

INSTALLATION, OPERATIONS & SERVICE MANUAL R-1130 FRONT RAILGEAR WITH 12" WHEELS

1.0 INSTALLATION

INSTALLATION SAFETY PRECAUTIONS

If any installation problems are encountered, please call G&B Specialties 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 Industries 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.
- Always disconnect the vehicle's battery when welding on the vehicle or railgear in order to protect the vehicle's electrical system.

SECTION	<u>TABLE OF CONTENTS</u> DESCRIPTION	PG.
1.0	Installation	1
	Safety Precautions	1
	General Information	3
	Work Area:	3
	Truck Condition:	3
	Preliminary Installation	4
	Front Railgear Installation	4
	Front Railgear Alignment	8
	To align to Link Arms, check:	8
	To check the spring bracket location, check:	8
	Final Front Installation	9
	Hydraulics.....	11
	New Hydraulic System	11
	Existing Hydraulic System.....	11
	Railsweep Installation	13
	Units with Brakes	13
	Units without Brakes	13
	Rail Sweep Adjustment	13
2.0	Operation	15
	Daily Inspection	15
	Placing Truck on Rails	15
	Lower Rear Guide Wheels.....	15
	4.1.2 Lower Front Guide Wheels	15
	Removing Truck from Rail	16
	While on Rail	16
3.0	Maintenance	17
	Maintenance Intervals.....	17
	Daily	17
	Weekly	17
	Bi-annually	17
	Lubrication.....	17
4.0	Parts/Schematics	18
	Standard Gauge	18
	Miscellaneous.....	22

GENERAL INFORMATION

Work Area:

The work area in which the railgear is to be installed should meet these minimum requirements in order to facilitate the installation and conditions that allow the work to be completed in a safe, accurate and timely manner.

- Floor - The floor should be level in order to provide good measurements required to check alignment of the railgear. The floor should also be sufficiently hard to prevent damage by the railgear wheels.
- Lighting - The work area should be adequately lighted.
- Space - There should be enough space to maneuver the railgear components into position and to safely work around other equipment.

Truck Condition:

Before installation, the truck should be checked in some important areas.

- Tires - the tire pressure should be checked for the manufacturer's recommended inflation and checked for consistent pressure readings from all tires. This will ensure correct traction of the tires on the rails. In addition, the condition of the rear tires must be determined. If they are worn, they should be replaced.
- Alignment - Rear truck axle should be square with the truck frame. G&B Specialties recommends that a reputable alignment shop should check this. 0- degree thrust angle (which can be different than the manufacturer's specification) is required for proper railgear operation.
- Frame and Suspension - On a new truck these should be in good condition. On a used truck, the frame should be inspected for damage. The suspension components should also be checked for damage or wear. If any problems in these areas are not corrected, it will cause difficulty aligning and operating the railgear.

PRELIMINARY INSTALLATION

Remove front truck bumper.

Bolt/Weld the Frame Extension to the truck frame as req'd. Make sure that tilt cabs or hoods will clear the frame extensions. Trim the brackets and gusset as necessary. All truck frame extensions that have bolt on brackets must use 5/8"-11 bolts minimum, hardened steel washers and grade-8 prevailing torque locknuts. All of the grade-8 hardware should be tightened to the manufacturer's specifications. Check that the frame extensions are level and square with the truck frame.

In normal applications, mount the front valve plate assembly between the front frame extensions (with the hydraulic valve underside and the handle facing forward) and weld valve plate in place. In case this is not possible, mount the valve plate in the most appropriate and easily accessible location.

NOTE:

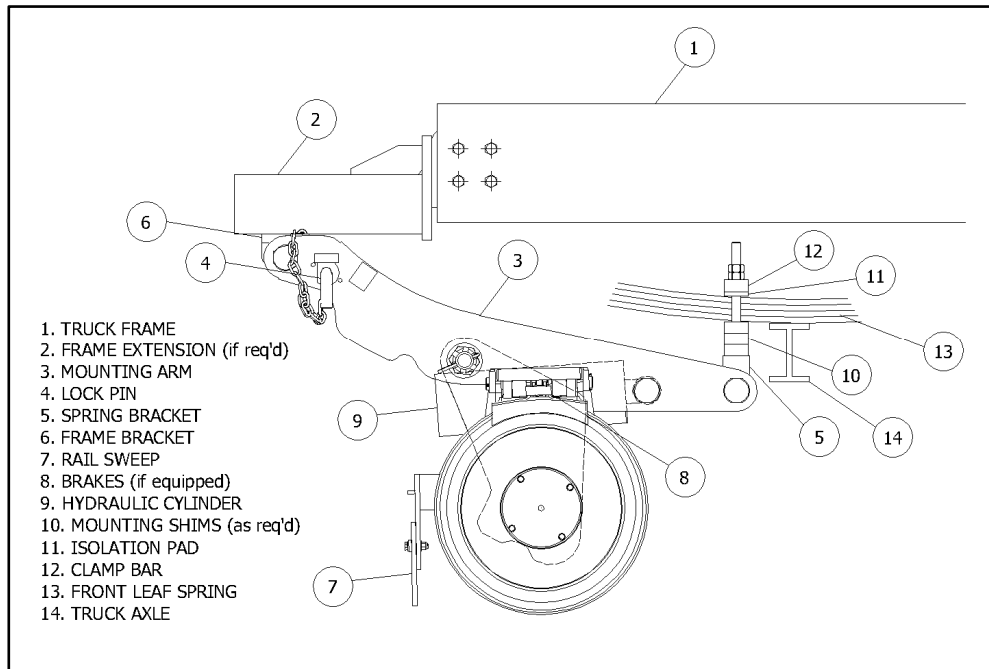
If the vehicle has been supplied with an integral extended front frame then frame extensions will not be required. The front valve plate can be welded directly to the extended front frame.

FRONT RAILGEAR INSTALLATION

NOTE:

Before starting the Front Railgear installation, check the spacing on the front tires on your vehicle. There must be a minimum spacing of 65" between the front tires. If there is not, contact G&B Specialties for further assistance.

With the front railgear under the truck, spacer thickness can be determined. Spacers may be needed to place the front railgear at the proper mounting height. Measure the ground clearance of the front spring just in front of the axle beam. The correct distance from the ground to the center of the rear-mounting pin should be 10 ¾". In order to obtain this 10 ¾" distance, 1" spacers should be used between the spring and the spring bracket. There are 1" spacers provided with the front railgear. The top spacer is used for clamping purposes only and doesn't affect mounting height. Spacers can be added or removed as required to allow for proper mounting height. If additional spacers are required, beyond what is supplied with the railgear, it is to be the responsibility of the installer to fabricate and supply as req'd.



The req'd spacers are to be placed between the spring bracket and the underside of the truck spring. After lifting the Link Arms into place, attach the spring brackets to the truck spring, using two $\frac{3}{4}$ "-10 hex nuts per stud. Push the spring brackets against the axle beam and tighten the hex nuts onto the top spacer to cage the springs.

The front railgear can now be actuated with the hydraulic system, which will raise the front of the Link Arms to the frame extensions. The frame needs to be raised just enough to touch the frame extensions or truck frame.

CAUTION - Do not raise all the way to lift truck frame and raise the front truck tires.

In order to install the front of the front railgear at the correct height, the center of the front mounting pins must be located 22"-23 $\frac{1}{2}$ " from the ground (with the truck steering tires on the ground). If necessary, shim the frame-mounting bracket to obtain the proper measurement. All shims should be load bearing members, do not use thin wall tubing. If necessary, a different frame-mounting bracket can be used to obtain the proper mounting height.

Check for interference with the truck frame, springs, steering gear or other truck components, with the railgear. Front mounting pin ground clearance may be reduced to as low as 22" in order to provide for proper fit.

!WARNING!

