

ADDENDUM
INSTALLATION, OPERATIONS & PARTS
R-290 FRONT RAILGEAR UNIT W/
LEVER OPERATED RAILGEAR LOCK

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.

INSTALLATION OF FRONT RAILGEAR LEVER LOCK KIT

The following procedure details the installation of the front railgear kit as it pertains to the Front Railgear Lever Actuated Lock. The hardware required for one front installation is listed in table 1.

Table 1: Railgear Kit Installation Parts

Part Number	Description	Qty
R-2900LF	Front Railgear Assembly, Lever 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-R29ARRXR290F	Lever Lock Kit	1
R-11144	"FRONT UNIT" Decal	REF

The components of the Front Lever Lock Kit are listed in Table 2 below.

Table 2: K-R29ARRXR290F - Front Lever Lock Kit

Part Number	Description	Qty
P-00029	Actuating Lever, Front	1
P-00028	Push Rod, Front (pre-assembled)	1
P-00023	Lock Pin (pre-assembled)	1
P-00027	Clevis (pre-assembled)	1
P-00030	Thrust Washer	1
R-990KIT-278	Installation Hardware Kit	1
R-3561	Spring (pre-assembled)	1
R-28046D	Handle Grip	1

1. Refer to the Railgear Kit installation manual that was shipped with this Railgear Unit for installation procedures.
2. The Front Railgear Unit is shipped with the lever lock partially assembled. The remaining components are shipped loose with the railgear unit and will need to be installed at railgear installation.
3. Assemble the actuating lever to the front push rod using the supplied clevis pin and cotter pin. Assemble the actuating lever to the railgear upper frame assembly using the supplied 1/2" hardware and thrust washer.
4. The actuating lever may need to be modified by the installer as required to work with the individual vehicle installation.
5. Adjust the Lever Lock as described in the Operations section of this manual.

OPERATION OF FRONT RAILGEAR LEVER LOCK KIT

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

Lever Lock Adjustment

Lock pin travel should be adjusted as follows:

1. Remove the cotter pin holding the lever to clevis.
2. Swing the lever out from between the clevis arms.
3. Loosen the jam nut securing the clevis to the front pushrod.
4. Holding the push rod, turn the clevis either in or out to adjust lock pin travel.
5. Turning the clevis in will increase the lock pin travel.
6. Assemble the lever to the clevis with the clevis pin.
7. Test the lock pin travel to ensure the lock pin is fully retracted.
8. If necessary, repeat steps 1 thru 7.
9. Tighten the clevis jam nut and attach the clevis cotter pin.

Lever Lock Operation

Placing the Vehicle On Rail - To Lower The Railgear:

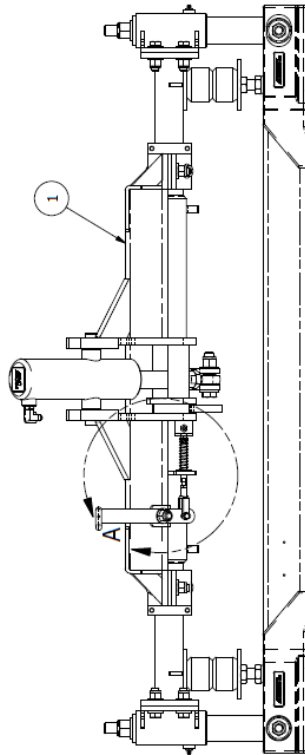
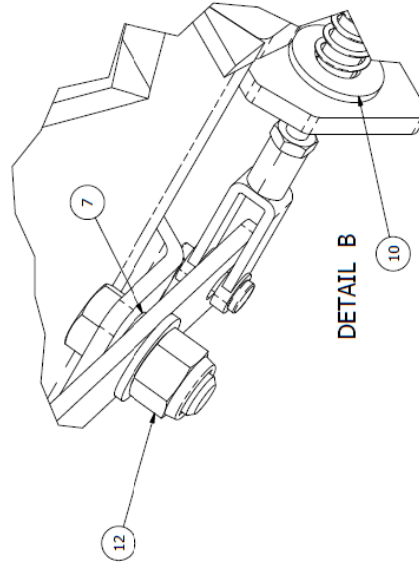
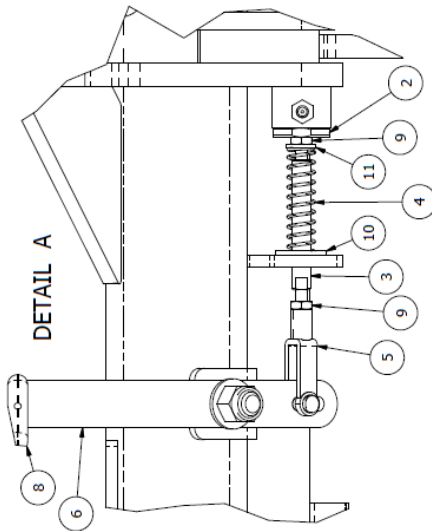
1. Disengage the lock pin by pulling on the lock lever. Do not force. If the lock pin cannot be disengaged, raise the railgear slightly.
2. Hold the lock lever in the disengaged position.
3. Lower the railgear and release the lever once the railgear has rotated past the road locked position.
4. As the railgear is being deployed, it will start taking some of the vehicle's load. The railgear's spring suspension should be observed compressing at least 1" under this 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 about 2° over-center before proceeding.

