

**INSTALLATION OF R-290 REAR RAILGEAR UNIT W/ ROD OPERATED  
RAILGEAR LOCK  
FORD F-250/350, GM 2500HD/3500HD, & RAM 2500/3500**

**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.
- 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.
- Max vehicle speed on rail not to exceed 45 MPH.

**INSTALLATION OF REAR RAILGEAR ROD LOCK KIT**

The following procedure details the installation of the front railgear kit as it pertains to the Front Railgear Rod Actuated Lock. The hardware required for one rear installation is listed in either Table 1 or Table 2, depending on how the gear was ordered.

**Table 1: K-R29RRXR2900LR**

Part Number	Description	Qty
R-2900LR	Front Railgear Assembly, Rod Lock	REF
R-1600	Rail Wheel Assembly	REF
R-21102D	Rail Sweep, Driver's Side	REF
R-21102P	Rail Sweep, Passenger's Side	REF
K-R29ARRXR290R	Lever Lock Kit	1

**Table 2: K-R29RRXR2900LRBR (Bronze Bushings)**

Part Number	Description	Qty
R-2900LR-B	Front Railgear Assembly, Rod Lock	REF
R-1600	Rail Wheel Assembly	REF
R-21102D	Rail Sweep, Driver's Side	REF
R-21102P	Rail Sweep, Passenger's Side	REF
K-R29ARRXR290R	Lever Lock Kit	1

The components of the Rear Rod Lock Kit are listed in Table 3 below.

**Table 3: K-R29ARRXR290R - Rear Rod Lock Kit**

Part Number	Description	Qty
P-00031	Push Rod, Lower (Pre-Assembled)	1
P-00032	Push Rod, Upper	1
P-00023	Lock Pin (Pre-Assembled)	1
R-3561	Spring (Pre-Assembled)	1
P-00024	Tie Plate	1
R-5652A	Knob	1
P-00034	Support Plate, Upper Rod	1
R-990KIT-279	Installation Hardware Kit	1

1. Refer to the Railgear Kit installation manual that was shipped with this Railgear Unit for installation procedures.
2. The Rear Railgear Unit is shipped with the rod lock partially assembled. The remaining components are shipped loose with the railgear unit and will need to be installed at railgear installation.
3. Once the railgear is installed at the correct mounting height, assemble the lower push rod to the upper push rod with the supplied tie plate. Locate and adjust the upper push rod as necessary.

4. The upper push rod may cut to length or otherwise modified by the installer as required to work with the individual vehicle installation.
5. Locate and install the upper rod support plate as necessary. Due to the length of the upper rod it is necessary to support the end of the rod to ensure proper operation. If the supplied support plate is not suitable, a proper support plate will need to be supplied by the installer.

**OPERATION OF R-290 REAR RAILGEAR UNIT W/ ROD OPERATED  
RAILGEAR LOCK  
FORD F-250/350, GM 2500HD/3500HD, & RAM 2500/3500**

**OPERATION SAFETY PRECAUTIONS**

If any operating, services 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.
- Ensure that the position and function of all railgear controls are known before attempting operation.
- Ensure the railgear is locked in road or rail position before starting road or rail travel respectively.
- Ensure all body parts and loose clothing are clear of any moving parts of the equipment.
- If misalignment of the railgear equipment is indicated, promptly perform the alignment procedure.
- 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 REAR RAILGEAR ROD LOCK KIT**

The rear railgear rod lock is designed to automatically lock when the railgear unit is raised to the road position. It is important to ensure the rod lock is adjusted properly and in good working condition. It is also important that the rod is free from any vehicle obstruction that would hinder movement and/or operation.

**Rod Lock Operation****Placing the Vehicle On Rail - To Lower the Railgear:**

1. Disengage the lock pin by pulling on the upper push rod knob. Do not force. If the lock pin cannot be disengaged, raise the railgear slightly.
2. Hold the push rod in the disengaged position.
3. Lower the railgear and release the rod once the railgear has rotated past the road locked position.
4. As the railgear is being deployed, it will start taking some of the vehicle's load. (If this is not the case, **DO NOT use the railgear**. Inspect the railgear for lubrication and damage.)
5. Continue lowering the railgear until the hydraulic cylinder is fully extended and the lock pin re-engages in the rail position. Some railgear models have a lock cam converter installed to prevent the lock pin from engaging in the rail position; they have a hydraulic lock instead.
6. Ensure that the railgear is fully deployed and 2-3° over-center before proceeding.

