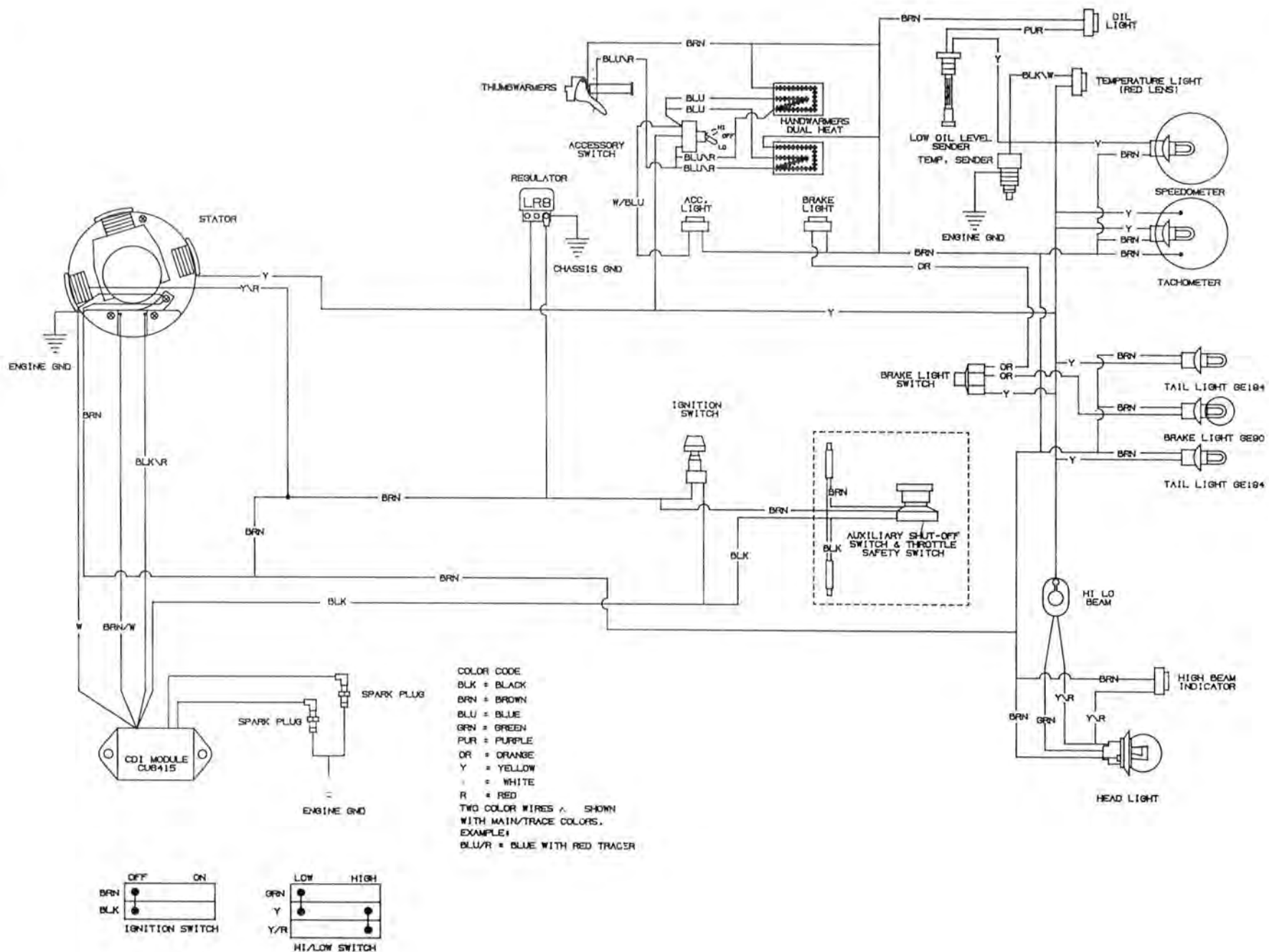
BODY ELECTRICAL 1994 Wiring Diagram - 440 / SKS



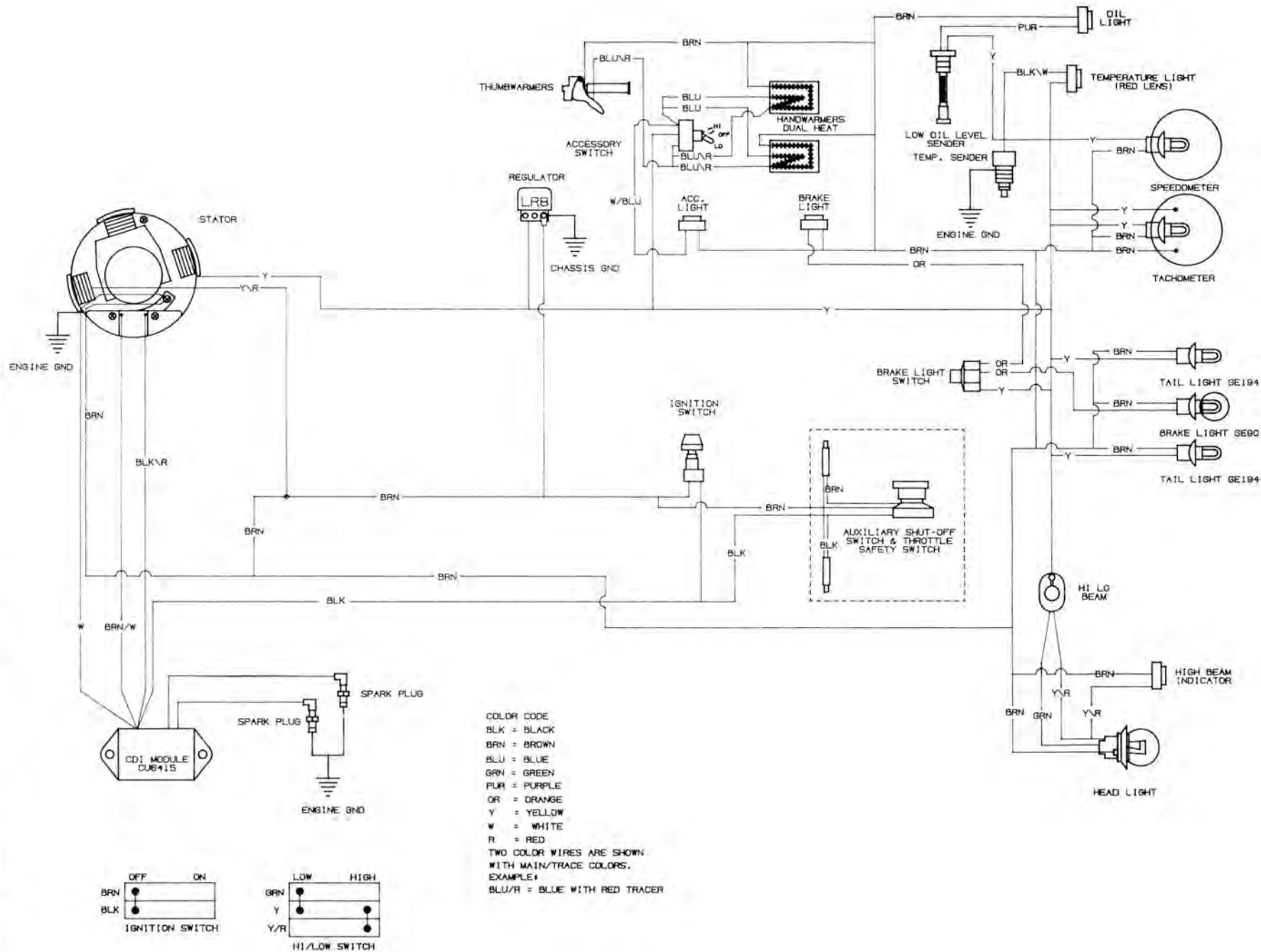
BODY ELECTRICAL **1994 Wiring Diagram - 600 XCR**



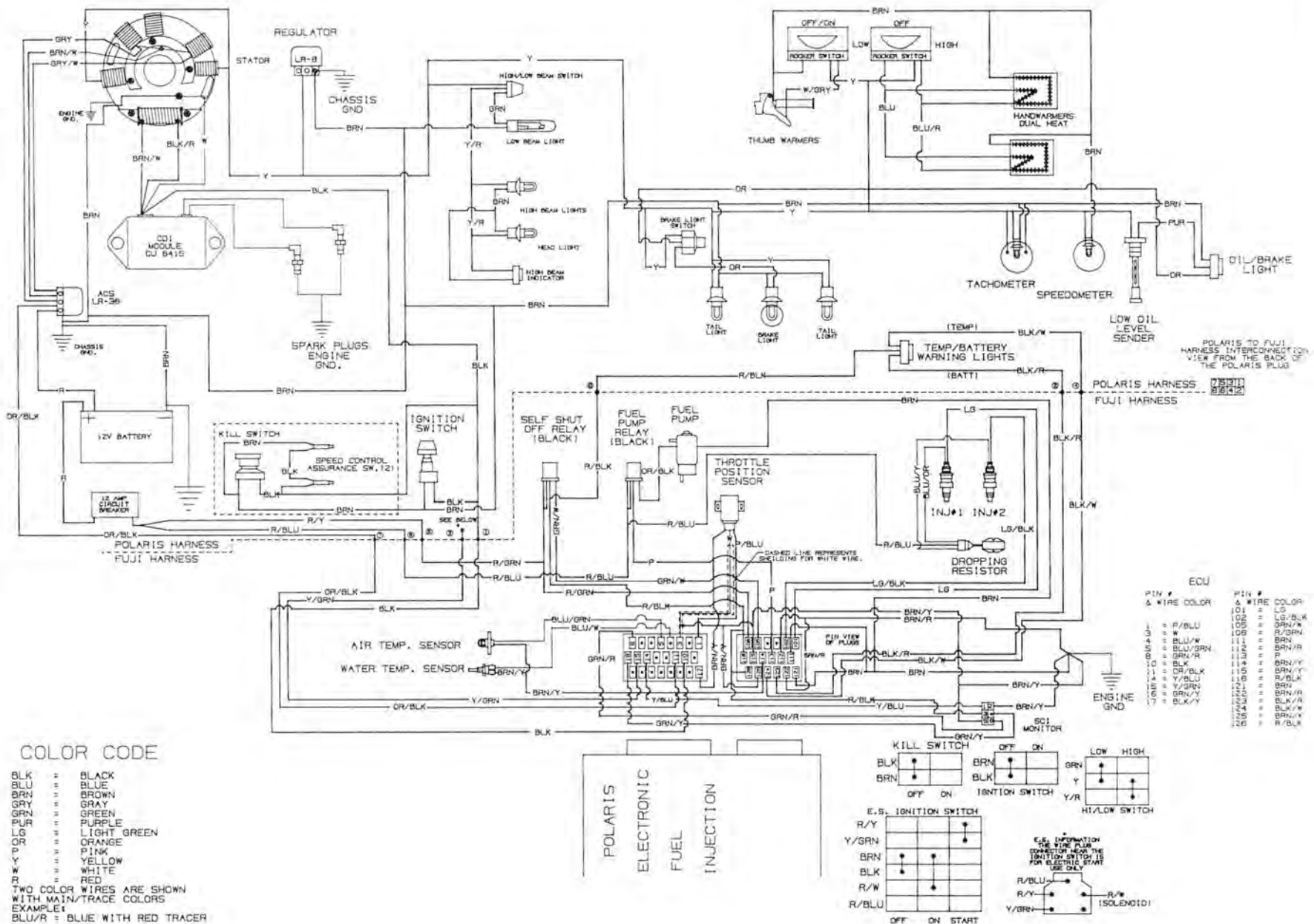
BODY ELECTRICAL 1994 Wiring Diagram - 440 XCR



