SERVICE BULLETIN

Reference number:	**SB-07-0434V2**	**Issued: 09 July 2019**
Subject:	**Introduction to AMShift**	
Model(s):	**V12 Vantage S and V12 Vantage AMR manual transmissions**	
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 procedures in Service Bulletin SB-07-0434 have changed. The changes to this document have a black line against them in the left margin. Please destroy all copies of SB-07-0434 and replace them with Service Bulletin SB-07-0434V2.

Reason for this Service Bulletin

A seven-speed 'AMShift' manual transmission is offered as a no-cost option for 17MY V12 Vantage S vehicles. This Bulletin introduces the technical aspects of this transmission.

AMShift Manual Transmission for V12 Vantage S

17MY V12 Vantage S vehicles can be ordered with a seven-speed 'Sportshift III' automated manual transmission or with a new seven-speed manual transmission. The transmission casing and internal gear components are common between the two, with a manual gearshift mechanism to replace the Automatic Shift Manual (ASM) equipment.

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 new AMShift feature. AMShift uses input signals from the clutch slave cylinder, gear position and propeller shaft sensors. The engine management system is then able to increase or decrease available engine torque. This means the driver does not need to lift their foot off the accelerator pedal when a gear change up is made. This causes the vehicle mimic the technique of heel-and-toe downshifts and also offers the capability of full-throttle upshifts for maximum smoothness under acceleration.

The installation of additional electrical components has made it necessary to also introduce a modified engine wiring harness specific to seven-speed manual transmission vehicles.

Transmission Removal

If the transmission is to be removed, the linkage cables must first be removed from the gearshift handset (refer to Workshop Manual Procedure 07.03.CB). This prevents damage to the cables.

If the engine and driveline are to be removed, the gearshift handset and cables must also be removed.

Workshop Procedure - Clutch Adaptation Reset:

As the AMShift function makes use of input signals from the clutch, the clutch adaptation values must be reset. This must be done when any work related to the clutch is completed, such as:

- When you have replaced, or worked on, the clutch or its related hardware. This includes when you bleed the slave cylinder or master cylinder.
- When you have replaced an Engine Management System (EMS) module.
- When you have replaced one of the sensors and switches for the AMShift system.

You must always perform the AMDS procedure "Clutch Adaptation AMShift".

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 engine management system before you proceed to the next step.

2. Set the ignition control to position 'I' or position 'II'.
3. The engine must not be in operation.
4. The engine temperature must be below 90 °C.
5. Fully push and release the brake pedal at least three times. Push and hold the brake pedal after the last push.
6. Fully push and hold the accelerator pedal.

   Note: The clutch pedal must not be pushed.

7. Push and hold the cancel button for the cruise control (CAN) 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.

Workshop Procedure - Clutch Learning:

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 engine management system before you proceed to the next step.

2. Set the ignition control to position 'I' or position 'II'.
3. The engine must not be in operation.
4. The engine temperature must be below 90 °C.
5. Fully push and slowly release the clutch pedal five times. The pedal must be move to its maximum and minimum positions each time.

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

6. 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 engine management system before you proceed to the next step.

7. Start the engine and let it idle.
8. Fully push and slowly release the clutch pedal five times. The pedal must be move to its maximum and minimum positions each time.

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

9. Set the ignition to OFF.

10. Wait 30 seconds to let the engine management system fully shut down.

11. 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 engine management system before you proceed to the next step.

12. Set the ignition to ON and do an AMDS Operation Check (Refer to Workshop Manual procedure 00.06.AD). Make sure that the BECM_M PID ClthFlgRngDone is set to True.

AMShift Diagnostic Trouble Codes (DTCs)

DTC	DTC Name	DTC Description
P0606	MoFMSRx	Control Module Processor
P1120	Clth25PrcActv	Clutch switch 25 percent stuck open
P1121	Clth25PrcInactv	Clutch switch 25 percent stuck closed
P1124	Clth75PrcActv	Clutch switch 75 percent stuck open
P1125	Clth75PrcInactv	Clutch switch 75 percent stuck closed
P1134	ClthRAnaSRCMax	Clutch position sensor circuit high
P1135	ClthRAnaSRCMin	Clutch position sensor circuit low
P1148	CluWear	Clutch wear detected
P1149	ConvSlipPrtLim	Clutch protection active
P114C	GbxPosSigPlaus	Gear position sensor plausibility, mismatch gear allocation
P114D	GbxPosSRCMaxUa	Gear position sensor Ua signal, circuit high
P114E	GbxPosSRCMaxUw	Gear position sensor Uw signal, circuit high
P114F	GbxPosSRCMinUa	Gear position sensor Ua signal, circuit low
P1150	GbxPosSRCMinUw	Gear position sensor Uw signal, circuit low
P1151	GbxSpd	Gearbox input speed sensor, circuit
P1152	GbxSpdPlausErr1	Gearbox input speed sensor plausibility, signal low
P1153	GbxSpdPlausErr2	Gearbox input speed sensor plausibility, signal high
P1154	GbxSpdPlausErr3	Gearbox input speed sensor plausibility, signal offset
P1155	MoFTraSamt	Control Module Processor
P1156	ClthSRCInv	Clutch position sensor inverted signal circuit
P1157	ClthStuckChkSnsr	Clutch position sensor plausibility stuck check raw
P1158	ClthStuckChkSwt	Clutch switch plausibility stuck check raw
U0100	Mst2Slv10msMsg8TO	Vehicle Communication Bus B
U0100	Mst2Slv10msMsg9TO	Vehicle Communication Bus B
U0100	Mst2Slv100msMsg7TO	Vehicle Communication Bus B
U0115	Slv2Mst10msMsg6TO	Vehicle Communication Bus B

If one or more of the above DTCs are stored in the engine management system, use the AMDS Data Monitor with this sel file loaded: AM shift service.SEL

If there is a P0606 or P1155 DTC code stored and the sensors and switches are both plausible, do a check of the EMS wiring harnesses for any damaged or backed out connector pins. If the fault continues to be shown, contact AMTech.

Electrical Connector for the Propeller Shaft Speed Sensor

On some early built vehicles with seven-speed manual transmission, the electrical connector for the propeller shaft speed sensor may not have a correctly formed key way. This can cause the connection between the vehicle harness and the sensor to not latch correctly and can separate over time. If any DTCs are stored in the engine management system related to the propeller shaft speed sensor, do a check that the connector is securely latched first.

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.BG
Check on the connector for the propeller-shaft speed sensor	3.0	05.02.BE