# COTTRELL, INC.


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# OPERATOR'S MANUAL

# FOR CAR-HAULING EQUIPMENT

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**Manual en Español en el Otro Lado**

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# INTRODUCTION

Thank you for selecting Cottrell Car-Hauling Equipment. The design and construction of your Equipment reflects Cottrell's concern for precision, efficiency and, above all, safety.

This Manual has been prepared to acquaint you with various aspects of service, maintenance and operation. It explains various features and controls that should be familiar to the operator before attempting to operate the Equipment. **THIS MANUAL SHOULD BE KEPT WITH THE EQUIPMENT AT ALL TIMES FOR REFERENCE. THE MANUAL IS PART OF THE EQUIPMENT AND SHOULD STAY WITH THE EQUIPMENT IN THE EVENT OF SALE.**

Your Cottrell Car-Hauling Equipment may have all or some of the features described in this Manual. Therefore, you may find operation or maintenance data in this Manual for features not installed on your Equipment. Please note that some illustrations may differ slightly from what you find on your own Equipment. Text, illustrations and specifications in this Manual are based on information available at the time of printing. Cottrell reserves the right to make changes to this Manual at any time without notice. You are encouraged to contact Cottrell directly if additional maintenance information or assistance is needed. To receive the most-recent updates and revisions to this Manual, please contact Cottrell, Inc. at 1-800-827-0132 or refer to our website at www.cottrelltrailers.com.

Proper operation, service and maintenance are important to the safety and reliability of all motor vehicles. The information contained in this Manual is provided as a reference for systems and components that require periodic service. The intervals provided are manufacturer's recommendations and should be considered maximum intervals. Actual operating conditions must be considered and maintenance intervals adjusted accordingly. Any time a system or component does not perform satisfactorily, corrective service should be performed at once.

**NOTE: Throughout this Manual are warnings to use only Cottrell-supplied replacement parts. Use of non-Cottrell supplied replacement parts may create hazards in operation that will result in injury to the operator or other personnel, and will void the Limited Warranty offered by Cottrell on all new Equipment.**

Familiarity with automobile operation and controls is assumed to be common knowledge to anyone who will be operating this Equipment. This Manual is to be utilized in conjunction with the manual provided separately by the tractor manufacturer and vehicle manufacturer shipping procedures.

**NOTE: Do not attempt to operate this Equipment without: (1) the physical qualifications to do so as provided in Section 391.41 of the Federal Motor Carrier Safety Regulations; (2) thorough knowledge of all instruments and controls; (3) direct supervision, or hands-on training in this or similar Equipment under direct supervision; and (4) an appropriate license or permit to operate. The operator should read this Manual, as well as the manual supplied by the tractor manufacturer, before attempting to operate this Equipment.**

# FOREWORD

This Operator's Manual provides some general and specific information regarding safe operation and maintenance of your Cottrell Equipment. It does not address all items or situations that may arise, and it is not a substitute for proper driver and mechanic training. Exercise of care, common sense, and good driving habits and practices are necessary for safe operation.

Some information will be especially important as you read this Manual. It will be highlighted in the following manner:

| | |
|---|---|
| **⚠ DANGER** | Indicates a hazardous situation that, if not avoided, will result in death or serious injury. |
| **⚠ WARNING** | Indicates a hazardous situation that, if not avoided, could result in death or serious injury. |
| **⚠ CAUTION** | Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury. |
| **NOTICE** | Indicates a situation that, if not avoided, could result in property damage. |

Cottrell, Inc. offers many items as standard and optional equipment to meet Federal, State and local specifications as well as individual customer requirements. Properly selected equipment can help ensure reliable and safe transport of vehicles.

It is the operator's responsibility to ensure that all components on the Equipment are in proper working condition. Equipment should be inspected prior to each use, as required by the Federal Motor Carrier Safety Regulations, and as otherwise set forth in this Manual.

You should also have received with your Equipment an operator's manual from the tractor manufacturer. If you failed to receive such a manual, contact the tractor manufacturer's closest dealer immediately to obtain one.

