

ERGO-EXPRESS®

Model 36500 HD Tug

Owner's Manual: Information and Operation



SERIAL NUMBER



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Liability Statement

This product, the Model 36500 HD Tug, has been built to the highest standards of PHS West. Please do not attempt to operate or repair this equipment without adequate training. Any use, operation, or repair in contravention of this document is at your own risk. By acceptance of this system, you hereby assume all liability consequent to your use or misuse of this equipment. PHS West assumes no liability for incidental, special, or consequential damage of any kind. PHS West reserves the right to make equipment or product specification changes at any time. This manual, and all information contained within it, are subject to revision at a future date.

End of Life Statement

Your PHS West Motorized Tug has been designed to provide years of reliable and trouble free service, but at some point in time, it may be necessary to retire the system from service. To protect the environment, the following requirements should be considered and followed:

- This PHS West Motorized Tug is primarily constructed from steel and contains no hazardous materials (with the exception of the batteries). This equipment has an electrical control panel that must be removed from the system and disposed of according to country, regional and local requirements.
- The PHS West Motorized Tug is considered mobile industrial equipment as stated in Category 4 in Annex 1A of the European Waste of Electrical and Electronic Equipment (EU WEEE) Directive 2012/19/EU. As of 2014, this directive could change in the future and the directive should be reviewed for any future changes.
- Included in the PHS West Motorized Tug are components manufactured by others. Their retirement and disposal are covered in the individual equipment technical manuals listed in the PHS West manual if applicable.

Proprietary Notice

All drawings and information herein are the property of PHS West. All unauthorized use and reproduction is prohibited.

Trademark Acknowledgments

All product names and trademarks are the property of their respective owners.

Revision Log

Revision Level	Date	Affected Pages	Description of Change
-	6/30/2025	All	-
A	11/5/2025	2, 3, 5, 15, 17, 18	Breaker visuals and labeling.
B	12/23/2025	1	Corrections to drive system specifications.



Introduction

The Ergo-Express® 36500 HD Tug is a premier offering providing the torque and maneuverability to handle heavy server racks. For an understanding of efficient and safe operation, it is important that you read this manual.

The motorized tug uses a microprocessor based controller to operate all functions including drive speed, direction of travel, a motor speed governor, a battery charge meter, and an automatic motor brake. Additionally, the microprocessor controls many functions that may not be readily apparent to the user, such as load compensation, acceleration control, emergency stop behavior and motor current limiting.

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Related Documents

These documents are included in the manual package that shipped with your equipment. All information contained in these documents pertains to devices not manufactured by PHS West. Each manufacturer assumes responsibility for the contents of the accompanying literature.

Equipment Type	Functional Data	Document Numbers and Manufacturer
Battery Charger	DeltaQ IC1200 36 Volt 33 Amp Battery Charger	DeltaQ PN 710-1043 Rev 5

Specifications & Features

- Dimensions: OA L/W/H: 49.5" x 25" x 47.25"
- Unit Weight: 2205lb
- Drive System
 - 36 Volt 500Nm Wheel Motor
 - (3) 12 Volt Batteries
 - 36 Volt 33.3 Amp Onboard Charger
 - Resettable Circuit Breaker
- User Interface
 - Directional Thumb Throttle
 - Safety Stop Switch
 - 120 db Horn Button

Safety

Document Symbol Conventions

It is important that you read and understand this manual. The information contained within relates to protecting your safety and preventing problems. The symbols below are used to help you recognize this information.

Symbol	Description
	DANGER! Indicates a potentially hazardous situation which, if not avoided, will result in death or serious injury
	WARNING! Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury
	CAUTION! Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury
	NOTICE: Indicates a potential situation which, if not avoided, can result in property damage or damage to the equipment
	Note: Indicates information, notes, or tips for improving your success using the equipment

Hazardous Energy Safety

Sources of hazardous energy can be in many forms such as electrical power, hydraulic power, pneumatic power, and stored energy such as springs, capacitors, and even falling weight. Before servicing any equipment, it is important to disable, or at least account for, all forms of hazardous energy.

- Know the location of equipment branch circuit interrupters or circuit breakers and how to turn them on and off in case of emergency.
- Avoid contact with electrical components while the system is powered. Contact with electrical components may result in electric shock.
- Immediately disconnect electrical power if there are signs of overheating such as a burnt odor, smoke, or excessive heat. Failure to disconnect power immediately may result in fire or equipment damage.
- See **Addendum A** for Regulatory Cautions.

⚠ CAUTION! Pinch Point Hazards

The user needs to be aware of potential limb pinch points when operating the unit for their own safety and the safety of others.

1. Keep limbs and foreign debris clear of the load wheel (1) at the rear of the unit.
2. Keep limbs and foreign debris clear of the wheel motor when in operation. The wheel motor spins in clockwise and counter-clockwise directions (2A), along with turning in a 90 degree angle (2B).
3. When opening (3B) and closing (3A) the control panel, ensure all limbs are kept out of the path of the hinged control panel.
4. When operating the unit, the tiller arm will pivot. Ensure when the tiller arm is moving into the rest position (4) that limbs are clear of the pivot area.