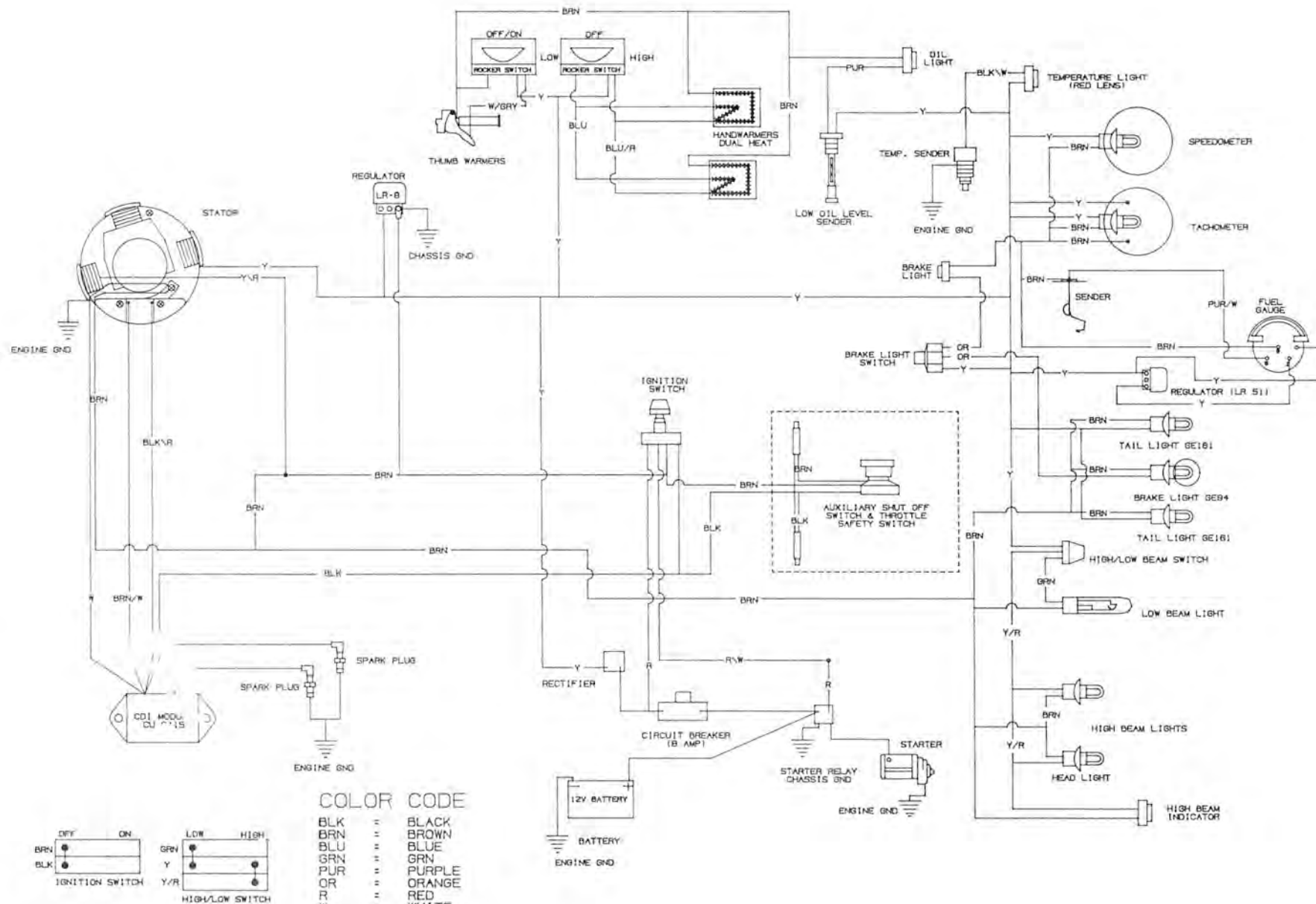
BODY ELECTRICAL **1994 Wiring Diagram - 440 XCR SP**



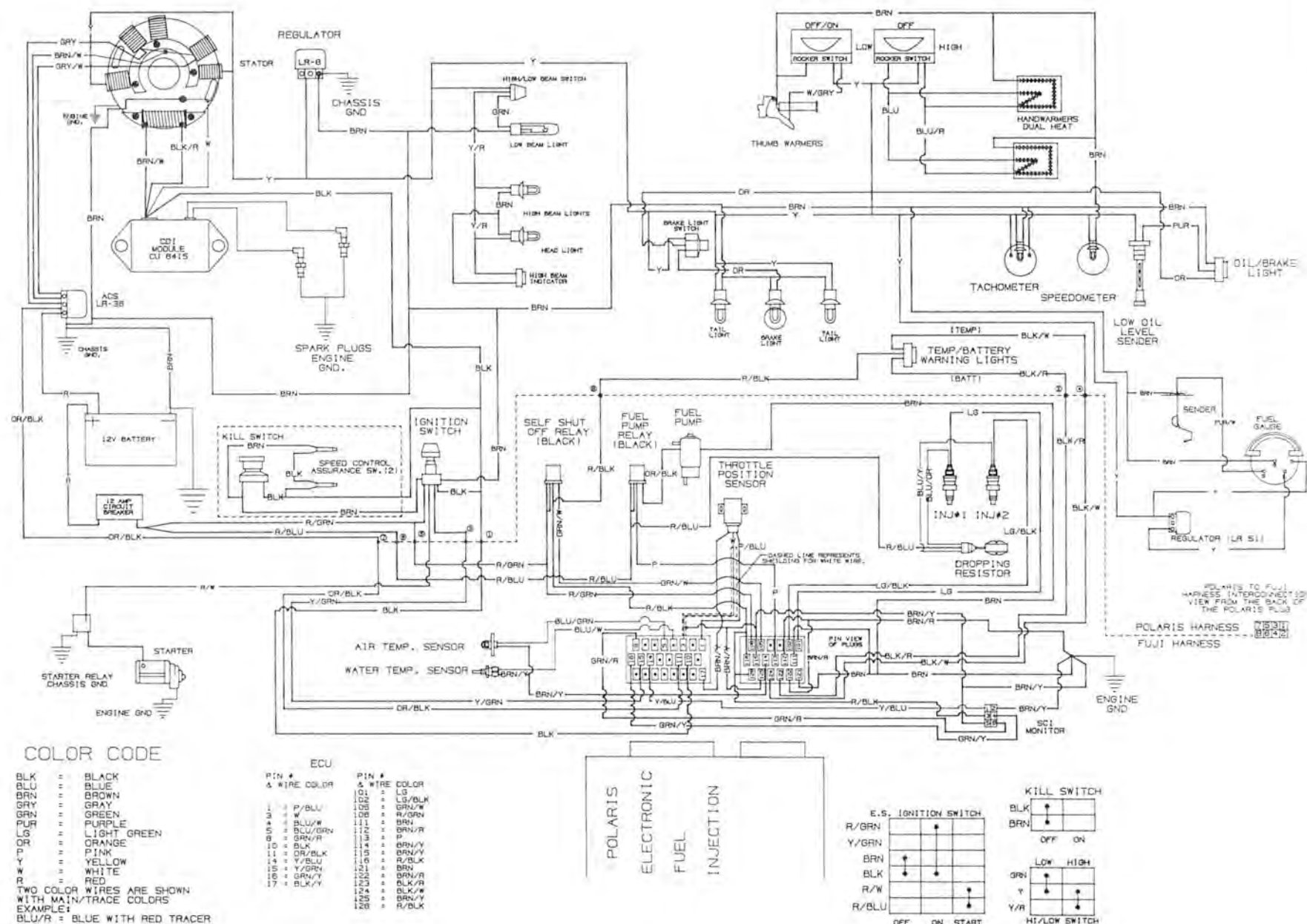
BODY ELECTRICAL 1994 Wiring Diagram - 500 EFI / SKS



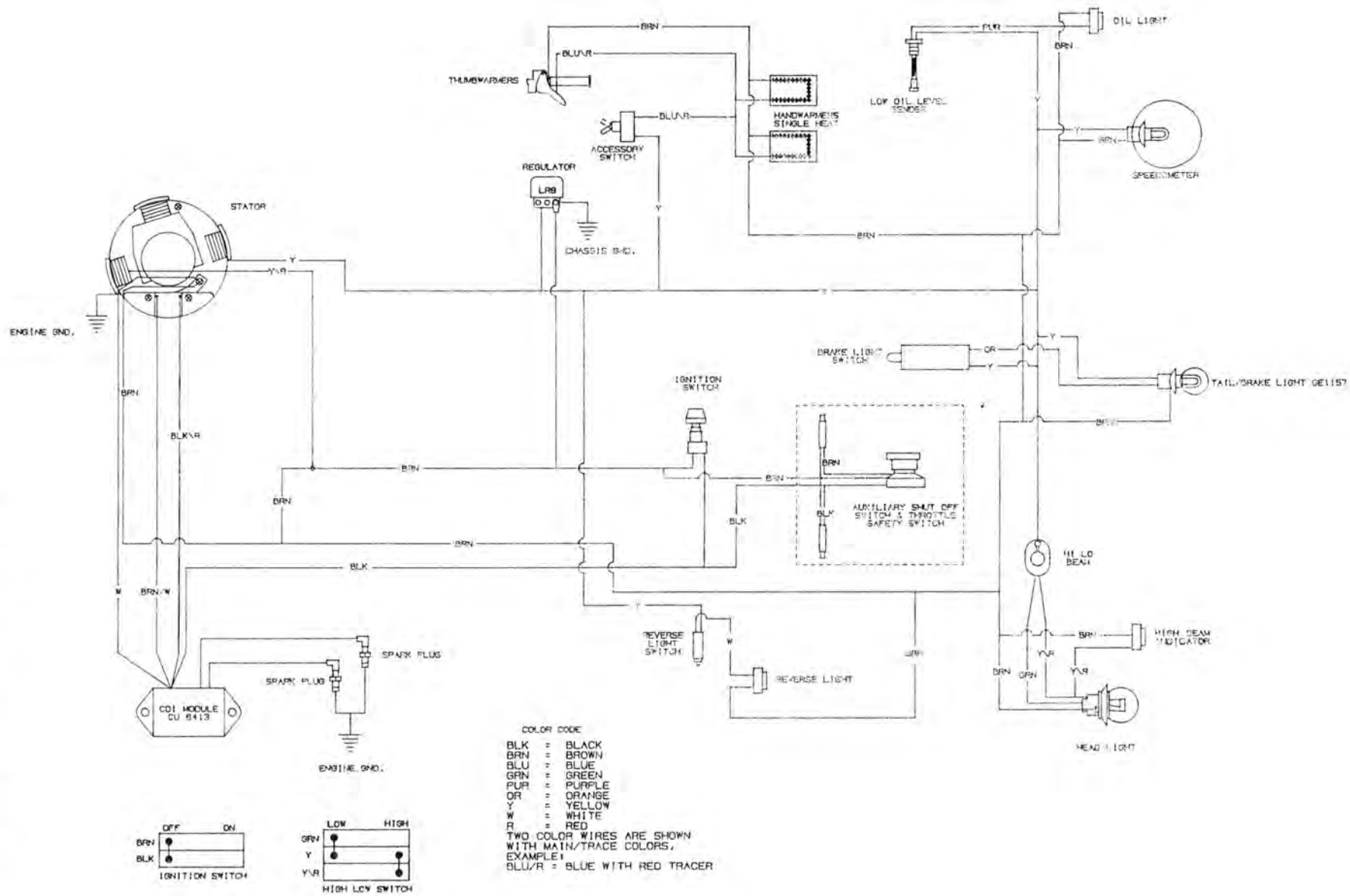
BODY ELECTRICAL **1994 Wiring Diagram - Classic**



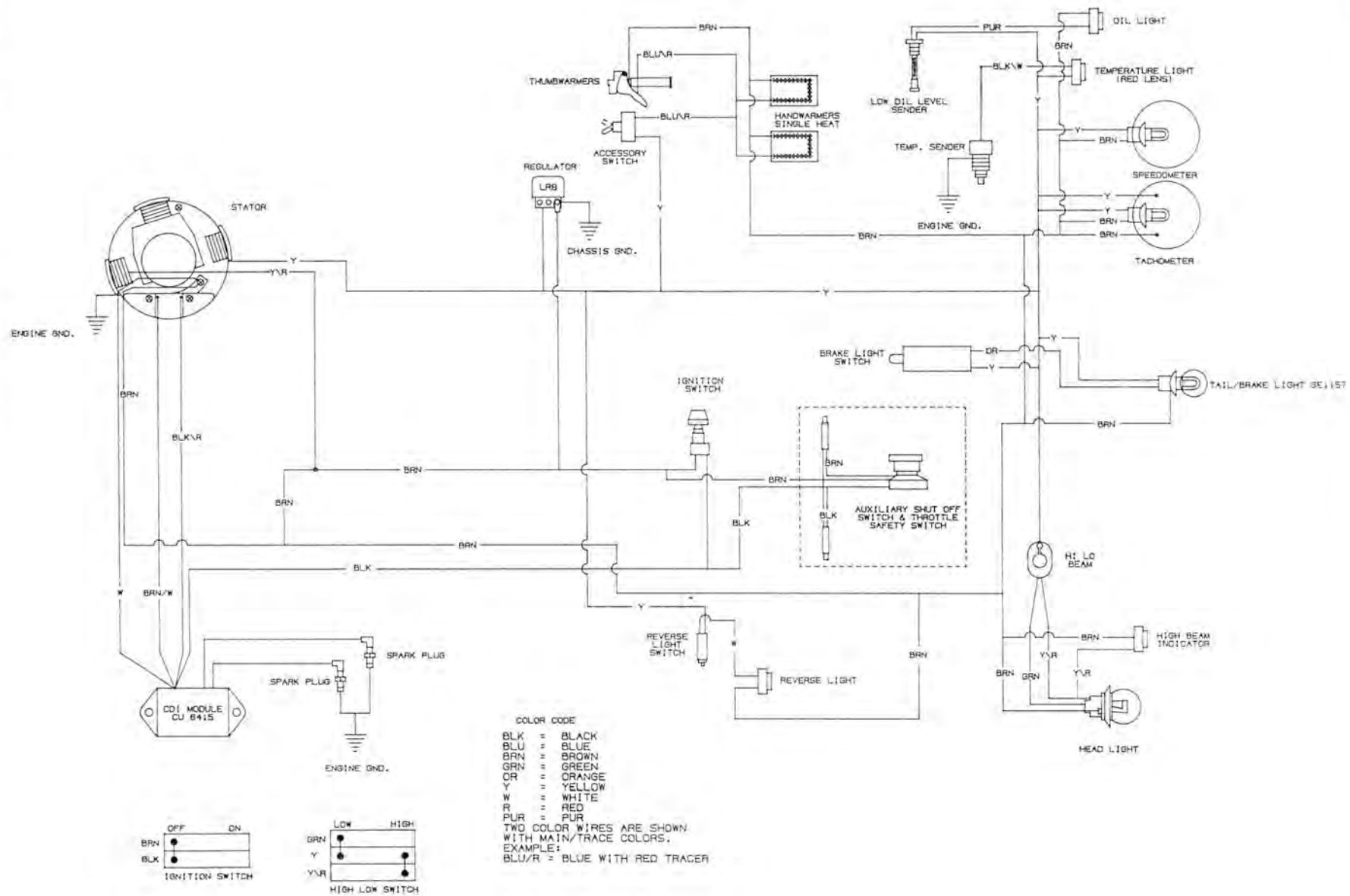
BODY ELECTRICAL 1994 Wiring Diagram - Classic Touring



