

Arctic Weather Option 090123



Cole Hinkle

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BACKGROUND

- For highest level of cold weather protection, trucks need the following:
 - Cold Weather Package
 - Extreme cold weather fluids
 - Arctic weather package
- Includes: Cold air shields, battery management, insulative blankets, and condensate freeze prevention
- Time Frame: Ready for machines built in Nov. 2023



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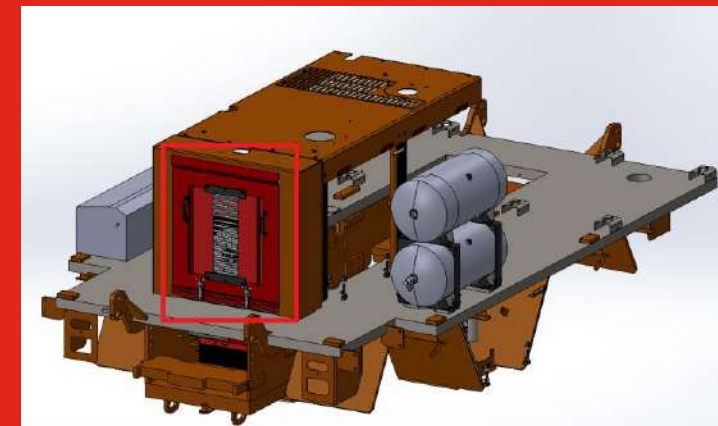
Radiator Shielding – Upper

ISSUE: Freezing air reaching radiator, machine temps too low

VENTED RADIATOR SHIELD WITH SLIDING CLOSEOUT

OPEN

CLOSED



Installation:

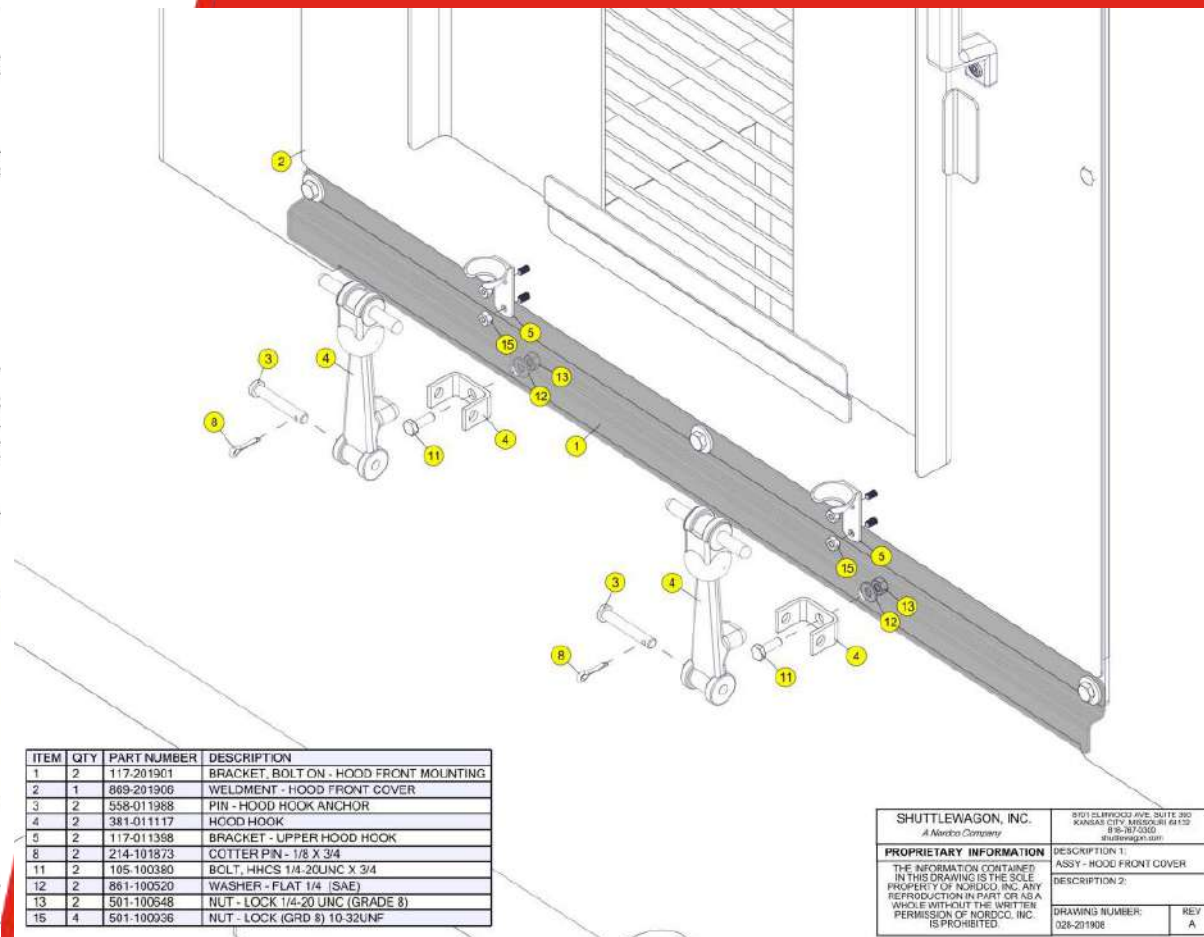
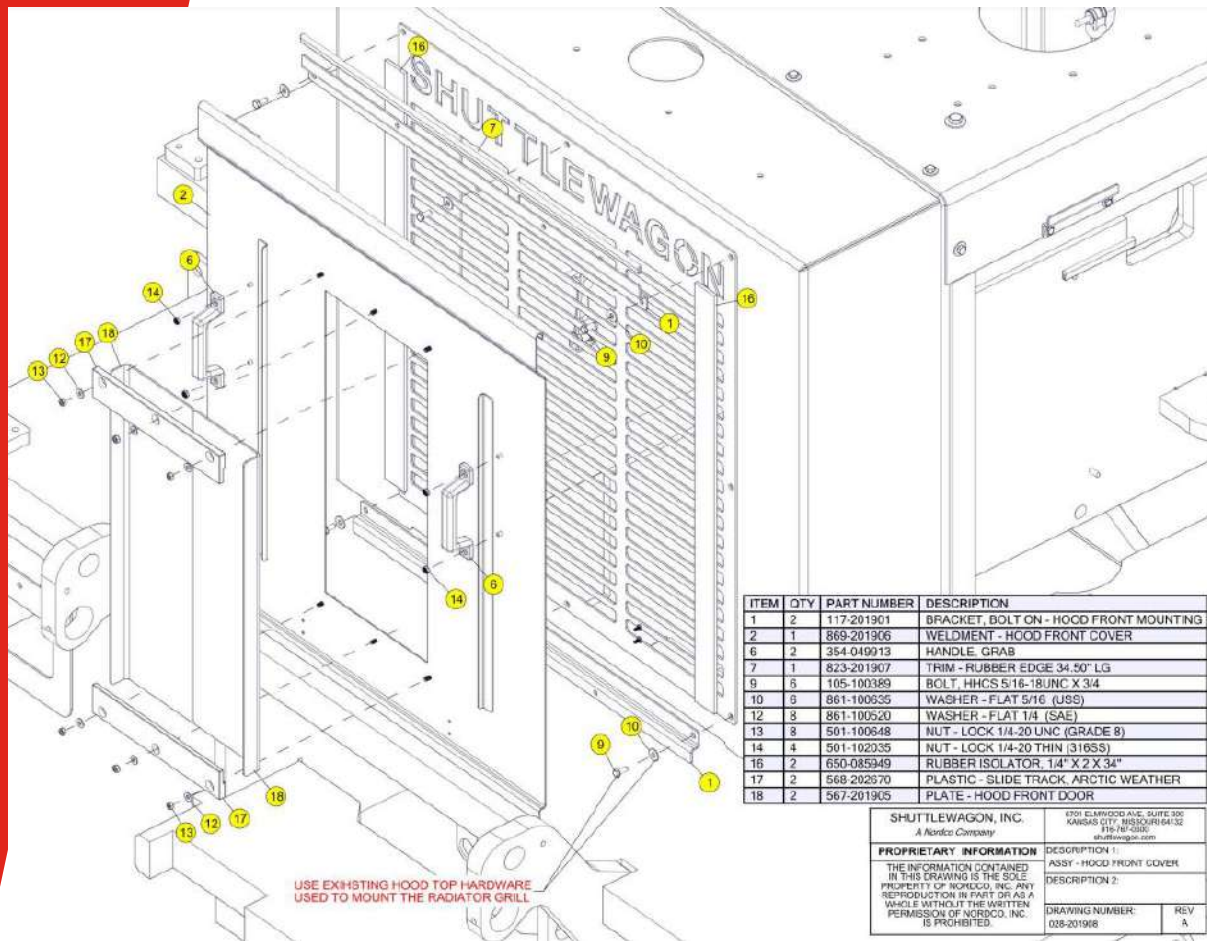
- Similar mounting style to hood cover panels
- Utilizes existing grill mounting points.
- Can be taken on and off just like side cover panels

