

Eaton® Internal Battery Instructions

For use with the Eaton 9355 (20/30kVA) UPS



p/n: 164201708
Revision 03

IMPORTANT SAFETY INSTRUCTIONS SAVE THESE INSTRUCTIONS

This manual contains important instructions that you should follow during installation and maintenance of the UPS and batteries. Please read all instructions before operating the equipment and save this manual for future reference.

CONSIGNES DE SÉCURITÉ IMPORTANTES – CONSERVER CES INSTRUCTIONS

Ce manuel comporte des instructions importantes que vous êtes invité à suivre lors de toute procédure d'installation et de maintenance de la PDU. Veuillez consulter entièrement ces instructions avant de faire fonctionner l'équipement et conserver ce manuel afin de pouvoir vous y reporter ultérieurement.

**IMPORTANT**

To ensure you have the most up-to-date content and information for this product, please review the latest manual revision on our website, www.eaton.com/9355.

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Table of Contents

1 Safety Warnings and Symbols, Controls, and Indicators	1
1.1 Safety Warnings.....	1
1.2 Consignes de Sécurité.....	2
1.3 Advertencias de Seguridad	3
1.4 Symbols, Controls, and Indicators	4
2 Installation	5
2.1 Battery Type.....	5
2.2 Removing and Replacing the UPS Front Door	5
2.3 Installing the Internal Batteries	6

Table of Contents

Chapter 1 Safety Warnings and Symbols, Controls, and Indicators

1.1 Safety Warnings

IMPORTANT SAFETY INSTRUCTIONS SAVE THESE INSTRUCTIONS

This manual contains important instructions that you should follow during installation and maintenance of the UPS and batteries. Please read all instructions before operating the equipment and save this manual for future reference.

DANGER

This UPS contains LETHAL VOLTAGES. All repairs and service should be performed by AUTHORIZED SERVICE PERSONNEL ONLY. There are NO USER SERVICEABLE PARTS inside the UPS.

WARNING

The UPS is intended to be operated only with batteries installed. When batteries are not installed a tip hazard exists that could result in bodily injury.

CAUTION

- Servicing should be performed by qualified service personnel knowledgeable of batteries and required precautions. Keep unauthorized personnel away from batteries.
 - Batteries can present a risk of electrical shock or burn from high short circuit current. The following precautions should be observed: 1) Remove watches, rings, or other metal objects; 2) Use tools with insulated handles; 3) Do not lay tools or metal parts on top of batteries; 4) Disconnect charging source prior to connecting or disconnecting battery terminals; 5) Wear voltage rated gloves and electrical hazard footwear.
 - When replacing batteries, replace with the same type and number of batteries or battery packs. Contact your service representative to order new batteries.
 - Proper disposal of batteries is required. Refer to your local codes for disposal requirements.
 - Never dispose of batteries in a fire. Batteries may explode when exposed to flame.
 - Do not open or mutilate the battery or batteries. Released electrolyte is harmful to the skin and eyes and may be extremely toxic.
 - Determine if the battery is inadvertently grounded. If inadvertently grounded, remove source of ground. Contact with any part of a grounded battery can result in electrical shock. The likelihood of such shock will be reduced if such grounds are removed during installation and maintenance (applicable to equipment and remote battery supplies not having a grounded supply circuit).
 - ELECTRIC ENERGY HAZARD. Do not attempt to alter any battery wiring or connectors. Attempting to alter wiring can cause injury.
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1.2 Consignes de Sécurité

CONSIGNES DE SÉCURITÉ IMPORTANTES – CONSERVER CES INSTRUCTIONS

Ce manuel comporte des instructions importantes que vous êtes invité à suivre lors de toute procédure d'installation et de maintenance des batteries et de l'ASI. Veuillez consulter entièrement ces instructions avant de faire fonctionner l'équipement et conserver ce manuel afin de pouvoir vous y reporter ultérieurement.

 **DANGER!**

Cet onduleur contient des TENSIONS MORTELLES. Toute opération d'entretien et de réparation doit être EXCLUSIVEMENT CONFIEE A UN PERSONNEL QUALIFIE AGRÉÉ. AUCUNE PIÈCE RÉPARABLE PAR L'UTILISATEUR ne se trouve dans l'onduleur.

 **AVERTISSEMENT!**

L'ASI est conçue pour fonctionner seulement avec les batteries installées. Lorsque les batteries ne sont pas installées, il existe un risque de chute pouvant engendrer des dommages corporels.

