The Safety Source LLC
Agreement for Sale of Storage Rack Components without Installation

- **Seller:** The Safety Source LLC (TSS)
- **Customer**: _____ **Phone**: _____
- **Customer Address:**_____
- **Purchase Order #**: _____ **Purchase Price:** _____ **(material only)**
- Storage Rack Component Sales:
  - TSS is willing to make sales of Storage Rack Components without Installation only if the Customer agrees as part of the terms of sale. Storage Rack Components without Installation are storage rack components and/or replacement parts sold to the Customer but not installed pursuant to written agreement with TSS.
  - Customer acknowledges that they have received, read, fully understand, and agree to follow the specified procedures as outlined in the attached **Worldwide Material Handling WorldRev™ Pallet Rack Repair Safety and Installation Guide**.
- Disclaimer of Implied Warranties:
  - All Storage Rack Components without Installation are sold "As Is" and without warranty except as otherwise may be specifically provided in writing by TSS. However, any written warranty TSS may provide shall be null and void if any if any Storage Rack Components are altered, abused, misused, installed improperly, or subjected to an abusive environment. TSS SPECIFICALLY DISCLAIMS ANY AND ALL OTHER WARRANTIES WHETHER EXPRESS OR IMPLIED BY OPERATION OF LAW OR OTHERWISE INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.
- Limitation of Liability:
  - Customer agrees that in no event, whether as a result of breach of contract or warranty, negligence or other cause whatsoever, and regardless of the form of legal action or theory of recovery, will TSS or its or affiliates be liable for (a) consequential, special or punitive damages including but not limited to loss of profit or revenues, loss of equipment or downtime costs, or claims of customer clients for such damages, nor (b) any losses or damages under any claim of any kind, in excess of the purchase price actually paid to TSS for the Storage Rack Components without Installation which give rise to the claim. In any event, and unless a shorter time period is specified by an applicable limitations statute, any liability whatsoever will terminate two years (2) years after receipt of the Storage Rack Components by the Customer.

Customer agrees to the terms as stated in this Agreement:

The Safety Source LLC

Signature:_____ Date:_____

Title: Sales Coordinator

Company Name:_____

Signature:_____ Date: _____

Title: _____
(must be Officer or Authorized Representative)

WorldRev™

PALLET RACK REPAIR

SAFETY AND INSTALLATION GUIDE

Table of Contents

1. General Information

These instructions are for: Worldwide Material Handling WorldRev™ Pallet Rack Repair System and Rack Lifting Jack.

Information used in these instructions was current at time of printing. However, due to WWMH's ongoing product improvement, production changes may cause your equipment to appear slightly different in detail.

Worldwide Material Handling reserves the right to change specifications or design without notice and without incurring obligation to install the same on equipment previously manufactured.

Your Worldwide Material Handling equipment has been carefully designed to provide dependable service and operation in return for your investment.

These instructions have been prepared to aid you in the performing rack repair installations. They should be considered a permanent part of the rack repair system and remain with the equipment for reference.

1.1 DISCLAIMER

Information has been carefully checked and is believed to be accurate; however, no responsibility is assumed for inaccuracies.

Worldwide Material Handling Products, LLC reserves the right to make changes without further notice to any products to improve reliability, function, or design.

Worldwide Material Handling Products, LLC does not assume any liability arising out of the application or use of any product; neither does it convey any license under its patent rights of others.

Worldwide Material Handling Products, LLC is not responsible for any misuse of materials, tools, or accessories. It is strictly the responsibility of installers and end users to ensure all instructions are followed and to comply with all laws and regulations related to the use of any WWMH product or equipment.

2. Safety

It is the responsibility of the user to read and understand this Safety and Installation Guide in regards to safety, operation, installation, and procedures. It is the user's responsibility to inspect equipment and follow all procedures listed in this manual.

We have attempted to cover all areas of safety, operation, installation, and procedures; however, there may be times when special care must be taken to fit your conditions. Always follow OSHA, State, and local safety procedures.

Throughout this manual the ⚠ symbol and the words **DANGER**, **WARNING**, and **CAUTION** are used to call attention to safety information that if not followed, will or could result in death or injury. **NOTICE** and **NOTE** are used to call your attention to important information.

The definition of each of these terms follows:

⚠ DANGER

DANGER Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING

WARNING Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION

CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to personal injury.

NOTE: Special point of information or machine adjustment instructions.

Read Safety and Installation Guide.

⚠ WARNING

Improperly operating or working with this equipment could result in death, serious injury, or damage to property and equipment. Read and follow all instructions in this Safety and Installation Guide before operating equipment or performing any installation.

2.1 General Safety Instructions

1. Read and understand instructions provided in this manual and warning labels. Review these instructions frequently!
2. Never allow equipment to be operated by anyone unfamiliar with operation of all functions of the unit. Users must read and thoroughly understand all instructions given in this manual before operating equipment or performing installations.
3. Make sure weight does not exceed capacity of lifting equipment. This is critical to maintain safe control and prevent death or injury, or property and equipment damage.
4. Always wear protective clothing, shoes, gloves, hearing, and eye protection as required.
5. Inspect work area before beginning installation:
    - Stored material
        - ✓ Check type of stored material (Hazardous, liquids, etc.)
        - ✓ Check pallet position, condition, and loading
    - Rack System
        - ✓ Check condition of the entire system
        - ✓ Check average and maximum weight load
        - ✓ Check system alignment
        - ✓ Check vertical support secured
        - ✓ Check condition of diagonal & horizontal braces
        - ✓ Check numbers and condition of safety bars
        - ✓ Check for existing row spacers
    - Sprinkler System
        - ✓ Check if bolted to rack or uprights.
        - ✓ Check if system runs inside the upright