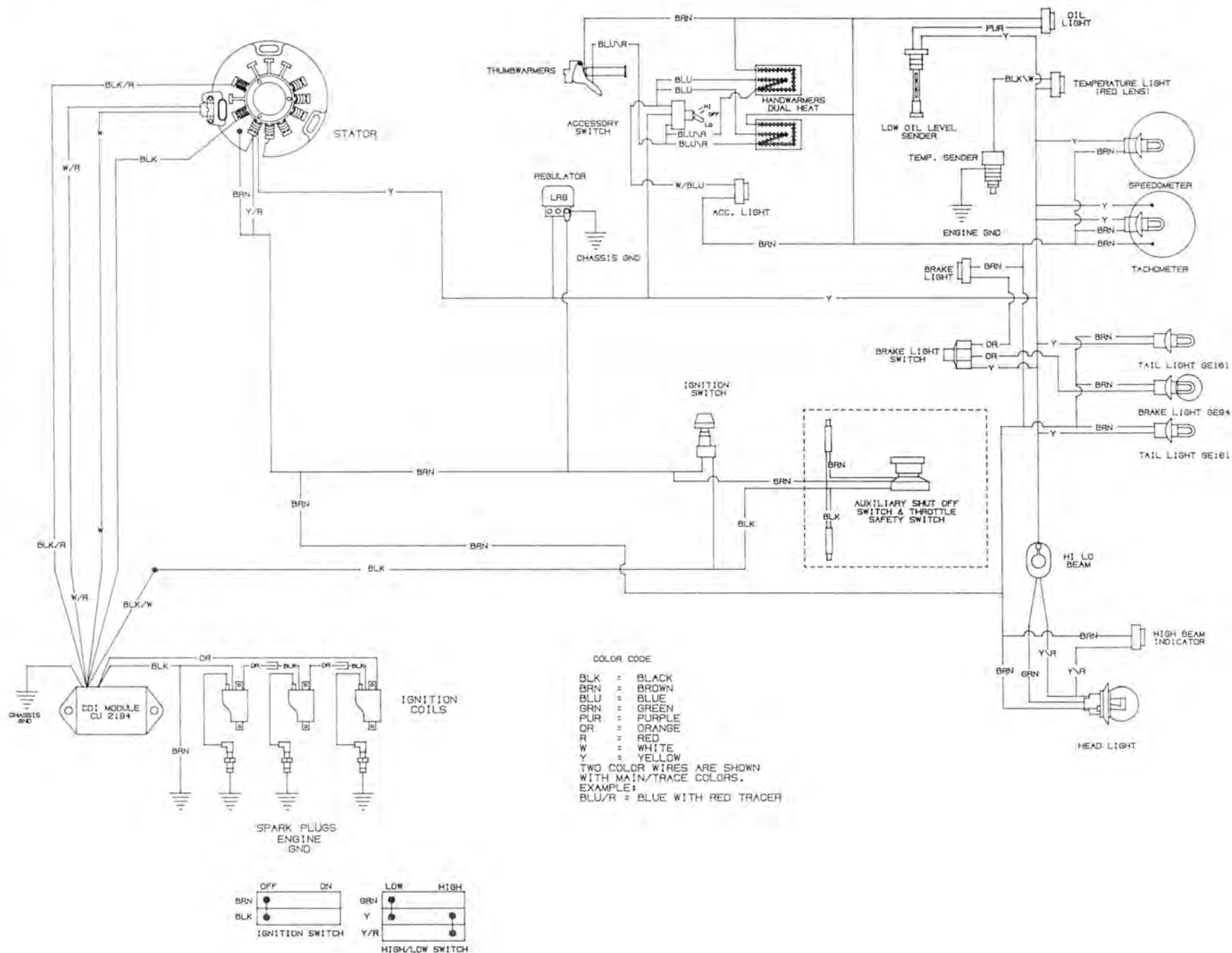
BODY ELECTRICAL **1994 Wiring Diagram - WideTrak GT**



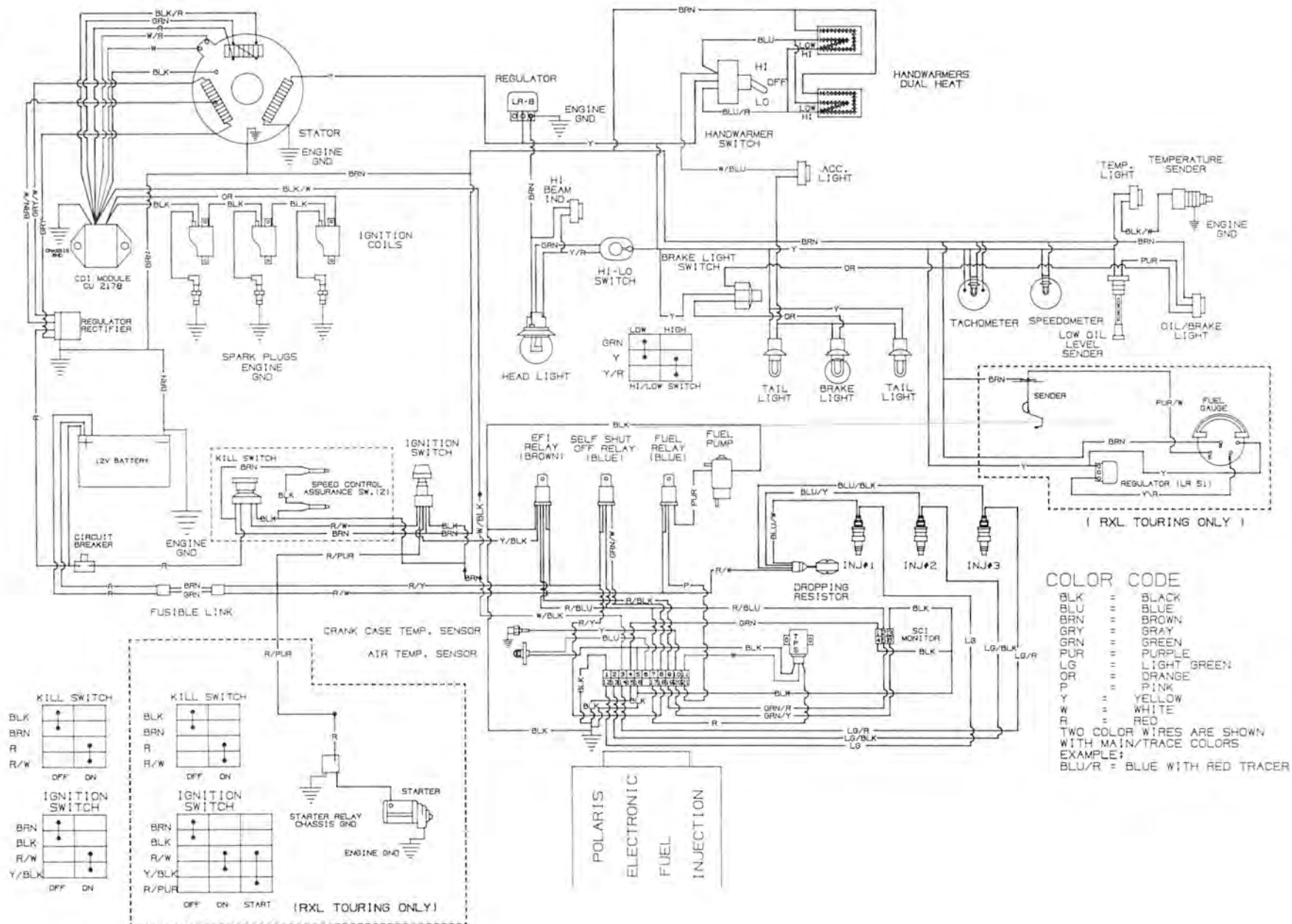
BODY ELECTRICAL 1994 Wiring Diagram - WideTrak LX



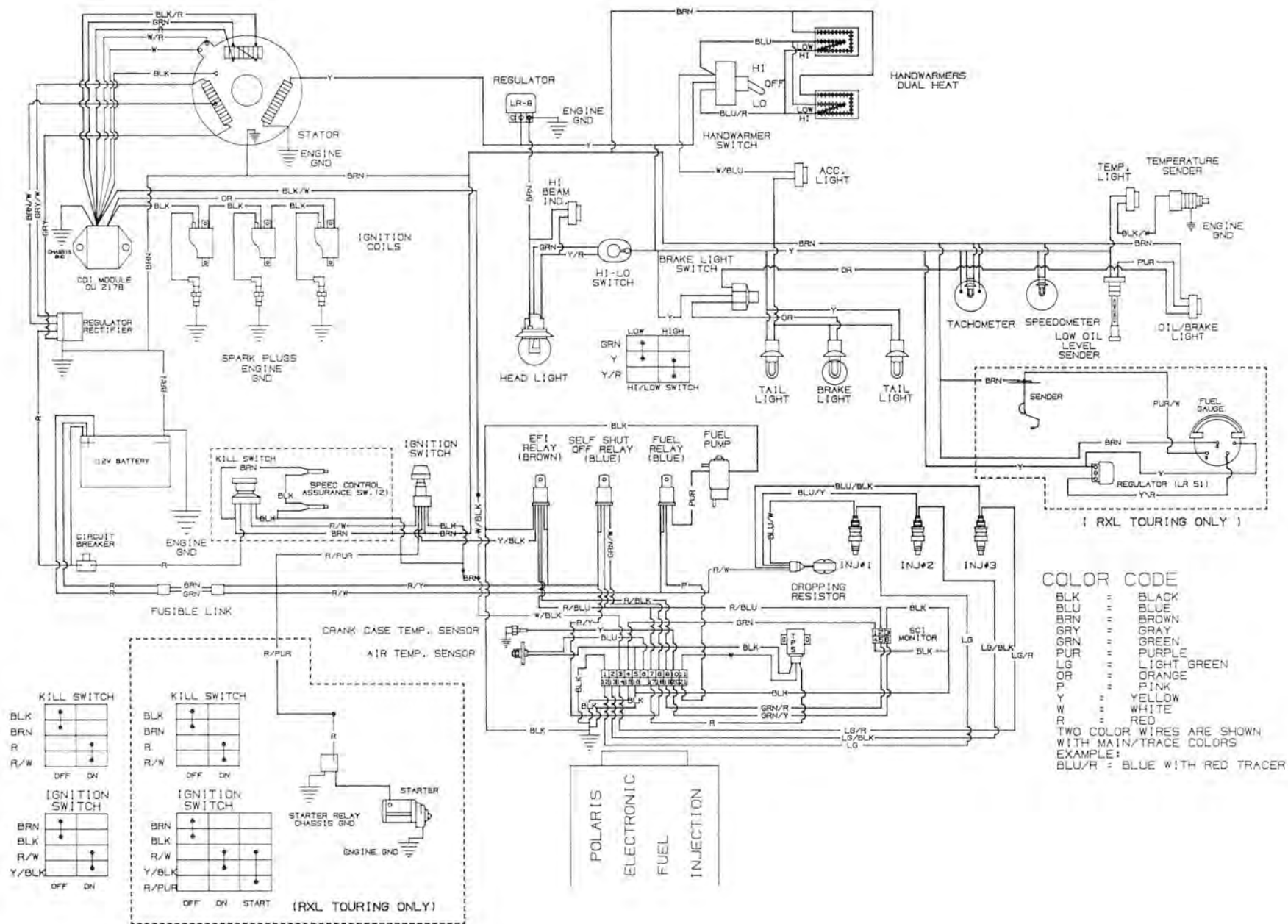
BODY ELECTRICAL **1994 Wiring Diagram - XLT / XLT SP / XLT SKS / XLT Special XTRA**



