DIVERSIFIED METAL FABRICATORS, INC.

Installation, Parts & Service Manual Hydraulic & Manual Raildogs

October 2015

DMF ◆ 665 Pylant Street ◆ Atlanta, Georgia 30306
Parts (404) 607-1684◆ Parts Fax (404) 879-7888◆ parts@dmfatlanta.com
Service Department (404) 879-7882◆ service@dmfatlanta.com
Phone (404) 875-1512 ◆ Fax (404) 875-4835◆ info@dmfatlanta.com
http://www.dmfatlanta.com

Message from DMF

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

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

Contact:
Diversified Metal Fabricators
665 Pylant St. NE
Atlanta, GA 30306
(404) 875-1512
(404) 875-4835 Fax
(404) 607-1684 Parts
http://www.dmfatlanta.com
info@dmfatlanta.com

Ship to:
668 Drewry St. NE
Atlanta, GA 30306

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SECTION 1.0 RAILDOGS INSTALLATION

1.1 PRE-INSTALLATION

NOTE
Read all the instructions and check that all required kit parts are included before beginning the installation. The proper installation of this equipment is solely the responsibility of the installer. When in doubt, contact DMF for assistance.

1.1.1 Safety Statements

Use personal protective equipment and clothing when performing any work on the truck.

1.1.2 Tools Required for Installation

- Welder (Arc or Mig)
- Hoist or Floor Jack
- Frame Drill (with 5/8" Drill Bit)
- Surge Protector (protects ECM from damage during welding)
- General Mechanic Tools

1.1.3 On Hand Additional Material

Item	Qty.
Hydraulic Hose (Appropriate Size & Rating for System)	As Required
Swivel Hose Ends (Appropriate Size & Rating for System)	As Required
Hydraulic Oil – Unax RX-46 (or Equivalent)	As Required
Grease – Citgo Syndurance Premium Synthetic 460 #2	As Required
Bolts – 5/8"-11 Gr. 5 (for Raildog Frame)	8
Nylock Nuts – 5/8"-11 Gr. 5 (for Raildog Frame)	8
Washers – 5/8" Gr. 5	8

1.1.4 Welding Information

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

Low Hydrogen Electrodes (AWS E-7018)

Manufacturer Equivalent Welding Rod	
Manufacturer	Welding 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

1.1.5 Work Area

The installation area should meet the minimum following requirements to facilitate a safe, accurate and timely installation:

- Floor - The floor should be level to provide a good surface for the installation and alignment of the Raildogs.
- Lighting - The work area should be adequately lighted.
- Space - There should be enough space to maneuver the Raildog components into position and to safely work around other equipment.

1.1.6 Preliminary Truck Preparation

Before installation, the truck should meet the following criteria:

- The Railgear should be fully functional both mechanically and hydraulically. All alignments and weights should be set on the Railgear. The positioning of the hydraulic Raildogs relies on properly functioning Railgear.
- The tire pressure should be checked on all tires and properly inflated to the manufacturer's recommended pressure. This provides the proper height for mounting the Raildogs. If any of the tires are extensively worn, replace before installation.

1.2 HYDRAULIC RAILDOGS INSTALLATION

The location and space requirements for mounting the hydraulic Raildogs are shown in Figure 1.2.1. Frame mounted components such as the hydraulic tank and the battery box may need to be relocated to provide adequate space to install and operate the Raildogs. Remove any existing Raildogs previously installed on the truck and replace with those provided. All frame modifications, including those required to mount the Raildogs, must adhere to the truck manufacturer's recommended standard practices.

NOTE

The below procedure assumes the Raildogs are being installed on a truck with a typical frame height between 40" and 43" between the ground and top of truck frame. The spacing of the Raildogs with respect to the top of the frame should be adjusted accordingly to accommodate trucks out of this range. Any frame modifications should be in accordance with the truck manufacture's specifications.

1.2.1 Mounting Hydraulic Raildogs

1. Position the Raildog up against the truck frame as shown in Figure 1.2.1 to verify there is adequate space for mounting and operation. Remove the Raildog assembly from the frame.

2. Use a frame drill with a 5/8" diameter drill bit to drill the mounting holes in both sides of the frame rails as located by Figure 1.2.1. Be certain to maintain the bolt pattern shown. The mounting plates have holes spaced 5-5/8" between hole centers.

3. Choose a side to mount the first Raildog. Raise the assembly up to the outside of the truck frame overlaying the previously drilled holes. The lift cylinder, as shown in Figure 1.2.1, faces the rear of the truck.

4. Use the 5/8" mounting hardware and the mounting plates to mount the Raildog to the truck frame. Space the Raildog 18" from the ground as shown. Tighten the hardware enough to hold the assembly in position. Final alignment will occur later in the installation.

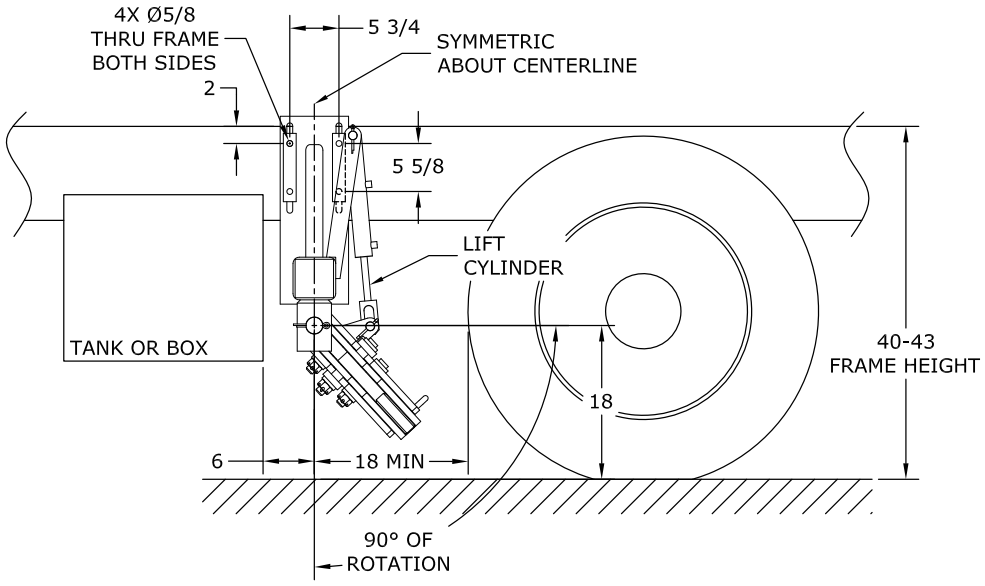
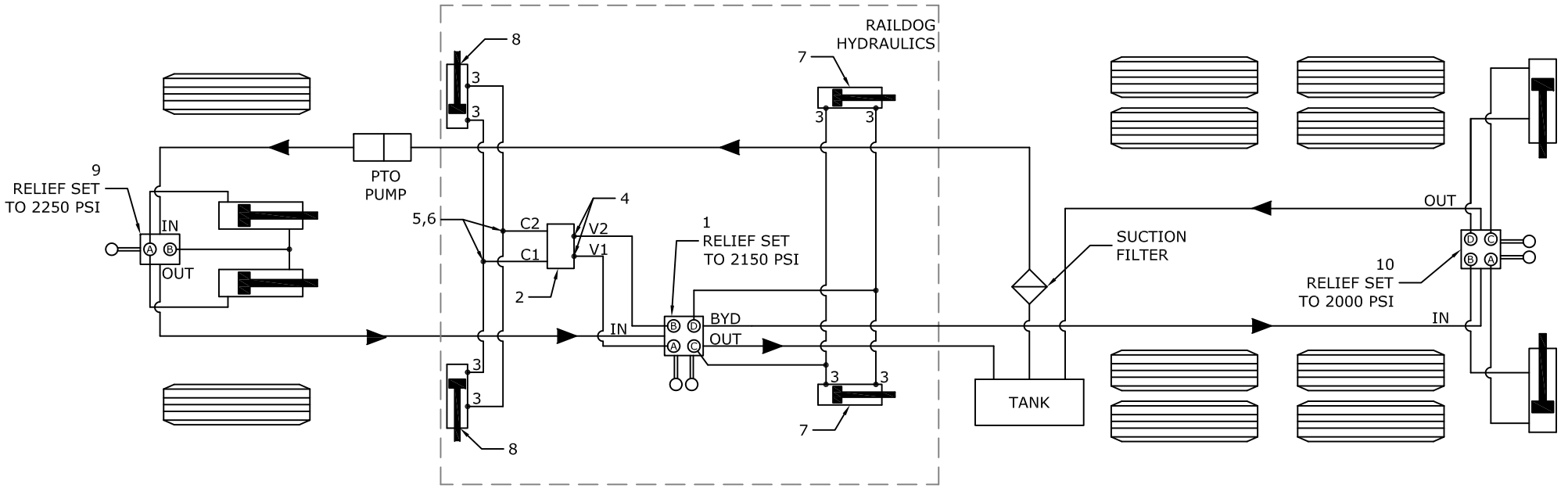


Figure 1.2.1 - Hydraulic Raildog Placement

1.2.2 Hydraulic System Connection – Dual Valves

The installation of the hydraulic Raildogs is only compatible with trucks equipped with DMF Railgear and a hydraulic system similar to the one on the following page. Within the supplied Raildog hydraulics kit are valves, hoses and fittings. It is recommended to install the Raildog operating valve and lock valve on the driver's side behind the cab. **DO NOT weld directly to the truck frame.** Use the hydraulic schematic on the following page for plumbing of the Raildogs.

