



Countries:	CANADA, UNITED STATES, PUERTO RICO	Document ID:	IK0400019
Availability:	ISIS, Fleet	Revision:	2
Major System:	BRAKES	Created:	4/9/2007
Current Language:	English	Last Modified:	3/11/2014
Other Languages:	NONE	Author:	James Santos
Viewed:	7336		

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Coding Information

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Title: Air Powered (SAAR) Park Brake Troubleshooting (Service "P" Light Coming on)

Applies To: All HPV with Air Powered Park Brake (SAAR)

DESCRIPTION

The SAAR parking brake is an air powered parking brake for hydraulic brake vehicles. Unlike the hydraulic powered parking brake (SAHR) used on school buses, the air SAAR parking brake is controlled by the ESC.

SIGNALS TO WATCH

The screenshot shows the International Diamond Logic Builder software interface. The top menu bar includes File, Edit, View, Advanced Logic, Tools, Diagnostics, and Help. The status bar at the top right indicates "Simulating - 1HTWYAHTX7J542849". The main window has tabs for Select, Advanced Logic, Features, Faults, Connectors, Signals, Center Panel, Cluster, and Messages. The "Signals" tab is active, showing a table of signals. The table has columns for Signal, Pins, Signal Type, Value, Unit, Status, Watch, and a lock icon. The signals listed are Ignition, Accessory, Park_Brake_SAAR_Travel_Signal, Park_Brake_Switch_Signal, Service_Park_Brake_Ind_Cmd, and Persis_Serv_Park_Brake. The status bar at the bottom indicates "Simulator running at roughly 86.53% of real time" and "14.80 estimated seconds elapsed".

Signal	Pins	Signal Type	Value	Unit	Status	Watch	...
Ignition	1600-12	Digital Input, J1939...	✓	On/Off	0		
Accessory	1600-2	Digital Input, J1939...	✓	On/Off	0		
Park_Brake_SAAR_Travel_Signal	4004-16	Digital Input	✓	On/Off	0		
Park_Brake_Switch_Signal	1600-32	Digital Input	✓	On/Off	0		
Service_Park_Brake_Ind_Cmd		J1939 Output	□	On/Off	0		
Persis_Serv_Park_Brake			□	On/Off	0		

TROUBLESHOOTING

NOTE:

On the Pre-2007 trucks with ESC's, the Service P light would go out whenever the DTC went inactive. On the Post-2007 trucks with Body Controllers(BC), the Service P light will stay on even after the code goes inactive. So in order to get the light to go out, you need to clear all inactive codes.

1. Is this a problem with the auto-apply only? The auto-apply portion of this parking brake is hard wired and has nothing to do with the ESC or BC. There is a switch in the shifter that grounds a solenoid which dumps the air out of the SAAR can, allowing the spring to apply the park brake. See the circuit diagrams below.

2.

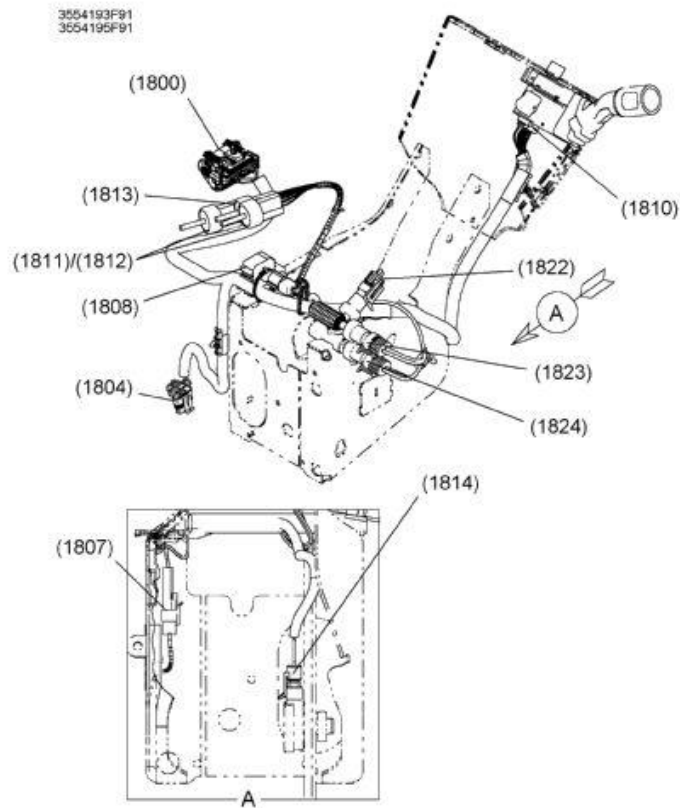
Does the parking brake actually work? Does it apply and release with the switch? If the parking brake is actually working with the switch, that tells you that the mechanical and air part of the system is working properly and you have an electrical problem.

3.

Monitor the [Park_Brake_SAAR_Travel_Signal](#) and [Park_Brake_Switch_Signal](#) in DLB. If the Service P light is coming on, it's because these 2 signals do not agree. You need to figure out which one is wrong and then troubleshoot that circuit.

CIRCUIT DIAGRAMS

- For Travel Switch wiring on pre-2007 [click here](#)
- For Travel Switch wiring on post-2007 [click here](#)
- For electrical circuit diagrams on pre-2007 [click here](#)
- For electrical circuit diagrams on post-2007 [click here](#)



Air Park Brake Switch Location (Steering Column Support View)

(1813) PARK INDICATION PRESSURE SWITCH
(1800) DRIVER CONTROL MODULE (DCM) CONNECTOR

For more component locations, [click here](#).

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