



Freightliner M2 / HTS-10T Owner's Installation Manual

**HTS Systems Lock N Roll, LLC. Hand Truck Transport Solutions
Hand Truck Sentry System – HTS Ultra-Rack (Owner's Manual)**

10/15/08

This HTS-10T Freightliner M2 installation manual was published by HTS Systems Lock N Roll, LLC.

CONGRATULATIONS ON YOUR NEW PURCHASE OF AN HTS ULTRA-RACK!

Your HTS Ultra-Rack been designed, engineered and manufactured to give you the best possible dependability and performance. Should you experience any problems you cannot easily remedy, please contact your nearest HTS Systems Lock N Roll distributor or installation facility. Authorized HTS Systems service centers have competent, well-trained technicians and the proper tools to service or repair this unit. Please read and retain this manual for future reference. The instructions will enable you to assemble, install and maintain your HTS System properly. Always observe the "Safety Rules."

CUSTOMER RESPONSIBILITIES: PRINT THIS MANUAL AND CARRY IN VEHICLE

- Read and observe all safety rules.
- Follow a scheduled maintenance; complete a damage inspection before using your HTS unit.
- Follow the instructions under "Customer Responsibilities" sections of this owner's manual.

ATTENTION: OWNER'S MANUAL INTRODUCTION

This **HTS Systems Lock N Roll Hand Truck Sentry System OWNER'S MANUAL** is intended to act as a guide for operation and routine maintenance but is in no way intended to encourage usage or repair of this hand truck locking unit by those who are not qualified to do so.

The contents of this manual include, but are not limited to general operation, installation procedures, parts list and an outline of things that should be checked but may not be obvious to those not technically qualified. This manual assumes the HTS unit is installed, undamaged and operating correctly. Improper installation, improper operation or damage should be immediately corrected by a qualified person. If the owner or operator observes improper installation, improper operation or damage or has any doubts as to the installation, condition, use or operation of the HTS unit, he or she should immediately contact a qualified person for assistance and correction.

We strongly urge anyone that has questions regarding the installation, operation, usage, maintenance or repair (as it relates to the HTS) to contact our PENNSYLVANIA facility where we have qualified personnel that will be happy to assist you. You may contact our customer support center at: customerservice@handtrucksystems.com Telephone numbers and address of this location has been listed within your HTS Systems Lock N Roll owner's manual and installation instructions are listed below.

**HTS Systems Lock N Roll, LLC.
Hand Truck Transport Solutions
5 West Olive Plaza
Scranton, PA. 18508-2531**

www.handtrucksystems.com

customerservice@handtrucksystems.com

Customer Service Department: (1-866) 388-2102

Product Sales Department: (570) 342-2102 Fax (570) 347-3878

IMPORTANT: TO BE KEPT IN VEHICLE / GENERAL OPERATION INSTRUCTIONS

For the operation of this HTS unit, please refer to the "OPERATIONS INSTRUCTIONS" inside of this owner's manual.

DO AND DO NOT SAFETY LIST / INSTRUCTIONS FOR SAFE OPERATION

- DO:** Read and follow all warning decals, assembly, installations and operating instructions found within your HTS Systems' HTS Ultra-Rack Hand Truck Sentry owner's manual.
- DO:** Be sure the area in which the HTS will open and close is clear before opening, closing or activating the dash release switch of this unit.
- DO:** Visually inspect your HTS Ultra-Rack unit frequently for damage, wear or abuse.
- DO:** Repair or replace this device when it is found to be faulty or damaged to prevent accidents and/or injuries.
- DO:** Be sure the vehicle is properly and safely braked before using this unit. Vehicle must be parked on a dry level road surface before attempting to release and tilt unit forward.
- DO:** Be alert when removing or attaching the hand truck to the HTS unit. Observe traffic flow and watch for stopped or parked vehicles that may depart without warning. Be careful!
- DO:** Keep all decals in place and legible, we recommend the HTS owner's manual be kept inside the vehicle for new drivers and future reference.
- DO:** Read and follow all instructions, **comply with** all safety information, including **unit weight restrictions or all warranties are void.**

DO NOT: allow your HTS to be assembled, installed or used by persons who have not read this installation manual or become familiar with its operation.

DO NOT: use your HTS unit for climbing, stepping or as a ladder device.

DO NOT: overload your HTS unit, it is designed to retain up to 50 lbs. (22.5 kg), **one** extrusion aluminum or cart conversion hand truck or standard tubular steel, tubular aluminum.

DO NOT: use your HTS unit for pushing, towing or as a negative ground circuit when jump starting a disabled vehicle, **any abuse voids warranties.**

DO NOT: attempt to splice, connect, wire, hook into or attach the HTS Micro-cable wiring harness to any other electrical components. This electrical harness is a closed wiring system.

DO NOT: attempt to modify any part of your HTS unit to accommodate larger unapproved hand trucks or to allow untested and/or unapproved vehicle attachments.

DO NOT: attempt to interchange electrical components, designs or brands without the express written authorization of HTS Systems Lock N Roll LLC.

DO NOT: use your HTS device if the unit shows signs of abuse or fails to operate properly.

ATTENTION: The success or failure of this equipment could very well depend on the thorough and proper installation. Please read all instructions before proceeding.

IMPORTANT: When installed, the HTS unit must not alter or prevent any vehicle compliance to existing state or federal standards, especially FMVSS 105. Each chassis and/or truck body manufacturer's recommendations should be consulted for installation and compliance.

HTS SYSTEMS LOCK N ROLL LLC. PRODUCTS COMMERCIAL / CONSUMER LIMITED WARRANTY INFORMATION

Limited Warranty Information:

HTS Systems Lock N Roll LLC. product warranty covers the mechanical components of each new **HTS Hand Truck Sentry System** commercial front mount and rear mount designs to be free from defects in material and workmanship for the lifetime of the HTS device. All electrical components and mounting hardware carry a one (1) year limited warranty against defects in material and workmanship. An optional two (2) year limited warranty protection for all electrical components may be purchased from HTS Systems Lock N Roll within one year of purchase.

Color Select Option is warranted for one (1) year against manufacturing defects. Any scratching or wear caused by normal use, hand truck contact, vehicle collision or any type of abuse, is not covered by warranty. Color Select includes UV inhibitors that help stabilize the glass filled Nylon polymer to reduce sun damage and color fading. However; some extreme environments or cleaning agents may cause premature or adverse reactions to the frame surfaces. Please consult your owner's manual for additional information. Color Select is a customer expense option.