Radiator Shielding – Upper

Sample parts installation



Radiator Shielding - Upper Installation

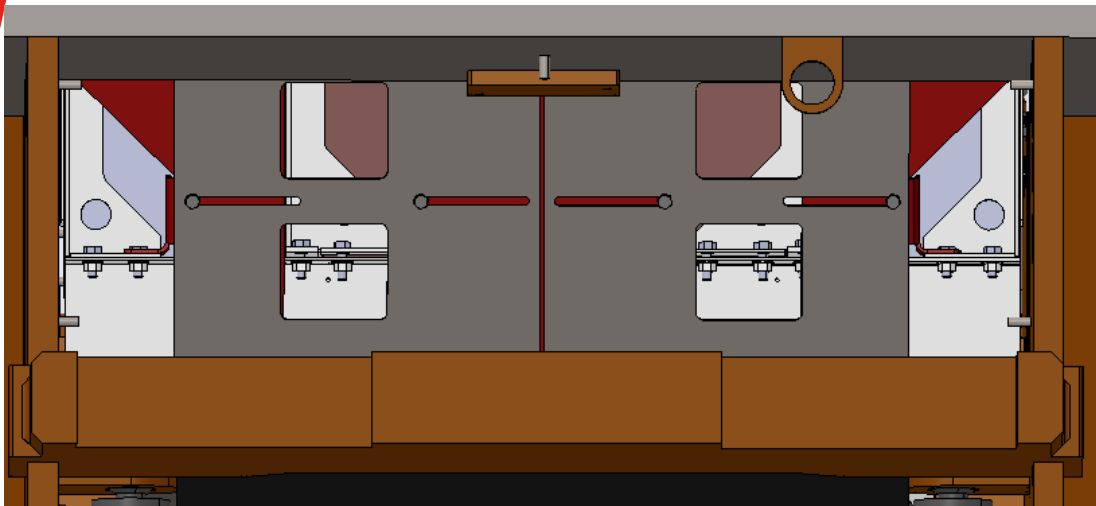


Radiator Shielding – Lower

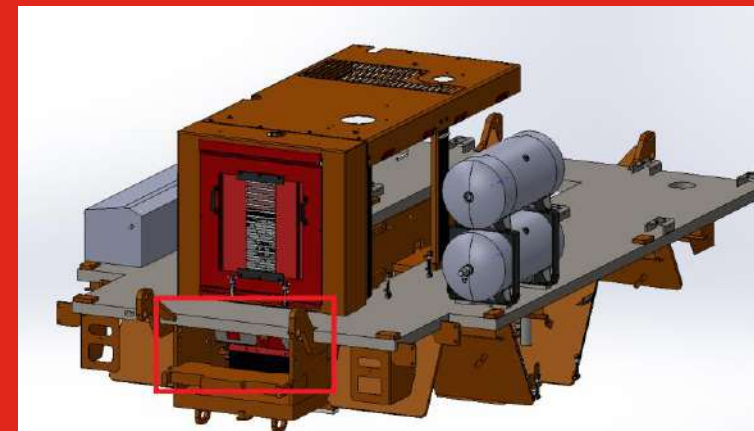
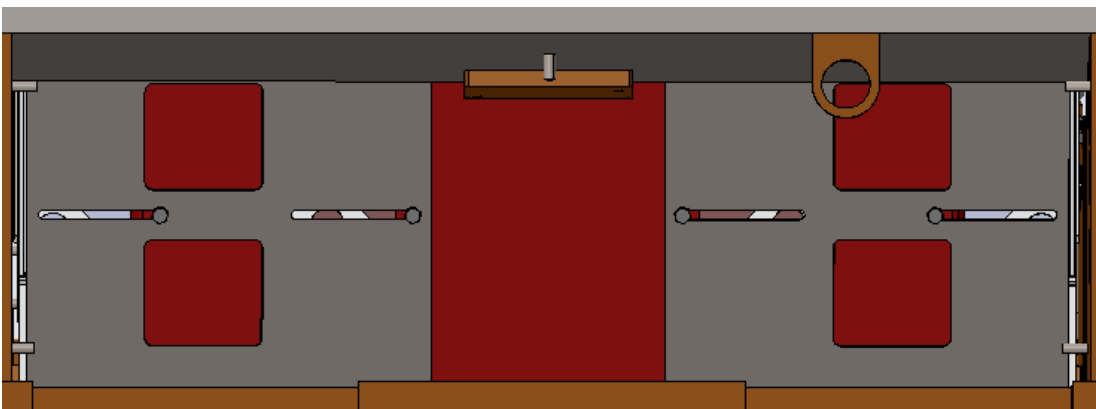
ISSUE: Freezing air reaching radiator, machine temps too low