Before rotating front gear, ensure axle is positioned correctly or damage to the cylinders could occur. (figure 1.2.1)

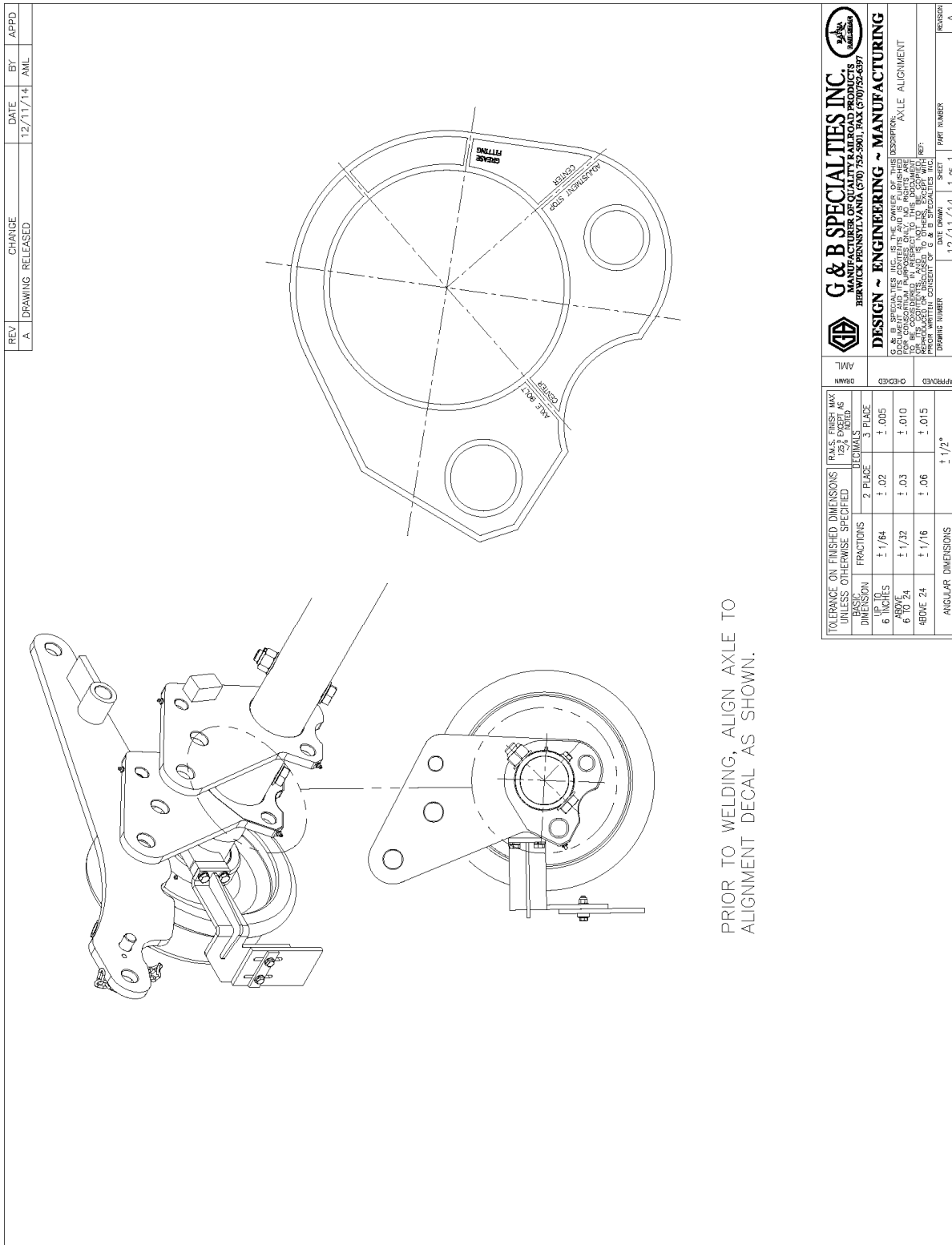
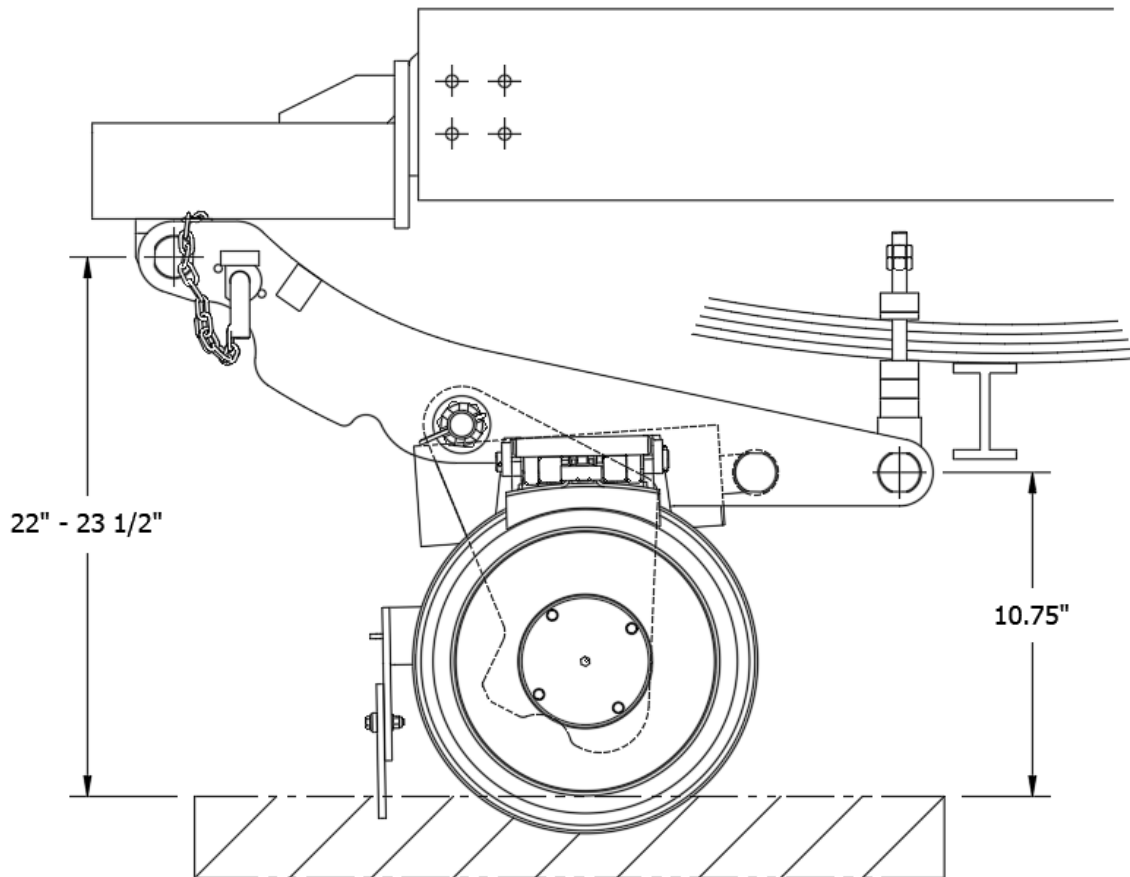


Figure 1.2.1



NOTE:

If the vehicle has been supplied with an integral extended front frame then frame extensions are not necessary. The frame-mounting bracket can be brought up to the extended frame as show. Follow all instructions for finding the proper ground clearance with frame extensions. Solid or load bearing spacers may be required to obtain the proper ground clearance to the front mounting pin.

Clearance Note:

Proper clearance will allow the railgear to move up and down with the truck's front suspension. As the truck tire bumps on the road, the truck spring allows the front axle to move upward. Since the railgear is attached to the spring just forward of the front axle, sufficient clearance must be allowed to prevent interference with other truck parts. The front mounting pin does not move in relation with the truck frame because it is fastened to the frame extension or the truck frame. As the front mounting pin does not move and the rear-mounting pin does, the railgear effectively rotates around the front mounting pin. Therefore, the part of the railgear near the rear mounting pin moves more that the part near the front mounting pin and attention needs to be paid to possible clearance problems that this movement may cause.

FRONT RAILGEAR ALIGNMENT

The front railgear is now ready to be aligned and squared. Three measurements need to be taken in order to insure that everything is properly aligned.

To align to Link Arms, check:

- (1) That they are parallel with each other and the truck frame.

The distance between the Link Arms should be the same at the front mounting pin as it is at the rear-mounting pin. This prevents the railgear from binding during up and down movements. In addition, the distance from the truck frame to the Link Arms should be uniform on both sides of the railgear.

- (2) That they are the same distance forward.

Measure the distance from the front mounting pin to the common point on the truck frame. If the measurements are off, square the railgear by loosening the nuts on spring hanger and move the appropriate distance, then re-tighten.

To check the spring bracket location, check:

- (3) That the spring bracket to truck axle is the same on both sides.

Measure the distance from each spring hanger back to the truck axle. Since the forward position of the Link Arms has been verified in step (2), an off measurement here probably means that the truck axle is miss-aligned and needs to be corrected.

After these alignment checks and after ensuring that there is sufficient clearance, the frame mounting brackets can be tack welded to the frame extensions.