Warranty registration must be submitted to HTS Systems Lock N Roll within thirty (30) days of purchase via www.handtrucksystems/warranty/registration.com from our web site. Warranty is valid for the original purchaser of the HTS Systems unit only.

WARRANTY GENERAL INFORMATION

The obligation under this warranty, statutory or otherwise, is limited to the replacement or repair at the manufacturer's factory or at a point designated by the manufacturer, of such part, that shall appear to the manufacturer, upon inspection of such parts to have been defective in materials or workmanship. This warranty does not obligate HTS Systems Lock N Roll LLC. to hold the cost of labor or transportation charges in connection with repair of defective parts, nor shall it apply to a product upon which repairs or alterations have been made unless authorized by the manufacturer, or for equipment which has been misused or neglected or which has not been installed correctly. HTS Systems Lock N Roll obligation shall be limited to such repairs or replacement and shall be further conditioned upon HTS Systems receiving written notice of any alleged defect and proof of original purchase within ten (10) days after its discovery and, at HTS Systems' option, the return of the allegedly defective part to HTS Systems Lock N Roll manufacturing facility or authorized distributor. If the authorized distributor requests, the purchaser may return the HTS unit, with all transportation charges prepaid, to the authorized distributor. Any damage in transit will be the responsibility of the carrier or at the risk of the purchaser.



Attention: There will be no transit reimbursement to purchaser without proper written authorization from HTS Systems Lock N Roll, LLC. 5 West Olive Plaza Scranton, Pennsylvania 18508, please provide confirmation number and date of authorization.

Attachment of an HTS Hand Truck Sentry System hand truck retaining device to motor vehicles is the risk and expense of the purchaser. Compliance with applicable motor vehicle regulations is the responsibility of the installer. HTS Systems Lock N Roll LLC. will not assume any liability for any damage to a motor vehicle resulting from the attachment or from the use of an HTS device. Although HTS Systems' Hand Truck Sentry Systems hand truck locking units are designed to fit specific vehicle models, HTS Systems does not assume any liability for the cost of modification of the unit or the vehicle required to attach, install or mount the Hand Truck Sentry System.

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF OTHER EXPRESS AND IMPLIED WARRANTIES (EXCEPT OF TITLE), INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

HTS SYSTEMS LOCK N ROLL LLC. PRODUCT LIABILITY IS EXPRESSLY LIMITED TO THE REPAIR AND REPLACEMENT OF DEFECTIVE PARTS AS HEREIN PROVIDED. HTS SYSTEMS LOCK N ROLL SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL OR CONTINGENT DAMAGES WHATSOEVER, WHETHER FOR BREACH OF CONTRACT, BREACH OF WARRANTY, NEGLIGENCE OR OTHER TORT, OR ON ANY STRICT LIABILITY THEORY.

IMPORTANT NOTICE: Limited Warranty Information Continued

To the fullest extent permitted by applicable law, the following are hereby excluded and disclaimed:

- 1.) All warranties of fitness for a particular purpose;
- 2.) All warranties of merchantability;
- 3.) All claims for consequential or incidental damages. There are no warranties that extend beyond the description that appears in the owner's manual. Some states do not allow the above exclusions or disclaimers in consumer transactions, and as such, this disclaimer/exclusion may not apply.

To the extent such warranties of fitness for a particular purpose or merchantability are deemed to apply to this product, they exist for only as long as the express limited warranty elsewhere set forth is in existence.

HTS Systems Lock N Roll, LLC. whose policy is one of continuous product improvement, reserves the right to improve any product through changes in design or materials as it may deem desirable. HTS Systems Lock N Roll is not obligated to incorporate such changes in products of previous manufacturer.

If field service at the request of the buyer is rendered and the fault is found not to be the HTS product, the **buyer shall pay the time and expense cost of the field representative**. Invoices for service, labor or other expenses which have been incurred by the buyer without express approval or authorization by HTS Systems Lock N Roll will not be accepted.

This product warranty gives you specific legal rights and you may also have other legal rights which vary from state to state.



WARRANTY REGISTRATION WEB PAGE (example)

MODEL NUMBER	HTS-10T – BL	PURCHASER NAME AND ADDRESS
SERIAL NUMBER	002 372426	<u>ABC Delivery Company</u>
COLOR SELECT OPTION	YES / NO	<u>123 Main Street</u>
CODE	BL RD GN YW BN	<u>Anywhere, USA</u>
DATE OF PURCHASE	07/23/08	DISTRIBUTOR NAME AND ADDRESS
ELECTRICAL COMPONENTS EXTENDED 2YR. LIMITED WARRANTY	YES / NO	<u>Material Handling Company</u>
		<u>123 Avenue</u>
		<u>Anywhere, USA</u>

WARNING: WARRANTY REGISTRATION PAGE MUST BE COMPLETED AND FILED WITH OUR WARRANTY SUBMIT PAGE VIA HTS WEB SITE TO HTS SYSTEMS LOCK N ROLL, LLC. CORPORATE OFFICE, NO LATER THAN THIRTY (30) DAYS OF DATE OF PURCHASE/DELIVERY DATE TO VALIDATE PRODUCT WARRANTY AND TO DOWNLOAD OUR ADOBE (PDF) INSTALLATION MANUAL.

ATTENTION: THE MODEL AND SERIAL NUMBER CAN BE FOUND ON A LABEL AFFIXED TO THE SIDE PANEL OF THE HTS SHIPPING BOX. YOU SHOULD RECORD BOTH THE SERIAL NUMBER AND DATE OF PURCHASE AND KEEP THEM IN A SAFE PLACE FOR FUTURE REFERENCE.

**CUSTOMER / RESPOSIBILITIES SECTION
DELIVERY / RECEIVING INSTRUCTIONS:**

Conduct a careful inspection of product shipping carton. Examine cardboard container for puncture holes, tears, collapsed or crushed walls which may indicate shipping damage or the possibility of lost parts.

When consignee/purchaser accepts delivery of damaged freight the receiver must immediately perform an open container inspection. Receiver must open product shipping box and carefully evaluate the condition of the product and check for the proper contents. The receiver must note and record on the shipping bill all damage to the product container and report the condition of the freight to the carrier.

ASSEMBLY INSTRUCTIONS:

Remove HTS unit from shipping carton by opening side panel flaps of shipping carton and removing corrugated triangle insert. To remove the HTS, grab frame and pull upward to clear side wall of carton. Remove HTS Dash control kit and fastener hardware before lifting the Hand Truck Sentry System from packaging.

Identify all contents by reviewing the Assembly Parts List Section located within your HTS Systems owner’s manual. Carefully inspect all parts and complete a thorough parts inventory before beginning assembly and installation procedures. Note: HTS-10T M2 is assembled.

