HARSCO RAIL
Enabling TECHNOLOGY IN MOTION

www.harscorail.com

SERVICE BULLETIN

MAINTENANCE OF WAY EQUIPMENT

DATE: 09 - 2021 **BULLETIN NO:** 21-005B

TITLE: BUGGY DERAIL ALARM KIT - MARK IV

RATING:

- ☐ **DIRECTIVE** (Action Is Required)
- ☐ **ALERT** (Potential Problem)
- ☐ **INFORMATION** (Action Is Optional)
- ☒ **PRODUCT IMPROVEMENT** (Enhance Product)

PRODUCT SERIES / MODEL: Mark IV Production / Switch Tampers with Jupiter II

SERIAL NO: N/A

SUMMARY: Harsco Rail has developed a Derail Alarm Kit to detect and prevent derailment of the projector light buggy. It provides audible and visual notifications to the operator and has the ability to automatically reduce power and apply the brakes. Field installation takes approximately 3 hours and utilizes a wireless transmitter so no wires need to be run through the pusher bars.

OPERATIONAL IMPACT:

A projector buggy not equipped with the alarm kit may result in a derailment, which can cause damage to the machine and track structure and possible personal injury to the operator.

ACTION: Order one Buggy Derail Alarm Kit-Mark IV assembly kit (Harsco Rail part number 5122545) for each machine being reworked. Follow the instructions in this Service Bulletin to assemble and install the kit components onto the projector buggy. Refer to the supplied Harsco Rail drawing 5122545 - Buggy Derail Alarm Kit-Mark IV, when installing the kit onto the projector buggy.

CONTACT: Harsco Rail Service Department
(803) 822-7546

Harsco Rail Parts Department
(800) 800-6410

SAFETY INFORMATION

- **Follow applicable railroad lockout - tagout procedures to disable energy sources when performing maintenance, making adjustments or repairs to the vehicle or equipment. Failure to heed this warning could result in severe bodily injury.**

Before Installing Buggy Derail Alarm Kit

1. Make sure all machine work components are in the stored position and locks are engaged.

2. Make sure the machine is shut down, parking brakes are applied, battery switch is turned off and the machine wheels are chocked.

3. Order one Buggy Derail Alarm Kit-Mark IV #5122545 for each machine.

ITEM	PART NO	DESCRIPTION	QTY
	5122545	Buggy Derail Alarm Kit - Mark IV	1
1	5122546	Sensor Mounting Assembly	2
2	5122628	Bracket, Projector Buggy	2
3	L426262	1/2-20 Locknut	4
4	202063	Washer, Flat, 1/2", Hardened	4
5	F002734	Hex Cap Scr 1/4-20x2 3/4 Gr5	4
6	F004606	1/4-20 Elastic Stop Nut	8
7	F002355	HHD Cap Scr 1/4-20x3/4 Gr4	8
8	F001106	Washer, Flat, 1/4", USS, ZP	8
9	5122549	Bracket, Tube	2
10	5016794	Enclosure Brkt	1
11	5125089	Enclosure, Derail Kit.	1
12	155421-1	Connector, Sq., 90 Deg .50, Grip .37-50	1
13	F019878	Locknut 1/2NPT Elec Fitg	1
14	3401326	Cable, M12-M/F 3M SH 5-Cond.	2
15	F018229	Ty-Rap	16
16	5122654	Front Cover, Projector Buggy.	0
17	5123375	Front Cover, Projector Buggy RH.	0
18	5127041	Buggy Derail Alarm Software	1
19	F011626	10-24 x 3/4 Skt Hd Cs	4
20	F009542	Nut, Hex, #10-24, Gd2, Zp	4

Install 5125089- Enclosure, Derail Kit (Formed Plate-Style Buggy Frame)

1. Remove existing Distribution J-Box Assembly (Harsco Rail 5034556) from projector buggy assembly. Save the fasteners for re-installation later.

2. Drill four Ø .28 holes in the existing 5016794 - Enclosure Brkt - as shown in Harsco Rail drawing 5122545 (Sheet 2 - Section D-D).

3. Re-install the previously removed Distribution J-Box Assembly (Harsco Rail 5034556) to projector buggy frame using the original fasteners.

4. Secure the new (Item 10) 5016794 - Enclosure Brkt, onto the other side of the existing 5016794 - Enclosure Brkt with four new fasteners; (Item 6) F004606 1/4-20 Elastic Stop Nut, (Item 7) F002355 HHD Cap Scr 1/4-20x3/4 GR4, and (Item 8) F001106 Washer, Flat, 1/4", USS, ZP, - as shown in Harsco Rail drawing 5122545 (Sheet 2 - Section D-D).

5. Secure new (Item 11) 5125089 - Enclosure, Derail Kit onto new (Item 10) 5016794 - Enclosure Brkt, with four new fasteners; (Item 6) F004606 1/4-20 Elastic Stop Nut, (Item 7) F002355 HHD Cap Scr 1/4-20x3/4 GR4, and (Item 8) F001106 Washer, Flat, 1/4", USS, ZP, - as shown in Harsco Rail drawing 5122545 (Sheet 2 - Section D-D).

Install 5122546 - Sensor Mounting Assembly (Formed Plate-Style Buggy Frame)
(For machines *without* Solar Laser Liner Projector)

1. Remove existing Male Rod End Nut and install (Item 2) 5122628 - Bracket, Projector Buggy and secure with two each (Item 3) L426262 1/2-20 Locknut and (Item 4) Washer, Flat, 1/2", Hardened - as shown in Harsco Rail drawing 5122545 (Sheet 2 - Section B-B, Section C-C and inset image). Repeat for installing the other Bracket, Projector Buggy on the opposite side.

2. Loosen fasteners securing the rubber mounts on (Item 1) Sensor Mounting Assembly and adjust center of Sensor to align with center of rail. Adjust Sensor height to 1.52 in (38.6 mm) from the top of the rail - as shown in Harsco Rail drawing 5122545 (Sheet 2 - Section C-C). Securely tighten fasteners on the rubber mounts. Repeat for adjusting the other sensor above the other rail.

3. Connect one end of (Item 14) 3401326 Cable, M12-M/F 3M SH 5-Cond to connector on the side of (Item 11) 5125089 - Enclosure, Derail Kit and the opposite end to the newly mounted (Item 1) 5122546 - Sensor Mounting Assembly - as shown in Harsco Rail drawing 5122545 (sheet 5). Repeat for connecting the other cable to the sensor above the other rail.

Install 5122546 - Sensor Mounting Assembly (Formed Plate-Style Buggy Frame)
(For machines *with* Solar Laser Liner Projector)

1. Remove existing Male Rod End Nut and install (Item 2) 5122628 - Bracket, Projector Buggy and secure with (Item 3) L426262 1/2-20 Locknut. Repeat for installing the other Bracket, Projector Buggy on the opposite side.

2. Install (Item 1) 5122546 - Sensor Mounting Assembly beneath (Item 2) 5122628 - Bracket, Projector Buggy on both sides of buggy using hardware supplied with Sensor Mounting Assembly as shown in Harsco Rail drawing 5122545 (Sheet 2 - Section B-B, Section C-C and inset image). Repeat for installing the other Sensor Mounting Assembly on the opposite side.

