

SERVICE BULLETIN

Reference number:	SB-07-1316V2	Issued: 28th September, 2020
Subject:	AMShift Information for Vantage	
Model(s):	Vantage	
VIN Range:	All	
Applicable to:	All Dealers	
Distribute to:	After Sales Manager Executive Manager Service Manager Sales Manager	Warranty Staff Technician(s) Parts Staff

Reason for Version 2 of this Service Bulletin

The changes to this document have a black line against them in the left margin. Please destroy all copies of SB-07-1316 and replace them with Service Bulletin SB-07-1316V2.

Reason for this Service Bulletin

A seven-speed manual transmission is offered as an option for Vantage. This Service Bulletin introduces the technical aspects of this transmission.

Manual Transmission with AMShift

The seven-speed manual transmission features a dog-leg configuration. This makes sure that the gears used most frequently are aligned in a double 'H' pattern like a conventional six-speed manual.

The seven-speed manual transmission also includes the AMShift feature. This feature lets the driver change gear without the need to lift their foot off the accelerator pedal when a gear change is made. This can also simulate the technique of heel-and-toe downshifts and allow full-throttle upshifts under acceleration.

The transmission is also compatible with the vehicle Stop/Start system.



Workshop Procedure

When the Engine Management System learns and stores the clutch “bite” point, it adapts this point as the clutch components wear. When a new clutch is installed, or existing components are removed and installed again, the adaptations must be learned again to give the new position of the clutch components. When you do the clutch learn procedure, this gives the system an accurate position to calculate when and how much engine torque is transmitted to the driveline. This is important for the AMShift speed matching function to work correctly.

CAUTION: WHEN ANY WORK RELATED TO THE CLUTCH IS COMPLETED, YOU MUST ALWAYS PERFORM THE AMDS PROCEDURE “CLUTCH ADAPTATION AMSHIFT”. IF YOU DO NOT, THIS MAY CAUSE DAMAGE TO THE TRANSMISSION.

As AMShift uses input signals from the clutch system, the **clutch adaptation values and learn procedures** must be done when any work related to the clutch is completed. This includes installation of new parts and when the same parts are installed again, this includes the parts that follow:

- Clutch removal or related hardware. This includes when you bleed the slave cylinder or master cylinder.
- Clutch pedal sensor.
- Pedal box assembly.
- Driveline (Torque tube, drive shaft, and transmission).
- When you have replaced the Engine Management System (EMS) module.
- Sensors or switches for the AMShift system.

Clutch Adaptation Procedure

1. Do an AMDS Operation Check (refer to Workshop Manual procedure 00.06.AD).

Note: There must be no Diagnostic Trouble Codes (DTCs) stored in the EMS before you proceed to the next step. If a DTC is found this must be repaired before you continue.

2. Open the Data Monitor in AMDS2 (refer to user guides).
3. Set the Data Monitor to read DID 9a0a (Clth_flgLrngRst) in ECM_V8.
4. Set the ignition to position ‘II’.
5. Fully push and release the brake pedal at least three times. Push and hold the brake pedal down after the last push.
6. Fully push and hold the accelerator pedal down.

Note: The clutch pedal must not be pushed.

7. Press the AMShift button to complete the procedure.

Note: The red warning triangle and the message ‘AMShift Service Required’ will show in the instrument cluster when the reset procedure is complete. The DID Clth_flgLrngRst will momentarily go to “1” to show the reset is complete.

Clutch Learn

CAUTION: MAKE SURE THAT THE CLUTCH ADAPTATION PROCEDURE HAS BEEN COMPLETED BEFORE YOU DO THE CLUTCH LEARN PROCEDURE.

1. Do an AMDS Operation Check (Refer to Workshop Manual procedure 00.06.AD).

Note: There must be no DTCs stored in the EMS before you proceed to the next step. If a DTC is found this must be repaired before you continue.

2. Set the ignition to position 'II'.
3. Start the engine and let the engine idle.
4. Fully push and slowly release the clutch pedal two times. The pedal must be moved to its maximum and minimum positions each time.