**Removing the Vehicle From Rail - To Raise the Railgear:**

1. Disengage the lock pin by pulling on upper push rod knob. Do not force. If the lock pin cannot be disengaged, lower the railgear slightly. (Some railgear models have a lock cam converter installed to prevent the lock pin from engaging in the rail position in which case the lock pin does not need to be disengaged.)
2. Raise the railgear and release the rod once the railgear has rotated past the rail locked position.
3. Continue raising the railgear until the lock pin clicks into the road locked position. The hydraulic cylinder should be completely retracted.

**PARTS OF REAR RAILGEAR ROD KIT**

PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	R-2900LR	R-290 UPPER ASSEMBLY, REAR ROD	1
2	P-00023	LOCKING PIN	1
3	P-00031	PUSH ROD, LOWER	1
4	P-00024	TIE PLATE	1
5	R-3561	SPRING	1
6	P-00032	PUSH ROD, UPPER	1
7	R-5652A	PLASTIC KNOB	1
8	P-00034	SUPPORT PLATE	1
9	JAM NUT	NUT, 3/8" UNC JAM GR. 5 Z/Y	1
10	JAM NUT	NUT, 1/4" UNC JAM GR. 5 Z/Y	1
11	FWASHER	WASHER, 1/4" FLAT TYPE-A GR. 5 Z/Y	1
12	FWASHER	WASHER, 1/2" FLAT TYPE-A GR. 5 Z/Y	1