Cottrell welcomes your comments and suggestions regarding this Manual. Please write to:

Cottrell, Inc.
Attn: Sales Publications - Manual
2125 Candler Road
Gainesville, GA 30507

**NOTE: PLEASE READ THIS MANUAL AND THE TRACTOR MANUAL CAREFULLY BEFORE OPERATING YOUR EQUIPMENT.**

# REPORTING SAFETY DEFECTS

If you believe that your Equipment has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying Cottrell, Inc.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or Cottrell, Inc.

To contact NHTSA, you may call the Vehicle Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153); go to **http://www.safercar.gov;** or write to:

Administrator
NHTSA
1200 New Jersey Avenue SE
West Building
Washington, DC 20590

You can also obtain other information about motor vehicle safety from **http://www.safercar.gov.**

# EQUIPMENT IDENTIFICATION

The **Vehicle Identification Plate** certifies that your Cottrell Equipment conforms to all applicable Federal Motor Vehicle Safety Standards in effect on the date of manufacture. Do not remove or deface the plate. The plate is located on the driver's side of the trailer. See Figures below.

## VIN PLATE APPEARANCE


## VIN PLATE AFFIXED TO TRAILER

# GENERAL WARNINGS AND INSTRUCTIONS

**⚠ DANGER**

**Never operate hydraulic controls with any part of your body or anyone else inside the Equipment. Always operate controls standing outside of the Equipment with both feet on the ground. Failure to comply with these Instructions will result in death or serious injury.**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

## Operator Precautions

1. No person shall operate this Equipment unless that person is physically qualified to do so as provided in Section 391.41 of the Federal Motor Carrier Safety Regulations**.**
2. Do not wear loose fitting clothing or jewelry while operating this Equipment. It can become caught on the structure, on vehicles, or in moving parts of the Equipment**.**
3. Keep hands, limbs, loose articles and clothing away from moveable objects, including the hydraulic screw devices, while hydraulic system is operating. Hands, limbs and other body parts can be injured when caught between a moving and fixed part, or drawn into a moving object by loose articles or clothing, resulting in personal injury.
4. Always wear full-toed, rubber-soled shoes while operating the Equipment, and ensure that shoes are in proper condition with adequate soles. Do not wear sandals, flip flops, tennis shoes, or leather-soled shoes or boots. Your feet can be injured by contact with surfaces on the Equipment, or you can slip and fall while climbing or moving about on the Equipment. Inspect your footwear periodically, including the soles, to ensure they are in proper condition, as the soles may wear down from the friction/traction devices on the Equipment.
5. Always wear gloves while operating the Equipment. Your hands can be injured from contact with the Equipment during operation.
6. Stand clear of decks and ensure other persons and property are clear of decks before operating hydraulic system.
7. Read all decals, warnings and instructions on the Equipment prior to operation.

## Equipment – General

**Car Hauling has many inherent hazards, including operating at heights in excess of six (6) feet. Due to the varying size and dimensions of loaded motor vehicles and Federal Commercial Vehicle Width Requirements applicable to the Equipment, certain loads will provide differing amounts of room for maneuvering on the top decks. Understanding your load and awareness of the room for maneuvering are necessary for safe operation, consistent with the information provided in this Manual.**