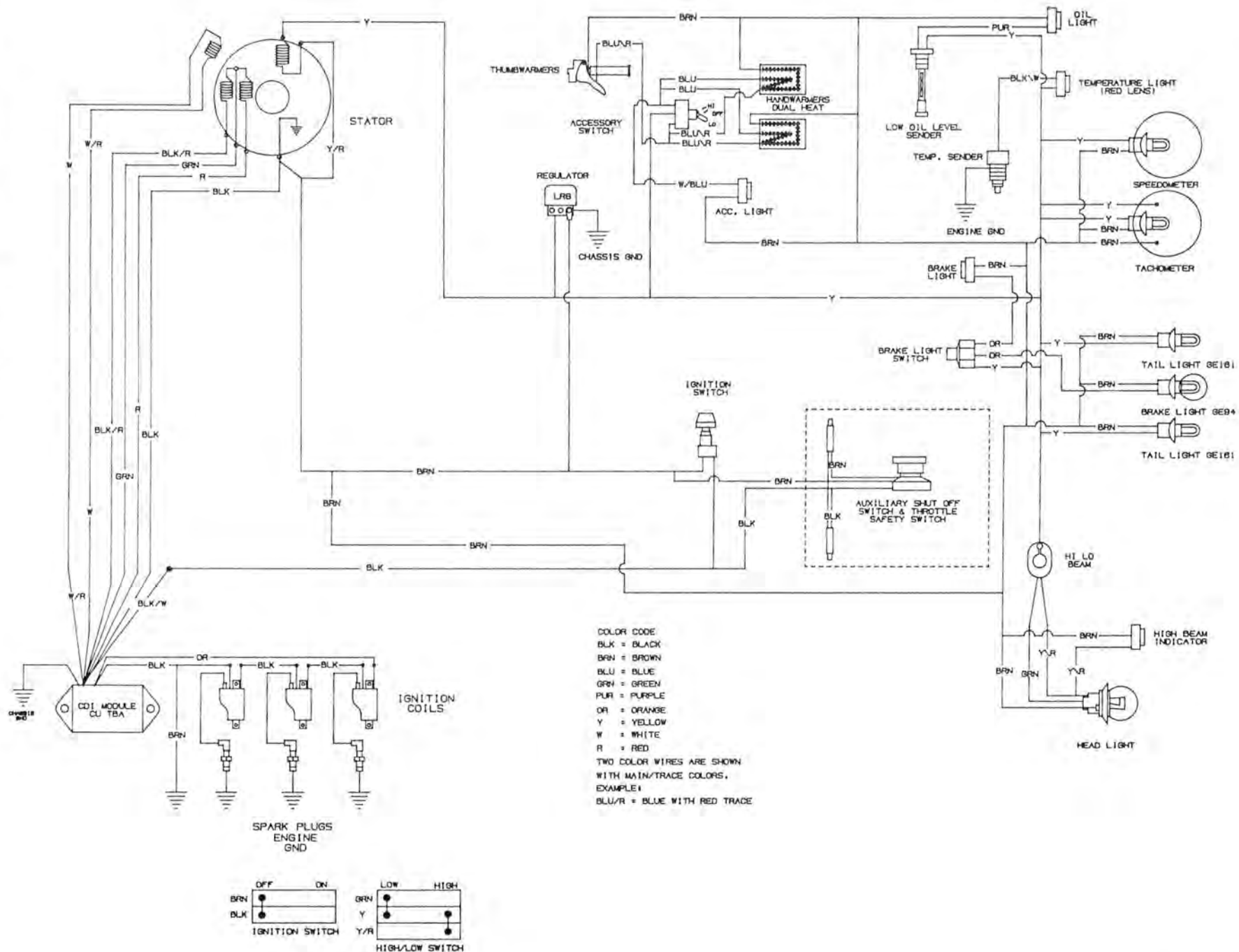
BODY ELECTRICAL 1994 Wiring Diagram - RXL



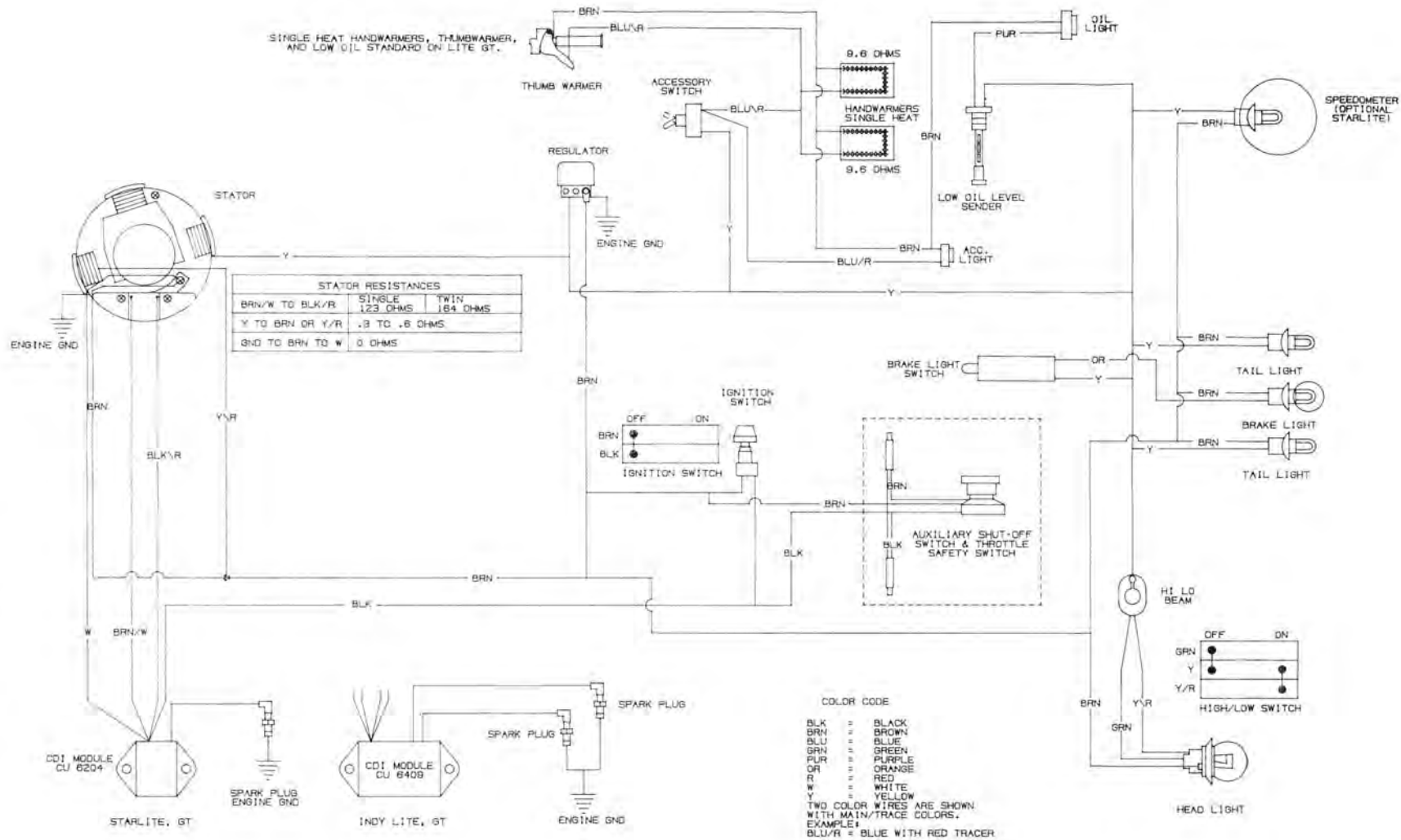
BODY ELECTRICAL **1994 Wiring Diagram - RXL Touring**



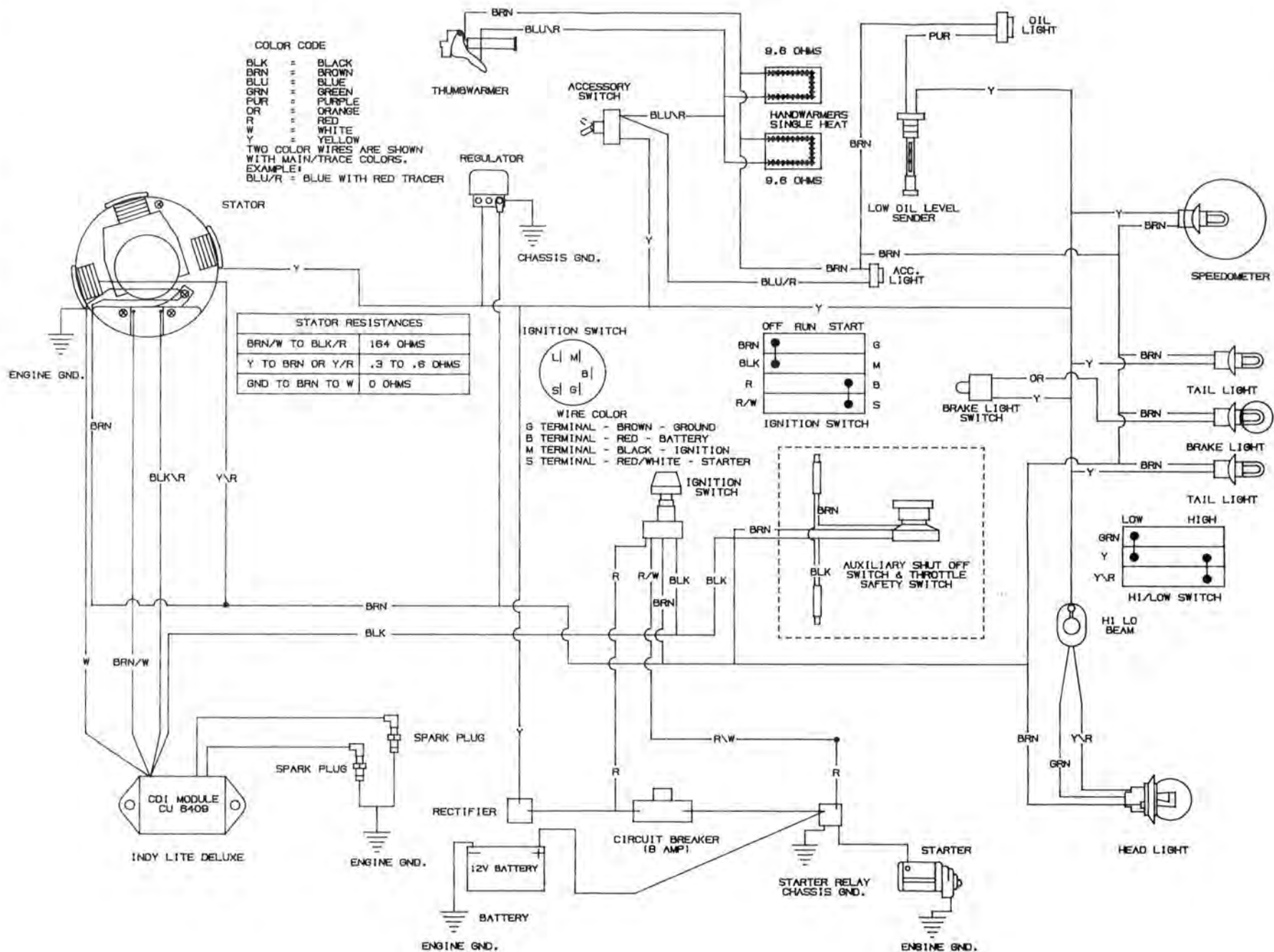
BODY ELECTRICAL 1994 Wiring Diagram - Storm / SKS



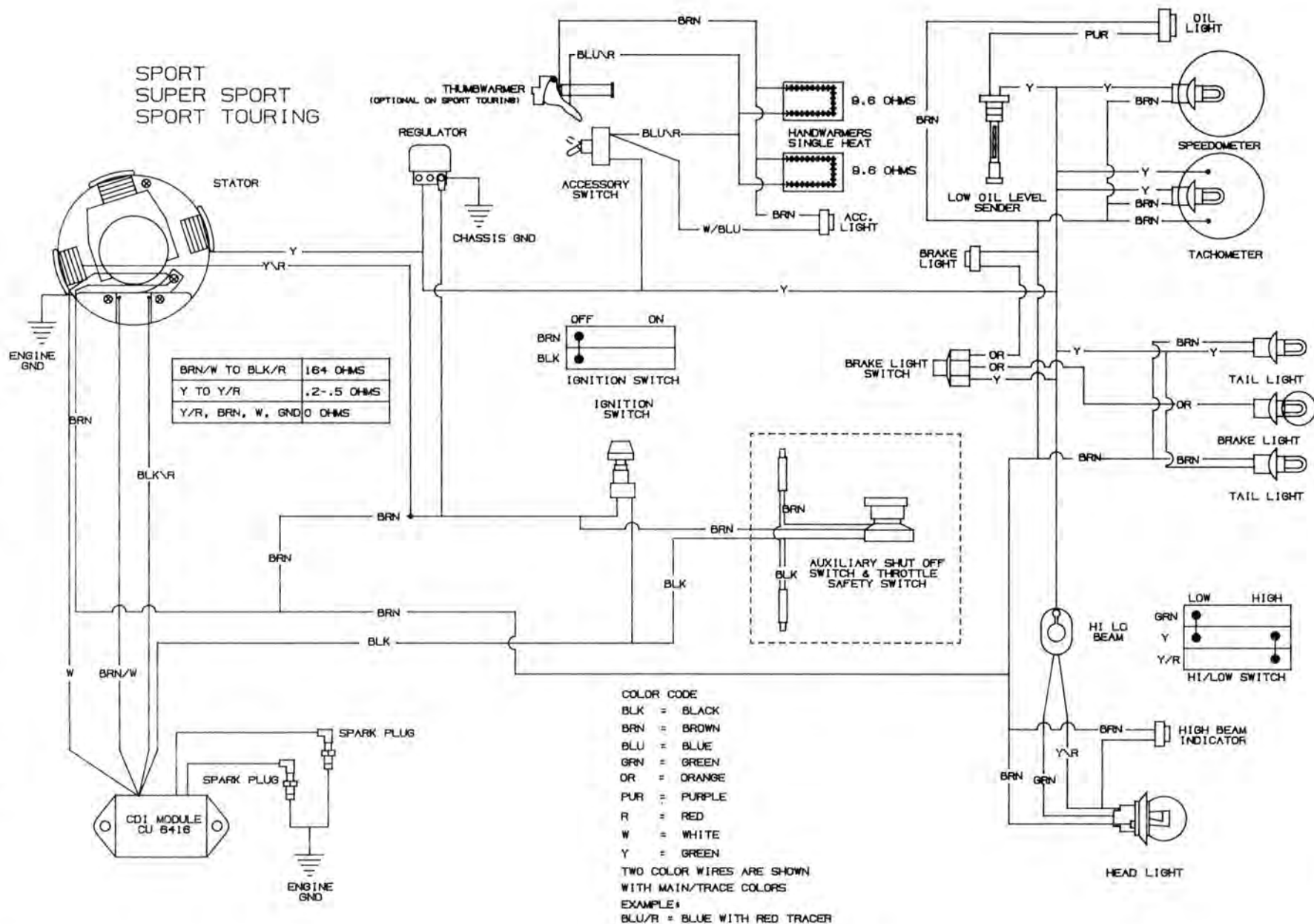
BODY ELECTRICAL **1995 Wiring Diagram - StarLite / Lite / GT**