 **ATTENTION!**

- L'entretien doit être réalisé par du personnel qualifié connaissant bien les batteries et les précautions nécessaires. N'autorisez aucun personnel non qualifié à manipuler les batteries.
 - Les batteries peuvent présenter un risque de choc électrique ou de brûlure provenant d'un courant de court-circuit haute intensité. Les précautions suivantes doivent être observées : 1) Retirez montre, bagues ou autres objets métalliques ; 2) Utilisez des outils aux poignées isolantes ; 3) Ne déposez pas d'outils ou de pièces métalliques sur les batteries ; 4) Déconnectez la source de chargement avant de connecter ou de déconnecter les bornes de batterie.
 - Remplacez uniquement les batteries par des batteries ou blocs de batteries présentant les mêmes type et numéro.
 - Une mise au rebut réglementaire des batteries est obligatoire. Consulter les règlements en vigueur dans votre localité.
 - Ne jamais jeter les batteries au feu. L'exposition aux flammes risque de les faire exploser.
 - Vous ne devez en aucun cas ni ouvrir ni détruire la ou les batteries. L'électrolyte qui s'en échappe est nuisible à la peau et aux yeux et peut s'avérer extrêmement toxique.
 - Déterminez si la batterie est mise à la terre par inadvertance. Si celle-ci est mise à la terre par inadvertance, retirez la source de terre. Tout contact avec une partie d'une batterie mise à la terre peut engendrer un choc électrique. La probabilité d'un tel choc sera réduite si de telles masses sont retirées durant l'installation et la maintenance.
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1.3 Advertencias de Seguridad

INSTRUCCIONES DE SEGURIDAD IMPORTANTES – GUARDE ESTAS INSTRUCCIONES

Este manual contiene instrucciones importantes que debe seguir durante la instalación y el mantenimiento del SIE y de las baterías. Por favor, lea todas las instrucciones antes de poner en funcionamiento el equipo y guarde este manual para referencia en el futuro.

PELIGRO

Este SIE contiene VOLTAJES MORTALES. Todas las reparaciones y el servicio técnico deben ser efectuados SOLAMENTE POR PERSONAL DE SERVICIO TÉCNICO AUTORIZADO. No hay NINGUNA PARTE QUE EL USUARIO PUEDA REPARAR dentro del SIE.

ADVERTENCIA

El SIE está diseñada para hacerla funcionar solamente con las baterías instaladas. Cuando no están instaladas las baterías, existe un riesgo de inclinación que podría derivar en lesiones corporales.

PRECAUCIÓN

- Personal calificado de servicio que conozca de baterías y esté al tanto de las precauciones requeridas debe darle servicio al equipo. Mantenga al personal no autorizado alejado de las baterías.
 - Las baterías pueden constituir un riesgo de descarga eléctrica o quemaduras por corriente alta de corto circuito. Debe tomar las siguientes precauciones: 1) Quítese el reloj, los anillos u otros objetos de metal; 2) Utilice herramientas con manijas aisladas; 3) No coloque las herramientas o piezas de metal en la parte superior de las baterías; 4) Desconecte la fuente de carga antes de conectar o desconectar las terminales de las baterías.
 - Cuando se reemplacen las baterías, cámbielas con el mismo tipo y número de baterías o paquetes de baterías.
 - Es necesario desechar las baterías de un modo adecuado. Consulte las normas locales para conocer los requisitos pertinentes.
 - Nunca deseche las baterías en el fuego. Las baterías pueden explotar si se las expone a la llama.
 - No abra ni corte las baterías. El electrolito liberado es peligroso para la piel y los ojos, y puede ser extremadamente tóxico.
 - Determine si la batería está accidentalmente conectada a tierra. Si está conectada accidentalmente a tierra, retire la fuente de conexión a tierra. El contacto con cualquier parte de la batería conectada a tierra puede derivar en descarga eléctrica. La probabilidad de una descarga de este tipo se reducirá si se eliminan dichas conexiones a tierra durante la instalación y el mantenimiento.
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1.4 Symbols, Controls, and Indicators

The following are examples of symbols used on the UPS or accessories to alert you to important information:



RISK OF ELECTRIC SHOCK - Observe the warning associated with the risk of electric shock symbol.



CAUTION: REFER TO OPERATOR'S MANUAL - Refer to your operator's manual for additional information, such as important operating and maintenance instructions.



This symbol indicates that you should not discard the UPS or the UPS batteries in the trash. This product contains sealed, lead-acid batteries and must be disposed of properly. For more information, contact your local recycling/reuse or hazardous waste center.



This symbol indicates that you should not discard waste electrical or electronic equipment (WEEE) in the trash. For proper disposal, contact your local recycling/reuse or hazardous waste center.

Chapter 2 Installation

2.1 Battery Type

When purchasing UPS cabinets without batteries, only the following types are recommended. Use of any other battery type inside Eaton cabinets will void the product warranty.



When replacing batteries, use the same manufacturer and part number originally supplied with the cabinet to ensure correct harness fit and terminal landing.