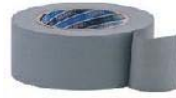
Tools Required for HTS Ultra-Rack Assembly and Vehicle Installation



Measuring tape



Pen Ink marker



Duct tape or Masking tape



Mechanics creeper



Drill punch



Power Drill



19mm socket



Extension cord



Phillips driver



1/8" inch (pilot-hole) drill bit



5/8" inch drill bit



1 1/4" hole drill bit



1/2" Ratchet wrench



3/8" Ratchet



5/16" Allen socket



Phillips screwdriver



Pliers



Crescent wrench



Drop light



SAE Allen wrench set



Wire cutters



Hammer



Utility knife



Paint pen

Caution: The HTS Systems' Hand Truck Sentry System must be mounted vertically straight and to the highest mounting position as possible without conflicting with the tilt bumper bracket on Tilt Mount HTS-10T units. In most cases this desired location can be easily achieved by locating the lower mounting holes approximately 2 " inches from the bottom edge of the vehicle bumper. Follow the M2 – HTS adapter plate instructions and proper height and pivot clearance will not be an issue. The adapter plate is your guide.

WARNING: Inspect your HTS unit for shipping damage and/or lost parts. Select the location for mounting your HTS unit to the delivery vehicle. Tilt Mount model is designed for the vehicle front, Direct Mount model and Swing Mount model for the vehicle rear. The unit must be mounted to the center of the front or rear bumper, between the bumper mounting bolts. When installing two (2) HTS units to the same bumper surface, span evenly over both sides of the bumper mounting bolts for each unit. Caution, do not cover marker lights, electrical outlets, placards, license plates or tax stickers when installing your HTS unit. Blocking or covering these components is a DOT violation and subject to fines and out of service penalties.



Please start here to begin M2 installations:



Freightliner M2 / HTS-10T Ultra-Rack Owner's Installation Manual

MOUNTING HTS-10T FREIGHTLINER M2 ADAPTER PLATE

Step 1.

Carefully measure to locate the center of the vehicle's bumper. Many truck and truck body manufacturers install brackets, steps and other vehicle options within this area. Make sure there is sufficient clearance to allow the HTS unit to pivot below the bumper mounting area. It may be necessary to remove an old or out dated hand truck bracket or blade chute. It may be necessary to relocate the state license plate and/or hazmat placard display frame. Mount the vehicle license plate 10" -12" inches away from the HTS adapter plate, towards the (right front side) driver side area. If required, relocate the placard display frame to the (left front side) or passenger side.



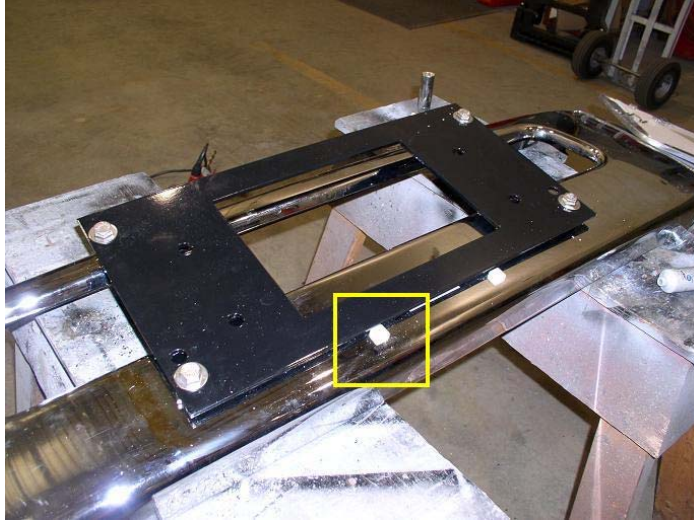
Place a center mark on the bumper by measuring below and between the license plate nylon fastener holes. This center point is the alignment of the HTS adapter plate on center to the M2 bumper. Carefully measure the bumper center directly between and below the nylon fasteners.

Remove the M2 bumper from the truck frame by removing the all four (4) bumper nuts by using a 19mm socket wrench. First remove the bottom bolts, leave the top bolts in place to prevent the bumper from falling. Disconnect the hydraulic (gas charged) hood assist cylinder at the bumper pin joint area by using a small screw driver, slowly pry the release clip back and let the cylinder hang. With two people, carefully lift the bumper upward and back to remove it from the chassis. Using two people, gently place the M2 bumper over saw horses or on a work bench.



The universal HTS adapter plate kit above with stainless steel fasteners and spacers.

This HTS adapter plate kit is designed to fit most Navistar, Freightliner, Sterling, Isuzu, Ford, Peterbilt, Mitsubishi Fuso, Hino and GMC trucks. The Kenworth T300 adapter plate is shorter, has no air vent opening and installs or bolts behind the front bumper, unlike the universal plate.



When attached, the HTS adapter plate will contact the bottom edge of the nylon nut, but it will not cover the nylon surface or holes. This is your correct height and center mark guide for the HTS adapter plate. Use the adapter plate as your template to mark your top pilot holes first with a black marker. Use a sharp drill punch to mark and start the correct pilot holes. The two mounting holes in the outside area of the adapter plate spaced closer together identifies the top side.



Use the adapter plate as your template to mark position the four (4) pilot holes using a black marker pen. Measuring are all marks twice and drill once, this will improve precision.

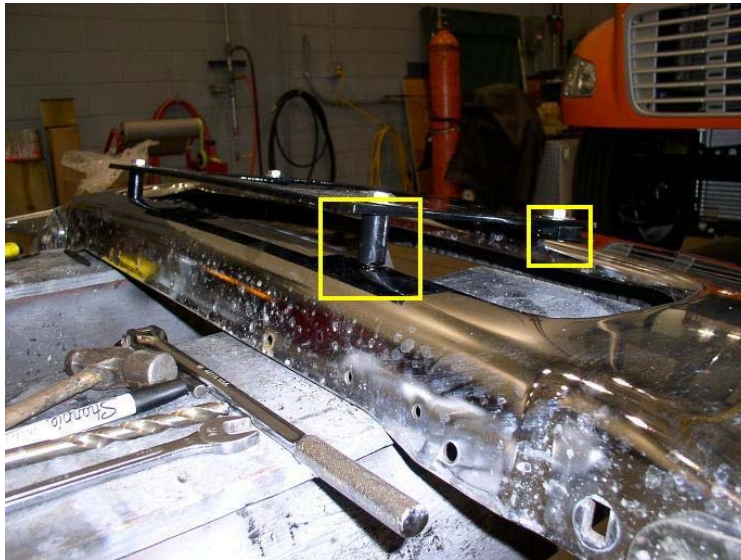
Warning: Before drilling pilot holes carefully inspect the back side of the metal bumper and look for any coolant lines, pneumatic (air) lines, hydraulic lines and electrical wiring that may become damaged. Make sure there are no obstructions on the back inside area of the bumper before drilling! Make certain that there is sufficient clearance behind the vehicle bumper for the washer and nut fasteners. If any obstructions are found, adjust the template accordingly to avoid any damage. Use a heavy piece of folded cardboard behind bumper to protect coolant and air lines.