ITEM	PART NO.	QTY	DESCRIPTION
1	810220	1	HYDRAULIC RAILDOG VALVE W/ FITTINGS, PWR BYD
2	600606	1	LOCKING VALVE W/O FITTINGS (DPC1-10-P-6T)
3	10457	8	#04 MJIC X #04 MAORB, 90 DEG
4	18952	2	#04 MJIC X #06 MAORB, 90 DEG
5	605048	2	#04 MJIC X #04 FJIC SWIVEL, 90 DEG
6	605536	2	TEE, #04 MJIC, #06 O-RING
7	300592	REF	HYDRAULIC RAILDOG, LIFTING CYLINDER
8	300700	REF	HYDRAULIC RAILDOG, CLAMPING CYLINDER
9	810204	REF	1630 FRONT HYDRAULIC VALVE, W/ FITTINGS
10	810210	REF	1630 REAR HYDRAULIC VALVE, W/ FITTINGS



NOTES:
RAILGEAR PLUMBING DEPENDS ON VALVE ORIENTATION AND MAY VARY FROM THE SCHEMATIC SHOWN. REFERENCE REAILGEAR MANUAL FOR REALGEAR INSTALLATION

REV	DATE	DESCRIPTION	BY	APP
B				
A	10/12/15	ADDED SCHEMATIC	DJJ	

TOLERANCES: (UNLESS SPECIFIED) COMMON SENSE PREVAILS
FRAC. MACH: ± 1/32"
FRAC. OTHER: ± 1/16"
.X ± .063
.XX ± .030
.XXX OR .XXXX ± .005
DRILL SIZES: + .015
ANGULAR: ± 1°
SURF FINISH: 125 MICRO
THREADS: 2A AND 2B
BREAK SHARP EDGES (0.030 X 45° MAX)

ROTO

DRAWN BY: WET
APPD BY:

TITLE: HYDRAULIC COMPONENTS, HYDRAULIC RAILDOGS CIRCUIT

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

DATE: 10/03/96
DMF ATLANTA
DRAWING NUMBER: 300595
REV: A

1.2.3 Hydraulic System Connection – 5 Section PVG Valves

This Hydraulic Raildog installation section is only applicable to DMF ROTO 180's with 5 Section PVG Valves. All other Hydraulic Raildogs use their own set of valves for operation.

1. Before plumbing any hydraulic lines, verify the 5 Section PVG Valves have been mounted to frame of the truck.

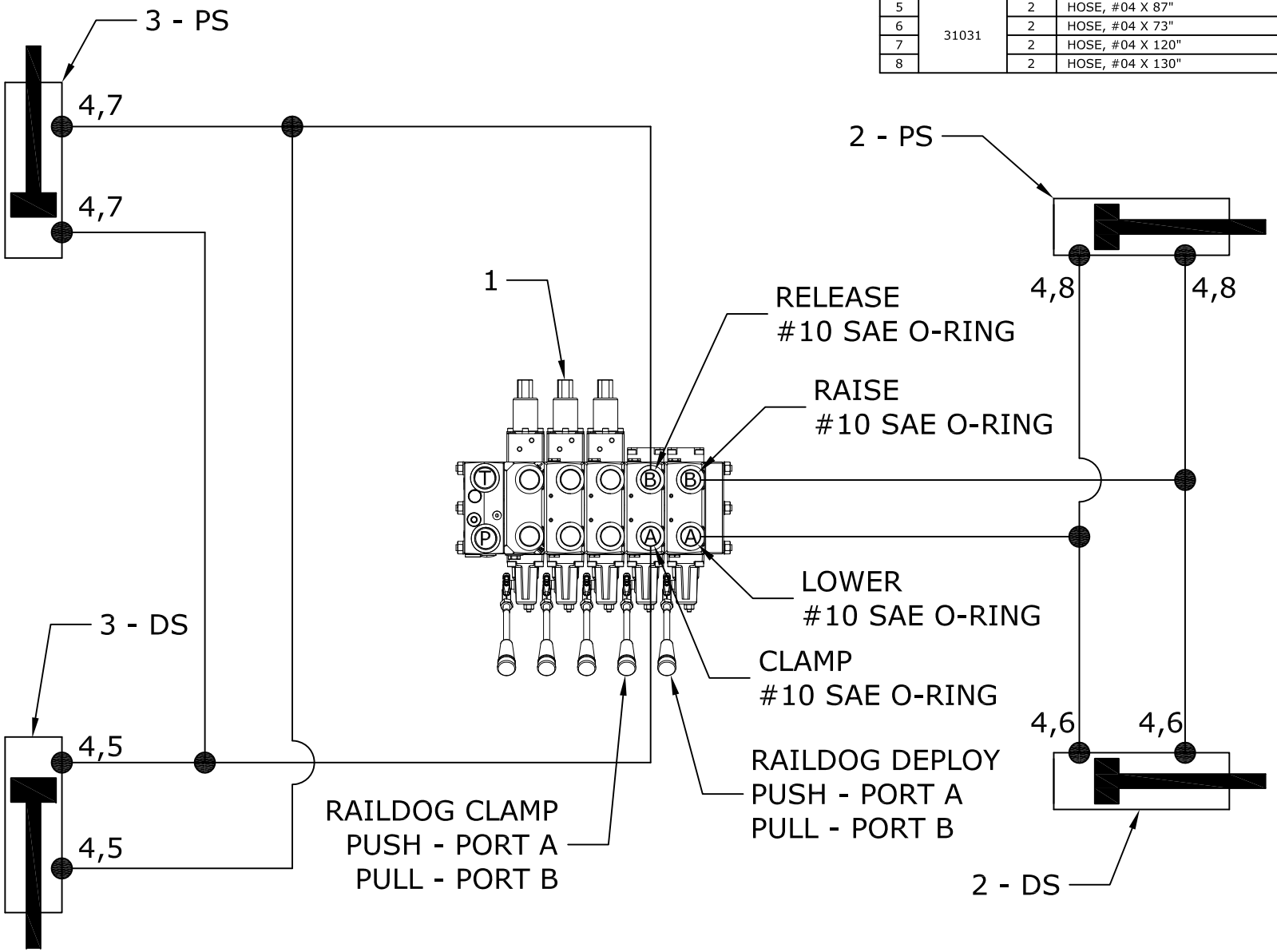
2. Hydraulic fluid is supplied to the PVG Valves from the rear Railgear. The "T" Port is plumbed back to tank.

3. Plumb the cylinders as shown in this schematic. The locking valve feature has been incorporated into the PVG Valves for both the lifting and clamping functions.

4. Port "A" of the clamping valve goes to the base end of the clamping cylinders. Port "B" of the same valve is plumbed to the rod end of the clamping cylinders.

5. Port "A" of the lifting valve goes to the base end of the lifting cylinders. Port "B" of the same valve is plumbed to the rod end of the lifting cylinders.

ITEM	PART NO.	QTY	DESCRIPTION
1	31028	REF	5 SECTION PVG 32 VALVE W/ FITTINGS (CVA-11285)
2	300592	REF	HYDRAULIC RAILDOG, LIFTING CYLINDER
3	300700	REF	HYDRAULIC RAILDOG, CLAMPING CYLINDER
4	10457	8	#04 MJIC X #04 MAORB, 90 DEG
5	31031	2	HOSE, #04 X 87"
6		2	HOSE, #04 X 73"
7		2	HOSE, #04 X 120"
8		2	HOSE, #04 X 130"



NOTE:
SEE DRAWING 31030 FOR MISSING CONNECTION DETAILS

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

ROTO-180

DRAWN BY: DJJ
APPD BY:

TITLE: RAILDOGS, HYDRAULIC SCHEMATIC, 5 SECTION PVG VALVES

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

DATE: 10/21/15

DRAWING NUMBER: 31033

REV: #

1.2.4 Hydraulic Raildog Clamp Adjustment

1. For the final adjustment of the hydraulic Raildogs, it is recommended to place the truck on rail with the front and rear Railgear deployed.

2. Set the parking brake, turn on the truck and engage the PTO following the truck manufacturer's instructions.

3. Unclip the chains, open the Raildogs fully and lower following the instructions outlined in Section 2. While doing this verify everything has been plumbed correctly and there are no binding hoses.

NOTE

Before operating the hydraulic Raildogs for the first time check the supplied hydraulic pressure to the valve. The Raildogs should be receiving approximately 2150 PSI if plumbed directly from the front Railgear. The 5 section PVG Valves should see 2000 PSI coming from the rear Railgear. If the pressure exceeds reaches 2500 PSI, the Railgear valve(s) must be adjusted to avoid damaging the system and opening the PVG relief valve.

4. Close the Raildogs around the rails ensuring both are operating properly and in the correct direction.

5. The clamp should rest approximately 1/2" below the bottom of the rail as shown in Figure 1.2.4.

6. Loosen the bolts slightly and adjust the height as necessary. When in place, tighten all bolts completely to 90 ft-lbs.

7. Weld the Raildog mounting plates to the Raildog assembly using four 1" welds as shown in Figure 1.2.4.

8. Ensure all cotter pins have been fixed in place on both Raildogs.

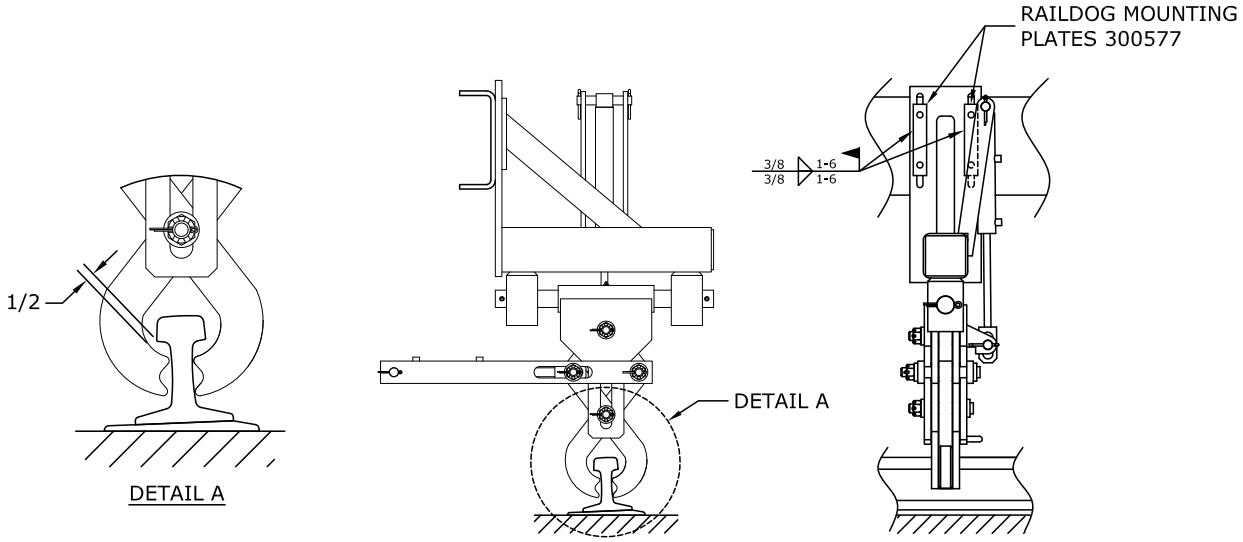


Figure 1.2.4 - Hydraulic Raildogs Final Adjustment

1.3 MANUAL RAILDOGS INSTALLATION

The location and space requirements for mounting the manual Raildogs are shown in Figure 1.3.1.A. Frame mounted components such as the hydraulic tank and the battery box may need to be relocated to provide adequate space to install and operate the Raildogs. Remove any existing Raildogs previously installed on the truck and replace with those provided. All frame modifications, including those required to mount the Raildogs, must adhere to the truck manufacturer's recommended standard practices.