REVISIONS	DATE	BY	APPRVD	ECN #
A. REVISION A RELEASED	10/14/19	JMP		

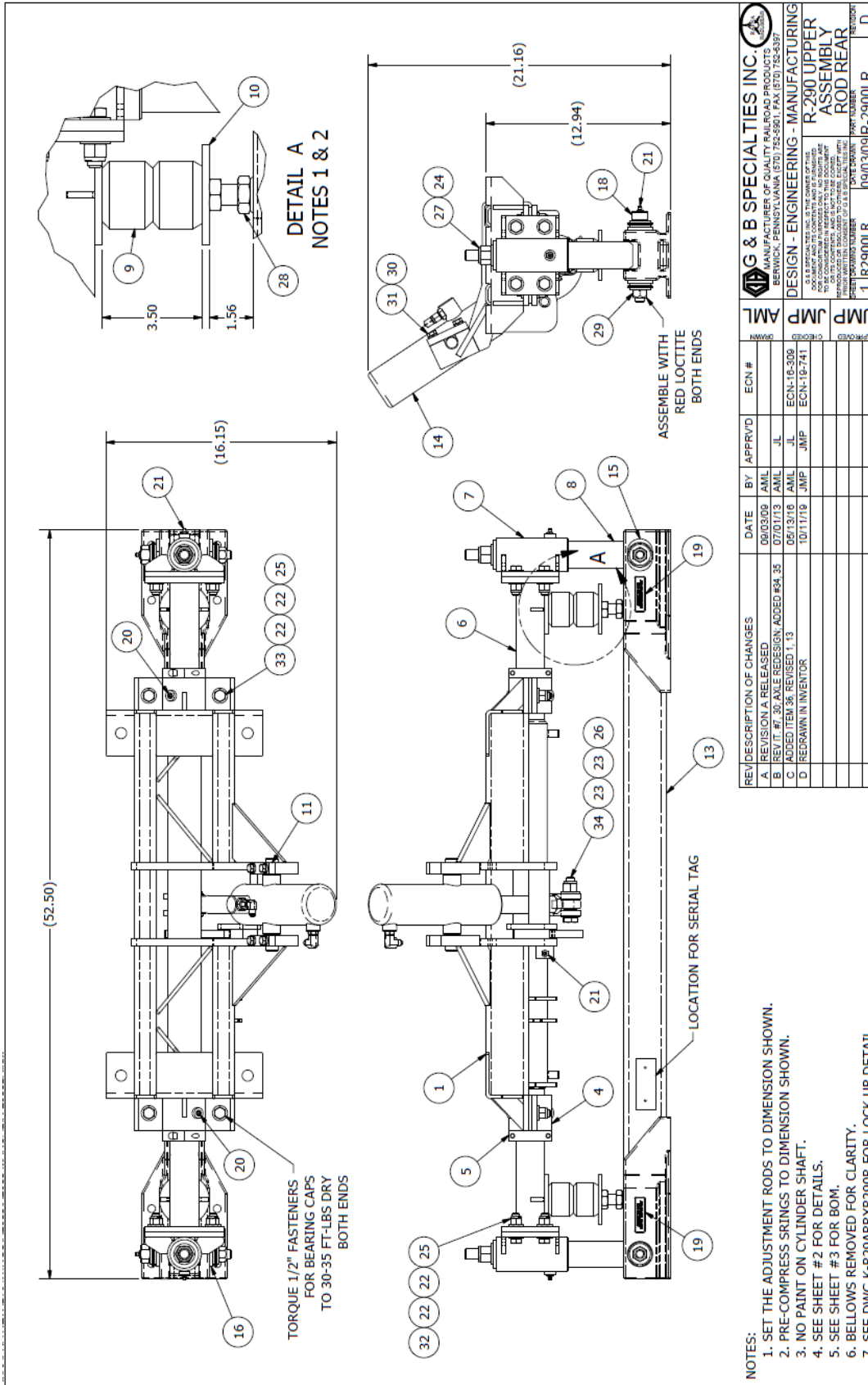
  

DESIGN - ENGINEERING - MANUFACTURING	DATE PLOTTED	DATE PRINTED	POP NUMBER	REVISION
R-290 ROD LOCK REAR	10/14/19	10/14/19	K-29ARRXR290R	A

