DIVERSIFIED METAL FABRICATORS, INC.

Parts & Service Manual

Scissoring Trailer
Railgear

September 2017

SERIAL NUMBER (FRONT) _____

SERIAL NUMBER (REAR) _____

NOTE:
Please refer to the serial numbers when ordering parts or inquiring about warranty items.

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Message from DMF

No matter what your job function is, Operation, Installation, Maintenance, or Repair, it is your responsibility to familiarize yourself with the entire manual. Once you have read the entire manual, there are some specific sections that you will want to pay special attention to, depending on your role.

If you find anything missing, incorrect or unclear in this manual, please contact us. We are always trying to improve our manuals.

Manuals, service bulletins and general information are available on our website listed below.

We reserve the right to update our manuals without notice. You can download a current manual at our website (http://www.dmfatlanta.com).

Thank you for choosing DMF Railgear. We make every effort to provide quality, safe and rugged products for the railroad. We hope you'll find our gear to be satisfactory in every way. We take product support very seriously, so if you have any questions, please contact us.

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SECTION 1.0 GENERAL INFORMATION

1.1 GENERAL DESCRIPTION, WEIGHTS & CAPACITIES

DMF's Trailer Railgear is designed for tow behind trailers. The Railgear completely lifts the trailer tires above rail when deployed. This allows for trailers with various track widths to be used on the same gauge rail.

The Railgear used for each trailer is comprised of either our RW-1019, 1212, 1420, 1630 or 1650 Railgear with minor modifications. The following document is a supplement to the Railgear manuals listed above. Detailed comparisons between each Railgear will not be addressed. The Railgear type selected for any given trailer is based on the trailer's weight capacities and frame characteristics.

1.1.1 Weights and Capacities

Trailer Railgear Capacity per Railgear Axle @ 20 MPH:

- RW-1019 Trailer Railgear, 10" Wheel Rolling Diameter: ~8,200 lbs.
- RW-1212 Trailer Railgear, 12" Wheel Rolling Diameter: ~12,300 lbs.
- RW-1420 Trailer Railgear, 14" Wheel Rolling Diameter: ~20,000 lbs.
- RW-1630 Trailer Railgear, 16" Wheel Rolling Diameter: ~40,000 lbs.
- RW-1650 Trailer Railgear, 16" Wheel Rolling Diameter: ~70,000 lbs.

Trailer Railgear installed weights per axle:

- RW-1019 Trailer Railgear: ~950 lbs.
- RW-1212 Trailer Railgear: ~760 lbs.
- RW-1420 Trailer Railgear: ~875 lbs.
- RW-1630 Trailer Railgear: ~1185 lbs.
- RW-1650 Trailer Railgear: ~1385 lbs.

1.1.2 Installation

The DMF Trailer Railgear assemblies were designed for mounting below the trailer frame. The Railgear, once aligned and fully operational, is welded to the frame. It is located just behind the rear axle where space is available. A second axle can be mounted to the front of the trailer. The mounting location of the second axle should be considered to balance the trailer when the Railgear is deployed. It should be noted that trailers requiring a second axle must be towed with a drawbar.

1.1.3 Options

There are multiple options available when ordering a set of Trailer Railgear. The most commonly ordered options include rail wheel brakes for assisted stopping on rail, insulated wheels to prevent crossing signal actuation and rail sweeps to clear the rail of potentially damaging materials. An optional cable pin off is available to replace the manual pin offs, reference Section 4 for available Railgear options.

NOTE:
Primary braking effort is provided from the towing vehicle when operating on rail. The rail wheel brake system is intended to assist the vehicle. If the existing vehicle brakes are not maintained in good working order, the rail wheel brakes are not capable of independently stopping the vehicle in reasonably short distances.

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1.2 TRAILER RAILGEAR COMPONENTS

Figure 1.2 identifies the key components of the Trailer Railgear. Appearances will vary depending on the selected Railgear options. These item descriptions will be used throughout this manual. The configuration is the same for all the varying types of Railgear.

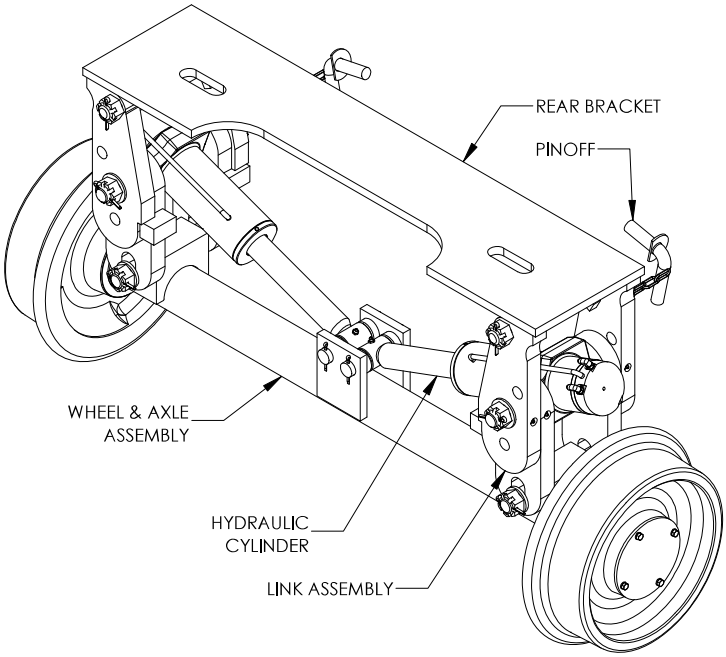


Figure 1.2 Trailer Railgear Components

SECTION 2.0 OPERATIONS

2.1 BEFORE RAILGEAR OPERATION

2.1.1 Familiarization of Railgear

Clearances and Approach Angles

Installation of Railgear typically reduces ground clearance, with the rail wheels resting below the frame of the trailer. This must be taken into consideration by the operator when maneuvering on highway and positioning for Railgear deployment. To avoid equipment and property damage, operators should be familiar with the modified clearances and working envelope before towing.

Pin Off Systems and Locations

Walk around the trailer and identify the location and type of Railgear pin off system installed. Locking valves are provided for each cylinder. Pin offs are installed on both sides of the Railgear assembly. It is required that the pin offs are used when the Railgear is in both the highway and rail positions.

Operation Controls

- Locate and be familiar with the location of the Railgear operating controls.
- Locate the hydraulic power unit, which is the power source and the power switch on the trailer.
- If the truck is equipped with Railgear brakes, locate the brake switch. This switch should only be enabled on rail to avoid continuously running the hydraulic power unit.

2.2 HIGHWAY OPERATION

Before towing a Railgear-equipped trailer on the highway ensure the following:

1. Verify Railgear is in highway position.
2. Verify that the pin offs for both sides of the axle(s) are properly engaged.
3. Verify that Railgear brakes have been disengaged and the switch has been turned off, if applicable.
4. Verify the hydraulic power unit has been disengaged and that the indicator light is OFF.

2.3 GETTING ON THE RAIL

NOTE:
The hydraulic power unit is turned on by pushing a momentary switch mounted next to each spool valve. Release the switch when not in use to avoid overheating the power unit.

2.3.1 Getting Onto the Tracks

1. If at any time the trailer is unhitched from the tow vehicle the wheels/tires must be secured in place to prevent it from moving. The Railgear brakes will NOT hold the trailer in place.
2. At the track crossing, drive past the track and back the vehicle and trailer onto the rails. Align the rear Railgear of the trailer over the tracks.
3. Engage the truck's parking brake to prevent the truck from rolling.
4. Leave the truck running and the transmission in neutral gear.

2.3.2 Lowering Guide Wheels – Single Axle

1. Disengage the Railgear pin offs on each side of the trailer. If a pin off is difficult to disengage, momentarily raise the Railgear to remove load from the pin off.
2. Hold the pump power button and use the valve to lower the Railgear. The flanges of the wheels should be to the inboard sides of the railheads. It may be necessary to adjust truck position slightly.
3. Release the power button when finished using the hydraulics.
4. When both wheels are down and properly engaging the rail, re-engage the Railgear pin offs.
5. If the Railgear is equipped with auxiliary rail brakes, turn the brake switch on.
6. Follow owner's manual to operate tow vehicle's Railgear.

2.3.3 Lowering Guide Wheels – Dual Axles

NOTE:
If the trailer is equipped with a second axle it must be towed on rail using a draw bar.

1. Disengage the Railgear pin offs on each side of the trailer for both axles. If a pin off is difficult to disengage, momentarily raise the Railgear to remove load from the pin off.
2. Push and hold the pump power button and use the valve to lower the rear Railgear only. The flanges of the wheels should be to the inboard sides of the railheads. It may be necessary to adjust the truck position slightly.
3. Release the power button when finished using the hydraulics.
4. When the rear Railgear is deployed, re-engage the Railgear pin offs for that axle only.
5. Follow the owner's manual to deploy the tow vehicle's Railgear on rail.
6. Chock the trailer rear Railgear wheels to keep it stationary.
7. Push and hold the pump power button and deploy the front Railgear enough to lift the weight of the trailer off the trailer hitch. Release the power button. Detach the trailer from the tow vehicle.
8. Ensure all safety chains and electrical connections are disconnected between the trailer and tow vehicle.
9. Drive the tow vehicle forward and install the draw bar.
10. Reverse the tow vehicle and use the draw bar to reattach to the trailer.
11. Ensure all electrical connections and safety chains are secured.
12. Fully deploy the front Railgear and engage the pin offs.
13. Remove the chocks from the rear Railgear axle.
14. If the Railgear is equipped with auxiliary rail brakes, turn the brake switch on.

2.3.4 On the Tracks

- Do not exceed posted track speed limit, and at no time exceed 20 MPH while on the track.
- Be aware that some Railgear is insulated, and will not operate the crossing gate circuits. It is the operator's responsible to know if the Railgear equipped vehicle and trailer have insulated or non-insulated wheels. To assist in identifying insulated rail wheels, a grooved ring is machined around the inside of the front and rear driver's side 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. No more than a slow walking pace is recommended.
- Traction is reduced on the track, especially in wet conditions.
- Braking distance is increased on the track, especially in wet conditions.
- Do not exceed the maximum rated capacity of the equipment.

2.4 GETTING OFF THE RAIL

NOTE:
The hydraulic power unit is turned on by pushing a momentary switch mounted next to each spool valve. Release the switch when not in use to avoid overheating the power unit.

2.4.1 Single Axle

1. Safely pull onto the track crossing, paying attention to the traffic and other obstacles.
2. Set the parking brake, leave the truck running and the transmission in neutral.
3. Follow the necessary steps outlined in the provided operations manual for stowing the tow vehicle's Railgear.
4. Disengage the Railgear pin offs on both sides of the trailer.
5. Push and hold the pump power button and use the spool valve to lift the Railgear.
6. Release the power button when the hydraulics are not in use.
7. Re-engage all pin offs for safe travel on the highway.
8. Turn off the switch controlling the Railgear brakes, if applicable.
9. Make sure the surrounding area is free and clear of any obstacles and vehicles before disengaging the parking brake and pulling onto the road.

2.4.2 Dual Axles

1. Safely pull onto the track crossing, paying attention to the traffic and other obstacles.
2. Set the parking brake, leave the truck running and the transmission in neutral.
3. Chock the rear Railgear wheels.
4. Disengage the pin offs on both axles.
5. Remove the draw bar and secure it in an appropriate location.
6. Back the tow vehicle up to hitch to the trailer.
7. Stow and pin off the front Railgear and remove the wheel chocks.
8. Fully stow the rear Railgear and pin off.
9. Follow the necessary steps in the provided operations manual for stowing the tow vehicle's Railgear.
10. Always release the power button when the hydraulics are not in use.
11. Disengage the switch controlling the Railgear brakes, if applicable.
12. Make sure the surrounding area is free and clear of any obstacles and vehicles before disengaging the parking brake and pulling onto the road.

SECTION 3.0 RAILGEAR INSTALLATION

3.1 PRE-INSTALL

NOTE:
The proper installation of this equipment is solely the responsibility of the installer. When in doubt, contact DMF for assistance.

WARNING:
Railgear alignment is crucial to ensure safe and reliable operation. Do not attempt to tow trailer on rail until these steps have been completed. See Section 3.5 for detailed instructions.

3.1.1 Safety Statements

- Always block up Railgear before getting underneath the trailer.
- Always use jack stands when jacking up the trailer.
- Use personal protective equipment and clothing.

3.1.2 Installation Order

This manual presents the installation information in the order that DMF finds to work best. The installer's shop, tools, personnel or other factors may dictate a different order. This is acceptable as long as the overall alignment, rail test, road test, and final inspection are performed at the end.