Table 1. Battery Manufactures, Types and Quantity

Battery Manufacturer	Eaton	CSB® Battery Co., Ltd.	EnerSys®, Inc.	GS Yuasa® Corporation (Japan Storage)
Battery Type	PWHR1234W2FR	HRL1234WFR	NPX-L35/250TW, NPX-35, or NPX-35FR	PX12090F2, PX12090, or PE12V7.2
Battery Quantity	18 per string	18 per string	18 per string	18 per string

2.2 Removing and Replacing the UPS Front Door

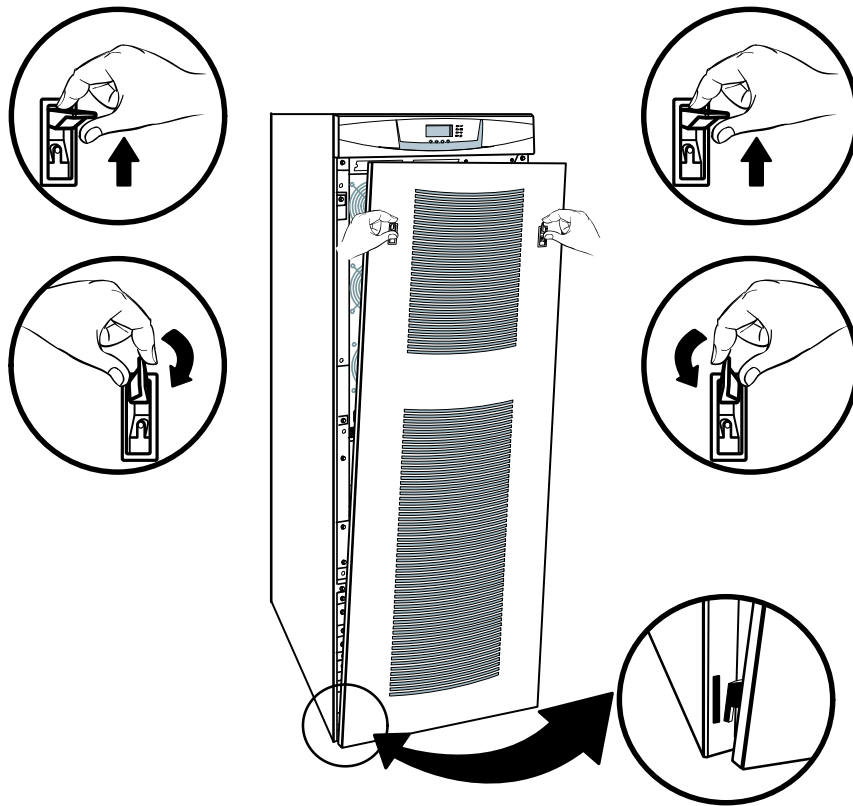
To remove the UPS front door:

1. Press and rotate the latches 90° to open the front door (rotate the left latch clockwise and the right latch counter-clockwise), see [Figure 1](#).
2. Lift the door up and off the cabinet.

To replace the door:

1. Insert the door notches into the slots on the bottom of the cabinet.
2. Secure the door latches.

Figure 1. Unlatching the door



2.3 Installing the Internal Batteries

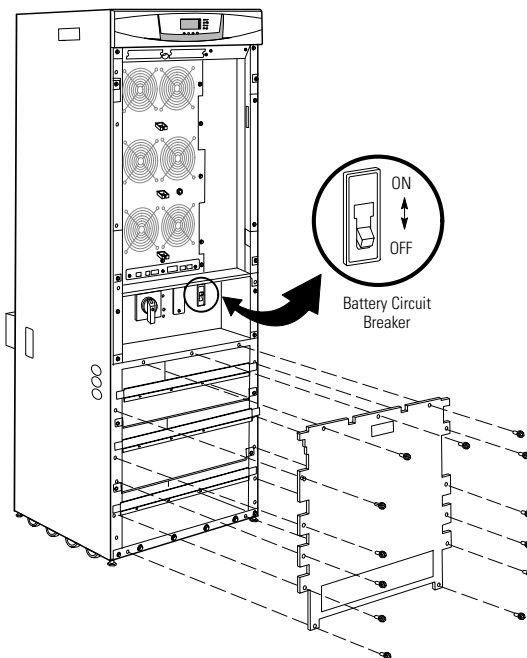
 **WARNING**

Ensure all External Battery Cabinets (EBC) are **disconnected** from the UPS.