NOTE

The below procedure assumes the Raildogs are being installed on a truck with a typical frame height between 41" and 45" between the ground and top of truck frame. The spacing of the Raildogs with respect to the top of the frame should be adjusted accordingly to accommodate trucks out of this range. Any frame modifications should be in accordance with the truck manufacture's specifications.

1.3.1 Mounting Manual Raildogs

1. The manual Raildogs should be mounted using the minimum clearances as shown in Figure 1.3.1.A. The spacing shown will prevent interference with the surrounding frame components while stowed.

2. Use a frame drill with a 5/8" diameter drill bit to drill the mounting holes in both frame rails. Use Figure 1.3.1.A to locate these holes on the frame.

3. Use the bolt pattern shown in Figure 1.3.1.A and drill 5/8" diameter holes in the Raildog bracket assembly plate.

4. Bolt the Raildog assembly to the frame using 5/8" grade 5 bolts, washers and Nylock nuts. Torque to 90 ft-lbs.

5. Install the Raildog on the other side of the truck.

6. Stow both Raildogs as shown in Figure 1.3.1.B prior to driving the truck.

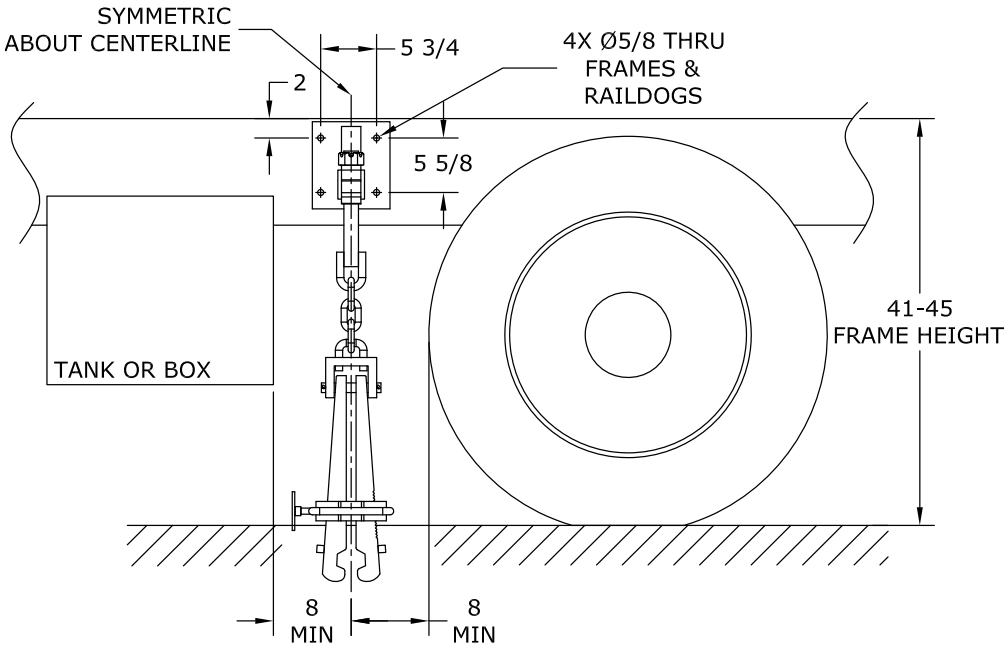
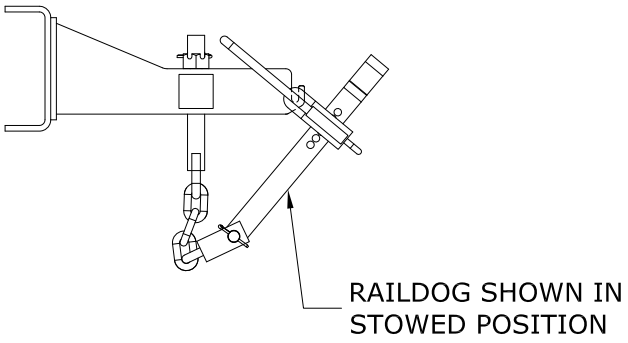


Figure 1.3.1.A - Manual Raildog Placement



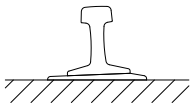


Figure 1.3.1.B - Manual Raildog Shown Stowed

1.3.2 Manual Raildog Clamp Adjustment

1. For final adjustment of the manual Raildogs, the truck should be placed on rail with the front and rear Railgear deployed. Set the parking brake.

2. Remove the Raildogs from the bracket assembly and allow them to hang freely.

3. Place each Raildog over the rail and clamp in position following Section 2.

4. Remove the cotter pin located at the top of the threaded rod. Tighten the castle nut until the bottom of the clamp is snug against the bottom of the rail as shown in Figure 1.3.2.

5. Place the cotter pin back into the threaded rod and secure. Ensure all other cotter pins have been secured.

6. Repeat the same steps for the other side.

7. Once completed, stow both Raildogs as shown in Figure 1.3.1.B.

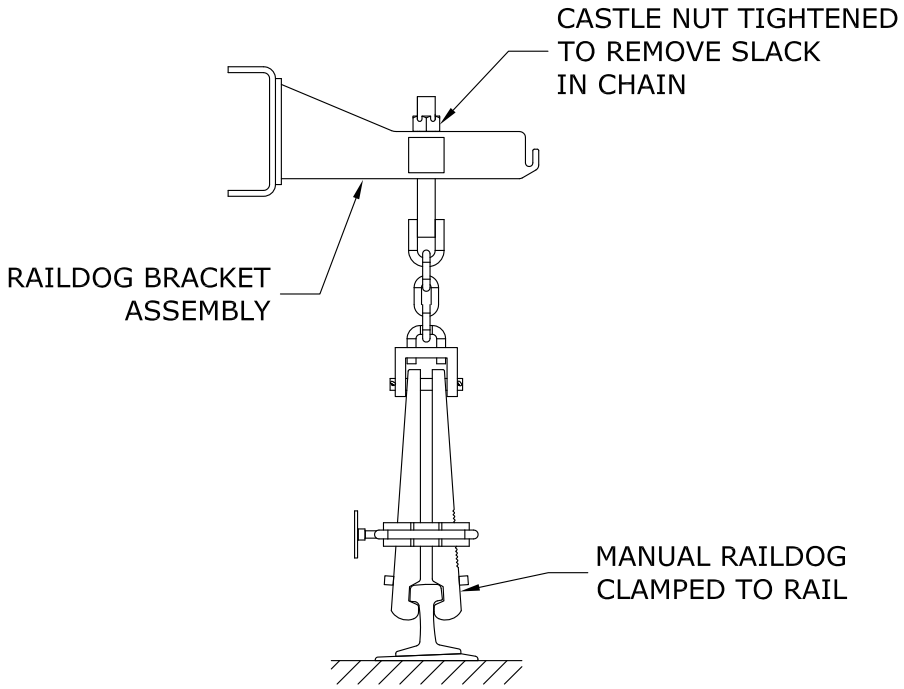


Figure 1.3.2 - Manual Raildog Adjustment

SECTION 2.0 RAILDOGS OPERATION

2.1 HYDRAULIC RAILDOGS OPERATION

1. To operate the hydraulic Raildogs the truck should already be on rail with both the front and rear Railgear deployed. Deploying the Railgear should only be done by following the Railgear operation's manual.

2. Ensure that the truck is in neutral and the parking brake has been set.

3. Follow the truck manufacturer's instructions for engaging the PTO.

4. If there is a hydraulic diverter valve, ensure it has been set to operate the Railgear.

5. Locate the Raildog control valves mounted on the driver's side of the truck near the Raildog. Each valve has been labeled for operation, one lowering and raising the Raildogs and the other closing and releasing the clamps.

6. Lift both Raildogs slightly to remove the clips holding them in place.

NOTE

The Raildog operation valves control both Raildogs simultaneously. Ensure both sides are clear prior to operation.

7. Ensure the clamps have been opened to fit around the rails. If not operate the appropriate lever to release the clamp.

8. Lower the Raildogs fully and clamp the rails. The clamp should rest just below the rail as shown in Figure 2.1.

NOTE

If the clamp will not close fully check the truck for proper tire inflation. If the tires are not the issue the Raildog height may need to be adjusted.

9. Visually check that both Raildogs are securely clamped to the rails.

10. The work function of the truck can now be performed.

11. To stow the Raildogs first release the clamps fully.

12. Raise the Raildogs and reattach the clips on both sides. The clamps should remain in the open position when stowed to avoid contacting the rear tires.

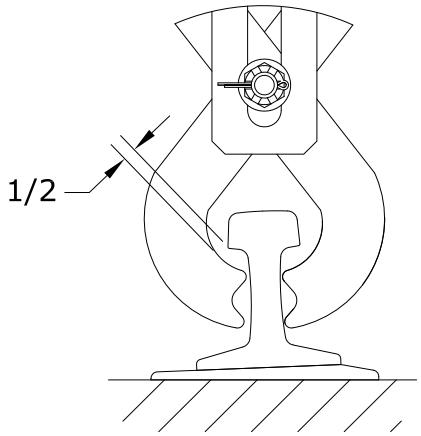


Figure 2.1 - Hydraulic Raildog Shown Properly Clamped

2.2 MANUAL RAILDOGS OPERATION

1. To operate the manual Raildogs the truck should already be on rail with both the front and rear Railgear deployed. Deploying the Railgear should be done by following the Railgear operation's manual.