3.1.3 Required Tools & Materials

Required:

- General shop tools and safety equipment
- Arc or MIG Welder
- Surge Protector (Protects ECM from damage during welding)
- Cutting Torch
- Hand Grinder
- Frame Drill
- Air Saw
- Angle Finder

Recommended:

- Transmission Jack, Motorcycle Lift, Pallet Jack or Forklift
- Overhead Crane
- Work Lights
- Wheel Dolly

3.1.4 Fluids and Lubrication

- Hydraulic Oil: Dexron III ATF, for DMF supplied electric/hydraulic power units
- Wheel Bearing Grease / Grease Fittings:
    - **Factory Standard**: Citgo Syndurance Premium Synthetic 460 #2
    - **Warm Climates:** Mystik JT-6 Hi-Temp Multi-Purpose Grease #2, or equivalent

3.1.5 Bolt Torque Specifications

See the following page for recommended torque specifications.

TITLE: Purchased Fastener Torque Specifications

PURPOSE: To establish production methods for the installation of commonly purchased threaded fasteners.

COMMON USAGE: Most areas of multiple part assembly and retention.

PARTS GENERALLY ENCOMPASSED BY THIS PROCEDURE: Most common sizes of SAE J429 Grade 5 and 8 and of ASTM A574 socket head cap screws.

PROCEDURE:

A) Identify the fastener as either fine or coarse thread, select the appropriate chart below.

B) Identify the fastener size (diameter and threads per inch), select the appropriate row in the chart selected.

C) Identify grade of the bolt.

D) Read across the size row and down the grade column. The intersection of row and column gives torque.

FINE THREAD BOLTS

SIZE (DIA-TPI)	SAE J429 GRADE 5 (3 MARKS) PLATED (FTLB)	SAE J429 GRADE 8 (6 MARKS) PLATED (FTLB)	ASTM A574 SOCKET HEAD CAP SCREW (FTLB)
1/4-28	6	8	12
5/16-24	12	15	24
3/8-24	21	27	43
7/16-20	33	43	68
1/2-20	51	66	105
9/16-18	72	96	-
5/8-18	100	135	202
3/4-16	180	223	354
7/8-14	260	350	564
1-12	390	530	860
1 1/8-12	540	750	-
1 1/4-12	745	1050	1697
1 3/8-12	-	-	2288
1 1/2-12	1320	1850	3001

COARSE THREAD BOLTS (MATCHING HEX NUTS)

SIZE (DIA-TPI)	SAE J429 GRADE 5 (3 MARKS) PLATED (FTLB)	SAE J429 GRADE 8 (6 MARKS) PLATED (FTLB)	ASTM A574 SOCKET HEAD CAP SCREW (FTLB)
1/4-20	5	7	10
5/16-18	19	14	22
3/8-16	19	24	38
7/16-14	30	38	61
1/2-13	45	59	93
9/16-12	66	84	-
5/8-11	90	120	179
3/4-10	160	200	317
7/8-9	240	320	511
1-8	360	480	767
1 1/8-7	480	670	1087
1 1/4-7	670	930	1533
1 3/8-6	-	-	2010
1 1/2-6	1170	1650	2668

COMMENTS:

A) Torque valves specified are for bolts with residual oils or no special lubricants applied. if special lubricants of high stress capacity (such as Never-Seez, graphite and oil, molybdenum disulphite, colloidal copper or white lead) are applied, multiply the torque values in charts by 0.90. The use of Loctite does not affect the torque values in charts.

B) All values are in Foot-Pounds (FTLB). Multiply by 12 for Inch-Pounds.

C) Flat washers of equal strength must be used.

D) Bolt manufacturer's specs should be used when available.

E) Values shown are for Nylock nuts or Grade C prevailing torque nuts.

F) Never re-use a highly stressed, torque fastener: IT MAY FAIL!

REV	DATE	DESCRIPTION	BY	APP
B	07/15/15	UPDATED ALL TORQUE VALUES, REMOVED PLAIN TORQUE SPECS	DJJ	
A	12/29/99	ADDED RECOMMENDED TORQUE CHART	LOR	

TOLERANCES: (UNLESS SPECIFIED) COMMON SENSE PREVAILS
FRAC, MACH: ± 1/32"
FRAC, OTHER: ± 1/16"
.X ± .063
.XX ± .030
.XXX OR .XXXX ± .005
DRILL SIZES: ± .005
ANGULAR: ± 1°
SURF FINISH: 125 MICRO
THREADS: 2A AND 2B
BREAK SHARP EDGES

DRAWN BY: TSH
APPD BY:

TITLE: PRODUCTION PROCEDURE 006
FASTENER TORQUE SPECIFICATION

DIVERSIFIED METAL FABRICATORS, INC. (404) 875-1512

DATE: 06/02/94

DRAWING NUMBER: PP006

REV: B

3.1.6 Welding Information

- Dual Shield Wire spec. → AWS E71T-1
- Low Hydrogen spec. → AWS E-7018

Low Hydrogen Electrodes (AWS E-7018)

Manufacturer	Equivalent Rod
Air Products	AP-7018, 7018IP
Airco	7018C, 7018-A1
Arcos	Ductilend 70
Air Products	170-LA, SW-47,616
Chemtron	170-LA, SW-47,616
Hobart	718, 718-SR
Marquette	7018
McKay Co	7018
Reid-Avery	7018
Uniblaze	7018
Westinghouse	Wiz-18
Lincoln	Jetweld LH-70

Table 3.1.6 Manufacturer Equivalent Welding Rod

3.2 INITIAL INSTRUCTIONS

3.2.1 Work Area

The Railgear installation area should meet the minimum requirements listed below. Doing so will help to complete the install in a safe, accurate and timely manner.

- Floor: Should be level to provide good measurements for Railgear installation.
- Lighting: The work area should be adequately lit.
- Space: There should be enough room to maneuver the Railgear components into position and to safely work around other equipment.

3.2.2 Trailer Condition

Before installation, the following trailer items should be inspected:

- Tires: Tires must be in good condition and inflated to manufacturer's recommended pressure.
- Alignment: Railgear axle(s) must be square with trailer hitch. If multiple axles are being used they must also be squared with one another.
- Frame: Inspect to ensure that there is no damage and it has not been bent.

NOTE:
Deploying Railgear lifts the trailer tires completely off rail. Ensure the trailer will remain stationary during this operation.

3.3 GENERAL INFORMATION

The Trailer Railgear has been designed for use on many makes and models of towable trailers. Therefor minor modifications to the trailer or Railgear may be required for proper installation. The Railgear provided consists of the listed major components below, which are also shown in Figure 3.3.

- Rear Bracket: Welded to the bottom of the trailer.
- Axle Assembly: The axle is provided fully assembled with rail wheels and brakes, if ordered.
- Link Assembly: Supports the axle assembly when deployed and stowed. Used to pin off the Railgear.
- Hydraulic Cylinders: Independently operated to deploy and stow the Railgear. All cylinders are equipped with locking valves.
- Pin Offs: Secures the Railgear in place when stowed and deployed. Prevents the Railgear from drooping over long periods of time and from moving in case of a hydraulic failure.
- Brake Toggle Switch: Switch mounted on trailer used to turn on the Railgear hydraulic or pneumatic brakes.

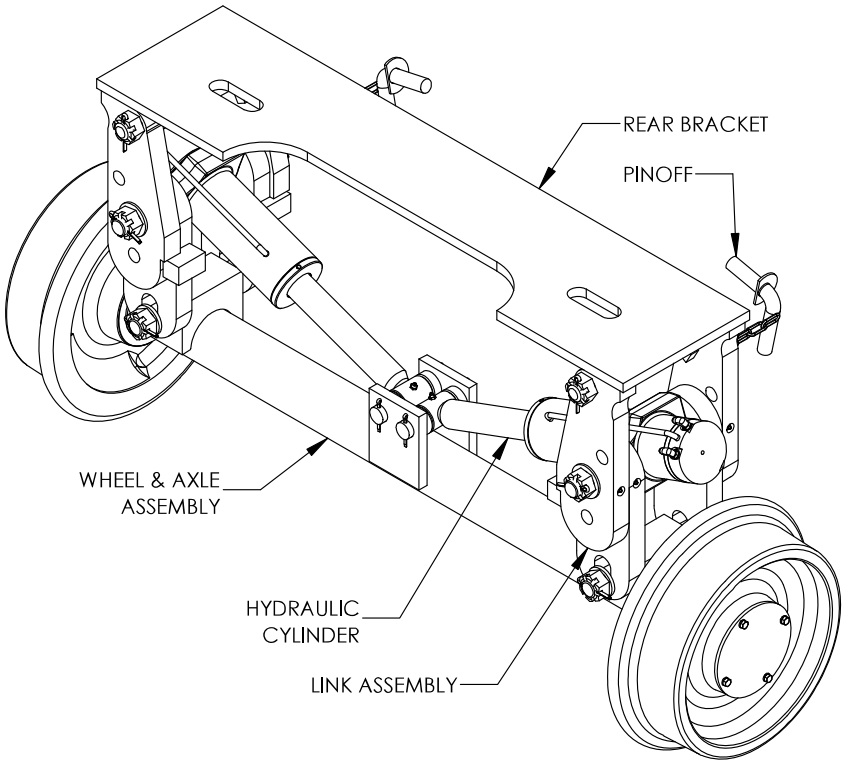


Figure 3.3 – Trailer Railgear Major Components

Prior to installation, review the components provided and understand how the Railgear operates. Check for sufficient clearances to prevent interference with the Railgear and other parts of the trailer. This includes the operation of the Railgear and trailer on rail and on highway.

3.4 INSTALLATION OF TRAILER RAILGEAR

NOTE:

The following installation procedure is a general guideline for installing multiple Trailer Railgear configurations. Refer to the provided Parts and Service Manual for the Railgear specific installation procedures.

3.4.1 Location of Railgear

1. Ensure there is sufficient frame space and ground clearance to install the Railgear. It is supplied to the customer fully assembled.
2. Chock the trailer tires in place so the trailer does not move during installation.

NOTE:

When fully deployed the Railgear is designed to lift the trailer tires off the ground. It is recommended at this point to secure the trailer to a tow vehicle to keep it from moving.

3. When set up correctly, the height of the stowed Railgear should be a minimum of 7" from ground. When deployed the Railgear should lift the trailer tires a minimum of 2" off rail. This may require the installer to use spacers between the trailer frame and the rear bracket to achieve these ground clearances, as shown in Figure 3.4.1.A. Be sure to take into consideration axle droop and rail wheel flange diameter. For more information on this reference the Railgear Installation manual provided with this manual.

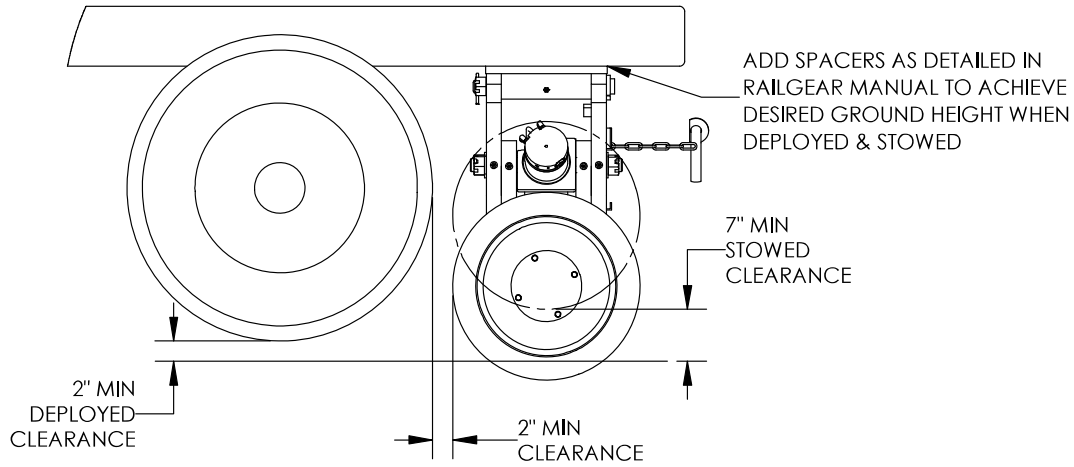


Figure 3.4.1.A – Railgear Positioning

4. Position the Railgear as close to the rear tire as practical, typically a minimum of 2". Leave a minimum of 2" of clearance to any spring or suspension components.
5. The Railgear can be articulated side to side to help align the trailer when getting on rail. A minimum clearance of 19" should be given from each side of trailer frame. Reference Figure 3.4.1.B.

