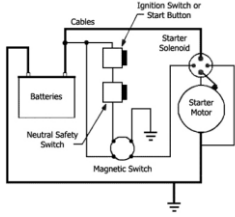


PBL Starting System Presentation



Auto Electrical & Engine Management
S.U.C.T.E. Name: _____

Project Based Learning Evaluating Starting Systems

For this project, you will research and describe the "starting system" of the car or light duty truck of your choice. You will list all of the components that make up the starting system, describe how it operates, and create a flow chart to diagnose a "no crank" condition. This information will be organized in any form (table above, memorandum, report) that you will present to the class. The class will rate each presentation and those groups that do best will receive 5 extra points. The presentation that will represent our class in a public forum to parents, industry partners, and other classes.

What vehicle will you be reporting on? _____

Will you be working with a partner(s)? What? _____

Instructor sign-off: _____

Be sure your presentation includes:

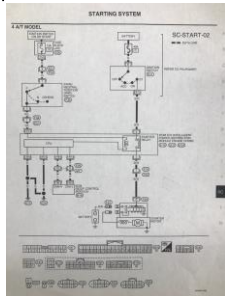
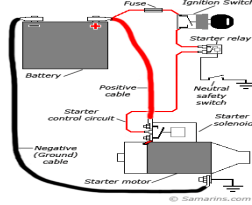
- _____ Components that are part of the starting system on your vehicle
- _____ Describe how the starting system operates (control side/power side)
- _____ Create a diagnostic flow chart or steps for a No Crank condition
- _____ Submit your presentation to your instructor for approval

Instructor sign-off: _____

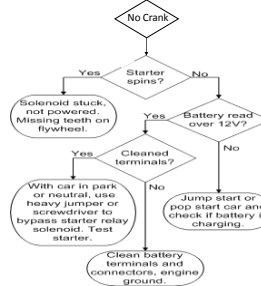
NISSAN Altima Starting System

Starting System Operation

When you turn the ignition key current flows through the CPU and starter relay. This closes the relay and solenoid contacts, connecting the positive battery cable directly to the starter motor. The starter motor pinion drives the flywheel and crankshaft until the engine starts and run on its own power.



NISSAN Altima Starting System



DIAGNOSTIC PROCEDURE 1

STARTING SYSTEM

Check Starter Motor Circuit

1. Check POWER SUPPLY TO STARTER MOTOR
 - 1. Remove the fuse cover.
 - 2. Check to make sure the engine is fully cranked and the fuse is not blown.
 - 3. Check the battery and alternator.
 - 4. Check the starter motor connection F27 terminal B connection is secure.
 - 5. Check voltage between battery and connection F27 terminal B.

Battery voltage should be:

OK: 12.0-12.5
 NG: 11.0 or below

If OK, check terminals between the battery and the starter motor for loose contact.

DIAGNOSTIC PROCEDURE 2

STARTING SYSTEM

Check Magnetic Switch Circuit

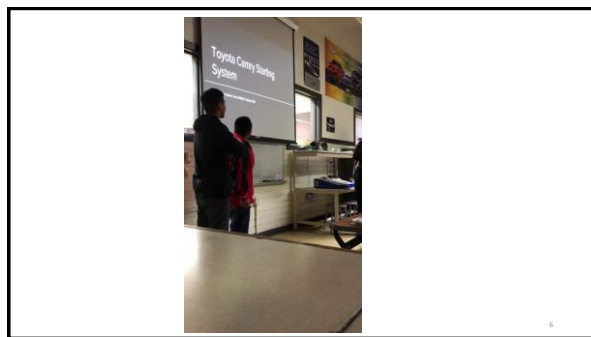
1. Check POWER SUPPLY FOR MAGNETIC SWITCH
 - 1. Remove the fuse jumper.
 - 2. Check to make sure the engine is cranked and the fuse is not blown.
 - 3. Turn the ignition switch ON.
 - 4. Disconnect battery main terminal F55.
 - 5. Check voltage between starter motor connection F28 terminal B and ground with a fused circuit tester.

Battery voltage should be:

OK: 12.0-12.5
 NG: 11.0 or below

If OK, check the following:

- WSA (Washer Solenoid), located in base and handle of the relay.
- WSA (Washer Solenoid) is not properly connected.
- Insulate engine from (F28) B.
- A terminal is tight or loose.



Auto Electrical & Engine Management
S.V.C.T.E. Name: _____

Project Based Learning Presentation
Evaluating Student Outcomes

Using this rubric, objectively rate the student's presentation.

Presentations:

Criteria	Excellent	Good	Fair	Poor	Comments
Project Topic/Components	Comprehensive view of the vehicle.	Some components were not mentioned.	Comprehensive view of the vehicle.	Some components were not mentioned.	
Opening Eye/Opening	Eye-opening of the opening of the opening system with the opening of the opening.	Eye-opening of the opening of the opening system with the opening of the opening.	Eye-opening of the opening of the opening system with the opening of the opening.	Eye-opening of the opening of the opening system with the opening of the opening.	
Content/Time by Day/Program/Process	Make sure you understand the content of the program.	Make sure you understand the content of the program.	Make sure you understand the content of the program.	Make sure you understand the content of the program.	
Information Delivery	The presentation was clear and easy to follow.	The presentation was clear and easy to follow.	The presentation was clear and easy to follow.	The presentation was clear and easy to follow.	
Final Quality	The presentation was clear and easy to follow.	The presentation was clear and easy to follow.	The presentation was clear and easy to follow.	The presentation was clear and easy to follow.	
Feedback/Engagement	The presentation was clear and easy to follow.	The presentation was clear and easy to follow.	The presentation was clear and easy to follow.	The presentation was clear and easy to follow.	

Comments: _____

Presentation Tracking

Student Name	Project Topic/Components	Opening Eye/Opening	Content/Time by Day/Program/Process	Information Delivery	Final Quality	Feedback/Engagement
Student 1						
Student 2						
Student 3						
Student 4						
Student 5						
Student 6						
Student 7						
Student 8						
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