

NIPPONDENSO ALTERNATORS

Chrysler Corp. Imports
Arrow & Colt (Exc. Hatchback)
 1600 cc
Honda
Opel
Toyota

DESCRIPTION

Nippondenso alternators are conventional 3-phase alternators utilizing 6 diodes (3 positive and 3 negative) to rectify current. Charge control may be either integrated circuit (IC) or externally mounted contact point type.

APPLICATION		
Model	Amps	Part No.
Arrow/Colt	45	100-211-0120
Honda		
Accord	50	72807-①-689-004
Civic	40	650-①-634-671
Civic CVCC		
W/O Air Cond.	35	59473-①-657-024
W/Air Cond.	45	627-①-671-014
Prelude	50	72807-①-689-004
Opel	50	94211350
Toyota®		
Celica		
2OR (A Type)	55	38090
2OR (B Type)	55	③28010, 28011, 28012
Corolla		
TE	40	26091
TE	55	28010, 28011
TE	55	③28012
KE	50	24071
KE	40	26091
KE	55	24090, 24091
Corona		
2OR	55	③28010, 28011, 28012
Cressida		
2OR	55	41080, 41081, 41082
2OR	60	45110, 45121
Supra		
2OR	60	45140
Land Cruiser		
2F	50	61023, 61041
2F	55	61070, 61071, 61080, 61081
Pickup		
2OR	40	38013, 38014
2OR	55	38110, 38111

① - 31100 identifies Honda alternator.
 ② - All Toyota numbers are preceded by 27020.
 ③ - External regulator.

TESTING

ON CAR TEST

Preliminary Inspection - Check alternator mounting and drive belt tension. Inspect turn signal and gauge fuses. Check alternator and regulator wire connections for tightness. Battery must be fully charged prior to beginning test.

No Load Test - 1) Connect a suitable test meter (09081-00010 alternator tester for models with special connector from regulator, or a common regulator tester) as shown in illustrations. Start engine and increase speed gradually to 2000-2300 RPM. Read "B" terminal voltage. Voltage should be 13.5-14.8 with a current draw of not more than 10 amps. If current is over specifications, battery is discharged or internally shorted.

2) If voltage is not steady, dirty regulator points or defective connection at "F" terminal may be the cause.

3) If voltage reading is too high, one of the following problems may be indicated: Regulator low speed gap too wide. High speed point gap too wide. High speed point gap resistance too high. Open circuit regulator coil or voltage relay coil. Open circuit regulator "N" terminal or "B" terminal. Low speed point contact tension too heavy. Loose regulator ground connection.

"F" Terminal Voltage Test - 1) With regulator tester, stop engine, disconnect alternator wiring connector, turn ignition switch to "ON" and measure voltage between "F" and "E" terminals of connector. Voltage should be 12 volts. If voltage is zero or very low, note the following possible causes; blown fuse, regulator "IG" terminal open, or regulator high speed points are burned.

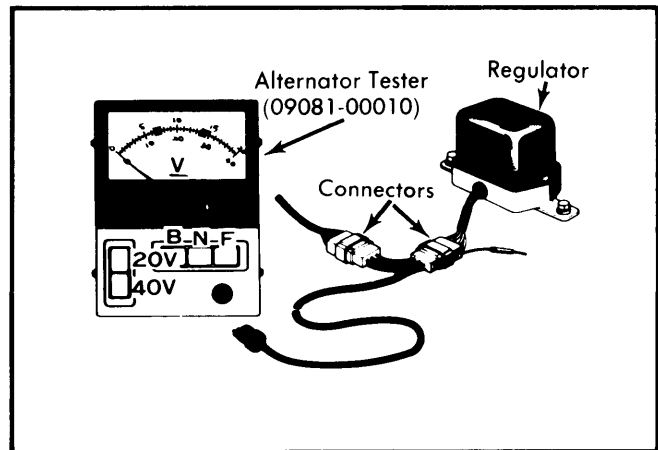


Fig. 1 Connections for Tester 0981-00010

2) With alternator tester (09081-00010) connected and engine idling, press switch "F" on tester. Gradually increase engine speed to 2300 RPM. Needle on tester should deflect in small steps from 12-7 volts, 6-4 volts and 3-1 volts. If voltage does not drop as specified, regulator is defective or out of adjustment.

Regulator Circuit Resistance - Disconnect regulator connector plug and check resistance between regulator "IG" and "F" terminals with an ohmmeter. If any resistance is shown, the low speed contact in the regulator is defective.

Load Test - With regulator tester connected as illustrated, start engine and turn on all lights and accessories. Run engine at 1100 RPM and check amperage and voltage. If reading is low due to fully charged battery, it may be necessary to crank engine (with coil disconnected) for about 15 seconds to discharge battery. If amperage is low when rechecking, rectifiers are open or shorted, or stator coil is open or shorted.

NIPPONDENSO ALTERNATORS (Cont.)