VENTED SHIELD WITH SLIDING CLOSEOUT

OPEN



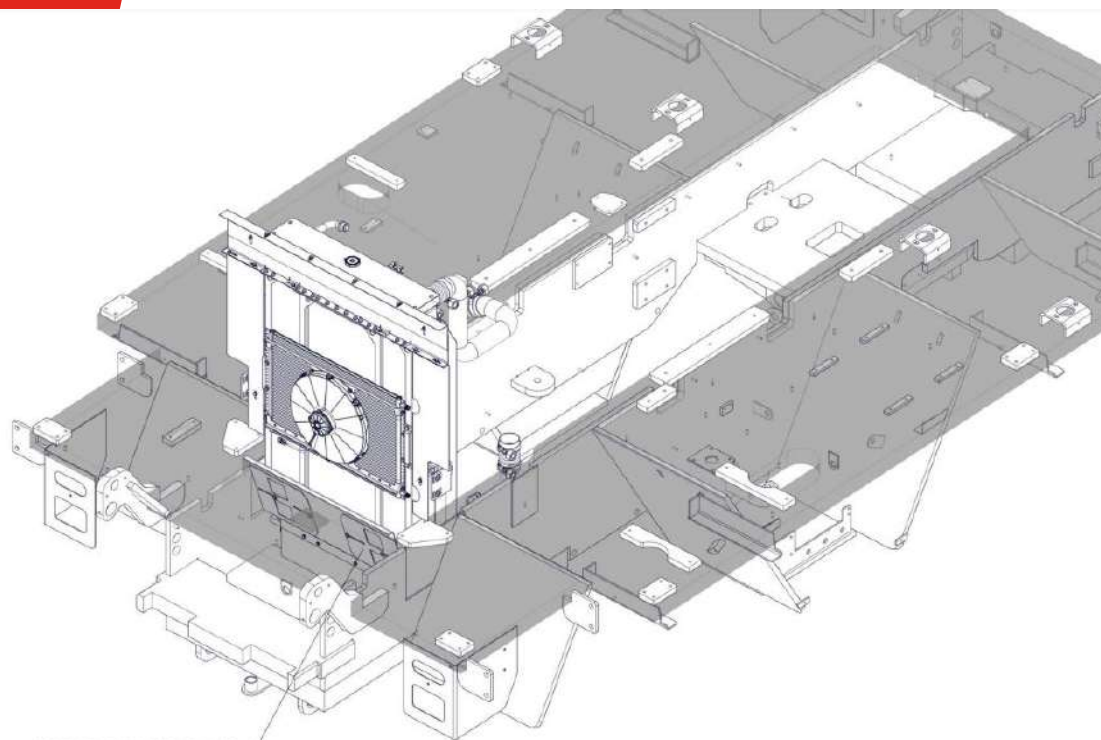
CLOSED



Installation:

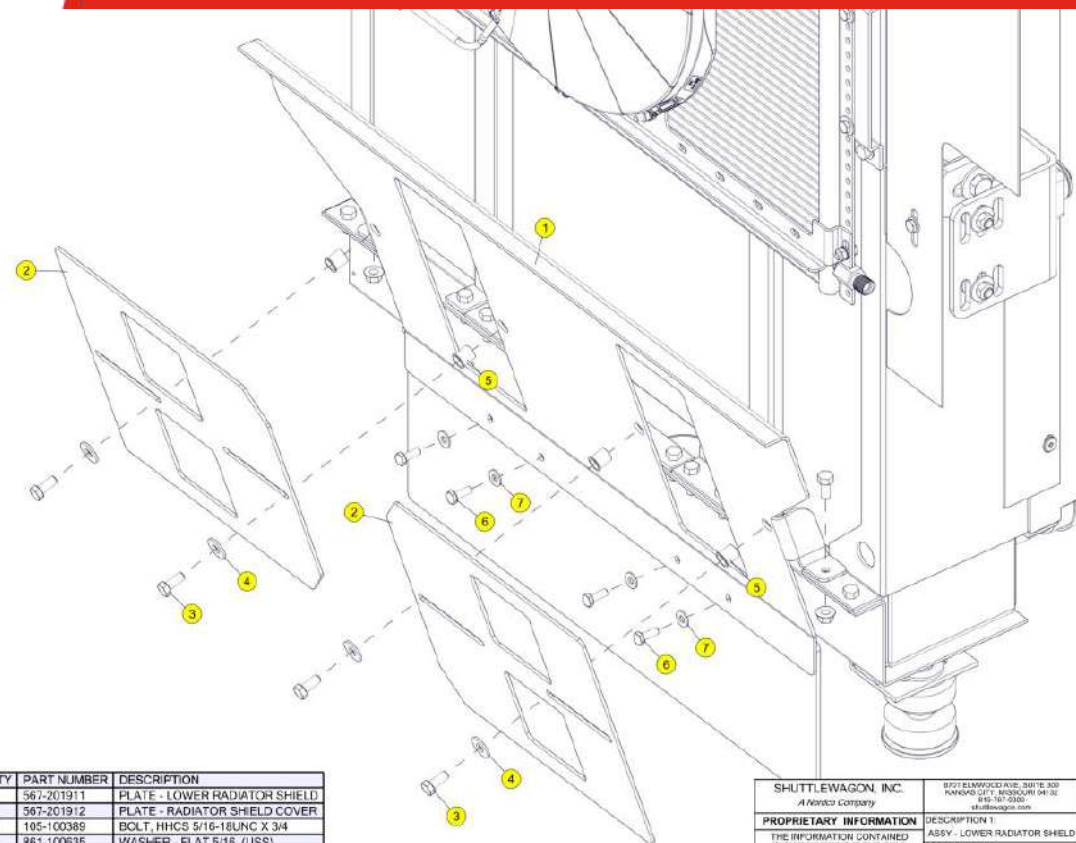
- Utilizes existing radiator mounting points.
- Can be opened and closed to account for various operating temps

Radiator Shielding - Lower Installation



LOWER RADIATOR SHIELD

SHUTTLEWAGON, INC. A Nordco Company		8701 ELMWOOD AVE. SUITE 300 PARKING LOT 1, WOODBURN, IN 46181-1013 shuttlewagon.com
PROPRIETARY INFORMATION THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF NORDCO, INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF NORDCO, INC. IS PROHIBITED.	DESCRIPTION 1: ASSY - LOWER RADIATOR SHIELD	
	DESCRIPTION 2:	
	DRAWING NUMBER:	REV
	028-201913	A

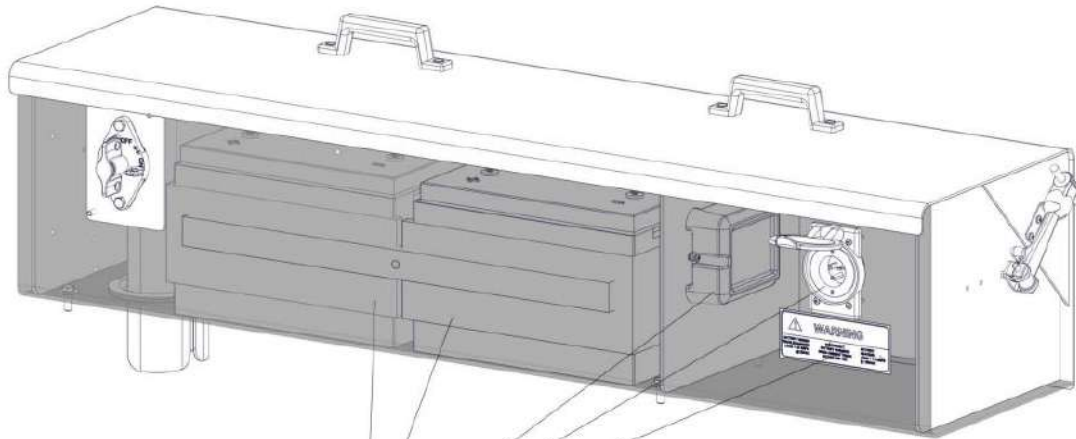


ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	567-201911	PLATE - LOWER RADIATOR SHIELD
2	2	567-201912	PLATE - RADIATOR SHIELD COVER
3	4	105-100389	BOLT, HHCS 5/16-18UNC X 3/4
4	4	861-100835	WASHER - FLAT 5/16 (USS)
5	4	523-101082	NUTSERF - 5/16-18 UNC
6	4	105-100380	BOLT, HHCS 1/4-20UNC X 3/4
7	4	861-100520	WASHER - FLAT 1/4 (SAE)