Removing the Vehicle from Rail - To Raise The Railgear:

1. Disengage the lock pin by pulling on the lock lever. 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 lever 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 FRONT RAILGEAR LEVER LOCK KIT

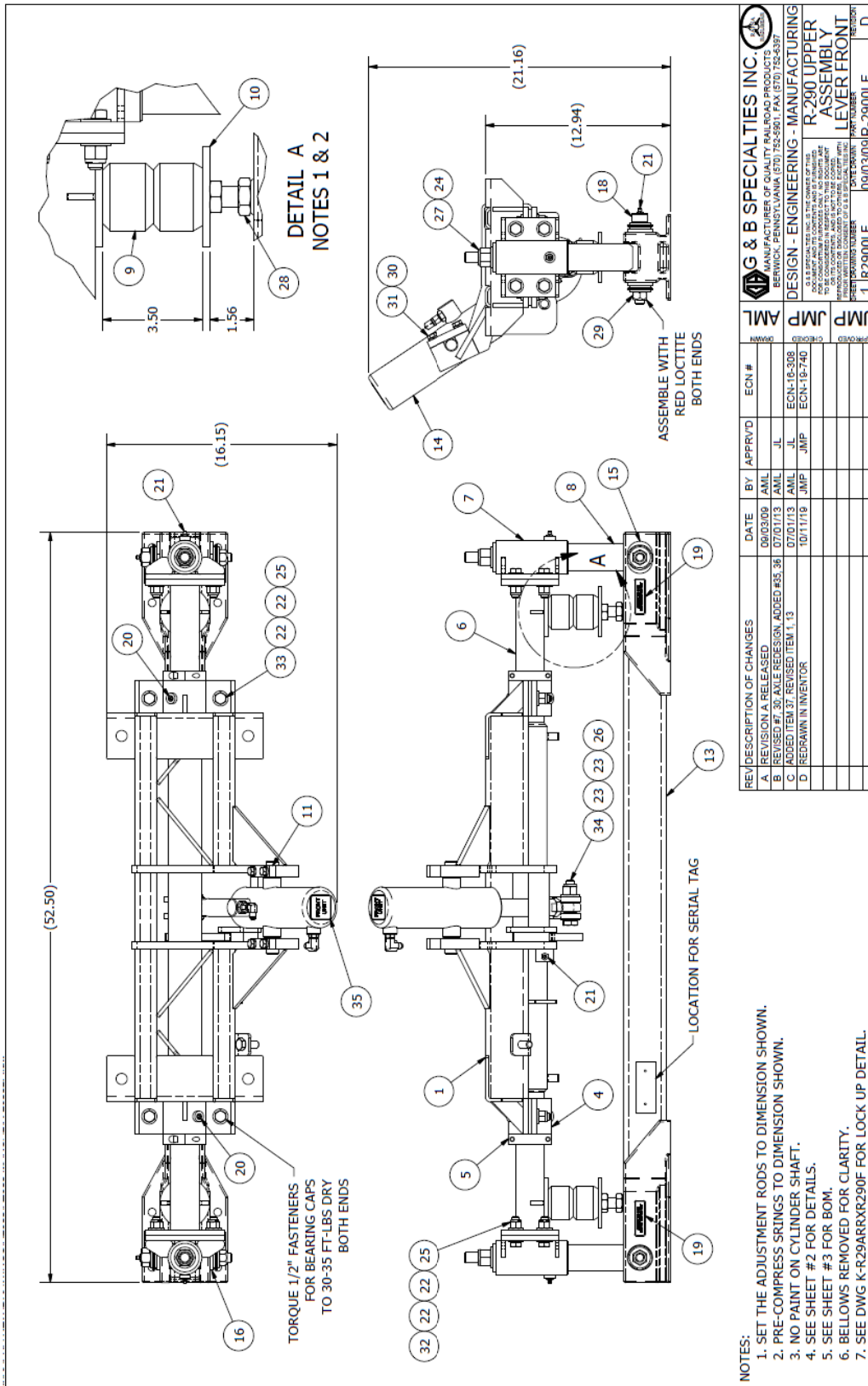
PARTS LIST				
ITEM	PART NUMBER	DESCRIPTION	QTY	REF
1	R-2900LF	R-290 UPPER ASSEMBLY, FRONT LEVER	1	
2	P-00023	LOCKING PIN	1	
3	P-00028	PUSH ROD	1	
4	R-3561	SPRING	1	
5	P-00027	CLEVIS W/ PIN AND COTTER PIN	1	
6	P-00029	LEVER	1	
7	P-00030	THRUST WASHER	1	
8	R-28046D	HANDLE GRIP	1	
9	NUT, 1/4" UNC GR.5 Z/Y	JAM NUT	2	
10	F-WASHER	WASHER, 1/2" FLAT TYPE-A GR.5 Z/Y	2	
11	F-WASHER	WASHER, 1/4" FLAT TYPE-A GR.5 Z/Y	1	
12	NYLOCK NUT	NUT, 1/2" UNC GR.5 Z/Y	1	



