



Subject: [964] Re: dual failure-brake/differential
From: "Adrian Streater" <adrian.streater@rheintalflug.com>
Date: Mon, 20 Nov 2000

Dear David,

This is an old story with the C4. I will advise you to check the archives because I have posted all the stories, how this system works and how to troubleshoot this system. However I will give you an overview of how the system works. The US models work the same as the European models btw.

Firstly, both the PDAS and Brake Warn Lights should be on for around 30 seconds after every start. They both go off when the brake hydraulic system is fully pressurised. The C4 has a high pressure brake system which is controlled by a pressure accumulator which is kept up to pressure by the ABS Pump. The brake hydraulic system components include, Normal Brake system ABS PDAS or traction control system including the two differential locks, Longitudinal and Lateral.

Various valves, lines and solenoid operated valves, the whole system has to be sealed and pressurised. Have you changes Brake Pads recently or tried to change brake fluid or bleed your brakes. You must pressure bleed a C4 system, gravity bleeding, buddy bleeding and any other system results in similar problems. You can not use the Bosch Hammer but it takes some messing around so I recommend you visit your local Porsche repair facility. I say this a few times. It really saves time after checking the basics. Now the PDAS system or traction control works by locking either the rear diff when it detects loss of traction on one rear wheel or the centre lock when it detects a loss of traction of both rear wheels or both front wheels. The detection system is made up of two acceleration sensors and four wheel speed sensors. You will know if your right rear speed sensor is working because it controls the rear spoiler. If it goes up and down automatically at the correct speed then the sensor is okay. Now which lights are coming on because we must consider the ABS Warning light. If you have an ABS or PDAS system fail, the other system will automatically switch off in 30 seconds or less. So lets look at how the system should work for you the driver to see.

Start the engine PDAS and Brake Pressure Warn Lights ON, ABS NOT ON. After 30 seconds or so (if cold up to 60 seconds) these lights go out. No other lights should come on at all. If you are low on Brake Pressure, the Brake Pressure Warn Light, ABS Light and PDAS Warn Lights will come on. If you have a PDAS Warn Light the ABS will come on but NOT the Brake Pressure Warn Light. If you have an ABS failure the ABS warn light will come on followed by the PDAS Warn Light but not the Brake Pressure Warn Light.

**THESE SYSTEMS HAVE NOTHING TO DO WITH THE AWD FUNCTION
THIS IS TOTALLY MECHANICAL. THREE DIFFERENTIALS ARE FITTED**

REAR/CENTRE/FRONT ALL CONNECTED PURELY MECHANICALLY.

With that out of the way you need to look at what the failure can be. There are some things you can do yourself. First, find the PDAS/ABS Control Unit and pull off the connector to check for corrosion on the pins and on the connector. The control unit is on the LH side of the trunk, next to the spare tyre (looking from the front). A couple of hints. Pull off the connector and check it. Then with connector disconnected turn engine on. The warn lights should be on and stay on. Turn engine off, remove power, reconnect connector (if no damage evident) and then turn engine on again and make sure system works correctly, lights on and then 30-60 seconds later the lights go out. You really need to get the Bosch Hammer onto this system. Unless you know exactly what you are doing only the Bosch hammer can help and only your local Porsche dealer will have one of these. The common faults are the Control Unit, if PDAS and ABS Warn lights are on all the time and cannot be reset by removing power. Corrosion on the connectors damaging the pins which cause an intermittant problem. Mechanical problem which causes the lights to come on whilst driving.

Most common problem is a worn differential lock. Speed Sensor problem, normally will show up after 20 seconds driving or when you reach 40Klms/hr. I tend to suspect either an damaged control unit or a mechanical problem. If this C4 has been on the track or at DEs the diff locks would be my first place to start. You need to catalogue the faults, which lights actually come on and work from there. If these lights are on it is a pain but no problem. You have only lost Traction Control and ABS. You normal brakes will work fine and you still have FULL AWD.

I hope this helps you, but I recommend the Bosch Hammer unless you can see an obvious fault. The speed sensor wiring should be inspected on each axle as well because they are known to corrode and break. One thing you can do is on a straight section of road, stop, turn the diff locks switch in the centre console to the right and lock the diffs. The yellow indicator light will be flashing. Both diffs will now be locked. Drive off, steering will be tough, if the PDAS and ABS warn lights come on and the diffs unlock this indicates an mechanical failure of one of the locks. If the systme switches off at 40Klms/hr and the PDAS ABS stay off, then it confirms to me that you do not have a mechanical failure in the diff lock system, check your owners manual if you are not sure how the traction control system can be activated.

Please check the archives as well,

Ciao,
Adrian
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