

INSTALLATION OF FRONT RAILGEAR MANUAL LOCK KIT R-450 Vertical Front, All Vehicles/Units

INSTALLATION SAFETY PRECAUTIONS

If any installation problems are encountered, please call G&B Specialties, Inc. for technical assistance before continuing with the installation process.



- Failure to heed to any of the following warnings could result in severe bodily injury and/or equipment damage.
- Read and understand this manual completely before attempting installation of the equipment.
- Installation instructions provided below only address the RAFNA railgear equipment. Applicable railway company procedures and policies must be adhered to.
- Before performing any work under the vehicle or railgear, ensure the engine is turned off and the parking brake is set.
- Do not start the vehicle with the power steering hoses disconnected. Reconnect all hoses and secure the power steering cooler if the vehicle is started.
- Ensure all removed components are given to the vehicle owner after the installation of the railgear. These components must be re-installed if the railgear is removed from the vehicle.
- Always disconnect the vehicle's battery when welding on the vehicle or railgear in order to protect the vehicle's electrical system.
- Railway Company rules governing rail travel must be observed at all times.
- Never operate the vehicle if the Gross Vehicle Weight Rating (GVWR), Gross Axle Weight Rating Front or Rear (GAWR), or the wheel or tire load ratings are exceeded.

INSTALLATION OF FRONT RAILGEAR MANUAL LOCK KIT

The following procedure details the installation of the front railgear manual lock kit. The hardware required for this installation is listed in the table below.

Table 1: Front Railgear Manual Lock Installation Parts

Part Number	Description	Qty
R-10701	Hitch Pin	2
R-10702	Clamp Half	2
R-10706	Clamp Half with Holder	2
R-10707	Tether	2
R-10708	Split Ring	2
R-10709	Hairpin Clip	2
R-990KIT-418	3/8" UNC Gr. 8 Bolt x 1 1/4" Long	4
	3/8" Lock Washer, Split	4
	3/8" UNC Hex Nut	4

1. The front railgear manual lock cannot be installed until the railgear has been completely installed on the vehicle.
2. Deploy the front unit to the rail position by extending the cylinders to the maximum stroke. This gear is to stay in this position until installation is complete.
3. Locate the top of the inner guide by measuring from the center of the bolted connection at the axle up 26.875". This will be the top of the inner guide.
4. Measure up another 1.625" from the top of the inner guide or 28.5" from the center of the bolted connection. This dimension is a minimum distance the pin can be from the top of the inner guide. This will be the centerline of the placement of the clamps and hitch pin. Repeat for opposite side.
5. Clamp the two halves together using the 3/8" hardware supplied with the kit. Do not torque the hardware. The centerline of the clamps should be centered on the centerline marked in the previous step. The ears of the clamps should be parallel to the front of the vehicle. Repeat for opposite side.
6. Drill a 25/32" hole through the clamp using the hole predrilled as a guide. Drill each side separately to ensure it will line up properly. Repeat for opposite side.
7. Clean and deburr the area of any metal shavings.
8. Ensure the pin fits through the holes.
9. With the pin still in position, stitch weld the top and bottom of each clamp to the outer guide.
10. Remove pin and place in holder with hairpin clip, locking it in the holder.
11. Pass the tether through itself as shown, around the pin handle.

12. Install the split ring on the free end of the tether.
13. Install the hairpin clip onto the split ring. The pin, hairpin clip, and tether should be all tied together at this point.
14. Apply the decal to the front of the railgear, on each tube, approximately 2" above the clamps. The decal should be plainly visible when in standing in front of the gear, and when installing the lock pin.
15. Gear can now be raised to road position.



~WARNING~



If any components of the locking system become worn or damaged, components must be replaced with Rafna approved parts and unit put back to fully functioning condition. Any modifications/alterations to the railgear to circumvent this will void any warranty/support from Rafna on future issues. This includes, but is not limited to, drilling of the outer and inner guide tubes for a pinned/bolted connection lockup in the road or rail position. Failure to heed to this warning could result in severe bodily injury and/or equipment damage.