3. Loosen fasteners securing the rubber mounts on (Item 1) Sensor Mounting Assembly and adjust center of sensor to align with center of rail. Adjust Sensor height to 1.52 in (38.6 mm) from the top of the rail - as shown in Harsco Rail drawing 5122545 (Sheet 2 - Section C-C). Securely tighten fasteners on the rubber mounts. Repeat for adjusting the other Sensor Mounting Assembly above the other rail.

4. Connect one end of (Item 14) 3401326 Cable, M12-M/F 3M SH 5-Cond to a connector on the side of (Item 11) 5125089 - Enclosure, Derail Kit and the opposite end to the newly mounted (Item 1) 5122546 - Sensor Mounting Assembly - as shown in Harsco Rail drawing 5122545 (Sheet 5). Repeat for connecting the other cable to the sensor on the other rail.

Install 5125084 - Kit, Radio I/O Module

1. Drill four Ø .22 holes inside the cab at location shown in Harsco Rail drawing 5122545 (Sheet 4 - Section A-A).

2. Install 5125084 Kit, Radio I/O Module (part of Item 11 - 5125089, Enclosure, Derail Kit) inside cab. Secure radio module with hardware supplied with it - four each (Item 19) F011626 10-24 x 3/4 Skt Hd CS and (Item 20) F009542 Nut, Hex, #10-24, Gd2, ZP. See Harsco Rail drawing 5122545 (Sheet 4 - Section A-A, and Detail F)

3. Connect 3401340 Cable,M12-M/PIG 8M 4-Cond HF (part of Item 11- 5125089, Enclosure, Derail Kit) to C2 port on Jupiter Module CAN:05 and to the newly mounted radio module inside cab - as shown in Harsco Rail drawing 5122545 (sheets 4 & 5).

Installing 5125089 - Enclosure, Derail Kit (Tube-Style Buggy Frame)

1. If mounting Enclosure to a tube-constructed buggy frame, remove the existing Distribution J-Box Assembly (Harsco Rail 5034556) from projector buggy. Save the fasteners for re-installation later.

2. Drill four Ø .28 holes in the existing 5016794 - Enclosure Brkt as shown in Harsco Rail drawing 5122545 (Sheet 3 - Section G-G).

3. Secure the new (Item 10) 5016794 - Enclosure Brkt, onto the other side of the newly modified 5016794 - Enclosure Brkt with four new fasteners; (Item 6) F004606 1/4-20 Elastic Stop Nut, (Item 7) F002355 HHD Cap Scr 1/4-20x3/4 GR4, and (Item 8) F001106 Washer, Flat, 1/4", USS, ZP, - as shown in Harsco Rail drawing 5122545 (Sheet 3 - Section G-G).

4. Re-install the previously removed Distribution J-Box Assembly (Harsco Rail 5034556) to projector buggy frame using the original fasteners.

5. Secure the new (Item 11) 5125089 - Enclosure, Derail Kit onto new (Item 10) 5016794 - Enclosure Brkt, with four new fasteners; (Item 5) F002734 Hex Cap Scr 1/4-20x2 3/4 Gr5, (Item 6) F004606 1/4-20 Elastic Stop Nut, and (Item 8) F001106 Washer, Flat, 1/4", USS, ZP, - as shown in Harsco Rail drawing 5122545 (Sheet 3 - Section G-G).

Install 5122546 - Sensor Mounting Assembly (Tube-Style Buggy Frame)
(For machines without Solar Laser Liner Projector)

Note: Projector Buggies without a Solar Laser Liner Projector use 0-1405308-0-01 Guide Bar and 0-1405307-0-01 Guide Tube as part of the projector buggy. Mounting the kit on this unit requires (Item 9) 5122549 - Bracket, Tube to mount (Item 1) 5122546 - Sensor Mounting Assembly. See Harsco Rail drawing 5122545 (Sheet 3 - Section E-E and inset image).

1. Assemble (Item 1) 5122546 - Sensor Mounting Assembly onto the square tubing with (Item 9) 5122549 - Bracket, Tube using hardware included with Sensor Mounting Assembly. See Harsco Rail drawing 5122545 (Sheet 3 - Section E-E and Inset Image). Repeat for installing the other Sensor Mounting Assembly on the opposite side.

2. Loosen fasteners securing the rubber mounts on the Sensor Mounting Assembly and adjust center of sensor to align with center of rail. Adjust Sensor height to 1.52 in (38.6 mm) from the top of the rail - as shown in Harsco Rail drawing 5122545 (Sheet 2 - Section C-C). Repeat for adjusting the other Sensor Mounting Assembly on the opposite side.

Installing Buggy Derail Alarm Software

1. The Buggy Derail Alarm Software (Item 18) is programmed onto the 8GB USB flash drive, and is specifically written for each machine by the serial number provided when the Buggy Derail Alarm Kit was ordered. Be certain to follow the software installation instructions exactly.

2. Verify and log all machine parameters before beginning the software download.

3. Turn the Jupiter computer OFF.

4. Make sure that the machine's engine is shut down, parking brakes are applied and battery master switch is OFF.

5. Turn the battery master switch on. Turn the Jupiter computer ON.

6. In some Jupiter-II applications, a new software "Install Permission" panel now asks the user whether they want to shut down the machine application in order to download a new software package.
   a. Press the "Esc" button to leave the USB drive installed but not install new software.
   b. Press the "Enter" button to proceed to software install (Super-Download screen).
   c. When software has finished installing, turn the Jupiter computer OFF and then back ON again.

7. Verify that none of the machine parameters have changed. If any parameters have changed, correct them using the parameter information that was logged.

8. Start the machine's engine. Turn Jupiter ON. Check the function of the entire Jupiter Control System. Make sure all functions controlled through the Jupiter II system are operating properly.

9. If any problems are encountered, contact the Harsco Rail Service Department.

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306 West 4th Street
Fairmont, MN
56031-1837
Tel: (507) 235-7376
Parts: (800) 800-6410
Fax: (507) 235-7372

2401 Edmund Road, Box 20
Cayce-West Columbia, SC
29171-0020
Tel: (803) 822-7420
Parts: (800) 800-6410
Fax: (803) 822-7403