2. Ensure the truck is in neutral and the parking brake has been set.

3. Remove each Raildog from the hook of its mounting bracket and swing it down into position.

4. Lift the Raildog collar assembly away from the rail to open the clamps as shown in Figure 2.2.A.

5. Lower the collar to close the clamps around the rail. The inner jaws should appear as shown in Figure 2.2.B.

NOTE

If the clamp will not close fully check the truck for proper tire inflation. If the tires are not the issue, the castle nut located at the top of the threaded rod should be adjusted.

6. Tighten the collar locking screw. The collar should be positioned so that the screw coincides with one of the holes in the clamp as shown in Figure 2.2.B.

7. The work function of the truck can now be performed.

8. To stow the Raildogs first loosen the collar locking screw. Raise the collar to loosen the clamp and remove it from the rail.

9. Swing the Raildogs out and up to hook it back in place on the mounting bracket.

10. Tighten the collar locking screw to prevent the clamps from shifting while driving.

11. Use the same procedure for the other side.

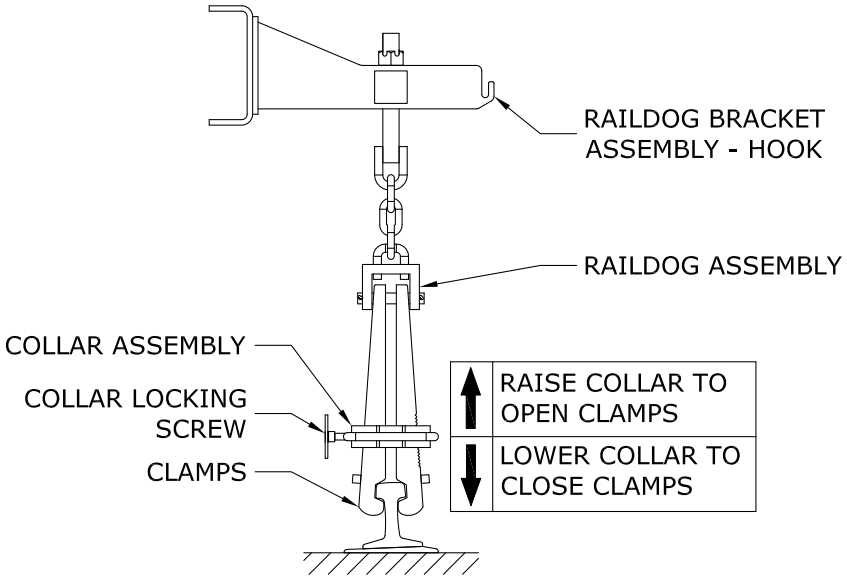


Figure 2.2.A - Manual Raildog Operation

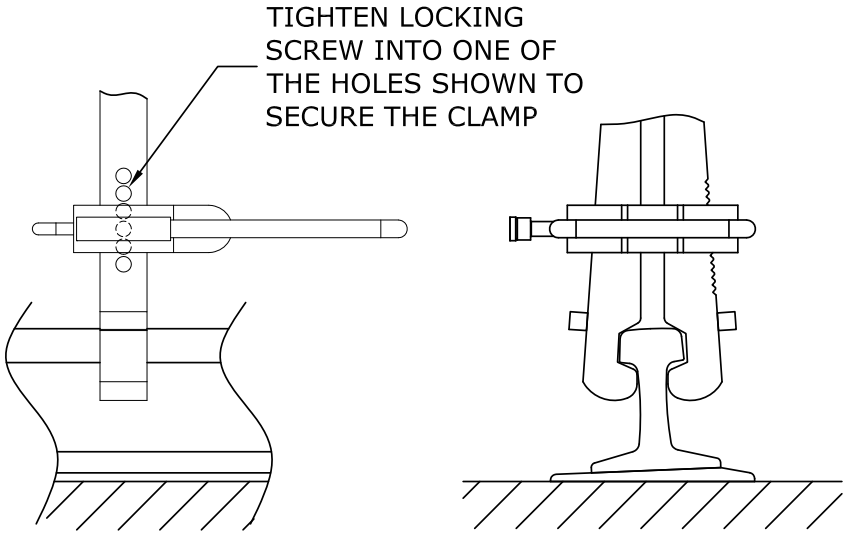


Figure 2.2.B - Manual Raildog Shown Properly Clamped

SECTION 3.0 RAILDOGS INSPECTION & MAINTENANCE

3.1 INSPECTION & MAINTENANCE

3.1.1 Daily Inspection

1. Visually inspect for hydraulic fluid leaks.
2. Check that all threaded fasteners and cotter pins are secured.
3. Make sure all hoses are secured and away from moving parts and the exhaust system. Replace as needed.
4. Perform daily inspections as outlined in ROTO 180 and Railgear Manuals.

3.1.2 Weekly Inspection

1. Lubricate the grease fittings found on the Raildogs and all moving parts shown in Figure 3.1.2.
2. Check hydraulic tank fluid level and add as needed.
3. Check air pressure in tires and adjust as needed.
4. Perform weekly inspection as outlined in ROTO 180 and Railgear Manuals.
5. Perform daily inspection list above.

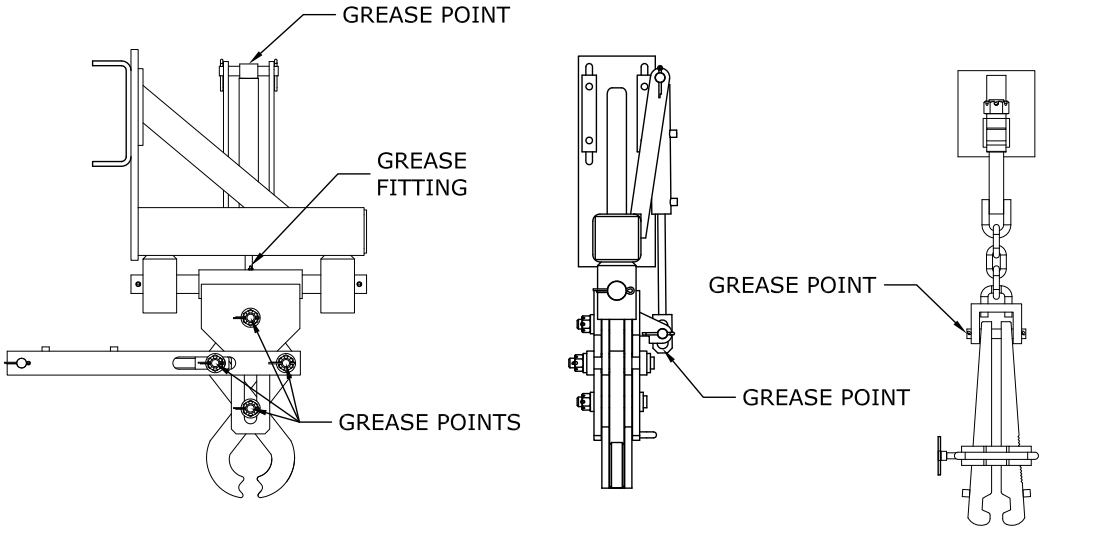


Figure 3.1.2 - Raildog Grease Points

3.1.3 Bi-Annual Inspection

1. Check full function of Raildogs and lubricate moving parts as needed.
2. Follow bi-annual inspection as outlined in ROTO 180 and Railgear Manuals.
3. Perform daily and weekly inspections as listed above.

3.2 LUBRICATION SPECIFICATION

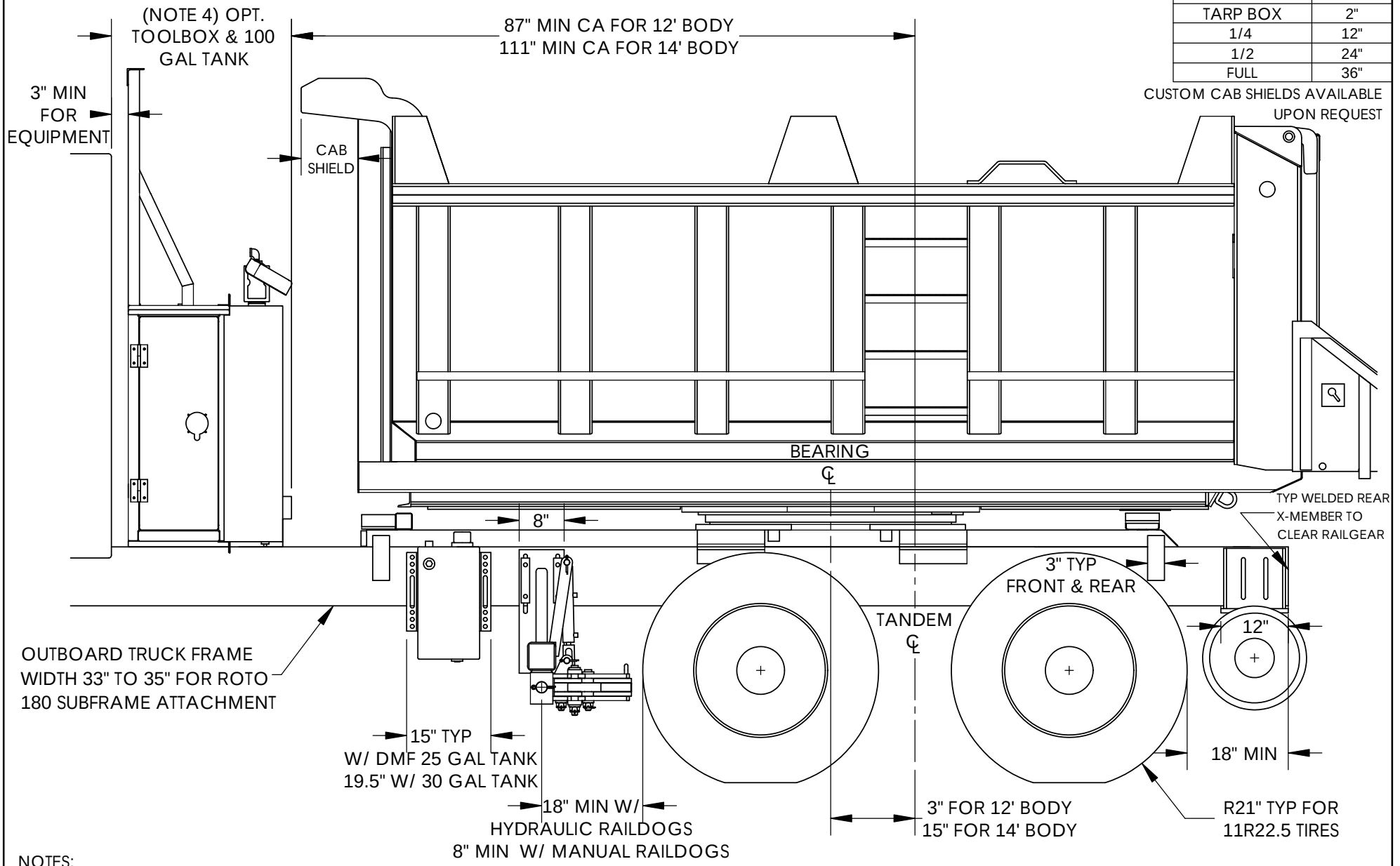
- Grease Fittings: Factory Standard – Citgo Syndurance Premium Synthetic 460 #2
  Warm Climates – Mystik JT-6 Hi-Temp Multipurpose Grease #2 or equivalent