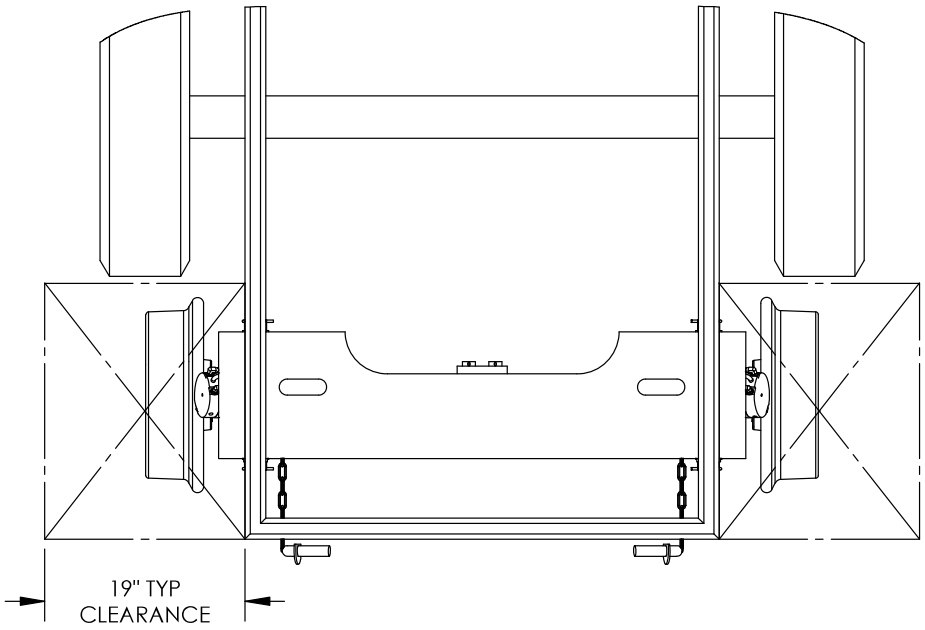


Figure 3.4.1.B – Railgear Side to Side Clearances

6. Center the Railgear about the frame and position it as specified. Add spacers as needed to adjust for proper ground clearances.
7. Once positioned, temporarily secure the Railgear to the frame. Do not weld anything at this point.

3.4.2 Railgear Alignment

1. All measurements should be from a common location to square the Railgear with the trailer hitch. This may be difficult so an alternative is to find a common point relative to the front hitch on both sides of the frame. See Figure 3.4.2.A.

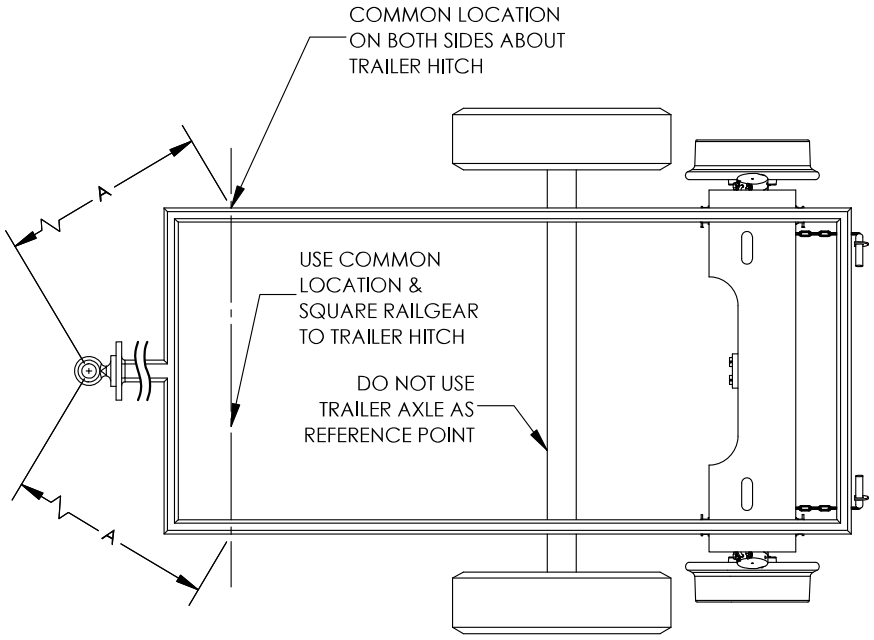


Figure 3.4.2.A – Common Alignment Location

2. Measure from the common point to the Railgear axle on both sides, dimension B as shown in Figure 3.4.2.B. Measure the distance from the each rail wheel flange to the trailer frame, dimension C. Adjust as necessary.

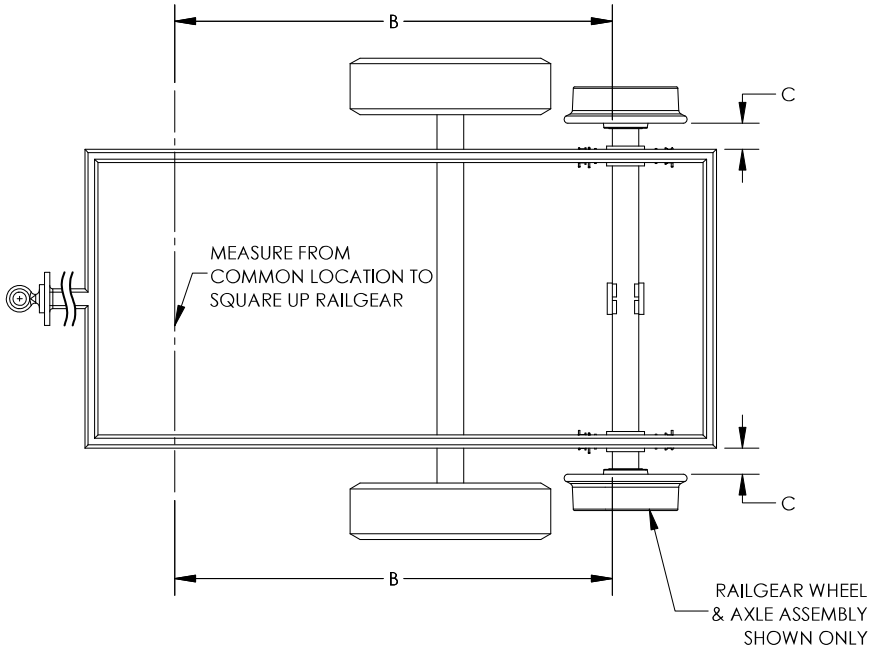


Figure 3.4.2.B – Railgear Alignment

3. Tack weld all spacers together and to the trailer frame. Tack weld the rear bracket to spacers. If the spacers were not needed tack the rear bracket to the trailer frame. Do not fully weld until a final alignment and rail test have been performed.
4. At this point the hydraulic and electrical systems should be installed, see Section 5. Run the Railgear in both directions to ensure no clearance issues exist.
5. Follow these same steps if a second set of Railgear is required. Ensure the second axle is squared to the other axle. Adjust as needed, see Figure 3.4.2.C.

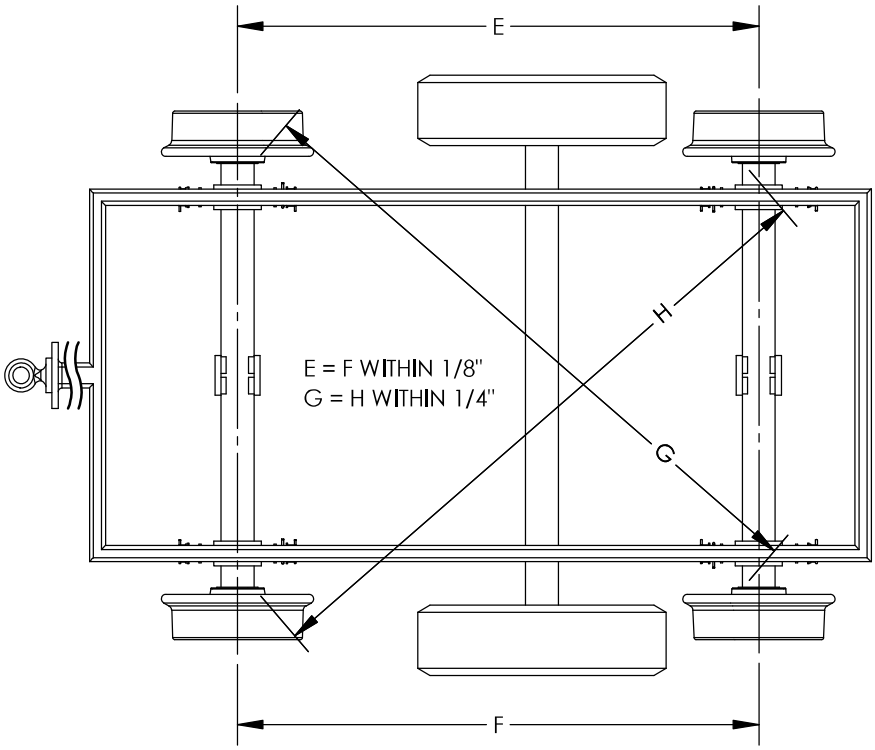


Figure 3.4.2.C – Second Axle Alignment

6. Run all Railgear up and down to makes sure it can be pinned off in both positions and as a final clearance check.
7. Secure all hoses away from moving parts and pinch points.

3.5 ALIGNMENT AND RAIL TEST PROCEDURES

With the Railgear fully assembled on the trailer, it is necessary to do a final alignment and rail test. When performing the alignment procedure, record the final alignment measurements on the sheet provided at the end of this section.

NOTE:

DMF recommends these procedures to be performed after the hydraulic and electrical systems have been installed. A fully functional hydraulic system will make it possible to repeatedly lift and lower the Railgear to check and verify adjustments.

The Railgear must be square to the trailer hitch to prevent towing issues. The following measurements are to be taken with the Railgear fully deployed, the trailer properly supported and secured in place. All pin offs must be in use. If available, hitch the trailer to a suitable tow vehicle.

NOTE:

When the Railgear is deployed the trailer axle(s) will be completely lifted off rail and will not affect travel on rail. This is why it is not acceptable to measure from the trailer axle(s) to align the Railgear.

3.5.1 Railgear Alignment – Single Axle

Refer to Figure 3.5.1 for the alignment of the Trailer Railgear with a single axle.

- A & B: Diagonal measurements from the hitch to the axle. The measurements should be equal to within ¼”.
- C & D: Length measurements from the flange face of the Railgear to the trailer frame. The measurements should be equal to within 1/8”.

If adjustment is required, grind the Railgear free from the trailer and reposition. Again tack weld the Railgear in place and recheck the measurements. When the measurements are within the tolerances listed, record them in the alignment sheet included at the end of this section.

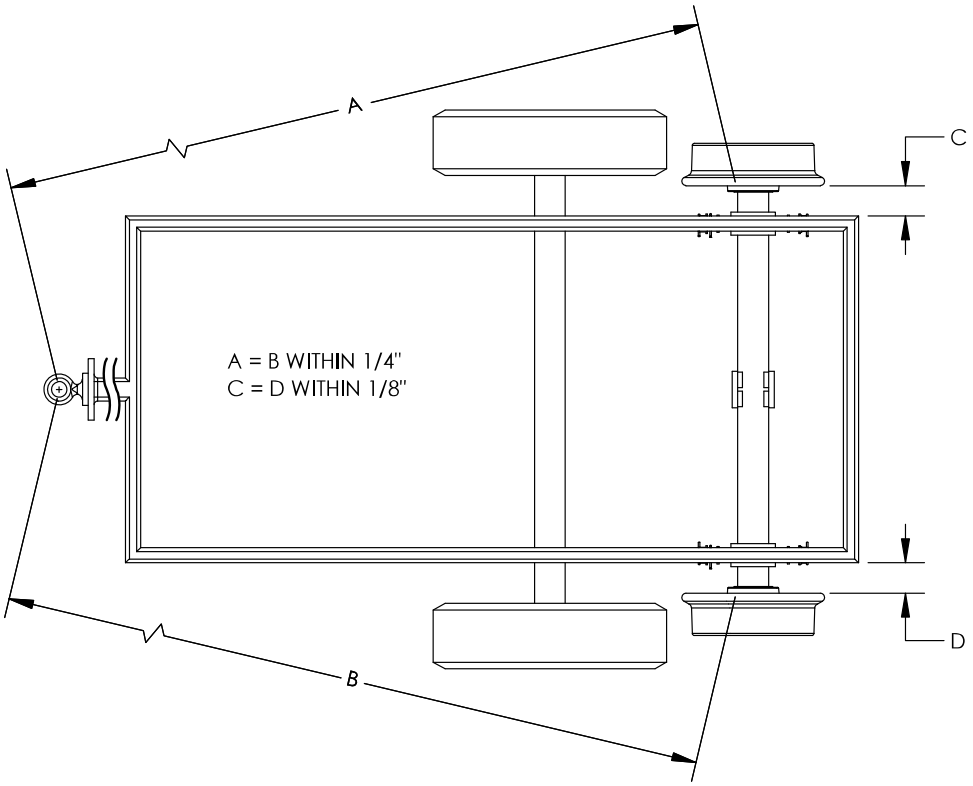


Figure 3.5.1 – Railgear Alignment Single Axle

3.5.2 Railgear Alignment – Dual Axles

Refer to Figure 3.5.2 for the alignment of the Trailer Railgear with dual axles.