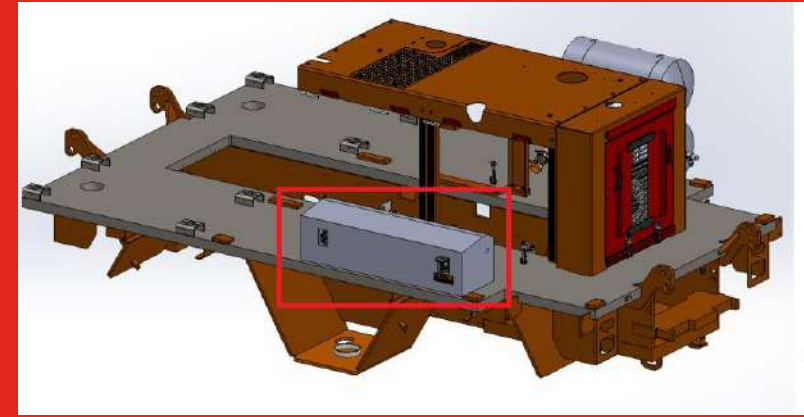
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	DESCRIPTION 2:	
	DRAWING NUMBER:	REV
	028-201913	A

Battery Maintenance – 120V

ISSUE: Batteries become cold and lose charge.
Relays become too cold to allow start.



ARCTIC WEATHER, BATTERY BOX

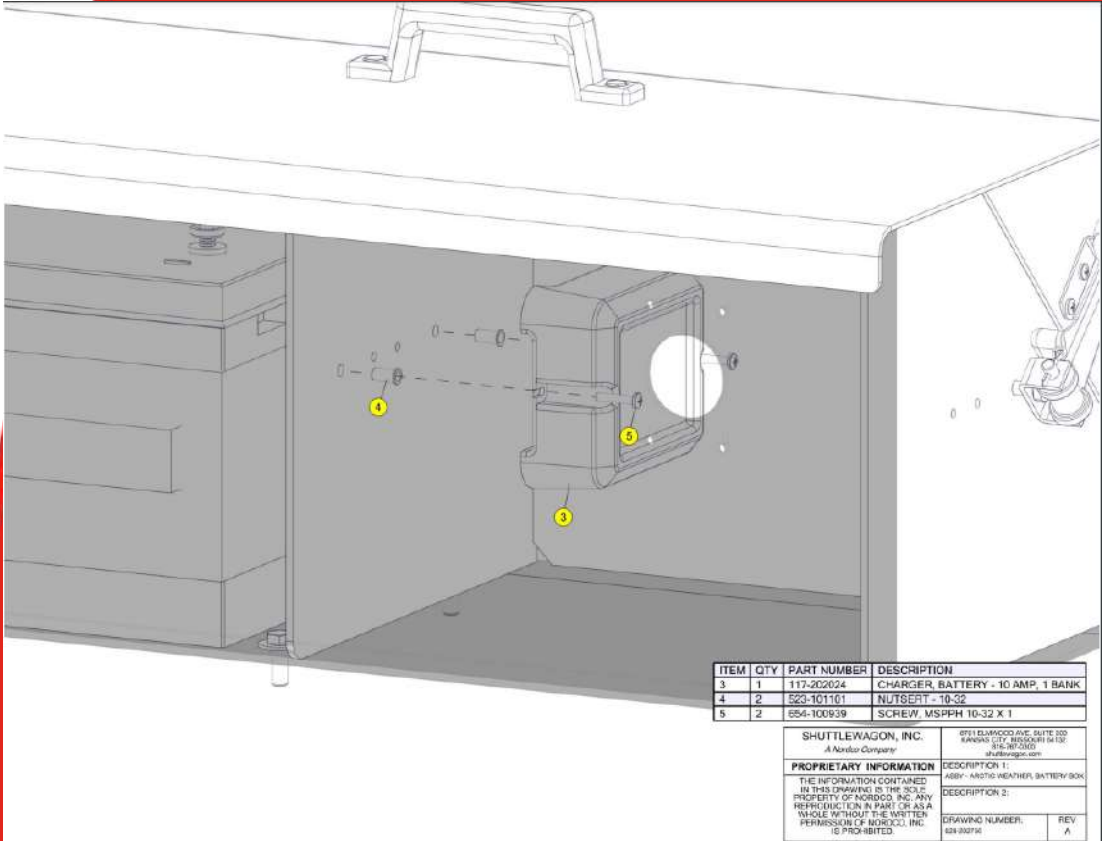
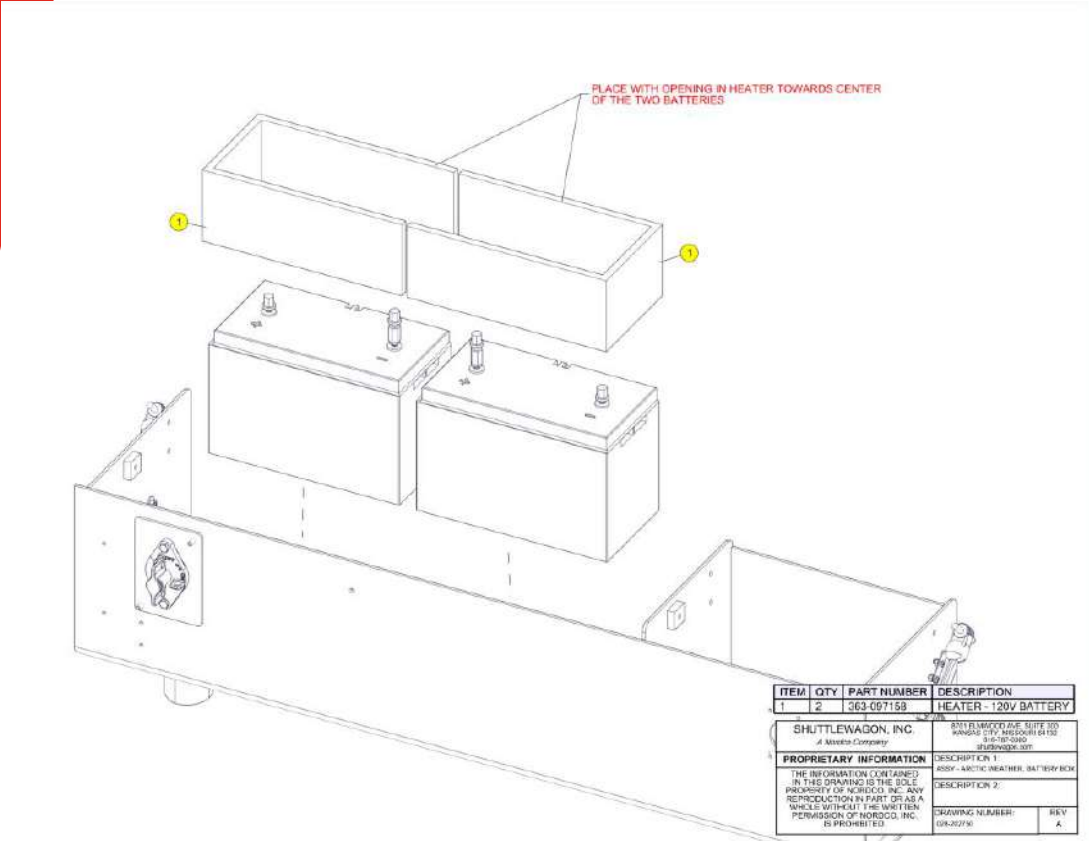


120VAC battery maintenance system, self contained in the battery box.