Drill the four (4) small pilot holes using an 1/8" inch drill bit. Place the adapter plate over the bumper again to recheck your alignment before re-drilling the 1/2" holes for the adapter plate.



Using a black paint pen cover the inside edges of the 1/2" holes to protect bumper from rust.

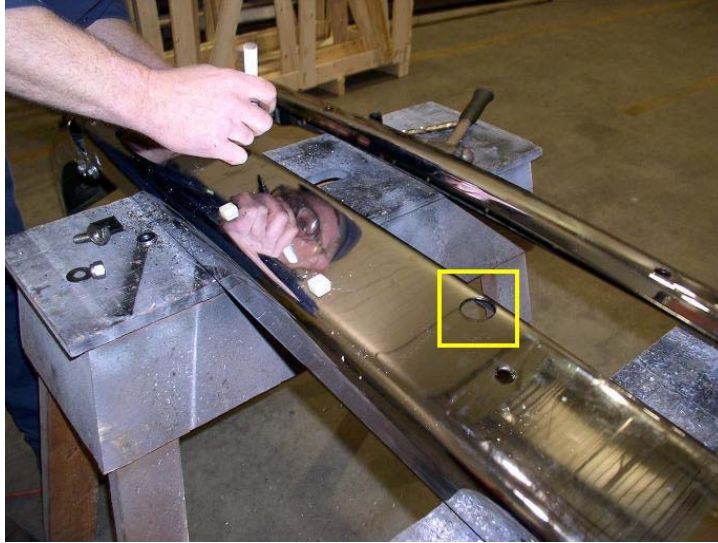


Place the HTS adapter plate with metal spacers under plate and over bottom holes and plastic spacers between plate and bumper and over top holes. Align the metal spacers with the longer (tapered) section facing the bottom of the bumper, which should match the bumper's contour.

Important: Insert the plate bolts and spacers, **but do not attach or tighten nuts**. Using the adapter plate as a template, mark the top mounting holes for the HTS unit with a black marker pen, located on the top inside of the adapter plate. There are (2) two height mounting positions on the HTS adapter plate or (4) four HTS mounting holes. The M2 uses the top position or highest hole and the third hole down. Two (2) larger holes are required in the M2 bumper for accessing the (2) two top mounting fasteners when attaching the HTS unit to the adapter plate and for fastener clearance. Re-check the hole alignments before drilling into the bumper for the two (2) larger holes. Drill the two (2) larger holes to 1 ¼" inch diameter to access with the socket wrench.



The two (2) larger 1 ¼" inch access holes must be large enough to allow the socket wrench to pass through the bumper to reach the two (2) top HTS bumper mount nylon lock nuts.



After drilling the larger 1 ¼" inch socket wrench access holes, use the black paint pen again on the bumper hole edges, to reduce corrosion to the M2 chrome bumper.

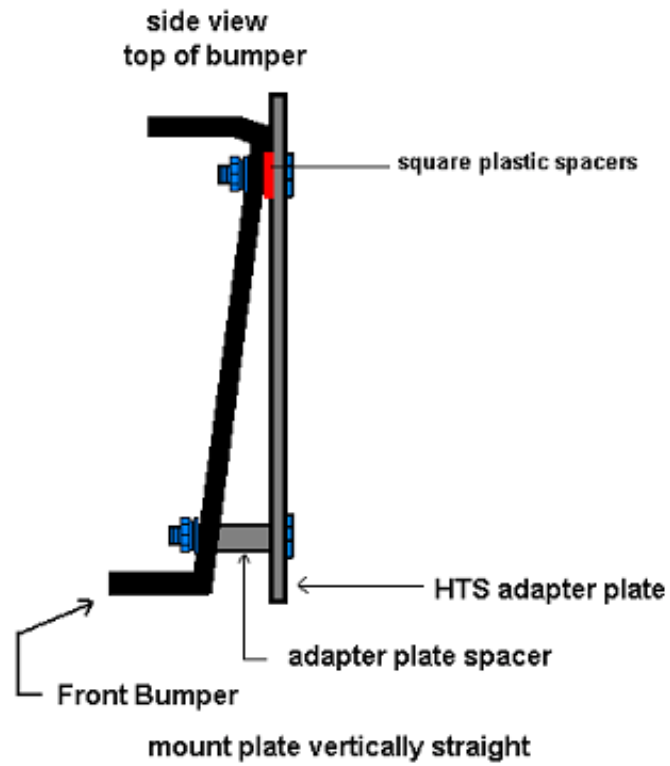
Note: The larger holes shown in image above will be 1 ½" inches higher on your M2 bumper than shown in photo. Your new HTS-M2 adapter plate has been redesigned to raise the HTS another 1 ½" inches high for additional road (ground) clearance height.

Step 2.

Spray a light coat of lithium grease to the shank of all the ½" stainless steel mounting bolts to prevent galling and seizing. Select the ½" socket wrench and ½" Ratchet wrench to install the fasteners. The HTS fasteners are stainless steel which may cause galling or seizing when tightening, we recommend hand tools only and to avoid using high speed pneumatic wrenches. We also recommend applying a lubricant, by spraying lithium grease or similar to all stainless steel mounting fasteners (bolts) before tightening to vehicle. Secure all bolts using the supplied flat washers, lock washers and nylon lock nuts. Tighten and torque all fasteners to the proper weight specified for each bolt diameter.



Place the adapter plate, spacers and fasteners back into place and tightened bolts. Be careful to align the plastic shim spacers straight and metal spacers properly before tightening all fasteners.



Check to confirm the lower metal spacers are in their proper positions with the longer tapered side facing towards the bumpers edge. The angled metal spacers should contour to fit the bottom edge of the M2 bumper.



Step 3.

Attach the HTS-10T unit to the HTS adapter plate. Secure, but do not over tighten HTS to plate.



Step 4.

