



Precision Parts

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LIVE WIRE

Welcome to the November 2007 issue of the PPR Live Wire.

The LiveWire is now digitally published, meaning that when we find technical information to offer that takes many pages, we are not restricted in regards to printing costs. This issue illustrates the benefit of the digital publishing world.

In this issue of the LiveWire, you will find:

Catalog News

News regarding the PPR 2008 catalog.
Page 2.

Technical

by Greg Stuart, PPR's engineering supervisor.
This month's Technical column addresses
DAS630, DAS510, and DAS941.
Pages 3 through 8.

Hot Stuff

DAS188 supersession. Page 9



2008 PPR Catalog

Precision Parts and Remanufacturing's 2008 Application catalog arrived in early November. If you are a PPR distributor and have not yet received your catalogs, please contact PPR's order desk to arrange shipment to your company. And as always, our website, www.pprok.com, has our latest catalog information.



Technical

DAS630

Warning G20 Infinity Owners Warranty VOID if due to overcranking Please READ BELOW

No. 1TB97-041A

Models: 1990 - 1997 Infinity G20

Subject: Engine cranks, but will not start or is hard to start

Condition: If your engine cranks but will not start or is hard to start, do not damage your starter by over cranking.

Do not crank your stater for longer than 10 seconds or damage may occur. Let the starter cool for 10 seconds before attempting to restart your vehicle.

This situation may be caused by small carbon deposits falling onto the intake and exhaust valve sealing surfaces which results in loss of compression.

Repair:

Please refer to service bulletin 1TB97-041A for repair of this. See the PPR website for the full text of this service bulletin. <http://www.pprok.com>

Starting Information for Customer

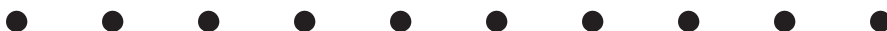
Short Driving Cycles - Q45, J30, I30 and G20

Modern multi-valve engines designed for efficient low-friction operation may sometimes experience carbon build-up on the valves after driving a very short duration (less than 1 minute). A hard start or no start incident may occur on the next starting attempt. If this pattern is observed, the vehicle can be started by following the cold weather starting procedure below.

Cold Weather Starting - All Models

During cold weather, Nissan suggests the following procedure to make starting the vehicle easier when this incident occurs. This procedure is a continuation of the procedure outlined in the owners manual and should be used to remedy a "No Start" condition when the ambient temperature is low.

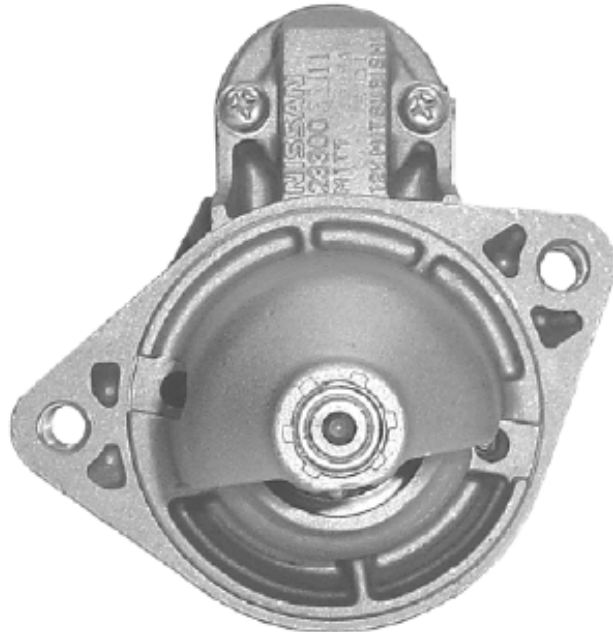
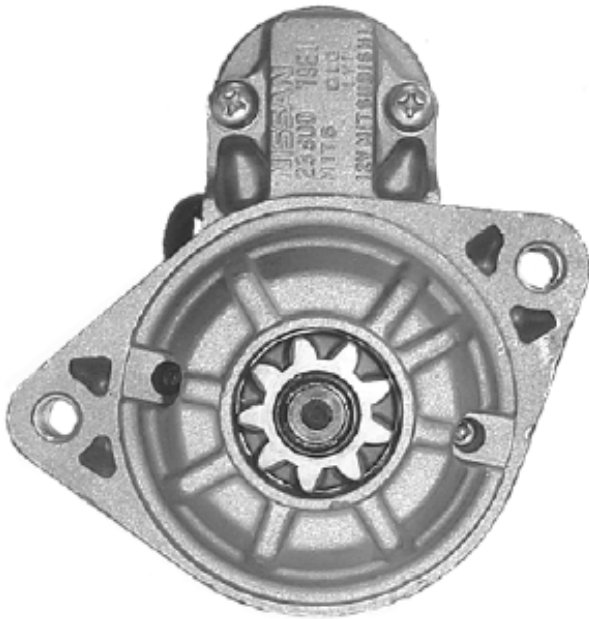
1. Depress the accelerator pedal approximately 1/3 of the way to the floor.
2. Hold the accelerator pedal in this position and crank the engine.
3. Once the engine has started, release the accelerator pedal. (Do not race the engine while warming it up.)
4. **If the engine does not start within 10 seconds, wait at least 10 seconds and repeat steps 1 through 3.**