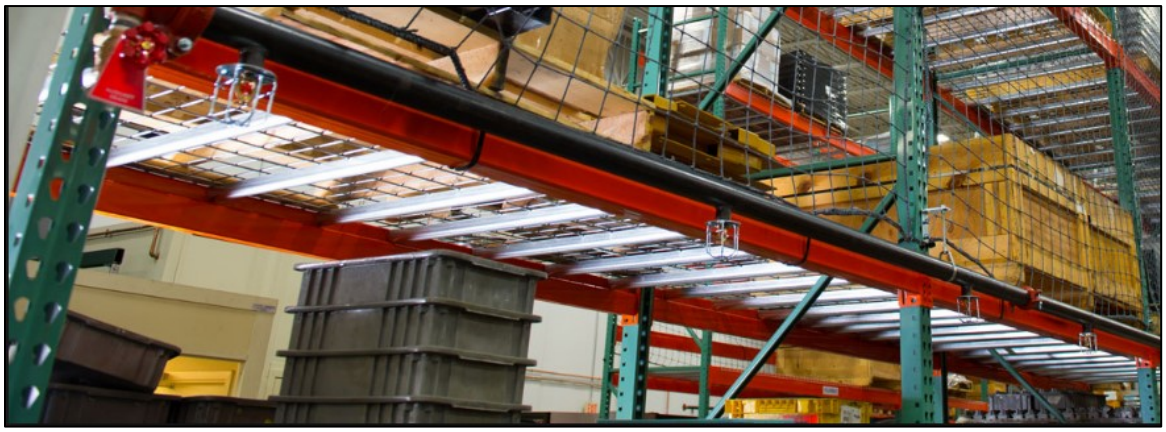


Figure 1. Rack Sprinkler System Installation (Typical)

- Electrical
    - ✓ Check if any electrical outlet is attached to the upright
    - ✓ Check if any electrical wires or conduits are installed in rack system
- Floor Condition
    - ✓ Check condition of concrete
    - ✓ Verify floor is level
    - ✓ Check for electrical or heating/cooling lines, or other mechanical systems that may be embedded in the floor

⚠ DANGER

Electric shock will cause death or serious injury. Ensure all power is turned off before working on any racks or other equipment with wires, conduits, or outlets. Use a qualified electrician to remove or modify any circuits or other electrical equipment which may be present on or around the work area.

⚠ CAUTION

Rack Lifting Jack weighs approximately 555 lb. (252 kg). Always use appropriately rated equipment to lift and move Rack Lifting Jack.

⚠ CAUTION

High noise levels can cause hearing loss. Always use hearing protection and stay away from hazardous work area.

⚠ WARNING

Falling objects can cause death, serious injury, or damage to property and equipment.

- **Maximum rated lifting capacity of Rack Lifting Jack is 10,000 lb. (4,536 kg).**
- **Always use safety stop when supporting rack during installation. Never rely on hydraulic jack to support any load.**
- **Check stability and condition of all loaded racks before attempting any work.**
- **Check operating condition of hydraulic jack before each use. Never use a jack that is damaged, leaking, or does not operate normally according to manufacturer's instructions.**
- **Always install Rack Safety Locking Pins in the closest hole to the support. Never force or hammer a pin into position.**
- **Install all clevis pins to prevent a locking or safety pin from backing out. Never assume weight or pressure will keep a pin in position.**

⚠ CAUTION

Inhaled dust can cause lung damage or other illnesses. Harmful dust can be produced from cutting, drilling, or grinding material during installation.

Wear light respiratory protection when cutting or other activities creating dust.

⚠ WARNING

Inoperative safety devices can cause death, serious injury, and damage to property and equipment.

- **Check all safety devices are operating properly before starting work.**
- **Never turn off or disable safety devices.**
- **Make sure all safety devices are readily accessible.**

2.2 Installer Responsibilities

⚠ WARNING

Failure to follow these installation instructions can result in serious injury or death. If you have any questions, or if you do not understand these instructions, contact Worldwide Material Handling (WWMH) immediately at 888-650-9473 or email rackrepair@wwmh.net

Allowing unqualified and untrained personnel to operate, perform installation activities, or work in the installation area can result in death, serious injury, and damage to property and equipment. Installation of WorldRev pallet rack repair products must be installed by highly skilled professionals experienced in pallet rack systems, structures, and components.

These instructions must be read and clearly understood before beginning the repair. If at any time you are unclear or unfamiliar with any terms, conditions, procedures, or components associated with this pallet rack repair process, stop immediately.

- Only allow qualified personnel to perform any work.
- Keep unqualified personnel away from installation areas.
- Stop work if any unqualified or unauthorized persons are in hazardous areas.

NOTICE

These WorldRev instructions refer to roll-formed pallet rack ONLY. Other types of pallet rack (C-channel, structural, etc.) require different components and/or instructions.

- It is the responsibility of the installer to be familiar and comply with each facility's special requirements, local regulations, and site conditions (i.e., special safety training, work permits, product familiarity, emergency and evacuation plans, closest exits, etc.). All safety procedures must be followed by every member of the installation crew.
- Installer must ensure all equipment is secured or contained, and never left unattended at any time.
- The Installer is responsible to obtain any work permits required before installation can begin (including but not limited to: hot work, surface penetration, aisle lockout, etc.).
- If at any time you are unsure of the safety, conditions, or installation, stop and contact the appropriate person(s).
- Installer is responsible to comply with all safety, handling, and other requirements for the related work environment (foodstuffs, hazardous, flammable, etc.).

⚠ WARNING

Carbon monoxide poisoning. Carbon monoxide is an odorless gas which can cause death or serious injury. Under no circumstances should internal combustion generators or tools be used for any part of the repair/installation process. Only use cordless electric power tools.

NOTICE

Improper handling and disposal of environmentally harmful substances can cause damage to the environment. Follow all Federal, State, and local regulations.

2.3 Personal Protective Equipment

Personal Protective Equipment (PPE) protects personnel against dangers which may affect their health or safety during work. Follow instructions PPE posted in the work area.

Protective Work Clothing
Tight-fitting work clothing with low resistance to tearing, with tight sleeves and without projecting parts. It primarily protects against entanglement by moving machine parts. Do not wear rings, chains, or other jewelry.

Hearing Protection
Protects against hearing damage.

Light Respiratory Protection
Protection from hazardous dusts.

