INSTALLATION OF R-450 CABLE ACTUATED FRONT TRUCK AXLE LOCK
2008 - PRESENT, RAM / STERLING BULLET 4500/5500 CHASSIS CAB

INSTALLATION SAFETY PRECAUTIONS

If any installation/operation 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.
- Beware of all pinch points on the railgear and keep all parts of the body clear.
- 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.

INSTALLATION OF FRONT TRUCK AXLE LOCK KIT (CABLE)

The following procedure details the installation of the front truck axle lock kit. The hardware required for this installation is listed in Table 1.

Table 1: K-R45AVXDX02 Cable Actuated Front Axle Lock Installation Parts

Part Number	Description	Qty
R-4912C	Axle Lock-up Hook	2
P-00058	Locking Pull Cable	2
R-19070D	Pull Cable Drivers Side Mounting Bracket	1
R-19070P	Pull Cable Passengers Side Mounting Bracket	1
R-19047	Spacer	2
R-19071	Pull Cable Mounting Plate	2
R-19046	Pivot Stud	2
R-19045	Mounting Block	2
R-19049	Self-Locking Setscrew	4
R-19031	Pull Cable Support Bracket	2
R-19030	Cable End Mounting Tab	2
R-19050	Cable End Ball Joint	2
R-19051	Cable Clamp	6
R-990KIT-252	5/8" UNC Gr. 8 Bolt x 6.00" Long	2
	5/8" Gr. 8 Type-A Washer	4
	5/8" Gr. 8 Type-A Wide Washer	2
	5/8" UNC Gr. 8 Nylon Insert Lock Nut	2
	3/4" Gr. 8 Type-A Washer	6
	3/4" UNC Gr. 8 Heavy Jam Nylon Insert Lock Nut	2
	3/8" Gr. 8 Type-A Washer	8
	3/8" UNC Gr. 8 Nylon Insert Lock Nut	8
	1/4" Gr. 8 Split Lock Washer	2
	1/4" - 28 UNF Gr. 8 Hex Jam Nut	2

1. Remove the front OEM wheels.

Note:

Make sure the truck is supported up by the axle so the suspension/axle does not drop.

2. Remove the OEM hardware attaching the upper trailing arm to the front axle. (Figure 1)

3. Replace the removed hardware with one 5/8" x 6" long bolt, four regular washers, two wide washers, two spacers, and two nylock nuts as shown in Figure 1. **Torque to 120 ft. lbs. as specified by Chrysler service departments.**

4. Bench assemble the mounting block, pivot stud, and self-locking setscrews, making sure the setscrews fasten tight against the flats on the pivot stud as shown in Figure 4.

5. Place the axle lockup hook on the pivot stud, and hold the lockup hook underneath the spacer, leaving about 1/4" between the hook and the spacer, and weld the mounting block to the shock tower. See Figure 2 for reference.

6. Remove the hook and assemble both hooks with two or three 3/4" washers, and one heavy jam nylock nut as shown in Figure 1. Do not over-tighten, as the hook needs to swing freely by hand, and will need to be removed later for welding.

Note:

The number of washers will be determined by how much the hook needs to be spaced out. The hook should be centered with the spacer when engaged.

7. Fasten the mounting plate to the bumper brackets using two 3/8" washers, and two nylock nuts as shown in Figure 2.

8. Fasten the mounting bracket to the mounting plate using two 3/8" washers, and two nylock nuts as shown in Figure 2.

9. Fasten the T-knob end of the cable to the mounting brackets as shown in Figure 2.

10. Run the cables through the frame and out the slot at the shock tower as shown in Figures 1 & 2.

11. Fasten the cable to the pull cable support bracket as shown in Figure 1. Do not tighten the fasteners as adjustment will need to be done later.

12. Fasten the mounting tab to the ball joints using a 1/4" lock washer and jam nut as shown in Figure 1. Use Loctite thread-locker when fastening.

13. With the hook engaged in the lock position, clamp the mounting tab to the hook as shown in Figure 1.

14. While holding the pull cable support bracket against the frame, extend the cable for road position to ensure the hook will be clear of the brake lines as shown in Figure 2.