Attach the cushion clamp (provided) around the HTS cable to the bottom edge of the bumper. Use the self-drilling screws provided. A small pilot hole that is slightly smaller than the self-drilling screw will be required to allow the screws to penetrate the M2 bumper. Six (6) self-drilling screws are provided in your installation kit. Two (2) screws are for cushion clamps, if both cushion clamps are required. Two (2) self-drilling screws will be used to secure the dash release bracket and two spare self-drilling screws are included.

Make certain the Micro-cable harness is above and to the right of the hand truck plate slot, but still concealed behind the HTS frame. Most position directly between the bumper mount walls.

Note: Tilt Mount units (front bumper installations) if possible allow 2-3 inches of pivoting slack. Carefully make a small coil approximately 8-12 inches of cable and store securely between Front bumper and chassis frame. This will allow cable slack in the event the unit must be removed to the side (still connected) for vehicle maintenance or emergency towing.

Important:

The HTS adapter plate and HTS unit needs to be mounted vertically straight to the front bumper. It is acceptable to use ½" ID stainless flat washers between HTS bumper mounts and the adapter plate to achieve a vertically straight position. Even just a few degrees off at the bumper area will make the HTS-10T unit and the taller hand truck lean inches away from the vehicle.



Step 5.

Insert the top bumper bolts into the top of the M2 bumper and using two people carry the bumper back to the truck, lift and align bumper to chassis holes and place into position. Use a socket wrench to re-attach the M2 bumper to the truck chassis and tighten all M10 fastener bolts.

Reattach the hydraulic cylinder (hood assist) by sliding and locking it over the joint pin.

Note: It may be necessary to grind (cut) off the end 3-4 threads of the upper HTS fasteners when the unit is over tightened and/or if the adapter plate bolt shank contacts the M2 truck frame when returning the bumper back to the truck frame. This is common on some earlier M2 installations. **The HTS-10T unit installed on Freightliner M2 trucks does not slide completely to the bottom channels of the bumper mounts. The HTS-10T unit will still clear the M2 hood when in the tilt position. Hood clearance is approx. 45 degrees.**

INSTALLING THE HTS ELECTRICAL HARNESS

Step 6.

Secure the harness tightly by placing black nylon lock ties (provided) every 10"-12" inches. Tilt Mount units require a 2-3" inch slack on the Micro-cable harness at the lower pivot area to prevent the harness cable from pulling and binding when tilting the unit from the vehicle bumper.

Follow the existing electrical wire harness along the vehicle frame towards the engine firewall. Be careful not to cross over the steering, brakes or suspension components. Do not contact the vehicle engine or any moving components within the engine compartment. Always route the HTS electrical harness away from heat sources such as the engine, transmission and radiator components.



Step 7.

Inspect the engine compartment firewall and inside cab under-dash area for possible harness entry locations. Many truck manufacturers have existing holes (pre-punched) with grommet plugs covering the holes used for additional hoses, lines or vehicle options. If an existing hole is available, use it to enter the under-dash cab location. Do not drill or cut an additional hole, if one is already available. If an entry location is unavailable, one must be created by drilling a small 1/8" pilot hole, then a larger 11/16" hole through the firewall. The M2 has a ready access location.

Warning: Before drilling hole through the firewall, carefully inspect the entire drilling area for obstructions, such as heater hoses, electrical harnesses, cables, pneumatic lines and other components. In some cases it is safer and easier to drill from within the cab area towards the engine compartment. Either method, check carefully for possible obstructions on the firewall and within the engine compartment to avoid possible damage and costly repairs to engine components. **Note: Most M2 installations do not require drilling holes into the firewall!**



Insert the HTS wiring harness through the firewall through this location shown in photo above. Push wire grommet into hole and lock into place. Grommet through grommet is acceptable. Slowly slide (pull) the Homerun cable through the grommet to reach the center of the lower interior dash area. The HTS Micro-cable must reach the passenger cup holder area.

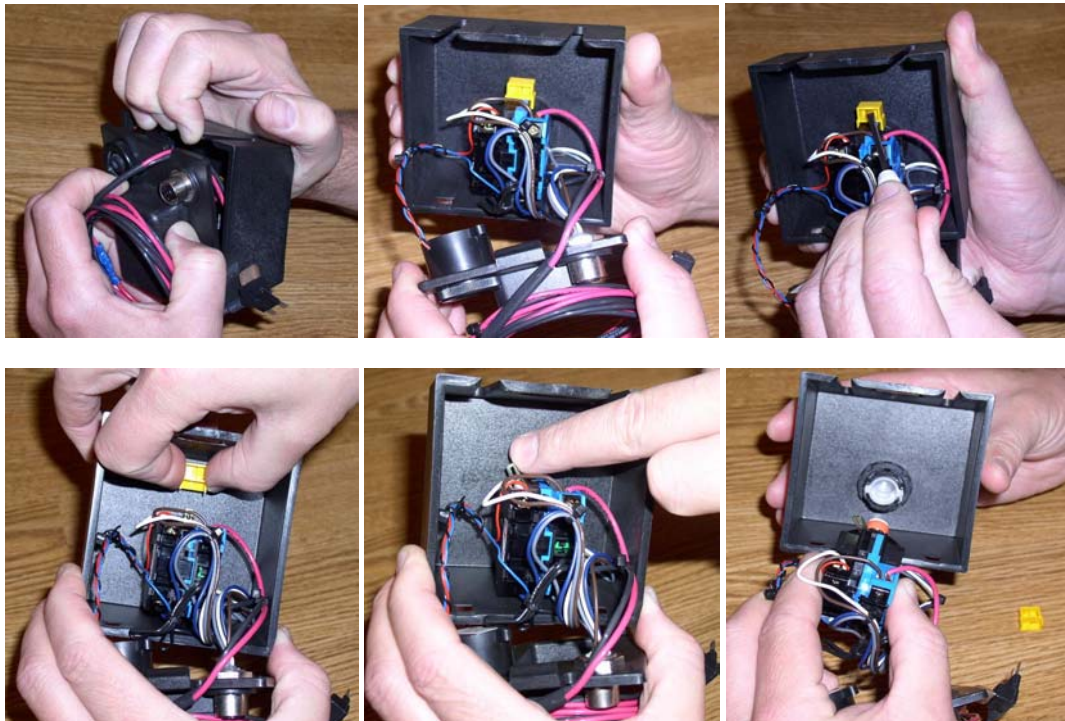
MOUNTING DASH CONTROL BRACKET

Step 8.

Locate the desired mounting location for the Dash Release Switch. The Dash Bracket should be mounted within arms length of the driver or centered on the bottom edge of the vehicle dash board. The Freightliner M2 dash design provides an excellent location for the HTS control switch, at a 45 degree angle, under the passenger beverage (cup) holder.