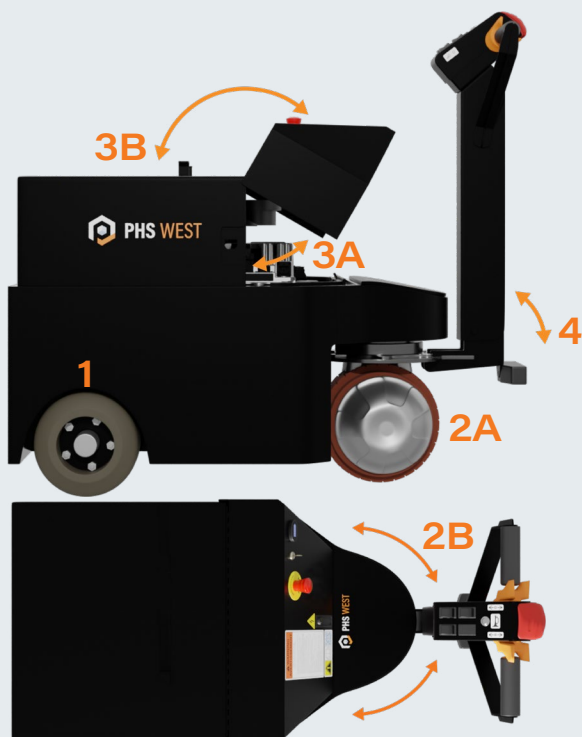


Figure 1: Pinch Point Hazard Locations

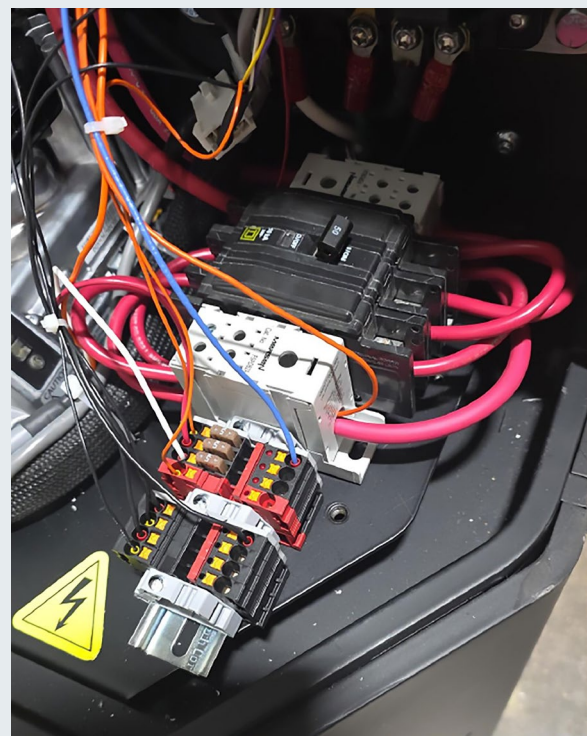


Figure 2: Power Disconnect

⚠ CAUTION!

The following instructions are vital to preventing hazardous situations that could result in an injury.

- Before servicing, disconnect the power at the batteries and unplug the chargers.
- All batteries are sealed and maintenance free. (AGM batteries)
- Never operate the Motorized Tug if your visibility is obstructed.
- Always use safety straps while towing other equipment.
- Use caution when operating the tug on steep inclines.
- Never carry rider(s) on the tug.
- Never leave the tug unattended while the parking brake is disengaged.
- Turn the power off when leaving the tug unattended.

Built-In Features

The UI is equipped with several internal features to enhance the operation of the system.

- **Throttle Engaged During Power Up:** To prevent abrupt startups, the equipment will not operate if the throttle is engaged while the power switch is turned on. The throttle must be in the neutral position when the power switch is turned on.
- **Sleep Mode:** The equipment utilizes a power saving mode designed to conserve battery life. If the system does not detect user input for 5 minutes, the equipment will power itself off. To exit sleep mode, turn the power switch to the off position, and then back to the on position.
- **Electromechanical Brake:** the tug automatically engages a motor brake when the drive wheels are not being powered, even while the system is off. See **Manually Moving** for instructions on disengaging the brake.
- **Throttle Lock-Out During Charging (Interlock):** If the system is charging, the throttle levers will be disabled. If the throttles are engaged while charging, the tug will not operate and a fault code will be displayed on the user interface.
- **Anti-Runaway:** If, for any reason, the brake lever is released and the tug rolls away, the controller will automatically limit the speed of the tug. This function operates even if the tug is powered "off."
- **Start Compensation:** The controller will sense when the tug is stopped on an inclined surface and will provide additional power when started to prevent roll back.
- **Daily Inspection:** Always inspect your tug before using it. If any of the components are found to be damaged, nonfunctional, or missing, remove the tug from service and replace immediately. Refer to the **Maintenance** section.

User Interface

The user interface (**UI**) is the control system for the tug's power drive and safety features. It is located at the front of the tug at the top of the steering column.

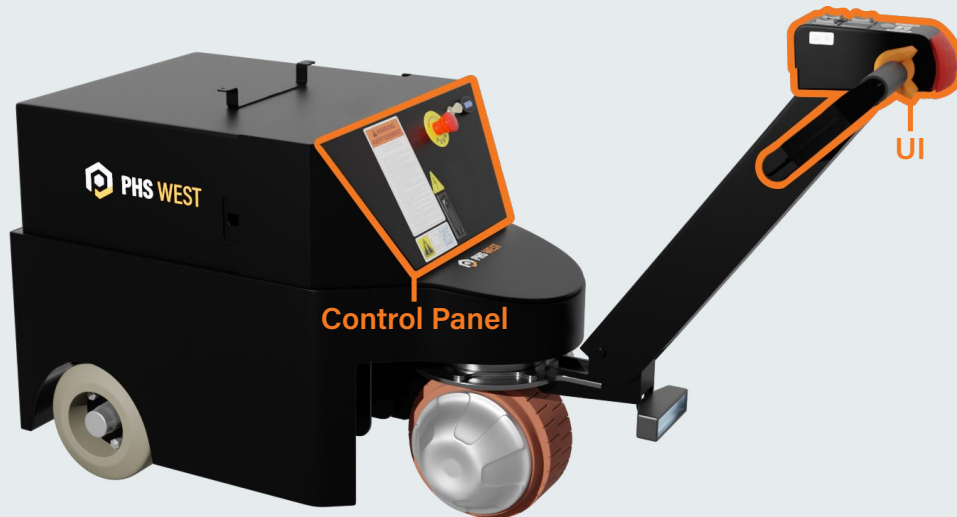


Figure 3: User Interface and Control Panel



Horn

The horn is used to project a clear signal when approaching blind corners, high traffic zones, etc. To engage the horn, press the small silver button on the UI. The horn will sound for as long as the button is depressed.



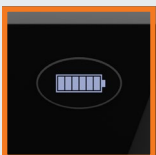
Work Light Switch

The rocker switch located on the left side of the UI. To turn the lights on, press the toggle switch so the top is depressed. To turn the lights off, press the toggle switch so the bottom is depressed.



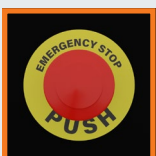
Speed Mode Switch

The rocker switch located on the right side of the UI. The speed mode switch toggles the maximum speed between two driving modes. For general transport, the turtle mode provides greater control and safer operation. The rabbit mode provides an increased maximum speed to assist in moving heavy loads when moving in reverse.