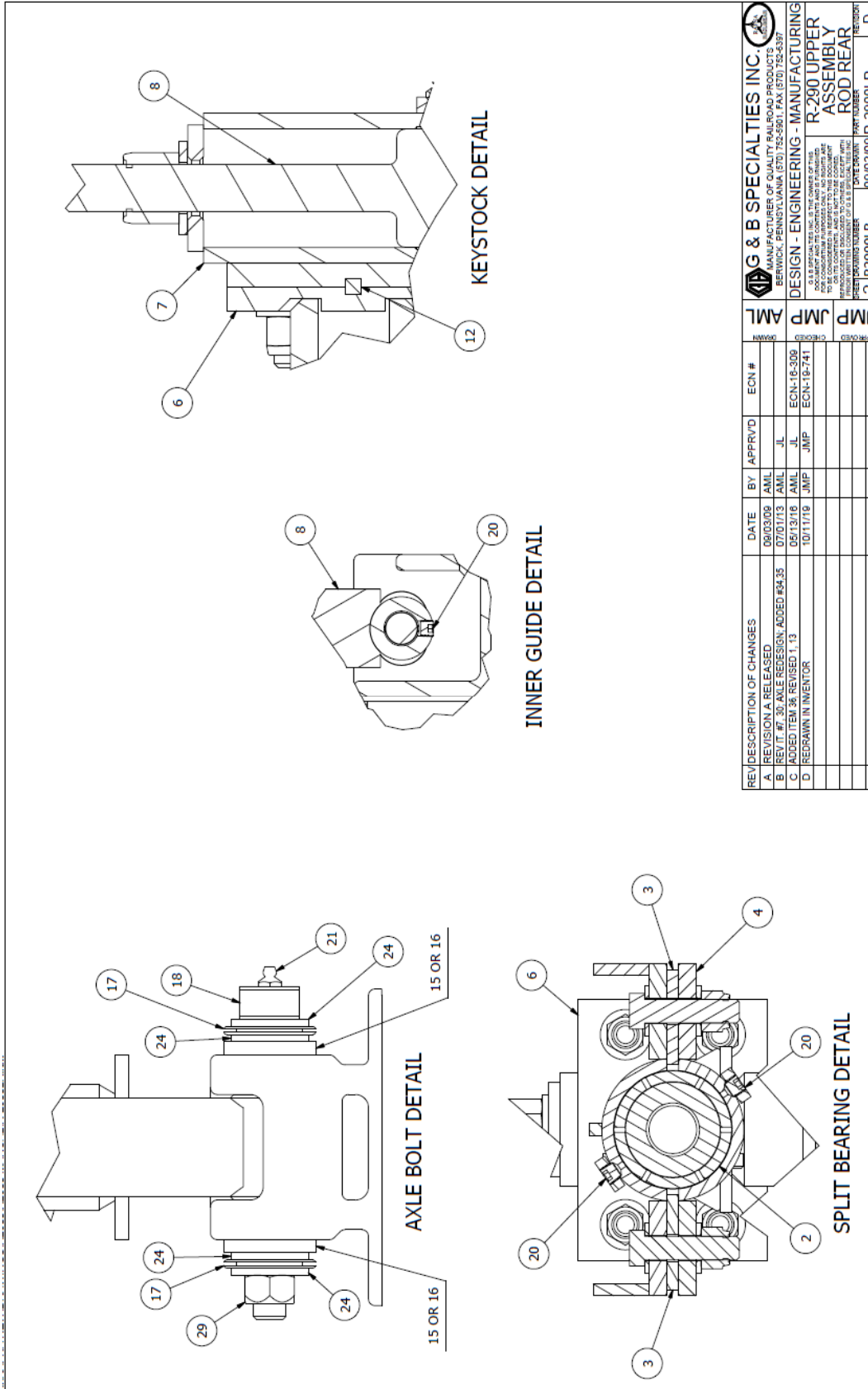
**NOTES:**

- ITEMS 9-12 INCLUDED IN R-990KIT-279.
- ASSEMBLE ITEMS 2-5 TO UNIT WITH APPROPRIATE HARDWARE PRIOR TO SHIPMENT.
- REMAINING ITEMS TO SHIP LOOSE WITH UNIT.



- NOTES:
1. SET THE ADJUSTMENT RODS TO DIMENSION SHOWN.
  2. PRE-COMPRESS SPRINGS TO DIMENSION SHOWN.
  3. NO PAINT ON CYLINDER SHAFT.
  4. SEE SHEET #2 FOR DETAILS.
  5. SEE SHEET #3 FOR BOM.
  6. BELLOW REMOVED FOR CLARITY.
  7. SEE DWG K-R29ARRXR2900R FOR LOCK UP DETAIL.





REV	DESCRIPTION OF CHANGES	DATE	BY	APPRVD	ECN #	DRWN	CHKD	APPN	
A	REVISION A RELEASED	06/03/09	AMIL						
B	REV IT #7, 30, AXLE REDESIGN, ADDED #54, 35	07/01/13	AMIL	JL					
C	ADDED ITEM 36, REVISED 1, 13	05/13/16	AMIL	JL	ECN-16-306 ECN-16-741				
D	REDRAWN IN INVENTOR	10/11/19	JMP	JMP					
REVISIONS TO THIS DRAWING ARE TO BE MADE BY THE DRAWING ENGINEER AND THE COMPANY AND IN ACCORDANCE WITH THE COMPANY'S DRAWING CONTROL SYSTEM. CONTACT THE DRAWING ENGINEER FOR MORE INFORMATION.									
DRAWING NUMBER							DATE	APPN	REV
2 R2900LR							09/03/09	R	D

COMPANY	MANUFACTURER OF QUALITY RAILROAD PRODUCTS
G & B SPECIALTIES INC.	G & B SPECIALTIES INC.
DESIGN - ENGINEERING - MANUFACTURING	DESIGN - ENGINEERING - MANUFACTURING
R-290 UPPER ASSEMBLY	R-290 UPPER ASSEMBLY
ROD REAR	ROD REAR

