

OWNERS MANUAL

InPower Model ITM150

Platform Lift Interlock System For RAM ProMaster with gasoline engines

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1. Introduction

This product is intended for installation in RAM ProMaster vans with gas engines and FMVSS compliant, public-use platform lifts manufactured by The Braun Corporation, Ricon Corporation or Maxon Mobility. If another type of lift is to be used, contact the lift manufacturer to determine compatibility.

This interlock system is designed to meet the requirements of FMVSS 403/404 and therefore must be installed in accordance with the lift manufacturer's instructions. The installer must be trained and skilled in installing FMVSS compliant lift systems. The installation must also comply with SAE (Society of Automotive Engineers) and RAM electrical wiring procedures.

2. Product Description

The ITM150 interlock system consists of the following components:

1. ITM150 Control Module
2. 7201. 046 Chassis Wiring Harness
3. Mounting Screws for shiftlock sensor

Note: Do not substitute alternate screws for securing the shiftlock sensor. The supplied screws are of a correct length to ensure they do not harm any internal circuits.

The interlock system layout is shown on Page 3.

The Chassis Wiring Harness uses a 12-pin connector (P1) to plug into the interlock control module. This harness contains two blunt cut 18 inch wires, two "plug and play" T-cables that connect to the shiftlock solenoid and shifter connector, one T-cable that connects to the parking brake terminal and one shiftlock sensor to be mounded adjacent to the shifter.

The control module has one connector that connects to the wiring harness. It also has five status LEDs (Power, Lift Enabled, Park Brake Set, Park and Door Ajar) to aid in system troubleshooting.

3. Installation Procedures

3.1 Safety Precautions



WARNING

This interlock product has been designed and manufactured to meet the intended application requirements and specifications. Any modifications to the product or to the installation procedure can be dangerous and will void InPower's warranty.

- Read and understand the instructions in this manual and other manuals before starting the installation.
- Make sure that the vehicle battery power is disconnected during installation of the Interlock and lift systems.
- Reconnect the battery when the system installation is complete.
- Wear appropriate safety equipment, such as protective eyeglasses, face shield and clothing when installing equipment and handling the battery.
- Be careful when working near a battery. Make sure that the area is well ventilated and that there are no flames near the battery. Never lay objects on the battery that can short the terminals together. If battery acid gets in your eyes, immediately seek first aid. If acid gets on your skin, immediately wash it off with soap and water.

3.2 Getting Started

This manual provides instructions for installing the InPower Model ITM150 Interlock System in the RAM Promaster vans with gasoline engines and with a FMVSS compliant, public use (commercial) platform lift. It is important that you follow these instructions carefully and contact InPower if you need assistance or more information. Note that product technical documents are available on InPower's web site.



WARNING

This interlock system installation requires additional parts and materials that are not supplied with the interlock product. Identify all required parts before starting the installation and ensure that these items are the correct type and quality.

Inspect the interlock product and all other components for damage before starting the installation. Do not perform the installation if any problems exist.

Determine the type of interlock interface required for the platform lift. This interlock system provides a +12 volt @ 1.8 amps Enable Lift output to allow the platform lift to be operated. If the lift system is not compatible with this interface signal you must take the necessary actions to adapt the lift system interface to the interlock system's interface. Refer to the lift manufacturer's installation instructions for further details.