Note:

The mounting tab and/or pull cable support bracket may need to be moved around to ensure there is enough clearance with the brake lines in the road position.

15. After proper positioning of the mounting tab and pull cable support bracket, weld the pull cable support bracket to the frame.

16. Remove the clamped hook and mounting tab and weld the mounting tab to the hook.

17. Fasten the hook to the pivot stud. Do not over tighten. If over torqued, the cable will be harder to push or pull and may cause damage to the cable.

18. Make sure everything is tightened and test lockup for functionality. Ensure the hooks clear all brake lines in the unlocked position.

19. Repeat steps for opposite side.

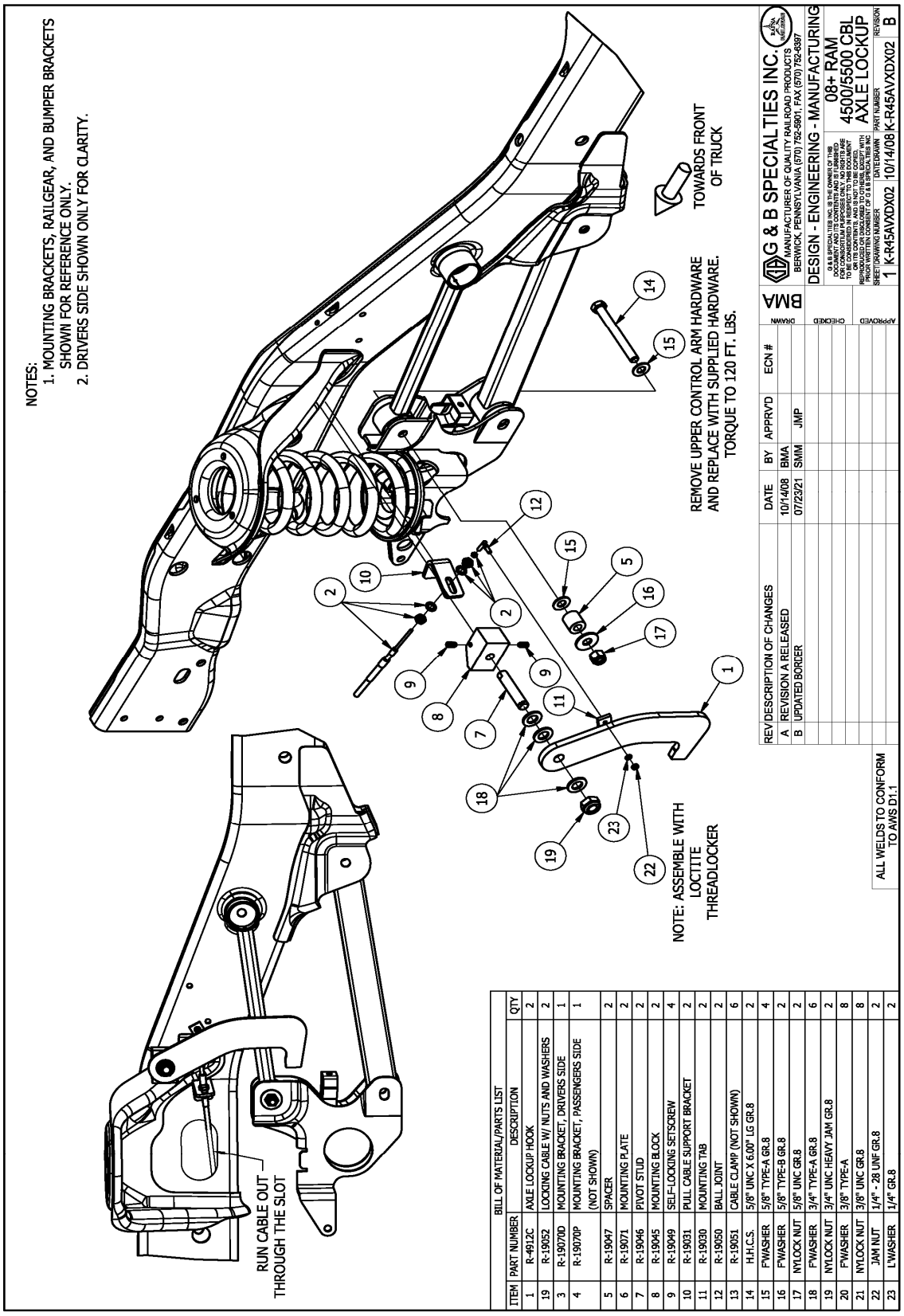

Figure 1: Assembly and Installation of Lockup

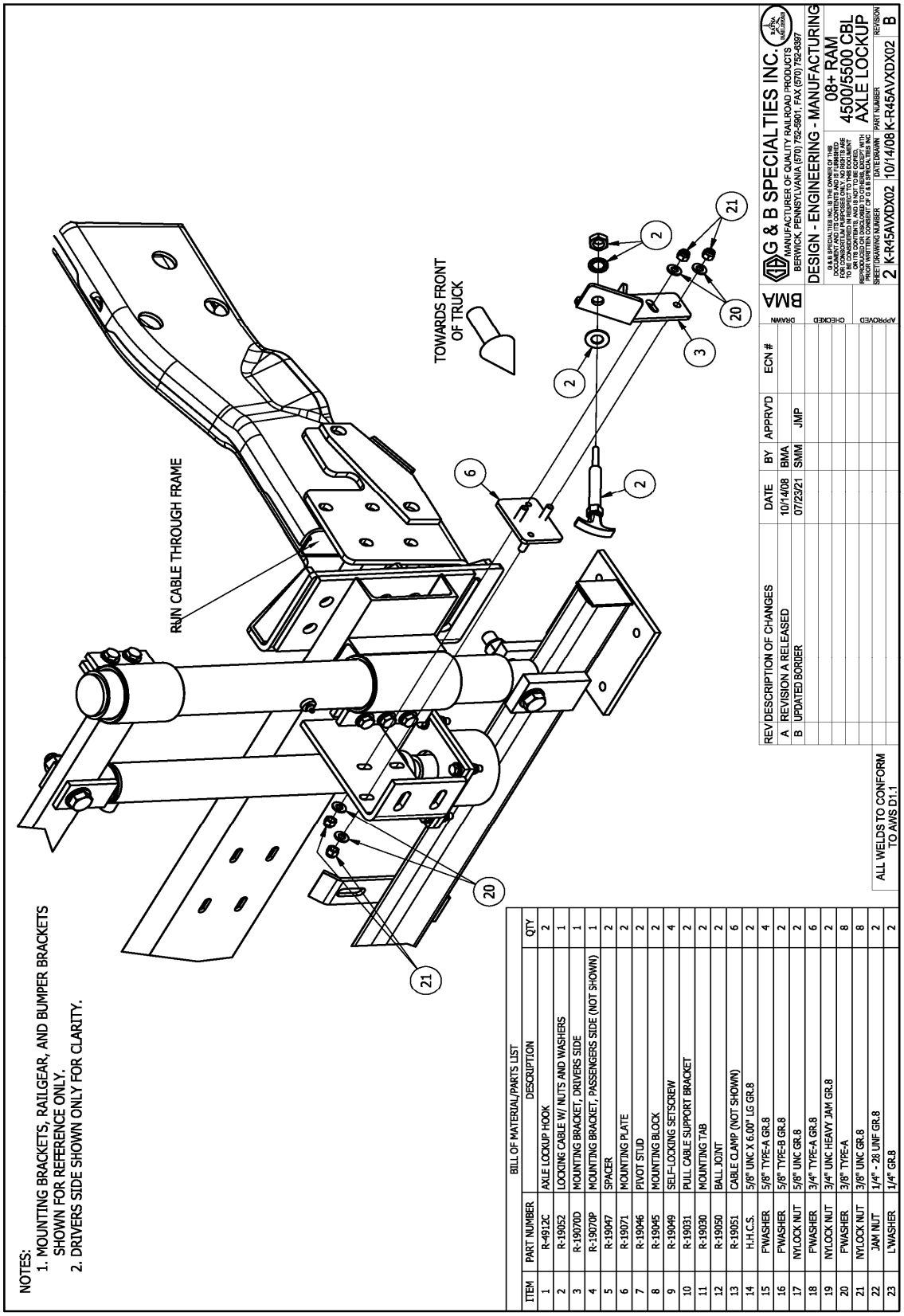

Figure 2: Assembly and Installation of Cable Handle and Brackets

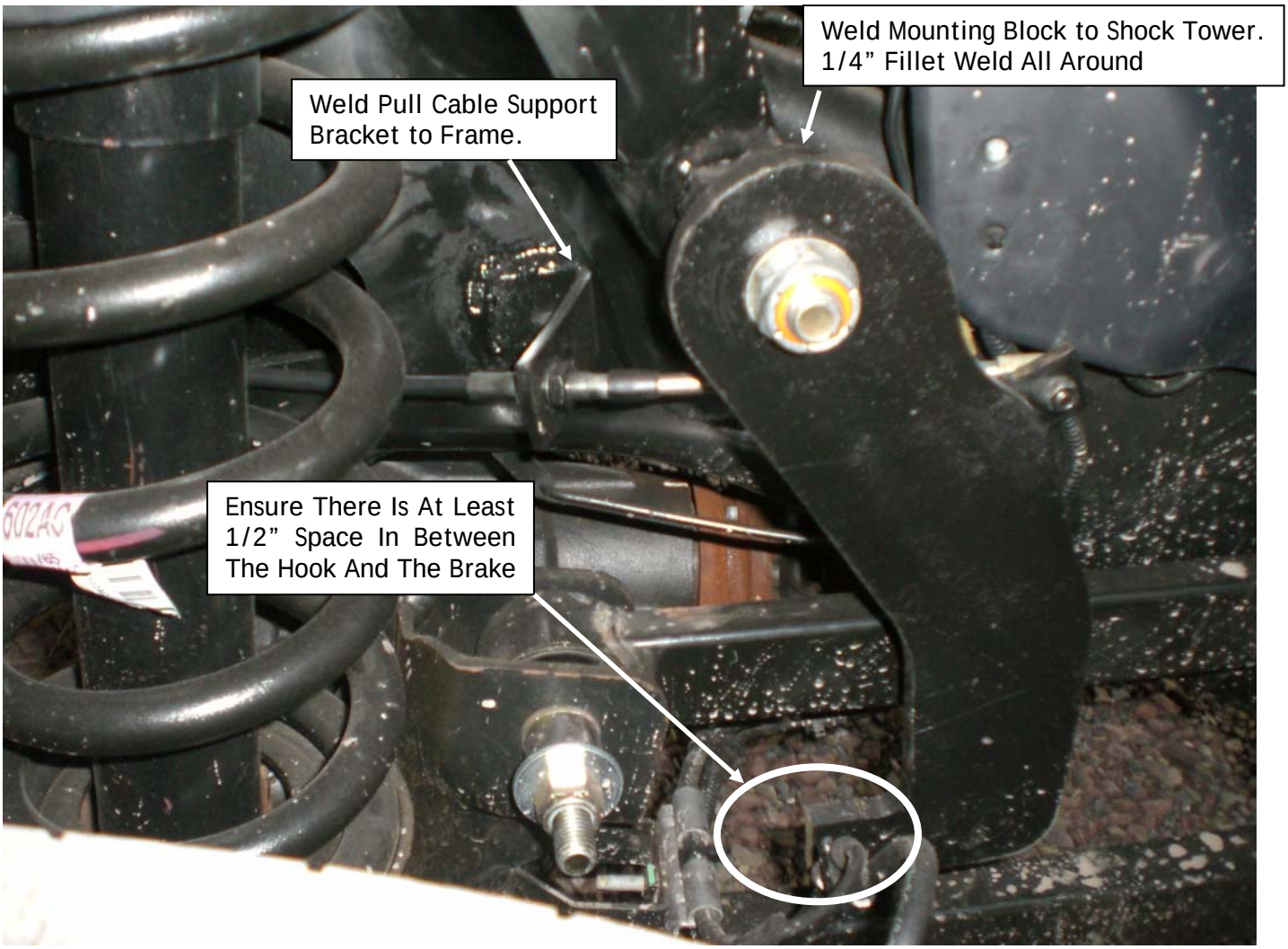