- A & B: Diagonal measurements from the hitch to the rear axle. The measurements should be equal to within 1/4”.
- C & D: Length measurements from the flange face of the rear Railgear to the trailer frame. The measurements should be equal to within 1/8”.
- E & F: Length measurements from front Railgear to rear Railgear. Values should be equal to within 1/8”.
- G & H: Diagonal measurements from front Railgear axle to rear Railgear axle. The measurements should be equal to within 1/4”.

If adjustment is required, grind the Railgear free from the trailer and reposition. Again tack weld the Railgear in place and recheck the measurements. When the measurements are within the tolerances listed, record them in the alignment tear sheet included at the end of this section.

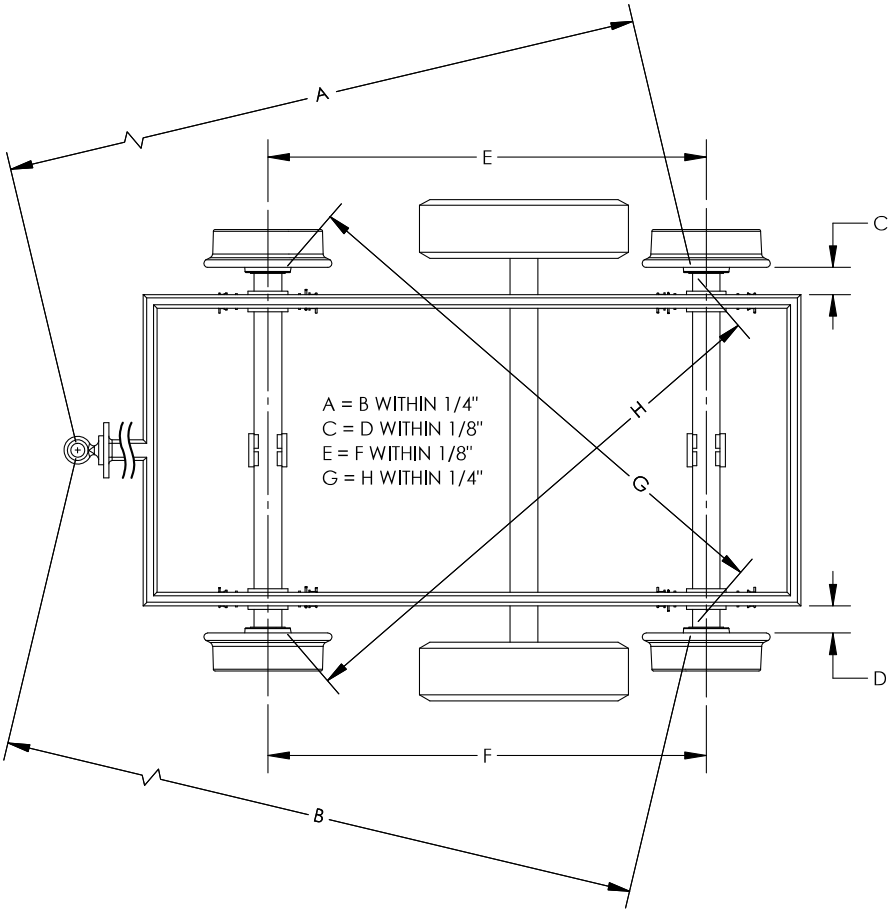
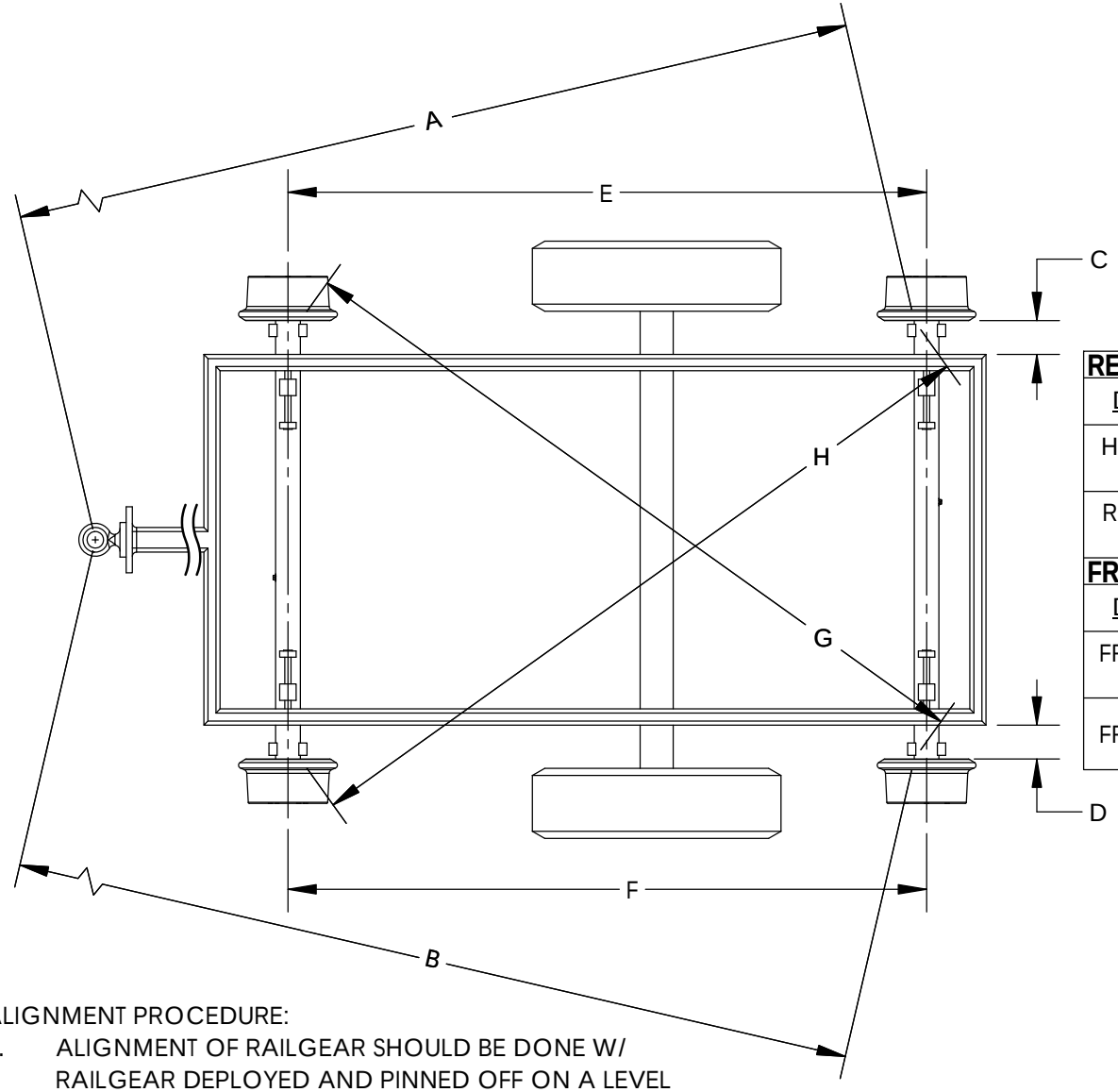


Figure 3.5.2 – Railgear Alignment Dual Axles



REAR AXLE				
DESCRIPTION	DIMENSION		DIMENSION	TOLERANCE
HITCH TO REAR AXLE	A:_____	=	B:_____	±1/4"
RAIL WHEEL TO FRAME	C:_____	=	D:_____	± 1/8"
FRONT AXLE - WHEN APPLICABLE				
DESCRIPTION	DIMENSION		DIMENSION	TOLERANCE
FRONT AXLE TO REAR AXLE	E:_____	=	F:_____	± 1/8"
DIAGONAL FRONT AXLE TO REAR AXLE	G:_____	=	H:_____	± 1/4"

ALIGNMENT PROCEDURE:

1. ALIGNMENT OF RAILGEAR SHOULD BE DONE W/ RAILGEAR DEPLOYED AND PINNED OFF ON A LEVEL SURFACE.
2. RECORD MEASUREMENTS WHERE INDICATED. PROVIDE COMPLETED SHEET TO CUSTOMER WITH MANUALS.
3. MEASURE AND ADJUST REAR AXLE WITH RESPECT TO HITCH AND FRAME RAILS.
4. MEASURE AND ADJUST FRONT RAILGEAR WITH RESPECT TO REAR RAILGEAR, IF APPLICABLE.
5. COMPLETE RAIL TEST PROCEDURE OUTLINED IN MANUAL.
6. COMPLETELY WELD ALL PREVIOUSLY TACK WELDED ITEMS.

REV	DATE	DESCRIPTION	BY	APP
		-		

TOLERANCES (UNLESS SPECIFIED):
FRAC, MACH: ± 1/32"
FRAC, OTHER: ±1/16"
.X ± .063
.XX ± .030
.XXX ± .005
DRILL SIZES: + .015
ANGULAR: ± 1°
SURF FINISH: 125 MICRO
THREADS: 2A AND 2B
BREAK SHARP EDGES .03 X 45° MAX.

DMF (404)875-1512

TITLE: MANUAL, ALIGNMENT TEAR SHEET, CHIPPER & TRAILER RAILGEAR

DRAWN BY:	APPD BY:	DATE:		DRAWING NUMBER:	REV:
DJJ	-	09/08/17	DMF	M1019142	#

3.5.3 Rail Test

After aligning the Railgear and welding the components in place, attach the trailer to a suitable tow vehicle and put it on a segment of test track following the procedures listed in Section 2. Note if a second axle has been installed a tow bar is required between the tow vehicle and the trailer. Run the following tests:

- Run the trailer forwards and backwards on rail.
- Check for proper clearance between the trailer tires and the rail.
- If available, run the trailer through curves and switches.
- If applicable verify that the Railgear brakes operate smoothly.
- Verify alignment by observing the wear pattern on the rail wheels and the behavior of the trailer.

3.5.4 Final Weld-out

After the Railgear has been aligned and successfully tested on rail, it is necessary to fully weld it in place. When used, weld all spacers fully to one another, the frame bracket and the trailer frame. If no spacers were used in the installation weld the rear frame bracket directly to the trailer frame.

3.5.5 Installation Review Checklist

The following checklist is intended to assist the installer in re-checking and verifying aspects of the installation that are often overlooked or forgotten.

- Check tire pressures.
- Double check all welds and fasteners. Tie strap all hydraulic hoses, air hoses, and electrical wires away from moving parts. Ensure that all hydraulic hoses have a sufficient bend radius.
- Raise the Railgear to highway position and check that it is possible to pin off both sides.
- Rail test the trailer to check for braking. Check that rail wheels with brakes do not lock-up or slide.
- Adjust the Railgear height as required to completely lift all tires off rail when all pin offs are in place. Verify the Railgear does not interfere with the trailer operation.
- Re-check alignment of the Railgear to the trailer hitch.
- Touch-up the black acrylic enamel paint on the Railgear.
- Check hydraulic oil level and top off if needed.

SECTION 4.0 RAILGEAR OPTIONS

4.1 RAIL SWEEPS

4.1.1 Rail Sweep Parts

Rail sweeps are available as an option for trailer Railgear. Installation and adjustment of rail sweeps are done with the Railgear in the deployed position. The bottom of the rubber rail sweep should lightly brush the rail surface. Adjust up or down as necessary.

- Axles with brakes: Rail sweeps are typically shipped loose.
- Axles without brakes: Weld-on rail sweeps are shipped loose and should be welded to the axle by the installer.

4.1.2 Rail Sweep Adjustment

The rubber rail sweeps should be replaced when they are worn to a point where satisfactory adjustment is no longer possible. Bent or broken rails sweeps should be repaired or replaced as necessary. Refer to the Railgear specific Parts and Service Manual for the rail sweep options available on a specific set of Railgear.

4.2 RAILGEAR BRAKES

WARNING:
The rail wheel brake system is intended to assist the tow vehicle brakes when on rail. Rail wheel brakes alone are insufficient to stop the vehicle in a reasonable distance.

The type of brakes used on Railgear depends on the type of Railgear ordered. RW-1019, 1212 and sometimes 1420 Railgear brakes are hydraulically operated by the trailer's hydraulic power unit. The Railgear brakes switch must be in the on position for the brakes to work on rail. When the trailer receives a braking signal from the tow vehicle the brakes will be applied for a 30 second interval and then released. This is to prevent overheating the hydraulic power unit.