- 120V Outlet
- 2X Heated battery blankets
 - 0.67A each
- Battery Charger/Maintainer
 - 10 A

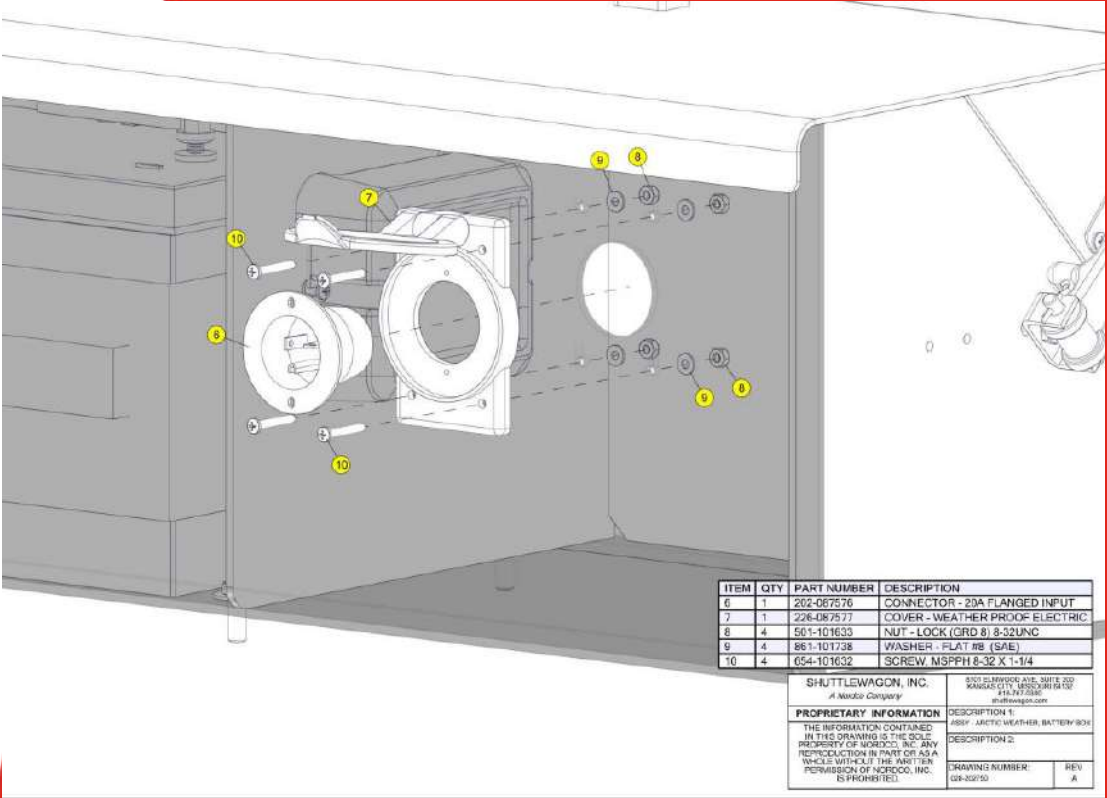
Battery Maintenance – 120V

INATALLATION – Charger and Warmers.



Battery Maintenance – 120V

INATALLATION – Plugs and Harness

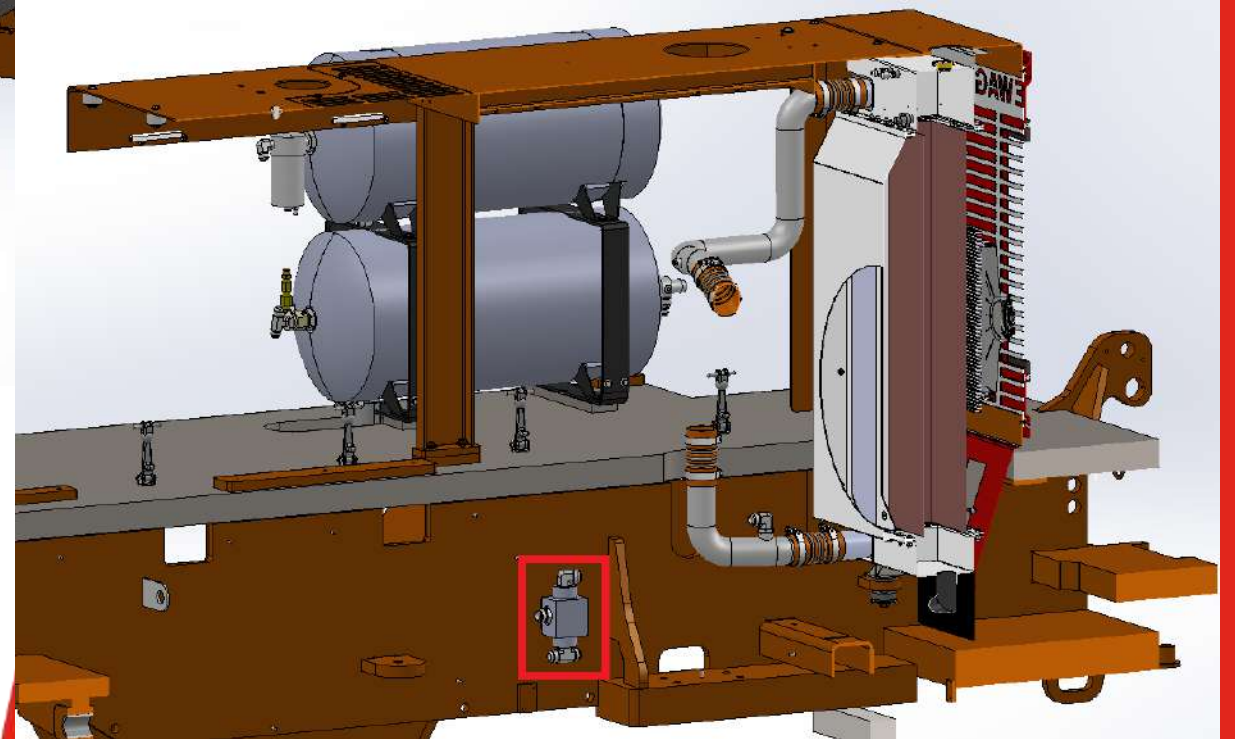
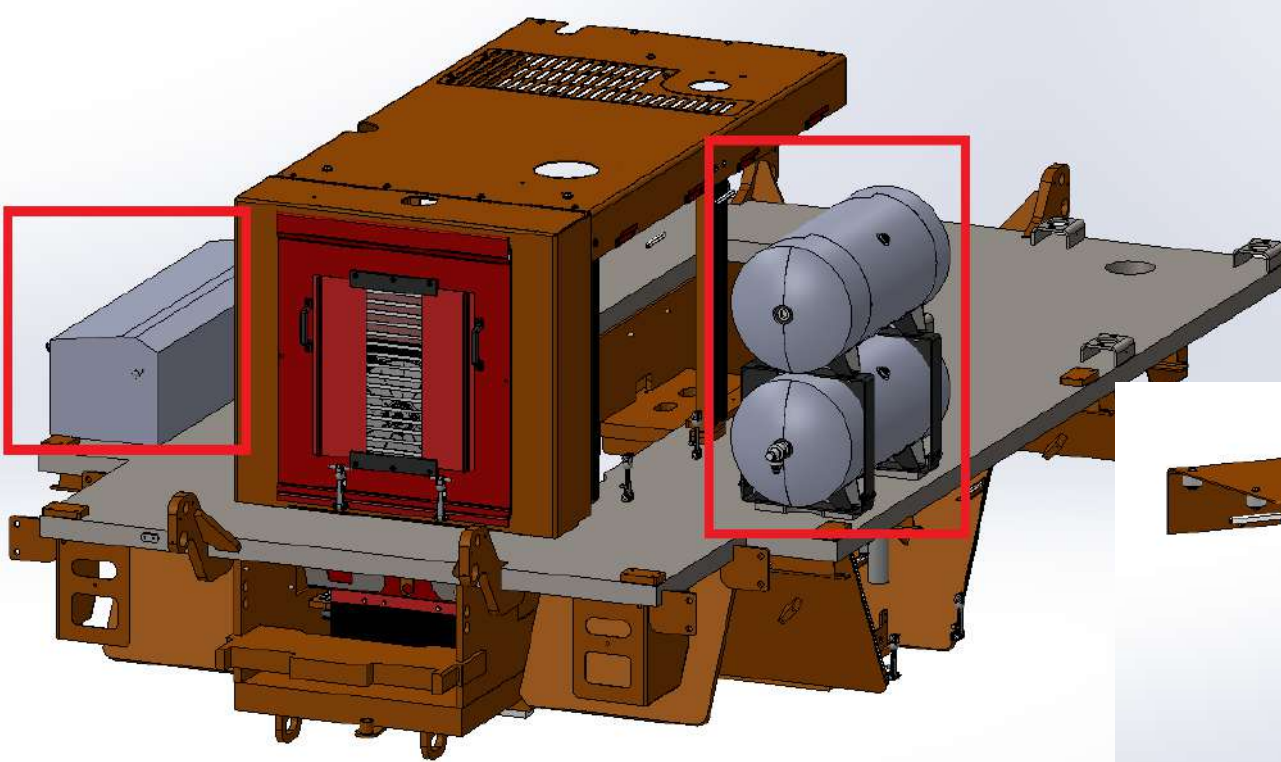


