STAR Case

Case Number: S1408000384

Release Date: 02/22/2020

Symptom/Vehicle Issue: Intelligent Battery Sensor-IBS Installation, Battery Charging Message, Start Stop Charging Warning Lamp Illuminated On Stop Start Equipped Vehicles

Discussion: Installation process for IBS sensor **and proper charging batteries**.

Note: START/STOP will be unavailable if battery SOC (state of charge) is not in the proper range. The SOC state is monitored by the PCM and BCM. Battery temperature and SOC (State of charge are critical) see chart for start stop engine on conditions.

Display example on a stop start vehicle

- **A common misdiagnosis is Battery light illuminated, the IBS has NOTHING to do with this Battery light and does not cause MIL Lights.**
- A Battery Light illuminated **IS** a charging system issue, not an IBS issue.
- The IBS measures voltage, current and temperature of the battery and **only** provides this information back to the BCM module.

STAR Case

- **The IBS DOES NOT NEED TO BE REPLACED with NEW OR RECHARGED batteries.**
- The IBS should only be replaced, if a DTC for the IBS is active.
- The IBS maintains a running record of Amp Hours received and Amp Hours released.
- Proper charging In-Vehicle systems is not an issue.
- Please note to charge through the IBS or tie negative clamp to body/engine ground.
- Customers, Dealers, Mechanics, and Engineers require battery charger or tester (i.e. Midtronics GR-8 Negative clamp) be connected only onto the IBS module (B-) Negative battery post.
- Connecting the battery charger or tester onto the (B-) battery post creates "blind charging".
- **"DO NOT BLIND CHARGE".**

Improper IBS Charging

Do not put Negative clamp on IBS Pole clamp

Do not remove IBS for charging

This document does not authorize warranty repairs. This communication documents a record of past experiences. STAR Center Online does not provide any conclusions about what is wrong with the vehicle. Rather, it captures all previous cases known that appear to be similar or related to the vehicle symptom / condition. You are the expert, and you are responsible for deciding on the appropriate course of action.

STAR Case

- IBS learning needs 1-2 key cycles and 2-4 hours of quiescent/sleep time (no charge in or no charge out of the battery). Quiescent (Sleep) time is defined as <250mA +-50mA. (no added loads).
  - **If ESS is still unavailable, review ESS parameters from wiTech2.**

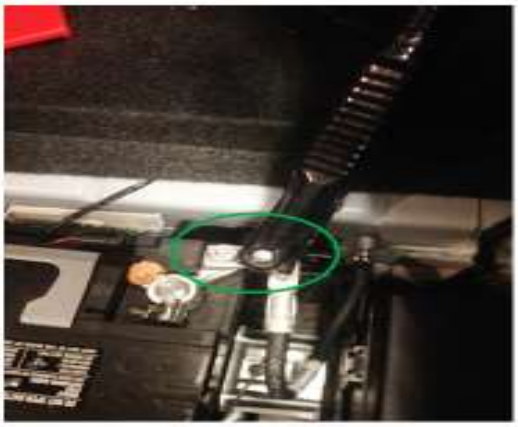
- If the installation of a new IBS is required, it be should installed onto a fully charged battery and follow the same learn procedure above.

  - What defines an IBS failure before returning to Supplier:
    - Active IBS DTC which does not clear.
    - U113E
      (note: this DTC can mean, blown 5A PDC fuse or broken (pinched) +12V or LIN wire or failed BCM (LIN 1).

See below proper connections for Proper battery charging.

Proper EBS Charging

Negative Clamp on Ground side as seen below
Engine Ground or Jump posts are also acceptable