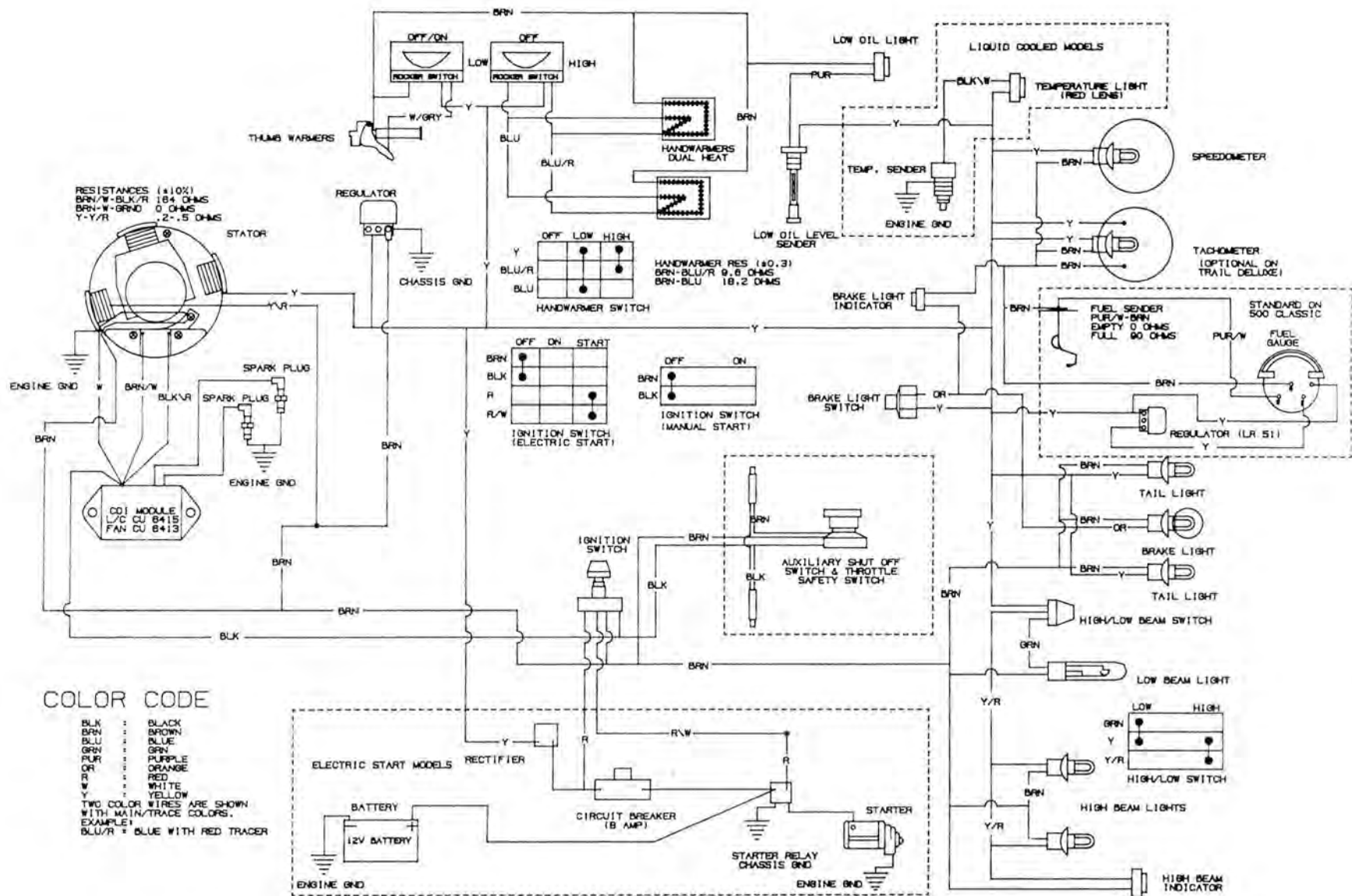
BODY ELECTRICAL 1995 Wiring Diagram - Lite Deluxe



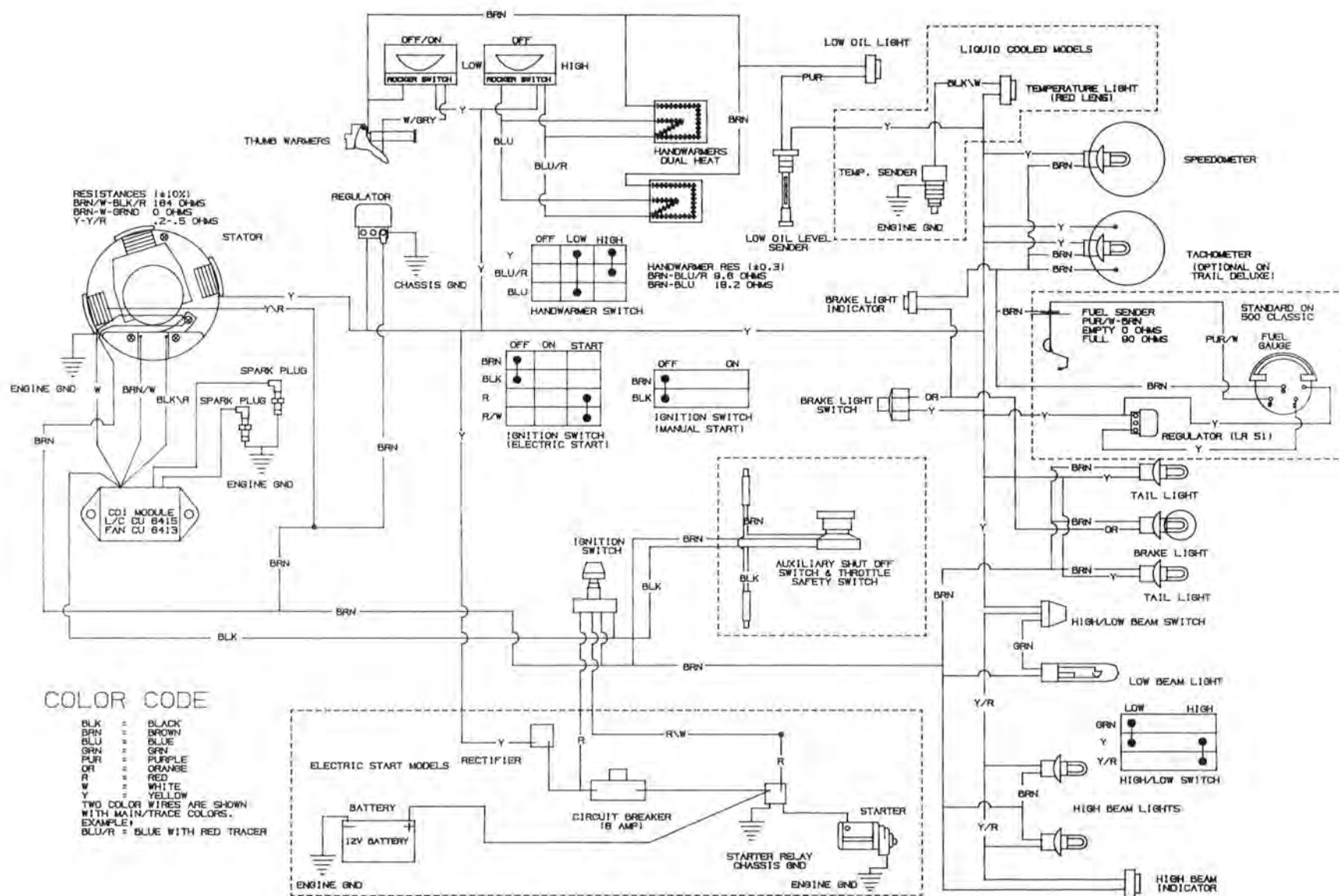
BODY ELECTRICAL 1995 Wiring Diagram - Sport / Super Sport / Sport Touring



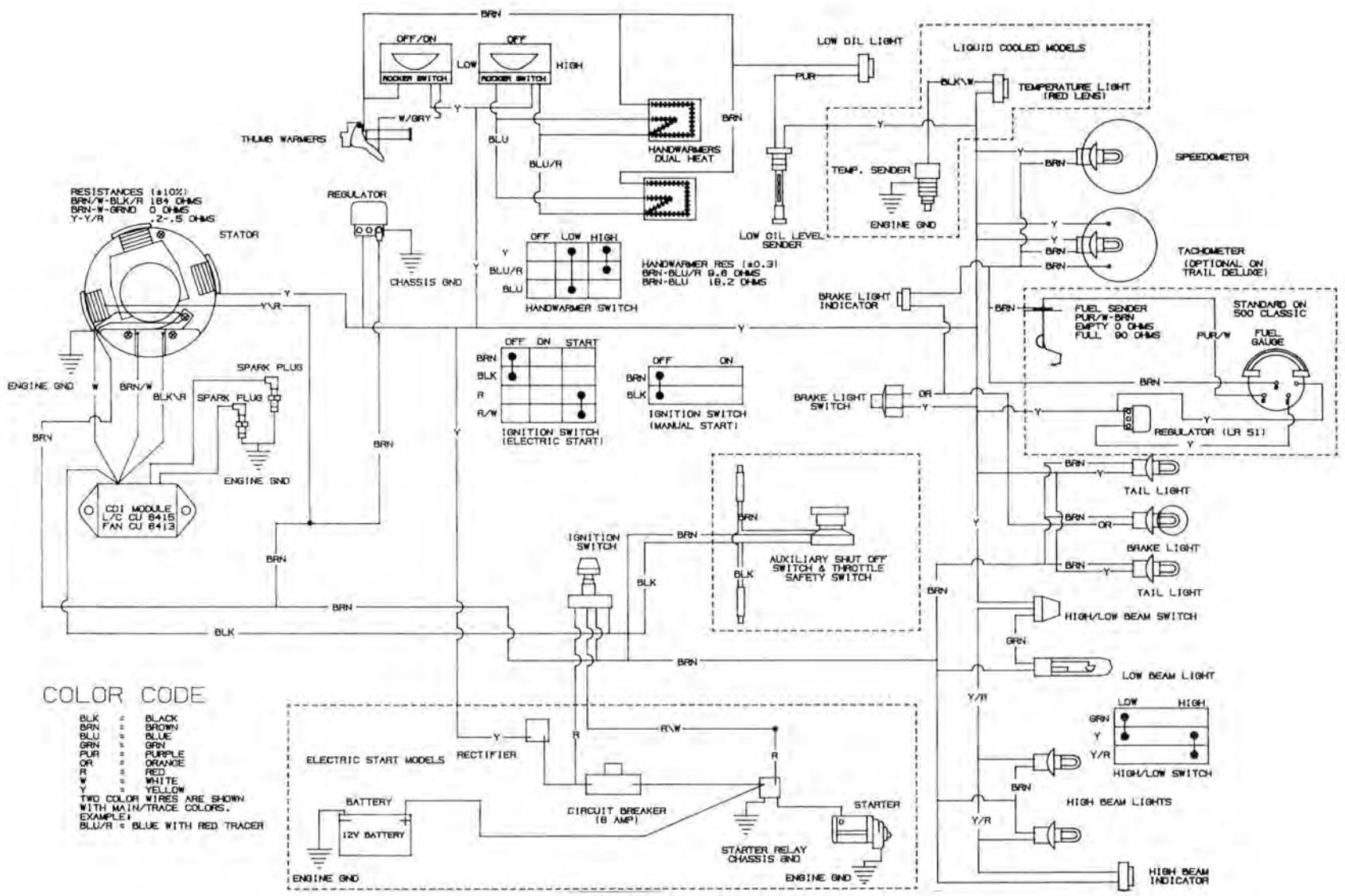
BODY ELECTRICAL 1995 Wiring Diagram - Trail