- Hydraulic Oil: ASTM D6158 HM (Unax RX-46 Hydraulic Oil, Shell Tellus EE 46 or equivalent) or some customers operate using Dextron III ATF

SECTION 4.0 RAILDOGS PARTS DRAWINGS

CAB SHIELD TYPE	LENGTH
TARP BOX	2"
1/4	12"
1/2	24"
FULL	36"

CUSTOM CAB SHIELDS AVAILABLE UPON REQUEST



NOTES:

1. SEND CHASSIS SPECS TO DMF FOR REVIEW BEFORE PLACING PO FOR CHASSIS OR ROTO 180.
2. DIMENSIONS SHOWN ARE TO "EFFECTIVE CA" WHICH ACCOUNTS FOR CHASSIS COMPONENT INTRUSION ON "CLEAN CA" SUCH AS EXHAUST, CAB SUSPENSION, ETC.
3. SEE ROTO 180, RAILDOG, & RAILGEAR MANUALS FOR HYDRAULIC REQUIREMENTS & OTHER DETAILS.
4. 32" AS SHOWN, 41.5" FOR TOOLBOX & 2 TANKS. ADJUST AS NEEDED FOR SPARE TIRE, BEHIND CAB CRANE, OR OTHER EQUIPMENT.

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 (0.030 X 45° MAX)

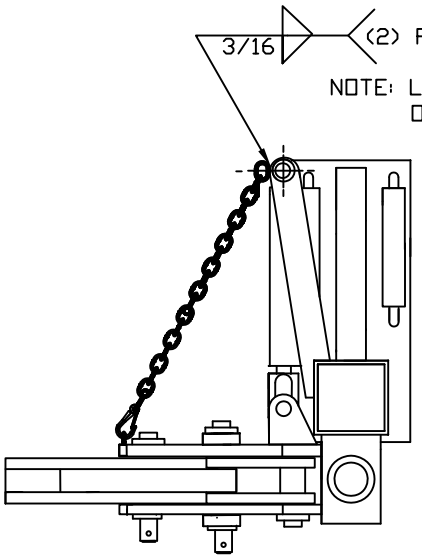
ROTO 180

TITLE: ROTO CHASSIS CLEARANCE REQUIREMENTS

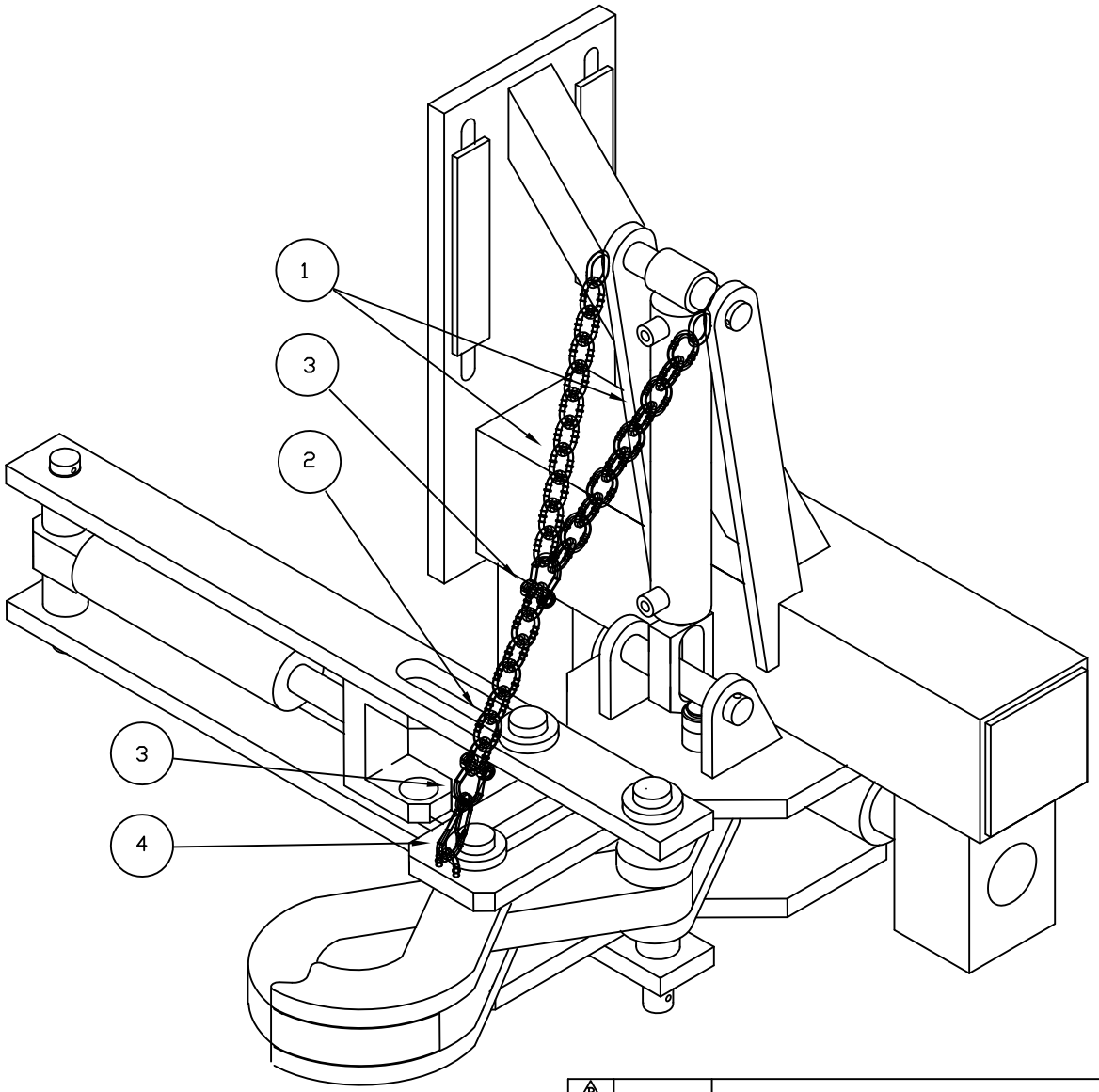
DIVERSIFIED METAL FABRICATORS,INC.(404)875-1512

DRAWN BY:	APPD BY:	DATE:	DRAWING NUMBER:	REV:
BJF	-	7/27/15	MROTO106	#

ITEM	PART NO.	QTY	DESCRIPTION
1	300652	2	CHAIN, 1/4 P.C. (9) LINKS
2	300654	1	CHAIN, 1/4 P.C. (6) LINKS
3	300656	2	SHACKLE, RAIL DOG PIN-OFF
4	605498	1	CARABINER CONNECTOR, SS



SIDE VIEW
(PIN-OFF POSITION)



NOTE:

PIN-OFF INSTALLATION SHOWN IS TYPICAL ON DRIVER AND PASSENGER SIDES.

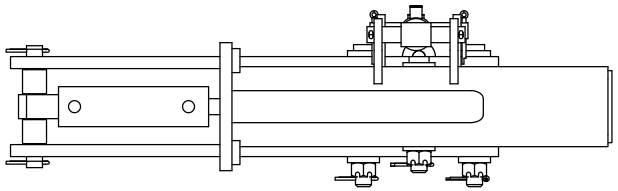
REV	DATE	DESCRIPTION	BY	APP
B				
A	06-08-15	REMOVED 300660 AND WELD, 605498 WAS 300658	DJJ	

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

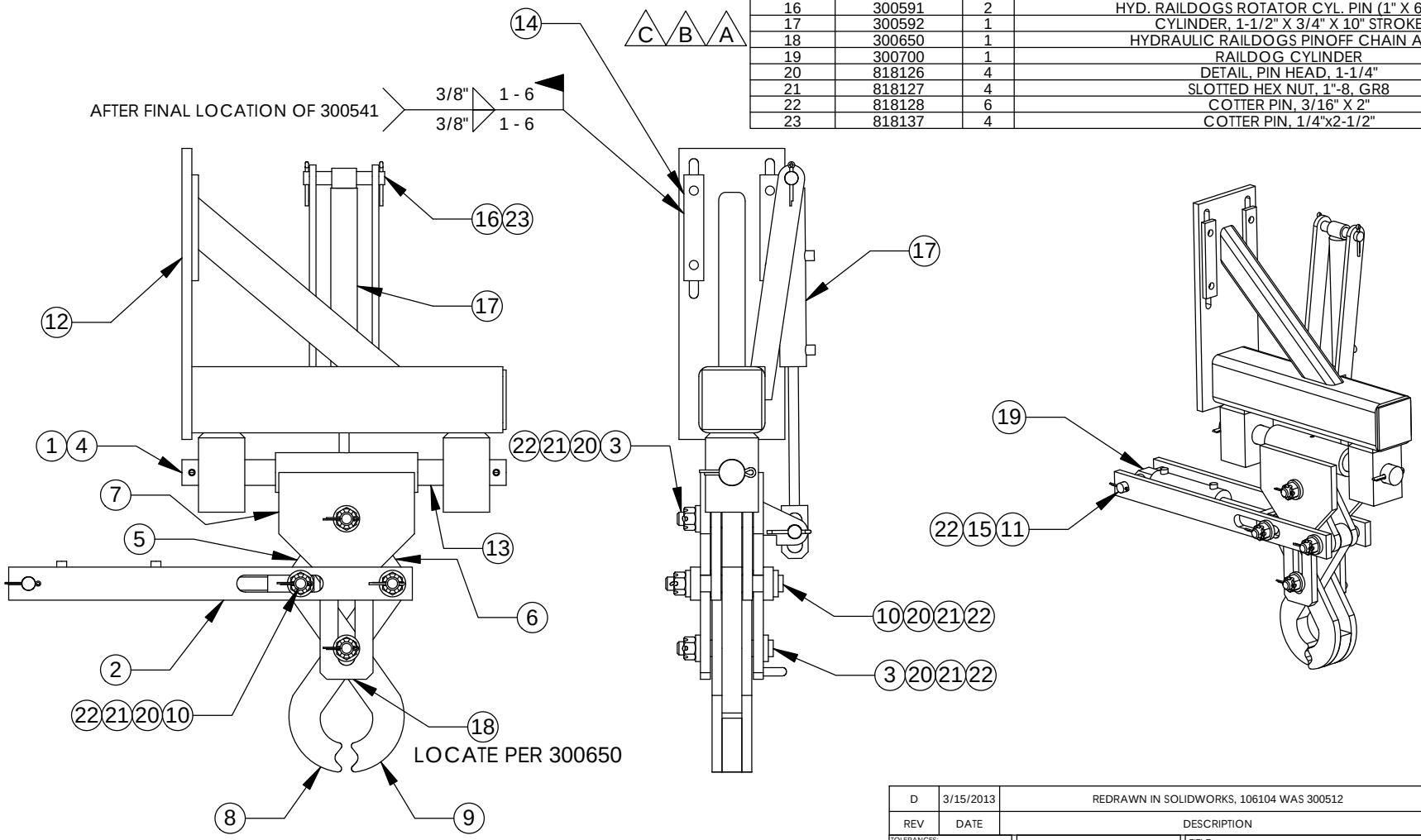
TITLE:
HYDRAULIC RAILDOG
PIN-OFF ASS'Y.

