Diagnosis – Complaint Related Diagnostic Chart

⚠ WARNING!

Life threatening injures possible if following protective measures are not followed.

⚠ CAUTION!

Risk of severe injury, due to uneven placement of lift arms/lift arm supports, as well as the support and lifting of vehicle components, there is the possibility of the vehicle slipping while on the lift.

⚠ CAUTION!

Danger of vehicle toppling off of lift due to irregular weight distribution after the removal of components and axles.

Protective measures:

- Center vehicle (fore, aft and across) properly on both sides of the lift columns.
- When supporting components while the vehicle is on a lift, ensure that the vehicle is not lifted from the lift arms, therefore secure vehicle to the lift arms as well.
- Ensure that the lift arm supports are even and parallel to each other when lifting the vehicle.

Protective measures continued:

- Prior to lift vehicle completely (wheels still in contact with floor), ensure that the lift arm supports are correctly placed unto the vehicle contact points.
- Prior to removing the axles or components from the vehicle while on the lift, secure the vehicle to the lift arms or place sand bags inside the vehicle to ensure proper weight distrubution to prevent toppling of the vehicle from the lift.
- Basically obey all the rules/guide lines regarding the lifting of vehicles as stated in the operator's manual by the lift manufacturer.

Control Module Adaption:

After the swap of the ESP/SPS/BAS or ESP/BAS control module (N47-5), it is important to perform the adaption procedure, since the control module must learn the values for the BAS solenoid valves. See HHT menu.

Diagnosis – Complaint Related Diagnostic Chart

Preparation for Test

1. Review 11, 13, 20, 21, 23

Complaint/Problem	Possible cause	Test step/Remedy [1]
Communication via the HHT is not possible.		23 ⇒ 1.0, 23 ⇒ 2.0
BAS/ESP MIL (A1e47) or ABS MIL (A1e17) **do not** illuminate **when ignition switch is turned ON**.	Lamp(s), instrument cluster (A1)	Readout DTC's for ESP control module, using HHT, See 12 Readout DTC's for instrument cluster (A1).
BAS/ESP MIL (A1e47) or ABS MIL (A1e17) **illuminates while driving and then goes out.**	Vehicle system voltage < 10 V briefly.	Check generator (G2), Read out DTC's for ESP control module, using HHT, See 12
ESP warning lamp (A1e41) **briefly blinks while driving**.	ESP function to stabilize vehicle while driving has occurred.	Read out DTC's for ESP control module, using HHT, See 12
BAS/ESP MIL (A1e47) or ABS MIL (A1e17) will **illuminate when the engine is running or while driving and will not go out.**	CA communication interrupted, component fault.	Read out DTC‘s for ESP control module. See 12
ABS MIL (A1e17) **illuminate with engine running after brake test or dynamometer use.**	Nonplausible rpm signal due to different rpm at front and rear axles. Prior to running vehicle on dynamometer activate the diagnostic tools of dynamometer test program within ESP/SPS control module (N47-5).	Readout DTC's for ESP control module and erase DTCs as necessary. See 12

[1] Observe Preparation for Test, see 22.

Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy 1)
BAS/ESP MIL (A1e47) **illuminates after driving and after readout of DTC memory, the DTCs C1142 and C1120 are set.**	Driving through steep turning curves, Vehicle collision, Vehicle spin-out on slippery road surfaces. i In this case the DTCs can be ignored.	Readout DTC's for ESP control module and erase DTCs as necessary. See 12

1) Observe Preparation for Test, see 22.

Important CAN data outputs *FROM* the ESP control module (N47-5)

CAN signal	Information
ABS/ESP status	• Increase or reduction of specified engine torque
ABS/ESP status	• Transmission shift requirements
ABS/ESP status	• Activation of MIL and warning lamps: ABS, BAS, ESP Signals from lamps indicate: faults or proper function
ABS/ETS/ESP status	• Stop lamp switch (S9/1): Brake not operated Brake operated No signal
ABS/ETS/ESP status	• Cruise control function OFF
Left front wheel vehicle speed signal (VSS)	Wheel speed
Right front wheel vehicle speed signal (VSS)	Wheel speed
Rear left wheel vehicle speed signal (VSS)	Wheel speed
Rear right wheel vehicle speed signal (VSS)	Wheel speed
Left front wheel speed signal for CC	Wheel speed
Right front wheel speed signal for CC	Wheel speed

Important data *TO* the ESP control module (N47-5) via CAN

CAN signal	Information	From control module
Engine status	• Pedal value	• Engine control module
Vehicle code	• Model • Version code • Engine • Transmission	• Engine control module
Engine status	• Engine rpm	• Engine control module
Engine status	• Indicated engine torque	• Engine control module
Engine status	• Maximum and minimum engine torque for current operational point	• Engine control module
Engine status	• Engine friction torque	• Engine control module
Engine status	• Engine torque as specified by driver	• Engine control module