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

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DESIGN - ENGINEERING - MANUFACTURING
 IS A SUBSIDIARY OF WABTEC CORPORATION
 2000 WABTEC AVENUE, BERWICK, PA 17011-0001
 WWW.GBSPECIALTIES.COM
 1 R-29RRXR290F 10/14/19 R-29ARRXR290F A

NOTES:
 1. ITEMS 9-12 ARE INCLUDED IN R-990KIT-278.
 2. ASSEMBLE ITEMS 2-5 TO UNIT WITH APPROPRIATE HARDWARE PRIOR TO SHIPMENT.
 3. REMAINING ITEMS TO SHIP LOOSE WITH UNIT.



REV DESCRIPTION OF CHANGES

REV	DESCRIPTION OF CHANGES	DATE	BY	APPROVD	ECN #
A	REVISION A RELEASED	09/03/09	JAMP	JAMP	
B	REVISED #1, 30, AXLE REVISION, ADDED #15, 36	07/01/13	JAMP	JL	
C	ADDED ITEM 37, REVISED ITEM 1, 13	07/01/13	JAMP	JL	ECN-18-308
D	REDRAWN IN INVENTOR	10/11/19	JAMP	JAMP	ECN-19-740

DESIGN - ENGINEERING - MANUFACTURING

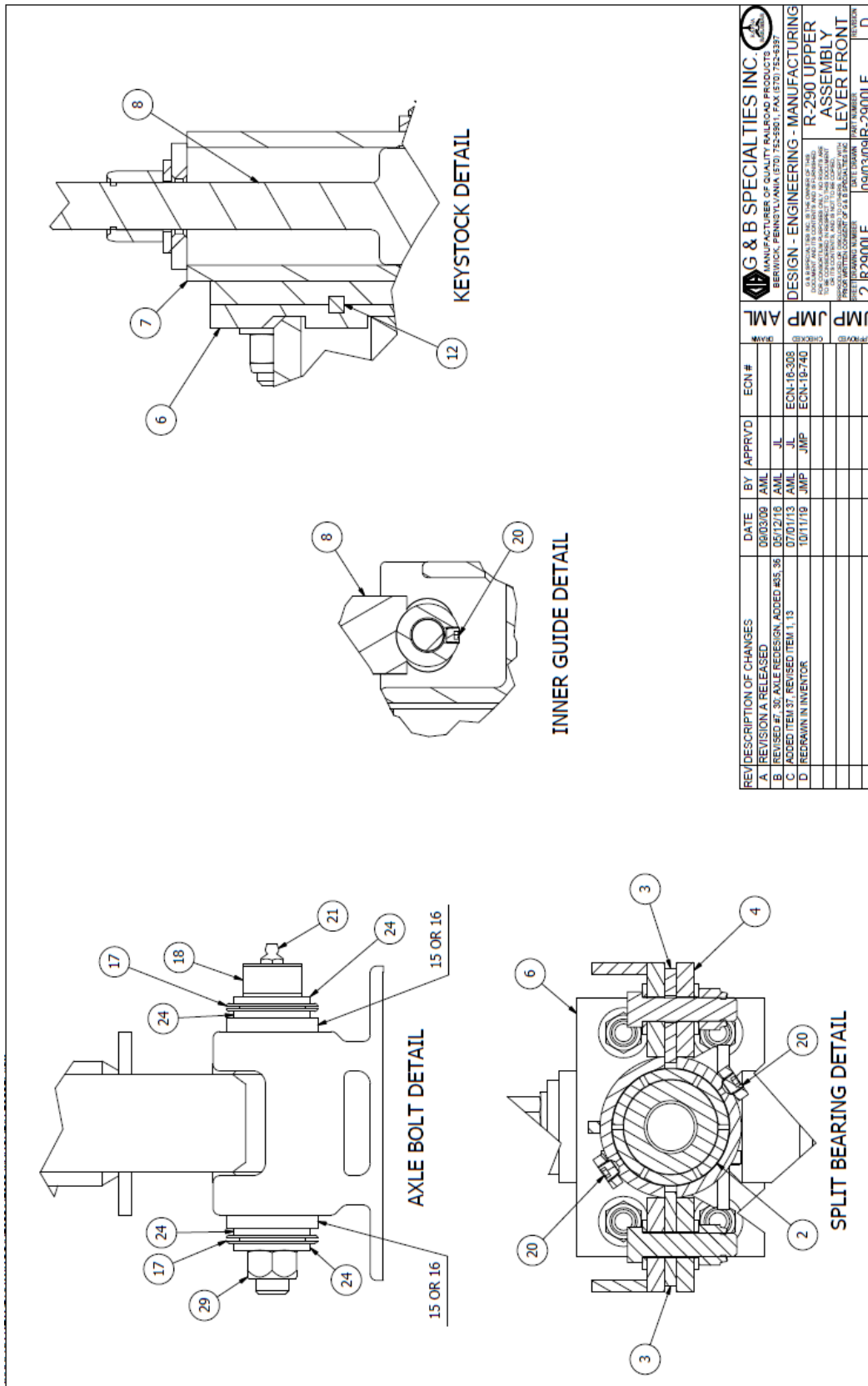
DESIGN	ENGINEERING	MANUFACTURING
JAMP	JAMP	JAMP

REVISIONS

NO.	DESCRIPTION	DATE	BY	APPROVD
1	R-290 UPPER ASSEMBLY LEVER FRONT	09/03/09	JAMP	JAMP

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'S REMOVED FOR CLARITY.
7. SEE DWG K-R29ARRXR290F FOR LOCK UP DETAIL.



REV/DESCRIPTION OF CHANGES	DATE	BY	APPROVD	ECN #
A - REVISION 1A RELEASED	09/03/09	AML		
B - REVISION 2A RELEASED - ACCORD #36	09/12/19	JL		ECN-18-303