NOTE:

Do not attach welding ground clamp to the railgear wheels. This will cause arcing across the bearings and lead to premature bearing failure.

Raise the front rail wheels just above the floor, making sure there is enough room to slide the front installation rails under the railgear wheels.

Because the railgear axle assembly is not fixed to the pivot arms, the rail wheels will need to be centered. To center, measure the distance from the inside of the rail wheels to the truck frame. If the measurements are off, slide the axle assembly in the appropriate direction and re-check rail wheel to truck frame distances. With the axle tube now centered, tack weld the axle tube to the outer pivot arms.

The front railgear is now ready to be lowered onto the installation rails. When the railgear is completely lowered, the front truck tires should be about 2” off the top of the installation rails. If the railgear will not lift the truck, check that the system pressure relief valve is set high enough that the front hydraulic control valve relief is set high enough. Check that the cylinders are not cross plumbed. As a final review, recheck the center alignment of the railgear wheels to the truck frame. If it is off, break the tacks between the outer pivot arms and the axle tube, move the axle tube to the correct position and retack.

!CAUTION!

- It is important that the axle be rotated to the proper location, as indicated by the
- alignment decal, prior to any welding.
-

FINAL FRONT INSTALLATION

Ensure that the hex nuts on the spring hangers are tight and secured with Loctite Red. Remove the excess stud length from both spring hangers. Leave approx 1” of threaded above hex nuts. If these studs are not trimmed, they may cause a clearance problem with other parts of the truck.

- Weld inboard side of outside pivot arms to axle tube all the way around.
- Fully weld, on all sides, front mounting blocks / cross tubes to truck frame.
- If shims were required, fully weld shims into place on all sides for each shim location.

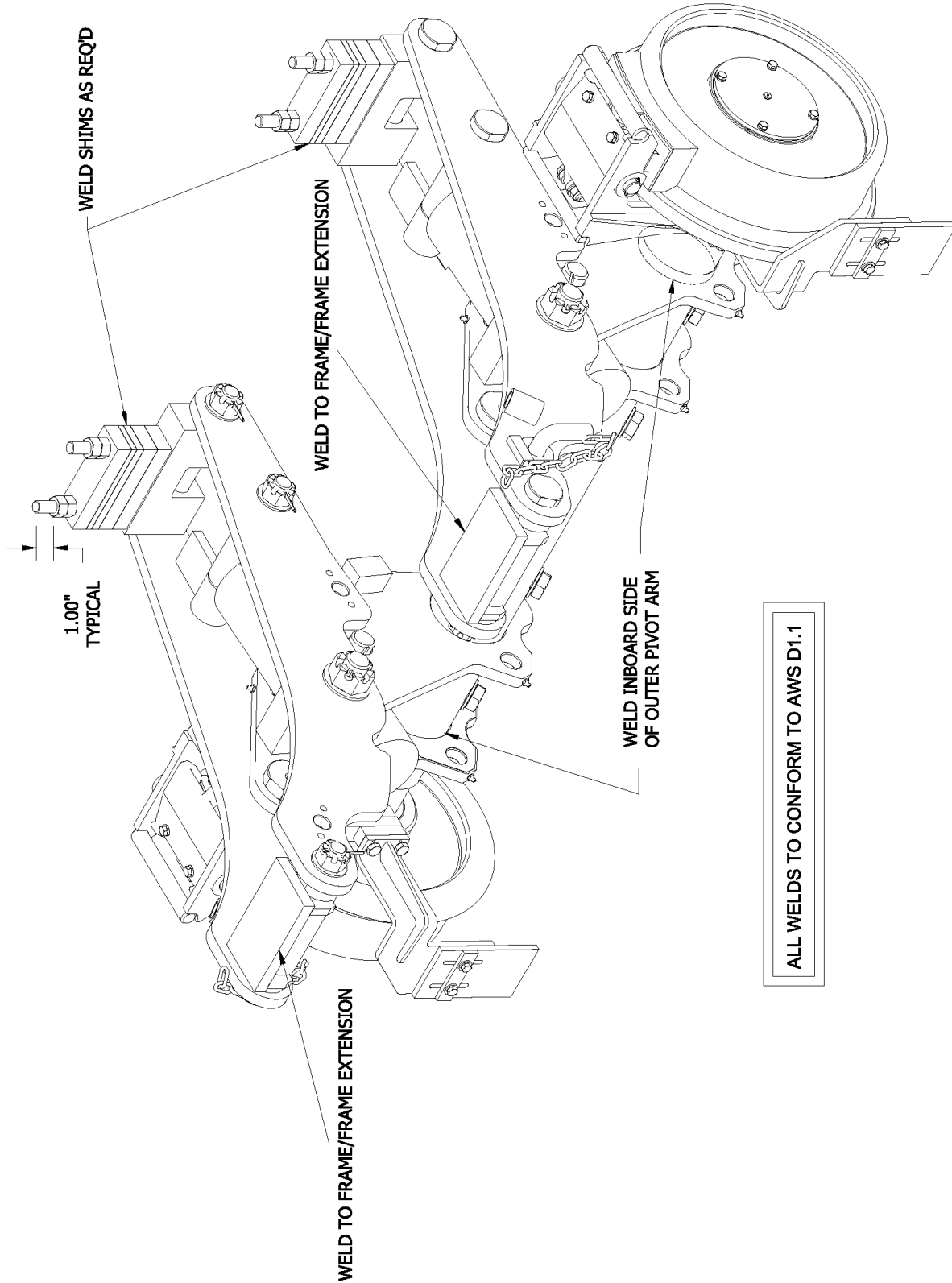


Figure 1.4

HYDRAULICS

New Hydraulic System

If G&B Specialties' railgear is to be the only hydraulic components and there is not an existing hydraulic system, equip the truck with a 5 to 7 GPM, 2500-PSI pump, Suction Filter and a 5-gallon reservoir. The tank should have a minimum of one suction port, one return port and a tank filler-breather. Fill the tank with UNAX Oil Rx 46 or equivalent hydraulic oil.

Route a pressure line from the pump to the center of the front bumper. The in port of the hydraulic control valve is connected to the pressure line. The outlet port of the front hydraulic control valve is routed to the inlet port of the rear hydraulic control valve. The outlet port of the rear hydraulic control valve is connected to the return port in the hydraulic reservoir. The remaining ports on the front valve are connected to the front cylinders. The bottoms of the both cylinders connect, with a tee at the valve, to the same valve port. Check that proper hose clearance is obtained to avoid chafing and shield hoses if necessary.

!WARNING!

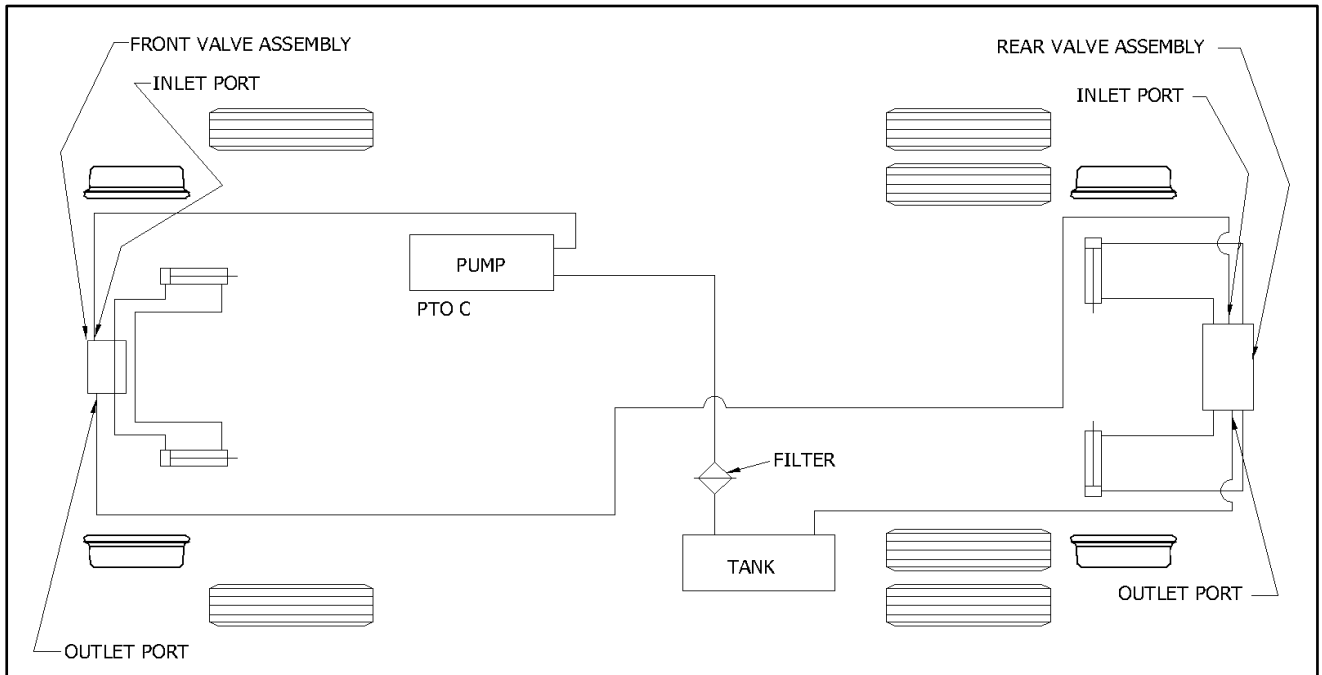
Be certain that front and rear valves are plumbed correctly. Each valve port is marked "INLET" or "OUTLET". Plumbing valve backwards will result in an unsafe condition, possible injury and/or damage.