ITEM	QTY	PART NUMBER	DESCRIPTION
6	1	202-087576	CONNECTOR - 20A FLANGED INPUT
7	1	226-087577	COVER - WEATHER PROOF ELECTRIC
8	4	501-101633	NUT - LOCK (GRD 8) 8-32UNC
9	4	861-101738	WASHER - FLAT #8 (SAE)
10	4	054-101632	SCREW, MSPPH 8-32 X 1-1/4

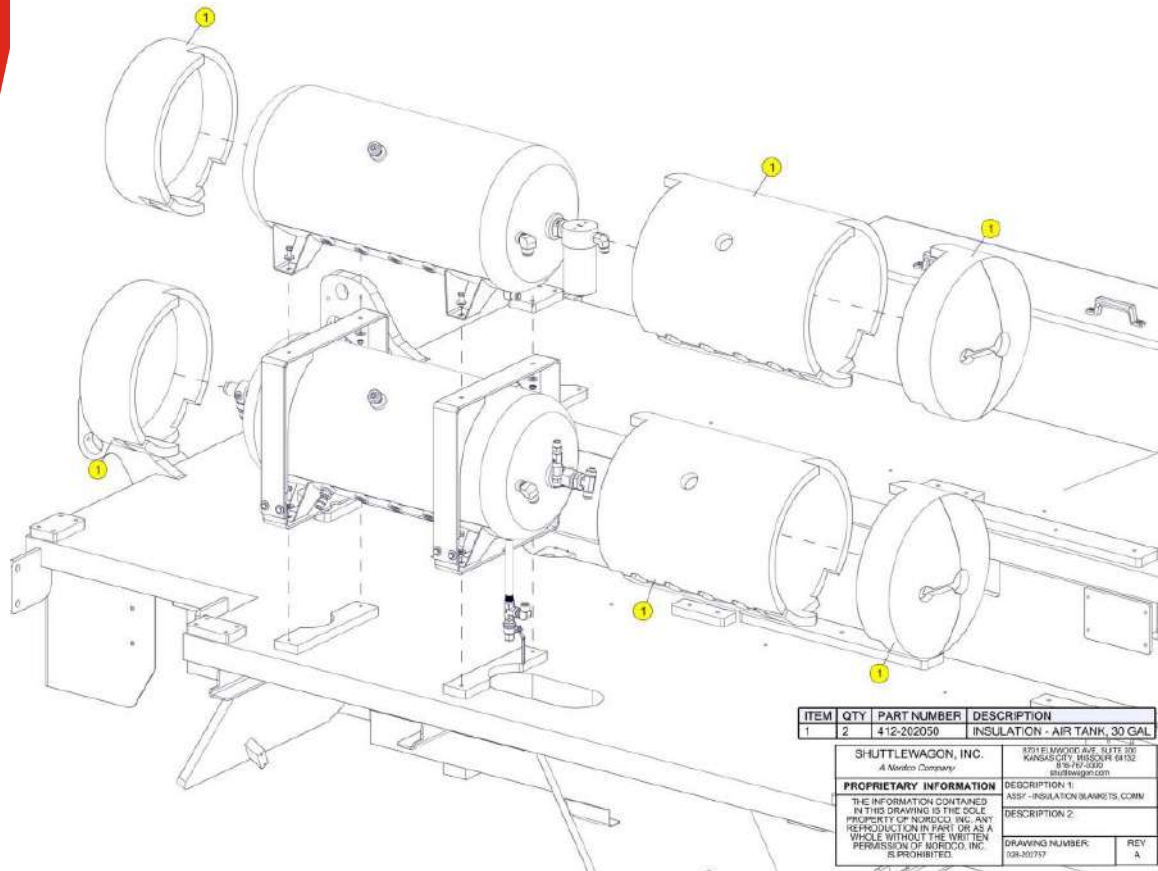
SHUTTLEWAGON, INC. A Nordic Company		550 SUMMIT AVE., SUITE 200 WANDUOCTON, MASSACHUSETTS 01977-0000 shuttlewagon.com
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		REV A