1200 Conrad Industrial Dr.
Ludington, MI
49431
Tel: (231) 843-3431
Parts: (800) 800-6410
Fax: (231) 843-1644

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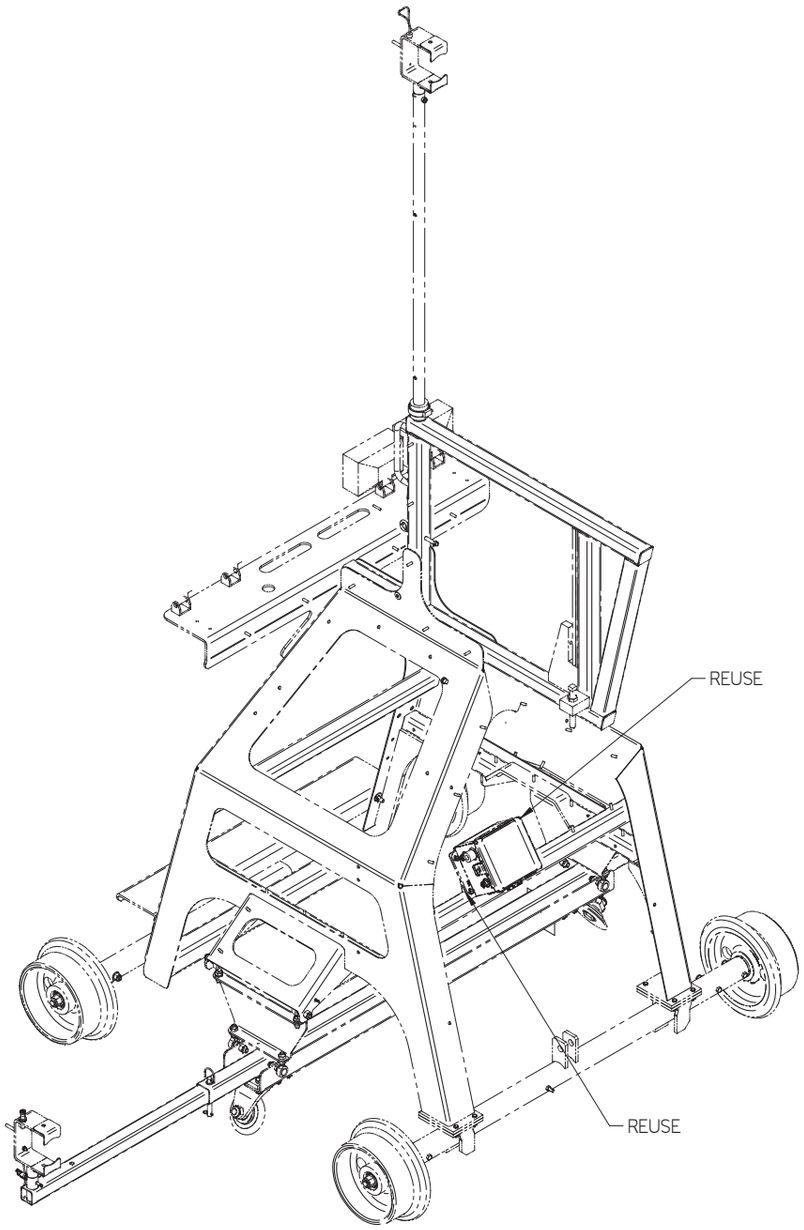
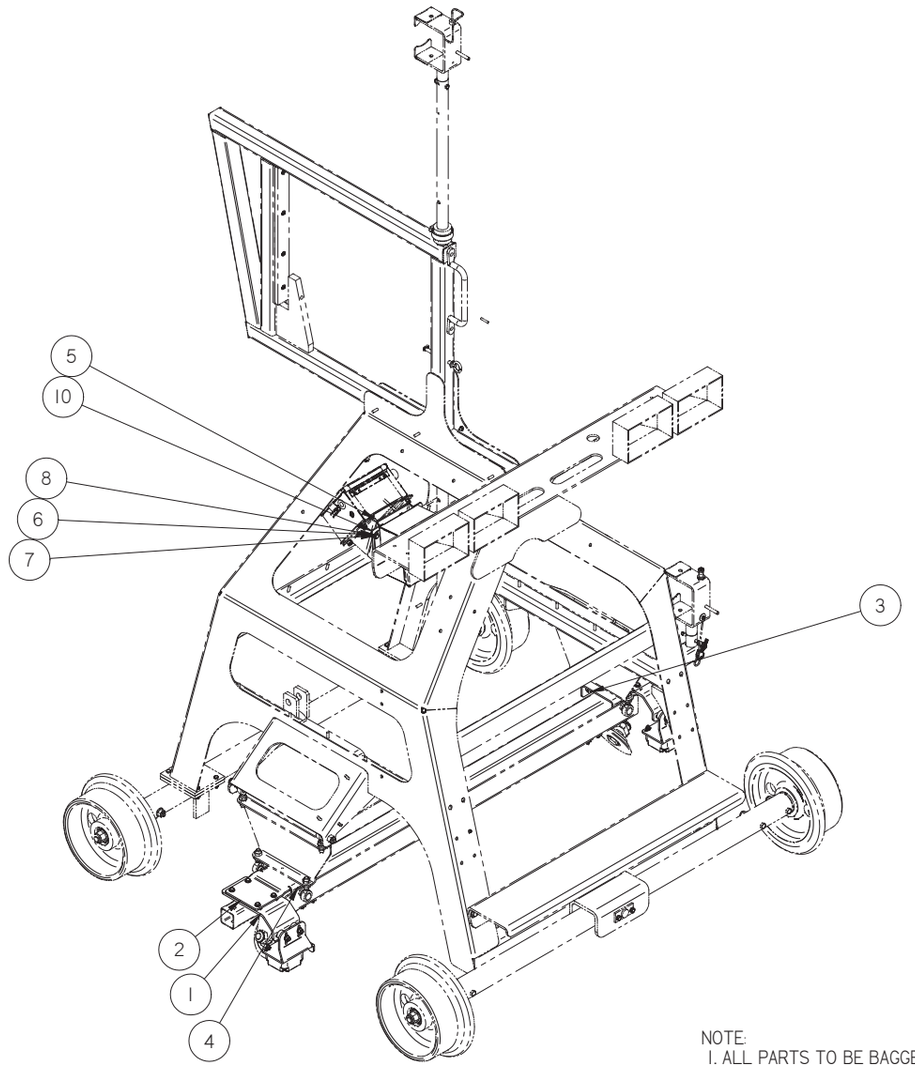


EXISTING PROJECTOR BUGGY



EXISTING PROJECTOR BUGGY

ITEM	PART NO	QTY	DESCRIPTION
1	5122546	2	SENSOR MOUNTING ASSEMBLY
2	5122628	2	BRACKET,PROJECTOR BUGGY
3	L426262	4	1/2-20 LOCKNUT
4	202063	4	WASHER, FLAT, 1/2", HARDENED
5	F002734	4	HEX CAP SCR 1/4-20X2 3/4 GR5
6	F004606	8	DC-1/4-20 ELASTIC STOP NUT
7	F002355	8	DC-HHD CAP SCR1/4-20X3/4GR4
8	F001106	8	WASHER, FLAT, 1/4", USS, ZP
9	5122549	2	BRACKET, TUBE
10	5016794	1	ENCLOSURE BRKT
11	5125089	1	ENCLOSURE, DERAIL KIT
12	155421-1	1	CONNECTOR, SQ., 90 DEG .50, GRIP .37-50
13	F019878	1	LOCKNUT 1/2NPT ELEC FITG
14	3401326	2	CABLE,M12-M/F 3M SH 5-COND
15	F018229	16	TY-RAP
16	5122654	0	FRONT COVER,PROJECTOR BUGGY
17	5123375	0	FRONT COVER,PROJECTOR BUGGY RH
18	5127041	1	BUGGY DERAIL ALARM SOFTWARE
19	F011626	4	DC-10-24 X 3/4 SKT HD CS
20	F009542	4	NUT, HEX, #10-24, GD2, ZP

REFERENCE DRAWINGS	
INCLUDE A COPY OF EACH OF THE FOLLOWING DRAWINGS WITH EACH KIT	
DRAWING#	DESCRIPTION
5122546	SENSOR MOUNTING ASSEMBLY
SB21-005	SERVICE BULLETIN, BUGGY DERAIL ALARM KIT-MARK IV
5016794	BRACKET, ENCLOSURE
5118866	COILED CABLE, 18AWG/15 COND

NOTE:
1. ALL PARTS TO BE BAGGED AND LABELED WITH HARSCO RAIL PART NUMBERS.
2. SHIPPING BOX TO BE LABELED WITH:
   a. HARSCO RAIL KIT PART NUMBER, REVISION
   b. P.O. NUMBER
3. ALL BRACKETS SHALL BE PAINTED WITH FLAT BLACK COLOR.