PARTS LIST										PARTS LIST									
ITEM	PART NUMBER	DESCRIPTION	QTY	ITEM	PART NUMBER	DESCRIPTION	QTY	ITEM	PART NUMBER	DESCRIPTION	QTY	ITEM	PART NUMBER	DESCRIPTION	QTY				
1	R-2910C	FRAME, UPPER CROSS	1	18	R-29042	PIN	2				2				2				
2	R-3618	SPLIT BEARING SET, NYLON	2	19	Z-LABEL025	LABEL, AXLE WARNING	2								2				
3	R-3602A	SHIM	4	20	R-125	PLUG, 1/8 NPT PIPE	6								6				
4	R-3602B	BEARING END CAP	2	21	9909000-009	FITTING, 1/8 NPT STRAIGHT	5								5				
5	R-2589	SPLIT COLLAR	2	22	9906000-050-002	WASHER, 1/2" FLAT TYPE-A NARROW	24								24				
6	R-2920	FRAME, LOWER CROSS	1	23	9906000-062-002	WASHER, 5/8" FLAT TYPE-A NARROW	2								2				
7	R-2941	OUTER GUIDE TUBE ASSEMBLY	2	24	9906000-075-002	WASHER, 3/4" FLAT TYPE-A NARROW	10								10				
8	R-2944	INNER GUIDE TUBE ASSEMBLY	2	25	9903116-050-22	NUT, 1/2" NYLOCK GR.8 Z/Y	12								12				
9	R-130	SPRING, TIMBREN	2	26	9903116-062-22	NUT, 5/8" NYLOCK GR.8 Z/Y	1								1				
10	R-2948	ADJUSTMENT ROD	2	27	9903116-075-22	NUT, 3/4" NYLOCK GR.8 Z/Y	2								2				
11	R-2950	TRUNNION CAP	2	28	9903300-075-02	NUT, 3/4" HVY HEX JAM Z/Y	2								2				
12	SB025-025	KEYSTOCK, 1/4" SQUARE X 4"	2	29	0380666-062-22	NUT, 5/8" TOPLOCK GR.9 Z/Y	2								2				
13	R-2930-1	AXLE	1	30	990402-037-02	WASHER, 3/8" HVY LOCK Z/Y	4								4				
14	R-9115	HYDRAULIC CYLINDER ASSEMBLY	1	31	990725-125-22	SCREW, 3/8" X 1-1/4" HHCS GR.8 Z/Y	4								4				
15	R-29041	SLOTTED BUSHING	2	32	990725-175-22	SCREW, 1/2" X 1-3/4" HHCS GR.8 Z/Y	8								8				
16	R-29041A	BUSHING	2	33	990727-200-22	SCREW, 1/2" X 2" HHCS GR.8 Z/Y	4								4				
17	R-1505	BELLOWS	2	34	990729-275-22	SCREW, 5/8" X 2-3/4" HHCS GR.8 Z/Y	1								1				

REV	DESCRIPTION OF CHANGES	DATE	BY	APPRV'D	ECN #	DATE	BY	APPRV'D	ECN #
A	REVISION A RELEASED	08/03/09	AMIL						
B	REV IT #7, 30, AXLE REDESIGN; ADDED #34, 35	07/01/13	AMIL	JL					
C	ADDED ITEM 36, REVISED 1, 13	05/13/16	AMIL	JL	EON-18-308				
D	REDRAWN IN INVENTOR	10/11/19	JMP	JMP	EON-19-741				

