

MORryde RS SUSPENSION SYSTEM

INSTALLATION INSTRUCTIONS



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RS INSTALLATION INSTRUCTIONS

Product and Safety

Read and understand all instructions and warnings prior to installation of system and operation of vehicle.

⚠ WARNING Failure to follow the instructions and heed the warnings of this document may result in death or serious injury, damage to the vehicle and/or property, and/or voidance of the product warranty. Always utilize appropriate safety equipment, i.e. proper eye protection, hearing protection, gloves, etc.

Retorque all fasteners after 50 miles. Always inspect fasteners and components during routine servicing.

⚠ WARNING You are personally responsible for following safe installation procedures, completing appropriate vehicle checks, and safely operating the vehicle.

⚠ WARNING Exercise caution and common sense when lifting and supporting the vehicle. Use only appropriately rated support devices that are fit for use. Follow safe vehicle supporting procedures recommended by the vehicle and support device manufacturers. Use all garage equipment according to manufacturer specifications.

TOOLS REQUIRED:

Floor Jack*	Wrench Set
Safety Stands*	Reciprocating Saw**
Socket Set	Welder**

* Check for adequate capacity. It must support the weight of the rear of the vehicle.

** May be required for tailpipe modifications.

TORQUE CHART:

Ft-lbs +/- 10%

BOLT SIZE	GRADE 5		GRADE 8	
	ZINC	OILED	ZINC	OILED
3/8-16	–	–	40	–
1/2-13	65	55	95	80
9/16-18	–	–	145	–



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Preinstallation: Fuel Tank Removal

** This can be done with or without the frame supported. This step may be necessary for a finished bus but not a bare chassis.*

⚠ WARNING Be sure to work in a well-ventilated area with access to a fire extinguisher. Keep all sources of sparks or flame away from the vehicle and fuel tank during the operation.

STEP 1A

Siphon the gas out of the tank to make it lighter for easier removal. Store fuel in an approved container.

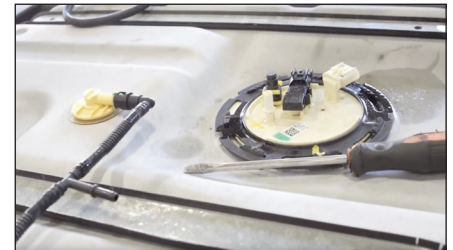
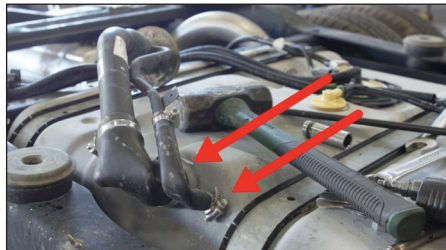
⚠ WARNING Releasing fuel under pressure can cause fire and injury. Prior to opening the fuel system, relieve the fuel pressure by removing the fuel pump relay and starting the vehicle. Let the vehicle run until it dies from lack of fuel.

⚠ WARNING After relieving the pressure in the fuel system, disconnect the negative battery cable to protect the electrical circuits.

STEP 1B

Remove the fuel pump wires and hoses.

NOTE: Stuff rags into the open ports to keep out debris. Before reinstalling hoses, remove all rags.



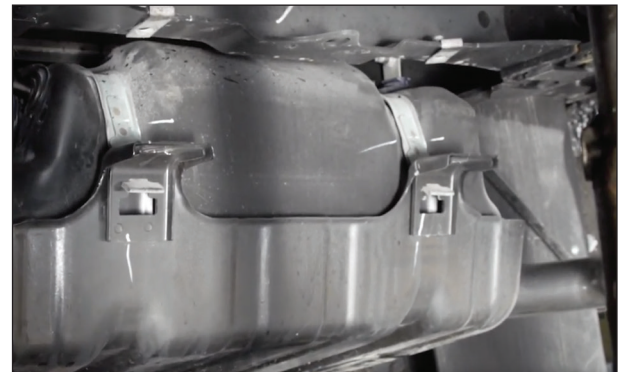
STEP 1C

Remove the bolts from the fuel tank. Bolts are located on both sides of the tank.



STEP 1D

Use a hydraulic jack to support and lower the fuel tank.