**⚠WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

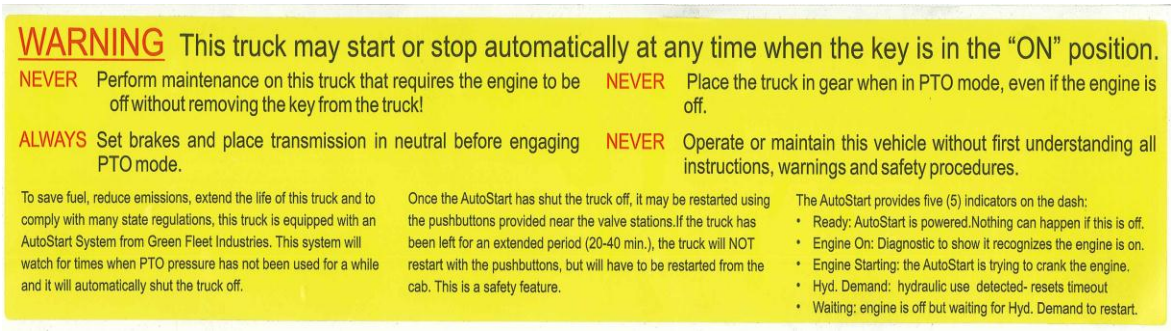
1. Inspect all Equipment prior to each use to ensure all components are in proper operating condition. Equipment not in proper operating condition can result in unexpected hazards and injury during operation of the Equipment.
2. Do not operate trailer with parking brakes caged. Trailer parking brake will not operate with brakes caged. Brakes must be set at all times the Equipment is not in transport mode. Movement of the Equipment after stopping, during loading or unloading can trap a person or body part and result in serious personal injury.
3. If the ABS warning light on the instrument panel or side of the trailer (depending on your equipment) illuminates, it may be an indication of the wheel end prematurely wearing out. All ABS system warnings need to be investigated as soon as possible.
4. Do not exceed the factory pressure setting on the hydraulic system as set forth on the Warning label on your Equipment. Exceeding this setting can result in failure of the system components and possible injury to the operator or other personnel. See Figure below.

**PSI WARNING**


↑ **Number will be indicated on Equipment**

5. Some Equipment is built "Pull to Raise/Push to Lower." Always check the valve plate on your Equipment for proper operating instructions.
6. Use only ladders and areas with non-skid surface to ascend or descend from the head ramp or trailer and when moving about on the Equipment. Use the grab handles provided and always maintain three (3) points of contact with the Equipment and/or its cargo to ensure proper balance. DO NOT walk on ramps or runways to ascend or descend from the top of the Equipment, as three (3) points of contact may not be available and you may slip and fall, injuring yourself.

7. DO NOT walk on the tracks or flippers that bridge the gap between the headramp and trailer. DO NOT attempt to step or jump across the gap between the headramp and trailer. DO NOT attempt to step or jump across the gap between the driver's side runways/tracks and the passenger's side runways/tracks. Failure to follow these instructions could result in a fall causing personal injury.
8. Non-skid areas should be kept clean and free of oils and debris. Non-skid surfaces are subject to wear. Inspect them regularly and reapply non-skid material as needed. Use only Cottrell authorized non-skid materials. You can slip and fall from surfaces not properly maintained and be seriously injured.
9. Inspect and clean drip pans of oil, residue and debris.
10. Contact Cottrell for approved paints for touch up.
11. Do not operate Equipment without all factory-installed guard devices in place. Moving parts can injure you if the guard is not in place.
12. Use only Cottrell-supplied replacement parts. Use of non-Cottrell supplied replacement parts may create hazards in operation that will result in injury to the operator or other personnel.
13. Do not attempt to bypass or otherwise hold electrical momentary switches in the "on" position for the PTO or electric hoist system. Holding these systems in the constant "on" position will result in extreme heat build-up that may cause equipment failure or fire.
14. If your Equipment has an Auto Start Feature, carefully review and comply with the instructions related to Auto Start. See Figure below.




15. Comply with additional warnings and instructions contained on component parts, including instructions on chains and wheel straps.

**NOTICE**

**Failure to follow these warnings and instructions could result in property damage.**

1. Prior to welding on the Equipment, turn battery disconnect switch to the "off" position or disconnect battery cables. Failure to follow this instruction could result in damage to or failure of the electrical system.
2. When welding on the Equipment, protect hydraulic hoses, air lines and wheel straps from welding sparks and slag. Contact with welding sparks and slag may cause damage to or premature failure of hydraulic hoses, air lines and wheel straps.