Protective Goggles
Protects eyes from flying debris, dust, and fluids.

Protective Gloves
Protects hands from friction, abrasion, puncture wounds, burns, or more serious injuries.

Safety Helmet
Protection from falling and flying parts and materials.

Safety Footwear
Protection from heavy falling parts and prevents slipping on slippery surfaces.

2.4 Safety Labels

⚠ WARNING

Illegible decals and symbols can result in failure to recognize hazards and can cause death, serious injury, or damage to property and equipment. Labels and signs can become dirty or illegible from wear or other causes.

- **Keep all safety, maintenance, and operating instructions highly legible at all times.**
- **Replace damaged labels and signs immediately.**

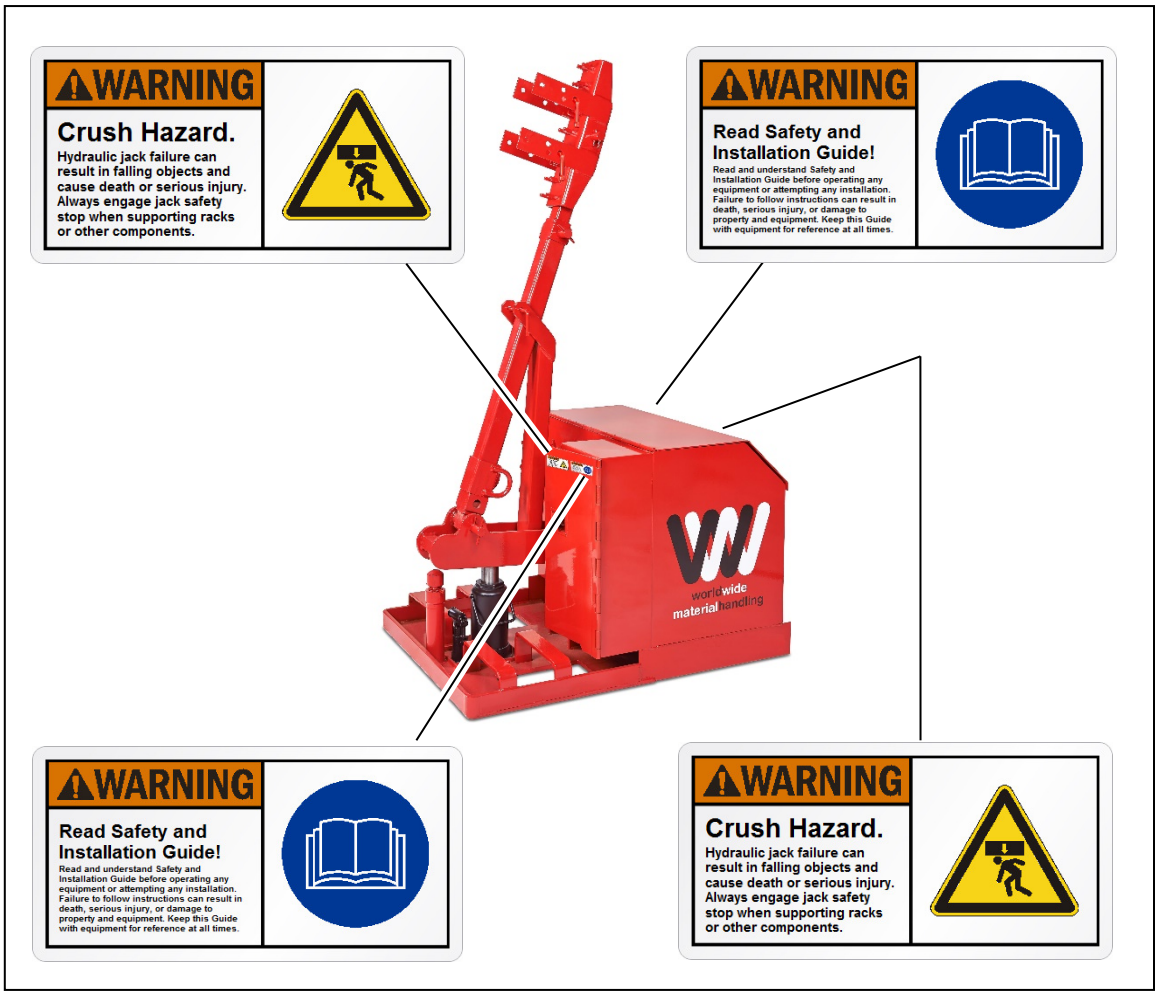


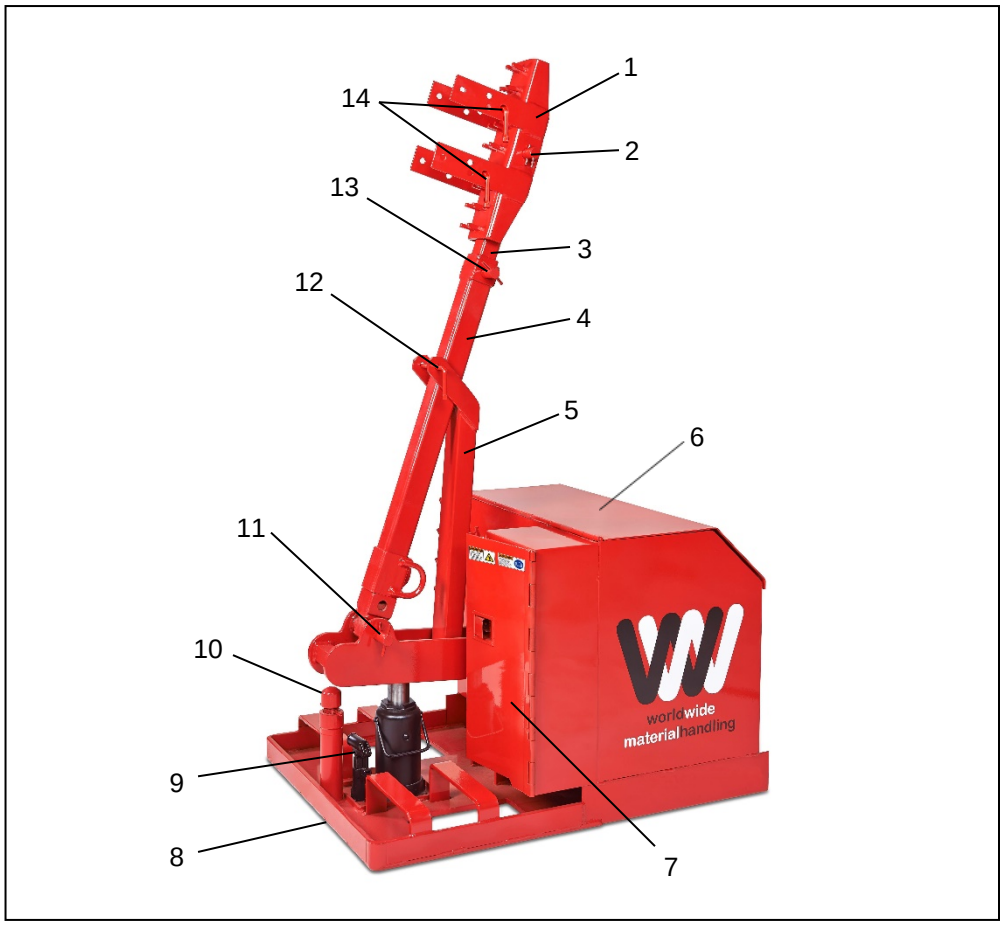
Figure 2. Safety Label Locations

3. Rack Lifting Jack

The Rack Lifting Jack consists of a 20 ton hydraulic jack with a rotating relief valve (9) mounted on a forklift or pallet jack transportable frame (8).

A lifting arm assembly (4), three interchangeable extensions (3), and safety stop (10) allow a rack to be supported while the damaged part is removed and replaced with appropriate WorldRev™ repair parts.

The head attachment (1) is specific to the pallet rack punch style. Fingers on the head attachment and locking pins with clevis safety pins (14).



1	Head Attachment	9	20 Ton Jack Assembly
2	Head Attachment Locking Pin	10	Safety Stop
3	Interchangeable Extension Arm • 3 ft. (.9 m) • 5 ft. (1.5 m) • 6 ft. (1.8 m)	11	Main Arm Base Pin
4	Main Arm	12	Main Arm Locking Pin
5	Main Arm Lock	13	Extension Arm Locking Pin
6	Tool Box	14	Rack Safety Locking Pins
7	Cabinet	15	Pallet Jack (Not Shown)
8	Transportable Frame		

Fig 2. Rack Lifting Jack Components

4. Tools

⚠ CAUTION

Improper use of tools and equipment can cause serious injury. It is the installers responsibility to be properly trained and fully proficient in safety and use of all tools and equipment.

The following tools are required for a typical WorldRev™ repair kit installation:

NOTE: Additional tools may be required

☐ Personal Protection Equipment, including: safety glasses, hard hats, steel toe boots, and high visibility vest.

NOTE: Additional protective equipment may be required subject to local job site requirements.

☐ Tape measure

☐ Permanent marker

☐ 8” Speed square

☐ 24” Level

☐ Cordless reciprocating saw with bi-metal blade and spares

☐ Cordless portable band saw with bi-metal blade

☐ Cordless electric drill

☐ 7/16”, 1/2” and 9/16” drill bits

☐ Cordless 1/2” Hammer drill

☐ Concrete masonry bits - ½” and ¾” dia. (recommended 12” or 16” length bits)

☐ Torque wrench, 20-245 in-lb.

☐ Torque wrench, 10-150 ft-lb.

☐ Impact wrench with SAE impact socket set

☐ 4 lb. mini sledge or dead-blow hammer

☐ Pry bar

☐ Cordless portable shop vacuum