Technical

Once the engine is started in cold weather conditions, run the engine for a minimum of 2 to 3 minutes before shutting it off. Starting and stopping the engine over a short period of time may make the vehicle more difficult to re-start. This type of usage may also adversely affect a vehicle's fuel economy.

Another factor that may affect a vehicle's starting performance in cold weather conditions is the viscosity or thickness of the engine oil that is used. An API SG or SH quality 5W-30 is the preferred engine oil to be used year-round for most models. In colder weather, oil that is rated 5W-30 will not thicken as much as a 10W-30 rated oil; this makes it easier to start the engine and maintain a stable idle during warm up.



Mitsubishi Open Supported DE frame

Mitsubishi Closed DE frame

As shown above, both Hitachi and Mitsubishi manufactured starters with 2 different DE frames, open supported, and closed DE frame types. The open supported DE frame units have 9 tooth drive pinions, and the closed DE frame units have 8 tooth drive pinions. Despite these differences, all versions of DAS630 interchange freely without complication.



DAS510

Application: 1990 - 1996 Nissan D21 truck with VG30E engine
 1990 - 1997 Nissan Pathfinder with VG30E engine

No. NTB04-011

Models: All models

Subject: This bulletin provides diagnostic procedure for the starting and charging systems.

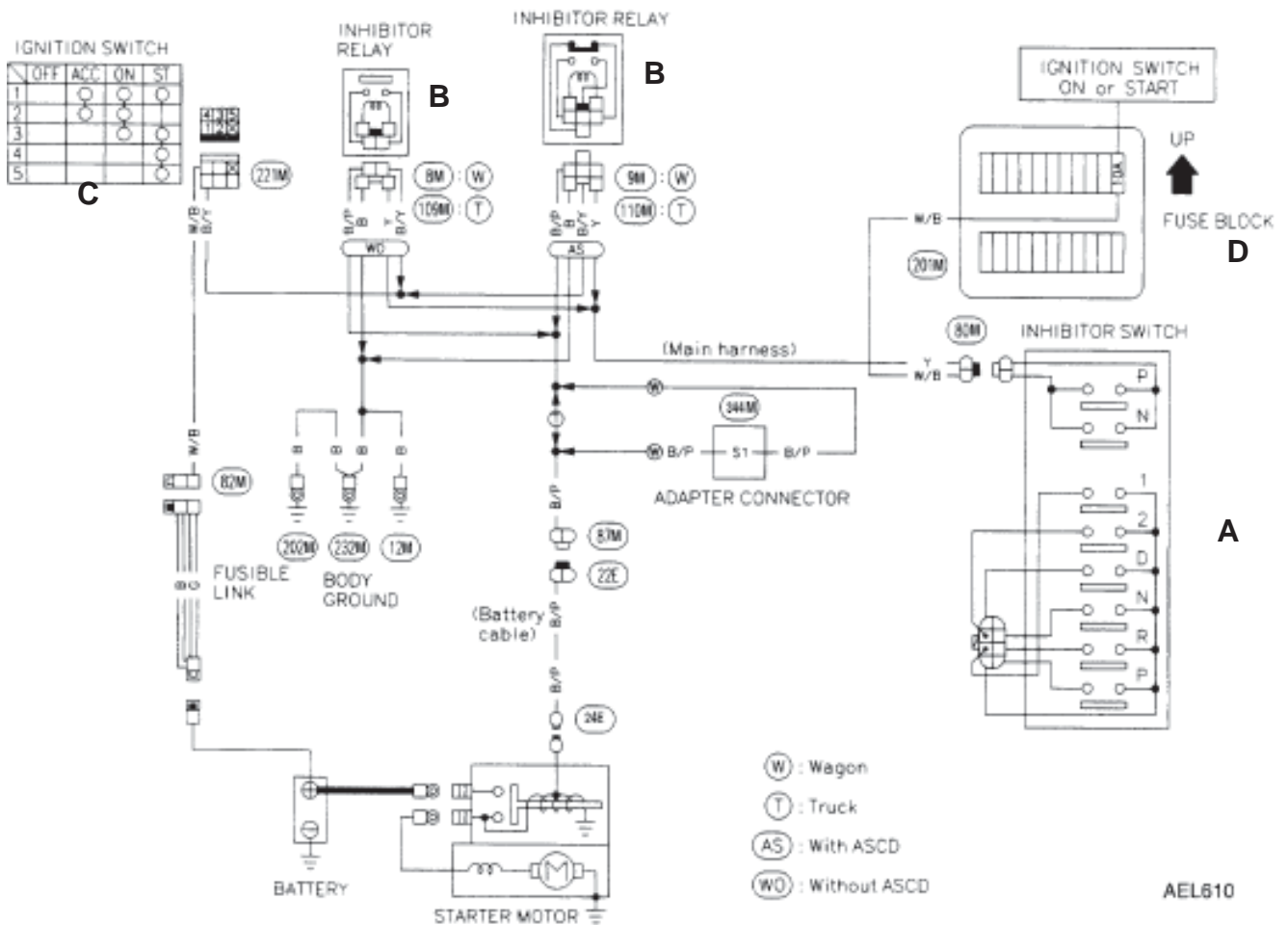
Starter Motor operation.