Insulation Blankets

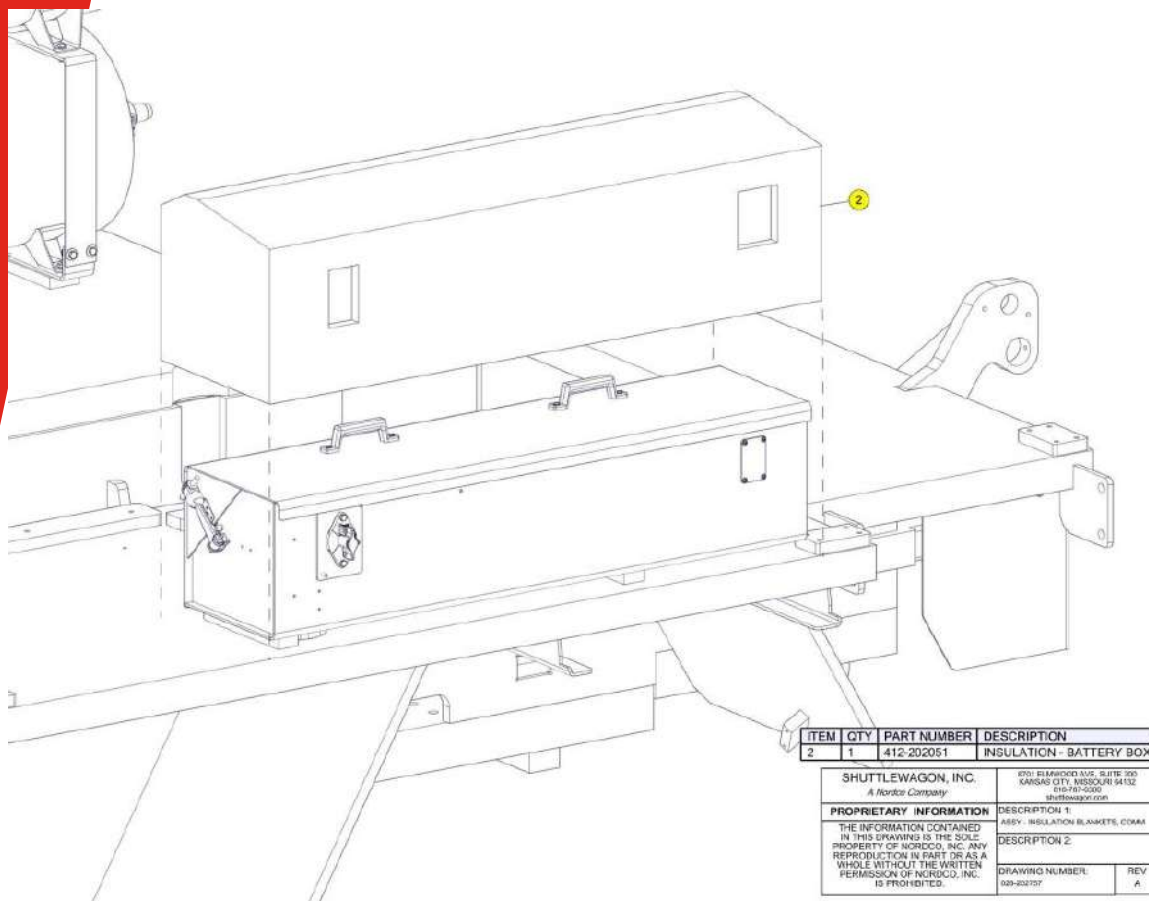
ISSUE: Extreme weather conditions affecting Thermal Bypass, Air Tanks, and Battery Box



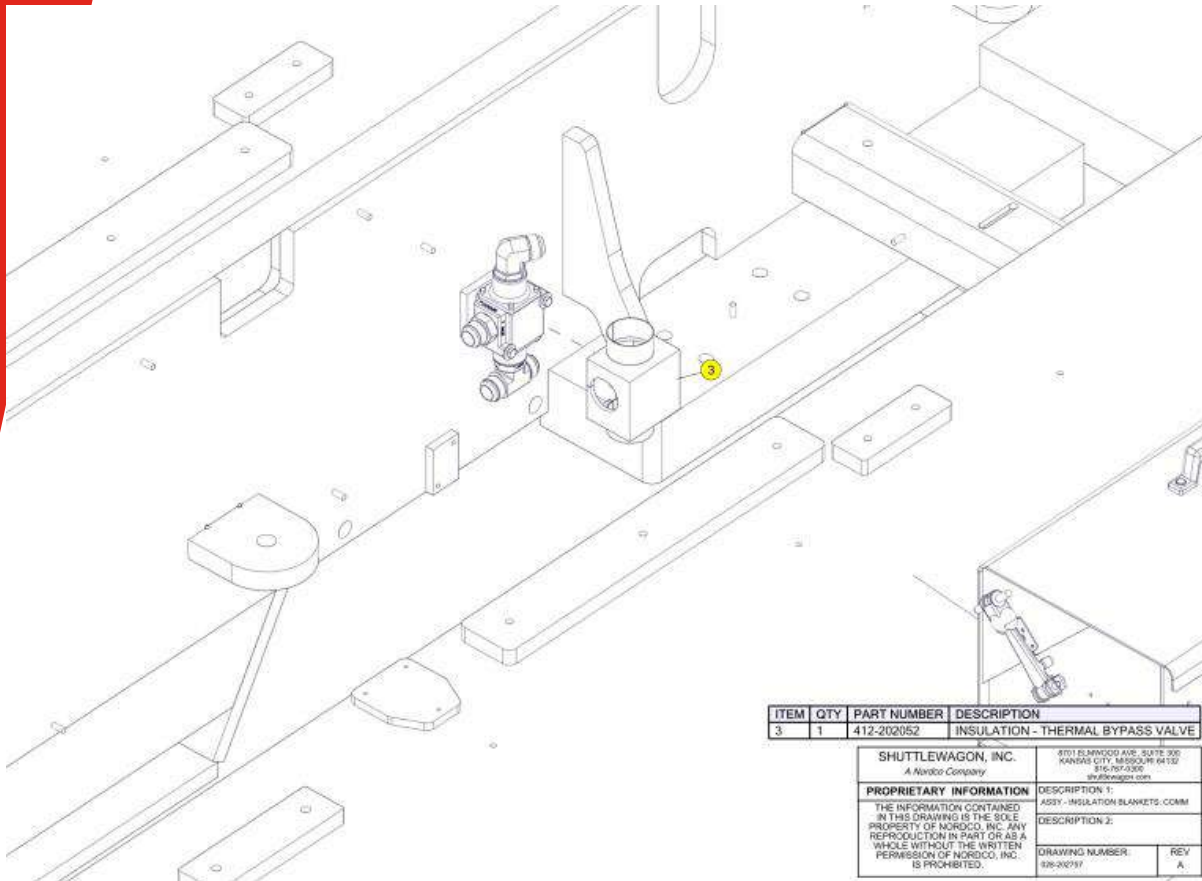
Insulation Blankets – Air Tanks Installation



