

1990 Corvette: Service Bulletin: Replacement of Isolation Diodes

#93-163-8A - REPLACEMENT OF ISOLATION DIODES

MANY OF THE ELECTRICAL SYSTEMS ON OUR VEHICLES USE A DIODE TO ISOLATE CERTAIN CIRCUITS AND PROTECT THEM FROM VOLTAGE SPIKES. SOME OF THE CIRCUITS WHICH MAY USE SUCH A DIODE ARE LISTED BELOW:

* A/C COMPRESSOR CLUTCH * ABS/4WAL NOTE: THE ABS DIODE ON THE DELCO MORAINÉ SYSTEM IS HIDDEN INSIDE OF AN ELECTRICAL CONNECTOR UNDER THE CARPET AT THE RIGHT KICK PANEL. * WIPER * CHARGING SYSTEM (HIDDEN IN WIRE HARNESS) * PARKING BRAKE (VEHICLES WITH ABS) * RELAYS * SOLENOIDS * DIESEL GLOW PLUG CIRCUIT * DAY TIME RUNNING LIGHTS

OBTAINING REPLACEMENT DIODES CAN SOMETIMES BE A PROBLEM. A UNIVERSAL DIODE, THAT MEETS THE SPECIFICATIONS IN THE CHART BELOW, MAY BE USED FOR THE APPLICATIONS LISTED ABOVE. SINCE CERTAIN DIODE APPLICATIONS HAVE SPECIFIC PART NUMBERS, ALWAYS REFERENCE THE APPLICABLE GM PARTS CATALOGUE BEFORE INSTALLING ONE OF THE UNIVERSAL DIODES LISTED IN THIS BULLETIN.

WHEN INSTALLING THE NEW DIODE, USE THE FOLLOWING PROCEDURES TO OBTAIN A LASTING REPAIR:

1. IF THE DIODE IS TAPED TO THE HARNESS, REMOVE ALL OF THE TAPE.
2. PAYING ATTENTION TO CURRENT FLOW DIRECTION, REMOVE INOPERATIVE DIODE FROM THE HARNESS WITH A SUITABLE SOLDERING TOOL. IF THE DIODE IS LOCATED NEXT TO A CONNECTOR TERMINAL, REMOVE THE TERMINAL(S) FROM THE CONNECTOR TO PREVENT DAMAGE FROM THE SOLDERING TOOL.
3. CAREFULLY STRIP AWAY A SECTION OF INSULATION NEXT TO THE OLD SOLDERED PORTION OF THE WIRE(S).

DO NOT REMOVE ANY MORE THAN IS NEEDED TO ATTACH THE NEW DIODE.

4. CHECK CURRENT FLOW DIRECTION OF THE NEW DIODE, BEING SURE TO INSTALL THE DIODE WITH CORRECT BIAS. REFERENCE THE APPROPRIATE SERVICE MANUAL WIRING SCHEMATIC TO OBTAIN THE CORRECT DIODE INSTALLATION POSITION. REFERENCE FIGURE 1 FOR REPLACEMENT DIODE SYMBOLS AND CURRENT FLOW EXPLANATIONS.

ATTACH THE NEW DIODE TO THE WIRE(S) USING 60/40 ROSIN CORE SOLDER. USE A HEAT SINK (ALUMINUM ALLIGATOR CLIP) ATTACHED ACROSS THE DIODE WIRE ENDS TO PROTECT THE DIODE FROM EXCESS HEAT. FOLLOW THE MANUFACTURER'S INSTRUCTIONS FOR THE SOLDERING EQUIPMENT YOU ARE USING.

5. INSTALL TERMINAL(S) INTO THE CONNECTOR BODY IF PREVIOUSLY REMOVED IN STEP NUMBER 2.

6. TAPE THE DIODE TO THE HARNESS OR CONNECTOR USING ELECTRICAL TAPE. TO PREVENT SHORTS TO GROUND AND WATER INTRUSION COMPLETELY COVER ALL EXPOSED WIRE AND DIODE ATTACHMENT POINTS. **NOTE: A UNIVERSAL DIODE WITH A 3 AMP, 400 PIV (PEAK INVERSE VOLTAGE) RATING CAN BE USED IN ALL OF THE PREVIOUSLY MENTIONED APPLICATIONS.**

DIODE BRAND RATING NUMBER P/N COMMENTS -----
GMSPO 1N4004 12112421 1 AMP, 400 PIV - ALL RADIO SHACK 276-1103
APPLICATIONS EXCEPT A/C COMPRESSOR CLUTCH
GMSPO 1N5404 12112422 3 AMP, 400 PIV - A/C RADIO SHACK 276-1144
COMPRESSOR CLUTCH APPLICATION
PARTS ARE CURRENTLY AVAILABLE FROM GMSPO.
THE FOLLOWING 1993 SERVICE MANUALS WILL NEED TO BE UPDATED WITH
THE CORRECT PART NUMBERS AND RATING CHANGES.

ALL J, L, N, A, W, AND 8A-5-12 U0
HEAT SINK, PART NUMBER 276-1567, CAN BE OBTAINED FROM RADIO SHACK.

Online URL: <https://www.corvetteactioncenter.com/tech/knowledgebase/article/1990-corvette-service-bulletin-replacement-of-isolation-diodes-217.html>