**Chains**

**⚠ DANGER**

**Use four (4) chains, one (1) on each corner of the vehicle in the specific location directed by the vehicle manufacturer for that particular make/model of vehicle, to secure vehicles for transport. Failure to follow this instruction could result in detachment and loss of vehicles during transport, which may result in death or serious injury to the operator and/or the motoring public.**

**⚠ WARNING**

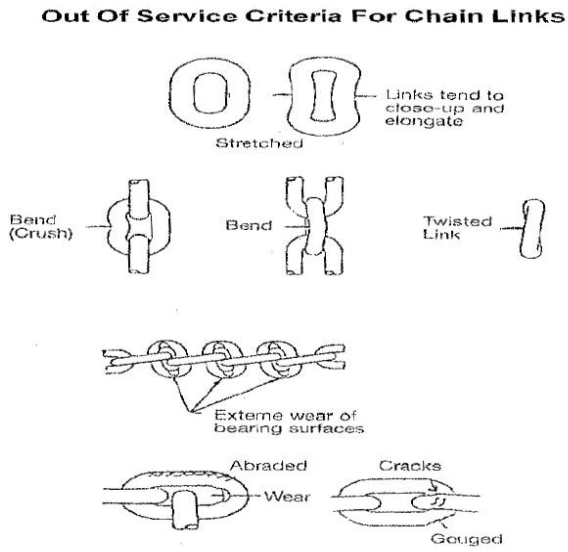
**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

1. Use only Cottrell-supplied chain and hook assemblies. Chains and hook assemblies not supplied by Cottrell may break or otherwise malfunction during securement or releasing, resulting in injury to the operator from unexpected movement of the chain or hook assemblies or falling while securing vehicles or releasing loaded vehicles.

2. Before each use, inspect the chain and hook assemblies for wear, rust or damage, and inspect any idlers to be used in the securement process. Chains and hooks not in proper condition may break during securement or releasing, resulting in injury to the operator from unexpected movement of the chain or hook assemblies or falling while securing vehicles or releasing loaded vehicles. Refer to the table and figure below and replace the chain or hook assembly if damage, rust or unacceptable wear is found. Properly dispose of any non-conforming chain or hooks to prevent inadvertent use at a later date.

**Table of Minimum Allowable Thickness**
**Measurement at Any Location on the Chain**

| Trade Size | | Chain Grade | Nominal Material Diameter | | Minimum Allowable Thickness on Link | |
|---|---|---|---|---|---|---|
| **Inches** | **MM** | | **Inches** | **MM** | **Inches** | **MM** |
| 1/4” | 7.0 | 70 | .276 | 7.0 | .239 | 6.07 |
| 5/16” | 8.0 | 70 | .312 | 8.0 | .278 | 7.06 |




3. Ensure that there is no more than a single layer of chain on the ratchet shaft and that chain is not "balled up." Chains with more than one layer or that is "balled up" could result in sudden movement of the chain on the ratchet shaft during securement or release causing personal injury to the operator.
4. Ensure that chains are not twisted or kinked. Twisted or kinked chains may be damaged when tension is applied, or may fail or move unexpectedly, leading to injury during securement or releasing.
5. Always pull on the tie-down bar during the chain-tightening process. Never push on the tie-down bar during the securement process. Pushing on the bar during securement may cause you to lose your balance and fall, resulting in injury.
6. Keep hands, fingers, and other body parts clear of the chain, ratchet assembly and vehicle while securing or releasing the vehicle.
7. Do not use excessive force to secure vehicles. Using excessive force to tighten chains may lead to premature wear to the chain and hook assembly, damage to the vehicle, or unexpected failure or movement of the chain, and could result in personal injury. For the purpose of this warning, "excessive force" means more force than is necessary to adequately and properly secure the vehicle to the Equipment. Apply only the force necessary to adequately and properly secure the vehicle to the Equipment in compliance with the vehicle manufacturer's specifications and this Manual. Do not over-tighten the loaded vehicle to achieve height requirements. Re-configure the load rather than using "excessive force" to achieve height requirements.
8. Do not overtighten chains during the securement process. Overtightening may lead to premature wear to the chain and hook assembly, damage to the vehicle, or unexpected failure or movement of the chain, and could result in personal injury. For the purpose of this warning, "overtightening" means applying more force than is necessary to adequately and properly secure the vehicle to the Equipment. Apply only the force necessary to adequately and properly secure the vehicle to the Equipment in compliance with the vehicle manufacturer's specifications and this Manual.