Insulation Blankets – Battery Box Installation

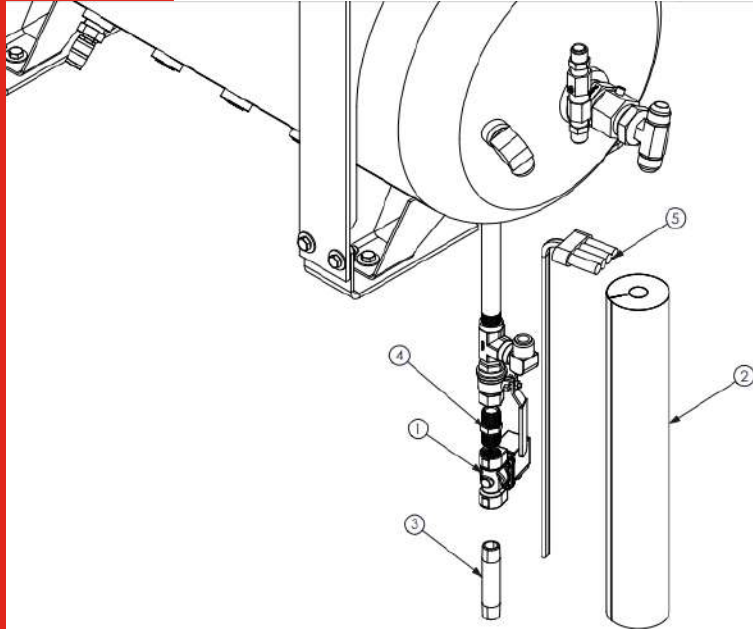


Insulation Blankets – Thermal Bypass Installation



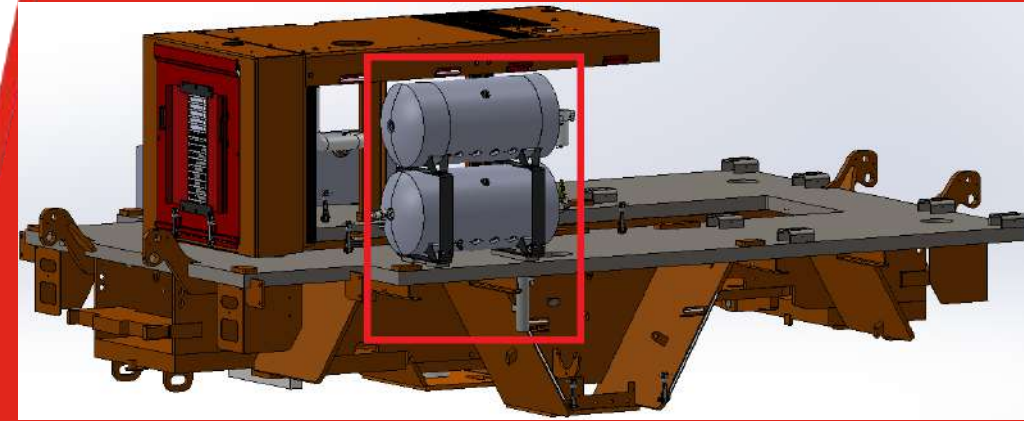
Condensate Freezing Prevention

ISSUE: Condensate in the air tanks is freezing.



REV.	ECO	DESCRIPTION	DATE	NAME
A	-	RELEASED TO PRODUCTION		

ITEM	QTY.	PART NUMBER	REV.	AMOUNT	UNITS	DESCRIPTION
7	1	315-016480	M	-	EA	FRAME ASSY - SWX315 COMMANDER
6	1	028-087956	G	-	EA	ASSY - AIR RESERVOIR RAIL/KNIFE
5	1	360-202417	-	-	EA	HARNESS - HEAT TRACE
4	1	300-093528	A	-	EA	FITTING - NIPPLE * 540408-08
3	1	300-083306	-	-	EA	FITTING - NIPPLE * 5400N-B-4
2	1	412-202754	A	-	EA	INSULATION - 1/2" NPT, 1" THK, 18" LONG
1	1	845-201917	A	-	EA	VALVE, SOLENOID - 1/2" NPT, 2-WAY 2-POS



Freeze Prevention:

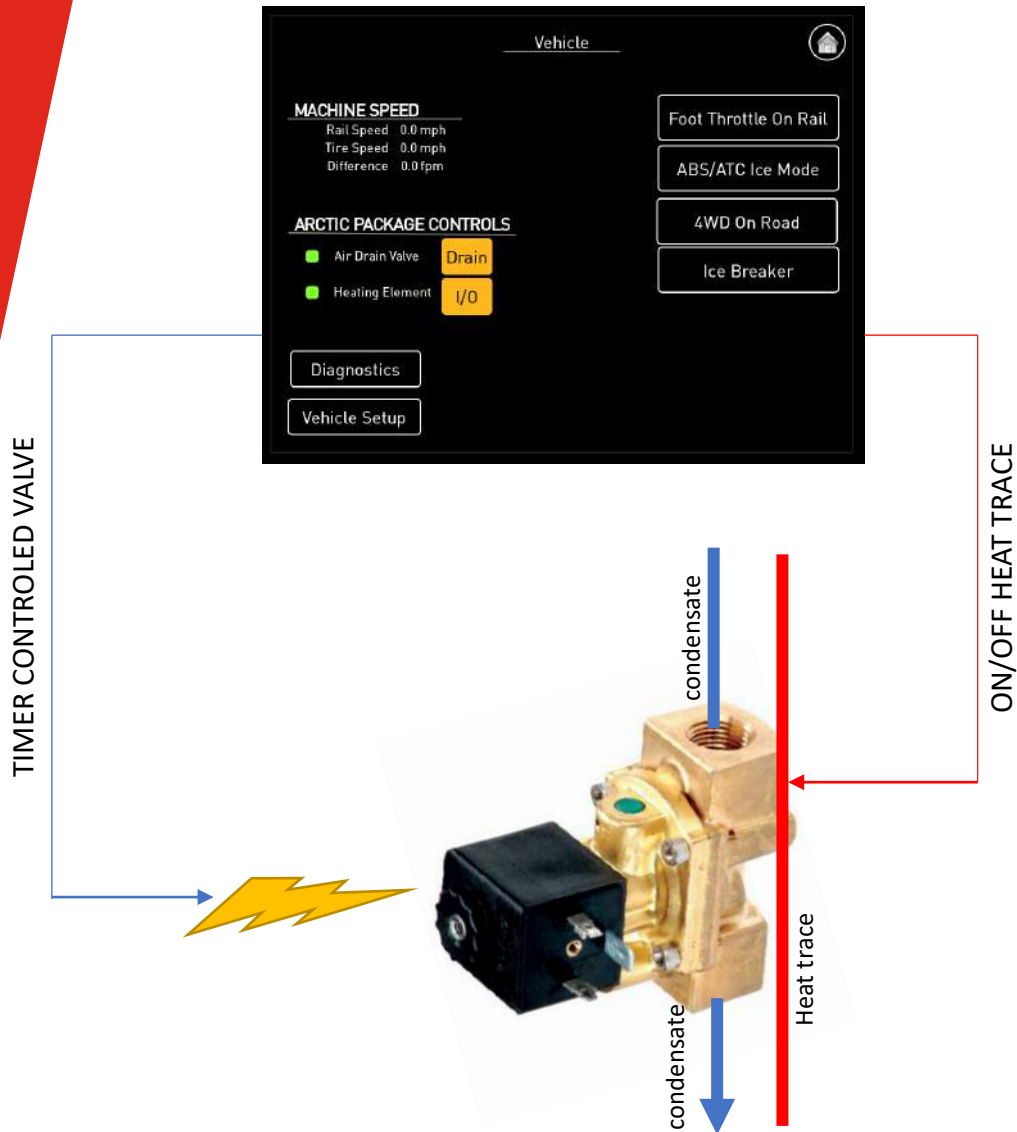
- Air Tank Blanket
- 12VDC Time adjustable condensate drain (Adjustable from the cab controls)
- Down-pipe insulation
- 12VDC Self regulating heat trace:

Electrical Components:

- 1/2" Solenoid Valve
 - 0.84A
- 3ft Heat Trace
 - 0.25A/ft

Condensate Freezing Prevention

ISSUE: Condensate in the air tanks is freezing.



PASSCODE PROTECTED SETTINGS

The screenshot shows the 'Arctic package option' settings menu. It features a key icon and a warning icon. The settings are as follows:

Setting	Value	Action
Drain Valve Enable	On	...
Heating Element Enable	On	...
Drain Valve ON time (Seconds)	1	...
Drain Valve OFF time (minutes)	5	...
Drain Valve time (minutes) After Ignition delay	5	...

STANDARD SETTINGS W/ OPTION ON

- HEAT TRACE ON
- VALVE OPENS FOR X SEC EVERY Y MIN