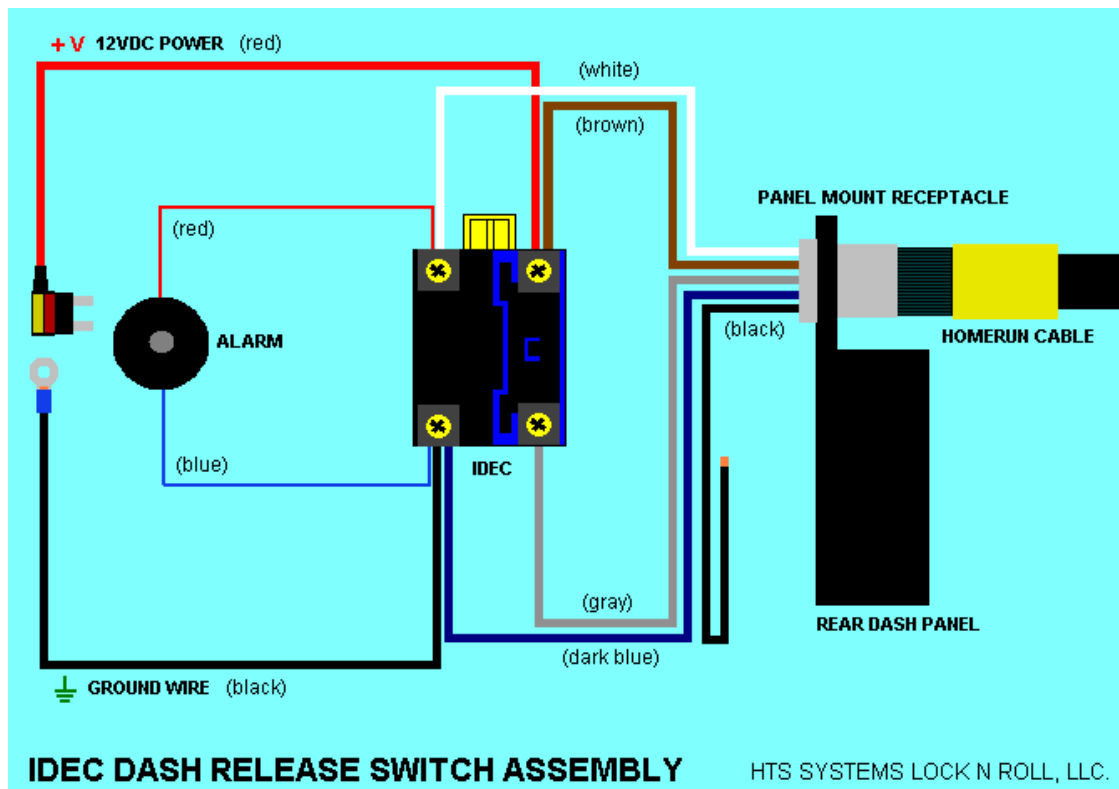
Snap open the rear cover panel of the Dash Release Bracket. Remove the yellow lock clip on the rear of the IDEC switch by prying upward with a small screwdriver and slide metal lever to the left. The wiring assembly will separate from the front section of the Dash Bracket.



Mark the appropriate holes location for the 3/16" fastener slots into the lower section of the M2 passenger cup holder. Position the HTS switch bracket so that it is angled facing the driver's location and slightly behind the edge of the (dash) cup holder.

The two holes should be exactly 2" inches apart. Drill the two (provided) self tapping drill screws (**without pilot holes**) into the bottom of the M2 passenger's plastic cup holder and leave approximately 1/8" of an inch between the screw head and to the bottom dash surface. Mount Front Release Bracket section to under dash by gently pushing the dash bracket front panel slots in between the screw heads and the dash surface. Insert IDEC switch into lens assembly, move metal lever from the left (unlocked) position to the straight-up (locked) position and then snap-on yellow retainer lock cap (hollow side facing you) onto switch assembly. Re-assemble rear section of dash bracket to mounted front section by tucking in the wires and locking lower panel tabs into front section. Snap closed to lock.

If for any reason a wire becomes loose and disconnects from the back of the IDEC dash release switch, you can view the IDEC wiring diagram to properly reconnect the wire using a small Phillips screw driver. Remember to turn off the vehicles ignition and disconnect the HTS power wire before connecting any loose wires. Reconnect the HTS power wire to test wire connections.



CONNECTING THE HTS ELECTRICAL HARNESS

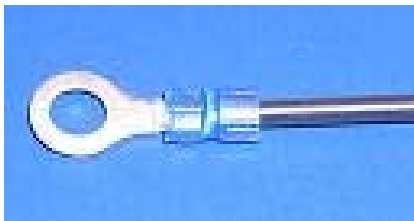
Step 9.

Take the Micro-cable (Homerun cable) female plug and align the key to the inside of the rear dash receptacle and push together to insert connecting pins. Then slowly turn and tighten the harness collar to the inside of the receptacle. Take caution not to cross-thread the Micro-cable connectors. Do not use pliers, channel locks or any tools to connect this harness! This wire connection is a hand-tighten operation only! Tightening the connection by hand will compress the o-ring sufficient to prevent water and moisture from entering the electrical contacts.



Step 10.

The M2 has an excellent location for the HTS ground circuit eyelet connection. There are two small screw studs directly below the ash tray compartment that help secure the center console. Most mechanics route the HTS ground wire above-over and through the support bracket and exit out the driver side area to the threaded metal stud. Simply remove the fastener nut, place the ground eyelet onto the threaded stud and replace the nut tightly. Using wire ties, neatly wrap and tuck the extra ground wire slack above the console bracket and out of sight.



