

OPERATOR MANUAL



1. Revision History

Revision	Issue Date	Author	Comments
1	12 Aug 2015	J. Leighton	Initial Release
2	12 Dec 2018	M. Cornelius	General updates
3	21 Jun 2022	N. Denton	Updated Section 6

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3. Important Information

This manual applies to the fourth generation ABT[™] Failsafe for Light Vehicles. The manual details how to operate the ABT[™] Emergency Failsafe Driveline or wheel end brake assembly correctly to ensure optimum safety and performance. All information contained in this manual is based on the latest ABT[™] Failsafe product information available at the time of publication. Images used in this manual are for reference purposes only.

While every effort has been made to address all aspects of operation, please advise Advanced Braking of any omissions or suggestions on how this manual may be improved.

Advanced Braking Pty Ltd reserves the right to change the manual at any time without prior notice.

The most up to date version of the manual can be obtained by contacting the ABT Customer Service Manager.

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ADVANCED BRAKING TECHNOLOGY

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4. Terminology

ABS	Anti-lock braking system
ATF	Automatic transmission fluid
DPS	Door Proximity System
Emergency Brake	Brakes automatically applied in an emergency
EMMA™	Electronically Modulated Mechanically Applied
HSI	Highway Speed Isolation
OEM	Original Equipment Manufacturer
Park Brake	Brakes applied independently of the service brake
PWI	Pad Wear Indicator
Service Brake	Brakes applied when driving via the foot pedal
ABT [™] Failsafe	Wheel end mounted fully sealed brake with SAHR
ABT™ "Blend 20"	Specially formulated cooling fluid for use in ABT [™] Failsafe and Failsafe Emergency brakes
SAHR	Spring Activated Hydraulically Released

5. ABT[™] Failsafe Controller



1. E-stop button

- a. The ABT[™] Failsafe Park and Emergency Brake is engaged and released via the red E-stop button.
- b. To engage the brakes, push the red E-stop button.
- c. To release the brakes twist the red E-stop button clockwise, approximately 15°, and allow it to spring outwards (the ignition must be on, doors closed, seatbelt connected and engine running). The hydraulic pump will then activate and release the park brake.

2. Brake status LED

- a. When the brake status LED is solid red the brakes are applied.
- b. When the brake status LED is flashing red the brake/s are in the process of applying or releasing. A pulsing audible alert accompanies the flashing LED to indicate the brake/s are in transition.
- c. When the brake status LED is solid green the brake/s are released.

3. Manual override button

- a. The manual override button enables the operator to override any interlocks preventing the brake from releasing.
- b. To operate, press and hold the manual override button. While the manual override button is depressed the brake can be released using the E-stop.
- c. A constant alarm tone will indicate the manual override button is overriding one of the interlocks. In this instance, as soon as the button is released, the brakes will apply.

4. Fault code LED

a. The fault code LED only illuminates if a fault is detected in the system. Please refer to the troubleshooting section in the workshop manual for further details.

5. Highway Speed Isolation LED

- a. The highway speed isolation system (HSI) is designed to prevent unintended brake application at high speeds.
- b. When the vehicle is travelling above a pre-determined speed the HSI system will become active this is indicated by the illumination of the green HSI LED.
- c. While the HSI system is active, any interlocks attempting to apply the brake will be overridden this will be indicated by a constant alarm tone.
- d. The HSI system does not override the ignition interlock or E-stop button.

6. ATF LED

a. The amber ATF LED will illuminate if the fluid level in the ABT[™] Failsafe pump reservoir drops below minimum.

7. Door interlock LED (Optional)

- a. The red door ajar LED will illuminate when the ignition is on and a vehicle door is open.
- b. While this LED is illuminated the brake will be applied (unless manual override or HSI is active).

8. Seat belt interlock LED (Optional)

- a. The red seatbelt LED will illuminate when the ignition is on and the driver's seatbelt is disconnected.
- b. While this LED is illuminated the brake will be applied (unless manual override or HSI is active).

9. Stall interlock LED (Optional)

- a. The red low engine oil pressure LED will illuminate when the ignition is on and the vehicle engine is not running.
- b. While this LED is illuminated the brake will be applied (unless manual override or HSI is active).

