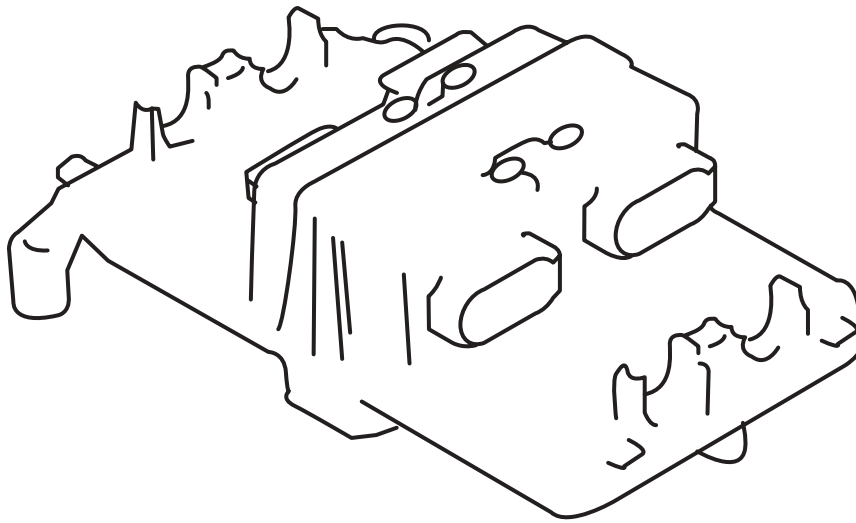


# **ABS/ATC System Addendum 2002**



**Navigator  
Executive  
Windsor  
Imperial**

**Diplomat LE  
Scepter  
Diplomat  
Endeavor Diesel**

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Due to a mid-year product change, Automatic Traction Control (ATC) is now available for the following 2002 model coaches. All starting serial numbers are listed below:

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Signature started at model change.  
Dynasty started at model change.  
Navigator starting unit number 601814  
Executive starting unit number 601819  
Windsor starting unit number 126019  
Imperial starting unit number 126019  
Diplomat LE starting unit number 126019  
Scepter starting unit number 126019  
Diplomat starting unit number 127260  
Endeavor Diesel starting unit number 127260

***Models Effected***

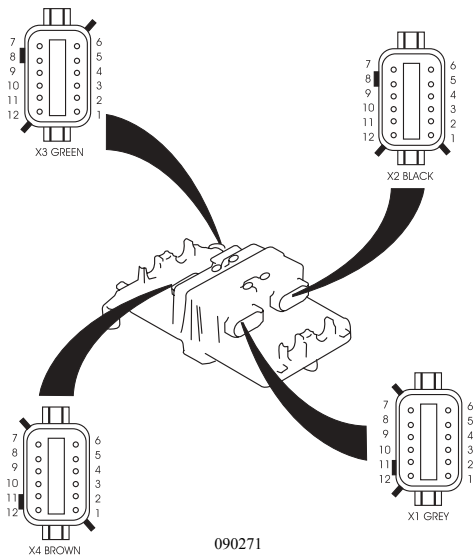
Unfortunately, the ATC cannot be retrofitted to early model coaches or coaches prior to the starting unit number.

The following information has been provide as an Addendum to the 2002 Owner's Manual:

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The motorhome is equipped with an anti-lock braking system (ABS) and automatic traction control system (ATC). The ATC is in fact a subassembly of the ABS. The ABS system monitors wheel rotation speeds by using a 100-tooth magnetic tone ring mounted to the hub. Revolving with the wheel, the magnetic tone ring is polarized giving positive and negative pulsations. A stationary sensor is mounted adjacent to the tone ring monitoring the magnetic pulses. The pulses are monitored by the ABS electronic control unit (ECU).

***ABS/ATC System  
(Anti-lock Brakes)***



The ECU monitors all available wheel sensors at the rate of 100 times per second. The ECU controls Pressure Modulator Valves. Pressure Modulator Valves have two electric over air solenoids, a hold solenoid and a release solenoid. The modulator valves are open under normal braking, allowing a straight through air signal from the treadle valve to the brake chamber. Should a wheel lose traction under a braking application, the ECU will energize the hold solenoid of the Pressure Modulator Valve to interrupt the air signal from the treadle valve to the brake chamber, while the release solenoid vents the existing air signal to the atmosphere allowing the skidding tire to regain traction. Skidding tires have less tractive efficiency. It is possible, under certain conditions, to have the wheel(s) skid with a normal functioning ABS system.

The ABS itself does not apply additional braking power. The purpose of the ABS is limiting brake torque to prevent wheel locking that results in the loss of lateral stability, and increased stopping distances. Cautious driving practices and maintaining adequate safe distances when following vehicles is the key to safe vehicle operation.

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**ABS Component Function:**

- Speed sensors and tone rings on each wheel monitor wheel rotation.
- Each speed sensor communicates wheel rotation pulses to the Electronic Control Unit.
- ECU receives the speed sensor inputs, interprets the signal pulses and calculates the speed and acceleration rates of each wheel.