Battery Charge Level Indicator

Located on the **Control Panel**. When the tug is powered on, the display shows the current battery level. See **Battery Charging**

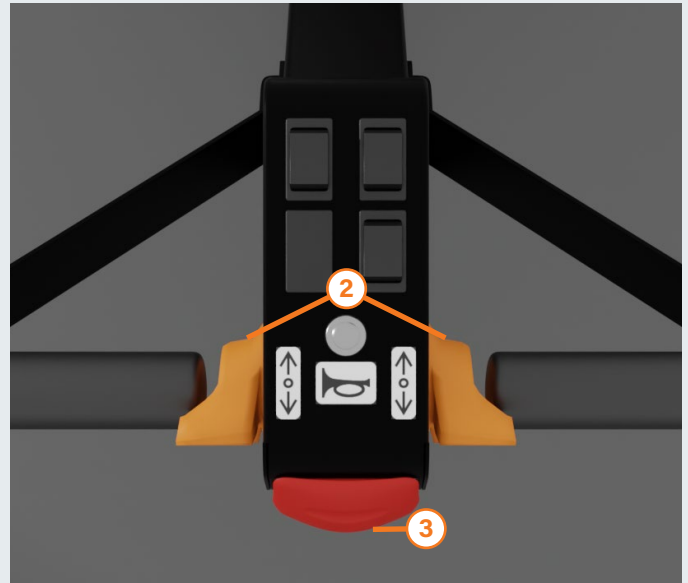


Emergency Stop Switch (E-Stop)

Located on the control panel. When depressed, the e-stop switch cuts all power to the tug. To resume operation, twist and release the e-stop switch.



Figure 4: User Interface Components



1 On/Off Key Switch

The key switch is located on the right side of the control panel. To power the tug on, insert the key at a horizontal orientation and rotate it counterclockwise. With the key at a vertical orientation (green decal), the tug will perform a boot up cycle lasting approximately 10-20 seconds before the tug is ready to operate. To turn the tug off, rotate the key clockwise to its original position (red decal).

Note: The key cannot be removed while in the on position.

2 Throttle

It is critical to understand all of the user interface functions prior to engaging the throttle.

The throttle levers engage the power drive system. To engage the throttle, hold the hand grip and use your thumb to push the throttle. The power drive will engage and the tug will move in the direction the throttle is being pushed. The throttle is ambidextrous and will travel in the direction of rotation regardless of if the left or right throttle is being pushed. Releasing the throttle will disengage the power drive and bring the tug to a stop. The speed of the tug is proportionate to amount the throttle is engaged. For example, engaging the throttle halfway will activate the power drive at half of the maximum speed. Engaging the throttle fully will activate the power drive at the maximum speed.

3 Quick Stop Switch

The stop switch is used to bring the tug to an immediate stop when needed and should not be used for routine stops. To engage the stop switch, press the large red button. The tug will come to an immediate stop and the throttle will not function while the stop switch is depressed. Upon releasing the stop switch, the tug's throttle will function normally.

Operation

⚠ CAUTION!

- Turn the power off when leaving the tug unattended.
- **Power on the tug:** Turn the on/off key switch counter-clockwise to the 'On' position. Check the battery level indicator to verify the batteries have an adequate charge.
- **Positioning:** When traveling **forward**, keep to the side of the tug and slightly ahead of the user interface. Use the hand closest to the truck to operate the throttle and steer. Make sure to stay out of the path of the tug. When traveling in **reverse**, position yourself directly in front of the user interface with both hands on the handlebars.
- **Engage throttle:** Position yourself in front of the UI. Pull the UI down to a comfortable height for operation. Slowly engage either throttle lever in the indicated direction of travel until the tug begins to move. Both levers perform the same, functioning as a proportional speed control. Engaging the throttle fully results in the tug traveling at the full maximum speed. Engaging the throttle half way results in half of the maximum speed, and so on.
- **Coming to a stop:** Releasing the throttle disengages the power drive and brings the tug to a stop. In cases where an immediate stop is necessary, engage the quick stop switch.
- **Alert your presence:** When approaching blind corners and high traffic areas, push the horn button to project a clear signal.
- **Maintain spatial awareness:** Anytime the equipment is in motion, the operator should be facing the direction of travel, announcing their presence, and managing their speed at a level appropriate for the environment.
- **Towing a rack:** When moving the tug under load, the operator must be mindful of the impact this will have on the performance of the tug. Wider turns must be taken, and additional distance is needed to come to a complete stop.

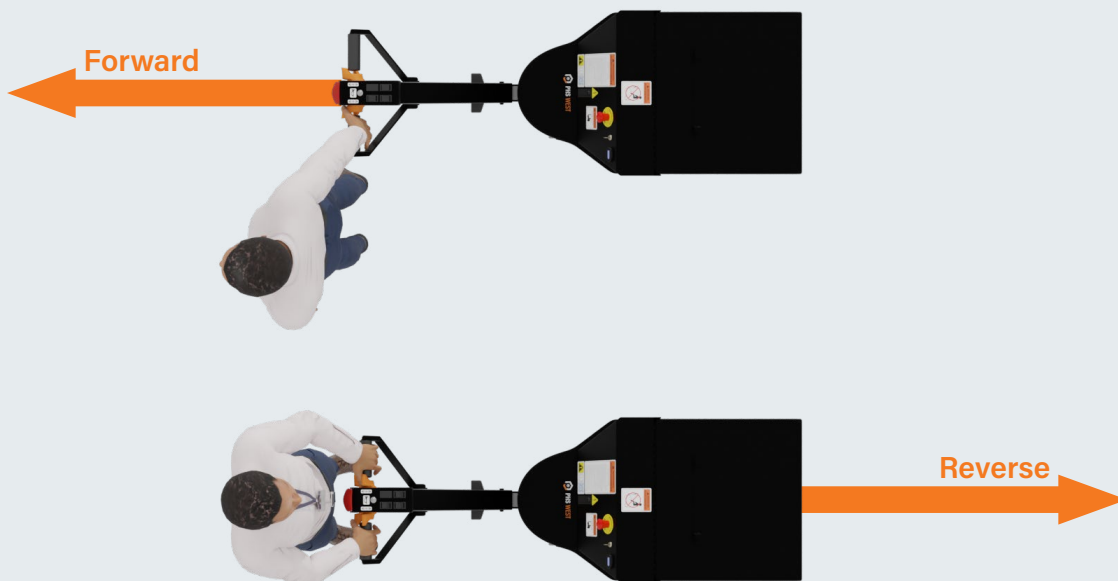


Figure 5: Directional Positioning

Battery Charging

⚠ CAUTION! Please read instructions completely before charging.

- Charge batteries fully in a dry, well ventilated, fire retardant location away from patient care areas with open sources of oxygen.
- Inspect batteries for bulging, swelling, and cracking before charging.
- Ensure that the batteries are replaced every 12 months using the **Replacing the Batteries** instructions in this manual.
- The installed charger is not intended to supply power to an extra-low voltage electrical system.
- Never change a frozen battery.