☐ 4 ea. sliding/adjustable C-clamps

☐ Fire extinguisher

⚠ WARNING

Use of unapproved lifting device and accessories can cause death, serious injury, and damage to property and equipment. Only use WWMH approved lifting devices and accessories.

☐ WWMH approved pallet rack lifting device with appropriate accessories, attachments, and hardware. No other lifting devices or equipment are approved.

5. Preparation

5.1 Safety Check

1. Installer is responsible to ensure that there are no delays or interruptions in completing the installation once the process has begun.
2. Properly secure the aisle and work area. Prevent any forklift, powered equipment, and/or pedestrian traffic from entering the work area.
3. Check for any overhead or in-rack obstructions (including, but not limited to: sprinkler system, overhead lights, electrical wiring, other hazards, etc.).
4. Check surrounding area for debris or obstructions. Remove all debris or obstructions before starting repair.
5. Check for proper pallet placement on the rack, left and right of the frame being repaired. If any unsecure and/or unstable pallets are found, they must be removed before beginning the repair.
6. Be aware of hazardous materials in the warehouse, including flammable materials that could be affected by the installation process. Any hazardous materials found must be removed before beginning the repair.

⚠ WARNING

Falling objects can cause death, serious injury, or damage to property and equipment. Row spacers and rear anchors must be properly installed. If row spacers or rear anchors are missing or improperly installed, DO NOT CONTINUE INSTALLATION.

7. Inspect all rack components (including, but not limited to: beams, beam clips, arms, rails, crossbars, row spacers, etc.) to ensure that nothing becomes disconnected during the repair process.
8. Ensure current frame condition can support additional stresses of the rack repair process. If there is any doubt or concern or evidence of previous rack repair DO NOT continue.

5.2 Lifting Jack Inspection

1. Inspect lifting jack base for rubber friction pad (if applicable). Do not use jack if pad is missing.
2. Inspect for broken welds or missing components. Do not use jack if any components are damaged!
3. Inspect bottle jack for leakage or any damaged components. If there are any signs of leaks or damages do not use bottle jack.
4. Inspect lifting poles for cracks, damages, or bends. Do not use lifting poles that are bent or damaged.
5. Inspect jack pole attachment pin, pole, and head coupler pins for damage and/or cracking. Do not use if there are signs of damage.
6. Inspect lifting head for missing pins or other damage. Do not use If any damage is found.
7. Calculate weight load on frame post being lifted for repair. Maximum load to be lifted with one standard jack is 10,000 lbs. DO NOT attempt to lift if weight load exceeds 10,000 lbs.