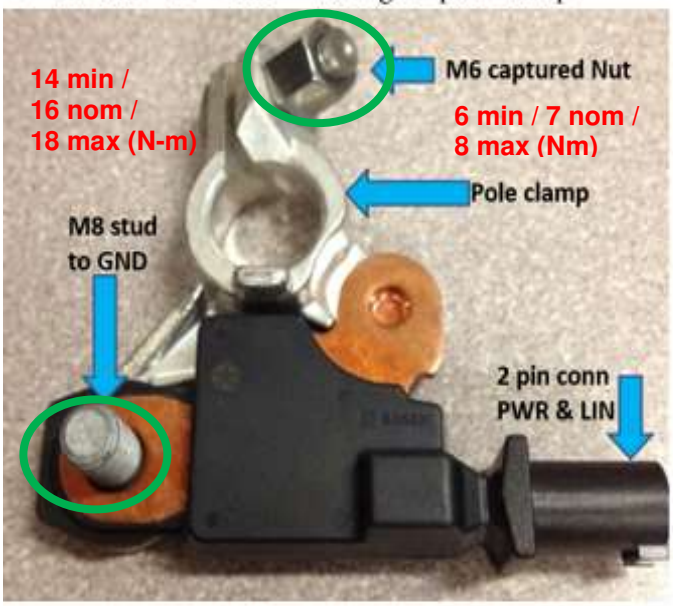


STAR Case

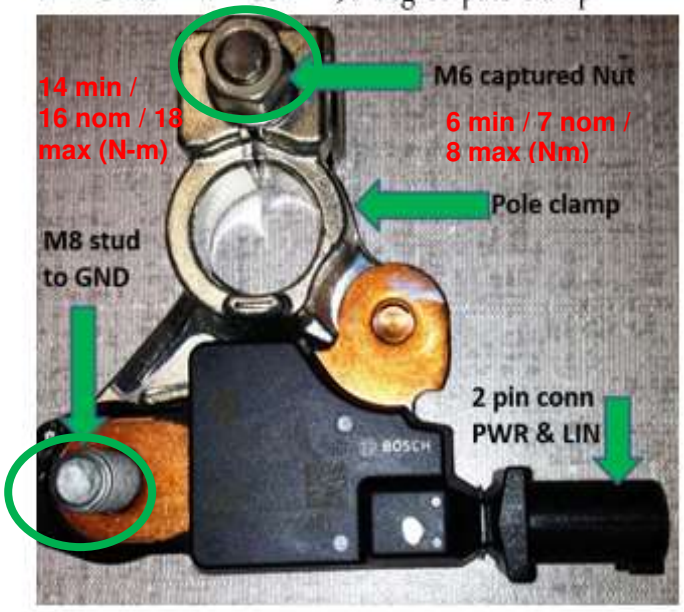
Intelligent Battery Sensor Training

Introduction of Intelligent Battery Sensor 2.0

➢IBS 2.0 – 2nd Gen – 45 degree pole clamp



➢IBS 2.0 – 2nd Gen – 90 degree pole clamp



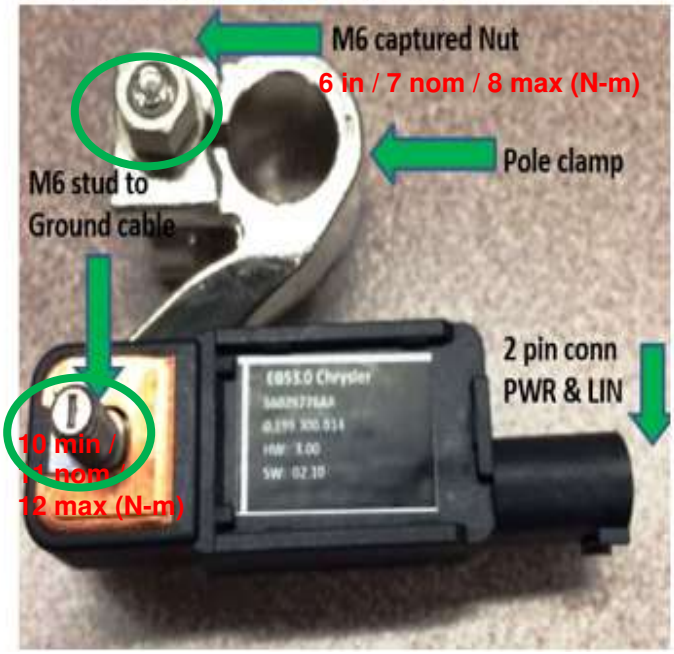
STAR Case

Intelligent Battery Sensor Training

Introduction of Intelligent Battery Sensor 3.0

➢ Battery Sensor 3.0 – 45 degree pole clamp

➢ Battery Sensor 3.0 – 90 degree pole clamp



STAR Case

(Example) Stop-start Engine ON conditions:

1. Gear and brake switch conditions valid.

2. Completed initial engine key start.

3. Occupant sensed allowing engine start conditions.

4. **OBD conditions** met allowing engine start conditions SOC (State Of Charge) values found under OBDII monitors using wiTech 2**.**