**⚠WARNING**

**Prior to releasing tension in the chain, ensure adequate clearance exists between cargo and other obstacles as the secured vehicle may move when the chain tension is released. Such movement could result in death or serious injury.**

**NOTICE**

**Prior to releasing tension in the chain, ensure adequate clearance exists between cargo and other obstacles as the secured vehicle may move when the chain tension is released. Such movement could result in property damage.**

**Wheel Straps**

**⚠ DANGER**

**Use four (4) wheel straps, one (1) on each tire, to secure vehicles for transport. Failure to follow this instruction could result in detachment and loss of vehicles during transport, which may result in death or serious injury to the operator and/or the motoring public.**

**⚠WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

1. Use only Cottrell-supplied wheel strap and hook assemblies. Non-Cottrell strap and hook assemblies may fail during securement, releasing or during transport and result in personal injury and/or cargo damage.
2. Inspect wheel straps before each use for wear. Refer to the enclosed strap care and maintenance guide for inspection procedures. Do not use any wheel strap that is fraying or showing signs of excessive wear. See examples of Damaged Straps (Synthetic Web Tie Downs) in the Figures below:

## FIGURES - DAMAGED SYNTHETIC WEB TIE DOWNS

**Figure 1**
Holes, Tears
Cuts, Snags

**Figure 2**
Broken Or Worn Stitching
In Load Bearing Sew
Patterns

**Figure 3**
Excessive
Abrasive Wear

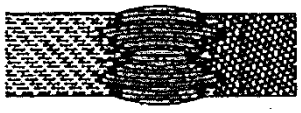


**Figure 4**
Knots In The
Tie Down

**Figure 5**
Melting Or Charring
Of The Tie Down,
Or Weld Spatter
On The Tie Down

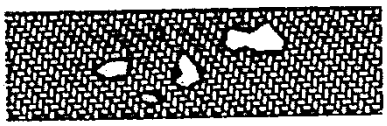


**Figure 6**
Chemical
Burns

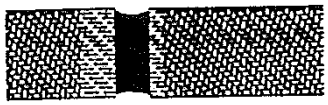


**Figure 7**
Damaged Loop,
Eye Hook Too
Small Or Too Rough

**Figure 8**
Tear In Webbing
At The Fitting

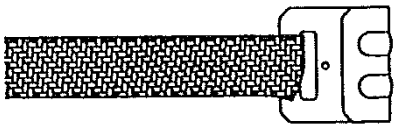
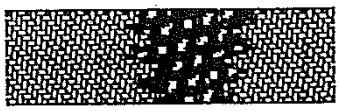


**Figure 9**
Other Apparent Damages
That May Affect Strength
Ratings; Such As Crushed
Webbing, Etc.





3. Inspect wheel straps to ensure that protective sleeves and cleats are in place. Do not use wheel strap if protective sleeves or cleats are missing or damaged.
4. Store wheel straps on the ratchet spool as far inboard as possible when not in use. Failure to store wheel straps properly could result in premature wear, damage or unexpected failure.
5. Store wheel straps in a cool, dry and dark place when not being used for prolonged periods of time. Failure to store wheel straps properly could result in premature wear, damage or unexpected failure.

6. Do not drive over wheel straps or hooks with vehicles. Failure to follow this instruction could result in premature wear, damage or unexpected failure.
7. Lower all top tracks to the lowest level before installing wheel straps. Attempting to install or tighten wheel straps with tracks in a position other than the lowest level may not provide an adequate posture or a balanced position, and may cause you to fall.
8. Ensure wheel straps are lying flat (not twisted) and running in a straight line from the ratchet shaft to the tire. Failure to follow this instruction may cause wheel straps to become loose during securement or transport, or could result in premature wear, damage or unexpected failure. (See "Enclosed Equipment" Section for procedures when operating hand-ratcheting device.)
9. Position protective sleeves over wheel strap as needed to prevent abrasion, which can lead to premature wear, damage or unexpected failure.
10. Do not use excessive force to secure vehicles. Using excessive force to tighten wheel straps may lead to premature wear to the strap and assembly, damage to the vehicle, or unexpected failure of the straps, and could result in personal injury. For the purpose of this warning, "excessive force" means more force than is necessary to adequately and properly secure the vehicle to the Equipment. Apply only the force necessary to adequately and properly secure the vehicle to the Equipment in compliance with the vehicle manufacturer's specifications and this Manual.
11. Do not overtighten wheel straps. Overtightening may lead to premature wear of the strap and assembly, damage to the vehicle, or unexpected failure of the straps, and could result in personal injury. For the purpose of this warning, "overtightening" means applying more force than is necessary to adequately and properly secure the vehicle to the Equipment. Apply only the force necessary to adequately and properly secure the vehicle to the Equipment in compliance with the vehicle manufacturer's specifications and this Manual.
12. Wheel straps should never be so tight as to cause the tire sidewall to bulge. If the tire sidewall starts to bulge, **STOP IMMEDIATELY,** release the tension on the wheel strap (see procedures for releasing in this Manual), and start the securement process again.
13. Do not twist the wheel strap during the securement process.
14. Affix hooks as close to the tire as possible to prevent tire movement.