C - ACCORD ITEM 37, REVISED ITEM 1, 13	07/01/13	AML		ECN-18-303
D - PREPARED BY INVENTOR	10/11/18	JMP		ECN-18-340

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BERWICK, PENNSYLVANIA 17504-5901 FAX: (570) 752-6395			
DESIGN - ENGINEERING - MANUFACTURING		R-290 UPPER	
ASSEMBLY		LEVER FRONT	
UNIT NUMBER	REVISED	DATE	REVISED
2	R2900LF	09/03/09	R-2900LF
PART NUMBER		REVISED	
D		D	

PARTS LIST				PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY	ITEM	PART NUMBER	DESCRIPTION	QTY
1	R-2910B	FRAME, UPPER CROSS	1	18	R-29042	PIN	2
2	R-3618	SPLIT BEARING SET, NYLON	2	19	Z-LABEL025	LABEL, AXLE WARNING	2
3	R-3602A	SHIM	4	20	R-125	PLUG, 1/8" NPT PIPE	6
4	R-3602B	BEARING END CAP	2	21	990900-009	FITTING, 1/8" NPT STRAIGHT	5
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" HXY HEX JAM Z/Y	2
12	58025-025	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" HXY 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	990725-175-22	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	R-11144	LABEL, FRONT UNIT	1

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DESIGN - ENGINEERING - MANUFACTURING
 R-290 UPPER ASSEMBLY
 LEVER FRONT

DATE DRAWN: 09/03/09
 FRONT NUMBER: R-2900LF
 REVISION: D

APPROVED: JMP
 CHECKED: JMP
 DATE: 09/03/09