⚠ WARNING

If weight cannot be calculated or correctly determined, pallet rack must be unloaded before continuing.

5.3 Kit Check

1. Before beginning repair, check the WorldRev™ repair kit specified for that location is the correct size and type needed, and all necessary parts and hardware are available and ready to install.

⚠ WARNING

Using incorrect type hardware can result in rack failure and cause death, serious injury, or damage to property and equipment. DO NOT substitute hardware. Use only supplied hardware from Worldwide Material Handling.

NOTICE

WorldRev roll-formed type kits should not be installed on any C-channel structural type racking systems. C-channel structural racking systems require separate components and instructions not included in these instructions.

2. Inspect repair kit for structural integrity and proper construction. If any problems are found, do not continue. Contact WWMH immediately at 888-650-9473 or email rackrepair@wwmh.net.

6. Determine Cut Height

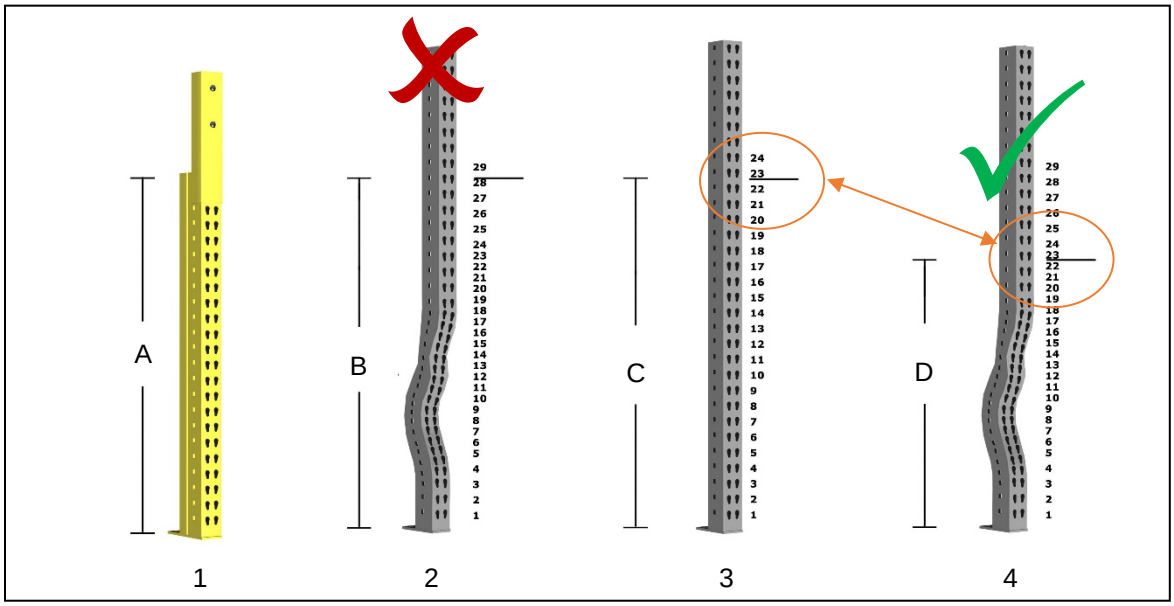


Figure 3. Determining Cut Height

NOTE: Every pallet rack is different. Measurements shown above are for example only.

Determine cut line by measuring total overall height of the frame.

1. Measure replacement repair kit from bottom of footplate to the top of Seat Plate. Note that dimension (Measurement 1). Exact cut height (x-dimension) on frame is determined by measuring exact length of repair kit to be installed in that location.
2. Determine original overall frame height (Measurement 2).
3. Subtract Measurement 1 from frame height Measurement 2. Make a note of this measurement (Measurement 3)
4. Measure from top of the frame to Measurement 3. You have now determined the cut line.

   NOTE: Take measurement from top of frame ONLY.

NOTICE

Measuring damaged frame cut height from floor does not allow for sagging caused by damage.

6.1 Alternate Measurement

1. If overall frame height cannot be determined, Measure repair kit cut height (A).

NOTICE

Measuring damaged frame cut height from floor does not allow for sagging caused by damage.

2. DO NOT use repair kit cut height (A) to determine damaged frame cut height (B).
3. Measure an undamaged frame using repair kit cut height (A) and mark the dimension (C). Count the number of holes on the front of this pallet rack frame. In this example (Figure 3), there are 23 holes.
4. Use the number of holes counted from the undamaged frame measurement (C) and count the same number of holes (D) from the floor on the damaged frame. Mark this location using a square and felt-tip marker.

7. Lift and Support Rack

⚠ WARNING

Falling objects can cause death, serious injury, or damage to property and equipment.

- **Maximum lifting capacity of Rack Lifting Jack is 10,000 lbs. (4,536 kg).**
- **Always use safety stop to support rack during installation.**
- **Never rely on hydraulic jack to support any load.**
- **Never leave jack unattended at any time.**
- **Only use lifting jack as a temporary lifting device during installation.**

1. Determine correct lifting head attachment to be used.
2. Identify correct location to attach the lifting head. Location must be above the damage and at a point where the diagonal and horizontal struts are attached to the column.
3. Place lifting jack as close to damaged column as possible. Make sure lifting pole is square and vertical to the column at all times. Jack must be centered on the post being lifted and jack pole must be parallel to the frame post being lifted. Lifting head must be mounted on frame post as close to an existing, undamaged strut as possible. Use shortest length of pole extensions on the jack to attach lifting head above repair. Never use more than two pole extensions to lift the rack.
4. Make sure the lifting head attachment is correctly inserted, fully engaged, and correctly secured to the frame using supplied locking and clevis pins.

Figure 4. Secure Head Attachment to Rack

⚠ WARNING

Failure to properly secure opposite frame leg may result in rack collapse.