Figure 3: Close-up of Installed Lockup

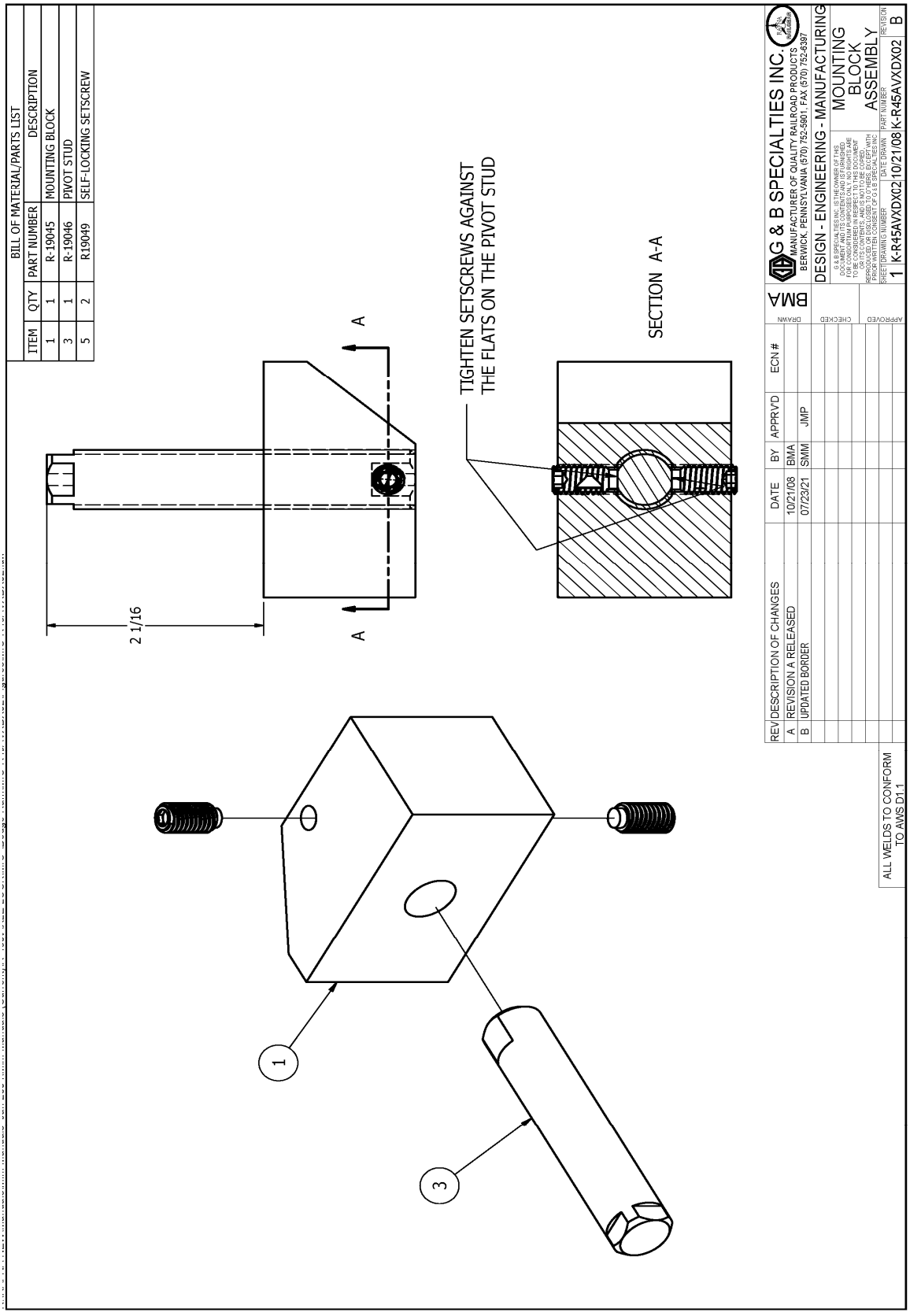

Figure 4: Mounting Block Assembly

OPERATION OF R-450 CABLE ACTUATED FRONT TRUCK AXLE LOCK
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OPERATION SAFETY PRECAUTIONS

If any installation/operation 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 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.
- 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.

OPERATION OF MANUAL FRONT AXLE LOCK KIT (CABLE)

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

The front axle lock should only be engaged for rail travel and should always be disengaged for road travel. Never operate the vehicle on road with the front axle 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 the Front Axle Lock:

1. The front axle lock should be engaged before deploying the front railgear to the rail position.

2. Twist the handle to unlock the cable and pull the handle outward to engage the hooks.