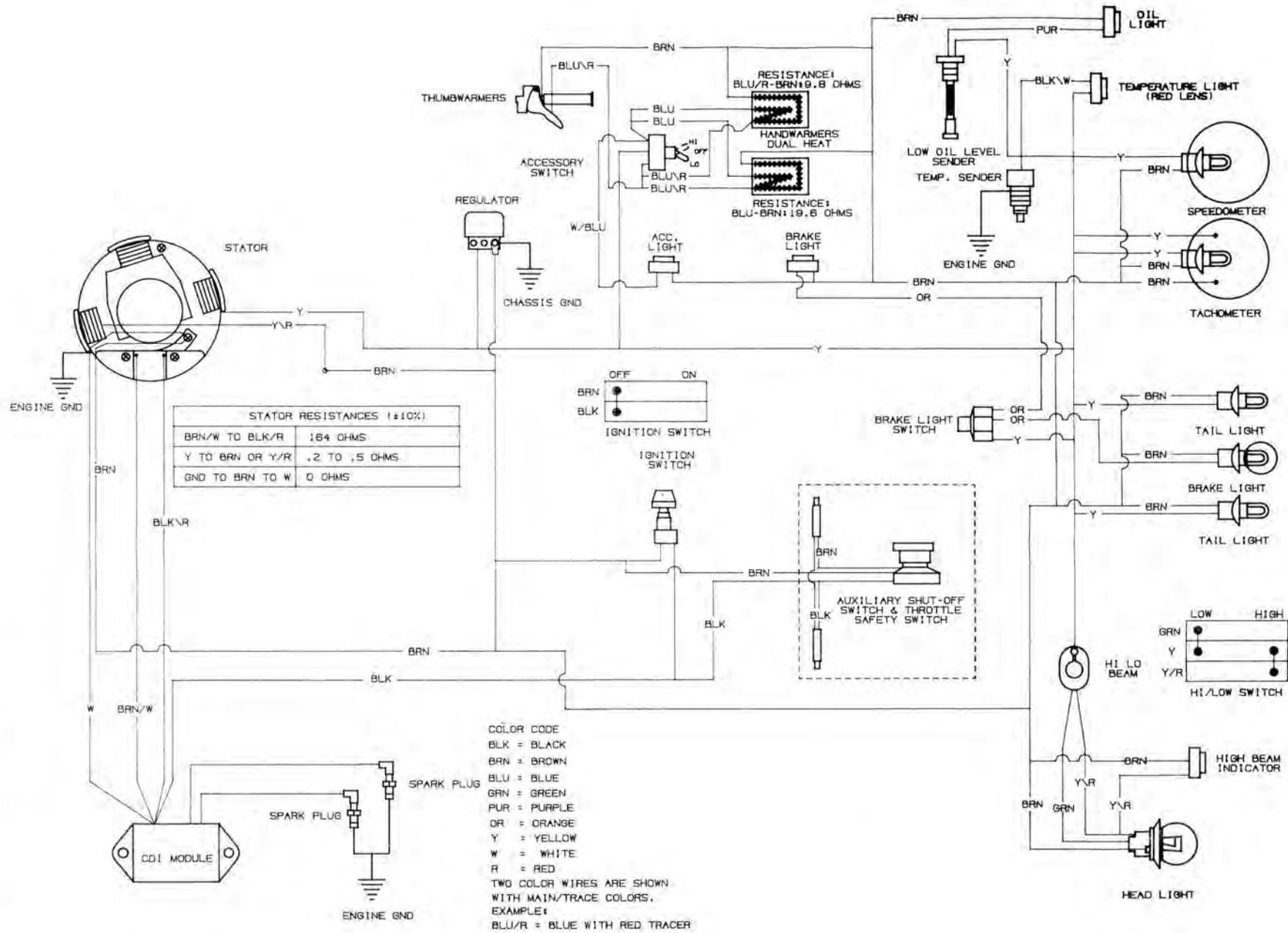
BODY ELECTRICAL 1995 Wiring Diagram - Trail Deluxe



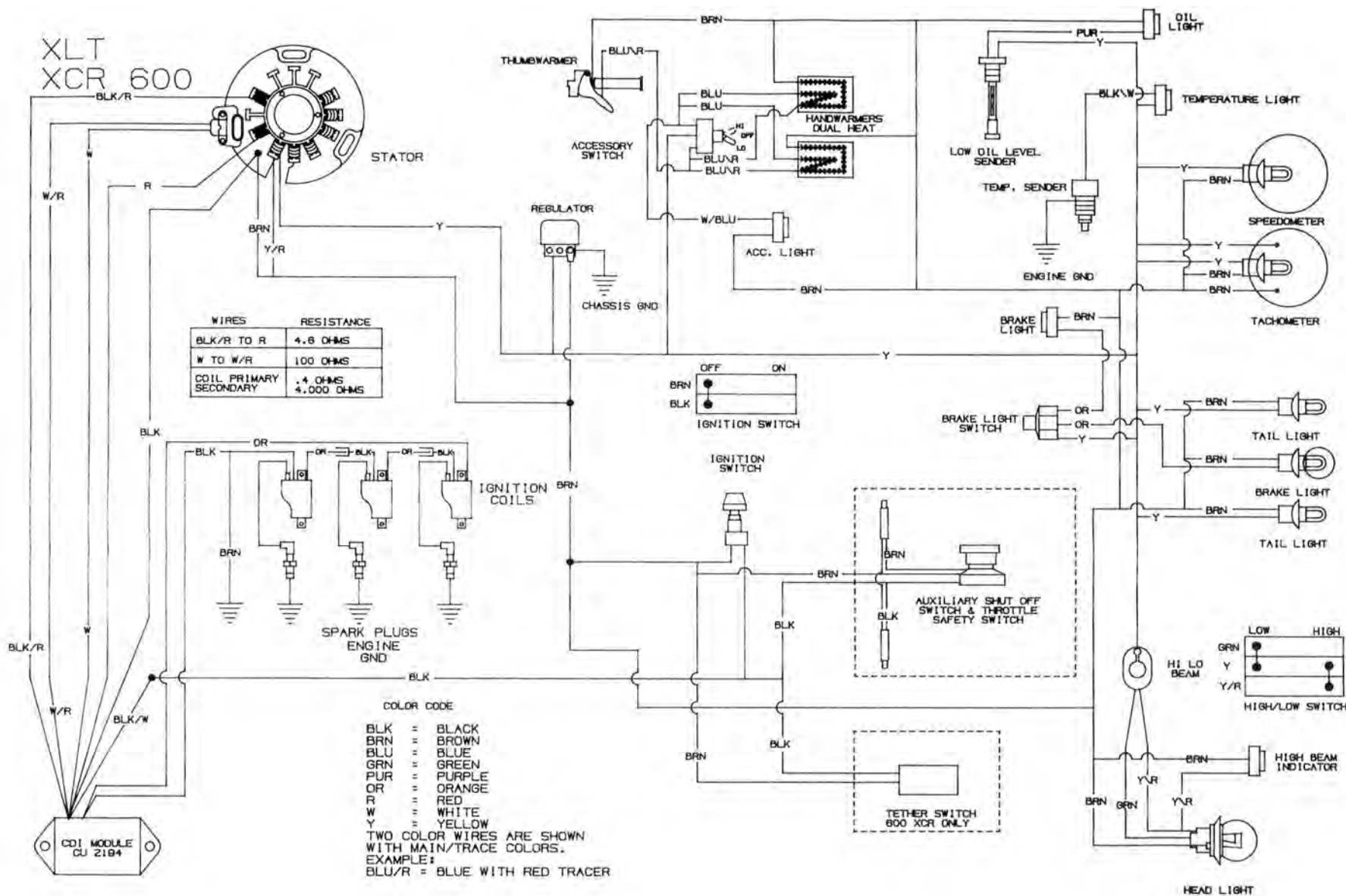
BODY ELECTRICAL **1995 Wiring Diagram - 440 / SKS**



BODY ELECTRICAL **1995 Wiring Diagram - 440 XCR**



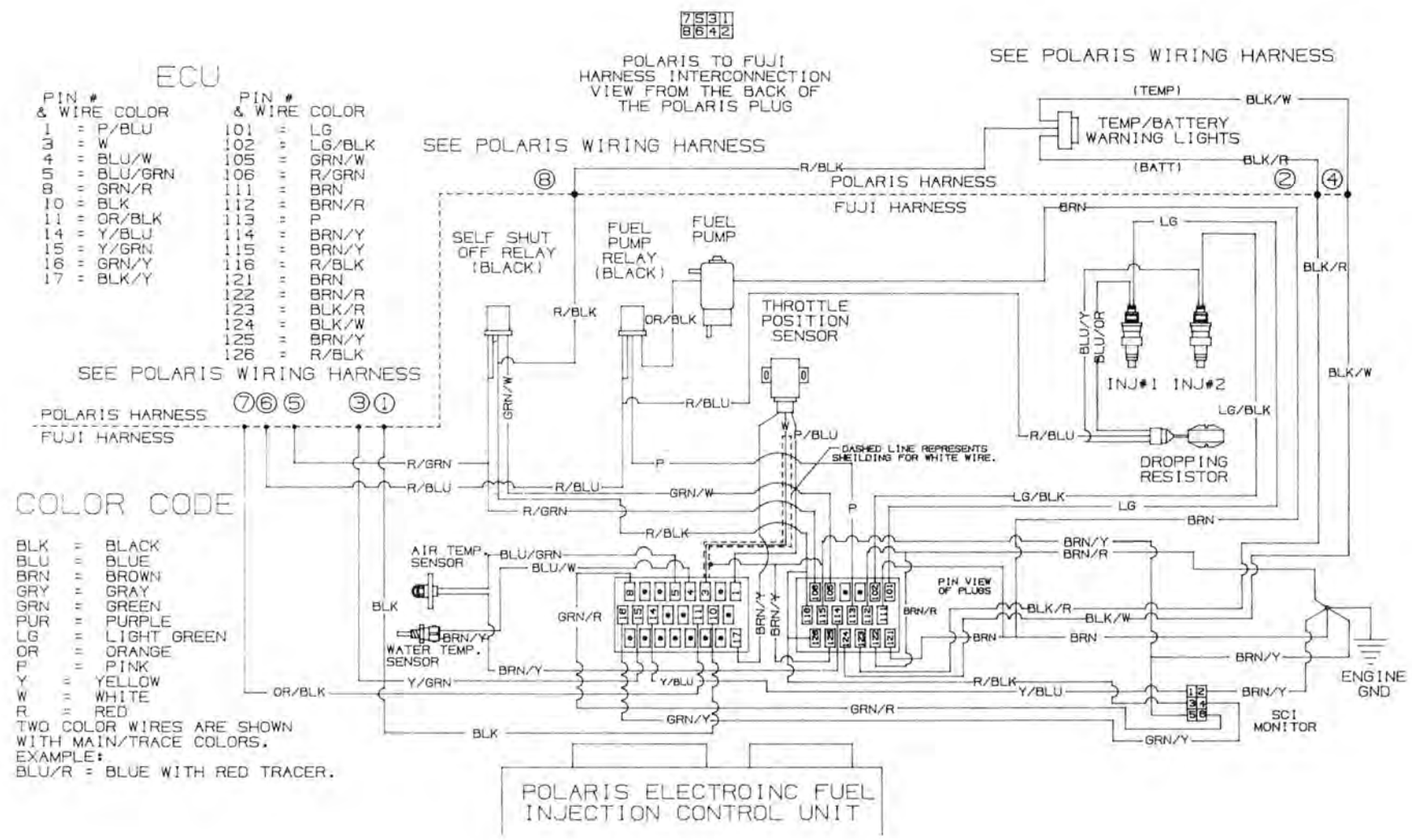
BODY ELECTRICAL **1995 Wiring Diagram - 600 XCR**