REV	DESCRIPTION	DATE	BY	APPRV'D	ECN #
3	R2900LR	09/03/09	R-2900LR		

REV	DESCRIPTION	DATE	BY	APPRV'D	ECN #
3	R2900LR	09/03/09	R-2900LR		

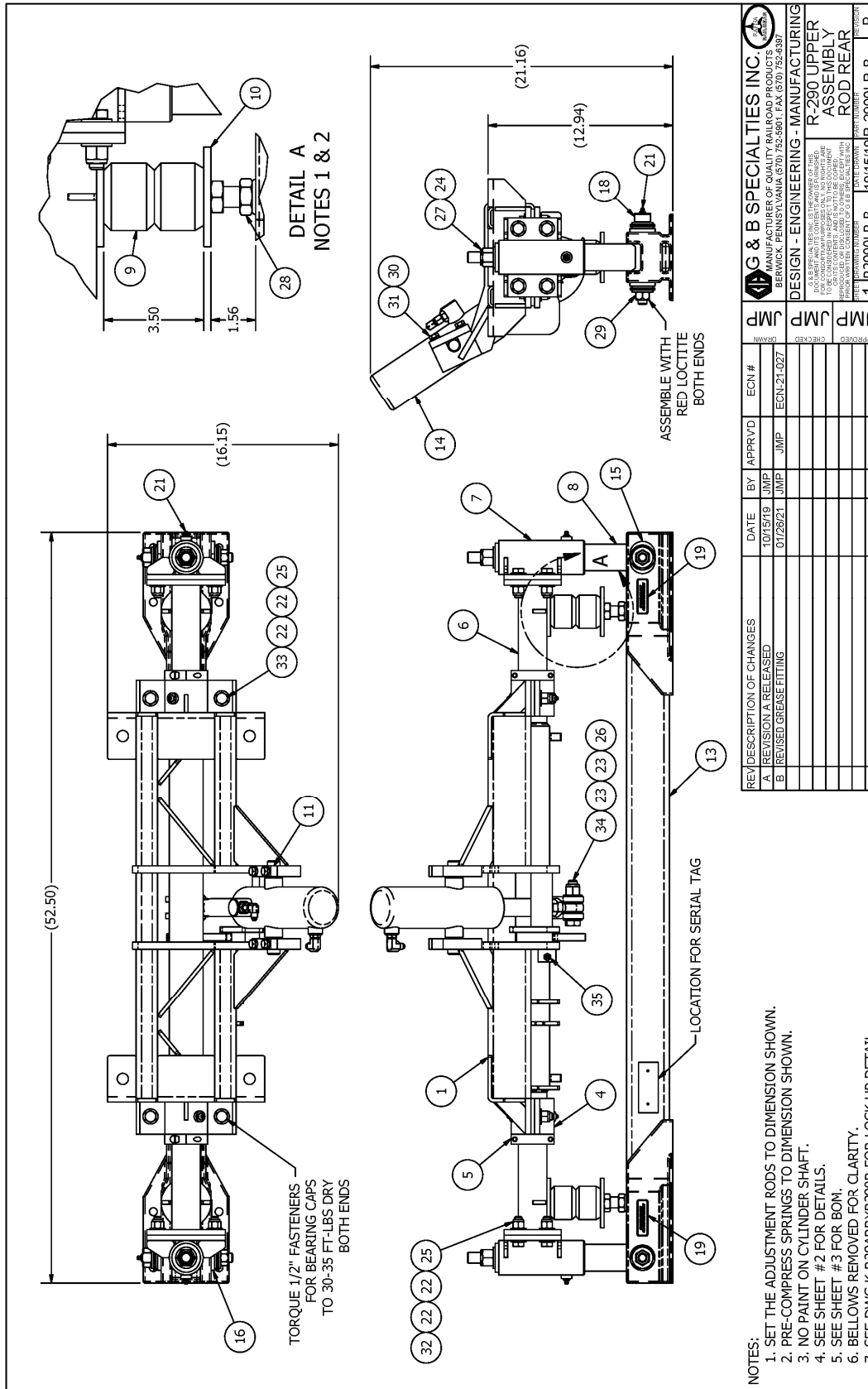
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3	R2900LR	09/03/09	R-2900LR		

