

# SPAL BRUSHED DUAL HIGH CFM 16" ELECTRIC FAN & SHROUD Z40116

'03 - '09 DODGE RAM W/5.9L & 6.7L CUMMINS ENGINES

## MECHANICAL FAN/SHROUD REMOVAL:

1. Make sure the engine is cool, and then remove negative battery cable.  
**Note:** You may need to remove the plastic belly pan on the underside of the chassis.
2. Remove the bolts to remove the factory shroud.
3. The factory fan/clutch assembly can now be removed.

## SHROUD MOUNTING:

1. Place the aluminum shroud between the radiator and engine so that the fan pigtails are facing down.
2. Use a clamp or locking pliers to secure the shroud lip to the bottom radiator lip that runs parallel along the bottom. With the shroud secured by the clamps, place channel cap over the top of radiator and fan shroud use the self-tapping screws supplied to screw the shroud to the radiator. **SEE PHOTO 1**



**PHOTO 1: Shroud Mount**

## TEMPERATURE SENSOR:

1. The brass temperature sensor can be screwed into a blank coolant port on the engine block. Thread compound is recommended to prevent leaks. **Note:** The temperature switch activates "ON" at 195°F and shuts off when the temperature drops to 175°F. **DO NOT** use Teflon pipe tape on the temperature switch threads as it will insulate the metal to metal contact required for a proper ground.

## FAN WIRING: (SEE PHOTO 2)

**FUSE HOLDER:** Connect to (+) power supply within 12" of the battery.

**BLUE WIRE:** Connect to the fuse holder. **Note:** Use minimum of 12 gauge wire from fuse holder.

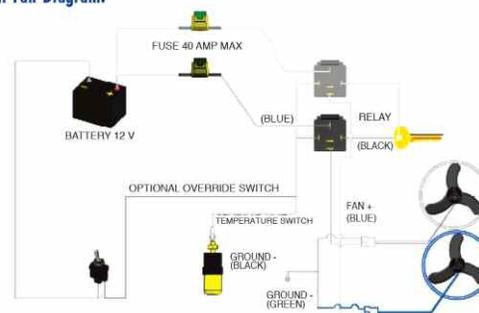
**GREEN WIRE:** Connect to the chassis ground by crimping a 12 gauge lead to the yellow butt connector. Seal the shrink tube case with hot air.

**BLACK WIRE: IMPORTANT:** Connect the black leads from each relay so there are effectively two black leads (set). Connect one black wire to ignition switch (+) 12 volt DC source. Connect the other one to your override or temperature switch. **Note:** The two leads are interchangeable and it does not matter which black lead you choose for the 12 volt (+).

### Fan Terminal Harness Diagram:



### Dual Fan Diagram:

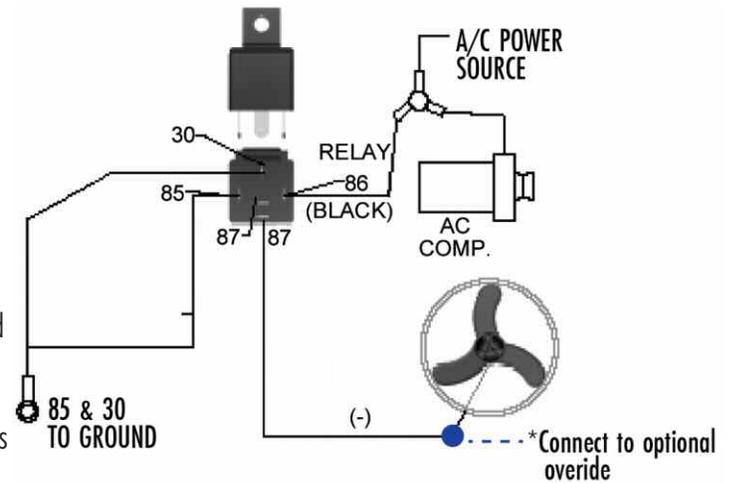


**PHOTO 2: Fan Wiring**

**AIR CONDITIONING RELAY: (SEE PHOTO 3)**  
**KEEP ALL WIRING AWAY FROM MOVING PARTS AND**  
**HOT ENGINE COMPONENTS!**

**INSTALLATION INSTRUCTIONS**

1. Locate A/C Relay on grounded metal surface close to the A/C Compressor.
2. Drill 1/8" pilot hole to match mounting flange on A/C Relay.
3. Scrape paint off area around hole for the ring terminal to assure a good ground. Fasten the wires with the ring terminal and A/C Relay using a sheet metal screw and flat washer make sure the ring terminal is grounded to the bare metal.
4. Next locate the wire(s) running to the front of the A/C Compressor Clutch. Select the wire that carries current that engages the clutch when the A/C is turned on. Cut that wire close to the A/C Relay location, strip the loose ends and crimp one of the 3-way connectors included.
5. Run a new wire from the 3-way connector to the terminal marked 86 on the A/C Relay (You will find the marking on the blade side of the relay with it unplugged). Run a wire from the terminal marked 87 on the A/C Relay to either the ground wire on the fan motor or the temperature switch. Wiring contacts should point downward.
6. Secure all loose wires with cable ties.



**PHOTO 3: Relay**

**NOTE:** The temperature switch gets wired by tapping into the wire between the A/C Relay and the fan motor using 3-way connectors. If installing an auxiliary switch it should also get wired to this same spot.

**FINISHING TOUCHES:**

1. Zip ties are provided in the kit to help tidy up the engine bay of wires.
2. Be sure to check coolant level after install as some coolant was probably lost in the install of the temperature sensor.
3. Double check clearance of all the wires from moving parts i.e.; pulleys, belts, steering components.
4. Reinstall the plastic belly pan on the underside of the chassis.
5. Reconnect the negative battery cable.

**INITIAL START:**

1. Start the truck with the A/C off and let it idle. The fans should be off at this time.
2. Turn on the A/C. The fans will begin to speed up if the A/C coil is active. Once the coil is deactivated, the fans will begin slowing to a stop.
3. Turn off the A/C and bring the truck up to temperature. Under cool temperature conditions, idling may not bring the engine temperature up enough to turn the fans on. **Note:** The factory gauge is NOT accurate. To get an accurate reading of engine temperature you will need a tuner capable of reading engine temperature or a diagnostic computer.
4. After the first couple trips of normal driving conditions, be sure to double check the shroud screws for tightness. As well as check for wiring that may have moved and needs to be secured.