Note: The clutch pedal does not need to be held down after the second push.

5. Set the ignition to off.
6. Make sure the EMS has fully shut down – leave the vehicle locked with the key away from the vehicle for more than 15 minutes.
7. After 15 minutes, set the ignition to position 'II'.
8. The clutch is now adapted and the message "AMShift Service Required" will be removed from the instrument cluster. The AMShift feature will be selectable with the AMShift button.
9. Do an AMDS Operation Check (refer to Workshop Manual procedure 00.06.AD).

Note: There must be no DTCs stored in the EMS before you proceed to the next step. If a DTC is found this must be repaired before you continue.

10. Set the ignition to ON and do an AMDS Operation Check (refer to Workshop Manual procedure 00.06.AD). The clutch learn will be successful if DID \$9A\$09 / Clth_flgRngAdpnDone = true.

Neutral Sensor Adaptation

Note: This procedure only needs to be done if a new ECM is installed or new software is flashed to the ECM.

1. Make sure the engine is set to ON.
 2. Make sure the Stop/Start system is set to off.
 3. Test drive the vehicle and do 3 idle phases in neutral for approximately 10 seconds.
- Note: The clutch pedal must not be pressed when you do the 3 idle phases.**
4. Drive the vehicle between each idle phase at greater than 10 km/h at varied speeds.
 5. Accelerate constantly for 10 seconds in a gear from the upper gear row (2nd, 4th, 6th) and lower gear row (1st, 3rd, 5th, 7th) for a positive torque adaptation.
 6. Do a 10 second constant deceleration with an upper and lower row gear for an overrun adaptation.

Notes: Brakes should not be used.

IMPORTANT – 1st gear must not be used to do the overrun.

7. Leave the vehicle stationary in neutral with the engine set to ON and check the DID values with the SEL file provided.

DID 9A\$0C Gbx_stNPosMT==true (pass) under the conditions that follow (all must be true):

- DID 20\$00 nmot_w>600rpm and nmot_w<900rpm (engine speed around idle speed)
- DID 50\$22 vfzg<2kph (vehicle speed less than 2kph)
- DID 9a\$06 Clth_bClth25Prc=False (clutch not pressed)
- DID 9a\$00 Tra_NumGear=0 (in neutral).

AMShift Diagnostic Trouble Codes (DTCs)