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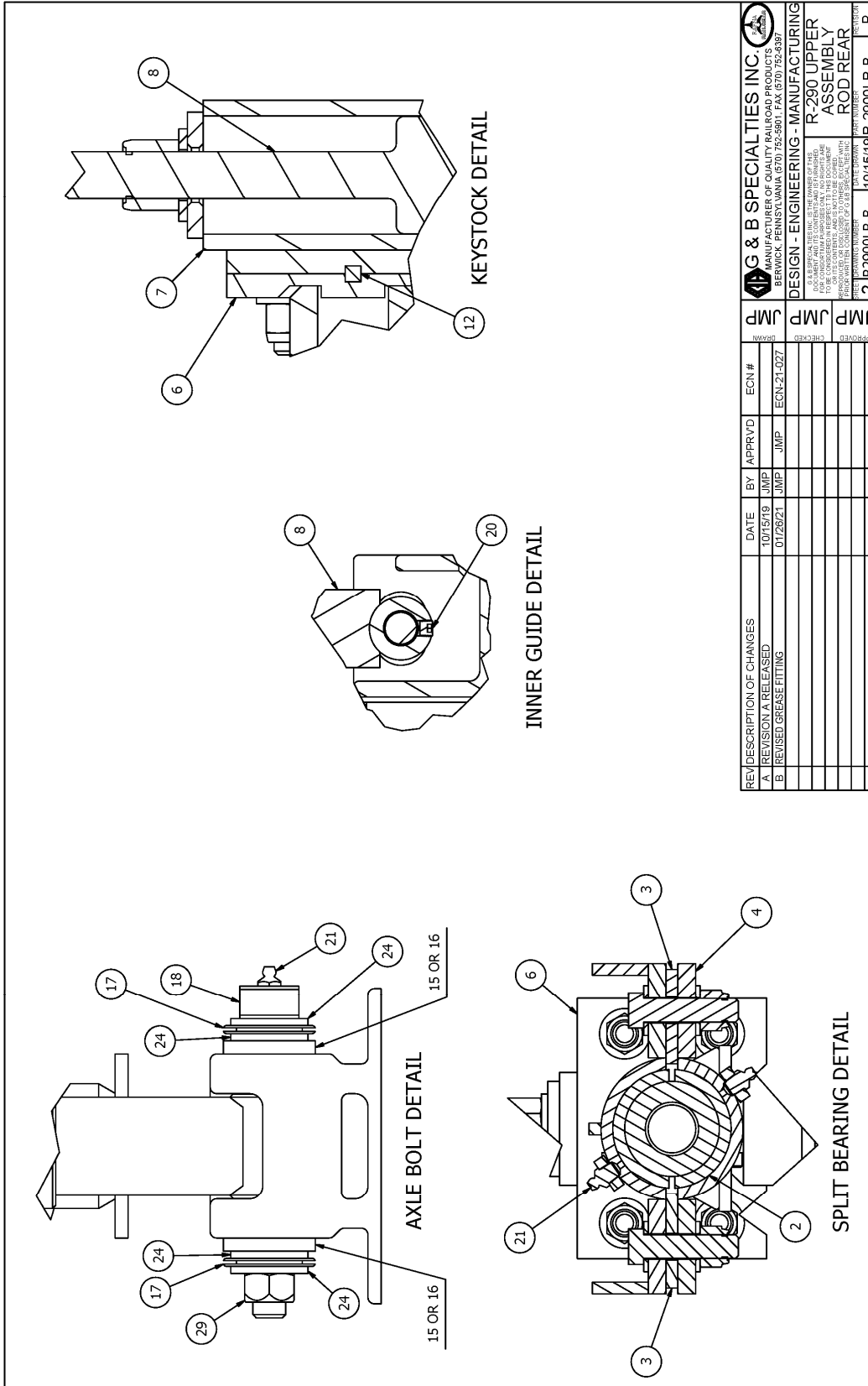
REV	DESCRIPTION	DATE	BY	APPRV'D	ECN #
3	R2900LR	09/03/09	R-2900LR		




DATE	BY	APPRVD	ECH #	DESCRIPTION OF CHANGES
10/15/18	JMP	JMP	ECH-21-027	REVISION A RELEASED
07/26/21	JMP	JMP		REVISED GREASE FITTING

DATE	BY	APPRVD	ECH #	DESCRIPTION OF CHANGES
10/15/18	JMP	JMP	ECH-21-027	REVISION A RELEASED
07/26/21	JMP	JMP		REVISED GREASE FITTING

G & B SPECIALTIES INC.  
 MANUFACTURER OF QUALITY RAILROAD PRODUCTS  
 BERWICK, PENNSYLVANIA (570) 752-5901, FAX (570) 752-9387  
 DESIGN - ENGINEERING - MANUFACTURING  
 R-290 UPPER ASSEMBLY ROD REAR  
 PART NUMBER: 10/15/19/R-2900LR-B  
 DRAWING NUMBER: 1 R2900LR-B



REV	DESCRIPTION OF CHANGES	DATE	BY	APPRVD	ECN #	APPROVED	CHECKED
A	REVISION A RELEASED	10/15/19	JMP	JMP	ECN-21-027		
B	REVISED GREASE FITTING	07/28/21	JMP	JMP			