To install the internal batteries:

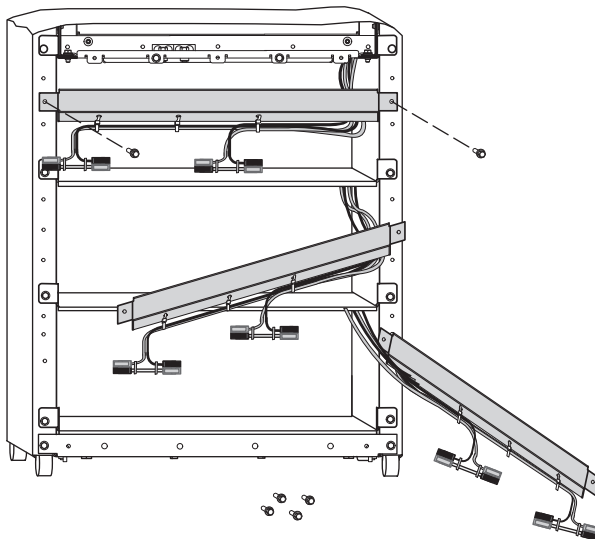
1. Verify that the UPS battery circuit breaker is in the OFF position (see [Figure 2](#)).
2. Remove the 13 M5 bolts from the battery cover panel and remove the panel.

Figure 2. Remove the bolts from the battery cover panel



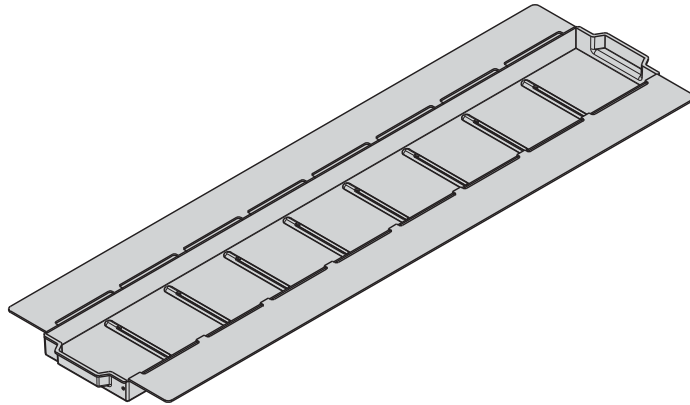
3. Remove the two M5 bolts from each of the three retaining bars and move the retaining bars to the side (see [Figure 3](#)).

Figure 3. Remove the battery retaining bars



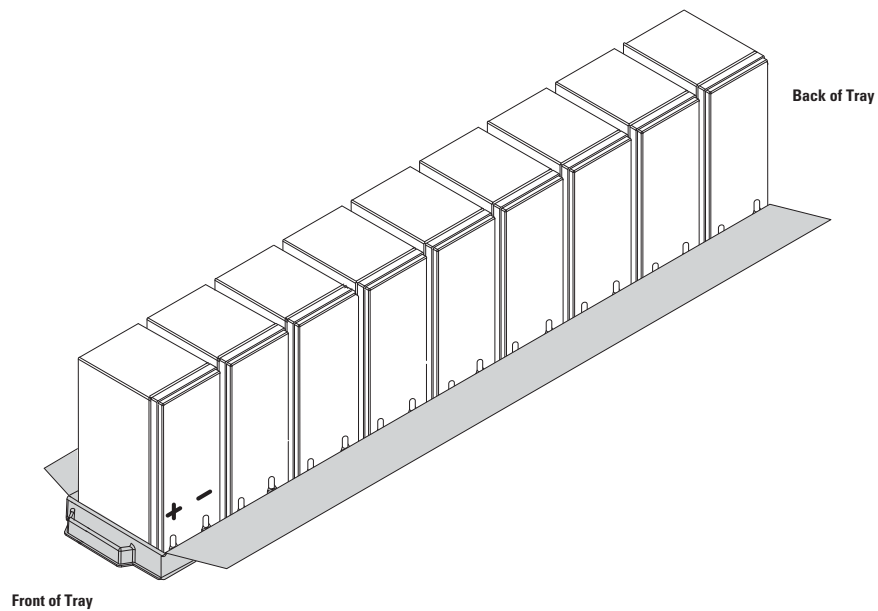
4. Remove the battery trays and the tray kit bag containing the jumper wires.

Figure 4. Battery Tray



5. Remove nine batteries from shipping package and record the oldest date code from that string of batteries. Date code information will be needed for later use (see [Step 14](#)).
6. Insert the nine batteries into a battery tray as shown in [Figure 5](#). Place the batteries with the connectors at the bottom.