RW-1420, 1630 and 1650 can be ordered with optional air brakes. The orientation of the brakes will be set at the factory. A dedicated air supply line from the tow vehicle is needed to supply tank air to these brakes. When disconnected, the dedicated line must prevent air leakage from tank and allow the tow vehicle to operate as normal. The installation of this line connection between the tow vehicle and trailer is the sole responsibility of the installer. The trailer brakes switch must be in the on position for the brakes to work on rail. The switch taps in to the trailer air supply for a brake signal only. Do not use the trailer braking air supply for Railgear braking as this is critical for trailer use on highway.

4.2.1 Brake Adjustment

It may be periodically necessary to adjust the rail brakes to compensate for pad and wheel wear. See the figures below for brake adjustment procedures for both types of brakes.

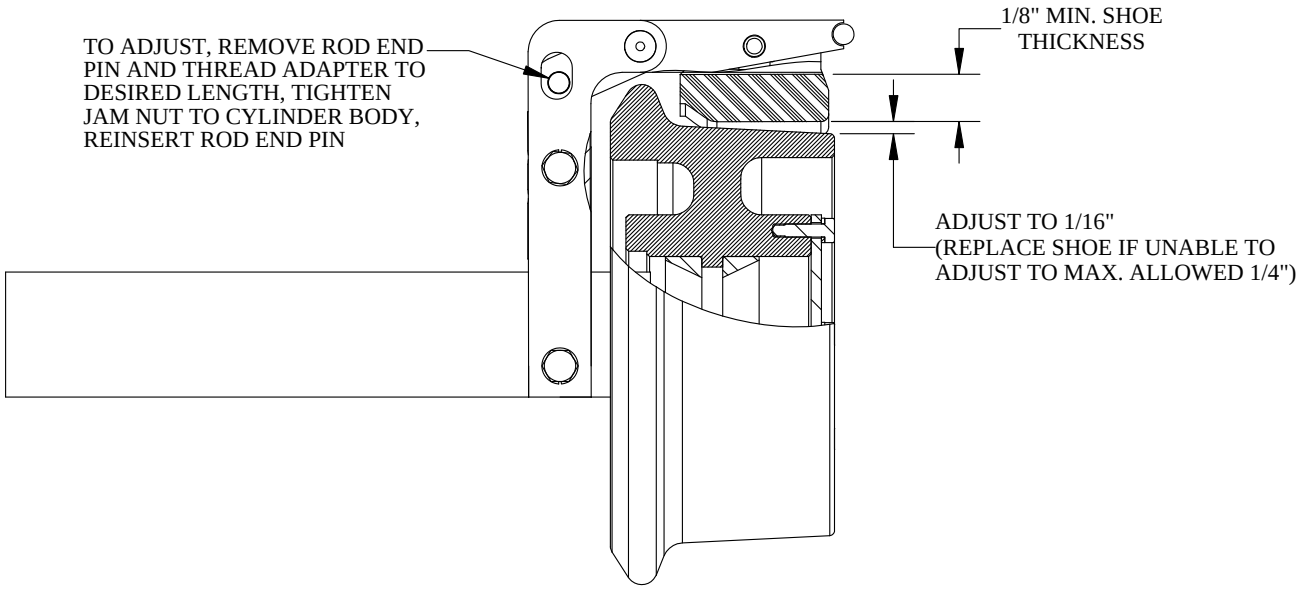


Figure 4.2.1.A - Rail Brake Adjustment - Hydraulic

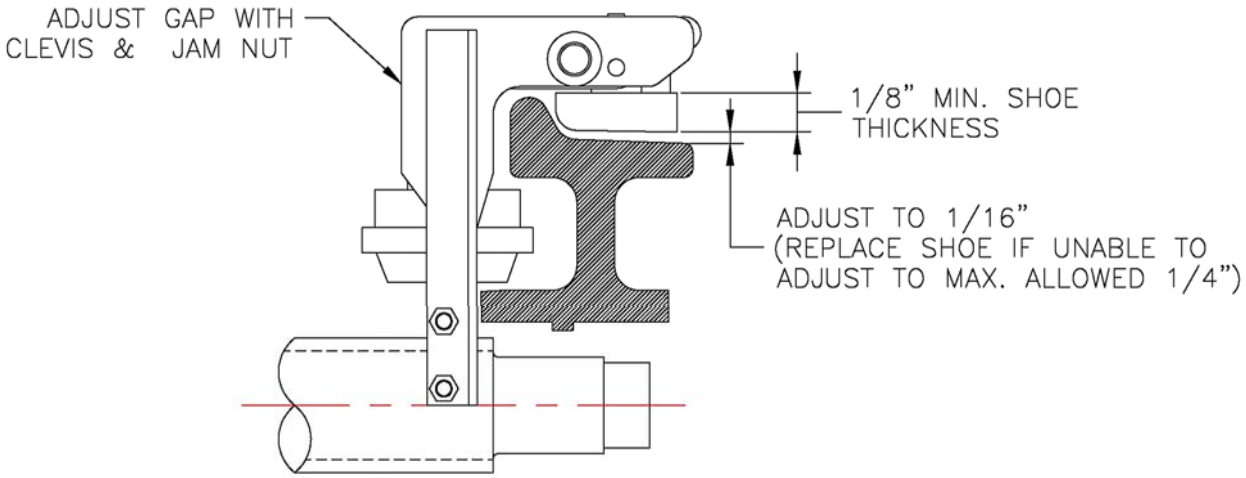


Figure 4.2.1.B – Rail Brake Adjustment – Air

WARNING:
The rail wheel brake system is intended to assist the tow vehicle brakes when on rail. The primary braking effort is derived from the tow vehicle's tires in contact with the rail. Rail wheel brakes alone are insufficient to stop the vehicle in a reasonable distance.

Reference the provided Parts and Service Manual for brake components specific to the type of Railgear provided.

4.3 PIN OFFS

Pin offs are supplied on all trailer Railgear and must be used when stowed and deployed. Manual pin offs come standard but can be upgraded. A cable pin off allows the user to operate the pin off from a common location on the trailer away from the Railgear. This prevents the operator from having to reach beneath the trailer to unpin the Railgear.

Pinoff designs very depending on the Railgear type in use refer to the supplied Parts and Service Manual for a complete list of options.

SECTION 5.0 HYDRAULIC & ELECTRICAL SYSTEMS

5.1 GENERAL INFORMATION

5.1.1 System Pressures and Relief Settings

Various components within the Trailer Railgear require different pressure setting to operate safely and reliably. Relief valves are factory set and typically should not require adjustment. Adjusting relief valves above or below the values shown below may result in damage to components and/or unsafe operation.

- Railgear System Relief: 2000 PSI
- Rear Brake Relief (when equipped): 1700 PSI
- Front Brake Relief (when equipped): 700 PSI
- Rear Railgear Control Valve: 1850 PSI
- Front Railgear control Valve (when equipped): 1600 PSI

5.1.2 Using Hydraulic Power Unit Provided by DMF

DMF provides an electric over hydraulic power unit (Monarch M-304) to power the Railgear and rail brakes, when equipped.

The unit includes a pump, motor and reservoir. This unit must be located somewhere accessible on the trailer. The unit should be protected from road spray and moisture. Only operate with Dexron III hydraulic oil.

ITEM	PART NO.	QTY	DESCRIPTION
1			
2			

TITLE: SAE (JIC) 37 Degree Fitting Installation.

PURPOSE: To Establish Production Methods For The Installation Of SAE (JIC) Medium Pressure Hydraulic Fittings.

COMMON USAGE: Hydraulic Systems Operating With Petroleum-Based Fluids At Pressures Below 4000 PSI Or Minimum Component Rating.

PARTS GENERALLY ENCOMPASSED BY THIS PROCEDURE: Purchased Fittings With SAE (JIC) 37 Degree Flared Ends.

PROCEDURE: A) Inspect fitting components to ensure that mating parts are free of burrs, nicks, scratches or any foreign material.

B) Align tube flare against nose of fitting body and screw on the nut, finger tight, clamping the tube flare between the fitting nose and the nut.

C) Tighten the nut the indicated Flats From Finger Tight (F.F.F.T.) listed in the chart below. Use a second wrench to hold the hose in proper alignment while tightening to avoid twisting the lay line. One flat on a hex is equal to 1/6th of a full turn. Tolerance on tightening is plus or minus 1/4 flat (1/24th of full turn).

SAE (JIC) 37° Flare Fittings

Size	Thread Size	Tube Connection F.F.F.T.	Swivel Nut or Hose Connection F.F.F.T.
-4	7/16-20	2	2
-6	9/16-18	1.5	1.25
-8	3/4-16	1.5	1
-12	1 1/16-12	1.25	1
-16	1 5/16-12	1	1
-20	1 5/8-12	1	1
-24	1 7/8-12	1	1

REV	DATE	DESCRIPTION	BY	APP
B				
A				

TOLERANCES: (UNLESS SPECIFIED) COMMON SENSE PREVAILS
FRAC. MACH: ± 1/32"
FRAC, OTHER: ± 1/16"
.X ± .063
.XX ± .030
.XXX OR .XXXX ± .005
DRILL SIZES: ± .005
ANGULAR: ± 1°
SURF FINISH: 125 MICRO
THREADS: 2A AND 2B
BREAK SHARP EDGES

DRAWN BY: TSH
APPD BY:

TITLE: PRODUCTION PROCEDURE 005
JIC FITTING INSTALLATION

DIVERSIFIED METAL FABRICATORS, INC. (404) 875-1512

DATE: 06/02/94

DRAWING NUMBER: PP005

REV: #

ITEM	PART NO.	QTY	DESCRIPTION
1			
2			

TITLE: SAE O-Ring Fitting Installation

PURPOSE: To Establish Production Methods For The Installation Of O-Ring Medium And High Pressure Hydraulic Fittings.

COMMON USAGE: Hydraulic Systems Operating With Petroleum-Based Fluids At Pressures Below 4000 PSI Or Minimum Component Rating.

PARTS GENERALLY ENCOMPASSED BY THIS PROCEDURE: Purchased Fittings With O-Ring Seals And SAE Straight Threads.

PROCEDURE:

A) Inspect to ensure that both mating parts are free of burrs, nicks, scratches or any foreign particles.

B) Lubricate O-Ring with light coat of system fluid or compatible oil.

C) For adjustable fittings, back off lock nut as far as possible. Make sure back up washer is not loose and is pushed up to nut.

D) Screw fitting into port until finger tight. Back up washer (adjustable) or hex face (non-adj.) should contact port face. Light wrenching may be necessary.

E) To align an adjustable fitting, unscrew by desired amount but not more than one full turn. Use wrench to hold in position. Screw nut down to port face until finger tight.

F) Tighten lock nut (adjustable) or fitting (non-adj.) the indicated Flats From Finger Tight (F.F.F.T.) in either the Adjustable chart or the Non-Adjustable chart below. One Flat on a hex is equal to 1/6th of a full turn. Tolerance on tightening is plus or minus 1/4 flat (1/24th of full turn).

G) Inspect to ensure that O-Ring is not pinched and back up washer/hex seats flat on face of port.

ADJUSTABLE FITTINGS

Fitting Size	SAE Port Thread Size	F.F.F.T.
2	5/16–24	1.0
4	7/16–20	1.5
6	9/16–18	1.5
8	3/4–16	1.5
10	7/8–14	1.5
12	1 1/16–12	1.5
14	1 3/16–12	1.5
16	1 5/16–12	1.5
20	1 5/8–12	2.0
24	1 7/8–12	2.0

NON–ADJUSTABLE FITTINGS

Fitting Size	SAE Port Thread Size	F.F.F.T.
2	5/16–24	1.0
4	7/16–20	1.0
6	9/16–18	1.5
8	3/4–16	1.5
10	7/8–14	1.5
12	1 1/16–12	1.5
14	1 3/16–12	1.5
16	1 5/16–12	1.5
20	1 5/8–12	1.5
24	1 7/8–12	1.5

REV	DATE	DESCRIPTION	BY	APP
B				
A				

TOLERANCES: (UNLESS SPECIFIED) COMMON SENSE PREVAILS
FRAC, MACH: ± 1/32"
FRAC, OTHER: ± 1/16"
.X ± .063
.XX ± .030
.XXX OR .XXXX ± .005
DRILL SIZES: ± .005
ANGULAR: ± 1°
SURF FINISH: 125 MICRO
THREADS: 2A AND 2B
BREAK SHARP EDGES

DRAWN BY: TSH
APPD BY:

TITLE: PRODUCTION PROCEDURE 003
O–RING FITTING INSTALLATION

DIVERSIFIED METAL FABRICATORS, INC. (404) 875–1512

DATE: 06/02/94

DRAWING NUMBER: PP003

REV: #

ITEM	PART NO.	QTY	DESCRIPTION
1			
2			

TITLE: National Pipe Thread (NPT) Fitting Installation.