Existing Hydraulic System

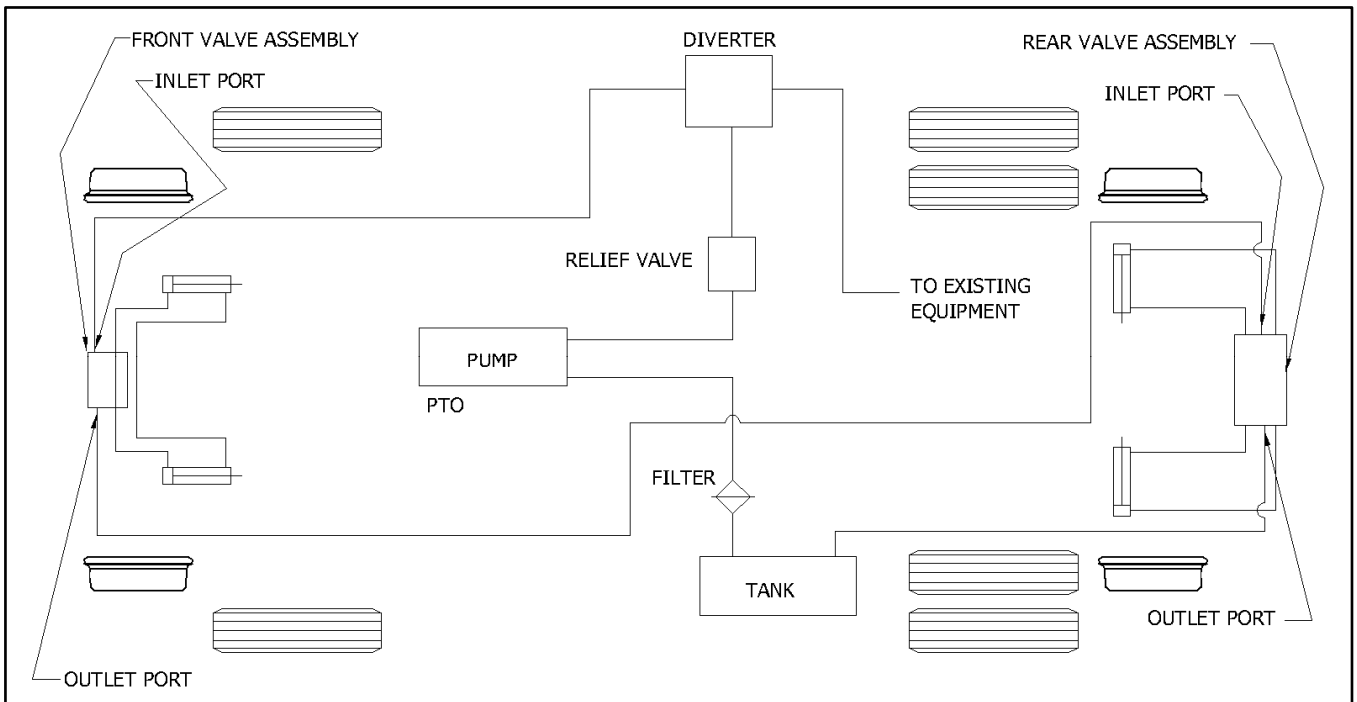
If the truck has an existing hydraulic system, install an appropriately sized diverter valve in the pressure line after the pump and before any existing equipment valves. One-outlet routes to the existing valves and the other to the center of the front bumper. The in port of the hydraulic control valve is connected to the pressure line. The outlet port of the front hydraulic system valve is routed to the inlet port of the rear hydraulic control valve. The outlet port of the rear hydraulic control valve is connected to the return port in the hydraulic reservoir. The remaining ports on the front valve are connected to the front cylinders. The bottoms of both cylinders connect, with a tee at the valve, to the same valve port. Check that proper hose clearance is obtained to avoid chafing and shield hoses if necessary. Directly after the pump, it is good practice to install a relief valve, set for the system pressure to provide overpressure protection for the pump.

NOTE

Railgear valves have built in pressure reliefs and the hydraulic working pressure of the system is 2000 PSI. The front valve is preset to 2000 PSI at the relief and the rear valve is preset to 1500 PSI. All other components supplied by G&B Specialties are rated 2500 PSI. Care must be exercised that the relief pressures at the valves don't exceed this. To ensure proper system pressure, check with a gauge



New Hydraulic Installation (figure 2.0)



Existing Hydraulic Installation (figure 2.1)

RAILSWEEP INSTALLATION

Units with Brakes

On units equipped with brakes, front and/or rear, the rail sweeps attach to the brake housing as shown in front brake kit installation manual.

Units without Brakes

On units without brakes, the front rail sweeps are supplied loose with the unit and need to be welded to the front railgear axle as shown.

Rail Sweep Adjustment

Adjust the rubber sweep by loosening the bolts securing the sweep plate to the rail sweep bracket. Lower or raise the rubber sweep as required so that the bottom of the sweep is just above the top of the rail head. Tighten sweep plate bolts.

The sweeps should be adjusted with the front railgear unit in the fully lowered rail position with the sweep mounting bracket parallel to the running surface of the rail.