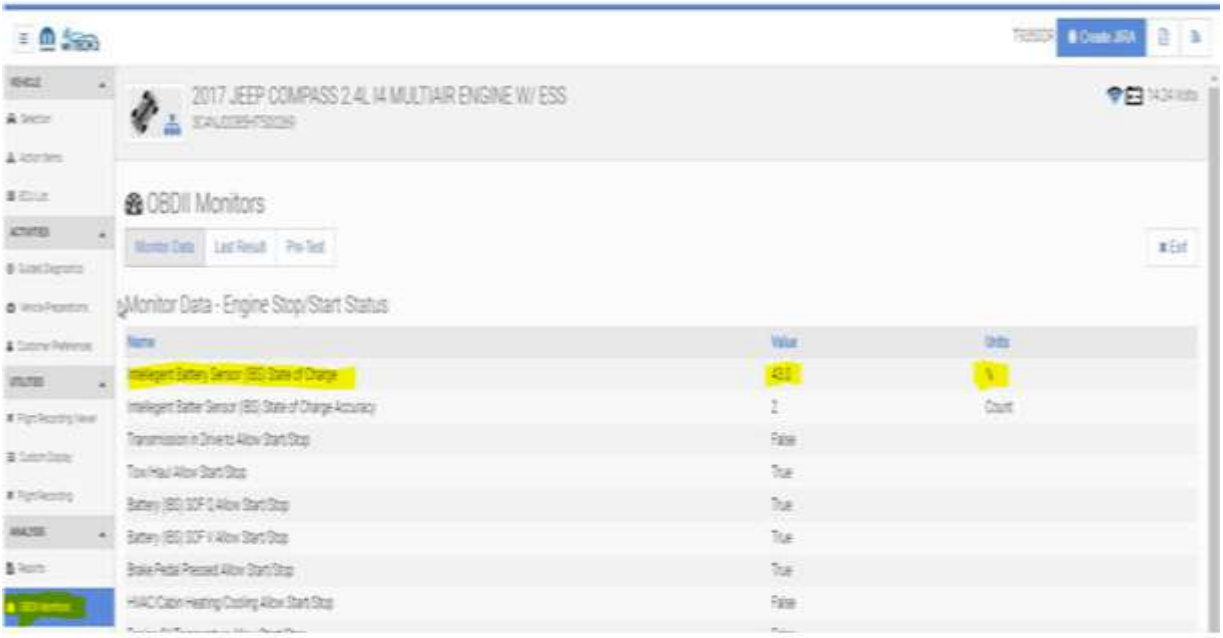
5. Vehicle hood is closed

Engine OFF conditions:	Max	Min	True/False
1. Valid target gear and brake switch state combination	NA	NA	True
2. Threshold vehicle speed exceeded or timeout since last shift out of reverse	NA	NA	True
3. Transmission ready	NA	NA	True
4. Tow Haul mode not active	NA	NA	True
5. 4WD Low mode not active			True
6. Starter cool down condition met after reaching max allowable consecutive restarts			True
7. Ambient temperature within defined range	-10F	110F	
8. Engine coolant temperature within defined range	40C	110C	
9. Catalyst temperature within defined range	150F	950F	
10. Battery temperature within defined range	-256F	256F	
11. Barometric pressure greater than threshold		60KPa	
12. Brake booster delta pressure less than threshold		20kPa	
13. Steering wheel angle within defined range			
14. Steering wheel angle gradient within defined range			
15. Steering column torque within defined range			
16. Fuel level greater than threshold			
17. Vehicle hood closed			
18. No throttle request			
19. No engine stop disable request by HVAC			

STAR Case

20. Battery state of charge greater than threshold		65%	
21.			
22. Battery voltage state of function greater than threshold		8 volts	
23. Battery health state of function greater than threshold		40 ah	
24. Engine speed less than threshold	1000 rpm		
25. Vehicle speed less than threshold	0		
26. Threshold vehicle speed exceeded since last engine start	8 mph		
27. Occupant sensing allow engine stop condition met			True
28. OBD allow engine stop condition met			True
29. Engine runtime greater than threshold	3 seconds		
30. Stop-Start enable switch activated by driver			True
31. Flex fuel learn mode not active			True
32. ABS brake event not present			True

(Example) - Dealer wiTech2 Screen:



This document does not authorize warranty repairs. This communication documents a record of past experiences. STAR Center Online does not provide any conclusions about what is wrong with the vehicle. Rather, it captures all previous cases known that appear to be similar or related to the vehicle symptom / condition. You are the expert, and you are responsible for deciding on the appropriate course of action.