

# RollTek Rollover Protection System *Study Guide*



Course Code: 8814

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#### Introduction

Welcome to the Navistar® training course; RollTek Rollover Protection System.

This course is intended to introduce service personnel to the RollTek Rollover Protection System and its components. This program also includes seat removal and installation, as well as a diagnostic overview.

Upon completion of this course, the student will be able to describe:

- Function and components of the RollTek Rollover Protection System
- Seat removal and installation procedures
- Basic diagnostic functions



The information provided within this course is for training purposes only. Always consult the latest service, diagnostic, and tool information, located on Navistar's Service Portal, prior to performing service on Navistar engines, vehicles, and equipment.

#### **Module 1: Overview**

The RollTek Rollover Protection System is optional on select International® vehicles.

This system provides additional protection to the driver and passenger in rollover crashes.

Sensors within the RollTek system detect when the truck enters an irrecoverable rollover.

When activated, RollTek firmly secures the occupant by deploying the seatbelt tensioner and pulling the seat to its lowest position.

The side-roll airbag then deploys from the outboard side of the seatback, providing protection to the driver and passenger at the point of contact with the cab. This series of events happens within milliseconds.



The RollTek Rollover Protection System consists of the seat, rollover crash sensor, side rollover airbag, electronic control unit, and a seatbelt tensioning system made up of the seat belt, seat belt buckle, Inter-connect point or ICP Bar, and a stored gas powered actuator.

When the ignition is turned to the 'on' position, the RollTek system will perform an initial diagnostic check.

The rollover sensor, located behind the seat, continuously monitors the angle and angular rate of the vehicle.

During a rollover event, the seat's electronic control unit compares the truck's acceleration, roll angle, and roll rate against known rollover conditions. When the comparison indicates an irrecoverable rollover condition, the seat's electronic control module deploys the RollTek Rollover Protection System.

### **Module 2: Safety Concerns**



To prevent property damage, personal injury and /or death, before removing any component from the RollTek system, disconnect the negative battery cable and wait at least two minutes to allow the seat's internal components to discharge. Failure to follow this warning may result in the airbag and pretensioners unintentionally deploying.



To prevent property damage, personal injury, and /or death, do not attempt to service or disassemble the RollTek module. The RollTek module cannot be serviced.



To prevent property damage, personal injury and / or death, keep in mind that the RollTek system contains electronics, pyrotechnic materials, and pressurized gases. Unintentional or improper deployment while servicing could cause severe injury or death.



To prevent property damage, personal injury, and /or death, do not cut, drill, braze, solder, weld, strike, or probe any part of the RollTek system.



To prevent property damage, personal injury, and /or death, keep all liquids, acids, halogens, heavy metals, and heavy salts away from RollTek system.



To prevent property damage, personal injury, and /or death, do not attempt to adapt, reuse or install a RollTek system in any vehicle other than the specific vehicle for which it is designed.



To prevent property damage, personal injury, and /or death, keep hands and hand tools away from scissor points under the seat.



To prevent property damage, personal injury, and /or death, do not expose the RollTek system to electricity. Never probe a circuit.



To prevent property damage, personal injury, and /or death, do not connect electrical power to the RollTek module unless module is securely mounted to seat riser in vehicle.

## **Module 3: Seat Removal & Installation**

#### **Section 1: Seat Removal**

This section will describe how to safely and properly remove the National seat equipped with the Rollover Protection System.

Before beginning this procedure:

- Park the vehicle on a level surface
- Shift the transmission into park or neutral
- Set the parking brake
- Turn off the ignition
- Install a set of wheel chocks
- Disconnect the negative battery cable



To prevent property damage, personal injury and / or death, disconnect the negative battery cable prior to removing the National Seat equipped with the RollTek Rollover Protection System. Allow at least two minutes for the seat's components to discharge. Failure to follow this warning may result in the airbag and pretensioners unintentionally deploying.

Once the negative battery cable has been disconnected, allow at least two minutes for any reserve power to drain from the components of the RollTek system.

Raise the seat up, and adjust the seat and seat back to their forward most positions.

Drain the air tanks. This will make it easier for the seat's push-to-connect airline fitting to be disconnected.

Remove the small electrical plate on the RollTek SRS module's lower cover by disengaging the three plastic push clips.

Disconnect the chassis wiring harness connector from the RollTek ECU.

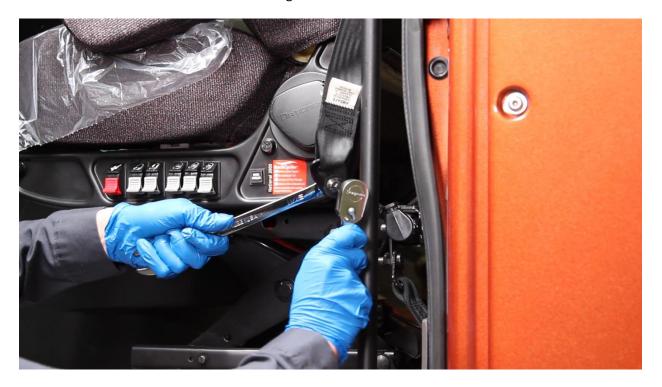
Disconnect the push-to-connect airline fitting located behind the seat.