Figure 5. Batteries in Tray



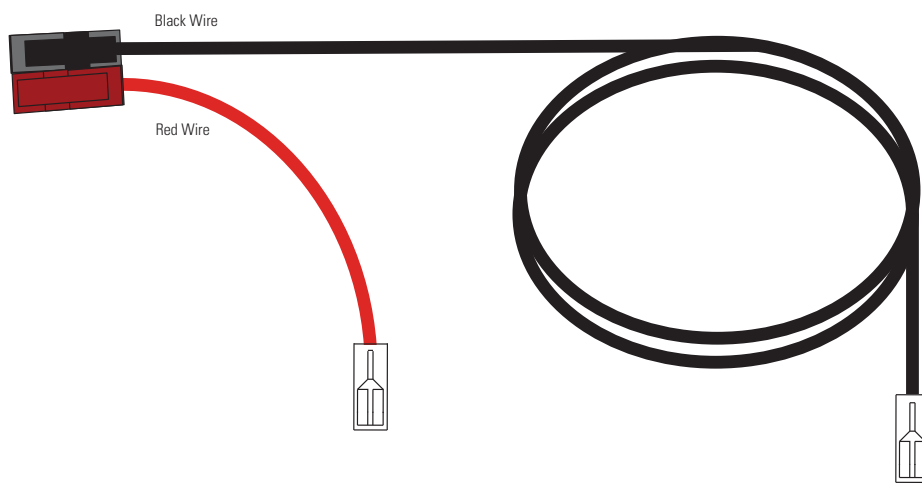
7. Connect eight jumper wires between the batteries.

CAUTION

Caution should be taken when connecting the battery terminals. Potential Lethal voltages are present.

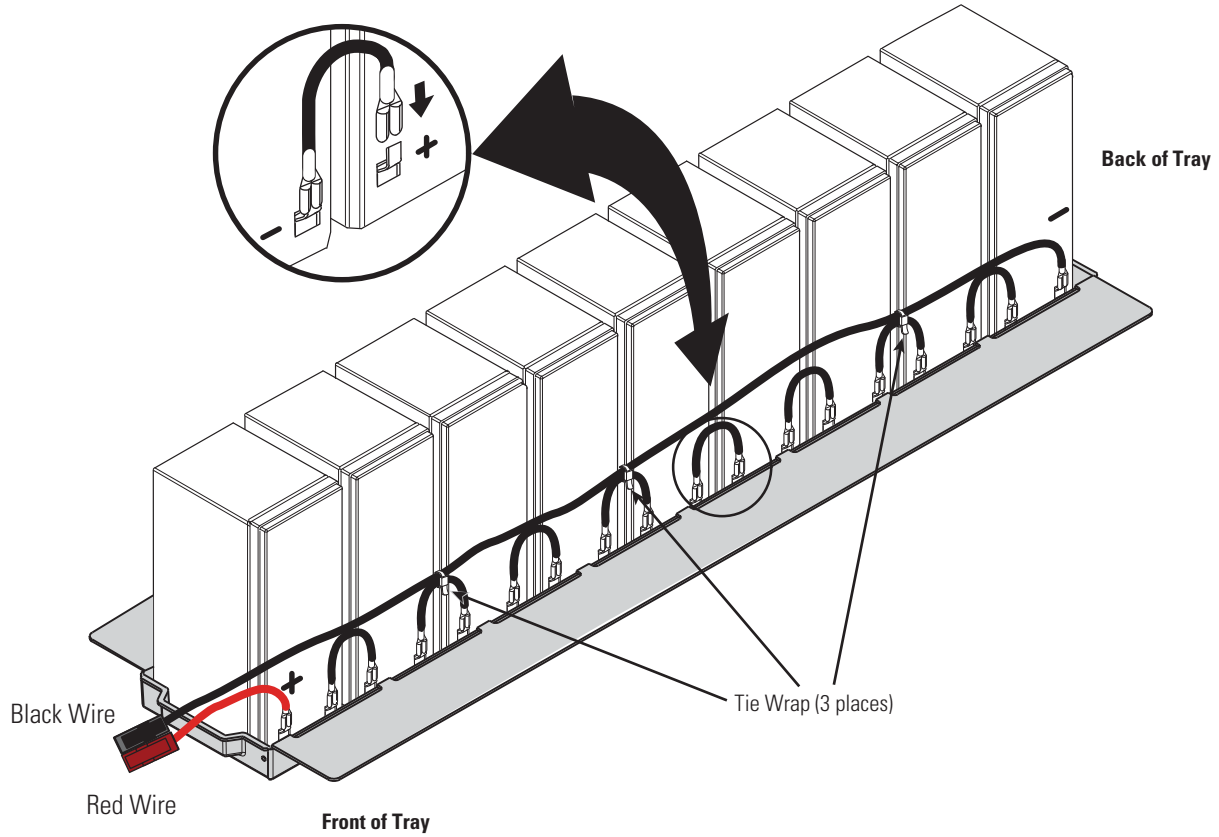
8. Connect the positive (+) connector (short red wire) of the battery tray wire harness (see [Figure 6](#)) to the positive battery terminal at the front of the tray, then run the rest of the wire to the back of the tray for later use. (see [Figure 7](#) for more detail)

Figure 6. Battery Tray Wire Harness



9. Connect the long black wire of the battery tray harness to the negative battery terminal at the back of the tray.
10. Tie wrap the wires to the jumper wires in three places using the supplied tie wraps.