MANUFACTURER	DESIGN	DATE	REV	REV BY
 <b>G &amp; B SPECIALTIES INC.</b> <small>MANUFACTURER OF QUALITY RAILROAD PRODUCTS BERWICK, PENNSYLVANIA (717) 752-5901 FAX (717) 752-6397</small>	<b>ENGINEERING - MANUFACTURING</b>			
	<b>R-290 UPPER ASSEMBLY ROD REAR</b>			
	<b>2</b>	<b>10/15/19</b>	<b>R-2900LR-B</b>	<b>B</b>

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PARTS LIST				PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY	ITEM	PART NUMBER	DESCRIPTION	QTY
1	R-2910C	FRAME, UPPER CROSS	1	18	R-29042	PTN	2
2	R-36188RZ	SPLIT BEARING SET, BRONZE	2	19	Z-LABEL025	LABEL, AXLE WARNING	2
3	R-3602A	SHIM	4	20	R-125	PLUG, 1/8 NPT PIPE	2
4	R-3602B	BEARING END CAP	2	21	990900-009	FITTING, 1/8 NPT STRAIGHT	8
5	R-2589	SPLIT COLLAR	2	22	990600-050-002	WASHER, 1/2" FLAT TYPE-A NARROW	24
6	R-2920	FRAME, LOWER CROSS	1	23	990600-062-002	WASHER, 5/8" FLAT TYPE-A NARROW	2
7	R-2941	OUTER GUIDE TUBE ASSEMBLY	2	24	990600-075-002	WASHER, 3/4" FLAT TYPE-A NARROW	10
8	R-2944	INNER GUIDE TUBE ASSEMBLY	2	25	990316-050-22	NUT, 1/2" NYLOCK GR.8 Z/Y	12
9	R-130	SPRING, TIMBREN	2	26	990316-062-22	NUT, 5/8" NYLOCK GR.8 Z/Y	1
10	R-2948	ADJUSTMENT ROD	2	27	990316-075-22	NUT, 3/4" NYLOCK GR.8 Z/Y	2
11	R-2950	TRUNNION CAP	2	28	990330-075-02	NUT, 3/4" HVY HEX JAMI Z/Y	2
12	S8025-025	KEYSTOCK, 1/4" SQUARE X 4"	2	29	038066-062-22	NUT, 5/8" TOPLOCK GR.9 Z/Y	2
13	R-2930-1	AXLE	1	30	990402-037-02	WASHER, 3/8" HVY LOCK Z/Y	4
14	R-9115	HYDRAULIC CYLINDER ASSEMBLY	1	31	990725-125-22	SCREW, 3/8" X 1-1/4" HHCS GR.8 Z/Y	4
15	R-29041	SLOTTED BUSHING	2	32	990727-175-22	SCREW, 1/2" X 1-3/4" HHCS GR.8 Z/Y	8
16	R-29041A	BUSHING	2	33	990727-200-22	SCREW, 1/2" X 2" HHCS GR.8 Z/Y	4
17	R-1505	BELLOWS	2	34	990729-275-22	SCREW, 5/8" X 2-3/4" HHCS GR.8 Z/Y	1
				35	990900-023	FITTING, 1/8 NPT STRAIGHT - SHORT	1

REVISION DESCRIPTION OF CHANGES		DATE	BY	APPRV'D	ECH #	DATE	BY	APPRV'D	DATE	BY	APPRV'D
A	REVISION A RELEASED	10/15/19	JMP	JMP	ECN-21-027						
B	REVISED GREASE FITTING	01/28/21	JMP	JMP							

G & B SPECIALTIES INC. 			DATE REVISION	PART NUMBER	REVISION
MANUFACTURER OF QUALITY RAILROAD PRODUCTS BERWICK, PENNSYLVANIA (570) 752-5901 FAX (570) 752-6397			10/15/19	R-2900LR-B	B
DESIGN - ENGINEERING - MANUFACTURING					
FOR QUANTITY AND OTHER RANGE OF PARTS, PLEASE CONTACT THE DESIGN ENGINEER. TO BE OBTAINED IN ACCORDANCE WITH THE DRAWING. PROCESSED TO THE QUALITY CONTROL OFFICE FOR RELEASE AND USE.					
R-290 UPPER ASSEMBLY ROD REAR					
DATE REVISION			10/15/19	R-2900LR-B	B