Remove the plastic push clips from the smaller top cover of the RollTek module, and remove the cover.

Remove the plastic push clips located on the larger RollTek module cover.

Remove the cover and set it aside as it will be re-installed later.

Remove and discard the nut and bolt securing the seat belt to the ICP bar.



Remove and discard the two tether mounting bolts from the ICP bar. The tethers will remain attached to the tether bracket on the cab floor.



In day cab applications, rear mounts for the National Seat anchor plate will be studs. In sleeper cab applications, all four mounts will be bolts.

Remove the fasteners that secure the seat's anchor plate to the cab floor. With assistance, lift the seat's anchor plate over the rear mounting studs and slide the entire seat assembly forward. Remove the seat from the vehicle.

#### **Section 2: Seat Installation**

With assistance, place the seat into the vehicle.

Ensure the seat and seat back are adjusted to their forward most positions.

Move the seat assembly back toward the rear mounting studs. Tilt the seat forward and place the rear mounting holes on the seat base over the two rear mounting studs.

Be sure the rear flanges of the RollTek module are seated properly into the slots of the floor mounted tether bracket. Ensure the front mounting holes on the seat base are aligned with the mounting holes in the cab floor.

Secure the seat to the cab floor using the specified nuts and bolts. Be sure to torque them to the proper specification.

Using new bolts, secure the two seat belt tethers to the ICP bar attachment points. Torque them to the proper specification.



Attach the 3-point belt anchor to the ICP bar using a new bolt and flange nut, and torque them to the proper specification.

Install the larger RollTek SRS Module cover, and insert the plastic push clips.

Install the smaller top cover onto the larger cover and insert the plastic push clips.

Connect the push-to-connect airline fitting located behind the seat.

Connect the chassis wiring harness connector to the RollTek ECU module.

Attach the small electrical cover to the larger plastic cover using three plastic push clips.



Ensure that the areas behind and underneath the seat are free from any loose items or debris, as they could interfere with the seat's operation.

Close the air tanks.

Reconnect the negative battery cable.

#### **Module 4: Diagnostics**

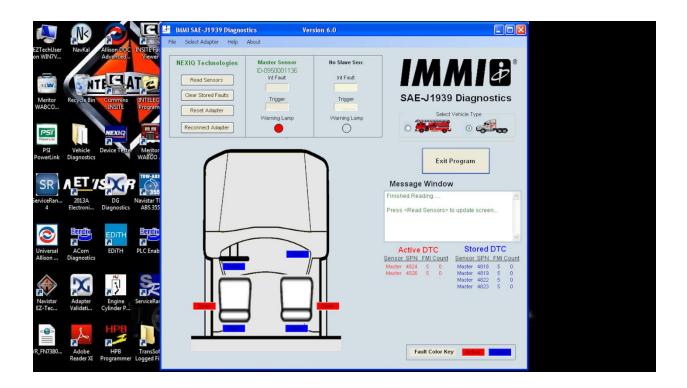


Vehicles equipped with the RollTek Rollover Protection System will include a dedicated diagnostic lamp on the dash panel.

The diagnostic lamp remains on for approximately five seconds after vehicle ignition power is applied. During these five seconds, internal tests verify system functionality.

However, if the diagnostic lamp remains on, or did not light during vehicle start up, the RollTek System may not be operational. The issue should be diagnosed prior to releasing the vehicle back the customer.

The RollTek Rollover Protection System contains it's own diagnostic software.



The diagnostic software will be pre-installed on new EZ Tech computers. For existing EZ Tech computers, the software is available in the download center.



To prevent property damage, personal injury and / or death, prior to correcting any faults, deactivate the roll sensor by turning the ignition off and disconnect the negative battery cable. Never perform service on a live RollTek system.

Be sure the ignition is in the off position.

Connect the EZ Tech to the vehicle's diagnostic port.

Turn the key to the key on engine off position.

Using the EZ Tech, open the RollTek Diagnostics software.

Choose the "Run Diagnostics" radio button and click "Select".

An adapter list will appear.

Select the adapter that is currently being used to connect the EZ Tech to the vehicle.

The operating screen will appear.

Note the adapter manufacturer in green text toward the upper left corner.

Also note the two sensor ID's to the right in green. Record the ID numbers for future use.

The message window at middle-right displays the current communication status between the software and the two sensors.

Toward the upper right, select the vehicle type.

Click on the "Read Sensors" button toward the upper left corner.

Once clicked, this will scan the system and pull any fault codes.

Any active or stored DTC's will be displayed in a list at the lower right of the operating screen.

A graphic of the vehicle will also be shown, displaying the location of each of the DTC's.

To further assist with diagnostics and troubleshooting of the RollTek System, refer to Service Portal.

# **Conclusion**

This concludes the Navistar training course, RollTek Rollover Protection System. Thank you for your participation.

Notes