- Based on the speed sensor input, the ECU detects impending wheel lock and operates the ABS Modulator Valves required for proper control. The Modulator Valves can be operated in the air, release or hold modes to regulate air pressure to the brake chambers.
- The braking force is applied at a level that minimizes the stopping distances while maintaining as much lateral stability as possible.

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The ABS will perform a diagnostic indicator lamp check and self-diagnostic test each time the ignition is switched to the on position. The ABS dash indicator light momentarily (2.2 seconds) illuminates verifying the self-check test. If the ABS indicator light remains on, or illuminates while the motorhome is being operated, there is a fault within the anti-lock brake system. This fault will not affect normal service braking. The motorhome will need to go to a service center to repair the problem.

### ***ABS Warning Light:***

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The ABS dash indicator light can be used to obtain system faults in the ABS and ATC systems by displaying a blink code.

### ***ABS/ATC Blink Code:***

#### **To Retrieve Blink Code(s):**

- Turn ignition key to the **ON** position.
- Wait for three seconds prior to proceeding.
- Apply and release the service brake pedal once.
- Using Systems Diagnostic Center, located left of steering column below dash board, press and hold the test button for one to two seconds. The indicator light will illuminate while test button is pressed.
- After releasing test button, observe the ABS warning indicator lamp. The lamp will turn off and the blink code will be displayed: 1-1 indicates no system faults.

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**ATC System:**

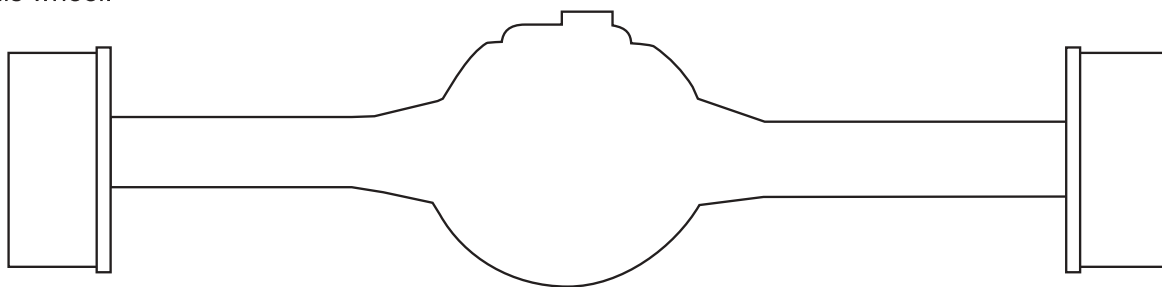
The ATC system improves traction on slippery or unstable surfaces by preventing excessive wheel slip. During periods of wheel slippage, the ECU enters an automatic traction control mode. There are various modes of ATC operations:

- Speed above 25 mph. The engine is throttled back to control rear wheel slip.
- Speed below 25 mph. The engine is throttled back and drive axle brake controls are activated to control wheel slip. If the brake control activates, it remains active regardless of road speed.

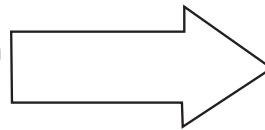
### How Automatic Traction Control (ATC) Works

If this wheel is spinning due to slippery surface or wheel off the ground, the ABS system with ATC applies the brake to this wheel.

This wheel then delivers torque to the ground.



Torque is then transferred through the differential to the other wheel.



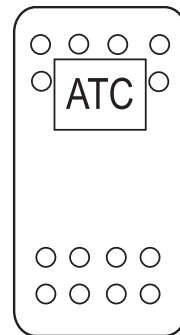
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- The ATC switch is a momentary switch that will turn the system **ON** and **OFF**. Pressing the switch **ON** allows greater torque and wheel slip. The amount of torque and wheel slip varies with the amount of rear wheel slip versus road speed. This mode is intended for off road adverse conditions.
- The ATC system is active regardless of road speed or switch position.

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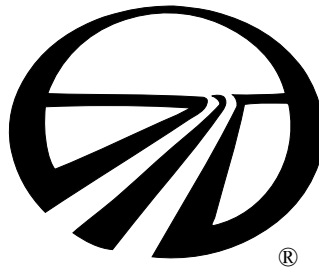
The ATC indicator light will illuminate steady when the ignition key is turned **ON**. The light remains illuminated until the first brake application. The indicator light flashes slowly when the ATC switch is pressed. The indicator light will flash quickly when an ATC event occurs.

### ***ATC Indicator Light:***



**INDICATOR LIGHT**

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**Monaco Coach Corporation**

91320 Coburg Industrial Way  
Coburg, OR 97408  
800-634-0855  
[www.monaco-online.com](http://www.monaco-online.com)

**Indiana Operations**

1809 W. Hively  
Elkhart, IN 46517  
800-650-7337  
[www.holidayrambler.com](http://www.holidayrambler.com)

**Warranty/Technical Support**

Toll Free 877-466-6226