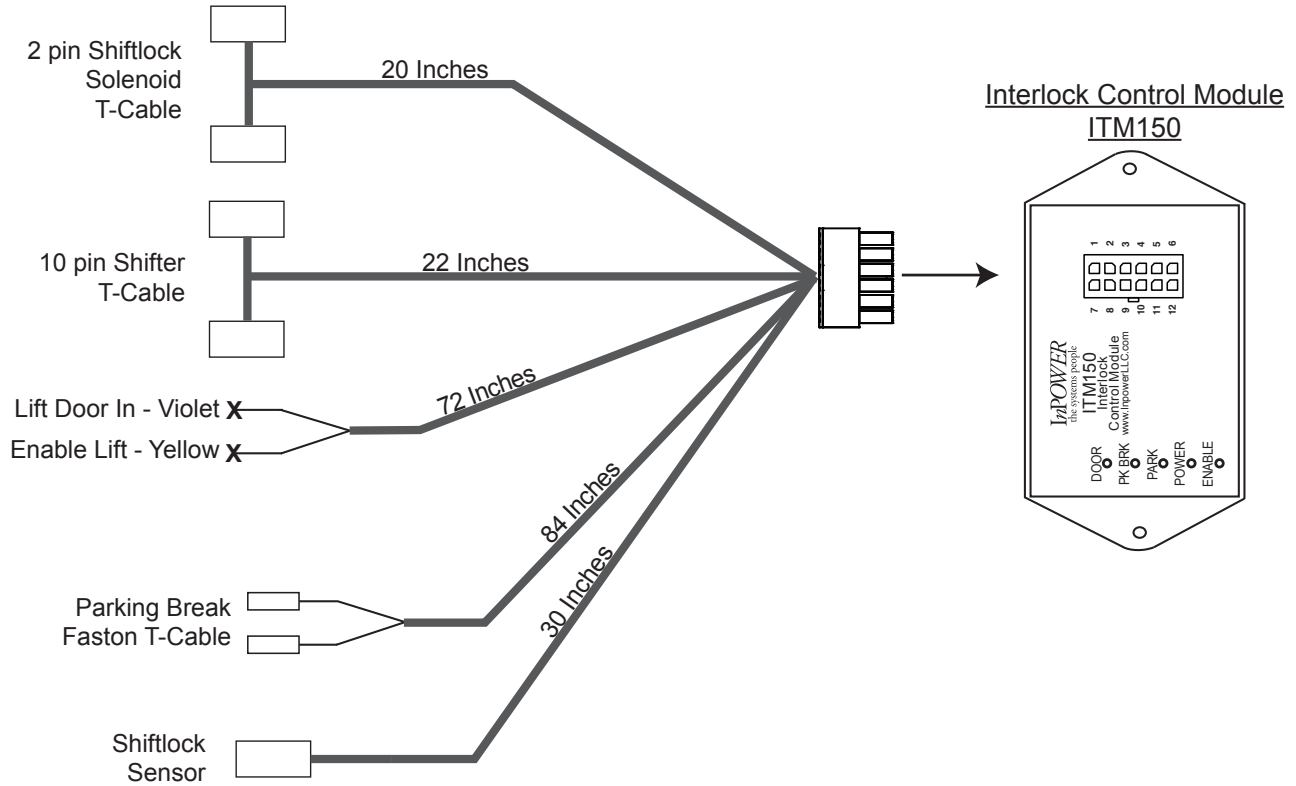
The recommended mounting location for the ITM150 interlock control module is in the center console below the shifter, due to the proximity of the wiring connections. **The unit must not be located in the engine compartment or any location that is not protected from the environment.**

4. System Layout Diagram

The following page shows the harness that needs to be wired. Refer to Section 5. Wiring Instructions for details on how to wire the circuits.

Interlock System Layout

Chassis Wiring Harness 7201.046



5. Wiring Instructions



WARNING

Make sure that the vehicle battery power is disconnected during installation of the interlock and lift system. Reconnect the battery when the system installation is complete.

Circuit 1 Wiring (Shiftlock Solenoid & Shifter Wiring)

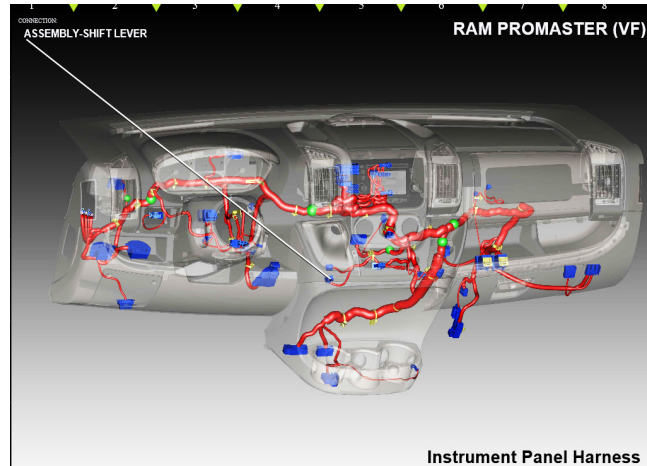


Figure 1. Diagram of the ProMaster center console.