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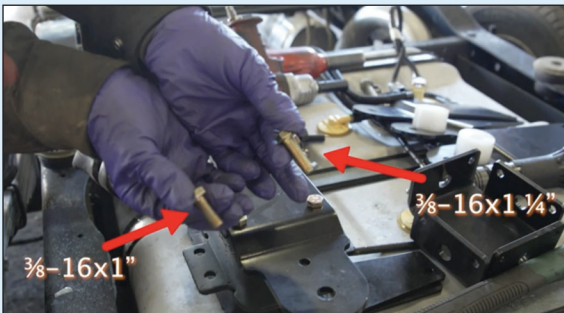
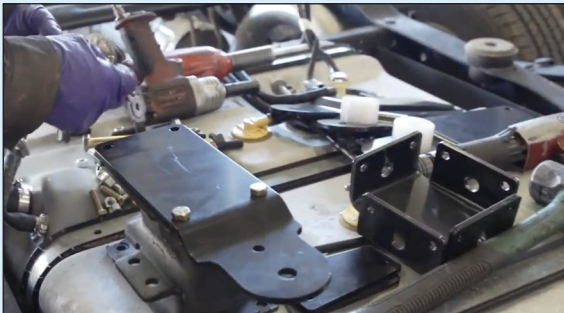
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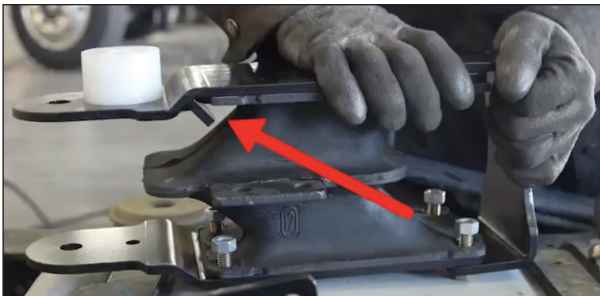
Preinstallation: Spring Carrier Assembly

STEP 2

Use the longer bolts for the retainment strap.

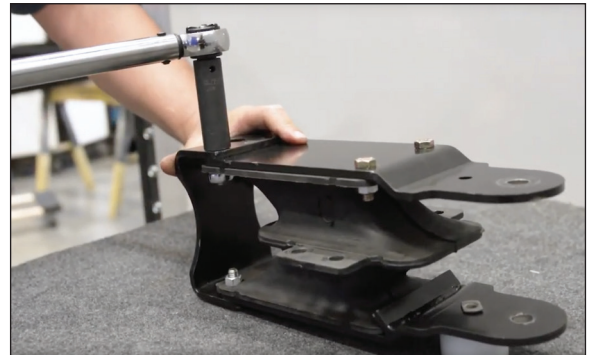


NOTE: Some systems use a hook plate while others use bolts.



STEP 3

Tighten and torque the spring carrier bolts to 40 ft-lbs. Repeat Steps 3 and 4 for the other spring carrier assembly.



EXHAUST MODIFICATION:

⚠ WARNING Follow safety warnings / precautions for the cutting device. Keep body parts clear of the cutting blade. Make sure all fuel spills are cleaned up prior to cutting.

The exhaust pipe must have a clearance of no less than 1" from metal parts and no less than 2" from the rubber parts of the MORryde system. If alteration of the exhaust is required, cut the exhaust pipe just behind the drive axle leaving 1 1/2" of straight flat pipe. Rejoin the exhaust at a later time.



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Preinstallation: Jacks & Wheel Chocks

STEP 4

Support the frame with jacks on each frame rail. Support the axle with a floor jack. Make sure the vehicle is in park. Chock the front wheels.



Preinstallation: Prepping the Frame

STEP 5A

Remove the stock suspension parts. Start by removing the nut from the spring eye bolt and then the shackle bolt. Repeat this on the other side. Raise the axle to move the spring eye above the frame rail to remove the spring eye bolt.



STEP 5B

Remove the frame hanger with a grinder or a torch.

⚠ WARNING Use weld blankets to protect from sparks where appropriate. Remove flammable objects from the area. Follow the precautions as indicated by the hand tool manufacturers.



⚠ WARNING Be careful not to damage the frame rail. Only torch the head of the bolt.



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STEP 5C

Punch out the remaining slugs. There are two different methods for removing the slugs.

METHOD 1: Drilling



METHOD 2: Air Chisel



STEP 5D

Using a drill bit, drill out the holes to 1/2".

NOTE: Make sure not to drill into wires or the fuel tank on the other side of the frame.

Repeat on the other side.

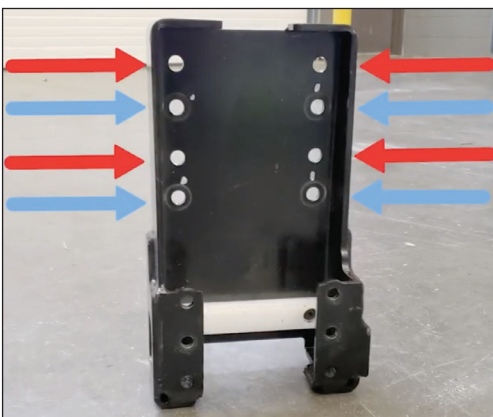


Installation Instructions

STEP 6A

Install the frame hanger.