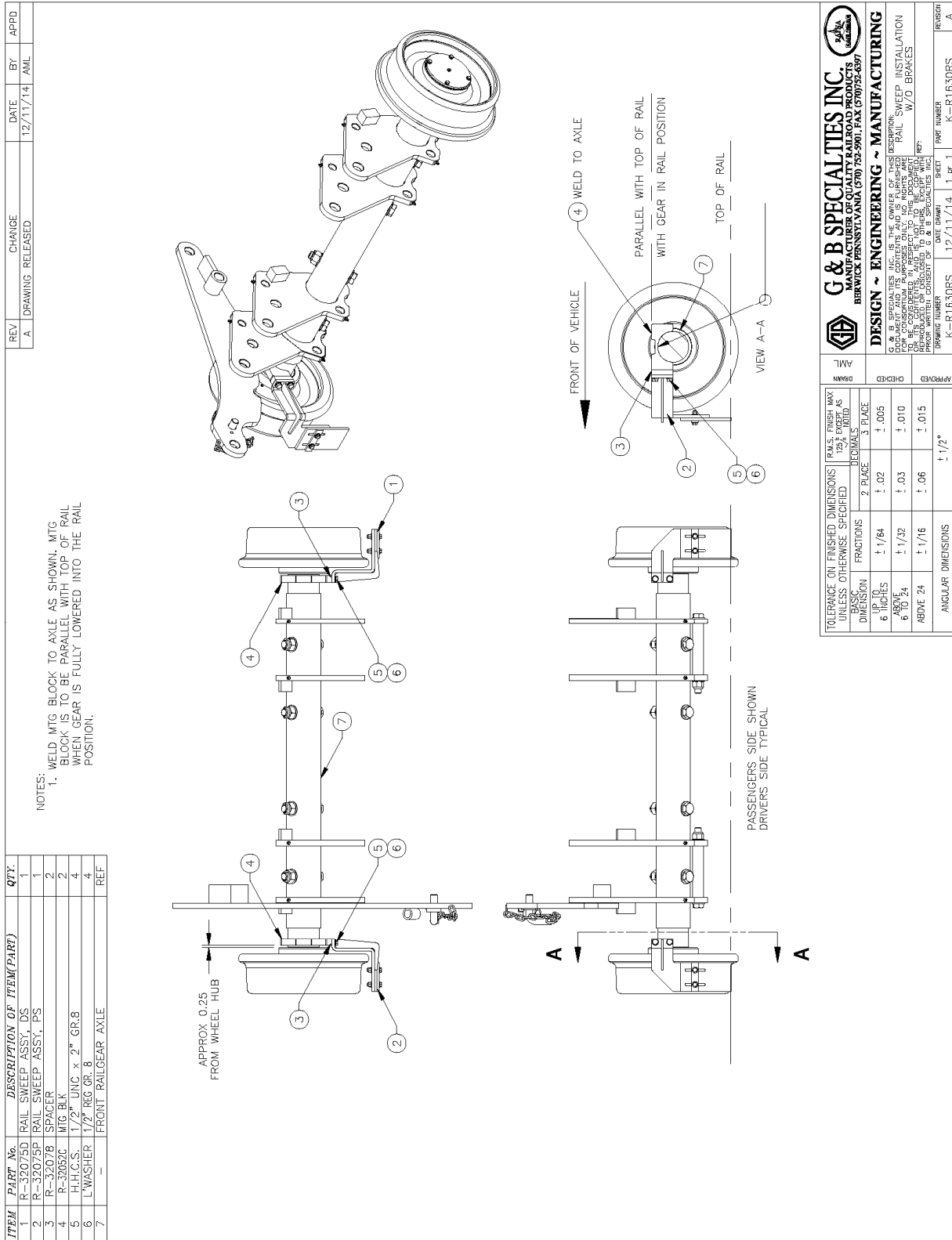


Figure 3.1

2.0 OPERATION

DAILY INSPECTION

Daily Inspection

Check to be sure that the railgear is in good operating condition.

Inspections should include:

All air and hydraulic fittings	All air and hydraulic hoses
Brake operation	Railgear parts for damage
Rail wheel wear	Hydraulic fluid level

PLACING TRUCK ON RAILS

Lower Rear Guide Wheels

1. If the Railgear has brakes, turn brake switch on.
2. Engage the hydraulic system for the railgear unit.
3. Remove the safety pin-off pins.
4. Lower wheels and engage rail.
5. You can use the valve handles independently to lower one side at a time to engage the rail, at which point you can then lower the opposite side. This will cause your vehicle to side-shift and align itself with the rail.
6. When both wheels are fully down and properly engaging rail, replace safety pin-off pins.

4.1.2 Lower Front Guide Wheels

7. If necessary, position the truck to line up the front guide-wheels with the rail.
8. Ensure that the hydraulic system for the railgear unit is engaged.
9. Check and make sure that the front guide wheels line up with the rail.
10. Remove lock pin.
11. Push valve handle to lower wheels and engage rail.
12. If equipped, ensure lock for rail position is engaged.

NOTE:

As a standard, the front railgear unit is designed to operate rotated over center and does not require a railgear lock when in rail position. Depending on options, the front railgear unit may have an optional lock in the rail position. If this is the case ensure that the lock is engaged when in the rail position

REMOVING TRUCK FROM RAIL

13. Engage railgear hydraulic system.
14. Disengage lock pins (if applicable) for the railgear unit being operated.
15. Lift both sets of Railgear (there is no preference for removal order).
16. Ensure all lock pins are engaged on both units in highway position.
17. Disengage the switch that controls the Railgear brakes (if applicable).
18. Disengage the railgear hydraulic system.

WHILE ON RAIL

Do not exceed posted track speed limit, and at no time exceed 30 MPH while on the track

- Be aware that some hi-rail gear is insulated and will not operate the crossing circuits.
- It is the responsibility of the operator to know if your hi-rail equipped vehicle has insulated or non- insulated wheels.
- All railroad rules and safety guidelines should be observed.
- Reduce speed while in reverse and/or at all crossings, curves, branch lines, switches and frogs.
- Traction is reduced on the track. Tire damage may result from spinning wheels on track.
- Braking distance is increased on the track. Do not slide tires or guide wheels on track.
- Do not exceed the maximum rated capacity of the equipment.

3.0 MAINTENANCE

MAINTENANCE INTERVALS

If your hi-rail vehicle is high-use or operated under extreme conditions, the levels of inspections listed below may need to be performed more frequently than stated.

Daily

- Visually inspect for hydraulic fluid leaks
- Visually inspect all hoses for wear or damage
- Visually inspect railgear units for damaged or worn parts
- Check and make sure that all threaded fasteners are secured
- Inspect wheel flanges for excessive wear
- Ensure that the railgear unit hydraulic system and brakes (if equipped) are in good operating condition

Weekly

Perform standard daily inspection points as listed above, and then check the following:

- Grease and lubricate all grease fittings on front and rear railgear and guide wheels
- Check level of hydraulic oil and all other fluids.
- Check air pressure in tires and inflate to proper inflation pressure (if required).

Bi-annually

Perform standard daily and weekly inspection points as listed above, and then check the following:

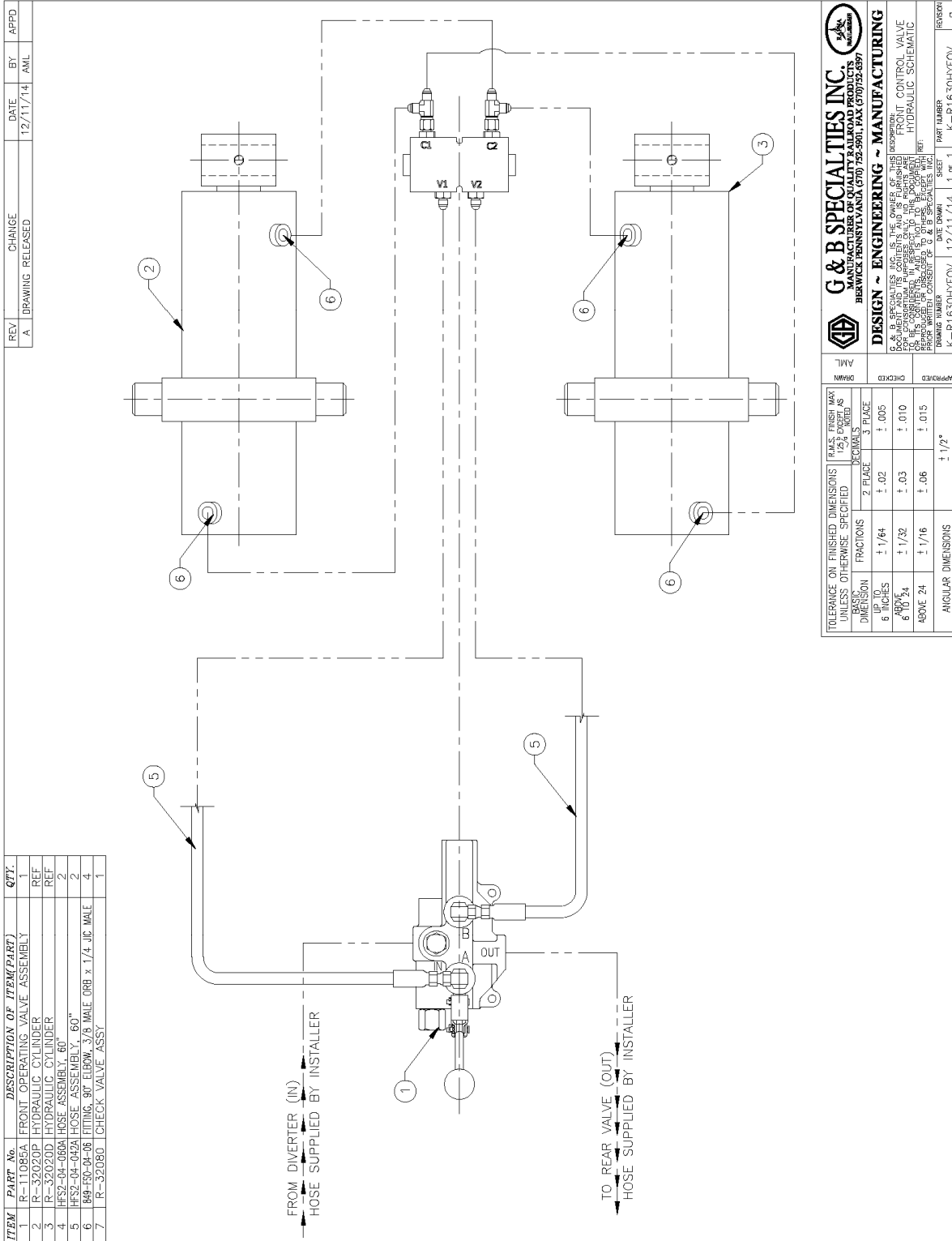
- Remove the hubcaps from the rail wheels and inspect for deterioration or loss of wheel bearing grease
- Clean the strainer / filter in the hydraulic power unit tank
- Rail test for proper traction and adjust as appropriate
- Rail test for proper braking and adjust as appropriate
- Check Railgear alignment

LUBRICATION

Grease fittings are provided at all railgear lubrication points. The recommended lubricant for all lubrication points on this railgear is ESSO LONAX EP2 grease or equivalent. In cold weather, -20F or colder, SHELL DARINA XL102 or equivalent may be used.