1. Remove center console cover held on by 4 screws. (See Figure 1)
2. Unplug 2-pin shiftlock solenoid connector on bottom left side of the shifter. Always insert and remove connectors by gripping the connectors. Do not pull on the wires.
3. Unplug 10-pin shifter connector on bottom left side of shifter. This should be located just above the 2-pin solenoid connector. (See Figures 2 and 3)
4. Plug the 10-pin connector on the T-harness into the 10-pin connector on the shifter.
5. Plug the 2-pin connector on the T-harness into the 2-pin connector on the solenoid.
6. Affix the sensor beside the shifter shaft using the two provided screws. It is important that the sensor is angled with the corner beside the shifter so that it detects the shifter position accurately. (See Figure 3)

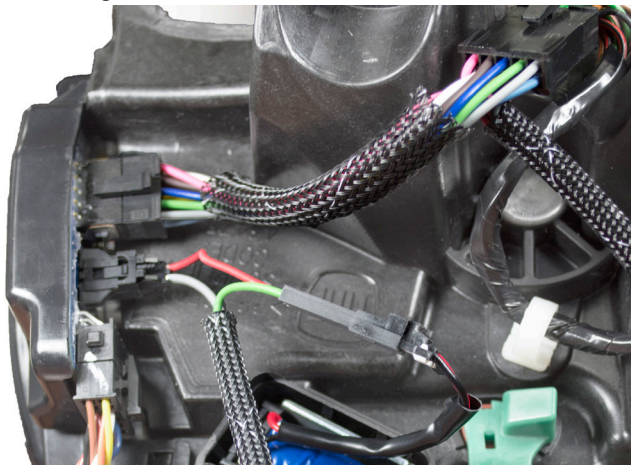


Figure 2. View of the ProMaster shiftlock solenoid and shifter.

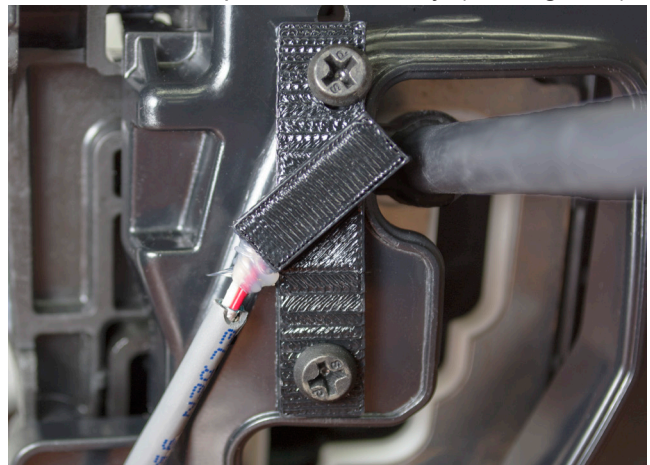


Figure 3. View of proper placement of sensor beside the shifter shaft.

5. Wiring Instructions (cont.)

Circuit 2 Wiring (Park Brake)

1. Run the brown park brake wire under the carpet to the brake lever located on the door side of the driver's seat. Remove the cover held on by two screws. (See Figure 4)
2. Unplug park brake 1-pin terminal.
3. Connect the park brake T-harness.



Figure 4. View of Park Brake terminals

Alternate Instructions for Splicing:

Splice the brown park brake wire from the interlock harness into the orange/white park brake wire located on the BCM connector C6, pin 44.

Circuit 3 Wiring (Lift Door)

For side-sliding door:

Connect the violet wire found on the interlock harness to the side Door Ajar switch black/violet wire (Figure 5). If you prefer to splice, the side door wire is located at BCM connector C6, pin 33 in the passenger side stepwell. (Figure 6)



Figure 5. View of Side Door Ajar switch



Figure 6. View of stepwell wiring and potential splice site.

For rear door:

Connect the violet wire found on the interlock harness to the rear Door Ajar switch white/black wire. If you prefer to splice, the rear door wire is at BCM connector C6, pin 35.