Proper charging practices will ensure the tug operates at peak performance throughout the day. It is recommended to charge the tug at the end of each shift and between workloads when possible. This will prevent unforeseen downtimes and maximize the cycle life of the batteries.

Charging the Batteries

1. Park near a grounded AC electrical outlet and turn the power off before charging.
2. Find the charging cord stored on the **Cord Wrap** on top of the tug.
3. Plug into the AC electrical outlet. Ensure the end of the cord is secure in the outlet.

Charge with the control panel closed. The display gauge on the **Remote LED Display**, located on the left side of the tug, will display the following:

- **Slowly flashing green light:** low state of charge.
- **Rapidly flashing green light:** high state of charge.
- **Solid green light:** the unit is fully charged.

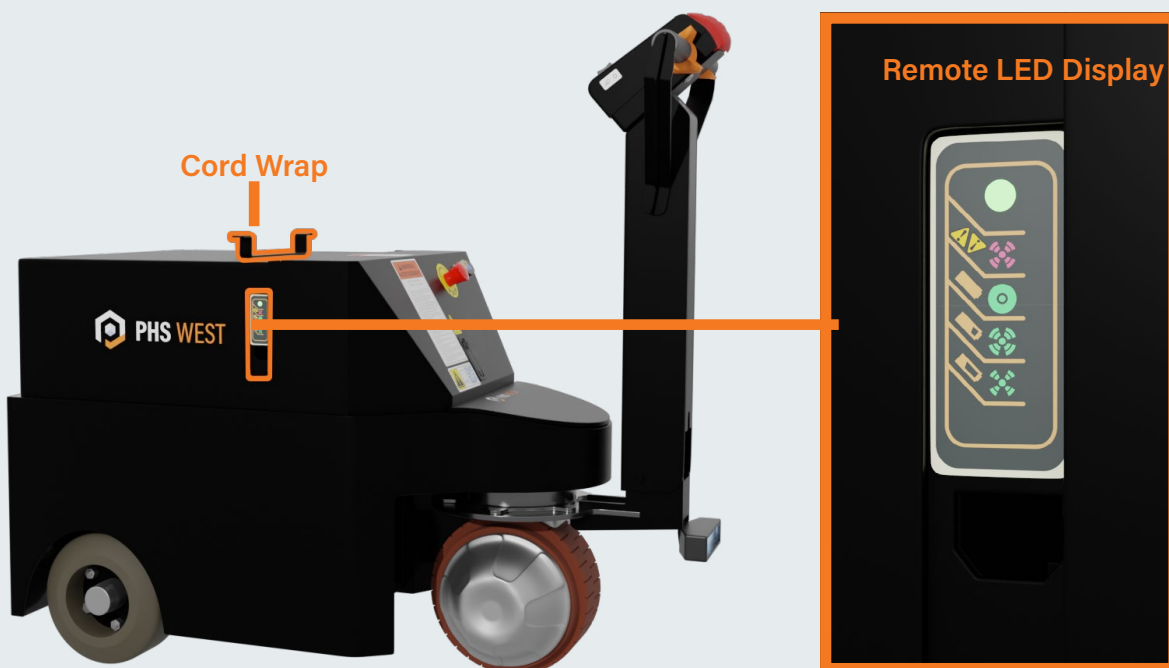


Figure 6: Charging Components

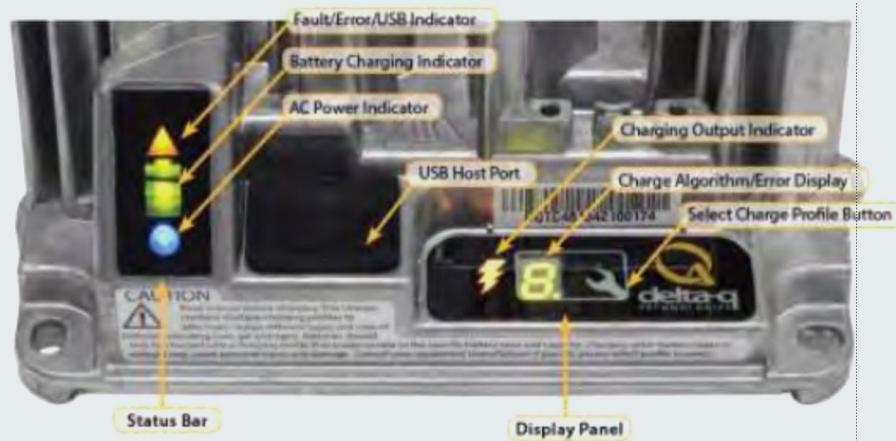


Figure 7: Battery Charger Components

Battery Charger:

The charger is permanently connected to the battery pack. Charging begins when AC input is applied to the charger and will continue until the batteries are fully charged. The charger enters monitor/maintain mode when charging is complete and the charger remains connected to AC input. The button can be used to turn the charger off when powered in DC only.

- When you first plug into AC power, the **AC Power Indicator** illuminates solid blue to indicate power is present.
- The **Battery Charging Indicator** has four states:

	Breathing Green = Low state of charge
	Solid green = High state of charge
	Breathing Green = High state of charge
	Solid Green = Charge completed

- The **Fault/Error/USB Indicator** indicates faults, errors, and USB activity.
 - Solid red: Charger fault, see display panel for details.
 - Flashing amber: External error condition- caution. See display panel for details.
 - Flashing green: USB port active.
 - Solid green: safe to remove USB flash drive.
- The **Charging Output Indicator** is solid yellow when the charger output is active. Take appropriate actions while handling the charger, as there is a risk of electric shock and energy hazard. The indicator flashes if the charger is disabled by an external signal (in some charge algorithms).
- The **Charge Algorithm/Error Display** shows the current charge algorithm or the resting phase of some algorithms or the fault/error code the charger is currently experiencing. It displays one of four possible codes to indicate different conditions:
 - F codes mean an internal fault condition has caused charging to stop.
 - E codes mean an external error condition has caused charging to stop.
 - P codes mean the charger programming mode is active.
 - C and S codes are relate to software display.
 - USB code means the USB port is active and the flash drive should not be removed.

Charging Guidelines:

- Allow batteries to charge fully. Initial charge is approximately nine (9) hours.
- Standard charge time after the initial charge is approximately eight (8) hours, uninterrupted.
- It is recommended that the tug remains plugged in when not in use.
- Driving functions are disabled while charging. This safety feature eliminates driving away while the charging cord is plugged in.
- The charger draws approximately 11.1A @ 120VAC.
- Battery life is greatly improved when proper charging procedures are followed.