NOTE: The lower set of mounting holes gives a lower ride height and the upper set of mounting holes gives a taller ride height.



RED:
Upper
mounting
holes

BLUE:
Lower
mounting
holes

STEP 6B

Tighten the frame hanger and then torque the frame hanger bolts to 80 ft-lbs.



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STEP 6C

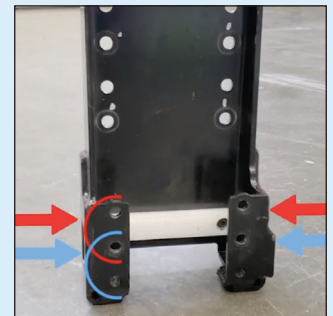
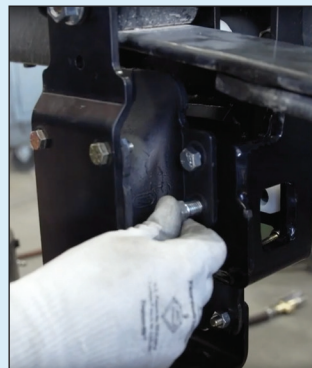
Install the spring carrier assembly with the head of the spring eye bolt facing the frame.



STEP 6D

Install the spring mounting bolts. Manipulate the height of the axle to align the spring mounting holes. Tighten and torque the mounting bolts to 40 ft-lbs.

NOTE: The different hole sets are for different ride heights. The lower mounting holes will result in a higher ride height while the higher mounting holes will result in a lower ride height.



RED: Upper mounting holes
BLUE: Lower mounting holes

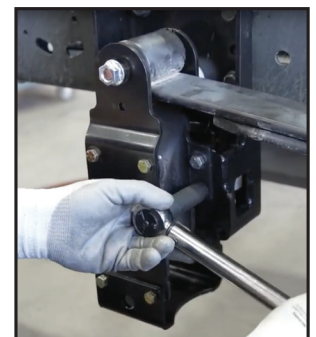
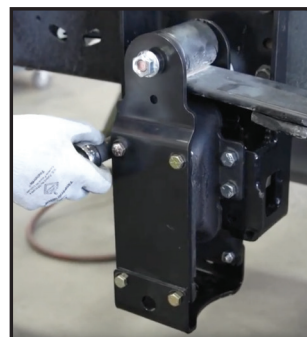
ATTENTION

It is also acceptable to use different height settings on each side in order to balance a vehicle that is heavier on one side or the other. For example, a bus unit that has a wheelchair lift may lean, and the lean may be corrected using a higher ride height on the lift side.



STEP 6E

Tighten and torque the spring carrier mounting bolts to 40 ft-lbs.



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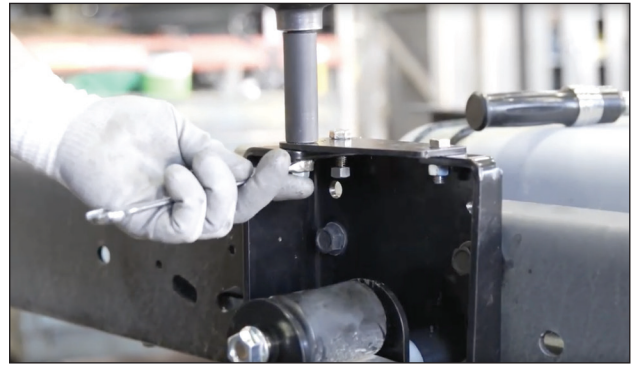
INSTRUCTIONS

STEP 7

Install and torque the nuts on the spring eye bolt. Tighten and torque the spring eye bolt to 145 ft-lbs. Torque mark the bolts. Repeat on the other side.



NOTE: The kit may include a jounce bumper plate. If so, install the bolts and tighten and torque to 40 ft-lbs.



STEP 8

If applicable, rejoin the exhaust per MORryde's guidelines and the appropriate vehicle requirements after the suspension work is complete. The exhaust pipe must have a clearance of no less than 1" from metal parts and no less than 2" from the rubber parts of the MORryde system.

Reattach the fuel tank and fuel pump wires and hoses according to the appropriate vehicle requirements.

If you have any questions regarding the installation procedure or have difficulty with any of the steps, please give us a call at **574-293-1581** or email **parts@morryde.com**.



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