4.0 PARTS/SCHEMATICS

STANDARD GAUGE



ITEM	PART No.	DESCRIPTION OF ITEM(PART)	QTY.
1	R-11085A	FRONT OPERATING VALVE ASSEMBLY	1
2	R-32020P	HYDRAULIC CYLINDER	REF
3	R-32020D	HYDRAULIC CYLINDER	2
4	HF32-04-060A	HOSE ASSEMBLY, 60"	2
5	HF32-04-042A	HOSE ASSEMBLY, 60"	2
6	849-159-04-06	FITTING, 90° ELBOW, 3/8 MALE ORB x 1/4 JIC MALE	4
7	R-32080	CHECK VALVE ASSY	1

G & B SPECIALTIES INC. MANUFACTURER OF QUALITY RAILROAD PRODUCTS BERWICK, PENNSYLVANIA (717) 752-5901, FAX (717) 752-6397	
DESIGN ~ ENGINEERING ~ MANUFACTURING	
<small>G & B SPECIALTIES INC. IS THE OWNER OF THIS INFORMATION. FOR PRODUCTION PURPOSES ONLY, AND RIGHTS ARE RESERVED. THIS CONTROL NUMBER IS TO BE OBSERVED. PRINT FROM WRITTEN CONSENT OF G & B SPECIALTIES INC.</small>	
DRAWING NUMBER K-R1630H1F0V	DATE DRAWN 11/27/14
SHEET 1 of 1	PART NUMBER K-R1630H1F0V
REVISION 0	APPROVED _____
TOLERANCE ON FINISHED DIMENSIONS UNLESS OTHERWISE SPECIFIED 12" & EXCEPT AS NOTED DECIMALS	PLUS, FINISH MAY VARY
BASIC DIMENSION UP TO 6 INCHES 6" TO 30" ABOVE 30"	2 PLACE ± .02 ± .03 ± .06
FRACTIONS ± 1/64 ± 1/32 ± 1/16	3 PLACE ± .005 ± .010 ± .015
ANGULAR DIMENSIONS	± 1/2°

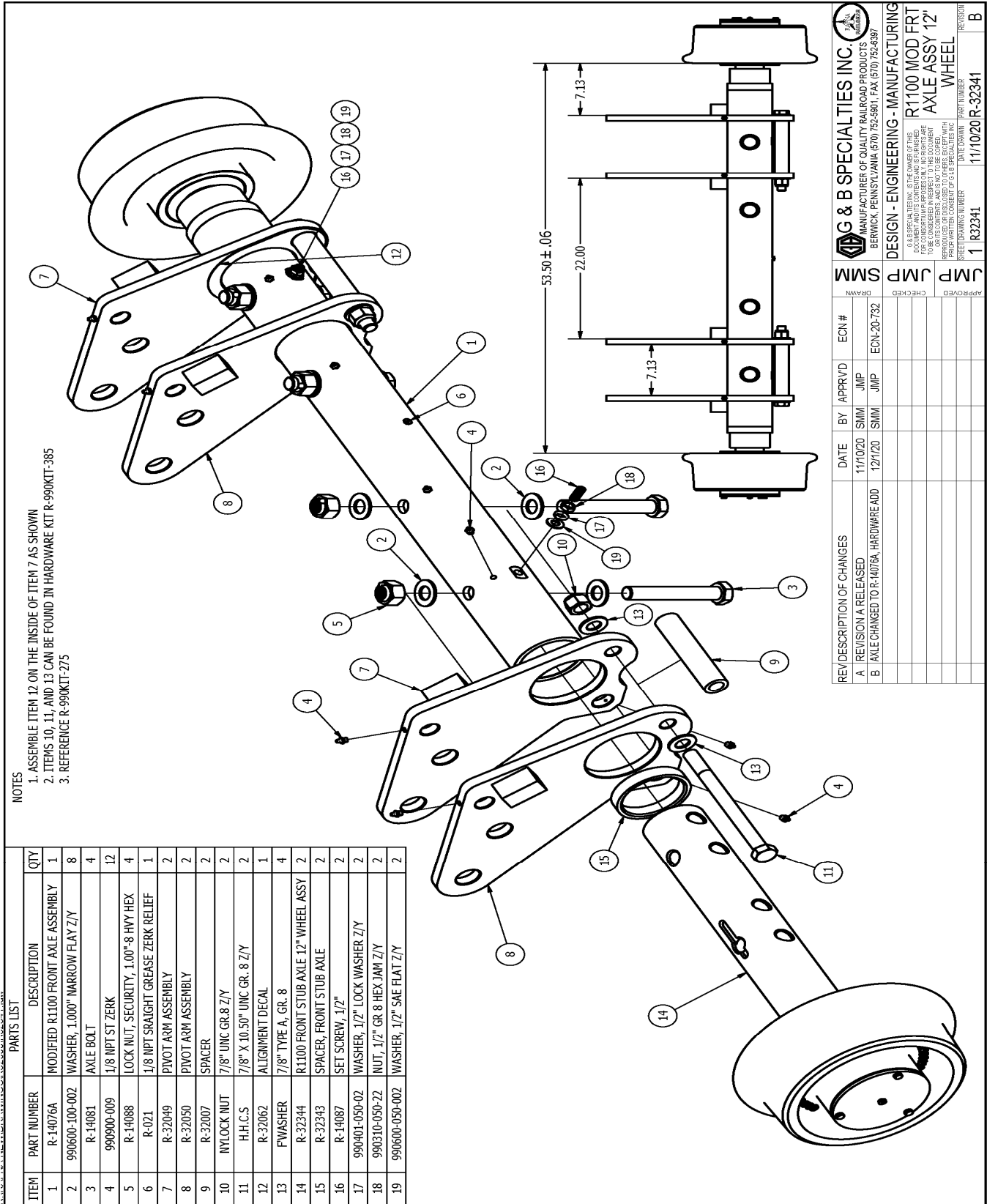
PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	R-32001P	OUTER SUPPORT ASSY PS	1
2	R-32002P	INNER SUPPORT ASSY PS	1
3	R-32046	PIVOT PIN	4
4	R-32018	SPRING HANGER BRKT	2
5	R-32020P	HYDRAULIC CYLINDER PASS SIDE	1
6	R-32006	FRONT MOUNTING PIN	6
7	990312-112-02	NUT, 1 1/8" HEX SLT Z/Y	6
8	990600-150-002	WASHER, 1 1/2" NARROW FLAT Z/Y	4
9	R-32015	SPACER, 1"	10
10	R-32016	SPACER, 1/2"	2
11	990311-075-02	NUT, 3/4" Hvy HEX GR 8 ZY	8
12	R-32017	RUBBER PAD	2
13	990900-009	1/8 NPT ST ZERK	4
14	R-32063	PIVOT BLOCK ASSY	2
15	990312-150-12	NUT, 1 1/2" HEX SLOTTED	4
16	990511-300-02	COTTER PIN, 1/4" X 3" ZY	4
17	990509-250-02	COTTER PIN, 3/16" X 2 1/2" ZY	6
18	R-32341	R1100 MOD FRONT AXLE ASSY, 12" WHEEL	1
19	R-32002D	INNER SUPPORT ASSY DS	1
20	R-32001D	OUTER SUPPORT ASSY DS	1
21	R-32020D	HYDRAULIC CYLINDER DRV SIDE	1
22	R-16514	SET SCREW, 1/4" UNC, 1/2" LG	4
23	990600-112-002	WASHER, 1 1/8" NARROW FLAT Z/Y	6
24	R-32018D	STUD, THREADED	4

