



## – How the Circuit Works

### Headlights (USA)

#### Low Beam Operation

The headlight relay receives battery voltage at all times. When you turn the headlight switch to the HEAD position with the dimmer switch in LO, the coil in the headlight relay is grounded through the BLU/RED wire. This energizes the relay, applying battery voltage to the left and right high and low beam headlights through fuses 45 and 46. The low beam bulbs come on because their opposite terminals are tied to ground. The high beam bulbs and indicator remain off because the ground path to them is interrupted by the deactivated dimmer relay.

#### High Beam Operation

Pulling the dimmer switch to HI, with the low beams already on, grounds the coil in the dimmer relay. This energizes the dimmer relay, applying ground to the high beam bulbs and high beam indicator, which turns on the high beams and indicator light. The low beam headlights stay on (see low beam operation).

### Headlights (Canada)

#### Daytime Running Lights Day Mode

When you turn the ignition switch to ON (II) with the parking brake released, the daytime running lights control unit supplies battery voltage through the RED/YEL and RED/GRN wires to the high beam headlights in series. Each high beam headlight receives less than battery voltage causing them to come on at reduced brightness. Applying the parking brake grounds the daytime running lights control unit through the GRN wire. If you apply the parking brake when the ignition switch is first switched to ON (II), the high beam headlights will remain off until you release the parking brake. Once the high beam headlights are in day mode, applying the parking brake will not turn them off. When you switch to low beam, high beam, or flash-to-pass operation, battery voltage from the headlight relay is applied to the daytime running light control unit through the RED/YEL and RED/WHT wires. The daytime running light control unit then turns off the daytime running light mode.

#### Low Beam Operation

The headlight relay receives battery voltage at all times. Turning the headlight switch to the HEAD position with the dimmer switch in LO, grounds the coil in the headlight relay through the BLU/RED wire. This energizes the relay, applying battery voltage to the left and right low beam headlights and to the daytime running lights control unit through fuses 45 and 46. The low beam bulbs come on because their opposite terminals are tied to ground. The high beam bulbs and indicator remain off because the ground path to them is interrupted by the deactivated dimmer relay.

#### High Beam Operation

With the low beams already on, battery voltage is applied to the daytime running lights control unit through the RED/YEL and RED/GRN wires. The control unit then supplies battery voltage from the RED/YEL and RED/GRN wires to the high beam headlights. Pulling the dimmer switch to HI grounds the coil in the dimmer relay. This energizes the dimmer relay, grounding the high beam headlights and high beam indicator which turns on the the high beams and indicator light. The low beams stay on (see low beam operation).

#### Flash-to-Pass (USA and Canada)

Holding the flash-to-pass switch in the ON position, grounds the coil in the headlight relay through the BLU/RED wire, and grounds the dimmer relay coil through the RED/BLU wire. This energizes the headlight relay, applying battery voltage to the low and high beam bulbs and to the dimmer relay. As the low beam bulbs receive battery voltage, the dimmer relay is energized, grounding the high beam bulbs and high beam indicator through the RED/BLU wire which turns on the high beams and indicator light.