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

DRAWN BY:	APPD BY:	DATE:	DRAWING NUMBER:	REV:
WET		9/7/00	300650	A



ITEM NO.	PART NUMBER	QTY.	DESCRIPTION
1	106104	2	COTTER PIN, 3/16" X 2"
2	300505	2	HYDRAULIC RAILDOGS CYL. MOUNT DETAIL
3	300509	2	HYD. RAILDOG PIN ASSEMBLY, 1-1/4" X 5-1/8" GRIP
4	300511	1	RAILDOG SHAFT, WIDE
5	300517	1	UPPER LINK - 1-1/2"
6	300518	2	UPPER LINK - 3/4"
7	300519	1	SLIDE BRACKET WELDMENT
8	300522	1	CLAMP ARM - 1-1/2"
9	300524	1	RAILDOG CLAMP ARM WELDMENT
10	300532	2	HYD. RAILDOG PIN ASSEMBLY, 1-1/4" X 6-3/4" GRIP
11	300533	1	HYD. RAILDOG PIN DETAIL, 1"
12	300541	1	RAILDOG FRAME - WIDE, LEFT
13	300564	2	HYDRAULIC RAILDOG WIDE SPRING (CENTURY S-149)
14	300577	2	HYD. RAILDOG MOUNTING PLATE
15	300578	2	SPACER, RAILDOG CYLINDER
16	300591	2	HYD. RAILDOGS ROTATOR CYL. PIN (1" X 6-1/8")
17	300592	1	CYLINDER, 1-1/2" X 3/4" X 10" STROKE
18	300650	1	HYDRAULIC RAILDOGS PINOFF CHAIN ASSY
19	300700	1	RAILDOG CYLINDER
20	818126	4	DETAIL, PIN HEAD, 1-1/4"
21	818127	4	SLOTTED HEX NUT, 1"-8, GR8
22	818128	6	COTTER PIN, 3/16" X 2"
23	818137	4	COTTER PIN, 1/4"x2-1/2"



REV	DATE	DESCRIPTION	BY	APP
D	3/15/2013	REDRAWN IN SOLIDWORKS, 106104 WAS 300512	JDI	

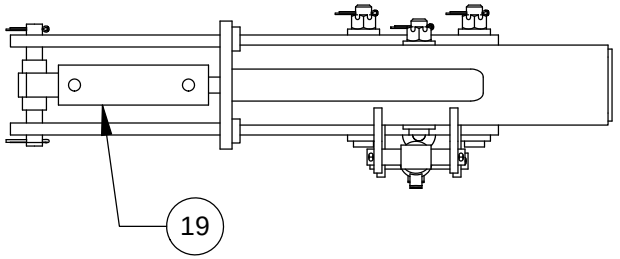
TOLERANCES: (UNLESS SPECIFIED)
FRAC, MACH: ± 1/32"
FRAC, OTHER: ± 1/16"
.X ± .063
.XX ± .030
.XXX ± .005
DRILL SIZES: + .015
ANGULAR: ± 1°
SURF FINISH: 125 MICRO
THREADS: 2A AND 2B
BREAK SHARP EDGES (0.030 X 45° MAX)

-

TITLE: HYDRAULIC RAILDOG ASSY. W/LIFT - (LEFT SIDE)

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

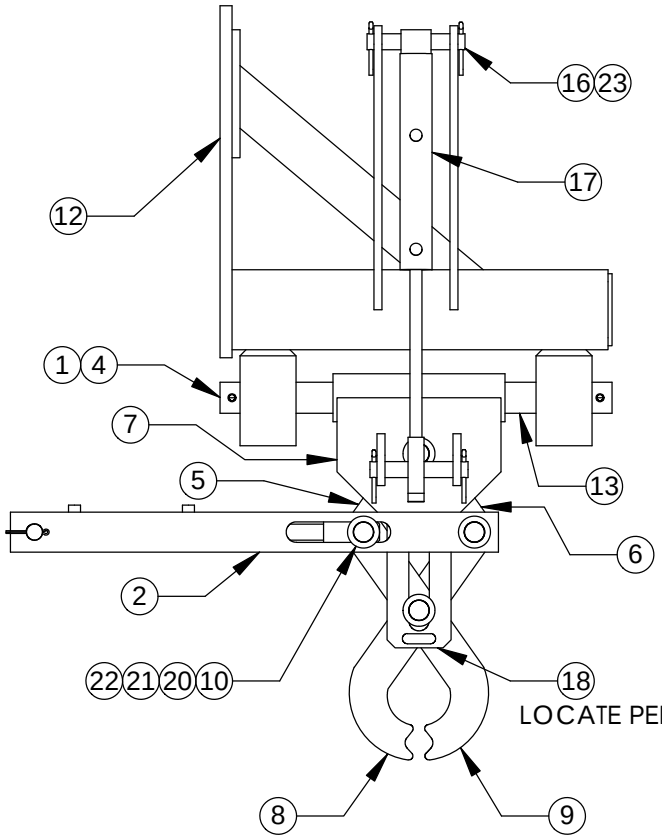
DRAWN BY:	APPD BY:	DATE:	DRAWING NUMBER:	REV:
KLC	TSH	8/21/97	300585	D

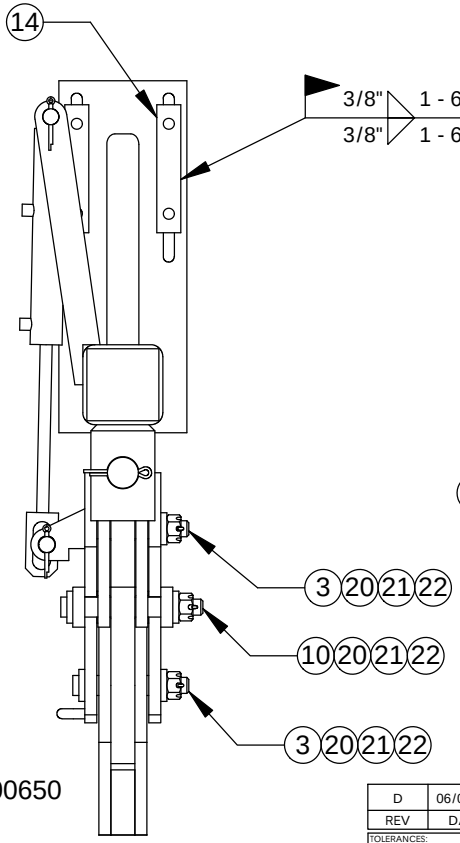


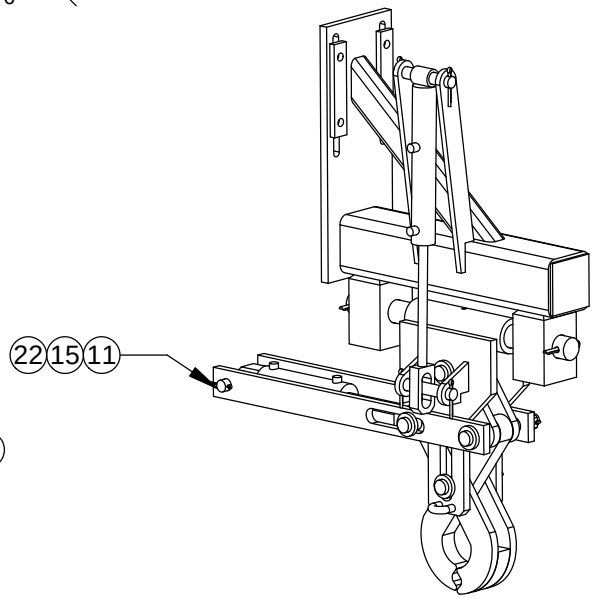
ITEM NO.	PART NUMBER	QTY.	DESCRIPTION
1	106104	2	COTTER PIN, 3/16" X 2"
2	300505	2	HYDRAULIC RAILDOGS CYL. MOUNT DETAIL
3	300509	2	HYD. RAILDOG PIN ASSEMBLY, 1-1/4" X 5-1/8" GRIP
4	300511	1	RAILDOG SHAFT, WIDE
5	300517	1	UPPER LINK - 1-1/2"
6	300518	2	UPPER LINK - 3/4"
7	300519	1	SLIDE BRACKET WELDMENT
8	300522	1	CLAMP ARM - 1-1/2"
9	300524	1	RAILDOG CLAMP ARM WELDMENT
10	300532	2	HYD. RAILDOG PIN ASSEMBLY, 1-1/4" X 6-3/4" GRIP
11	300533	1	HYD. RAILDOG PIN DETAIL, 1"
12	300542	1	RAILDOG FRAME - WIDE, RIGHT
13	300564	2	HYDRAULIC RAILDOG WIDE SPRING (CENTURY S-149)
14	300577	2	HYD. RAILDOG MOUNTING PLATE
15	300578	2	SPACER, RAILDOG CYLINDER
16	300591	2	HYD. RAILDOGS ROTATOR CYL. PIN (1" X 6-1/8")
17	300592	1	CYLINDER, 1-1/2" X 3/4" X 10" STROKE
18	300650	1	HYDRAULIC RAILDOGS PINOFF CHAIN ASSY
19	300700	1	RAILDOG CYLINDER
20	818126	4	DETAIL, PIN HEAD, 1-1/4"
21	818127	4	SLOTTED HEX NUT, 1"-8, GR8
22	818128	6	COTTER PIN, 3/16" X 2"
23	818137	4	COTTER PIN, 1/4"x2-1/2"