**⚠WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

**Tie-Down Bars**

1. Use only Cottrell-supplied tie-down bars.
2. Use only the tie-down bar designated for use with your Equipment. (See section of this Manual entitled "Chain Securement System" or "Strap Securement System" for more specific information). See also Table below. Never use any sort of "bar extension" or "cheater bar" with your Cottrell Equipment, as this could result in excessive force or over-tightening of chains, loaded vehicle damage, broken or malfunctioning chains or assemblies, and personal injury.

**Table of Tie-Down Bar Use with Cottrell Equipment**

| Task to be Performed | 24" Bar | 34" Bar | 38.5" Bar |
|---|---|---|---|
| Secure/Release Wheel Straps | Yes | Yes | As Needed |
| Secure/Release 1/4" Chain | No | Yes | No |
| Secure/Release 5/16" (8.0 MM) Chain | No | No | Yes |
| Operate Rear-Loading Skids | No | Yes | Yes |

3. Use only the tie-down bar designated for use with the task you are performing on your Equipment. (See section of this Manual entitled "Chain Securement System" or "Strap Securement System" for more specific information). See also Table above.
4. Always pull on the tie-down bar during the chain-tightening process. Never push on the tie-down bar during the securement process. Pushing on the bar during securement may cause you to lose your balance and fall.
5. Use only the Cottrell-supplied bar to operate the rear-loading skids. Do not grasp, push or pull on skids with your hands or feet.
6. Do not use the tie-down bar for any purpose other than to secure your load, release your load, operate your loading skids, and unlock post locks on certain Equipment.
7. Inspect your tie-down bar prior to each use. Never use a visibly damaged, bent, cracked or dinged tie-down bar. Ensure the knurling (the raised metal surfaces on the group and end of the tie-down bar) are in good condition. Using a tie-down bar that is damaged or that has worn knurling could result in personal injury.

# INITIAL INSPECTION OF THE EQUIPMENT

**⚠WARNING**

**Upon receipt of the Equipment, all brakes must be checked for proper adjustment. Failure to comply with this instruction could result in death or serious injury.**

**⚠CAUTION**

**Upon receipt of the Equipment, the following items should be checked and repairs or adjustments made according to the vehicle manufacturer's specifications. Failure to follow this instruction could result in minor or moderate injury.**

**NOTICE**

**Upon receipt of the Equipment, the following items should be checked and repairs or adjustments made according to the vehicle manufacturer's specifications. Failure to follow this instruction could result in property damage.**

**Tractor**

1. Check for proper oil level in all wheel hubs, if applicable.
2. Check wheel nuts for tightness.
3. Check tire inflation for correct pressure while tires are cool.
4. Check torque on bolts that attach hydraulic oil tank and bumper. See Torque Chart in Appendix.
5. Check torque on bolts that attach headramp to tractor. See Torque Chart in Appendix.
6. Check all lights, reflectors and conspicuity tape for presence and proper function.
7. Check hydraulic system for proper operation and inspect for leaks.
8. Check for proper hydraulic fluid level.
9. Check battery cables to ensure no chafing, loose or shorted connections and ensure proper installation of hold-downs.
10. Check fifth wheel wedge stop rod for proper slack adjustment as follows:

    Close the fifth wheel on a standard 2" kingpin or a 2" diameter shaft inserted vertically. Push on the wedge stop rod (Extends from the side of the top plate and looks like the head of a bolt). It should move in ¼" with hand pressure, and then spring back out. To obtain a proper setting, turn the wedge stop rod clockwise to reduce the dimension and counter-clockwise to increase it. Adjust until the free

travel is ¼". This will ensure that the automatic slack adjustment feature of the fifth wheel is functioning properly.