Manually Moving

If the tug must be moved manually, the motor brake must be physically disengaged. To disengage the brake, push the brake lever away from the brake. While the brake is physically disengaged, the tug will not operate and a 1-2 fault code will flash on the user interface. To engage the brake, pull the brake lever back into position. Note: To keep the brake lever disengaged, place an object such as a washer in the gap.

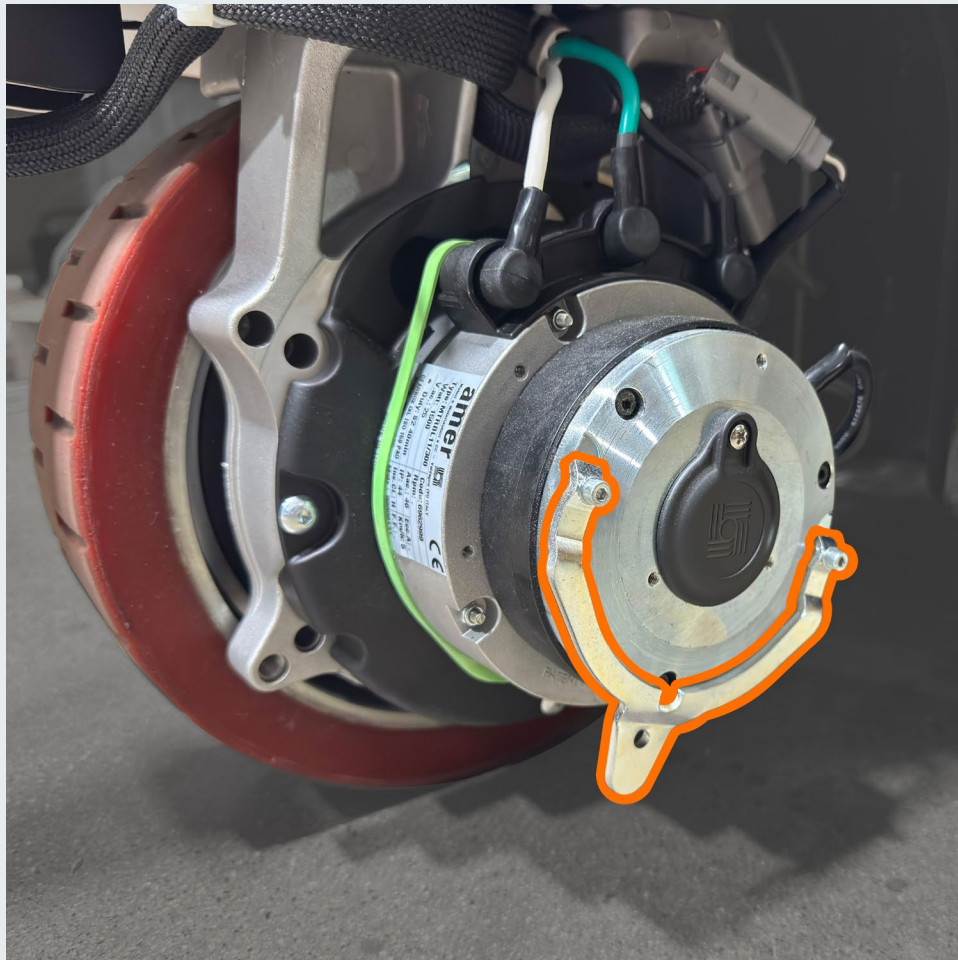


Figure 7: Brake Lever

Maintenance

⚠ CAUTION!

Only minimum maintenance is required to maintain the service and dependability of the tug. Failure to follow these instructions may result in personal injury or property damage.

Daily

- Always inspect your tug before using it. If any of the following are found to be damaged, nonfunctional, or missing, remove the tug from service and replace immediately.
- Check the battery charge level indicator. Operating the equipment with a low charge can damage the battery and void your warranty.
- Keep the charger plugged in when not in use.
- Visually check the load wheels and drive wheel for damage.
- Ensure that the power cord is in good condition and secured.
- Check that the stop switch is operating properly.
- If equipped with safety straps, check that the straps are functioning and secure.
- Check the grounding chain located under the tug. Ensure the chain is present and touches the ground.
- Visually check the tug for any other external damage.

Monthly

- Check and tighten any exposed fasteners.
- Inspect load wheels for roughness during rotation. Replace if necessary.
- Inspect the charge cord and AC charging receptacle.

Three Months

- Check all bolts and connections for tightness and wear.

Six Months

- Check all electrical connections for clean contact.
- Check all tires for wear and replace if necessary.

Yearly

- Replace batteries using the **Replacing the Batteries** instructions in this manual.

General Cleaning

These manufacturer recommended practices for cleaning products are not intended to disinfect product. Periodic cleaning to remove the buildup of dirt and residue is highly recommended to extend the life of your powder coating finish.

Use a mild detergent with warm water on a soft cloth. Use of a CaviWipe™ type of cleaner is also acceptable. Do not use wire brushes, abrasives, or similar cleaning tools that will abrade the powder coated surface. Always test the solution in an inconspicuous area before using on a large scale.

⚠ WARNING!

Do not expose the tug to spray-on cleaning solutions or excessive moisture.

Troubleshooting

During the power on sequence, the control head will perform a self-diagnostic check. If there is a fault detected, the digital display on the control panel will show an error code. That can be interpreted using *Table 1*.

The power on sequence may take up to 30 seconds as the controller performs diagnostic tests and ensures the tug is ready for use.

Code	Problem	Comments
0x24	PSL Motor Short	Loose/broken connection to Power Seat Lift motor
0x28	Motor Sensor Fault	An invalid condition was detected for the motor position sensors. Check for: ▪ Correct wiring to the motor and motor sensors ▪ Correct configuration of the motor sensor(s) After the condition is corrected, cycle the key switch to clear the fault. Check the motor sensor and the wiring connections. ▪ Replace or reconnect the motor temperature sensor. After the condition is corrected, cycle the key switch to clear the fault.
0x29	External Temperature Sensor	A problem was detected with the external temperature sensor.
0x2A	High Voltage Protect Error	High voltage was detected on the motor outputs. Check for disconnected power cables. ▪ Reconnect cables. After the condition is corrected, returning the throttle to neutral will clear the fault.
0x31	FET Over Temperature	The FET (Field Effect Transistor) temperature sensor on-board has indicated a temperature above the allowable limit. Check for: ▪ Operating in extreme environment ▪ Excessive load ▪ Faulty or disconnected brake engaged while driving. Allowing controller to cool will restore full power and/or allow motion. This fault is sticky, meaning that once it occurs, it will persist until the key switch is cycled.
0x32	Motor Over Temperature	The temperature sensor on the motor has indicated a temperature above the allowable limit. Check for: ▪ Operating in extreme environment ▪ Excessive load ▪ Faulty or disconnected brake engaged while driving. Allowing controller to cool will restore full power and/or allow motion.
0x41	Over Voltage Condition During Charge	The battery voltage is too high during charge cycle.
0x42	Charge Mode Time Out	The charge cycle did not complete within the expected time.
0x43	Charger Over Temperature Condition	The charger overheated during the charge cycle.
0x51	Low FET Error	Power up test on high side FET detected a problem. ▪ Check battery voltage. ▪ Check motor wiring. ▪ After the condition is corrected, cycle the key switch to clear the fault.