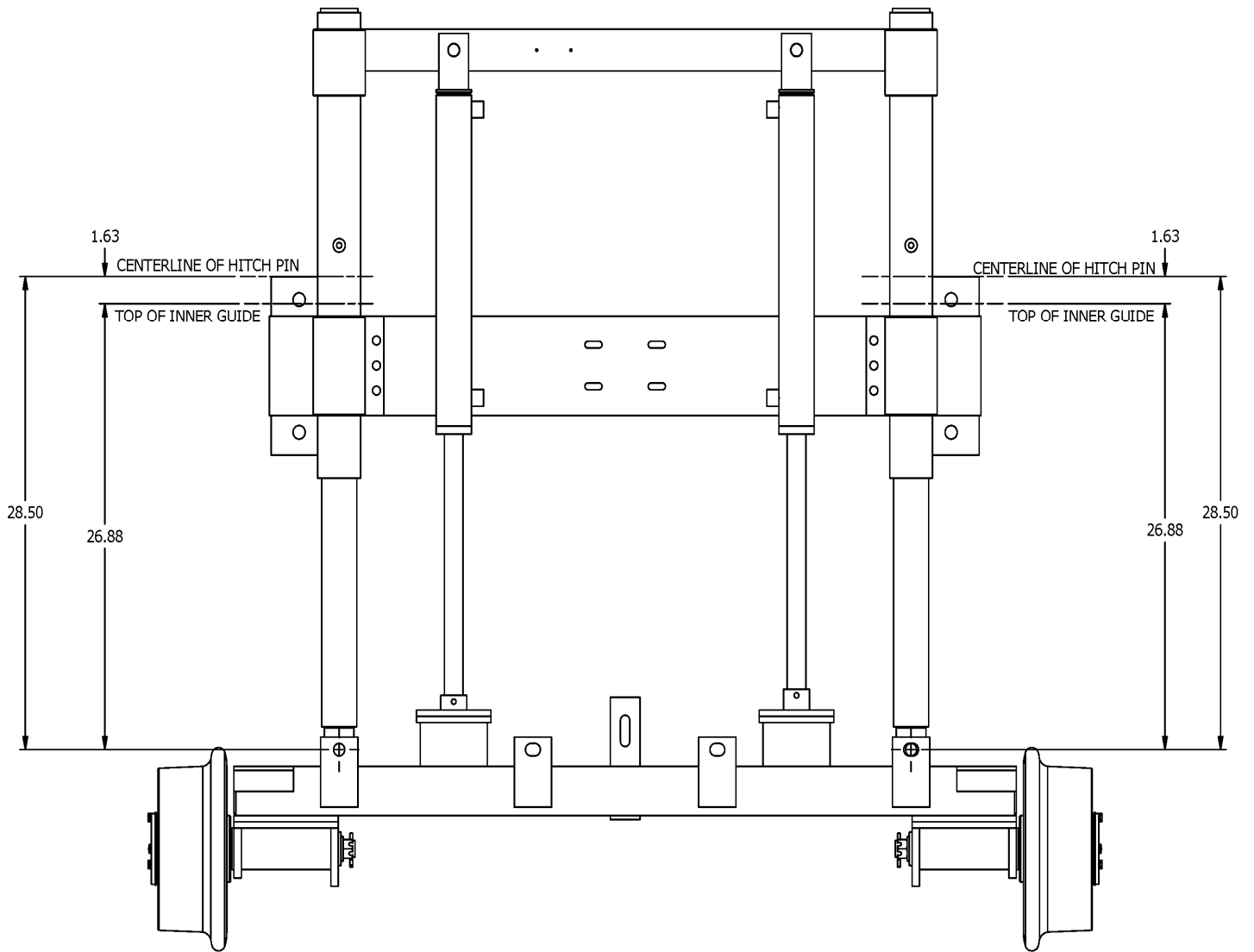


Figure 1: Pin Hole Location

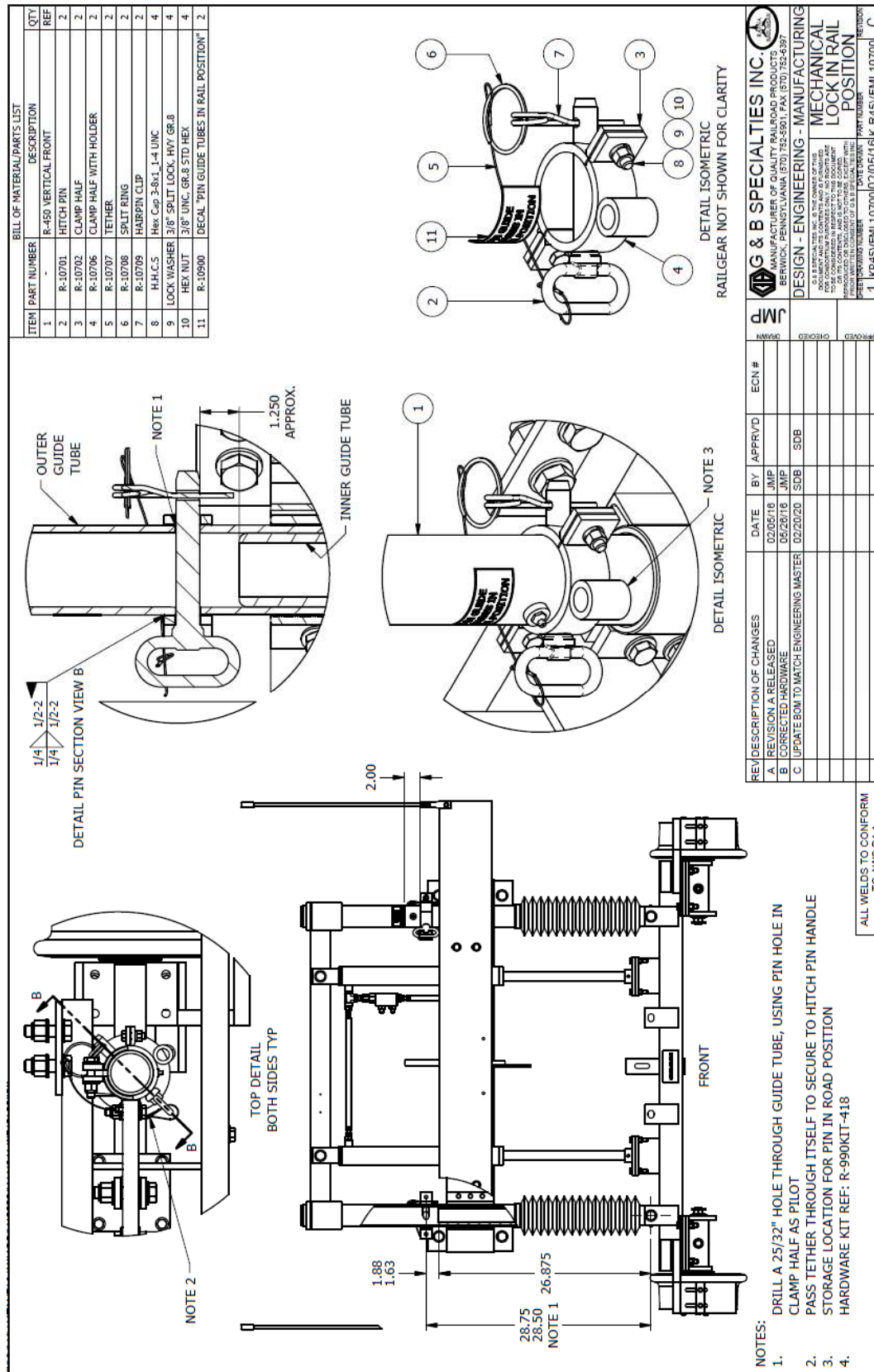


Figure 2: Front Railgear Manual Lock Assembly (K-R45VFML10700)

OPERATION OF FRONT RAILGEAR MANUAL LOCK KIT R-450 Vertical Front, All Vehicles/Units

OPERATION SAFETY PRECAUTIONS

If any operating, service or parts problems are encountered, please call G&B Specialties, Inc. for technical assistance.



- Failure to heed to any of the following warnings could result in severe bodily injury and/or equipment damage.
- Read and understand this manual completely before attempting operation of the railgear equipped vehicle.
- Operating instructions provided below only address the Rafna railgear equipment. Applicable railway company procedures and policies must be adhered to.
- Railway company rules governing rail travel must be observed at all times.
- Before performing any work under the vehicle or railgear, ensure the engine is turned off and the parking brake is set.
- Never operate the vehicle if the Gross Vehicle Weight Rating (GVWR), Gross Axle Weight Rating Front or Rear (GAWR), or the wheel or tire load ratings are exceeded.