REV	DESCRIPTION OF CHANGES	DATE	BY	APPROV	ECN #
A	REVISION A RELEASED	11/11/20	SWMM	JMP	ECN-20-746
B	ADDED QUANTITY OF R-32015	12/9/20	SWMM	JMP	

APPROVED	CHECKED	DATE DRAWN	PART NUMBER	REVISION
JMP	JMP	11/11/20	R-32340	B

NOTES
 1. QUANTITY 2 OF ITEM 9 TO BE SHIPPED LOOSE TO BE USED DURING INSTALL IF NEEDED

R-32340 (INSULATED ASSY)



- NOTES**
- ASSEMBLE ITEM 12 ON THE INSIDE OF ITEM 7 AS SHOWN
 - ITEMS 10, 11, AND 13 CAN BE FOUND IN HARDWARE KIT R-990KTT-385
 - REFERENCE R-990KIT-Z75

PARTS LIST		
ITEM	DESCRIPTION	QTY
1	MODIFIED R1100 FRONT AXLE ASSEMBLY	1
2	WASHER, 1.000" NARROW FLAT Z/Y	8
3	AXLE BOLT	4
4	1/8 NPT ST ZERK	12
5	LOCK NUT, SECURITY, 1.00"-8 HWY HEX	4
6	1/8 NPT STRAIGHT GREASE ZERK RELIEF	1
7	PIVOT ARM ASSEMBLY	2
8	PIVOT ARM ASSEMBLY	2
9	SPACER	2
10	7/8" UNC GR.8 Z/Y	2
11	H.H.C.S 7/8" X 10.50" UNC GR. 8 Z/Y	2
12	ALIGNMENT DECAL	1
13	7/8" TYPE A, GR. 8	4
14	R1100 FRONT STUB AXLE 12" WHEEL ASSY	2
15	SPACER, FRONT STUB AXLE	2
16	SET SCREW, 1/2"	2
17	WASHER, 1/2" LOCK WASHER Z/Y	2
18	NUT, 1/2" GR 8 HEX JAM Z/Y	2
19	WASHER, 1/2" SAE FLAT Z/Y	2

R-32341 (INSULATED AXLE ASSY)

G & B SPECIALTIES INC. MANUFACTURER OF QUALITY RAILROAD PRODUCTS BERWICK, PENNSYLVANIA (717) 752-5901 FAX (717) 752-6397		DESIGN - ENGINEERING - MANUFACTURING		R1100 MOD FRT AXLE ASSY 12" WHEEL	
SM	JMP	JMP	JMP	JMP	JMP
DATE	BY	APPRVD	ECN #		
11/10/20	SMM	JMP	ECN-20-732		
12/11/20	SMM	JMP	ECN-20-732		
REVISION A RELEASED					
REVISION B AXLE CHANGED TO R-14076A, HARDWARE ADD					
REVISION	DRAWN	CHECKED	APPROVED	PART NUMBER	REV. DATE
1	R32341	11/10/20	R-32341	11/10/20	R-32341

PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	R-5517A	GASKET	1
2	R-5510	CONE BEARING	2
3	R-5514	SLOTTED WASHER	1
4	R-5516	NUT, CASTELLATED 1" NF	1
5	990509-250-02	COTTER PIN, 3/16" X 2 1/2"	1
6	990900-009	FITTING, 1/8" STR PTF	1
7	R-5517	HUB CAP	1
8	990722-075-22F	SCREW, 1/4" X 3/4" NF	3
9	990402-025-02	WASHER, 1/4" HEAVY LOCK	3
10	R-32345	R1100 FRONT 12" WHEEL STUB AXLE	1
11	R-31046	WHEEL ASSEMBLY, 12" INSULATED	1
12	R-31049	SEAL, OIL	1

WHEEL ASSEMBLY PROCEDURE:

1. PACK ALL BEARINGS COMPLETELY ENSURING COMPLETE COVERAGE
2. INSERT BEARING IN INBOARD SIDE OF WHEEL (FLANGE SIDE)
3. PACK GREASE ON INBOARD SIDE OF BEARING
4. INSTALL SEAL BY GENTLY TAPPING WITH HAMMER UNTIL FLUSH WITH WHEEL HUB
5. PLACE WHEEL ON AXLE
6. FILL CAVITY BETWEEN BEARINGS AND AROUND AXLE UNTIL FLUSH WITH OUTBOARD RACE
7. INSERT BEARING IN OUTBOARD SIDE OF WHEEL
8. INSTALL INNER WHEEL NUT
9. ADJUST BEARING
 - A. WHILE ROTATING THE WHEEL FORWARD, TORQUE THE SPINDLE NUT TO 20 FT-LBS
 - B. LOOSEN THE SPINDLE NUT SLIGHTLY UNTIL IT IS "JUST LOOSE"
 - C. RE-TORQUE THE SPINDLE NUT TO 6 FT-LBS
 - D. END PLAY SHOULD NOT EXCEED 0.005"
- E. REPEAT STEPS IF ADJUSTMENT IS NECESSARY
- F. INSTALL COTTER PIN. IF HOLES DO NOT LINE UP, TIGHTEN SPINDLE NUT UNTIL HOLES ALIGN. DO NOT TIGHTEN MORE THAN 1/2 FLAT OF THE NUT.
- G. ENSURE THERE IS SUFFICIENT GREASE IN THE WHEEL BEARING CAVITY
10. FILL OUTBOARD CAVITY COMPLETELY
11. RUN A BEAD OF SILICONE ON HUBCAP MOUNTING SURFACE
12. INSTALL HUBCAP WITH PROVIDED SCREWS AND WASHERS