1. A/T Without Theft Warning System

With the inhibitor switch in PARK or NEUTRAL and the ignition switch in ON or START, battery voltage is ready to be applied to the starter motor through the inhibitor relay.

2. A/T With Theft Warning System

With the inhibitor switch in PARK or NEUTRAL and the ignition switch in ON or START, without the interrupt relay (theft warning relay) activated, battery voltage is ready to be sent to the starter motor through the inhibitor relay.



Items/Areas of Concern

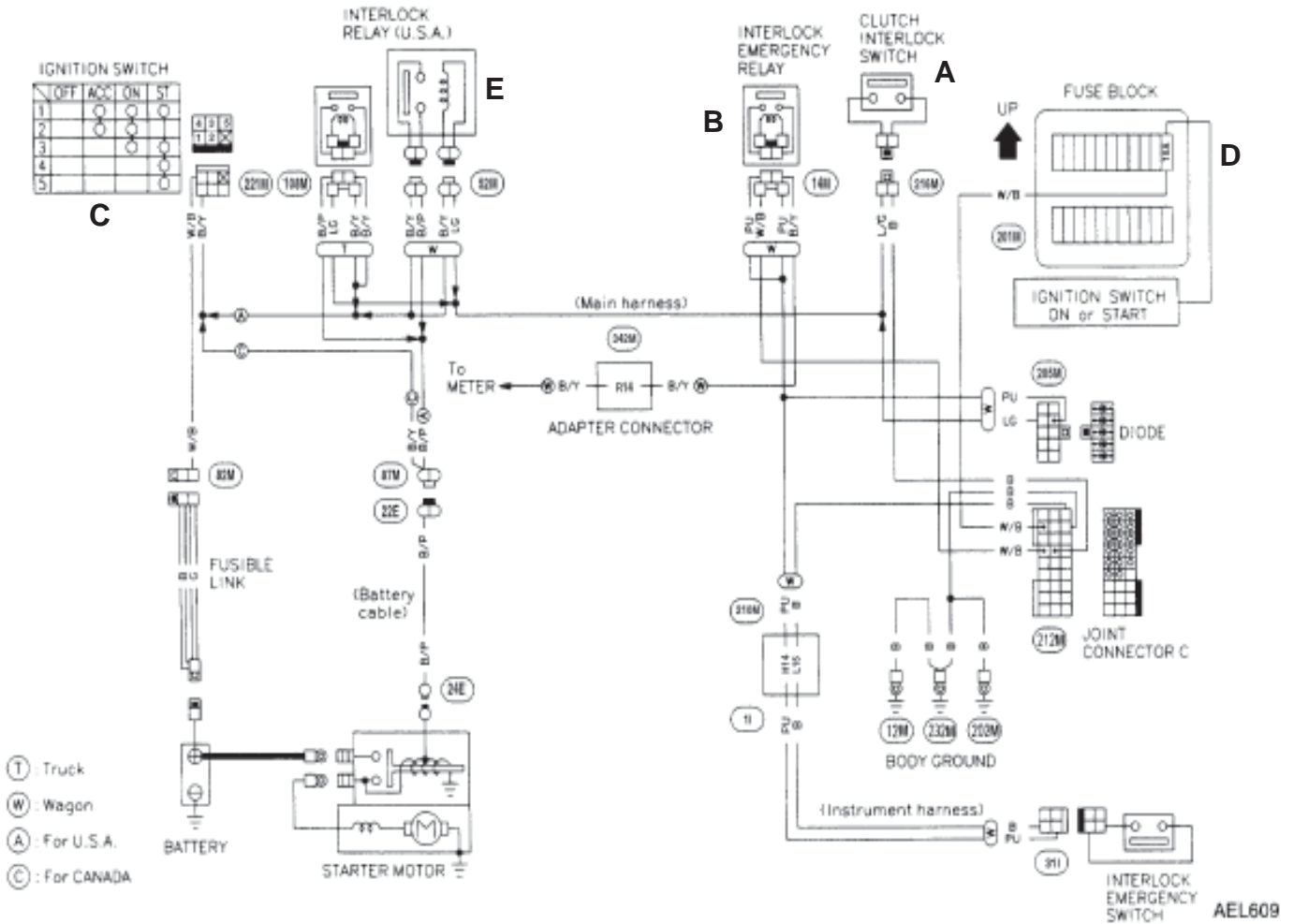
- A** Inhibitor Switch, check for correct operation
- B** Inhibitor Relays, check for correct operation
- C** Ignition Switch, check for correct operation
- D** Fuse, check for open circuit