PURPOSE: To Establish Production Methods For The Installation Of NPT Medium Pressure Hydraulic Fittings.

COMMON USAGE: Hydraulic Systems Operating With Petroleum-Based Fluids At Pressures Below 3000 PSI Or Minimum Component Rating.

PARTS GENERALLY ENCOMPASSED BY THIS PROCEDURE: Purchased Fittings With Tapered Pipe Threads.

PROCEDURE: A) Inspect port components to ensure that male and female threads are free of nicks, burrs, dirt etc.

B) Apply sealant/lubricant to male pipe threads. Use only Permatex #14D "Thread Sealant With Teflon" paste (or Engineering approved equal). The first few threads must be left uncovered to avoid system contamination.

C) Screw fitting into female pipe port to the finger tight position.

D) Wrench tighten the fitting to the appropriate Turns From Finger Tight (T.F.F.T.) shown in chart below. Make sure that tube end of shaped fitting is aligned to receive in coming tube or hose assembly.

STEEL PIPE THREAD FITTINGS

Fitting Size	Pipe Thread Size, NPT	T.F.F.T.
2	1/8-27	2.0-2.5
4	1/8-27	2.0-2.5
6	1/4-18	1.5-2.0
8	3/8-18	2.0-2.5
10	1/2-14	2.0-2.5
12	3/4-14	1.5-2.0
14	3/4-14	1.5-2.0
16	1-11 1/2	1.5-2.0
20	1 1/4-11 1/2	1.5-2.0
24	1 1/2-11 1/2	1.5-2.0

COMMENTS: Teflon Tape May Be Used In Certain Situations With Engineering Approval. A Pipe Fitting Is Limited To One Or Two Re-Uses.

REV	DATE	DESCRIPTION	BY	APP
B				
A				

TOLERANCES: (UNLESS SPECIFIED) COMMON SENSE PREVAILS
FRAC. MACH: ± 1/32"
FRAC, OTHER: ± 1/16"
.X ± .063
.XX ± .030
.XXX OR .XXXX ± .005
DRILL SIZES: ± .005
ANGULAR: ± 1°
SURF FINISH: 125 MICRO
THREADS: 2A AND 2B
BREAK SHARP EDGES

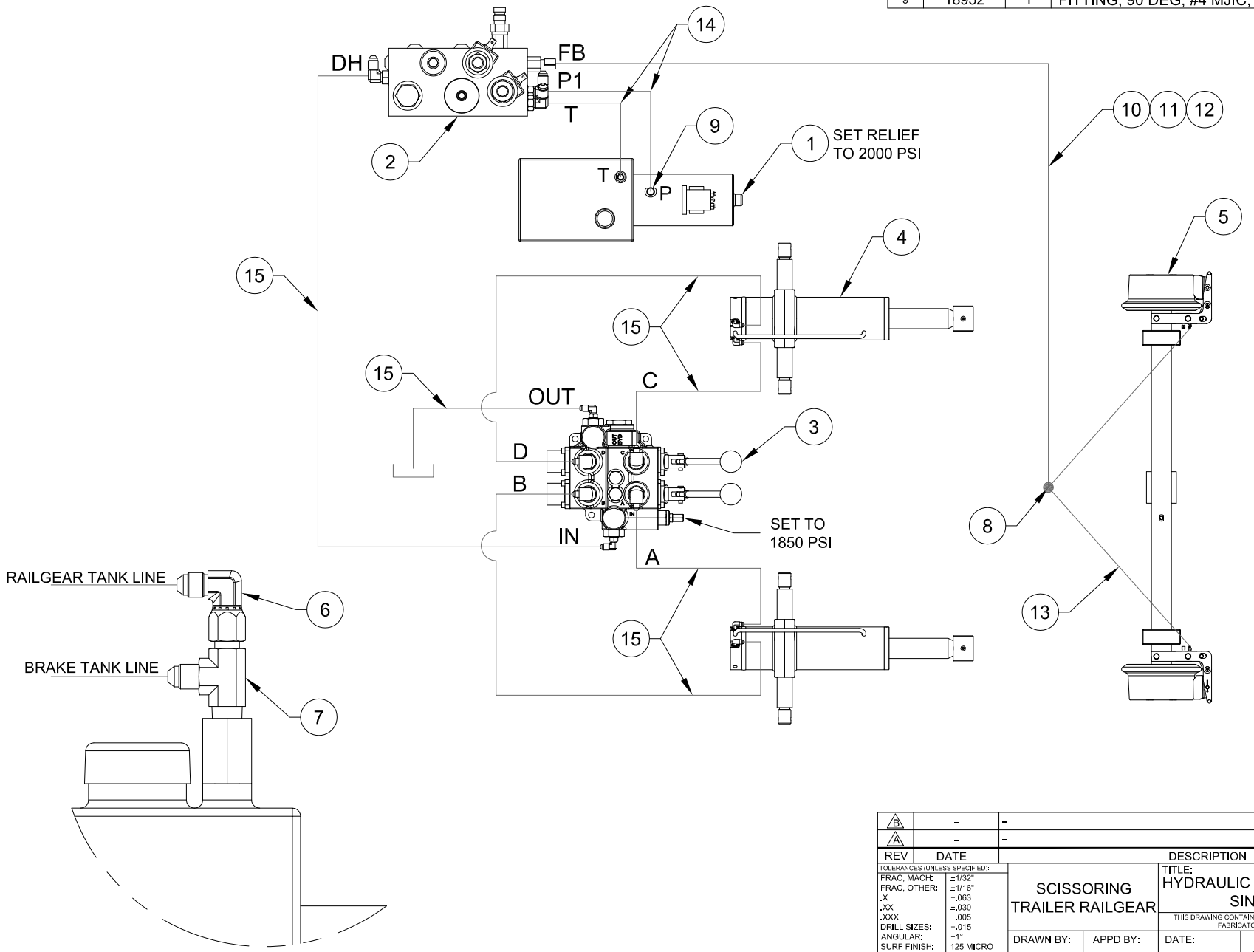
TITLE: PRODUCTION PROCEDURE 004
PIPE FITTING INSTALLATION

DIVERSIFIED METAL FABRICATORS, INC. (404) 875-1512

DRAWN BY:	APPD BY:	DATE:	DRAWING NUMBER:	REV:
TSH		06/02/94	PP004	#

ITEM	PART NO.	QTY	DESCRIPTION
10	605096	1	STRAIN RELIEF, .450-.560 1/2"
11	10478	2	INVERTED FLARE NUT, 3/16"
12	10462	1	RW-1019 STEEL BRAKE LINES, 3/16" X 25'
13	10442	2	STAINLESS STEEL BRAIDED BRAKELINE, 48"
14	810622	2	HOSE ASSEMBLY, 1/4 X 38"
15	810642	6	HOSE ASSEMBLY, 1/4 X 62"
16	810508	6	J-CLIPS, 3/8" (NOT SHOWN)

ITEM	PART NO.	QTY	DESCRIPTION
1	10400	1	MONARCH POWER UNIT W/ TANK, W/O FITTINGS (M304)
2	10500	1	RW-1019 LOCKING BRAKE VALVE ASSY, W/ FITTINGS (FNT)
3	810211	1	RW-1019 REAR HYDRAULIC VALVE, W/ O-RING FITTINGS
4	REF	2	RAILGEAR SPECIFIC CYLINDER
5	REF	1	RAILGEAR SPECIFIC AXLE W/ HYDRAULIC BRAKES
6	605048	1	FITTING, 90 DEG, #4 MJIC X #4 FJIC SWIVEL (6500-04-04)
7	605049	1	FITTING, TEE, #4 MNPT X #4 MJIC X #4 MJIC (2605-04-04-04)
8	10440	1	RW-1019 BRASS FITTING, HYDRAULIC BRAKE LINE, TEE, 3/16" INV FLARE
9	18952	1	FITTING, 90 DEG, #4 MJIC, #6 MAORB (6801-04-06)



REV	DATE	DESCRIPTION	BY	APP
B	-	-	-	-
A	-	-	-	-

TOLERANCES (UNLESS SPECIFIED):
FRAC, MACH: ±1/32"
FRAC, OTHER: ±1/16"
.X ±.063
.XX ±.030
.XXX ±.005
DRILL SIZES: +.015
ANGULAR: ±1°
SURF FINISH: 125 MICRO
THREADS: 2A & 2B
BREAK SHARP EDGES .03 X 45° MAX

DMF (404)875-1512

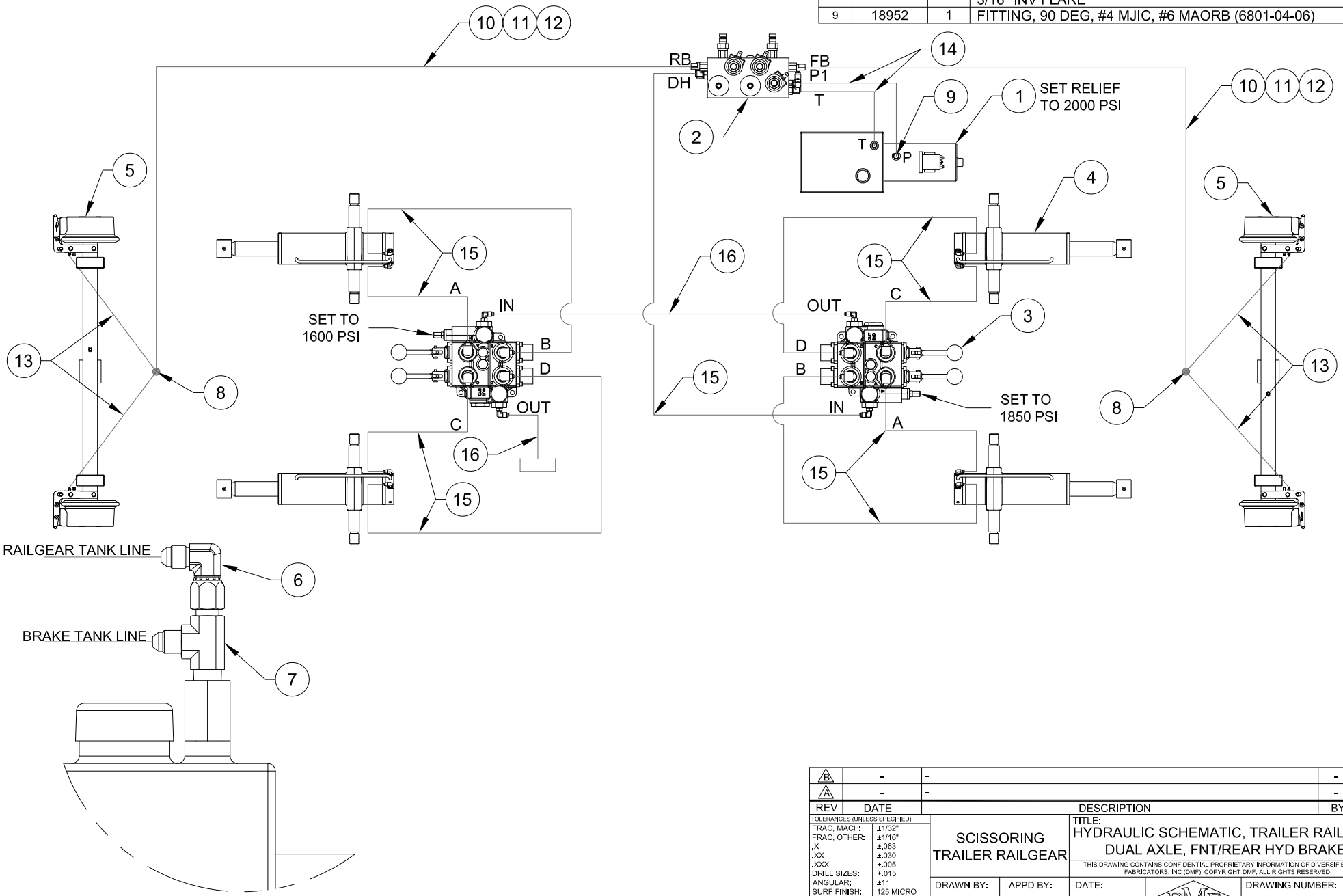
SCISSORING TRAILER RAILGEAR

TITLE: HYDRAULIC SCHEMATIC, TRAILER RAILGEAR, SINGLE AXLE, HYD BRAKES

DRAWN BY:	APPD BY:	DATE:	DRAWING NUMBER:	REV:
DJJ	-	08/15/17	853286	#

ITEM	PART NO.	QTY	DESCRIPTION
10	605096	2	STRAIN RELIEF, .450-.560 1/2"
11	10478	4	INVERTED FLARE NUT, 3/16"
12	10462	1	RW-1019 STEEL BRAKE LINES, 3/16" X 25'
13	10442	4	STAINLESS STEEL BRAIDED BRAKELINE, 48"
14	810622	2	HOSE ASSEMBLY, 1/4 X 38"
15	810642	9	HOSE ASSEMBLY, 1/4 X 62"
16	605209	2	HOSE ASSEMBLY, 1/4 X 96"
17	810508	6	J-CLIPS, 3/8" (NOT SHOWN)