Code	Problem	Possible Causes/Corrective Steps
0x52	High FET Error	Power up test on low side FET detected a problem. ▪ Check battery voltage. ▪ Check motor wiring. After the condition is corrected, cycle the key switch to clear the fault.
0x53	Throttle Failband	Check for shorted or off-center throttle input.
0x54	Throttle 2 Failband	Check for shorted or off-center throttle input.
0x71	Controller Temperature Error	The on-board temperature sensor is indicating an out of range condition. Check for: ▪ Operating in an extreme environment ▪ Excessive load ▪ Faulty or disconnected brake engaged while driving Allowing controller to cool may restore full power and allow motion. If the problem persists, the controller PCB may be damaged.
Other	Internal Failure	Motor controller problem detected. Replace controller.

Service

Prior to servicing your equipment, please call our 24/7 technical and operational support hot-line at 1-888-639-5438.

Transaxle Assembly

Sealed for life. Do not open or service; these actions will void warranty.

Micro-Processing Controller (MPC)

Do not attempt to service the MPC or any related components; these actions will void warranty.

Circuit Breaker Replacement

An automatic resetting circuit breaker protects the wiring and batteries in event of a short circuit. If the tug stops, check for overloads or short circuits before continuing to operate. The circuit breaker is located under the cover and attached to the positive terminal on the batteries. If you suspect the circuit breaker is defective, call PHS West for technical support.

WARNING!

Do not operate the tug until the circuit breaker is repaired.

Warranty

PHS West warrants this product to be free of defects in material and workmanship during the warranty period. Our warranty obligation is to provide a replacement for a defective original part, if the part is covered by the warranty, after we receive a proper request.

- **Who may request service?** The purchaser is the warrantee. Only the warrantee can request service.
- **What is an "original part?"** The part used to make the product as shipped.
- **What is a "proper request?"** A request for warranty service is proper if PHS West receives both:
 - A photocopy of the customer invoice displaying shipping date.
 - A written request for warranty service that includes the warrantee's name and phone number.
- **Requests may be sent using:**
 - Email: info@phswest.com
 - Mail: PHS West, 6704 Bleck Drive, Rockford, MN 55373
 - Fax: +1 763-498-8128
- **What is covered under the warranty?** After PHS West receives a request for warranty service, an authorized representative will contact the warrantee to determine whether the claim is covered by the warranty. Before providing warranty service, PHS West may require the warrantee to send the entire product or the defective part(s) to PHS West.
- **How long is the warranty period?** The warranty period for original, dynamic components is one year. For batteries, the warranty period is 30 days. The warranty period begins the date the product is shipped to the warrantee from PHS West.
- **Warranty Evaluation:** All parts sent back (freight paid by warrantee) to PHS West for warranty replacement or repair will be evaluated. PHS West will determine if the part is a warranty issue or if it has been damaged due to misuse or negligence. A written report will be issued detailing the investigation of the part and whether or not the part is classified as warranty.
- **What is not covered by warranty?**
 - Labor
 - Freight
 - Occurrence of any of the following:
 - Product misuse
 - Negligent operation or repair
 - Corrosion or use in corrosive environments
 - Inadequate or improper maintenance
 - Damage sustained during shipping
 - Collisions or other incidental contact causing damage to the product
 - Unauthorized modifications: Do not modify the product in any way without first receiving written authorization from PHS West. Modifications may make the product unsafe or cause excessive or abnormal wear.
- **If a defective part is warranted, how will PHS West correct the issue?** PHS West will provide an appropriate replacement for any covered part. An authorized representative of PHS West will contact the warrantee to discuss the claim.
- **Warranty Procedure:** In the event that a part is damaged or broken, please contact PHS West via phone or email to establish dialogue to identify and diagnose the issue. Please have your tug's serial number available when you call or email.

Labeling



1 Work Light On/Off

Indicates the status of the work Light toggle switch.



2 Rabbit/Turtle Speed

Indicates the status of the speed mode toggle switch.



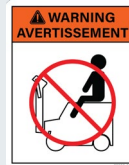
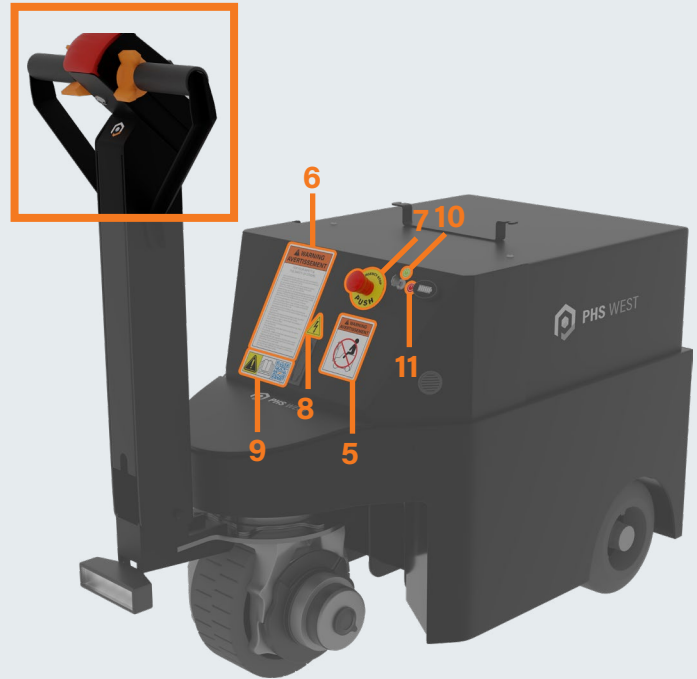
3 Control Lever Direction

Indicates the direction of operation based off the rotation of the throttle.



4 Signal Horn

Indicates the horn button.