REVISION DESCRIPTION	DATE	BY	APPRVD	ECN #
A REVISION A RELEASED	11/10/20	SMJ	JMP	

DRAWN	CHECKED	APPROVED	DATE DRAWN	PART NUMBER	REVISION
SMJ	JMP	JMP	11/10/20	R-32344	A

G & B SPECIALTIES INC.
MANUFACTURER OF QUALITY RAILROAD PRODUCTS
BERWICK, PENNSYLVANIA (570) 752-5901 FAX (570) 752-6397

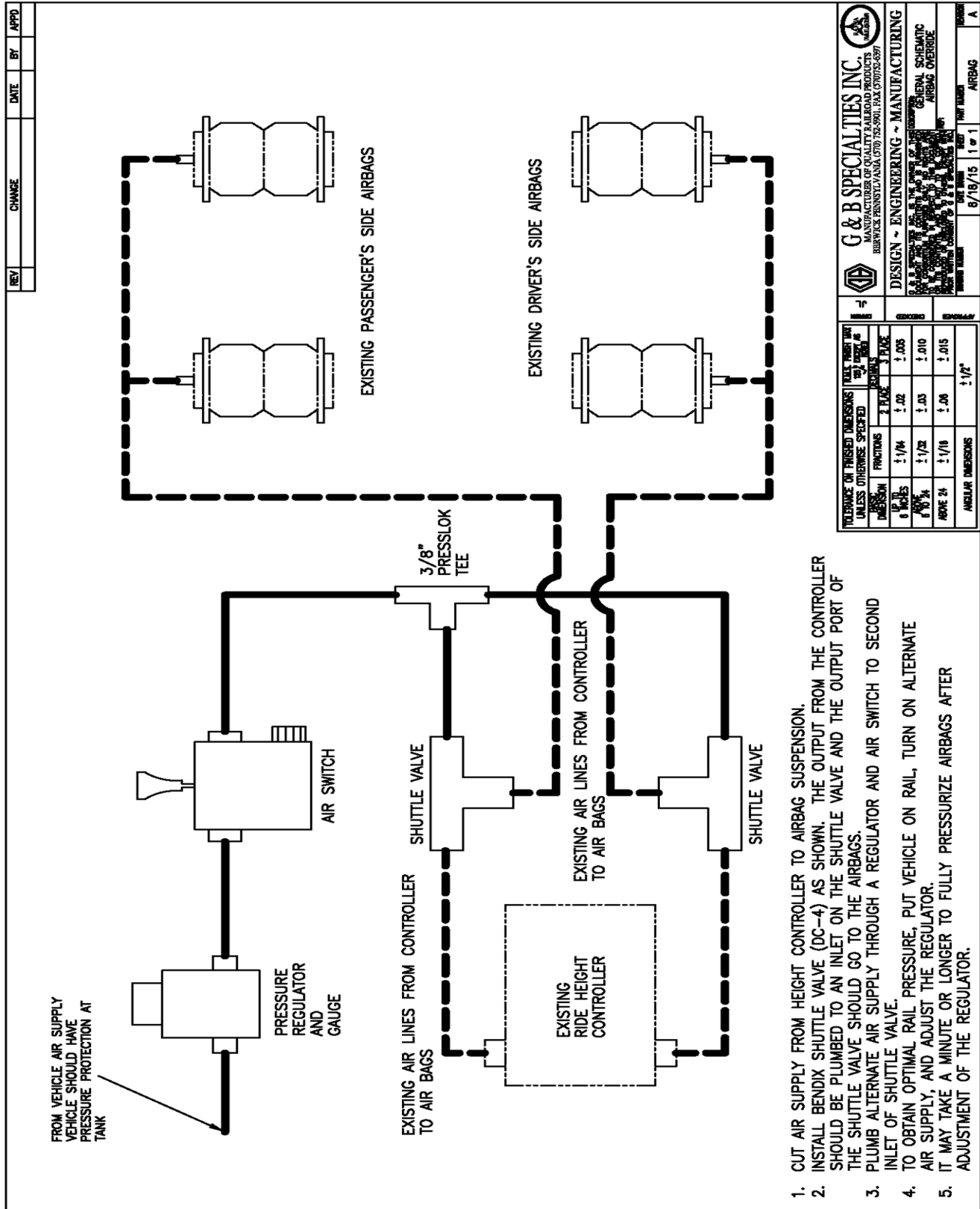
DESIGN - ENGINEERING - MANUFACTURING

G & B SPECIALTIES IS THE OWNER OF THIS DOCUMENT. NO PARTS OR EQUIPMENT MAY BE REPRODUCED OR DISCLOSED TO OTHERS, EXCEPT WITH THE WRITTEN PERMISSION OF G&B SPECIALTIES. ALL RIGHTS RESERVED. AND NOT TO BE COPIED.

R1100 FRONT STUB AXLE 12" WHEEL ASSY

R-32344 (INSULATED STUB AXLE ASSY)

MISCELLANEOUS





OPERATION OF RAFNA GUIDE WHEEL UNIT



TO PLACE VEHICLE ON RAIL:

1. Drive vehicle on crossing, centering it over tracks.
2. Once centered over tracks, remove front and rear safety pins.
3. Lower rear wheels first:
 - A. If rear is not completely centered (within 4"), rear rail wheels will center truck on rail
 - B. With the rear wheels fully extended and properly seated on rail, install safety pin into lower hole on both sides.
4. Center front rail wheels over rail:
 - A. If front is not completely centered over rail, maneuver truck so that it is.
 - B. Front vehicle wheels must be straight ahead.
 - C. Lower front rail wheels until cylinders are fully retracted. Front rail unit incorporates an over-center design.
 - D. Install front safety pins in rail position.
5. Check all rail wheel flanges to assure they are seated properly on rail.
6. Ensure that the rear safety pins are installed properly.
7. Engage vehicle steering wheel lock.

TO REMOVE VEHICLE FROM RAIL:

1. Drive vehicle on to crossing.
2. Either front or rear unit may be activated first.
3. Front Unit:
 - A. Remove safety pins.
 - B. Retract front rail wheels completely.
 - C. Re-install safety pins.
4. Rear Unit:
 - A. Remove safety pins.
 - B. Retract rear rail wheels completely.
 - C. Re-install safety pins.
5. Check to ensure that all safety pins are in their proper location.
6. Disengage steering wheel lock.

SAFE OPERATING SPEEDS ON RAIL WILL BE GOVERNED BY TRACK CONDITIONS AND EXISTING RAILROAD RULES AND REGULATIONS. UNDER NO CIRCUMSTANCES SHOULD THIS VEHICLE BE OPERATED OVER 30MPH WHILE ON TRACK.

RAFNA RAILGEAR, G&B SPECIALTIES

(570) 752-5901

BERWICK, PA

R-11210-1



OPERATION INSTRUCTIONS:

1. REMOVE SAFETY PINS.
2. ACTIVATE VALVE:
 - A. PUSH - RAIL POSITION
 - B. PULL - ROAD POSITION
3. REPLACE SAFETY PINS IN PROPER LOCATION.

R-11210-2



OPERATION INSTRUCTIONS:

1. REMOVE SAFETY PINS.
2. ACTIVATE VALVE:
 - A. PUSH - RAIL POSITION
 - B. PULL - ROAD POSITION
3. REPLACE SAFETY PINS IN PROPER LOCATION.

R-11210-2

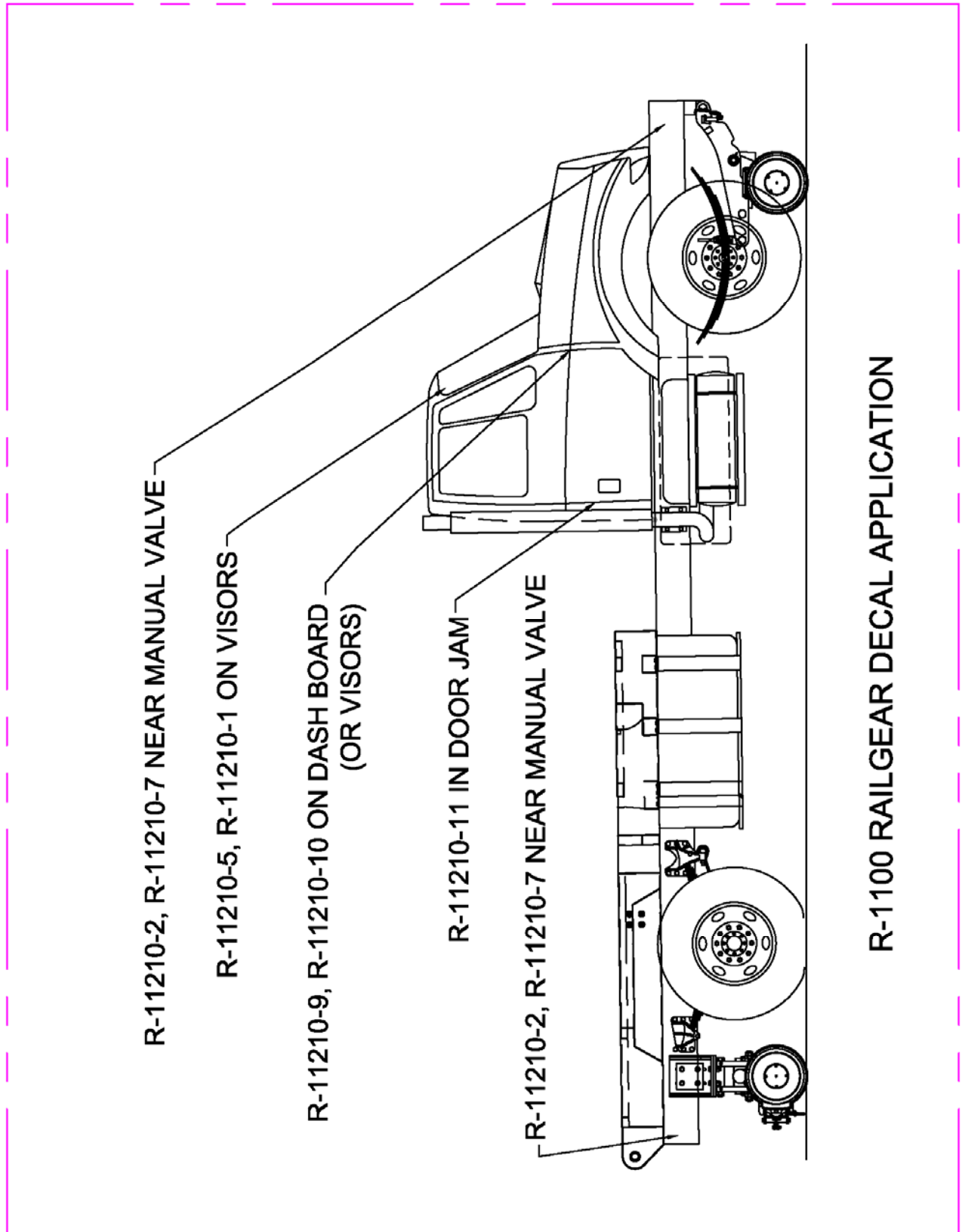
LOCKING PINS

PULL TO OPEN
PUSH TO CLOSE



REAR RAILGEAR
R-11210-4

R-11210 REV C



R-1100 RAILGEAR DECAL APPLICATION