Technical

3. M/T Without Theft Warning System With the clutch interlock switch in ON (clutch pedal depressed), battery voltage is ready to be applied to the starter motor through the interlock relay.

4. M/T With Theft Warning System With the clutch interlock switch in ON (clutch pedal depressed), without the interrupt relay (theft warning relay) activated, battery voltage is ready to be applied to the starter motor through the interlock relay.



Items/Areas of Concern

- A Clutch Interlock Switch, check for correct operation
- B Interlock Emergency Relay, check for correct operation
- C Ignition Switch, check for correct operation
- D Fuse, check for open circuit
- E Interlock Relay, check for correct operation

Technical

Voltage Drop Tests:

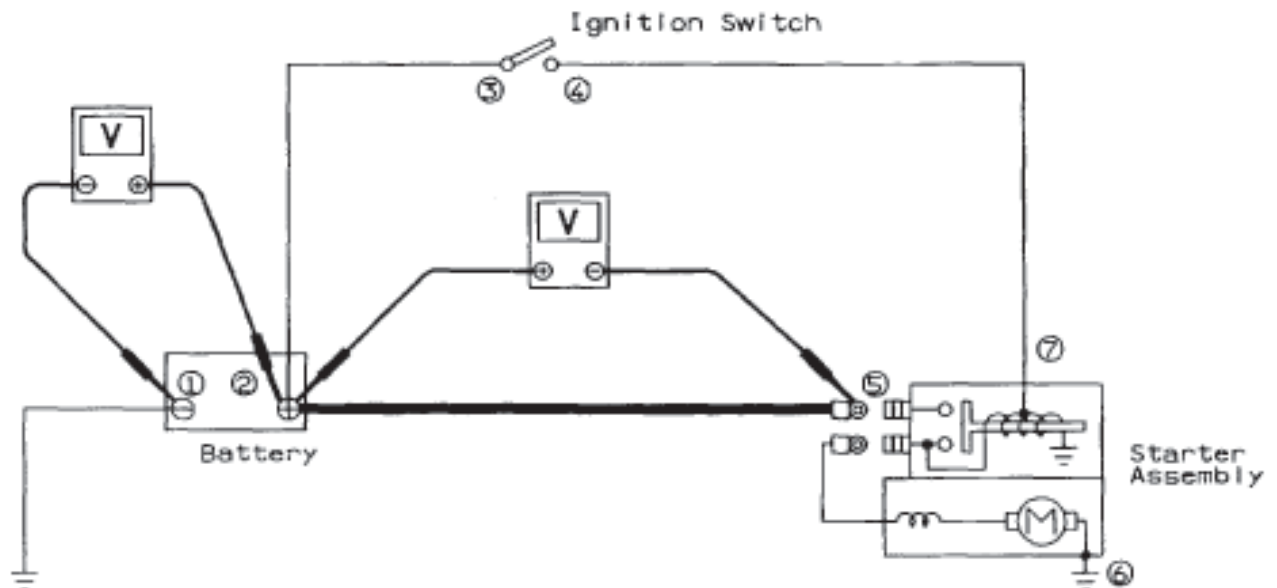
The following information contains techniques on how to perform a voltage drop test on a starter circuit. Performing a voltage drop test can aid the technician in locating and correcting starter circuit problems.

NOTE: To prevent the engine from starting during testing, remove the fuel pump fuse and bleed-off the fuel pressure from the fuel system.