D

C B A







REV	DATE	DESCRIPTION	BY	APP
D	06/04/15	REDRAWN IN SOLIDWORKS, 106104 WAS 300512	JDI	

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 (0.030 X 45° MAX)

-

DRAWN BY: KLC

APPD BY: TSH

TITLE: HYDRAULIC RAILDOG ASSY. W/LIFT - (RIGHT SIDE)

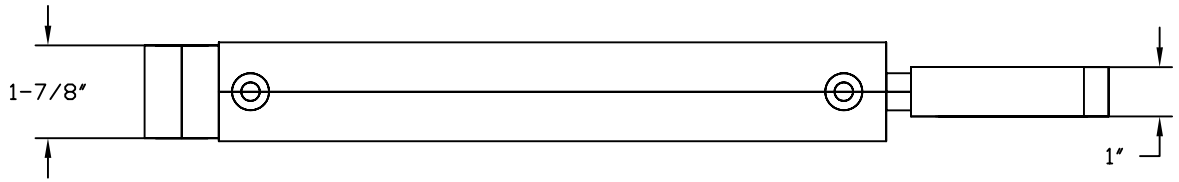
DIVERSIFIED METAL FABRICATORS,INC.(404)875-1512

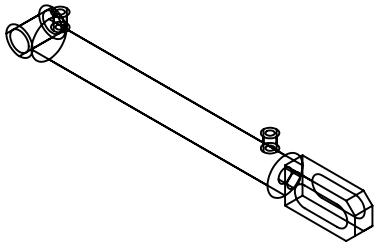
DATE: 8/21/97

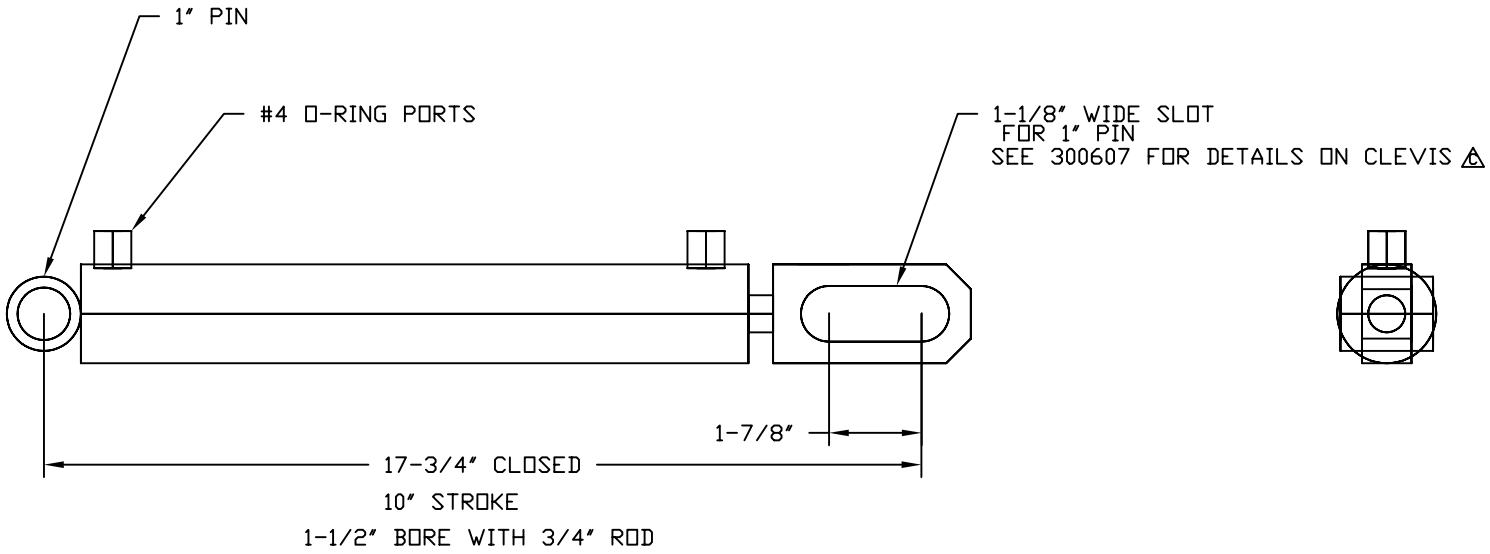
DRAWING NUMBER: 300586

REV: D

ITEM	PART NO.	QTY	DESCRIPTION
1		EA	GA HYD: GHC251507PP-10
2			







REV	DATE	DESCRIPTION	BY	APP
C	12-8-10	ADDED PART # FOR ROD END CLEVIS	BJF	
B	7-25-96	17-3/4 WAS 17-1/4"	TSH	
A	6-20-96	WAS 1/4 NPT PORTS	TSH	

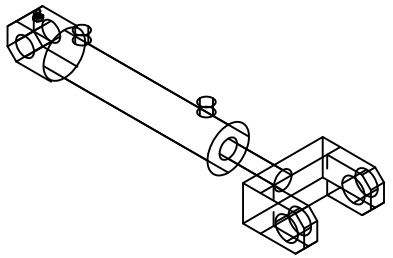
TOLERANCES: (UNLESS SPECIFIED) COMMON SENSE PREVAILS
FRAC, MACH: ± 1/32"
FRAC, OTHER: ± 1/16"
.X ± .063
.XX ± .030
.XXX OR .XXXX ± .005
DRILL SIZES: + .015
ANGULAR: ± 1°
SURF FINISH: 125 MICRO
THREADS: 2A AND 2B
BREAK SHARP EDGES (0.030 X 45° MAX)

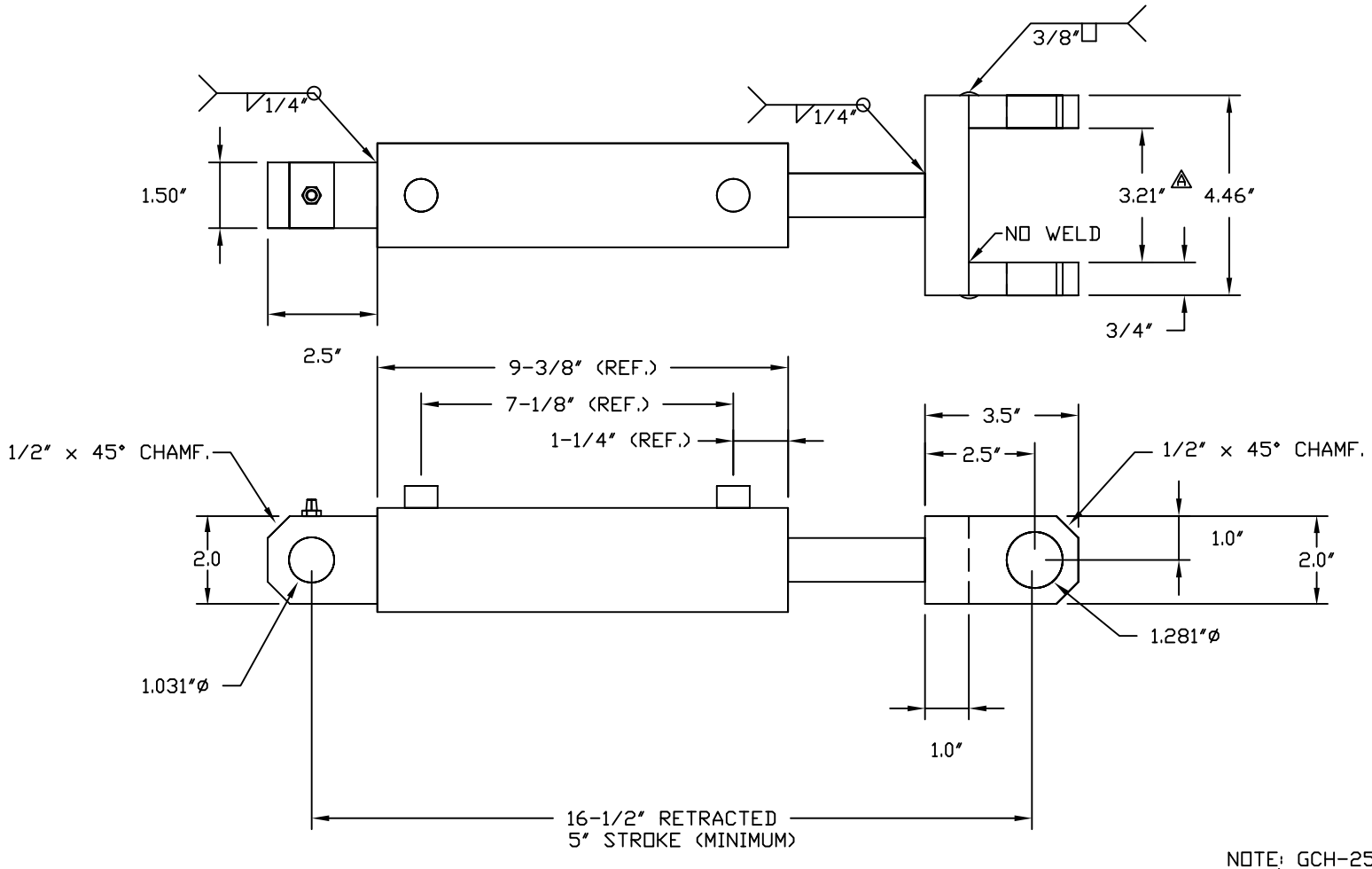
TITLE: HYDRAULIC RAILDOG ROTATOR CYLINDER

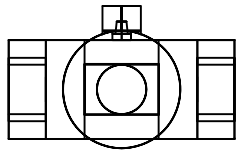
DIVERSIFIED METAL FABRICATORS, INC. (404) 875-1512