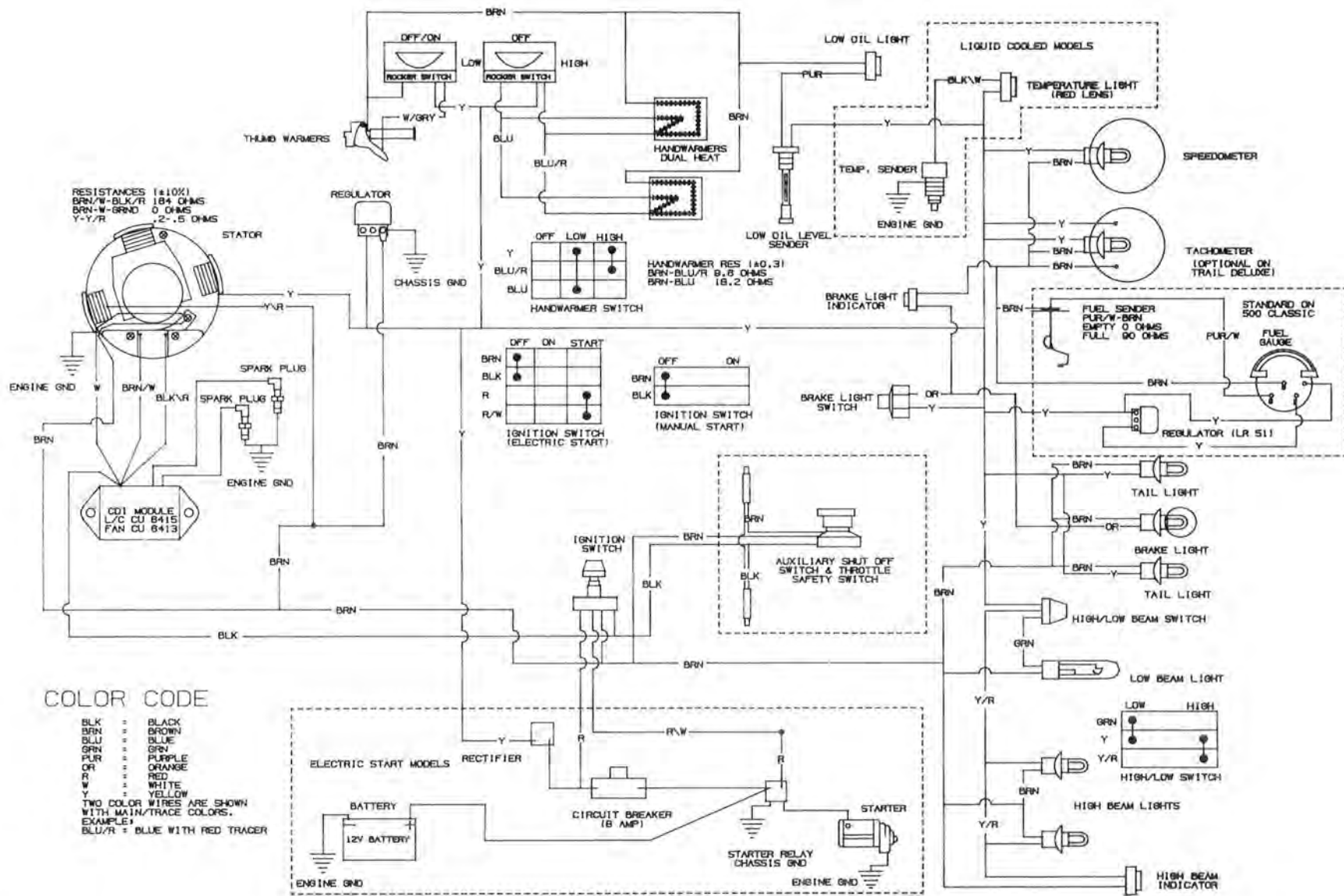


3.105

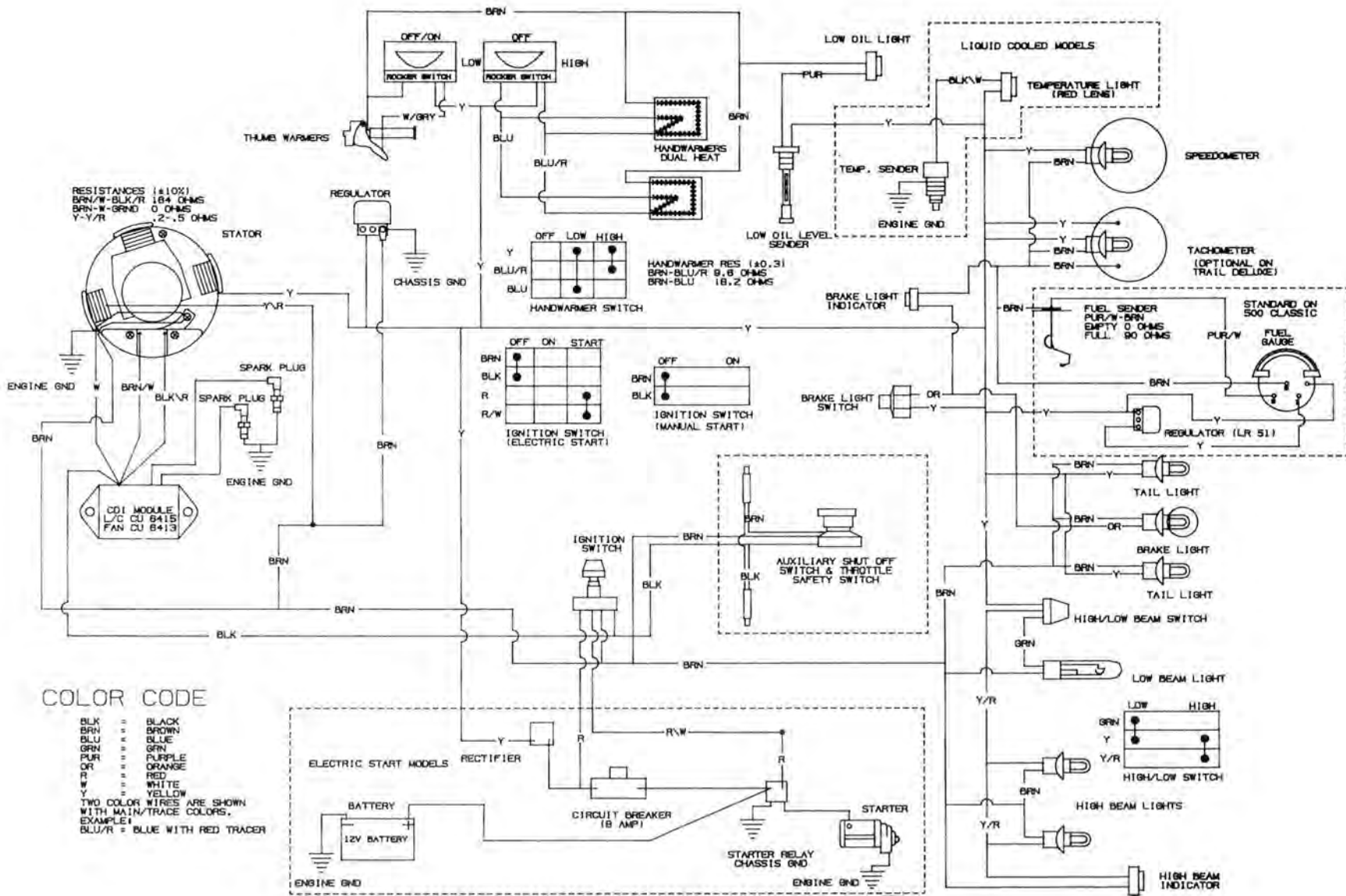
8/94



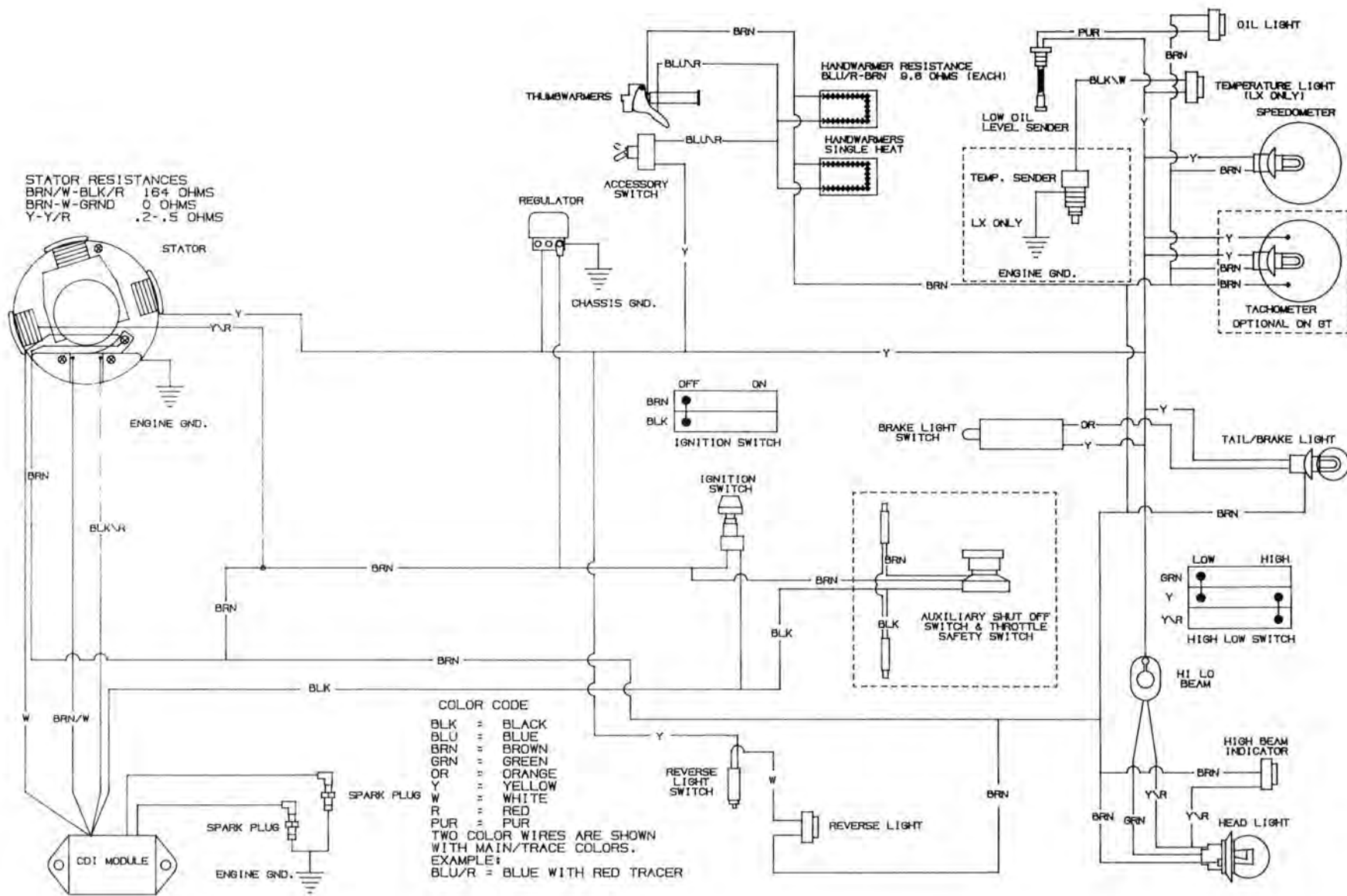
BODY ELECTRICAL 1995 Wiring Diagram - Indy 500