Figure 7. Installing the Batteries



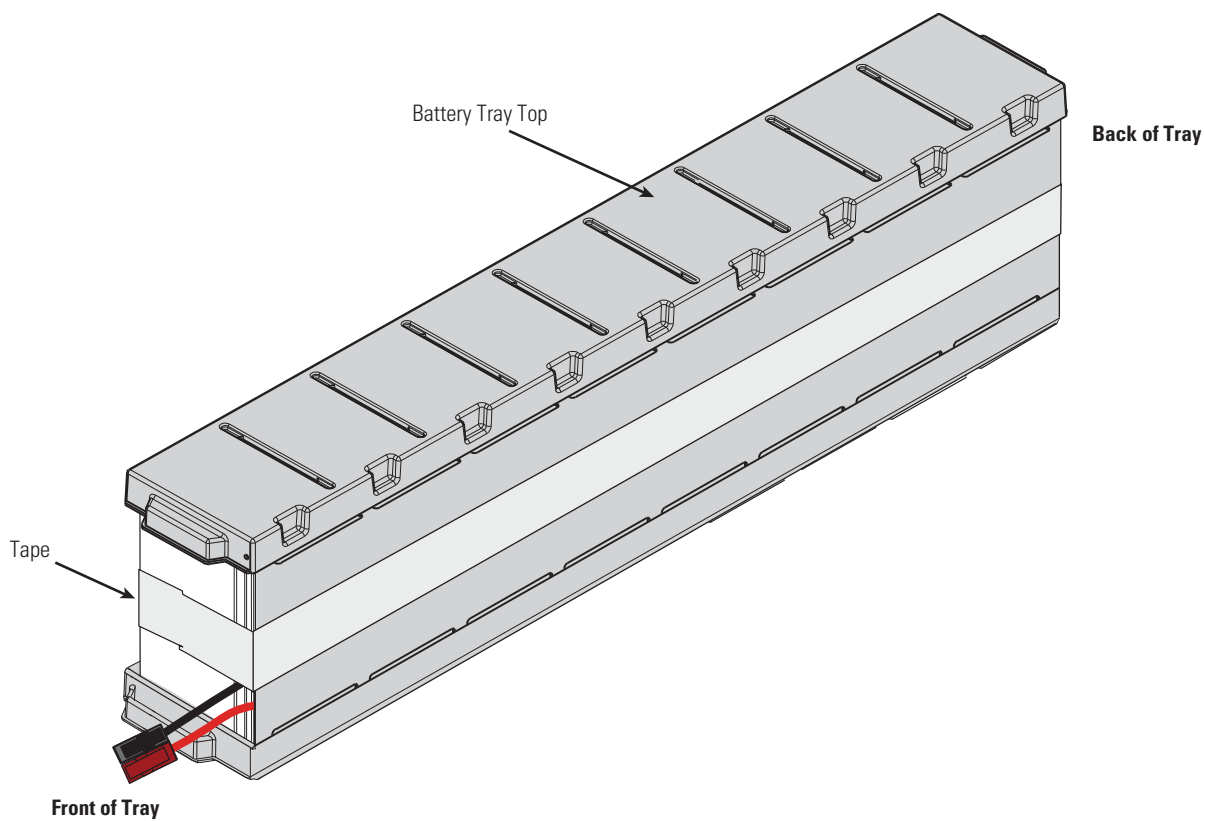
11. Make sure the sides of the battery tray are bent upward.
12. Place the battery tray top over the batteries (see [Figure 8](#)).



