

**RAFNA TECHNICAL SERVICE BULLETIN No. 153**

**Emergency Removal Of Railgear From Rail**

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This Technical Service Bulletin provides a procedure to move the Rafna R-150, R-250HD, R-290, R-450, R-650, R-850 Railgear models from rail to road position in the event of a hydraulic system failure when no auxiliary emergency hydraulic hand pump is available. This procedure is best carried out at or near a level railroad crossing or similar location to enable driving or moving the vehicle away from the railroad following storage of the railgear.



- **Read and understand this procedure and the operating manual completely before attempting to move the railgear.**
  - **Ensure that all rail company safety procedures are followed and never place yourself or others in a dangerous position.**
  - **Before anyone goes under the vehicle or railgear, ensure the vehicle engine is turned off, the parking brake is set and the vehicle and railgear are securely supported.**
  - **Ensure all body parts and loose clothing are clear of any moving parts of the equipment.**
  - **Failure to heed to any of the above mentioned warnings or failure to follow the procedure could result in severe bodily injury and/or equipment damage.**
1. Jack up the front of the vehicle and securely support it on jack stands by the front vehicle axle so that the front railgear wheels are clear of the rail. There should be no contact between the railgear and anything else (eg rail, road etc). Do not use the vehicle's hydraulic system (eg outriggers) to lift the vehicle as the hydraulic system will be disabled during this procedure.
  2. Even though the railgear is now "unloaded", there may still be hydraulic pressure in the hydraulic cylinders, lock valves (if equipped) and hoses. When working on these components in the next few steps, take the necessary precautions to avoid being sprayed with high pressure hydraulic oil. Prepare to collect oil that leaks from these components also. When disconnecting any of the hydraulic components, always "crack" the connection slightly to allow any pressure to escape slowly first.
  3. Ensure that the positions of all hydraulic components are known before removing them so that re-installation following clearing the rails will be easier.

***RAFNA TECHNICAL SERVICE BULLETIN NO. 153***

**Emergency Removal Of Railgear From Rail**

4. **For Vehicles Equipped With A Manual Truck Axle Lock:** Ensure that the axle lock hooks are not “loaded” with the truck axle. Follow the procedure in the operating manual to disengage the axle lock.
5. **For Vehicles Equipped With A Hydraulic Truck Axle Lock:** Ensure that the ball valve to the axle lock is closed and that the axle lock hooks are not “loaded” with the truck axle. Crack and then disconnect the hydraulic hoses at the axle lock hydraulic cylinder(s). Using a “come-a-long”, chain block, jack, or levers, move the axle lock hooks to the disengaged position. Reconnect the hydraulic hoses to the hydraulic cylinder(s).
6. Some railgear models use hydraulic lock valves (aluminum block with four connections marked U1, U2, D1, D2) to lock the hydraulic cylinder(s) in rail position. Other railgear models do not have these lock valves but instead have a mechanical lock that locks the railgear in rail position. Determine how the particular model is locked in rail position.
7. **For Railgear Equipped With Lock Valves:** Crack and let bleed all four connections to each lock valve, including the two hoses or solid connections between each lock valve and the hydraulic cylinder(s).
8. **For Railgear Equipped With A Mechanical Lock:** Crack and let bleed all the connections to the hydraulic cylinder(s). This can be done at the railgear hydraulic cylinder or at the operating valve or at the electric hydraulic pump (if equipped).
9. Once all the hydraulic pressure is bled from the crack connections, remove these connections completely. If there is a lock valve on the cylinder, remove it completely. This will allow the hydraulic cylinder(s) to be moved freely.
10. **For Railgear Equipped With A Mechanical Lock:** Have a helper follow the procedure in the operating manual to hold the mechanical lock control handle of the respective railgear in the disengaged position. It may be necessary to move the railgear with the aid of a “come-a-long”, chain block, jack or levers further towards the rail position in order to release the mechanical lock.
11. At this point the railgear will be free to be moved (rotationally or vertically depending on model) to the road position.
12. With the helper holding the mechanical lock handle in the disengaged position if necessary, the railgear can be moved with the aid of a “come-a-long”, chain block, jack, or levers into the road position.

***RAFNA TECHNICAL SERVICE BULLETIN No. 153***

**Emergency Removal Of Railgear From Rail**

13. Once the railgear is in the road position, the helper can release the mechanical lock handle. Ensure that the road position mechanical lock engages completely in the road position.
14. Reconnect the hydraulic components previously disconnected.
15. Do not use the vehicle's hydraulic system or any vehicle mounted hydraulic component until the railgear hydraulic system is checked and serviced.
16. Jack up the vehicle, remove the jack stands and lower the vehicle onto it's tires.
17. Use the same procedure on the rear railgear if necessary however the vehicle can be supported by the frame or rear vehicle axle which ever is more convenient.
18. Once the front and rear railgear are both securely stowed in the road position with the mechanical locks completely engaged and the truck axle lock (if equipped) is completely disengaged from the truck axle, disengage the steering wheel lock and clear the vehicle from the rails.