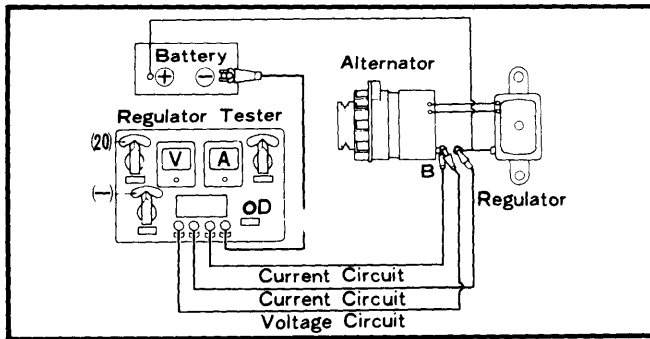


Fig. 2 Connections for Regulator Tester

Performance Test Using Conventional Tester – 1) Attach tester as illustrated and increase engine speed until reverse current (approximately 2.5 amp.) ceases to flow to rotor field coil.

2) Turn off No. 1 switch and increase speed until voltmeter indicates 14V. If speed is under 1000 RPM, alternator performance is satisfactory.

3) Increase load resistance to near maximum so that nearly no current will flow. Close switches 1 and 2 while gradually increasing speed. Rated output should be reached by approximately 5000 RPM with satisfactory alternator.

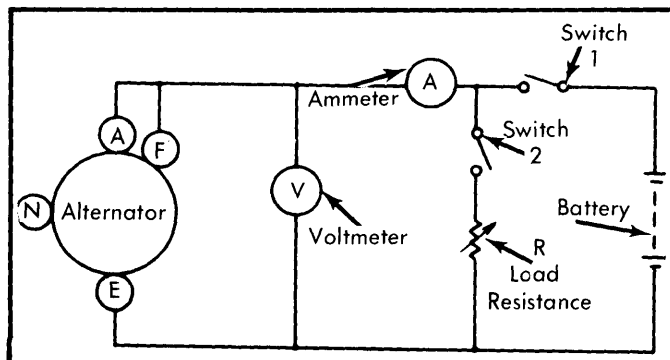


Fig. 3 Conventional Tester Connections

OVERHAUL

DISASSEMBLY

1) Remove retaining screws and pry drive end frame from stator with screwdriver. If necessary, tap lightly on drive end frame with mallet. Secure rotor core in padded vise and remove pulley attaching nut. Withdraw pulley, fan and spacer. Press rotor from drive end frame. Remove bearing retainer from end frame, then remove bearing, felt cover and felt ring.

2) Remove rectifier holder securing nuts and brush holder attaching screws. Separate stator with rectifier holders and brush holders from rectifier end frame. Remove brush lead terminal and stator coil "N" terminal from brush holder using a small screwdriver. When removing brush holder assembly, DO NOT cut "N" terminal lead or melt the solder.

TESTING

Rotor – Check rotor for open field windings using an ohmmeter across the slip rings. Coil resistance should be ap-

proximately 4.1-4.3 ohms. Check smoothness of slip rings. Check bearing and replace if necessary.

Stator – Use ohmmeter to check stator coil for ground. To check for open circuit, stator leads must be disconnected from diode leads. To disconnect leads from diodes, unsolder as quickly as possible with a low watt iron. Check 4 leads of stator coil for continuity between each lead. If no continuity or if resistance is noted, stator coil must be replaced.

Diode Test – With diode assembly on bench, contact diode plate with one probe and each of 3 diode leads with other probe. Note ohmmeter reading, then reverse probes and repeat test. Check both positive and negative diodes in this manner. All diodes should show a low reading in one direction and NO reading in the opposite direction. If any rectifier (diode) is defective, replace holder assembly.

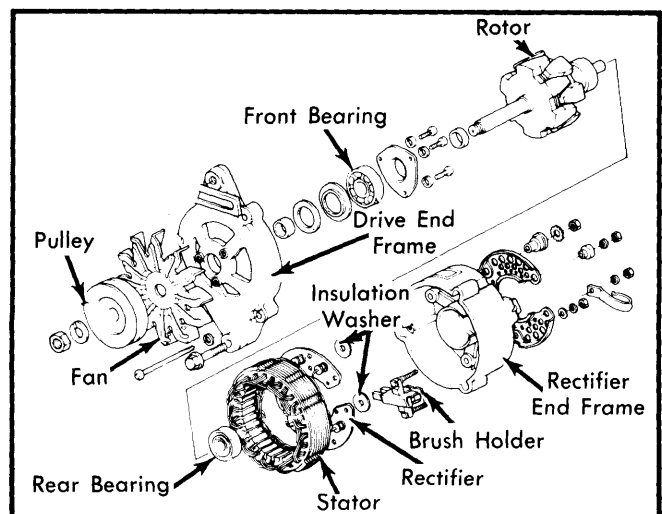


Fig. 4 Disassembled View of Nippondenso Alternator

PARTS REPLACEMENT

Brushes – Check for cracks and minimum length of .22" (5.5 mm). If damaged or worn beyond limit, replace brushes. Brushes should slide smoothly in holders. Install new spring when replacing brush. Solder brush wire keeping brush protruded length to .51" (13 mm). For heavy duty alternators, brush should protrude .73" (18.5 mm) from holder.

REASSEMBLY

1) Press brushes into holder against spring tension. Insert a retaining wire through access hole in rectifier and frame and into brush holder to prevent brushes from falling. Remove wire after assembly to end frame is completed.

2) Pack multipurpose grease into rear bearing and press bearing onto rotor shaft. Pack drive end bearing with grease and install in drive end frame. Install felt ring, cover and bearing retainer.

3) Ensure that drive end frame with rotor and rectifier end frame with stator are assembled in original alignment. Tighten body screws and remove brush retaining wire.