NOTE

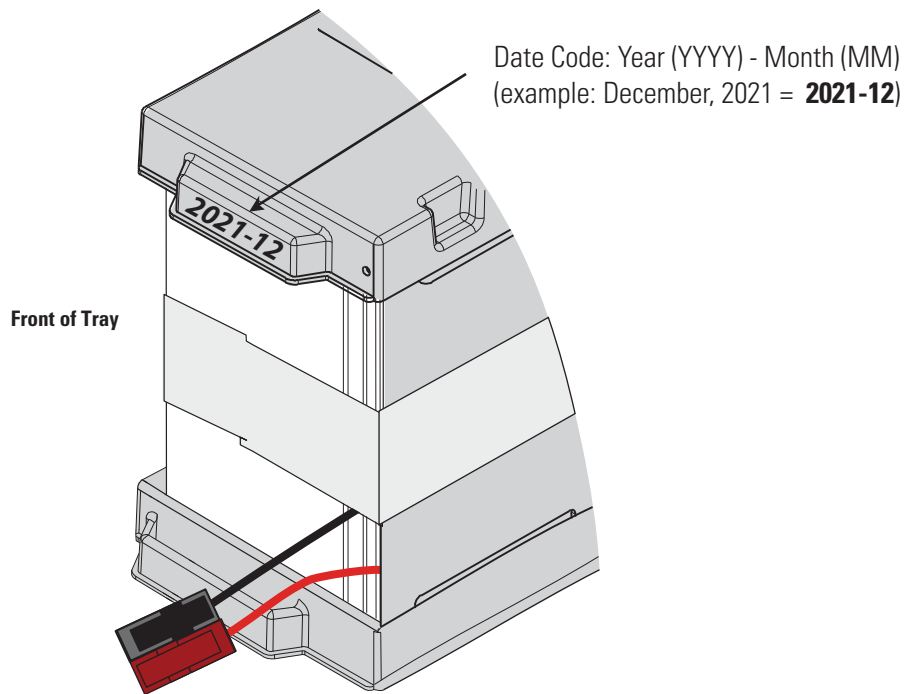
You may need to place something heavy on the top while taping the battery tray.

13. Wrap the supplied tape around the batteries, securing the top and bottom trays to the batteries. Verify that the bent sides of the trays are secure under the tape (see [Figure 8](#)).

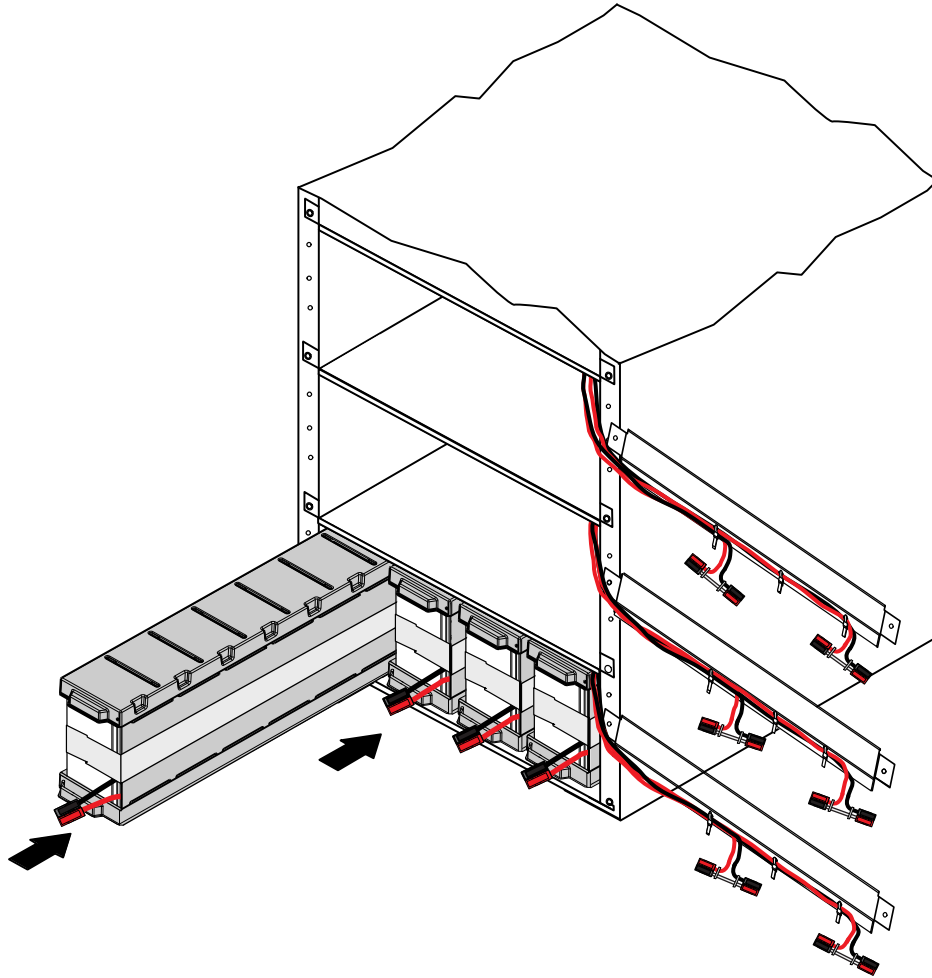
Figure 8. Securing the Top and Bottom Battery trays