Before performing the following test, visually inspect the starter, battery, cables and any other related components to ensure that the problem lies beyond a simple visual inspection. Let the following chart serve as a diagnostic guide in troubleshooting a starting circuit.

NOTE: System voltage is 12.2 volts unless otherwise noted. Values may vary depending on ambient or engine temperature, engine condition, oil viscosity, etc.

Test Points:



Voltage Drop Test Chart:

TERMINALS	VOLTS	AMPS	CONDITION
1(-) & 2(+)	12.8	-	no load
1(-) & 2(+)	11.2	-	while cranking
Between 2 & 5	-	60.0	while cranking
2(+) & 5(-)	0.2	-	while cranking
6(+) & 1(-)	0.15	-	while cranking
2(+) & 7(-)	0.82	-	while cranking
Between 4 & 7	-	20.0	while cranking
2(+) & 3(-)	0.17	-	while cranking
3(+) & 4(-)	0.18	-	while cranking
4(+) & 7(-)	0.29	-	while cranking

(+), (-): Tester probe for voltmeter

DAS941

Application: 1993 - 97, Nissan Altima

No. NTB96-088

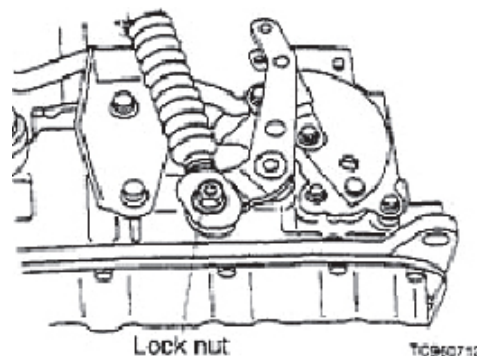
Models: 1993 - 96 Altima (U13) with automatic transmission (A/T)

Subject: Intermittent **No Crank** in the A/T "park" position

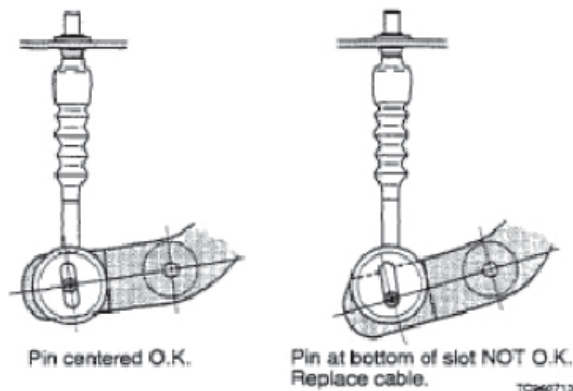
Condition: If a 1993-96 Altima vehicle with A/T has an intermittent no crank condition when the shift lever is in the "Park" position, the cause may be an A/T control cable that is approximately 2mm (0.08 in.) shorter than specified.

Repair:

1. With the engine off, place the A/T shift lever into "Park" position.
2. Raise the vehicle on a lift. Remove the lock nut that secures the A/T control cable to the A/T manual Shaft.



3. Check the position of the control cable slot, in relation to the pin on the manual shaft.
 - A. If the pin is centered in the slot then the A/T control cable is the correct length and no adjust/replacement is necessary.
 - B. If the pin is at the lower end of the cable slot as shown, you should replace the A/T control cable.



4. Lower the vehicle.

For instructions on replacing the A/T control cable, see the PPR website for the full text of this service bulletin. <http://www.pprk.com>



Hot Stuff

PPR part number DAS188 has been superseded to DAS520. While building DAS188 cores to DAS520 specifications does involve a significant parts cost increase for PPR, we are confident that the supersession will yield better starting performance on the vehicles involved.

The supersession involves the following interchange and application information.

<u>OE PN</u>	<u>Mfg.</u>	<u>New PPR PN</u>
23300-31U00	Nissan	DAS520
23300-31U01	Nissan	DAS520
23300-31U02	Nissan	DAS520
S114-801A	Hitachi	DAS520
S114-801B	Hitachi	DAS520
S114-801C	Hitachi	DAS520

NEW DAS520 Applications

<u>Car Mfg.</u>	<u>Model</u>	<u>Engine</u>	<u>Start Date</u>	<u>End Date</u>	<u>Notes</u>
Infiniti	I20	3000cc	03/95	06/99	VG30DE Engine
Nissan	Maxima	3000cc	02/94	06/01	VG30DE Engine

As we conclude another calendar year, PPR wants to take this opportunity to extend our best wishes to all of you for a fun and safe holiday season, and best wishes to you for the coming year!