P Code	Name	Description
P10FC	Clth25PrcActv	25 Percent clutch switch active error
P1121	Clth25PrcInactv	25 Percent clutch switch inactive error
P1122	Clth25PrcStkHi	Clutch Switch 25 Percent Stuck at position High
P1123	Clth25PrcStkLo	Clutch Switch 25 Percent Stuck at position Low
P1124	Clth75PrcActv	75 Percent clutch switch active error
P1125	Clth75PrcInactv	75 Percent clutch switch inactive error
P1126	Clth75PrcStkHi	Clutch Switch 75 Percent Stuck at position High
P1127	ClthIntrLckStkHiErr	Interlock switch stuck to High
P0704	ClthNpl	Clutch Switch Input Circuit
P1132	ClthPlausChk	Plausibility check for clutch
P1228	ClthRAAna2SRCMax	SRC Max error for clutch pedal analog position 2
P1229	ClthRAAna2SRCMin	SRC Min error for clutch pedal analog position 2
P1134	ClthRAAnaSRCMax	SRC Max error for clutch pedal analog position
P1135	ClthRAAnaSRCMin	SRC Min error for clutch pedal analog position
P1144	ClthSensStkHi	Clutch Position Sensor Stuck at position High
P1145	ClthSensStkLo	Clutch Position Sensor Stuck at position Low
P0704	ClthSig	Clutch Switch Input Circuit
P1146	ClthSigStk	Stuck error for clutch signal
P1147	ClthSigSync	Synchronization error for clutch signals
P122A	ClthSnsrStuck	Cluth position sensor is stuck
P122B	ClthSRCSync	Ratio of the two voltage inputs not plausible
P1157	ClthStuckChkSnsr	Stuck check sensor
P1158	ClthStuckChkSwT	Stuck check switch
P1148	CluWear	Clutch wear Fault detection
P114A	GbxNPosNpl	Check plausibility of Gbx_stNPos
P1159	GbxNPosPlausActv	Neutral gear (surely engaged) not recognized erroneously
P115A	GbxNPosPlausAg	Neutral gear sensor switching angle not plausible on surely engaged Neutral Gear
P115B	GbxNPosPlausHi	Neutral Gear Sensor output Voltage not plausible for gears with high voltage level on the Neutral gear sensor
P115C	GbxNPosPlausLo	Neutral gear sensor voltage not plausible for gears with low voltage level on the Neutral Gear sensor
P115D	GbxNPosPlausOvrRun	Neutral gear recognized erroneously on overrun
P115E	GbxNPosPlausPull	Neutral gear recognized erroneously on pull
P115F	GbxNPosPlausVltg	Neutral gear voltage not plausible on surely engaged neutral gear
P114B	GbxNPosSig	Check for error for CAN input
P1160	GbxNPosSRCMax	Neutral gear sensor signal range upper limit exceeded
P1161	GbxNPosSRCMin	Neutral gear sensor signal range lower limit underrun
P114C	GbxPosSigPlaus	Plausibility of gear signals
P114D	GbxPosSRCMaxUa	Gear Position sensor signal Ua for maximum errorLeverPosition
P114E	GbxPosSRCMaxUw	Gear Position sensor signal Uw for maximum errorLeverPosition
P114F	GbxPosSRCMinUa	Gear Position Sensor signal Ua for minimum errorLeverPosition
P3108	Com_stShiftAsstBtn_Raw_SNA	OBD specific trouble code / OBD specific diagnostic trouble code for check DFC_Com_stShiftAsstBtn_Raw_SNA
P1151	GbxSpd	Error in the Gearbox Speed sensor signal
P1152	GbxSpdPlausErr1	Plausibility check for Gearbox Speed sensor output
P1153	GbxSpdPlausErr2	Plausibility check for Gearbox Speed sensor output
P1154	GbxSpdPlausErr3	Plausibility check for Gearbox Speed sensor output
P1155	MoFTraSamt	Control Module Processor
P3108	Com_stShiftAsstBtn_Raw_SNA	OBD specific trouble code / OBD specific diagnostic trouble code for check DFC_Com_stShiftAsstBtn_Raw_SNA
P2545	TraINCCup	Torque integral exceeded

If one or more of the above DTCs are stored in the engine management system, use the AMDS2 Data Monitor with the attached AM shift service.SEL file (refer to Figure 1).

Note: You must click the Toggle Sidebar button in the left window pane of Technical Hub to show the attachment. This file can then be downloaded.

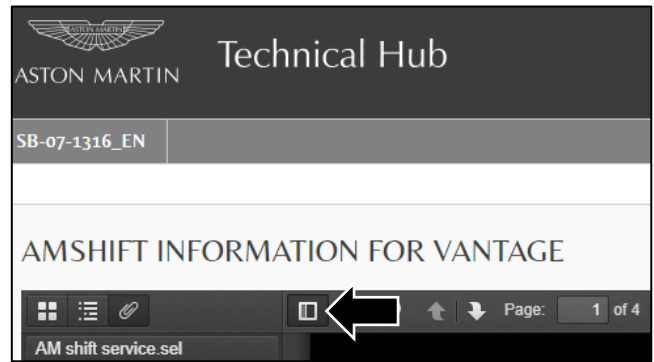


Figure 1

To do a high speed test of the crankshaft sensor, please use the attached .psdata file in the PicoScope application on AMDS.

Warranty Data

Procedure and Labour Time

Description	Labour Time	ROT Code
Clutch Adaptation Procedure	0.2	08.00.BB
Clutch Learning	0.2	08.00.BC
Neutral Sensor Adaptation	0.2	08.00.BH

If you have any questions related to this document, please refer to the 'Contact Us' link on this webpage, or contact your local Dealer or After Sales Manager.

The English version of this notice is written in Simplified Technical English to ASD-STE100™.