14. Write the oldest date code from the battery string (from [Step 5](#)) on the top tray, see [Figure 9](#).

Figure 9. Battery String Oldest Date Code

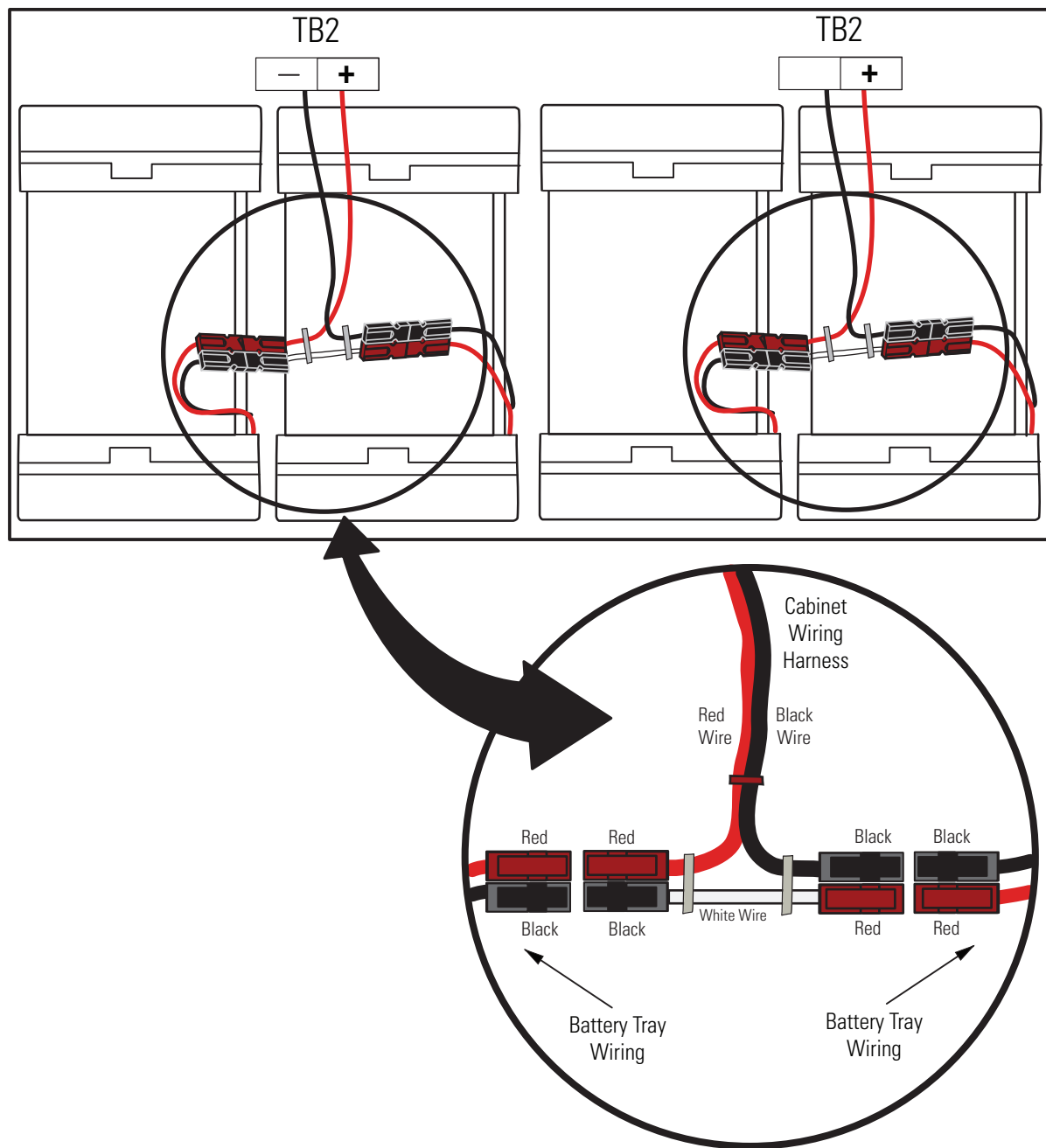


15. Repeat [Step 5](#) through [Step 15](#) for each battery tray.
16. Load four battery trays into the bottom of the cabinet (see [Figure 10](#)).
Repeat for the middle and top rows of battery trays.

Figure 10. Installing the battery trays

17. Reinstall the battery retaining bars.
18. Connect the factory-installed cabinet wiring harness to the battery tray wiring harnesses, beginning from the top left, as shown in [Figure 11](#):
Repeat for the other rows of battery trays.

Figure 11. Connecting the Cabinet Wiring Harness to Battery Tray Wires



19. Reinstall the battery cover panel.
20. Refer to the *Eaton 9355 UPS (20/30 kVA) Installation and Operation Manual* to continue installing the UPS. Otherwise, reinstall the UPS front door.



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