SIMILAR TO 5086657

Inch
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FEATURES ENCLOSED IN ⬭ ARE KEY CHARACTERISTICS

NOMINAL SIZE RANGE	INCH OVER	TO	PLUS OR MINUS 2 PLACE DECIMAL	PLUS OR MINUS 3 PLACE DECIMAL	NOMINAL SIZE RANGE OVER	TO	METRIC PLUS OR MINUS 1 PLACE DECIMAL	PLUS OR MINUS 2 PLACE DECIMAL
0	6		.03	.005	0	150	.8	.13
6	24		.04	.008	150	600	1.0	.20
24	-		.06	.010	600	-	1.5	.25

UNLESS OTHERWISE SPECIFIED:
1. REMOVE BURRS AND BREAK SHARP EDGES
2. ALL MACHINED SURFACES TO WILL HAVE: SURFACE FINISH OF 125 MICROINCHES ANGULAR TOLERANCE OF ± .50° CONCENTRICITY WITHIN .010
3. ALL WELDS SHOULD ADHERE TO THE MOST CURRENT A.W.S WELDING STANDARDS
4. TORQUE ALL FASTENERS PER STD-16030
5. TORQUE ALL FITTINGS PER STD-5069

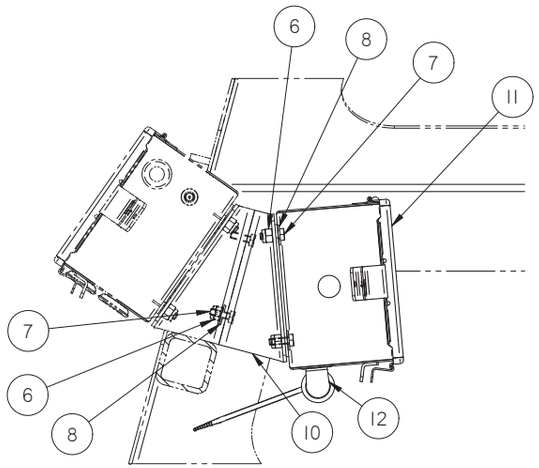
THIRD ANGLE PROJECTION

DRAFTED PER HARSCO RAIL STANDARD STD-1601D

(D)

CHANGE	R/L	REVISION	DR	DATE
EC614807	A	NEW RELEASE	AVS	03/08/21
EC615535	B	VIEWS REARRANGED, ITEMS REORDERED, ADDED SHEET#4,5.	BKP	06/24/21
EC615800	C	ADDED IT.18.	BKP	08/12/21
EC615938	D	ADDED IT.19,20. IN SHEET# 4 ADDED DETAIL F.	BKP	09/02/21

Description: BUGGY DERAIL ALARM KIT-MARK IV
HARSCO RAIL
Material
Machine Type: MARK IV
Size: D
Weight: 52.4 lbm
Drawn: vamin
Date Drawn: 03/08/2021
Part Number: 5122545
Sheet: 1 of 5
SOLID EDGE DRAWING
DO NOT SCALE



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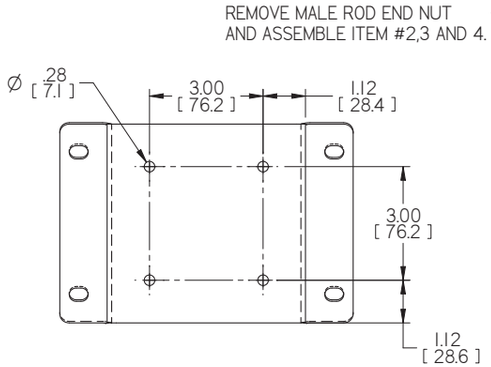

5016794 TO BE DRILLED AS SHOWN ABOVE
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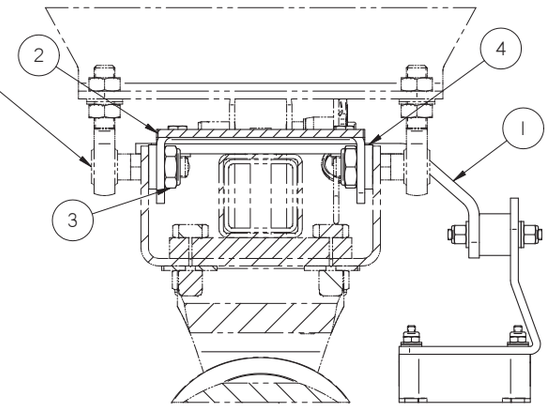