5 Do Not Ride

Provides warning to the danger of riding on the tug.



6 For Your Safety

A set of guidelines to follow for safe operation.



7 Emergency Stop

Indicates the e-stop button.



8 Hazardous Voltage

Indicates possible hazardous voltage areas.



9 User Manual

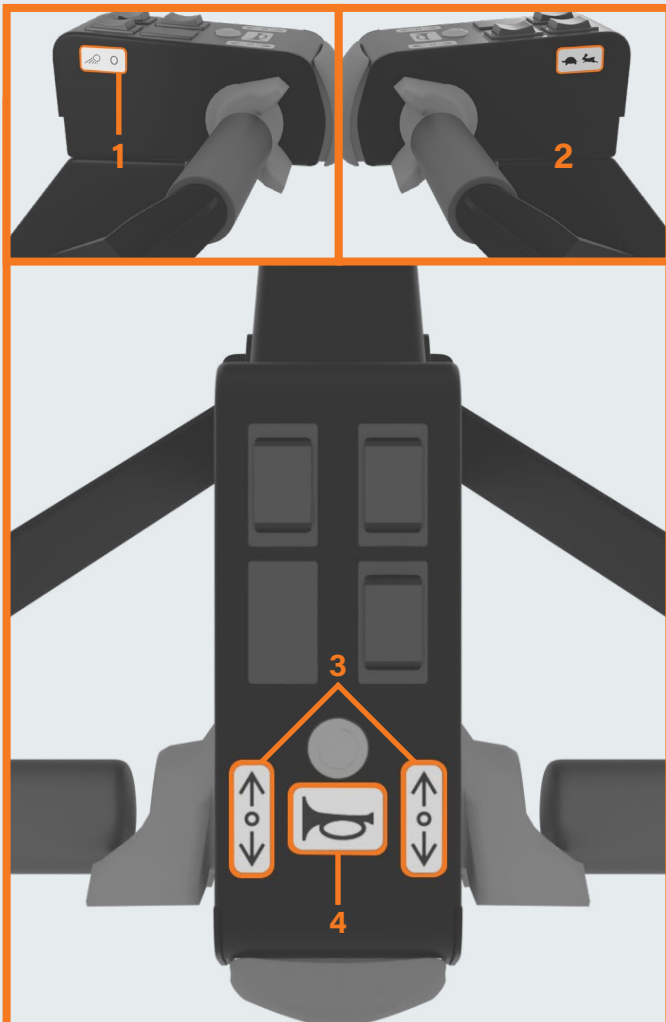
A QR code linked to the user manual for the tug.

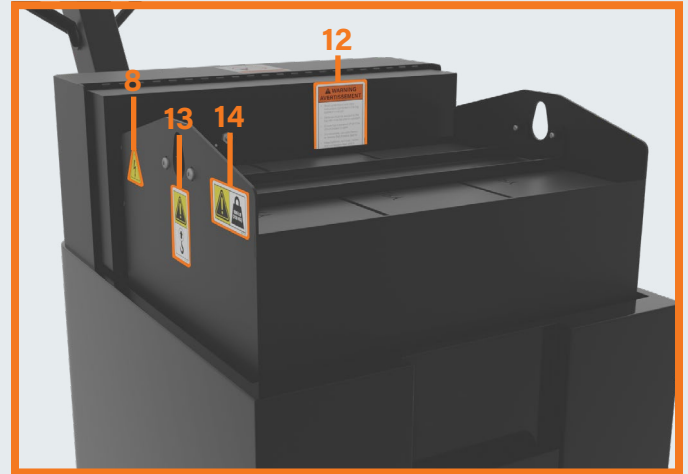


10 Power On



11 Power Off





12 Battery Warning

Provides warning inside of the battery compartment.



13 Lift Point

Indicates a designated location where a lifting device can safely be attached.



14 500lb Weight

Indicates the mass of the battery compartment.

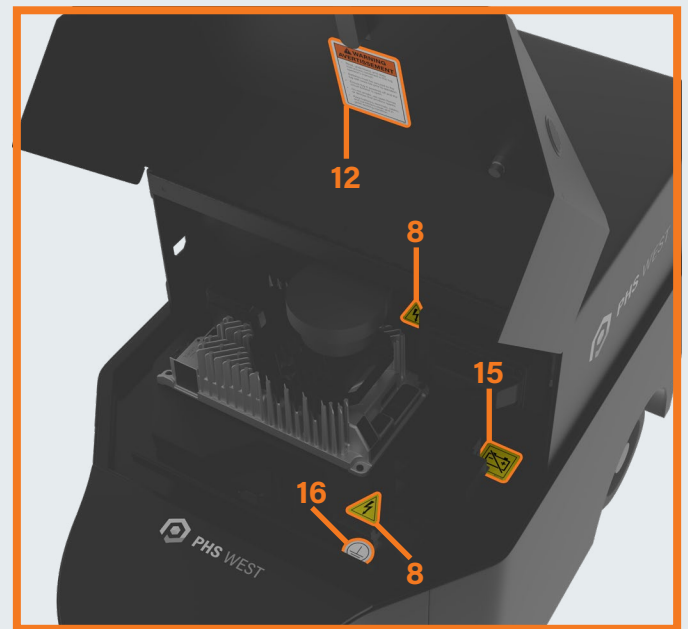


15 Battery Power Disconnect

Indicates the location of the battery disconnect switch.



16 Protective Ground



Addendum A

Regulatory Reference - 60335-1 © IEC:2010+A1:2013 (Clause 7.12 and 7.12 of Annex B)

CAUTION! Possible Harm to persons and equipment

This equipment is not intended for use by:

- Persons with reduced physical, sensory, or mental capabilities, including children, or that lack experience and knowledge of said equipment, unless they have been trained and supervised in the instruction of use of this equipment by a person responsible for their safety.
- Children (if applicable) should be supervised to ensure they do not play with the equipment.

CAUTION! Follow all instructions regarding battery handling

- Batteries are intended to be replaced by the user. See sections for **Replacing the Batteries**.
- Disable the equipment before performing any maintenance.
- Disconnect the equipment from the charging system before servicing the batteries.
- This equipment utilizes three sealed 12VDC rechargeable AGM batteries.
- Remove batteries as per the **Replacing the Batteries** instructions in this manual.
- Replace batteries as per the **Replacing the Batteries** instructions in this manual.
- For installation, be sure to understand the correct battery polarity.
- The batteries must be removed from the equipment before scrapping the device.
- Follow country and local environmental laws and regulations for proper and safe disposal of used batteries.
- Do not use non-rechargeable batteries.