BODY ELECTRICAL 1995 Wiring Diagram - Classic

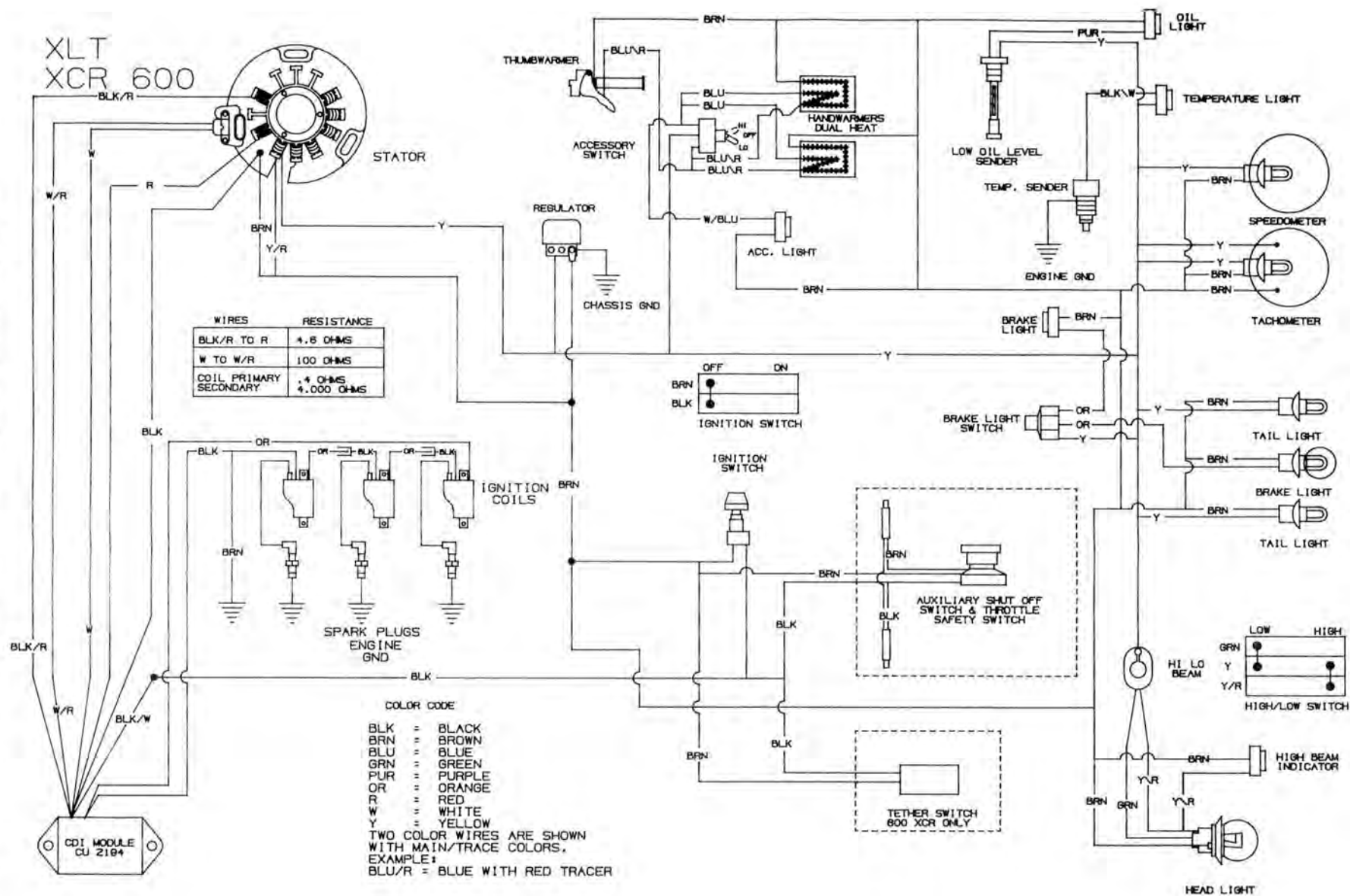


BODY ELECTRICAL **1995 Wiring Diagram - WideTrak GT**

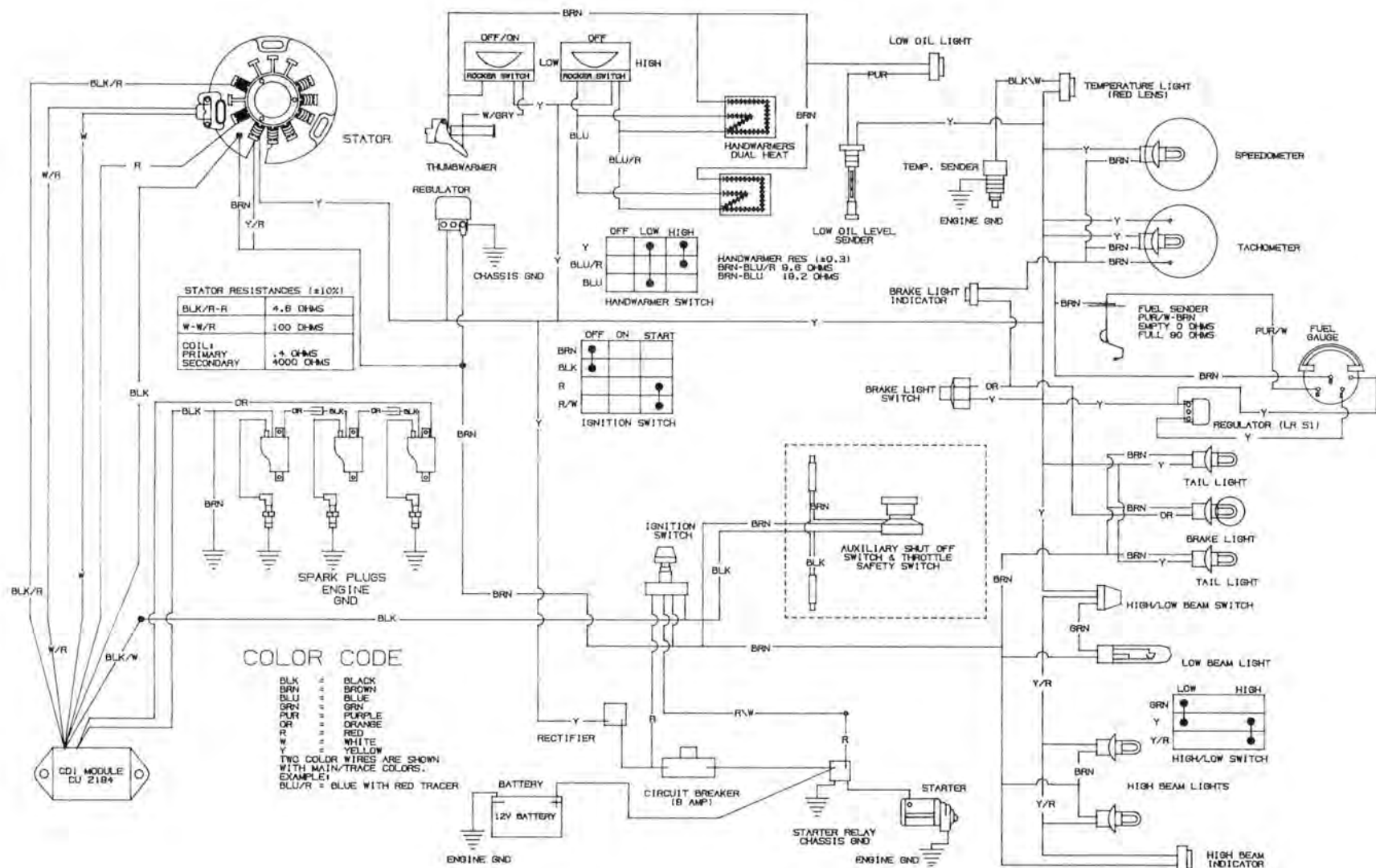




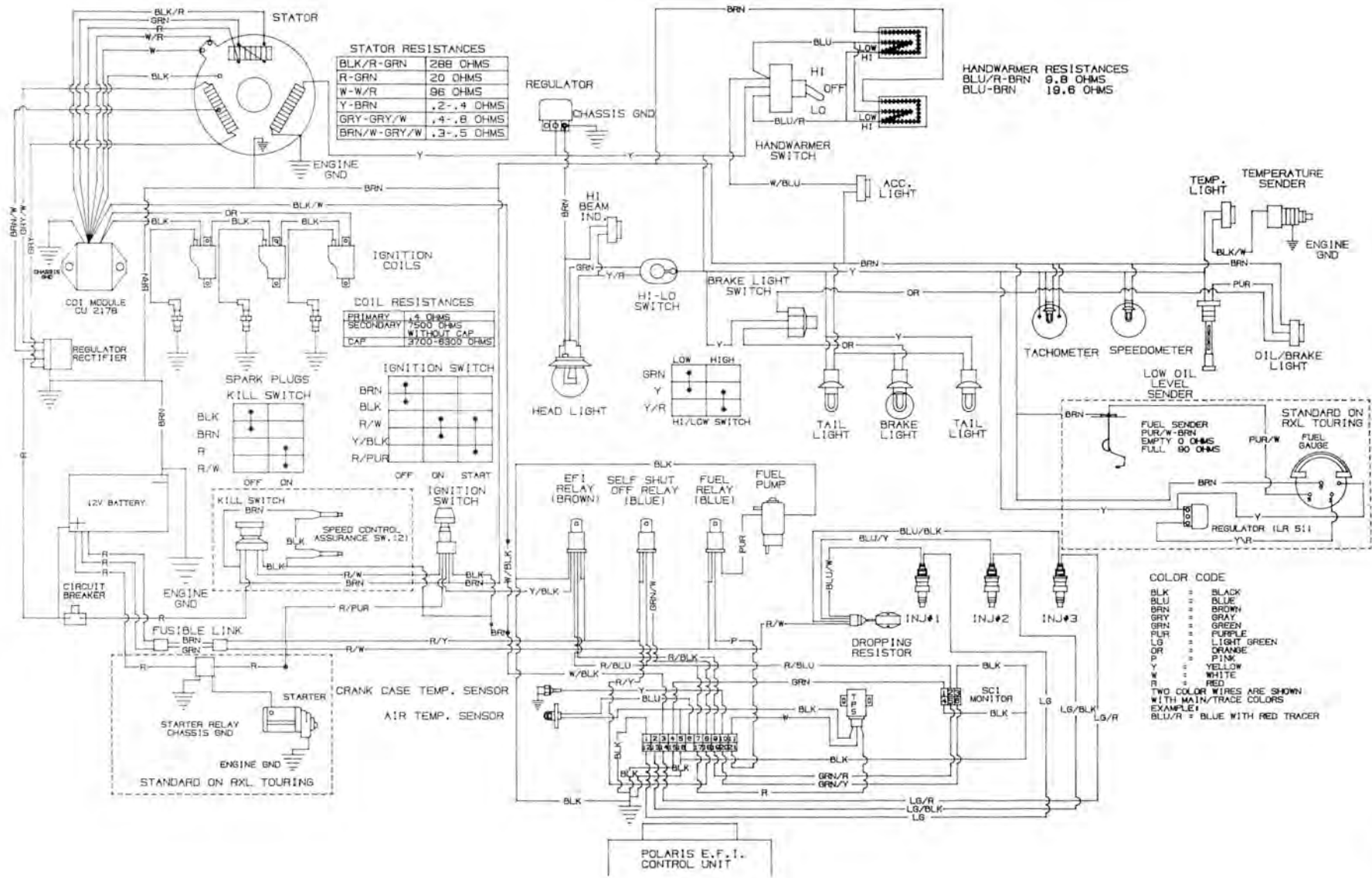
BODY ELECTRICAL **1995 Wiring Diagram - XLT / XLT SP / XLT SKS / XLT SKS PT**



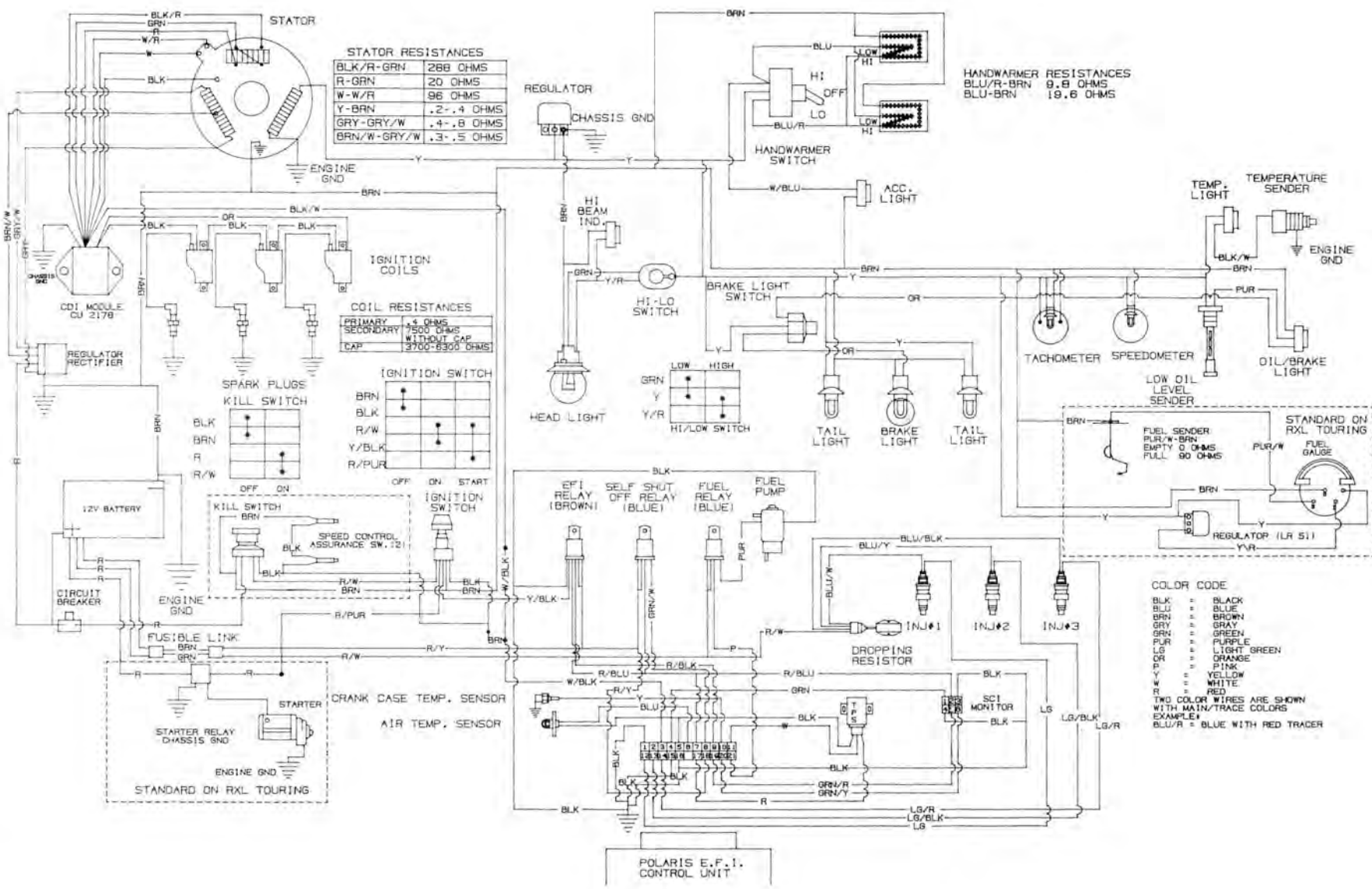
BODY ELECTRICAL 1995 Wiring Diagram - XLT Touring



BODY ELECTRICAL **1995 Wiring Diagram - RXL**



BODY ELECTRICAL **1995 Wiring Diagram - RXL Touring**



BODY ELECTRICAL 1995 Wiring Diagram - Storm / SKS / PT