DRAWN BY:	APPD BY:	DATE:	DRAWING NUMBER:	REV:
TSH		6-18-96	300592	C

ITEM	PART NO.	QTY	DESCRIPTION
1			
2			







NOTE: GCH-2500 CYLINDER
⚠B GHC-25201□PP-5
2" BORE W/ 1" ROD
PORTS: #4 O-RING 90° TO PIN AXIS

REV	DATE	DESCRIPTION	BY	APP
⚠B	2/20/98	ADDED P/N GHC-25201□PP-5 TO NOTE	KLC	TSH
⚠A	10/4/96	DIM 3.21 WAS 3.06	CJL	

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: WEG
APPD BY:

TITLE: CYLINDER, RAILDOG

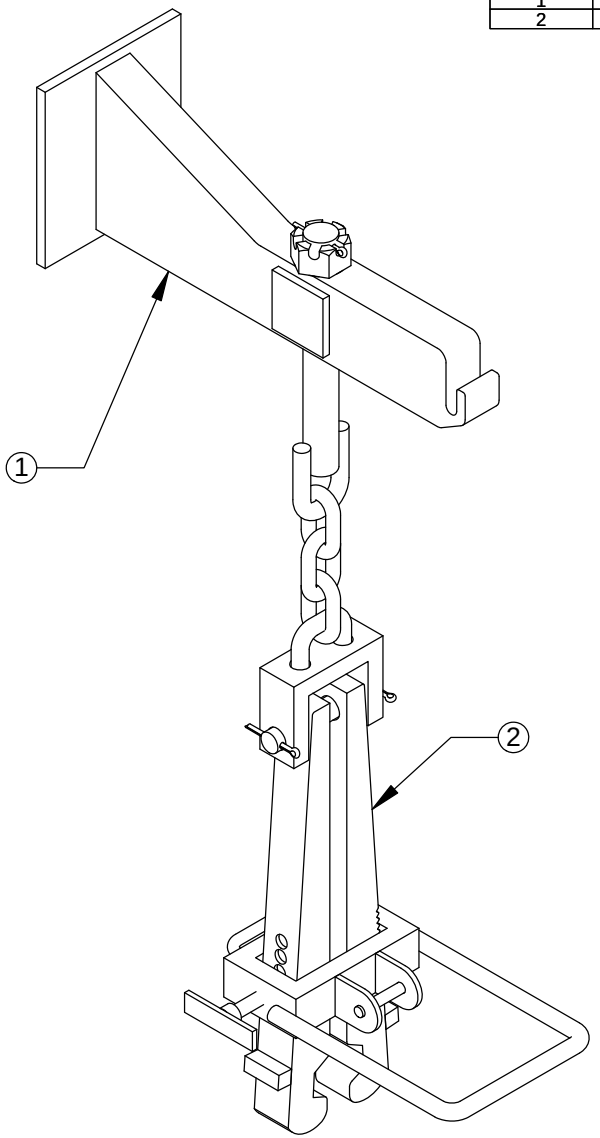
DIVERSIFIED METAL FABRICATORS, INC. (404) 875-1512

DATE: 1/19/94

DRAWING NUMBER: 300700

REV: B

ITEM NO.	PART NUMBER	QTY.	DESCRIPTION
1	238101	1	RAILDOG BRACKET ASSEMBLY
2	238140	1	RAILDOG ASSEMBLY W/O BRACKET



REV	DATE	DESCRIPTION	BY	APP
A	7/9/2014	REDRAWN IN SOLIDWORKS	BJF	

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

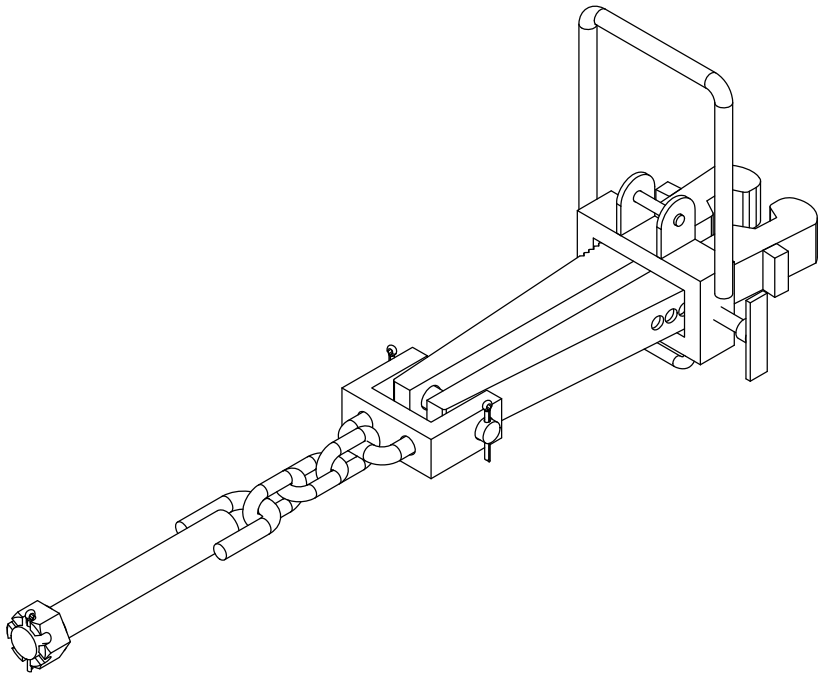
BREAK SHARP EDGES (0.030 X 45° MAX)

RAILDOGS

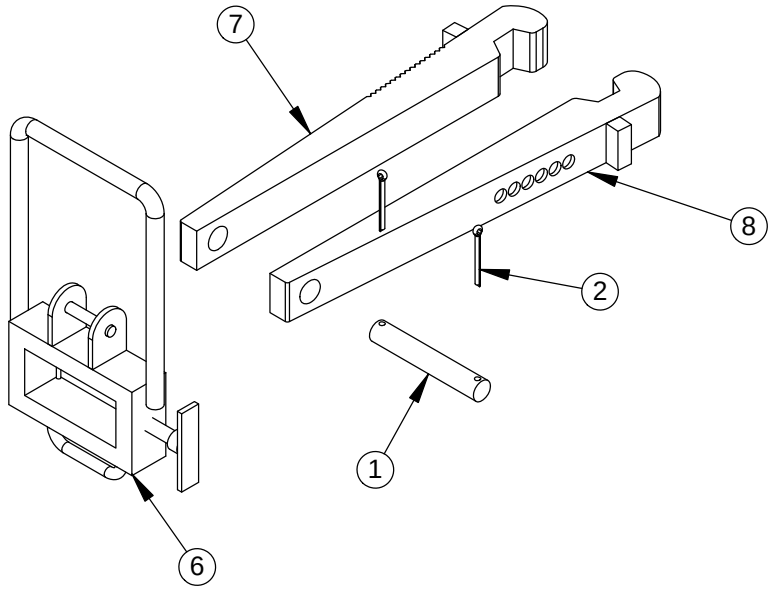
TITLE: MANUAL RAILDOGS, COMPLETE W/ BRACKET (ONE SIDE)

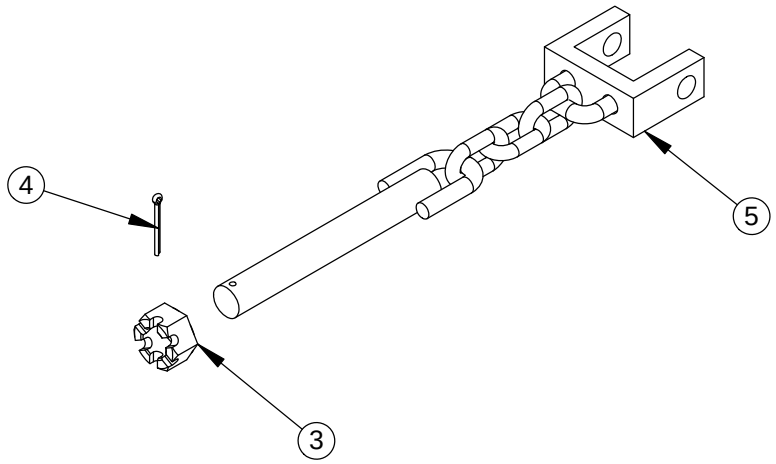
DIVERSIFIED METAL FABRICATORS,INC.(404)875-1512

DRAWN BY:	APPD BY:	DATE:	DRAWING NUMBER:	REV:
KLC	TSH	10/02/97	238142	A



ITEM	PART NO.	QTY	DESCRIPTION
1	300591	1	RAILDOG ROTATOR CYLINDER PIN
2	238111	2	RAILDOG CLEVIS COTTER PIN, 1/8" X 1-1/2"
3	238121	1	RAILDOG HEX NUT, 1-1/2-6
4	238123	1	RAILDOG COTTER PIN FOR THREADED ROD, 1/4" X 3"
5	238130	1	RAILDOG THREADED ROD ASSEMBLY
6	238131	1	RAILDOG COLLAR ASSEMBLY
7	238136	1	RAILDOG - SERRATED SIDE W/ STOP WELDED
8	238137	1	RAILDOG - DIMPLED SIDE W/ STOP WELDED





REV	DATE	DESCRIPTION	BY	APP
B	7/9/14	238131 REDRAWN	BJF	
A	6/20/12	REDRAWN IN SOLIDWORKS, P/N 300591 WAS 238110	JDI	

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 (0.030 X 45° MAX)

RAILDOG

TITLE: RAILDOG ASSEMBLY W/O BRACKET

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

DRAWN BY:	APPD BY:	DATE:	DRAWING NUMBER:	REV:
KLC		10/02/97	238140	B

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.

DMF ◆ 665 Pylant Street ◆ Atlanta, Georgia 30306
Parts (404) 607-1684◆ Parts Fax (404) 879-7888◆ parts@dmfatlanta.com
Service Department (404) 879-7882◆ service@dmfatlanta.com
Phone (404) 875-1512 ◆ Fax (404) 875-4835◆ info@dmfatlanta.com
http://www.dmfatlanta.com