HTS common ground eyelet



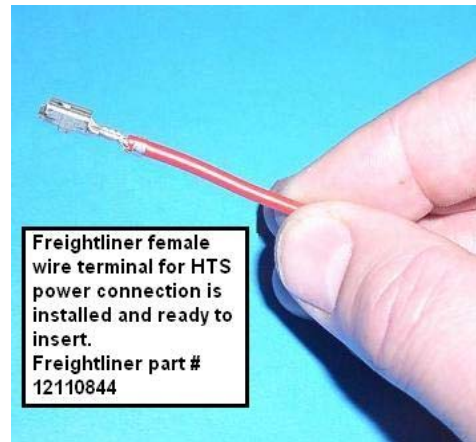
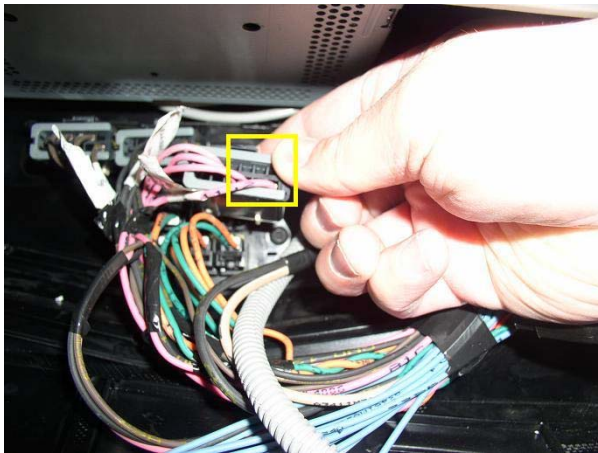
Mount the ground wire to metal surface.

The HTS M2 electrical harness is not equipped with an Add-A-Circuit or Tap-A-Circuit plug-in assembly. **The Freightliner M2 has a Multiplex Wiring System** and all fuse ports within the fuse box (which is located on the inside fender wall within the engine compartment) do not have fuse circuits that turn off with the vehicle's ignition. The fuse circuits are always hot or active. Fortunately Freightliner Corporation recommends a quick and easy solution to power the HTS unit. The power connection point is located directly behind the center dash panel. Using a small torque screw driver, remove all eight (8) center dash panel fasteners and gently lift panel away from dash frame. You will see three gray plug harnesses clipped onto the forward firewall.



The HTS power supply should be apart of the vehicle's ignition accessory circuit, such as the radio, heater (blower) fan or heated mirrors This will allow the HTS to only function when the ignition key is turned on and prevent the HTS from operating when the key or vehicle is off. If the HTS operates when the vehicle is off, the HTS alarm will remain on, distracting the driver and it would be possible to release the hand truck without the ignition key. **Not recommended!**

The HTS Ultra-Rack Hand Truck Sentry System electrical and wiring harness is rated for 5 amps!



Freightliner female wire terminal for HTS power connection is installed and ready to insert.
Freightliner part # 12110844

There are three gray plugs which are clipped to the firewall of the M2 inner dash. Select the gray plug or plug with red wires (select an open available cell slot) to connect the HTS power wire. **The gray ignition plug should have several red wires going into the face of the plug assembly.** The gray plugs should be clipped into their proper sequence. (order is left to right) This is the only recommended power connection for the HTS Ultra-Rack. The HTS-M2 Dash kit (power wire) is equipped with the proper female terminal that connects into this gray plug location on all M2 Freightliner models.

Shown below is the proper clipping or inner firewall positions of the gray plugs of the **M2 Dash Tap Points** for the Freightliner M2, provided by Freightliner Corporation.

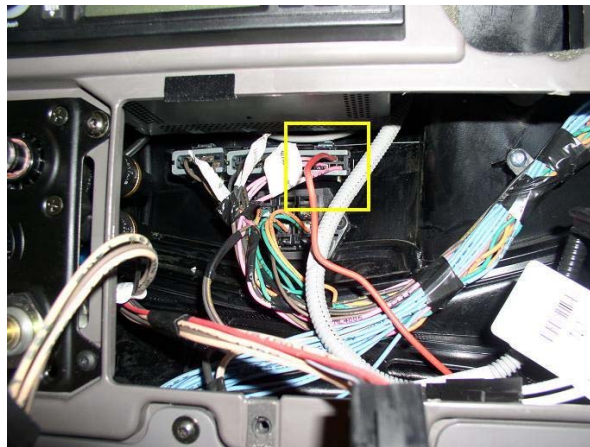
1) Illumination Circuit 219A Max allowable load 5 amps

2) Ground Circuit GND Max allowable load 10 amps

3) Ignition Circuit 81C Max allowable load: 5 amps (Use this Dash Tap Point only)

The electrical connections to the illumination, ground, and ignition utilize a Packard 280 Metri Pack splice pack. Typical terminal application is a Packard 280 Metri Pack Tangless, Pac12110844.

Snap open the rectangular lock collar on the rear side of the gray plug (w/ red wires) and fully insert the female terminal into an open cell inside the gray ignition plug. The connector terminal should hide inside when inserted properly. Snap the rectangular plug collar back in place. Gently pull back to confirm a locked position. The HTS red power wire also includes an inline ATM Mini Fuse holder w/ 5amp fuse. This red power wire with inline fuse and female terminal connects directly into the ignition plug assembly. Secure loose wires by coiling power wire behind dash using the black nylon wire ties provided.



TESTING THE HTS UNIT AND ELECTRICAL CONNECTIONS

Step 11.

Push the HTS button, it should not release, until the vehicle ignition or accessory is turned on. Start the vehicle by turning the ignition (key) switch. The HTS dash release should remain silent. Push the HTS dash release button. If installed and wired properly, the HTS should open and release the hand truck. The HTS unit should only release when the ignition is turned on!

The LED light should remain on and the audio alarm (buzzer) should sound. If the HTS is installed properly the LED light and alarm will cease once the vehicle ignition is turned off. If desired, you can increase the audio alarm volume by lifting and removing the rubber grommet.

Congratulations your installation is complete and your HTS unit is functioning properly!

If the HTS Ultra-Rack does not activate and open properly when the vehicle ignition is on or when the vehicle's accessory key position is switched on, check the HTS ground wire. If you are certain the ground connection is good, then re-check the Micro-cable connection going into the rear of the dash release switch. Check the 5 amp mini fuse inside the inline fuse holder attached to the red power lead wire, connecting into the gray ignition plug. This HTS Ultra-Rack was inspected and tested at (3) quality control stations with its assigned dash control switch prior to packaging and shipping. Most solutions involve improving the ground contact on the ground eyelet.