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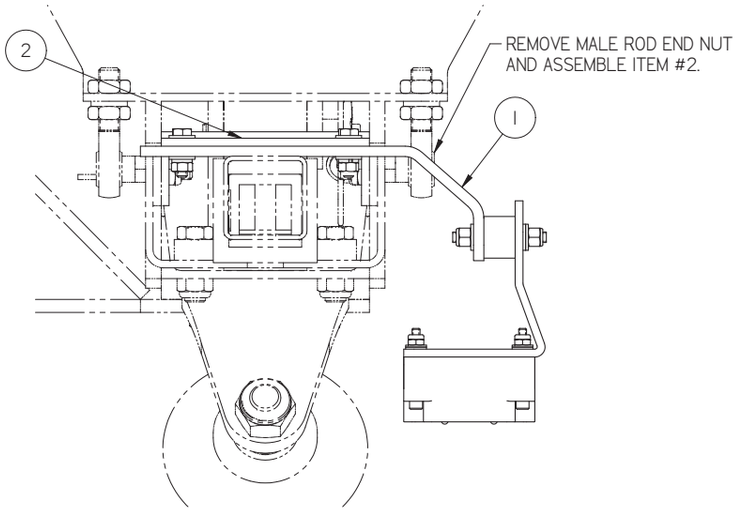
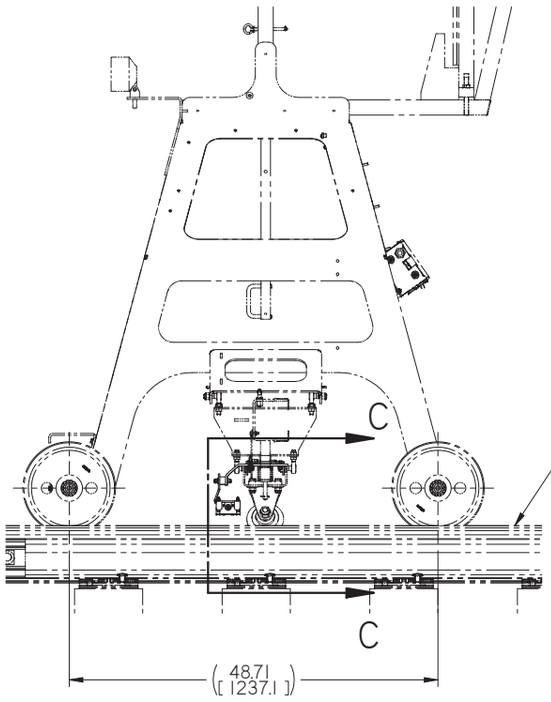
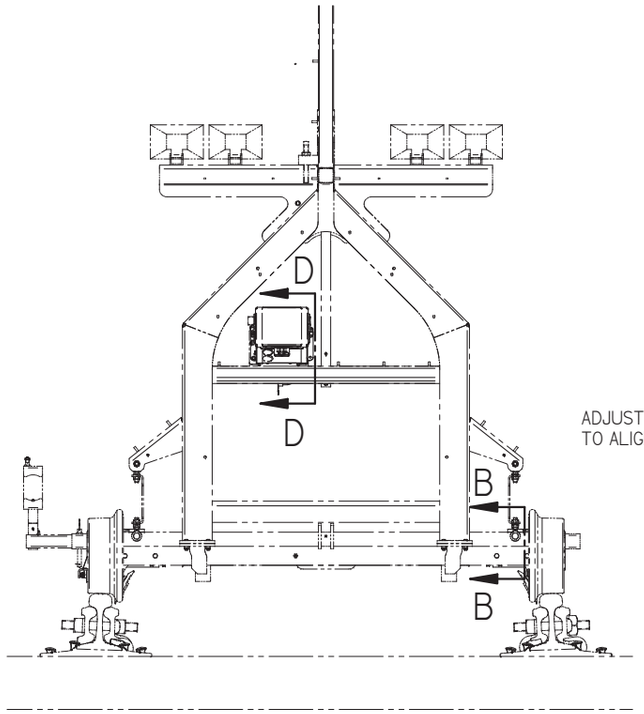
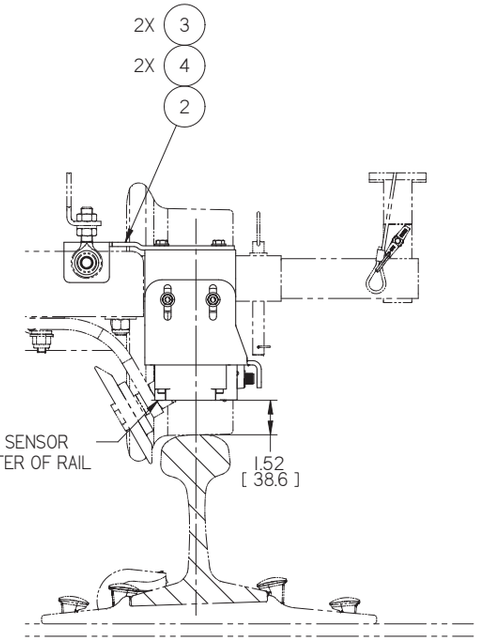


THIS ARRANGEMENT IS ONLY FOR
SOLAR LASER LINER PROJECTOR







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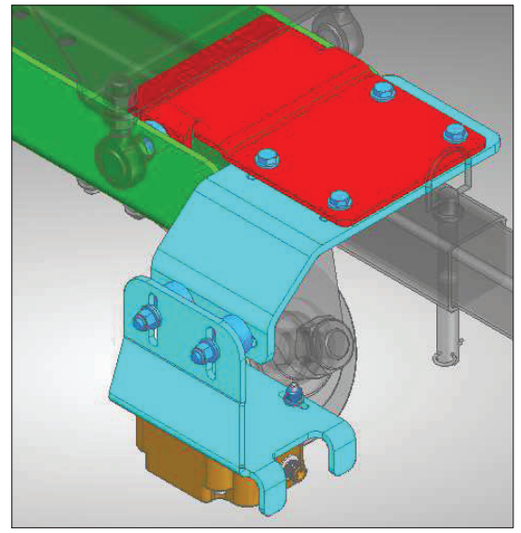

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0	6	.03	.005	0	150	.8	.13
6	24	.04	.008	150	600	1.0	.20
24	-	.06	.010	600	-	1.5	.25

UNLESS OTHERWISE SPECIFIED:
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2. ALL MACHINED SURFACES WILL HAVE A SURFACE FINISH OF 125 MICRO INCHES
ANGULAR TOLERANCE OF ± .5°
CONCENTRICITY WITHIN .010
3. ALL WELDS SHOULD ADHERE TO THE MOST CURRENT A.W.S WELDING STANDARDS
4. TORQUE ALL FASTENERS PER STD-16030
5. TORQUE ALL FITTINGS PER STD 5369

THIRD ANGLE PROJECTION

DRAFTED PER HARSCO RAIL STANDARD STD-1601D

CHANGE	R/L	REVISION	DR	DATE
EC614807	A	NEW RELEASE	AVS	03/08/21
EC615535	B	VIEWS REARRANGED, ITEMS REORDERED, ADDED SHEET#4,5.	BKP	06/24/21
EC615800	C	ADDED IT.18.	BKP	08/12/21
EC615938	D	ADDED IT.19,20. IN SHEET# 4 ADDED DETAIL F.	BKP	09/02/21

Description: BUGGY DERAIL ALARM KIT-MARK IV

HARSCO RAIL

Material:

Machine Type: MARK IV

Size: D

Weight: 52.4 lbm

Drawn: vamin

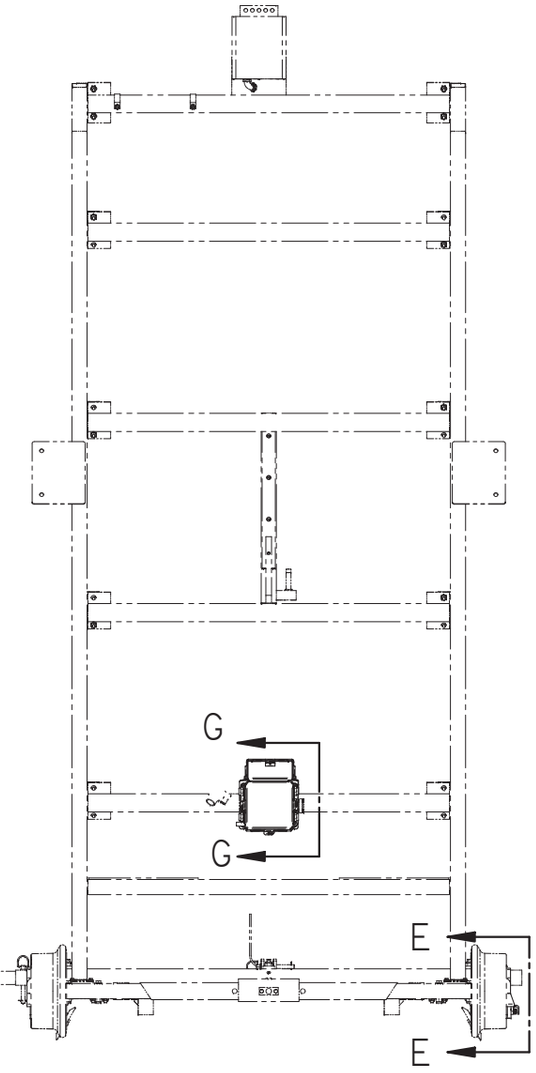
Date Drawn: 03/08/2021

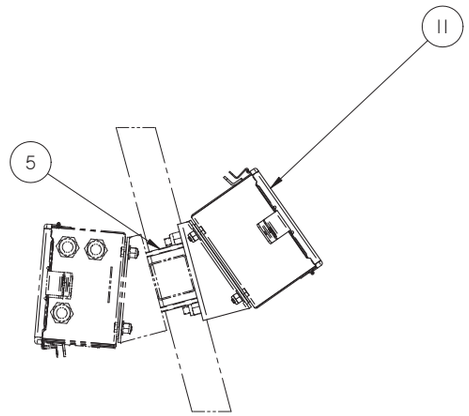
Part Number: 5122545

Sheet: 2 of 5

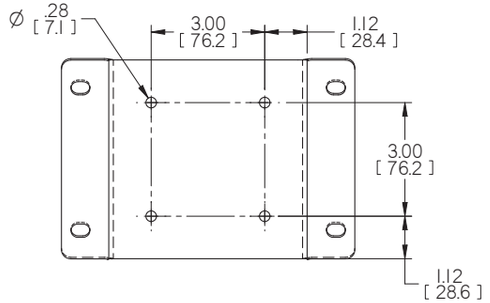
SOLID EDGE DRAWING

DO NOT SCALE

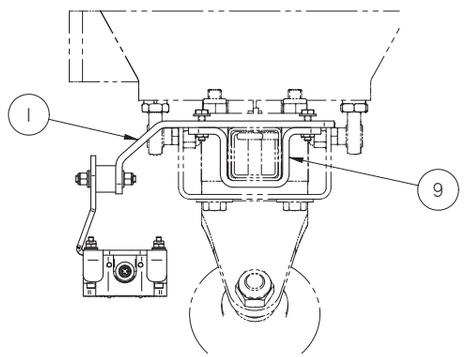




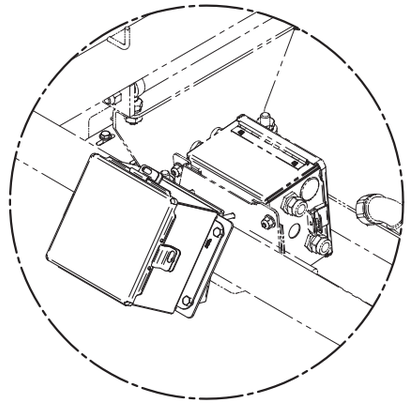
SECTION G-G



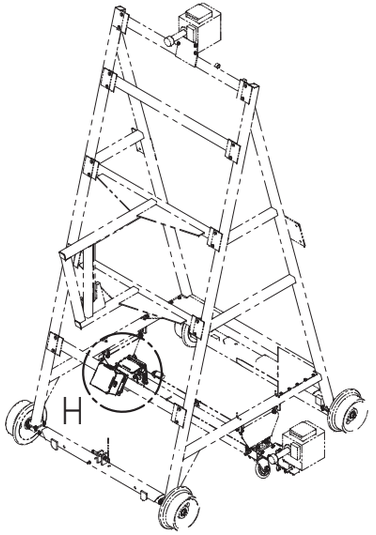
5016794 TO BE DRILLED AS SHOWN ABOVE
ON EXISTING BRACKET

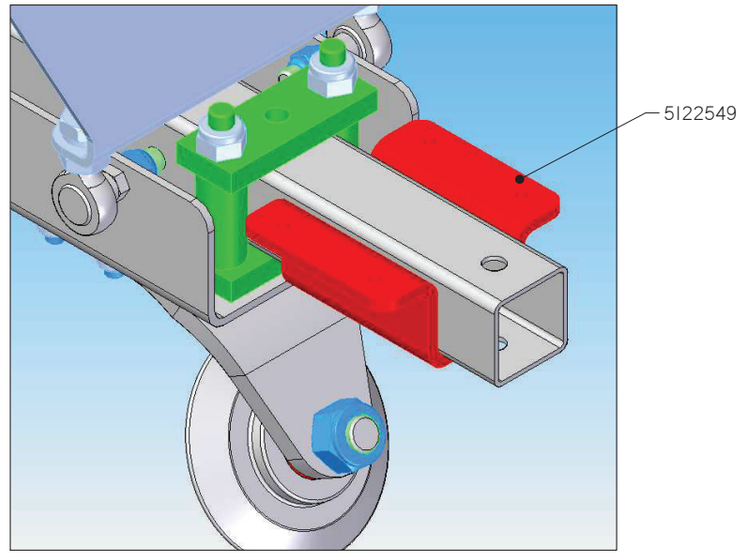


SECTION E-E



DETAIL H





USE 5122549 WHEN 0-1405308-0-01, 0-1405307-0-01 (GREEN COLOURED ITEMS)

Inch
[mm]

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FEATURES ENCLOSED IN ⬭ ARE KEY CHARACTERISTICS

NOMINAL SIZE RANGE		INCH PLUS OR MINUS		NOMINAL SIZE RANGE		METRIC PLUS OR MINUS	
OVER	TO	2 PLACE DECIMAL	3 PLACE DECIMAL	OVER	TO	1 PLACE DECIMAL	2 PLACE DECIMAL
0	6	.03	.005	0	150	.8	.13
6	24	.04	.008	150	600	1.0	.20
24	-	.06	.010	600	-	1.5	.25

UNLESS OTHERWISE SPECIFIED:
1. REMOVE BURRS AND BREAK SHARP EDGES
2. ALL MACHINED SURFACES WILL HAVE:
   - SURFACE ROUGHNESS OF 125 MICROINCHES
   - ANGULAR TOLERANCE OF ± 30'
   - CONCENTRICITY WITHIN .010
3. ALL WELDS SHOULD ADHERE TO THE MOST CURRENT A.W.S WELDING STANDARDS
4. TORQUE ALL FASTENERS PER STD-16030
5. TORQUE ALL FITTINGS PER STD-5369