5. Wiring Instructions (cont.)

Circuit 4 Wiring (Platform Lift)

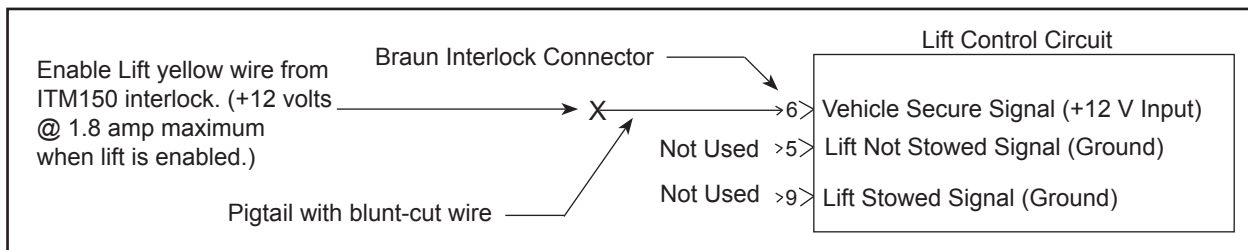
Review the platform lift installation manual and determine how to wire the ITM150 interlock system to the platform lift's interlock interface. Note that the Enable Lift is a +12 volt OUTPUT from the interlock system and an INPUT to the lift system. When at +12 volts the platform lift can be operated.

Connect the interlock yellow Enable wire found on the interlock harness to the lift enable input.

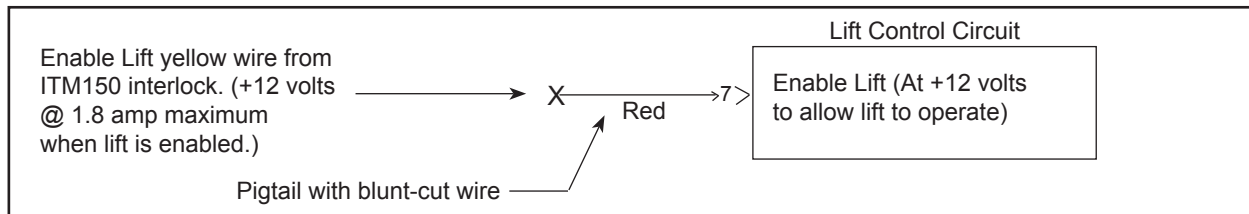
Note: The ITM150 interlock will supply a +12 volt @ 1.8 amp output to allow operation of the lift. Verify that this is the correct polarity for the platform lift.

The following diagrams show the wiring interface of typical platform lift systems. Be sure to verify the exact wiring interface for the lift system that you have.

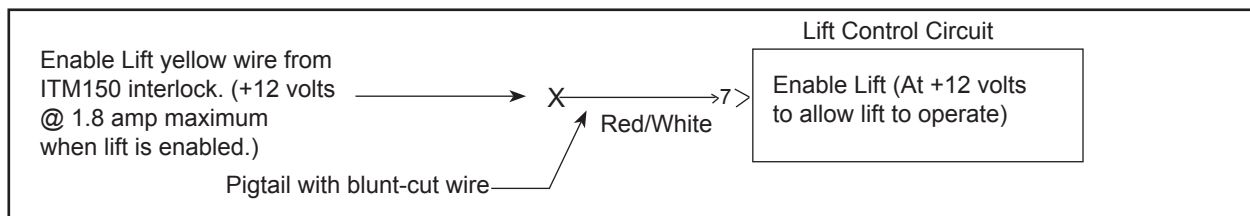
Braun FMVSS Platform Lift



Ricon Series S Platform Lift



Maxon Platform Lift



Final Steps

Once the harness is completely wired, mount the module and plug in the harness. Test to ensure that it has been wired correctly and that there are no loose connections.