OPERATION OF FRONT RAILGEAR MANUAL LOCK KIT

With the front railgear manual lock kit installed on this vehicle, it may be operated as normal.

The front railgear manual lock should only be engaged for rail travel and must be disengaged for road travel. Never operate this vehicle on the road with the manual lock engaged.

Never operate the vehicle if the Gross Vehicle Weight Rating (GVWR), Gross Axle Weight Rating Front or Rear (GAWR), or the wheel or tire load ratings are exceeded.

To Engage Manual Lock:

1. Deploy the front railgear to the rail position.
2. Remove hairpin clip from hitch pin and remove hitch pin from holder.
3. Insert pin into the hole in the clamp and outer guide and engage hairpin clip once the hitch pin is fully through the outer guide.
4. Repeat for opposite side.

To Disengage Manual Lock:

1. Remove hairpin clip from hitch pin and remove from the clamp and outer guide.
2. Insert hitch pin into the clamp holder and engage hairpin clip for road travel storage.
3. Repeat for the opposite side.
4. Retract the front railgear to the road position.

SERVICE OF FRONT RAILGEAR MANUAL LOCK KIT

The front railgear manual lock kit must be serviced regularly to avoid damage to the equipment. Table 1 below provides the Recommended Service Schedule and Table 2 provides Standard Fastener Torque Values. DO NOT torque the 3/8" hardware.

Table 1: Recommended Service Schedule

Service Required	Daily	Weekly	Monthly
Inspect kit for wear on pin and outer guide		✓	✓

Table 2: Standard Fastener Torque Values

Fastener Size	Fastener Torque Value (ft-lbs) Dry
1" UNC Gr. 8 Fasteners	250
3/4" UNC Gr. 8 Fasteners	175
5/8" UNC Gr. 8 Fasteners	150
1/2" UNC Gr. 8 Fasteners	100
3/8" UNC Gr. 8 Fasteners	40
1/4" UNC Gr. 8 Fasteners	12

PARTS OF FRONT RAILGEAR MANUAL LOCK KIT

BILL OF MATERIAL/PARTS LIST

ITEM	PART NUMBER	DESCRIPTION	QTY	REF
1	-	R-450 VERTICAL FRONT		
2	R-10701	HITCH PIN	2	
3	R-10702	CLAMP HALF	2	
4	R-10706	CLAMP HALF WITH HOLDER	2	
5	R-10707	TETHER	2	
6	R-10708	SPLIT RING	2	
7	R-10709	HARBOR CLIP	2	
8	H.H.C.S.	Hex Cap 3-8x1.14 UNC	4	
9	LOCK WASHER	3/8" SPLIT LOCK, HVY GR.8	4	
10	HEX NUT	3/8" UNC, GR.8 STD HEX	4	
11	R-10900	DECAL "PIN GUIDE TUBES IN RAIL POSITION"	2	

TOP DETAIL BOTH SIDES TYP

FRONT

DETAIL PIN SECTION VIEW B

DETAIL ISOMETRIC

DETAIL ISOMETRIC RAILGEAR NOT SHOWN FOR CLARITY

NOTES:

- DRILL A 25/32" HOLE THROUGH GUIDE TUBE, USING PIN HOLE IN CLAMP HALF AS PILOT
- PASS TETHER THROUGH ITSELF TO SECURE TO HITCH PIN HANDLE STORAGE LOCATION FOR PIN IN ROAD POSITION
- HARDWARE KIT REF: R-990KIT-418
- ALL WELDS TO CONFORM TO AWS D1.1

JMP

REVISION	DATE	BY	APPROVED	ECN #
A. REVISION A RELEASED	02/05/18	JMP		
B. CORRECTED HARDWARE	05/28/18	JMP		
C. UPDATE BOM TO MATCH ENGINEERING MASTER	02/20/20	SDB		

G & B SPECIALTIES INC.
MANUFACTURER OF QUALITY RAILROAD PRODUCTS
BERWICK, PENNSYLVANIA (STO) 752-5501, FAX (STO) 752-4397
DESIGN - ENGINEERING - MANUFACTURING

MECHANICAL LOCK IN RAIL POSITION

REVISION

REV	DATE	BY	APP'D	PART NUMBER
1	10R45/FML10700/02/05/16/K-R45/VFML10700	C		