THIRD ANGLE PROJECTION

DRAFTED PER HARSCO RAIL STANDARD STD-1601D

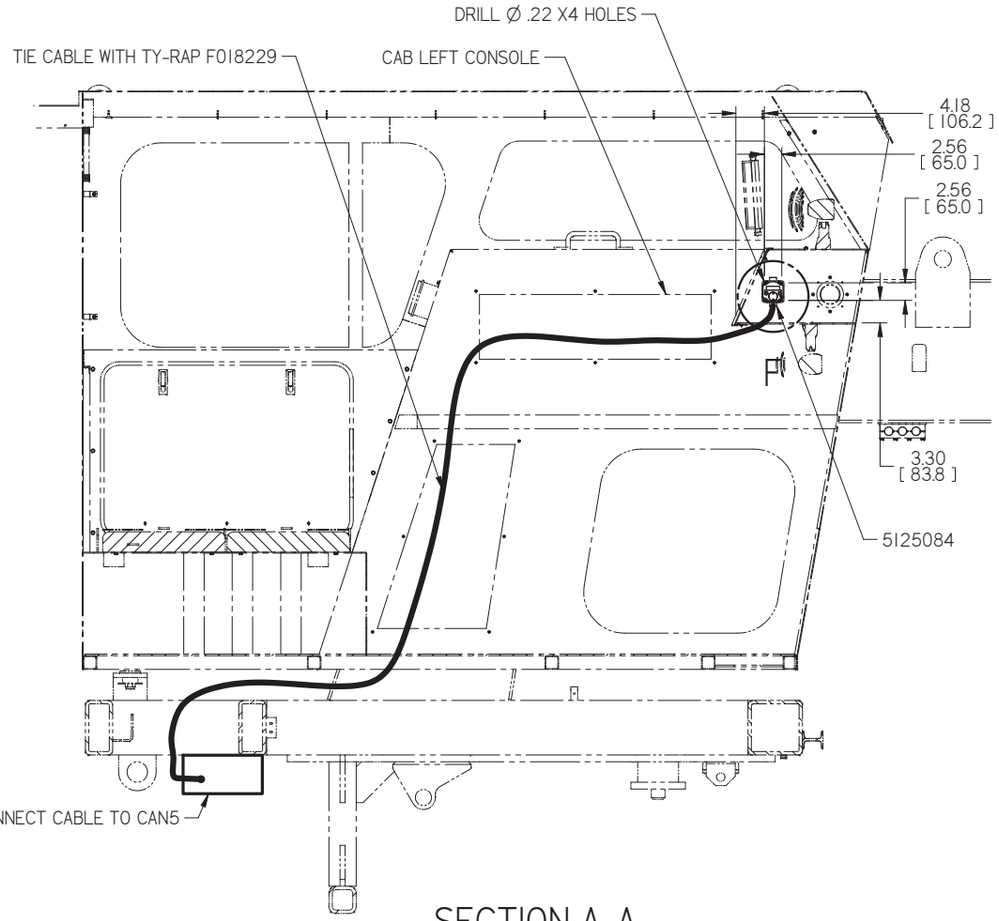
CHANGE	R/L	REVISION	DR	DATE
EC614807	A	NEW RELEASE	AVS	03/08/21
EC615535	B	VIEWS REARRANGED, ITEMS REORDERED, ADDED SHEET#4,5.	BKP	06/24/21
EC615800	C	ADDED IT.18.	BKP	08/12/21
EC615938	D	ADDED IT.19,20. IN SHEET# 4 ADDED DETAIL F.	BKP	09/02/21

Description: BUGGY DERAIL ALARM KIT-MARK IV

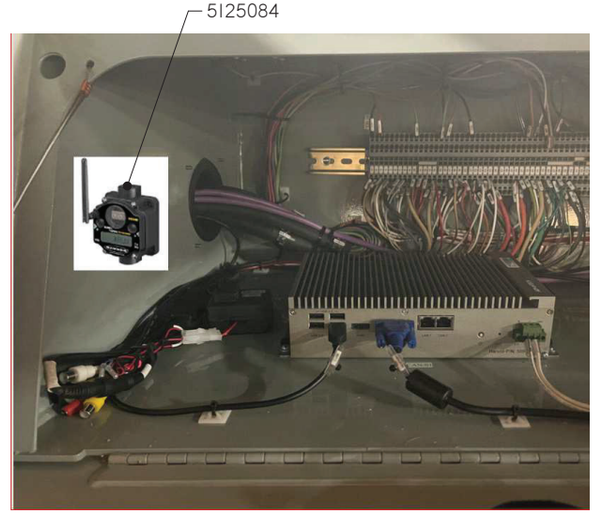
HARSCO RAIL

Material:
Machine Type: MARK IV
Size: D
Weight: 52.4 lbm
Drawn: vamin
Date Drawn: 03/08/2021
Part Number: 5122545
Sheet: 3 of 5
SOLID EDGE DRAWING
DO NOT SCALE

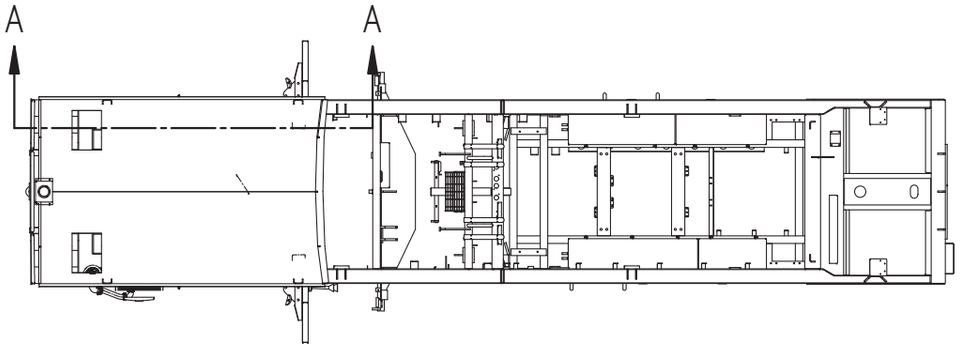
LEFT CONSOLE

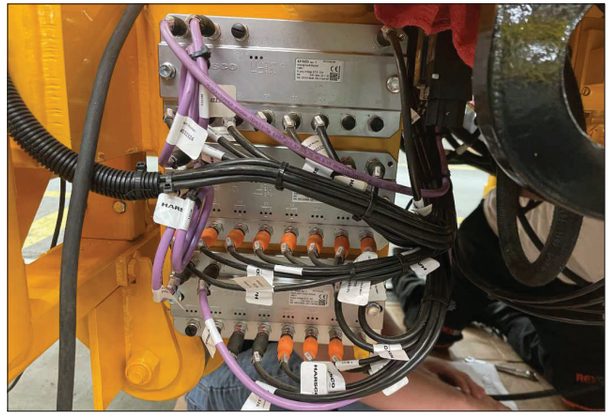


SECTION A-A

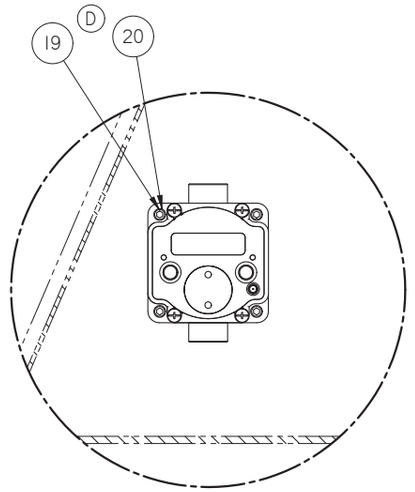


FRONT CONSOLE





CONNECT CABLE TO CAN



Ⓓ DETAIL F

Inch
[mm]

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FEATURES ENCLOSED IN ⬭ ARE KEY CHARACTERISTICS

NOMINAL SIZE RANGE		INCH PLUS OR MINUS 2 PLACE DECIMAL	3 PLACE DECIMAL	NOMINAL SIZE RANGE		METRIC PLUS OR MINUS 1 PLACE DECIMAL	2 PLACE DECIMAL
OVER	TO			OVER	TO		
0	6	.03	.005	0	150	.8	.13
6	24	.04	.008	150	600	1.0	.20
24	-	.06	.010	600	-	1.5	.25