6. Interlock System Operation

The interlock system is powered when the Ignition Switch is on. The following is the interlock system sequence of operation:

- Step 1 - Ignition switch on and engine running.
- Step 2 - Press service brake and place shifter in Park.
- Step 3 - Set parking brake.
 - Shift Lock will activate
- Step 4 - Open lift door.
 - Lift Enable will activate allowing operation of platform lift.
- Step 5 - The platform lift may now be operated (Refer to the platform lift operating instructions).
Note: During the Lift Enable sequence, if the parking brake is released the Lift Enable will be deactivated, preventing lift operation.
- Step 6 - When the lift cycle is completed, return the lift to its fully stowed position.
- Step 7 - Close the lift door.
- Step 8 - Release parking brake. When released, the shift lock will be automatically released.
- Step 9 - The cycle is now complete and the vehicle can be taken out of Park and driven.

7. System Troubleshooting

If there is a problem with system operation, there is a very high probability that either the control module lost its ground or +12 volt power source, or that one or more of its inputs are not being activated by the remote switches (e.g., Lift Door Switch). Most troubles are related to wiring problems, or switches either failing or becoming out of adjustment.

Troubleshooting Procedure:

Step 1: Determine if the control module is powered. If the LEDs on the control module are illuminated, you have power. If none are illuminated, check that all connectors are firmly in place and the shifter sensor is properly positioned. Also ensure that the 10 pin connector is properly connected to the shifter and that the 7.5 amp fuse F16 in the Power Distribution Center is functioning.

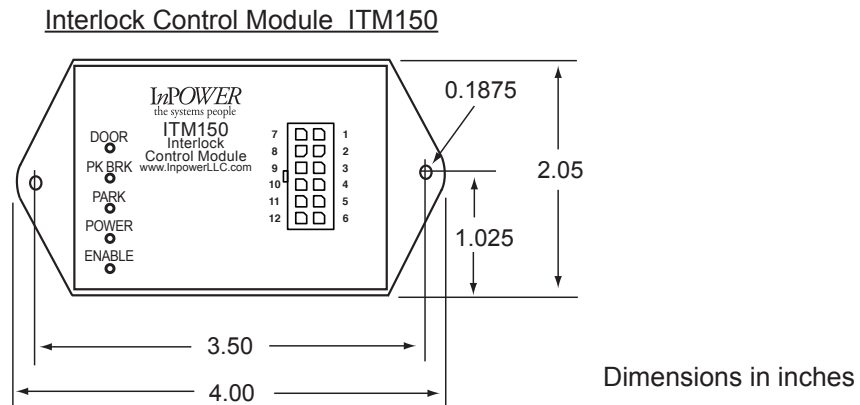
Step 2: If the connectors and fuses are all correct, first reset the interlock system by turning off its power. Then, step through the operating sequence described in Section 6. Pay particular attention to the diagnostic LEDs on the module. Verify that the LEDs agree with the switch position. If they do not, check the corresponding wiring and the sensor position.

The ITM150 module contains six diagnostic LED indicators to aid in system troubleshooting. These show the status of input and output signals of the control module.

System Diagnostic LED Indicators (Located on the control module)

POWER	■ (Red) On when +12 volt power is applied to module. The LED will go out if the ENABLE output current exceeds 2 amps
PK BRK	■ (Red) On when the park brake is set.
PARK	■ (Red) On when the transmission is in the Park position
ENABL	■ (Red) On when the interlock allows the platform lift to operate.
DR OPEN	■ (Red) On when the platform lift door is ajar or open (not fully closed)

8. Mechanical Drawing



9. Reference Information

9.1 Company Contacts

RAM Body Builders
www.RamBodyBuilder.com
(866) 205-4102
rambbg@chrysler.com

RAM Service Manuals
www.techauthority.com

Ricon Corporation
7900 Nelson Road
Panorama City, CA 91402
(818) 267-3038
(800) 322-2884
www.riconcorp.com

The Braun Corporation
631 West 11th Street
Winamac, IN 46966
(574) 946-6153
(800) 946-6158
www.braunlift.com

Maxon Lift Corp.
11921 Slauson Avenue
Sante Fe Springs, CA 90670
(562) 464-0099
(800) 227-4116
www.maxonlift.com

9.2 Required Parts Not Supplied with ITM150 Interlock System

1. Lift door switch and driver's door switch.
2. Miscellaneous wire, mounting hardware, wire tie wraps, wire loom.