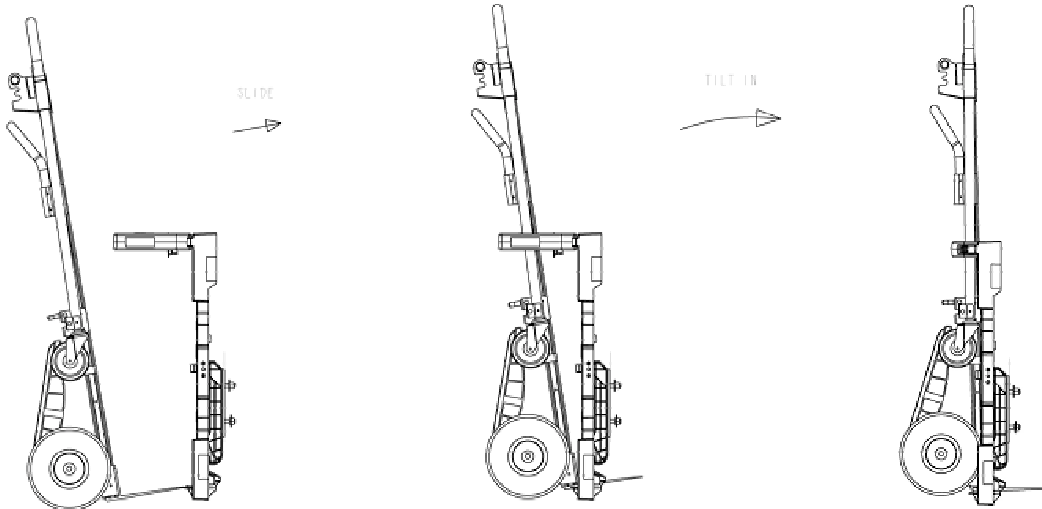


OPERATING THE HTS ULTRA-RACK HAND TRUCK SENTRY SYSTEM

Step 12.

Locking and securing the hand truck properly into the HTS Ultra-Rack:

1. Lift the hand truck and center it to the HTS frame and slide the hand truck load plate into the lower plate slot of the HTS. Make sure the hand truck load plate is completely inside the HTS plate slot and the hand truck side rails are contacting the HTS lower horizontal cross member above the HTS blade chute.
2. Move the hand truck forward to contact the Push-Bar. (When using a convertible or platform hand truck, such as the B&P Liberator, Wesco-Cobra or Magliner-Gemini remember to position the smaller caster wheel outward, simply **rotate the smaller caster wheels** by hand.) When using larger platform hand trucks it may be easier to squeeze the HTS push-bar and housing frame together by placing your hand through the hand truck frame. When the hand truck contacts the Push-Bar assembly, firmly rock the hand truck forward until the push-bar assembly meets the latch assembly and both claw tabs rest inside the main frame of the rib locks. Some drivers place one foot on the hand truck axle to hold the hand truck against the HTS lower cross member. Use medium force when rocking forward. The hand truck is now locked, secured safely and ready for travel!



Unlocking and removing the hand truck from the HTS Ultra-Rack:

1. When the driver arrives at the delivery location and the vehicle comes to a complete stop, apply the vehicle parking brake. Be alert when removing or attaching the hand truck to the HTS unit. Observe the traffic flow and watch for stopped or parked vehicles that may depart without warning. Be careful!
2. Push down on the red dash release button, the HTS will then release and the hand truck will pivot forward slightly, the hand truck is now released. The HTS alarm and LED light will activate and remain on until the vehicle's (ignition) engine is turned off.
3. Exit the vehicle and grab the side rails of the hand truck, move the hand truck forward slightly to level the hand truck load plate and remove the hand truck from the plate slot. You can release the hand truck by activating (pushing) the dash release (button) switch or by using the manual override key located at the bottom of the HTS component housing, outside the vehicle. Remember to turn the key back to the reset position before removing the key from the cam, when using the exterior override key. You must reset the manual override key back to the rest position or the HTS will not lock!

HTS ULTRA-RACK SIX MONTH MAINTENANCE



If the HTS unit fails to open or sticks because of heavy road dirt, simply spray and flush area with Permatex Silicone Lubricant. Simply use the override key and pull the unit open. Spray silicone lubricant on the inside of the push-bar rail and on the push-bar train. Manually slide system open and closed several times till push-bar moves more freely. After the dirt is clear, apply a thin layer of silicone grease to the Push-Bar.

In severe Winter climates this may necessary once every 4-6 months.

Tilting the HTS to open hood and access (maintenance) engine compartment:

1. Make certain the vehicle's emergency brake is on and the truck is parked safely on a dry level surface. Exit the cab and walk to the front of vehicle. Look for two small openings in the mid-section of the outer front edge of the HTS-10T frame.
2. Using both hands, insert one index finger into each of the two tilt latch holes and push the red latch levers downward at the same time. This action frees the main frame from the bumper mounts and allows the HTS unit to pivot freely and tilt forward.
3. Tilt the HTS unit back to the 45 degree position to clear the M2 hood. If the vehicle hood contacts the HTS unit, lift the HTS upward slightly while gently forcing the HTS lower section back with your left or right leg. Lower to the unit to the second tilt position and tilt to the 90 degree position to clear engine hood.
4. To lock the HTS unit into the upright vertical (travel) position, raise and tilt the HTS unit to meet the bumper mount latch strikers and force the unit firmly till locked into position. Make certain both red tilt latch levers are horizontally straight and level or not leaning downward. If the red lever is leaning slightly downward the unit is not fully locked.



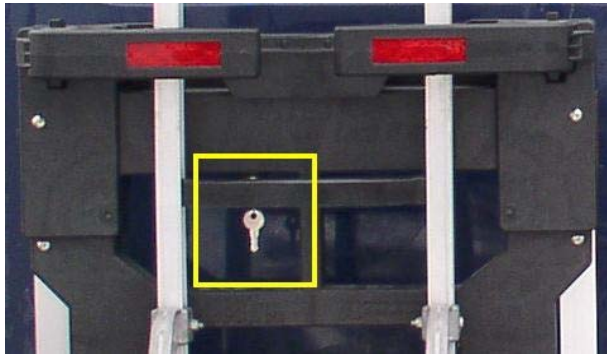
correct position - safe for travel

incorrect position - unsafe

When the red Tilt latch lever is horizontal and level the HTS-10T unit is safely latched into the upright (travel) position. If the red lever is not level and horizontal, the HTS-10T unit is not fully engaged upright for travel. The HTS tilt latches are a two position automotive safety latch.

Driver Training Notes:

It takes about 2-3 days for the route driver to be accustomed to the HTS and to become familiar with the HTS operation. The HTS dash release button action will become routine after (3) three days.



HTS Ultra-Rack manual override key is below frame housing.



Turn the key 1/4 left to unlock unit.

Some drivers chose to insert and leave the spare release key in the HTS override cam for several days for training only. Many drivers add the spare override key to their personal keys and simply carry the HTS key in their pocket. The second key should be stored on the ignition key ring for easy access. If a driver forgets to push the HTS release switch before exiting the cab, they can simply use the manual override key on the outside of the HTS to unlock the hand truck. You must reset the manual override key by allowing it to return back to the first position or the HTS Ultra-Rack will not relock properly!



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