5. Inspect opposite frame leg for damage and to ensure that it is properly anchored. If opposite frame leg is not anchored, install and properly secure the frame leg to the floor.

NOTICE

If you have any questions, or if you do not understand these instructions, contact Worldwide Material Handling (WWMH) immediately at 888-650-9473 or email rackrepair@wwmh.net.

Figure 5. Replacing Damaged Column

⚠ WARNING

Lifting structure beyond 1/8” maximum from floor can result in catastrophic failure and cause death, serious injury, or damage to property and equipment. Never lift structure beyond 1/8” from floor.

6. With lifting jack, pole(s), and head attachment in the proper position, pressurize jack to lift damaged post not to exceed a maximum of 1/8” off the floor.
7. Adjust Safety Drift Stop to prevent any movement in the bottle jack.

8. Installation

1. Using a reciprocating saw, cut the existing anchor bolt(s) flush with the concrete.
2. Follow proper installation procedures:
   - If installing a WorldRev S and WorldRev SPro kit, go to Step 3.
   - If installing a WorldRev XS kit, go to Page 18, Section 9, WorldRev XS Addendum.
   - If installing a WorldRev ST/SL kit, go to Page 20, Section 10, WorldRev ST/SL Addendum.
   - If installing a WorldRev S/SPro structural kit, go to Step 3c on next page.

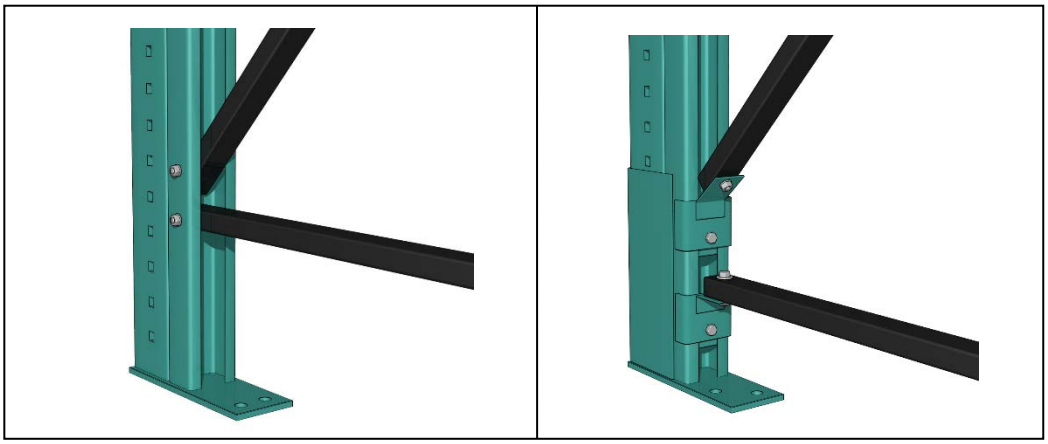


Figure 6. Strut Types

3. Determine if struts will be reused or replaced.
   - If struts are being reused follow Step 3a.
   - If struts are being replaced follow Step 3b.
   - If repairing a WorldRev S/SPro structural kit follow Step 3c.

3a. If strut(s) are undamaged and being reused, they will need to be cut. Using a portable band saw or reciprocating saw, remove the strut by cutting it flush where it meets the damaged column.

If original struts are 1.5” wide or less they insert into the rear backer column of the repair kit and must be cross drilled and through-bolted with Grade 5 supplied hardware – 5/16” x 3 ¼” nut and bolt.

2” or wider struts require a WWMH strut clip.

If open column, insert bolting plate into open column frame, then insert (3/8” x 1 ½” bolt through strut clip and tighten into bolting plate. Tighten hardware to OEM torque specifications on Page 22, Section 11 – Torque Tables.

If attaching the strut clip to a closed tube column it is required to use (2) 3/8” dia. self-tapping screws to secure the strut clip to the column.

NOTICE

If you cannot determine the correct location or a way to reattach the strut, STOP IMMEDIATELY! If you have any questions, or if you do not understand these instructions, contact Worldwide Material Handling (WWMH) immediately at 888-650-9473 or email rackrepair@wwmh.net.

3b. If strut is damaged and needs to be replaced, using a portable band saw or reciprocating saw, remove the strut by cutting it flush where it meets the undamaged column. Struts must NEVER be removed by bending or tearing out. There must be no damage to the remaining post when strut is removed. If replacement struts are 1.5" wide or less they will insert into the rear backer column of the repair kit and must be cross drilled and through-bolted with supplied hardware.

2" or wider struts require use of a WWMH strut clip.

If open column, insert bolting plate into open column frame, then insert (3/8" x 1 ½" bolt through strut clip and tighten into bolting plate. Tighten hardware to OEM torque specifications on Page 22, Section 11 – Torque Tables.

If attaching the strut clip to a closed tube column it is required to use (2) 3/8" dia. self-tapping screws to secure the strut clip to the column.

NOTICE

If you cannot determine the correct location or a way to reattach the strut, STOP IMMEDIATELY! If you have any questions, or if you do not understand these instructions, contact Worldwide Material Handling (WWMH) immediately at 888-650-9473 or email rackrepair@wwmh.net.

3c. If installing a WorldRev S/SPro Structural style repair column, attach the mounting flange to the column using supplied Grade 5 hardware. Re-attach new or existing struts to the mounting flange provided.

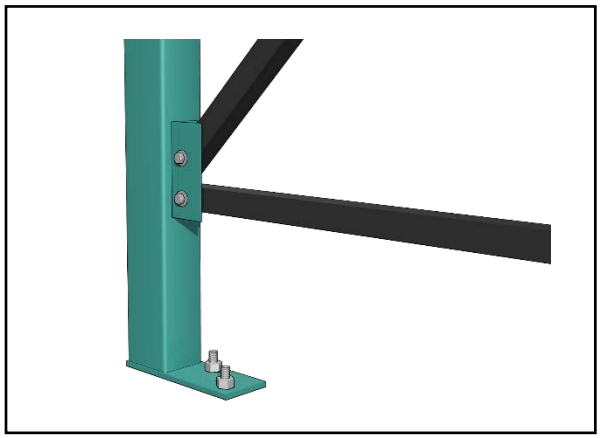


Figure 3. WorldRev S/SPro Mounting Flange

If strut(s) are undamaged and being reused, they will need to be cut. Using a portable band saw or reciprocating saw, remove the strut by cutting it flush where it meets the damaged column. Original strut(s) will be attached to the repair kit by cross drilling and through-bolting to the mounting flange with supplied hardware.