ITEM	PART NO.	QTY	DESCRIPTION
1	10400	1	MONARCH POWER UNIT W/ TANK, W/O FITTINGS (M304)
2	10501	1	RW-1019 LOCKING BRAKE VALVE ASSY, W/ FITTINGS (F & R)
3	810211	2	RW-1019 REAR HYDRAULIC VALVE, W/ O-RING FITTINGS
4	REF	4	RAILGEAR SPECIFIC CYLINDER
5	REF	2	RAILGEAR SPECIFIC AXLE W/ HYDRAULIC BRAKES
6	605048	1	FITTING, 90 DEG, #4 MJIC X #4 FJIC SWIVEL (6500-04-04)
7	605049	1	FITTING, TEE, #4 MNPT X #4 MJIC X #4 MJIC (2605-04-04-04)
8	10440	2	RW-1019 BRASS FITTING, HYDRAULIC BRAKE LINE, TEE, 3/16" INV FLARE
9	18952	1	FITTING, 90 DEG, #4 MJIC, #6 MAORB (6801-04-06)



REV	DATE	DESCRIPTION	BY	APP
B	-	-	-	-
A	-	-	-	-

TOLERANCES (UNLESS SPECIFIED):
FRAC, MACH: ±1/32"
FRAC, OTHER: ±1/16"
.X ±.063
.XX ±.030
.XXX ±.005
DRILL SIZES: +.015
ANGULAR: ±1°
SURF FINISH: 125 MICRO
THREADS: 2A & 2B
BREAK SHARP EDGES .03 X 45° MAX

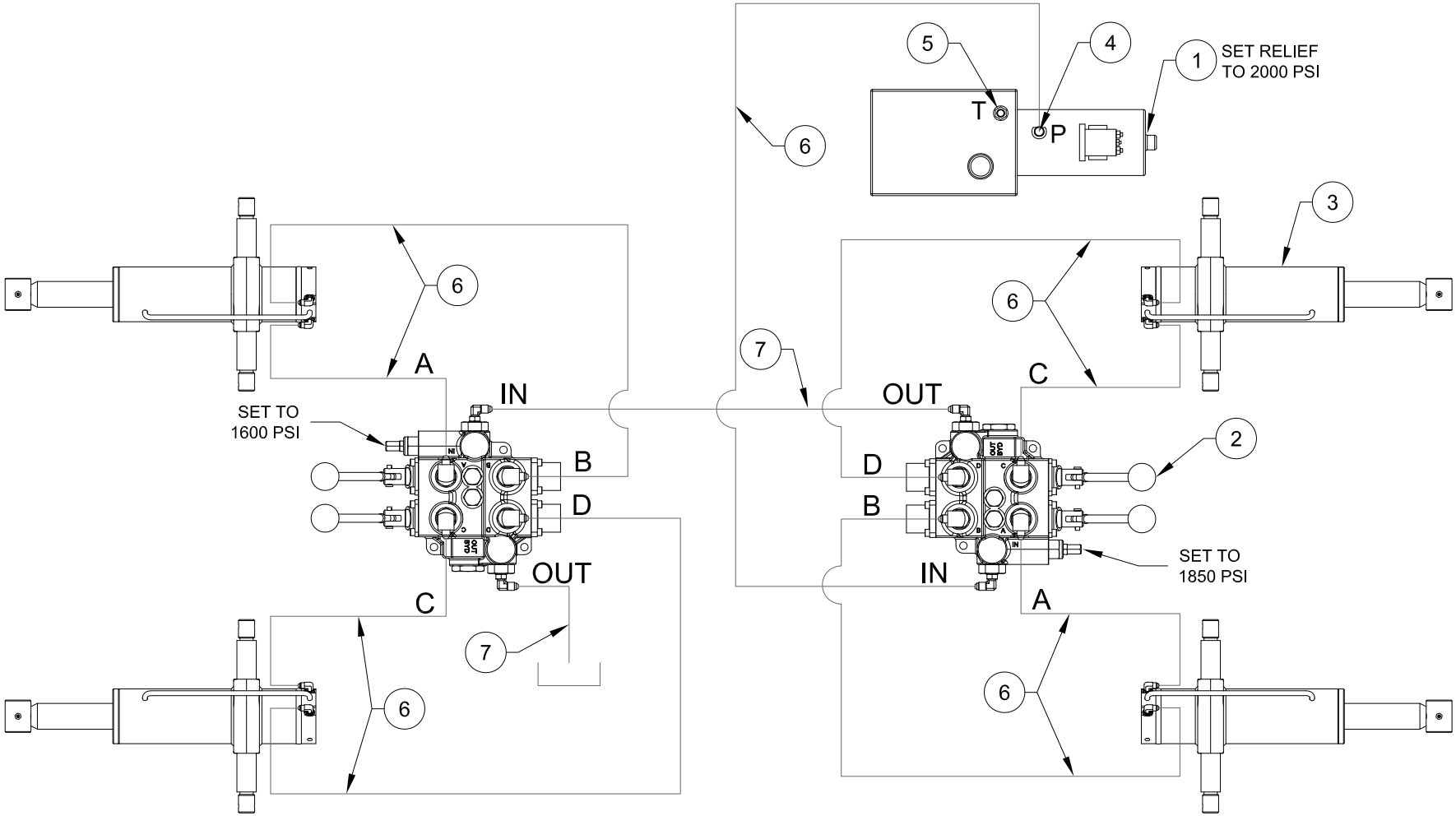
DMF (404)875-1512

SCISSORING TRAILER RAILGEAR

TITLE: HYDRAULIC SCHEMATIC, TRAILER RAILGEAR, DUAL AXLE, FNT/REAR HYD BRAKES

DRAWN BY:	APPD BY:	DATE:	DRAWING NUMBER:	REV:
DJJ	-	08/15/17	853287	#

ITEM	PART NO.	QTY	DESCRIPTION
1	10400	1	MONARCH POWER UNIT W/ TANK, W/O FITTINGS (M304)
2	810211	2	RW-1019 REAR HYDRAULIC VALVE, W/ O-RING FITTINGS
3	REF	4	RAILGEAR SPECIFIC CYLINDER
4	18952	1	FITTING, 90 DEG, #4 MJIC, #6 MAORB (6801-04-06)
5	10428	1	FITTING, 90 DEG, #4 MJIC, #4 MNPT (2501-04-04)
6	810642	9	HOSE ASSEMBLY, 1/4 X 62"
7	605209	2	HOSE ASSEMBLY, 1/4 X 96"
8	810508	6	J-CLIPS, 3/8" (NOT SHOWN)



REV	DATE	DESCRIPTION	BY	APP
B	-	-	-	-
A	-	-	-	-

TOLERANCES (UNLESS SPECIFIED):

FRAC, MACH:	±1/32"
FRAC, OTHER:	±1/16"
.X	±.063
.XX	±.030
.XXX	±.005
DRILL SIZES:	+.015
ANGULAR:	±1°
SURF FINISH:	125 MICRO
THREADS:	2A & 2B

BREAK SHARP EDGES .03 X 45° MAX

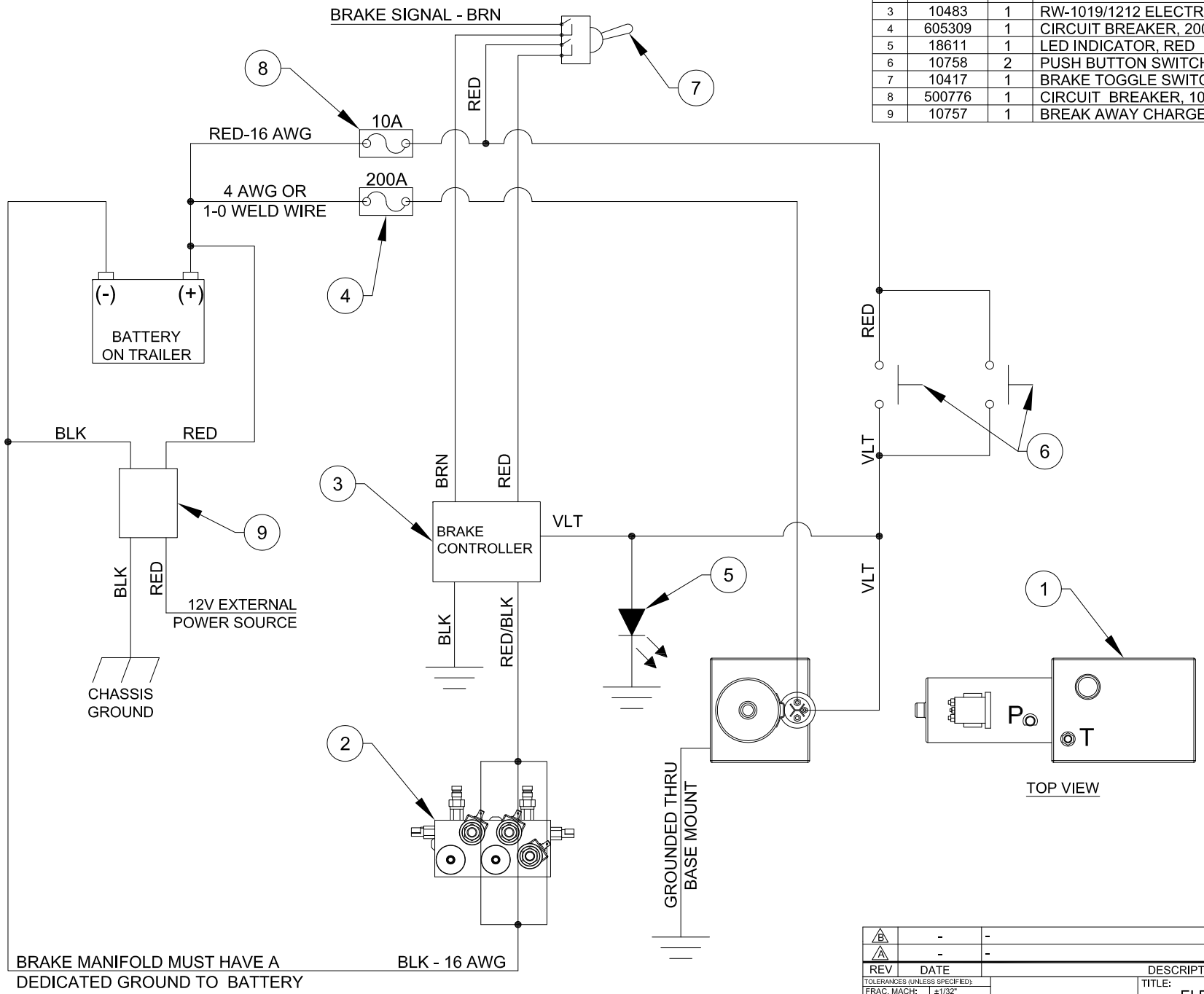
DMF (404)875-1512

SCISSORING
TRAILER RAILGEAR

TITLE:
HYDRAULIC SCHEMATIC, TRAILER RAILGEAR,
DUAL AXLE, AIR OR NO BRAKES

DRAWN BY:	APPD BY:	DATE:	DRAWING NUMBER:	REV:
DJJ	-	08/22/17	853285	#

ITEM	PART NO.	QTY	DESCRIPTION
1	10400	REF	MONARCH PWR UNIT W/ TANK (M304) W/ OUT FITTINGS
2	10501	REF	1019 LOCKING BRAKE VALVE ASSEMBLY W/ FITTINGS (F&R)
3	10483	1	RW-1019/1212 ELECTRIC CONTROLLER, HYD BRAKES
4	605309	1	CIRCUIT BREAKER, 200A, MANUAL RESET, SURF MOUNT
5	18611	1	LED INDICATOR, RED
6	10758	2	PUSH BUTTON SWITCH W/ RUBBER BOOT (90030-12)
7	10417	1	BRAKE TOGGLE SWITCH (DPST-7803K31)
8	500776	1	CIRCUIT BREAKER, 10 AMP, TYP-I, RW-1013
9	10757	1	BREAK AWAY CHARGER FOR TRAILERS



REV	DATE	DESCRIPTION	BY	APP
B	-	-	-	-
A	-	-	-	-

TOLERANCES (UNLESS SPECIFIED):
FRAC, MACH: ±1/32"
FRAC, OTHER: ±1/16"
.X ±.063
.XX ±.030
.XXX ±.005
DRILL SIZES: +.015
ANGULAR: ±1°
SURF FINISH: 125 MICRO
THREADS: 2A & 2B
BREAK SHARP EDGES .03 X 45° MAX
DMF (404)875-1512