CAUTION! In the event of a leaking battery, follow the instructions below

- Immediately stop use of the equipment.
- Follow the **Replacing the Batteries** instructions to remove the leaking battery. Wear gloves and eye protection during removal.
- Properly dispose of the leaking battery according to local environmental laws and regulations.
- Replace the battery with an identical 12VDC rechargeable AGM battery.

WARNING! Crushing Risk! Heavy Weight!

Addendum B

Replacing the Batteries

1. Flip the lever on the breaker to off. This severs power from the batteries to the controller.
2. Remove the button head screws from the battery shroud.

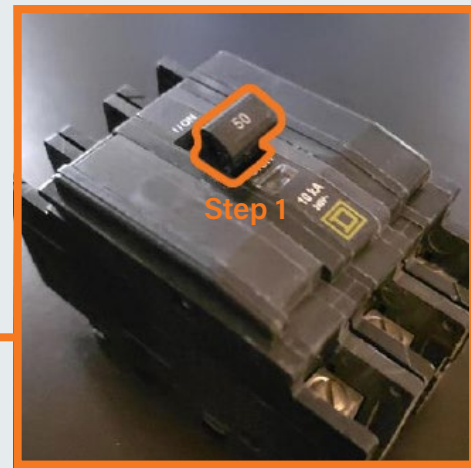


Figure 8: Circuit Breaker and Shroud Screws

3. Use a 1/4" drive socket, or equivalent tool, to pull back the battery terminal covers.
4. Starting on the **black terminal with three wires**, remove the battery connection. Carefully remove the ring terminals from the stud and pull them outside of the battery compartment.
5. On the **red terminal with two wires**, remove the battery connection. Carefully remove the ring terminals from the stud and pull them outside of the battery compartment.
6. On one of the **red terminals with one wire**, remove the battery connection. Carefully remove the ring terminals from the stud. While holding the cable, remove the opposing black battery connection. Set outside of the battery compartment in a safe place. Repeat on the remaining battery cable.
7. Free the hold down bar by removing the two screws on each side of the battery box (four screws total). Carefully lift the bar out of the battery cabinet and set in a safe place.

Step 4



Step 5



Step 6



Figure 9: Battery Connections

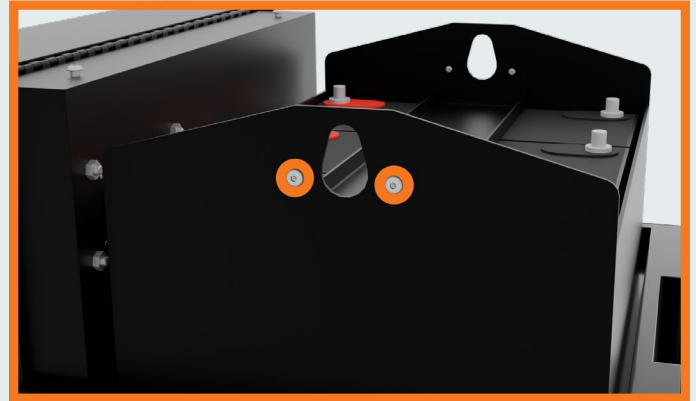


Figure 10: Hold Down Bar Removal

⚠ CAUTION! The batteries weigh approximately 145lb.

- Always lift the batteries in tandem with a second person.
8. Remove each battery by lifting the battery by the straps. Lift the battery straight up until the bottom clears the battery cabinet. Set the battery aside. Repeat for all three batteries.
 9. Place new batteries inside the battery cabinet in the displayed orientation.
 10. Reinstall the battery hold down bar. Start all four button head screws before pushing the bar down until tight and then cinch the four screws.
 11. Using the new hardware provided with the battery, install the intermediate harness (from step 6).
 12. Re-install the two red wires (from step 5).
 13. Re-install the three black wires (from step 4).
 14. Re-install the terminal covers and ensure the battery terminals are fully covered.
 15. Push the yellow lever back into the circuit breaker. Turn the keyswitch of the tug into the on position. Ensure that the tug turns on and that the horns and lights function. Do not operate with the shroud off.
 16. Once you verify functionality of the tug, turn the power off.
 17. Press the blue button on the circuit breaker.
 18. Install the battery shroud. Ensure all button head screws are snug and that the shroud is secured.
 19. Flip the lever on the breaker to "ON" to reconnect the batteries to the controller.

Declaration of Conformity

Manufacturer's Name: PHS West
Manufacturer's Address: 6704 Bleck Drive
Rockford, MN 55373 USA

PHS West declares under sole responsibility for issuing this declaration of conformity in relation to the following product(s):

Product Description: Heavy Duty Server Rack Tug
Model Number: 36500 HD

The above product(s) is hereby declared to conform to the essential requirements set out in community harmonization legislation mentioned below:

Machinery Directive: 2006/42/EC
EMC Directive: 2014/30/EU
RoHS Directive: 2011/65/EU

The following standards have either been referred to or have been compiled with in part or in full as relevant:

EN ISO 12100:2010	Machinery Safety	Safety of Machinery - General Principles for Design - Risk Assessment & Reduction, includes EN 14121:2007
IEC 60335-1:2010/AMD2:2016	Safety	Household and similar Electrical Appliances - General Safety
EN 60204-1:2010	Machinery Safety	Electrical Equipment of Industrial Machines - General Requirements
EN/ISO 14120:2015	Machinery Safety	Equipment Guarding - General Requirements
EN/ISO 4871:2009-11	Machinery Safety	Noise Levels - Declaration & Verification
EN 614-2:2000+A1:2008	Machinery Safety	Ergonomic Design Principals
EN 1037:1995+A1:2008	Machinery Safety	Prevention of Unexpected Start-Up
EN 55014-1:2006+A1:2	EMC	Electromagnetic Compatibility - For Household Appliances
EN 55014-2:2015	EMC	Electromagnetic Compatibility - For Household Appliances
CENELEC 61000-3-2E	EMC	Electromagnetic Compatibility - Limits for Harmonic Emissions
CENELEC 61000-3-3E	EMC	Electromagnetic Compatibility - Limitation for Voltage Changes
EN 12895:2015	EMC	Industrial Trucks Electromagnetic Compatibility
EN 62233:2008+C1	EMC	Measurement Methods for EMC Fields of Household Appliances

Full Name, Position of Responsible Person and Place of Signing
Michael Lindsay, President, Rockford, MN 55373 USA

Signature:

Date:

A technical file has been compiled and is available to European national authorities upon written request.

Notes