If strut is damaged and needs to be replaced, using a portable band saw or reciprocating saw, remove the strut by cutting it flush where it meets the undamaged column. Struts must NEVER be removed by bending or tearing out. There must be no damage to the remaining post when strut is removed. Replacement strut will need to be cross drilled and through-bolted to the mounting flange with supplied hardware.

NOTICE

If you cannot determine the correct location or a way to reattach the strut, STOP IMMEDIATELY! If you have any questions, or if you do not understand these instructions, contact Worldwide Material Handling (WWMH) immediately at 888-650-9473 or email rackrepair@wwmh.net.

4. Cut damaged column square and level using the predetermined cut line. Remove and properly dispose of damaged material.

NOTICE

It is the responsibility of the installer to ensure cut is accurate and follows cut line precisely. Making an uneven or incorrect cut will result in an improper and unsafe repair.

5. Insert 9” inner cuff into the existing frame and then position the repair kit in place and insert the existing struts into the backer column. Ensure there are no gaps (needs to sit square and flush) between the existing frame and repair kit. Using c-clamps, clamp the repair kit in place.
6. Depressurize jack slightly to seat repair kit to the frame. Ensure repair kit is square, plumb, level and maintains original frame depth.
7. Using a 9/16” drill bit and holes in the repair kit as a guide, drill 2 holes through existing column. Insert and hand tighten ½” carriage bolts and serrated flange nuts provided.
8. Place existing struts in the original position.

NOTICE

If you cannot determine the correct location, number of, or correct way to reattach the strut, STOP IMMEDIATELY! Contact Worldwide Material Handling at 888-650-9473 or email rackrepair@wwmh.net.

9. With struts in original OEM positions, reattach by cross-drilling a 7/16” hole through rear backer column and strut, and then through-bolt each strut using supplied 5/16” hardware.
10. Verify repair kit is square, plumb, level and that the frame depth is back to its original state.
11. Tighten all hardware to OEM torque specifications on Page 22, Section 11 - Torque Tables.
12. Depressurize jack completely and remove from column.
13. Anchor repair kit using ALL anchors provided.

NOTICE

It is the installer’s responsibility to determine if there are any in-floor obstructions or potential interferences before drilling into the concrete (i.e. coolant lines, electrical, water lines, etc.).

Installer is responsible to obtain the need for any surface penetration permit that may be required before repair installation can begin.

14. Torque all anchors to OEM hardware specifications on Page 22, Section 11 - Torque Tables.

NOTICE

A minimum of TWO anchors per footplate are required. DO NOT substitute size or quantity of required hardware or anchors. Additional anchors may be required subject to local building codes and specifications.

8.1 Job Site Clean Up

1. Vacuum or sweep concrete anchor dust and other debris. Collect all metal scrap parts and dispose of in customer approved area or containers.
2. Ensure entire work area is properly cleaned and clear of debris. Check area for any remaining empty boxes, hardware, tools, etc.
3. Properly stow all components in lifting jack. Completely lower lifting and ensure main arm is locked in transport position.

8.2 Final Inspection

1. Conduct a final check confirming all installation procedures have been followed and installation has been completed properly.
2. Conduct a final overhead check of product to ensure no product has shifted and area is safe for all personnel.
3. Inform customer that location is ready to be put back into service.

9. WorldRev™ XS Addendum

NOTICE

The WorldRev XS is designed to be installed below the first strut level. If strut is located less than 6 inches from the floor, the WorldRev XS cannot be installed.

Figure 7. WorldRev XS

1. Cut damaged column square and level using the predetermined cut line. Remove and properly dispose of damaged material.
2. Position repair kit in place. Ensure there are no gaps (needs to sit square and flush) between existing frame and repair kit. Use C-clamps to clamp repair kit in place.
3. Depressurize jack slightly to seat repair kit to the frame. Ensure repair kit is square, plumb, level and maintains original frame depth.
4. Using a 9/16” drill bit, drill 2 holes through existing column using holes in repair kit as a guide. Insert and hand tighten ½” hex bolts and serrated flange nuts provided.
5. Verify repair kit is square, plumb, level and that the frame depth is back to its original state.
6. Tighten all hardware to OEM torque specifications on Page 22, Section 11 - Torque Tables.
7. Depressurize jack completely and remove from column.
8. Anchor repair kit using ALL anchors provided.

NOTICE

It is the installer’s responsibility to determine if there are any in-floor obstructions or potential interferences before drilling into the concrete (i.e. coolant lines, electrical, water lines, etc.).

Installer is responsible to obtain the need for any surface penetration permit that may be required before repair installation can begin.

9. Torque all anchors to OEM hardware specifications on Page 22, Section 11 - Torque Tables.

NOTICE

TWO anchors per footplate are required. DO NOT substitute size or quantity of required hardware or anchors.

9.1 Job Site Clean Up

1. Vacuum or sweep concrete anchor dust and other debris. Collect all metal scrap parts and dispose of in customer approved area or containers.
2. Ensure entire work area is properly cleaned and clear of debris. Check area for any remaining empty boxes, hardware, tools, etc.
3. Properly stow all components in lifting jack. Completely lower lifting and ensure main arm is locked in transport position.

9.2 Final Inspection

1. Conduct a final check confirming all installation procedures have been followed and installation has been completed properly.
2. Conduct a final overhead check of product to ensure no product has shifted and area is safe for all personnel.
3. Inform customer location is ready to be put back into service.

10. WorldRev™ ST/SL Addendum

WorldRev ST/SL kits are designed with integral strut bracing attached and rear column connection points and hardware.