UNLESS OTHERWISE SPECIFIED:
1. REMOVE BURRS AND BREAK SHARP EDGES
2. ALL MACHINE SURFACES TO WILL HAVE: MAXIMUM ROUGHNESS OF 125 MICROINCHES ANGULAR TOLERANCE OF ± 30' CONCENTRICITY WITHIN .010
3. ALL WELDS SHOULD ADHERE TO THE MOST CURRENT AWS WELDING STANDARDS
4. TORQUE ALL FASTENERS PER STD-16030
5. TORQUE ALL FITTINGS PER STD-5369

THIRD ANGLE PROJECTION

DRAFTED PER HARSCO RAIL STANDARD STD-1601D

CHANGE	R/L	REVISION	DR	DATE
EC614807	A	NEW RELEASE	AVS	03/08/21
EC615535	B	VIEWS REARRANGED, ITEMS REORDERED, ADDED SHEET#4,5.	BKP	06/24/21
EC615800	C	ADDED IT.18.	BKP	08/12/21
EC615938	D	ADDED IT.19,20. IN SHEET# 4 ADDED DETAIL F.	BKP	09/02/21

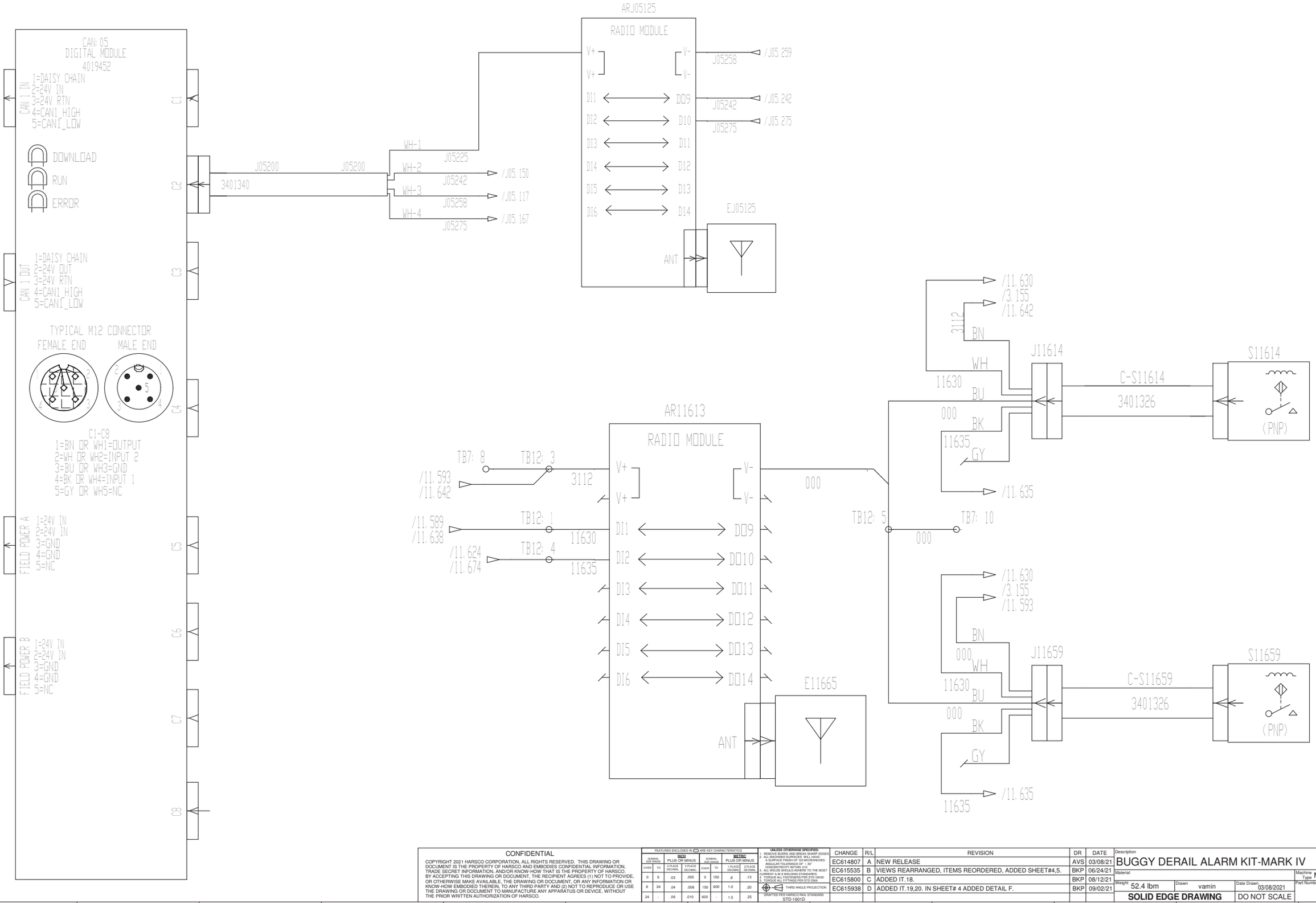
Description: BUGGY DERAIL ALARM KIT-MARK IV

HARSCO RAIL

Material | Machine Type: MARK IV | Size: D

Weight: 52.4 lbm | Drawn: vamin | Date Drawn: 03/08/2021 | Part Number: 5122545 | Sheet: 4 of 5

SOLID EDGE DRAWING | DO NOT SCALE



Inch
[mm]

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FEATURES ENCLOSED IN ⬭ ARE KEY CHARACTERISTICS

INCH NOMINAL SIZE RANGE		PLUS OR MINUS 2 PLACE DECIMAL	PLUS OR MINUS 3 PLACE DECIMAL	METRIC NOMINAL SIZE RANGE		PLUS OR MINUS 1 PLACE DECIMAL	PLUS OR MINUS 2 PLACE DECIMAL
OVER	TO			OVER	TO		
0	6	.03	.005	0	150	.8	.13
6	24	.04	.008	150	600	1.0	.20
24	-	.06	.010	600	-	1.5	.25

UNLESS OTHERWISE SPECIFIED:
1. REMOVE BURRS AND BREAK SHARP EDGES
2. ALL MACHINED SURFACES WILL HAVE A SURFACE FINISH OF 125 MICROINCHES ANGULAR TOLERANCE OF ± .50° CONCENTRICITY WITHIN .010
3. ALL WELDS SHOULD ADHERE TO THE MOST CURRENT A.W.S WELDING STANDARDS
4. TORQUE ALL FASTENERS PER STD-16030 UNLESS ALL FITTINGS PER STD-5563

THIRD ANGLE PROJECTION

DRAFTED PER HARSCO RAIL STANDARD STD-1601D

CHANGE	R/L	REVISION	DR	DATE
EC614807	A	NEW RELEASE	AVS	03/08/21
EC615535	B	VIEWS REARRANGED, ITEMS REORDERED, ADDED SHEET#4,5.	BKP	06/24/21
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Description: BUGGY DERAIL ALARM KIT-MARK IV

HARSCO RAIL

Material: 52.4 lbm | Drawn: vamin | Date Drawn: 03/08/2021 | Weight | Machine Type: MARK IV | Size: D | Part Number: 5122545 | Sheet: 5 of 5

SOLID EDGE DRAWING | DO NOT SCALE