

Diagnosis – Complaint Related Diagnostic Chart

⚠ WARNING!

Life threatening injuries possible due to vehicle slipping or toppling off while on lift.
Prior to lift vehicle completely (wheels still in contact with floor), ensure that the vehicle is centered within the lift columns and lift arm supports are correctly placed onto the vehicle contact points.


Preparation for Test:

1. Review section 0, 11, 21, 22, 23
2. Review Important Data Charts on pages 13/2, 13/3, 13/4

Complaint/Problem	Possible cause	Test step/Remedy ¹⁾
ESP MIL (A1e42) or ABS MIL (A1e17) illuminates with engine running.		Read DTC memory, 12
BAS/ESP MIL (A1e47) or ABS MIL (A1e17) illuminates while driving and does not go out		Read DTC memory, 12
ESP MIL (A1e42) or ABS MIL (A1e17) illuminates while driving and then goes out	Vehicle system voltage < 11 V, too many electrical consumers in use.	Check generator (G2), Read DTC memory, 12
ESP MIL (A1e42) or ABS MIL (A1e17) does not illuminate with ignition turned on	Lamp, Wiring.	Read DTC memory, 12 Read DTC memory for instrument cluster, using HHT
ABS MIL (A1e17) comes on with engine running after brake test or dynamometer use	Implausible wheel speed signal due to different rpm at front and rear axles.	Read, erase DTC memory 12
ESP MIL (A1e42) illuminates after the following causes (see Possible Causes) and upon DTC read-out using the HHT, the DTC C1142 is displayed	Driving through steep turning curves, Vehicle collision, Vehicle spin-out on slippery road surfaces, as a result: the DTC C1142 can be ignored.	Read, erase DTC memory

¹⁾ Observe Preparation for Test, see 22.

Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy ¹⁾
<p>ESP MIL (A1e42) illuminates and after reading-out the DTC's via the HHT, the DTC C1142 and at least one additional DTC between C1300 and C1311 is/are displayed.</p>	<p>Short circuit in more than one of the solenoid valves of the hydraulic unit or short in the wiring harness</p> <p> If two of the solenoid valves have a short circuit, then the voltage supply to all the solenoid valves is shut-off.</p>	<p>Check all the solenoid valves of the hydraulic unit along with the corresponding wiring for solenoid valves for any short circuits.</p>

¹⁾ Observe Preparation for Test, see 22.

Important Data via CAN from ABS Control Module

CAN signal	Type of Information
ABS/ETS/ESP status	<ul style="list-style-type: none"> • Brake pad wear sensor indicator lamp • Parking brake warning lamp • ABS MIL • System fault or diagnostics • Stop lamp switch (S9/1): Brake pedal not pressed, Brake pedal depressed, No signal • Cruise control OFF • ABS/ETS/ESP functions OK • ABS/ETS/ESP function OFF
Left front wheel speed signal	<ul style="list-style-type: none"> • Wheel rpm
Right front wheel speed signal	<ul style="list-style-type: none"> • Wheel rpm
Left rear wheel speed signal	<ul style="list-style-type: none"> • Wheel rpm
Right rear wheel speed signal	<ul style="list-style-type: none"> • Wheel rpm
Left front wheel speed signal for cruise control	<ul style="list-style-type: none"> • Wheel rpm
Right front wheel speed signal for cruise control	<ul style="list-style-type: none"> • Wheel rpm

Important Data via CAN from ESP/SPS Control Module (N47-5)

CAN signal	Type of Information
ABS status	<ul style="list-style-type: none"> • Cruise control function OFF • ABS/ETS/ESP functions OK • ABS/ETS/ESP function OFF • System fault or diagnostics
ETS/ASR/ESP status	<ul style="list-style-type: none"> • Brake pad wear sensor indicator lamp • Parking brake warning lamp • ABS MIL • ETS/ASR/ESP MIL • ASR/ESP OFF MIL • Wheel spin or ASR/ESP active (MIL blinks) • Stop lamp switch (S9/1): Brake pedal not pressed, Brake pedal depressed, No signal • ASR request: "2nd gear start" • ASR request: "hold in gear" • Rapid ASR control function • Increase in: engine braking regulation (EBR) • Decrease in: engine braking regulation (EBR) • Cruise control OFF • ASR functions OK • ABS/ASR function OFF • System fault or diagnostics

Important Data via CAN from ESP/SPS Control Module (N47-5) (continued)

CAN signal	Type of Information
Left front wheel speed signal	<ul style="list-style-type: none">• Wheel rpm
Right front wheel speed signal	<ul style="list-style-type: none">• Wheel rpm
Left rear wheel speed signal	<ul style="list-style-type: none">• Wheel rpm
Right rear wheel speed signal	<ul style="list-style-type: none">• Wheel rpm
Left front wheel speed signal for cruise control	<ul style="list-style-type: none">• Wheel rpm
Right front wheel speed signal for cruise control	<ul style="list-style-type: none">• Wheel rpm

Important Data to the ESP/SPS Control Module (N47-5) via CAN

CAN signal	Type of Information	From which control module
Engine status	<ul style="list-style-type: none"> • Engine rpm 	<ul style="list-style-type: none"> • Engine control module
Engine status	<ul style="list-style-type: none"> • Required engine torque for traction control 	<ul style="list-style-type: none"> • Engine control module
Engine status	<ul style="list-style-type: none"> • Atmospheric pressure 	<ul style="list-style-type: none"> • Engine control module
Engine status	<ul style="list-style-type: none"> • Acknowledge engine moment request 	<ul style="list-style-type: none"> • Engine control module
Engine status	<ul style="list-style-type: none"> • Accelerator Pedal value 	<ul style="list-style-type: none"> • Engine control module
Engine status	<ul style="list-style-type: none"> • Indicated engine moment 	<ul style="list-style-type: none"> • Engine control module
Engine status	<ul style="list-style-type: none"> • Engine friction moment 	<ul style="list-style-type: none"> • Engine control module
Engine status	<ul style="list-style-type: none"> • Maximum engine moment 	<ul style="list-style-type: none"> • Engine control module
Vehicle version code	<ul style="list-style-type: none"> • Model • Chassis • Engine • Transmission 	<ul style="list-style-type: none"> • Engine control module
Transmission status	<ul style="list-style-type: none"> • Actual gear • Requested gear 	<ul style="list-style-type: none"> • Electronic transmission control (ETC)
Transmission status	<ul style="list-style-type: none"> • Rear Drive • All wheel drive 	<ul style="list-style-type: none"> • Electronic transmission control (ETC)
Transmission status	<ul style="list-style-type: none"> • Initial shift request • Transmission in emergency limp-home-mode 	<ul style="list-style-type: none"> • Electronic transmission control (ETC)
Transmission code	<ul style="list-style-type: none"> • Large transmission • Small transmission 	<ul style="list-style-type: none"> • Electronic transmission control (ETC)
Transmission status	<ul style="list-style-type: none"> • Torque converter lock-up: "locked" • Torque converter lock-up: "unlocked" • Torque converter lock-up: "slip" 	<ul style="list-style-type: none"> • Electronic transmission control (ETC)