NOTICE

WorldRev SL slope leg kits are ONLY designed for back-to-back, double row pallet rack systems. NEVER install WorldRev SL kits on single row pallet rack systems.

Figure 8. WorldRev SL

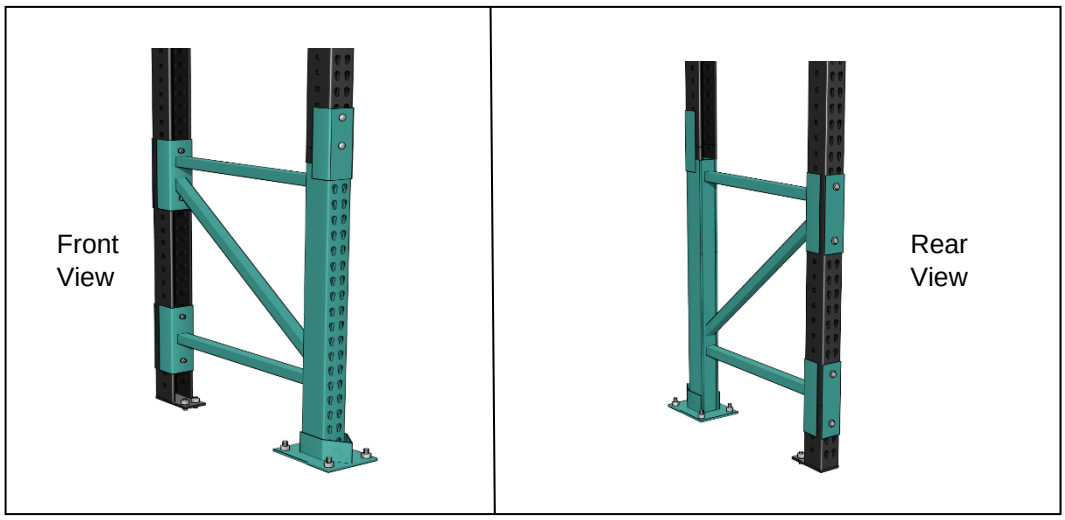


Figure 9. WorldRev ST

1. Using a portable band saw or reciprocating saw, remove the struts by cutting them flush where they meet the undamaged column.

NOTICE

Struts must NEVER be removed by bending or tearing out. There must be no damage to the remaining post when strut is removed. If you have any questions, or if you do not understand these instructions, contact Worldwide Material Handling (WWMH) immediately at 888-650-9473 or email rackrepair@wwmh.net.

2. Cut damaged column square and level using the predetermined cut line. Remove and properly dispose of damaged material.

NOTICE

It is the responsibility of the installer to ensure that the cut is accurate and follows the cut line precisely. Making an uneven or incorrect cut will result in an improper and unsafe repair.

3. Insert 9” inner cuff into existing cut frame, then position repair kit in place. Ensure front and rear connection cuffs are properly placed and connected around original frame.
4. Ensure there are no gaps (needs to sit square and flush) between existing frame and repair kit. Clamp repair kit in place using C-clamps.
5. Depressurize jack slightly to seat repair kit to the frame. Ensure repair kit is square, plumb, level, and maintains original frame depth.
6. Using a 9/16” drill bit, drill 2 holes through existing front column, using the holes in the repair kit as a guide. Insert and hand tighten ½” carriage bolts and serrated flange nuts provided.
7. Using a 9/16” drill bit, drill 2 holes per cuff through rear column (using holes in each cuff as a guide) to attach repair kit to the rear column. Place supplied flat plate on outside of rear column. Insert and hand tighten ½” carriage bolts and serrated flange nuts provided.
8. Verify repair kit is square, plumb, level and frame depth is back to its original state.
9. Tighten all hardware to OEM torque specifications on Page 22, Section 11 - Torque Tables.
10. Depressurize jack completely and remove from column.
11. Anchor repair kit using ALL anchors provided.

NOTICE

It is the installer’s responsibility to determine if there are any in-floor obstructions or potential interferences before drilling into the concrete (i.e. coolant lines, electrical, water lines, etc.).

Installer is responsible to obtain the need for any surface penetration permit that may be required before repair installation can begin.

12. Torque all anchors to OEM hardware specifications on Page 22, Section 11 - Torque Tables.

NOTICE

A minimum of TWO anchors per footplate are required. DO NOT substitute size or quantity of required hardware or anchors. Additional anchors may be required subject to local building codes and specifications.

10.1 Job Site Clean Up

1. Vacuum or sweep concrete anchor dust and other debris. Collect all metal scrap parts and dispose of in customer approved area or containers.
2. Ensure entire work area is properly cleaned and clear of debris. Check area for any remaining empty boxes, hardware, tools, etc.
3. Properly stow all components in lifting jack. Completely lower lifting and ensure main arm is locked in transport position.

10.2 Final Inspection

1. Conduct a final check confirming that all installation procedures have been followed and installation has been completed properly.
2. Conduct a final overhead check of product to ensure that no product has shifted and that area is safe for all personnel.
3. Inform customer location is ready to be put back into service.

11. Torque Tables

Table 1. Grade 5 Bolts

Nominal Diameter	Torque
5/16 in.	209 in-lb. (23.6 Nm)
3/8 in.	31 ft-lb. (42 Nm)
1/2 in.	75 ft-lb. (101.6 Nm)

Table 2. Steel Hex Flange Nuts

Locknut Size	Torque
5/16 in.	157 in-lb. (17.7 Nm) – 198 in-lb. (22.3 Nm)
3/8 in.	23.2 ft-lb. (31.4 Nm) – 29.3 ft-lb. (39.7 Nm)
1/2 in.	57 ft-lb. (77.2 Nm) – 73 ft-lb. (98.9 Nm)

Table 3. Wedge Anchors

Anchor Diameter	Installation Torque
1/2 in. (12.7mm)	55 ft-lb. (74.6 Nm)
3/4 in. (19.1 mm)	110 ft-lb. (149.2 Nm)