3. Ensure that the hooks are fully engaged against the spacers.

4. Twist handles again to lock the hooks in place.

To Disengage the Front Axle Lock:

1. The front axle lock should only be disengaged once the front railgear is fully returned to the road position.

2. Twist the handle to unlock the cable and push the handle in to disengage the hooks.

3. Ensure that the hooks are fully disengaged from the spacers and clear the brake lines.

4. Twist handles again to lock the hooks in place.

CABLE OPERATED FRONT AXLE LOCK ADJUSTMENT

The manual front axle lock is adjusted when the vehicle is resting on its tires in its minimum loaded condition with the railgear in the **road** position and the axle lock engaged. For the axle lock to function properly there are three adjustments to be made:

1. There should be a clearance of 1/8" to 3/8" between the hooking surface of each hook and hook catch. If the clearance is larger than 3/8", steel shims can be welded to the bottom of the hook catch. If the clearance is less than 1/8", any previously installed shims can be removed. If there are no shims to remove, the hook catch can be cut off the bracket and re-welded higher up on the bracket using a 3/8" all around fillet weld.

2. The rear vertical edge of each hook should rest flat against the forward edge of the hook catch when the axle lock is fully engaged. This can be adjusted by cutting the hook catch off the bracket and re-welding it in place using a 3/8" all around fillet weld.

3. Each hook must clear the suspension arm by at least 1/2" through its full range of motion. The hooks can be moved inboard and outboard on the hook hanger pivot post by adjusting the number of plastic washers on each side of the hook.

4. Paint all welded areas after the axle lock is properly adjusted.

5. Ensure that there is sufficient clearance between the front axle lock components and all vehicle components through their full range of motion.

SERVICE OF FRONT AXLE LOCK KIT

The Front Axle Lock Kit must be serviced regularly to avoid damage to the equipment. Table 2 below provides the Recommended Service Schedule and the detailed service procedures follow.

Do not torque the 3/4" fasteners that hold the hooks; these fasteners should only be tightened sufficiently to hold the hook from falling off the pivot stud. Table 3 provides all other Standard Fastener Torque Values.

Table 2: Recommended Service Schedule

Service Required	Daily	Weekly	Monthly	3 Months	6 Months
Inspect front axle lock fasteners (re-torque if required)	✓	✓	✓	✓	✓
Check / adjust front axle lock hook clearance (see procedure)					✓

Table 3: Standard Fastener Torque Values

Fastener Size	Fastener Torque Value (ft-lbs) Dry
1" UNC Gr. 8 Fasteners	250
¾" UNC Gr. 8 Fasteners	175
$^{5}/_{8}$" UNC Gr. 8 Fasteners	150
½" UNC Gr. 8 Fasteners	100
$^{3}/_{8}$" UNC Gr. 8 Fasteners	40
¼" UNC Gr. 8 Fasteners	12