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6. Pre-Start Check



- 1. Check brake master cylinder reservoir level. If low, top up with the correct brake fluid and check system for leaks. (Only applies to Light Vehicles and Medium Vehicles fitted with wheel end brakes)
- 2. Check ABT[™] Failsafe pump reservoir level. The level should be inline, or just above, the central red dot in the sight glass. If low, top up with ATF Dexron III and check system for leaks.



ABT[™] Failsafe pump enclosure with lid removed.

Points 3, 4 & 5 below are **Primary Activation Methods** for the Emergency Failsafe brake, these methods must be adopted and not rely on the **Secondary Activation Methods**.

the brake does not operate as detailed, the vehicle must be removed from service and repaired by trained personnel.

- 3. With the doors closed, engine running, and driver's seat belt connected, press the E-stop button:
 - a. The brake status light on the ABT[™] Failsafe control unit should be solid red.
 - b. The park brake should be applied.

If the brake does not apply, the vehicle should be removed from service and repaired by trained personnel.

- 4. Twist and release the E-stop button:
 - a. The brake status light should flash red momentarily and then change to solid green.
 - b. The park brake should now be released.

If the brake does not release, the vehicle should be removed from service and repaired by trained personnel.

5. Check the park/emergency brake applies when:

a. The ignition is switched to the 'ACC' (off) position.

If the brake does not apply, the vehicle should be removed from service and repaired by trained personnel



Points 6a, b & c, are optional, and are **Secondary Activation** methods for the Emergency Failsafe brake. **To determine if the above options are installed, see Section 10**

Note:

If the brake does not apply as detailed the vehicle must be removed from service and repaired by trained personnel.

6.

- a. The door is opened (door ajar warning light should display on control unit).
- b. The driver seatbelt is released (seatbelt warning light should display on control unit).
- c. The engine is stalled (low oil pressure warning light should display on control unit).

7. Check the service brake (foot brake) firmly applies the brake.

Note: To test the Park/Emergency brake use one of the following tests.

- 8. Drive the vehicle at 10 km/h. Press the E-stop button. The vehicle must stop within **5 metres** or within **3 seconds**.
- 9. Carry out a Failsafe brake performance test:
 - a. Ensure the test is carried out on a level surface, with no obstructions in front of the vehicle.
 - b. With engine running at normal operating temperature
 - Apply ABT[™] Failsafe Emergency brake
 - Depress clutch
 - Engage third gear low range
 - Do not press footbrake
 - Do not rev engine (engine should be idling as normal)
 - Slowly release clutch
 - Allow the engine rpm to slowly reduce until either the engine stalls or the vehicle rolls forward
 - Vehicle must stall without the vehicle driving through the brake



10. Optionally installed functions

- To establish which functions have been enabled, turn on the vehicle ignition and observe which LED icons are illuminated on the ABT controller.
- Only enabled functions will cause the LED to illuminate.



Ref Section 6.6a - Door Open – There are 2 types of door switch that could be fitted to enable this function.

Type 1. ABT Proximity sensor. seen in Fig 1. will be fitted to the A-pillar or B-pillar



With the engine running, open the driver door.

• Both door open icons, in the dash panel and the ABT controller, must illuminate. See Fig 3. If they don't the vehicle should be removed from service and repaired by trained personnel.



Fig 3.



If the Type 1 ABT proximity sensor is installed:

• If the door open icon doesn't illuminate in the ABT controller, the proximity switch, wiring or the controller requires diagnosing and repairing. If neither door open icon illuminates, the OEM door switch circuit will require investigating also.

If the Type 2 OEM door switch is installed:

• If the door open icon doesn't illuminate in the dash panel and the ABT controller, the OEM door switch circuit will require investigating.

Ref Section 6.6b - Seatbelt disconnected warning

With the engine running and the driver's door closed, disconnect the driver's seat belt.

• Both seat belt disconnected icons should illuminate, in the dash panel and the ABT controller. See Fig 4. If they don't the vehicle should be removed from service and repaired by trained personnel.



Fig 2.



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Fig 4.

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