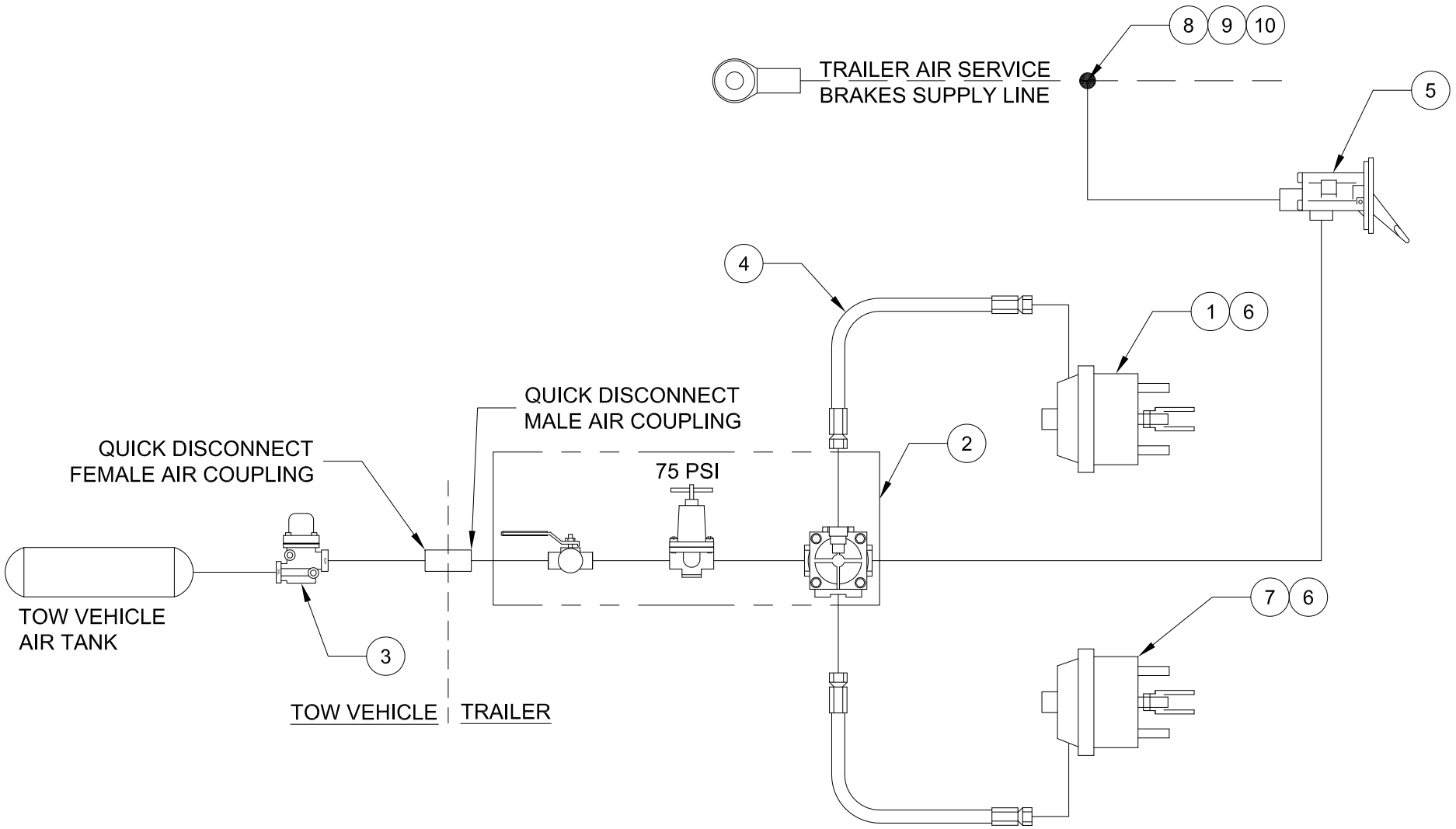
SCISSORING
TRAILER RAILGEAR

TITLE:
ELECTRICAL SCHEMATIC, TRAILER
RAILGEAR, BRAKES

DRAWN BY:	APPD BY:	DATE:	DRAWING NUMBER:	REV:
DJJ	-	09/08/17	853288	#

ITEM	PART NO.	QTY	DESCRIPTION
6	818497	2	AIR BRAKE FITTING (248-6-6B)
7	818460	REF	AIR BRAKE CHAMBER, REAR LH, TYPE 9
8	605208	REF	UNION, 1/4 FPT X 1/4 FPT
9	605604	REF	FITTING, 90 DEG, 1/8 TUBE X 1/4 MPT, DOT
10	605606	REF	FITTING, TEE, 3/8 TUBE X 1/4 MPT, DOT

ITEM	PART NO.	QTY	DESCRIPTION
1	818461	REF	AIR BRAKE CHAMBER, REAR RH, TYPE 9
2	818413	1	AIR BRAKE VALVE ASSEMBLY FRONT
3	818483	REF	AIR BRAKE PRESSURE PROTECTION VALVE
4	818496	2	AIR HOSE LINE, REAR
5	818437	1	KIT, AIR BRAKE TOGGLE MOUNTING HARDWARE



REV	DATE	DESCRIPTION	BY	APP
B	–	–	–	–
A	–	–	–	–

TOLERANCES (UNLESS SPECIFIED):
FRAC, MACH: ±1/32"
FRAC, OTHER: ±1/16"
.X ±.063
.XX ±.030
.XXX ±.005
DRILL SIZES: +.015
ANGULAR: ±1°
SURF FINISH: 125 MICRO
THREADS: 2A & 2B
BREAK SHARP EDGES .03 X 45° MAX

DMF (404)875-1512

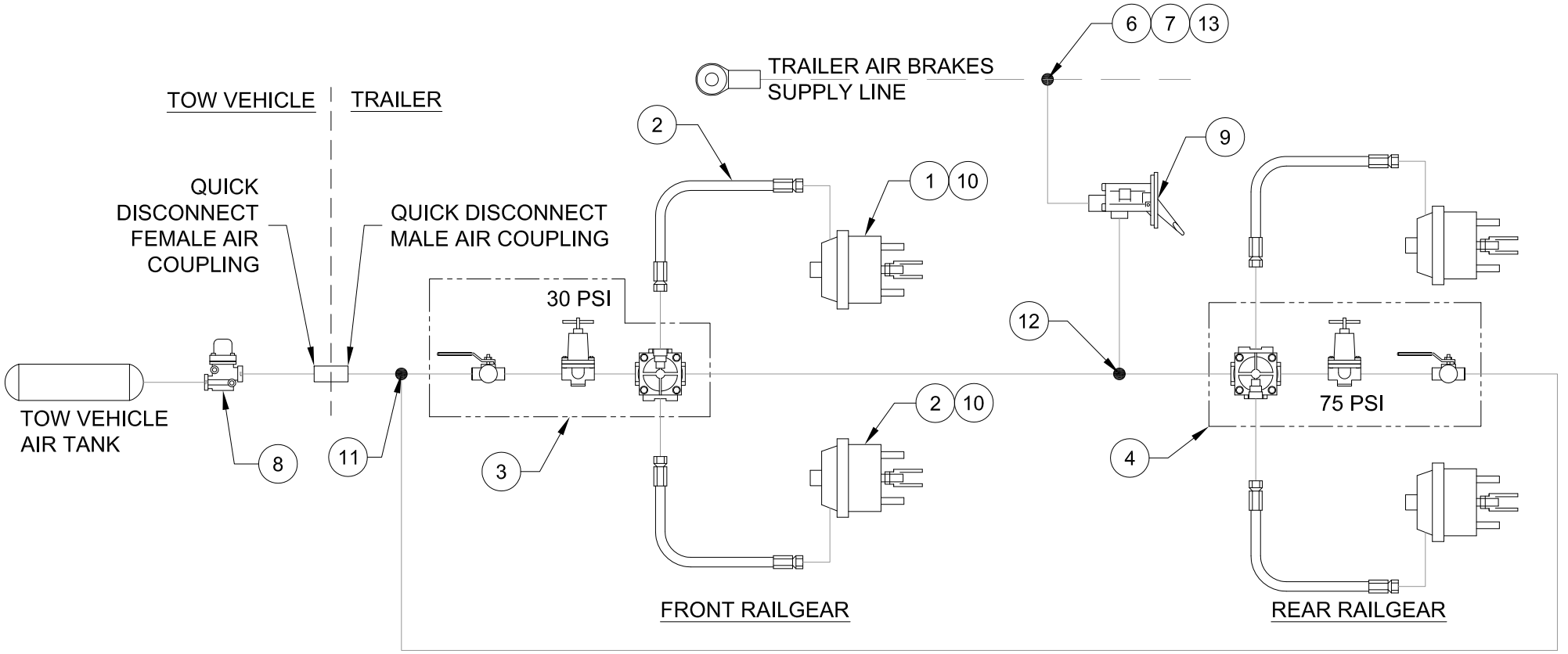
SCISSORING TRAILER RAILGEAR

TITLE: AIR BRAKE ASSEMBLY, TRAILER, SINGLE AXLE

DRAWN BY:	APPD BY:	DATE:	DRAWING NUMBER:	REV:
DJJ	–	08/24/17	818895	#

ITEM	PART NO.	QTY	DESCRIPTION
8	818483	REF	AIR BRAKE PRESSURE PROTECTION VALVE
9	818437	1	KIT, AIR BRAKE TOGGLE MOUNTING HARDWARE
10	818497	4	AIR BRAKE FITTING (248-6-6B)
11	605605	1	FITTING, TEE, 3/8 PMT - DOT (272PMT-6-6)
12	818528	REF	FITTING, TEE, 1/4 TUBE, DOT
13	605606	REF	FITTING, TEE, 1/2 TUBE X 1/4 MPT, DOT

ITEM	PART NO.	QTY	DESCRIPTION
1	818461	REF	AIR BRAKE CHAMBER, REAR RH, TYPE 9
2	818460	REF	AIR BRAKE CHAMBER, REAR LH, TYPE 9
3	818415	1	AIR BRAKE VALVE ASSEMBLY, REAR
4	818413	1	AIR BRAKE VALVE ASSEMBLY, FRONT
5	818496	4	AIR HOSE LINE, REAR
6	605208	REF	UNION, 1/4 FPT X 1/4 FPT
7	605604	REF	FITTING, 90 DEG, 1/8 TUBE X 1/4 MPT, DOT



REV	DATE	DESCRIPTION	BY	APP
B	–	–	–	–
A	–	–	–	–

TOLERANCES (UNLESS SPECIFIED):
FRAC, MACH: ±1/32"
FRAC, OTHER: ±1/16"
.X ±.063
.XX ±.030
.XXX ±.005
DRILL SIZES: +.015
ANGULAR: ±1°
SURF FINISH: 125 MICRO
THREADS: 2A & 2B
BREAK SHARP EDGES .03 X 45° MAX
DMF (404)875-1512

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TITLE: AIR BRAKE ASSEMBLY, TRAILER, DOUBLE AXLE

DRAWN BY:	APPD BY:	DATE:	DRAWING NUMBER:	REV:
DJJ	–	08/28/17	818896	#

DMF LIMITED WARRANTY POLICY

Diversified Metal Fabricators (DMF) products are designed to provide the utmost service and reliability. Competent workmen, guided by stringent quality standards, manufacture the products from high-grade material. **DMF** warrants products of its manufacture to be free of defects in material and workmanship, under normal use and service, for a period of **ONE CALENDAR YEAR**. **DMF's** obligation under this warranty is limited to repairing or replacing at its factory, or other location designated by us, any part or parts there-of which shall, within 30 DAYS of the date of failure or notice of defect, be returned, and which upon examination shall appear to **DMF's** satisfaction to have been defective. Such repair or replacement does not include the cost of installing the new part or any other expenses incident thereto; however, the outbound direct ground freight on the part will be prepaid to locations within the continental United States and Canada. **DMF** shall not be liable for other loss, damage, or expense directly or indirectly arising from the use of its products.

Ordinary wear and tear, abuse, misuse, neglect, or alteration is not covered by this warranty. **DMF** assumes no liability for expenses or repairs made outside its factory except by written consent. Warranty is null and void if instructions and operating procedures specifically referring to warranty coverage are not followed.

Equipment or parts not manufactured by this company, but which are furnished in connection with **DMF** products are covered directly and solely by the warranty of the manufacturer supplying them.

This warranty is in lieu of other warranties, expressed or implied, including any implied warranties of merchantability or fitness for a particular purpose and any liability for special or consequential damages.

All warranty claims must reference a serial number. Returns must reference a RA number.

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