The wedge stop rod can also be used to release a tight wedge (hard to open) by tapping the rod with a hammer to release the wedge.

Please also refer to the detailed Fontaine Fifth Wheel Instructions provided in your Cottrell Warranty Packet.

11. Check fifth wheel mounting bolts for proper torque, if so equipped. See Torque Chart in Appendix.
12. Check for air leaks and chafing of air hoses.
13. If Unit is equipped with a back-up alarm, ensure that alarm is operating properly.

**Trailer**

1. Check for proper oil level in all wheel hubs, if applicable.
2. Check wheel nuts for tightness.
3. Check tire inflation for correct pressure while tires are cool.
4. Check torque on suspension U-bolts and all attaching bolts on suspension. See Torque Chart in Appendix.
5. Check all lights, reflectors and conspicuity tape for presence and proper function.
6. Check hydraulic system for proper operation and inspect for leaks.
7. Check for air leaks and chafing of air hoses.
8. Check for proper brake adjustment.
9. Ensure proper maintenance on trailer axles. Refer to specific maintenance instructions and other materials from your Cottrell axle supplier, as contained in the Warranty Packet from Cottrell.

# COUPLING THE TRACTOR AND TRAILER

**⚠ DANGER**

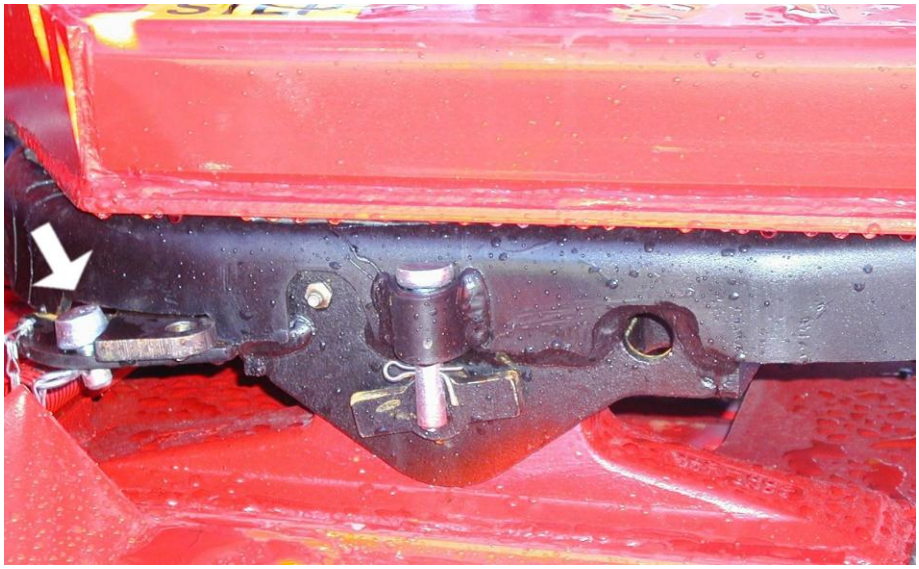
**Prior to attempting to couple the tractor with the trailer, ensure the area between the tractor and trailer is clear of all personnel, vehicles and other obstacles. Failure to comply with these Instructions may result in death or serious injury.**

**⚠ WARNING**

**Failure to follow the steps set forth below when coupling the tractor with the trailer could result in death or serious injury.**

1. Set trailer height properly for fifth wheel before coupling tractor to trailer. An improper height could result in a "high hitch" condition that will cause the trailer to become dislodged.
2. Carefully back tractor to engage with locking lever of trailer and ensure that lever is in locked position. Install safety pin if so equipped. Refer to Figure below.

## FIFTH WHEEL SAFETY PIN



3. After coupling tractor to trailer, visually inspect and perform test pull to ensure that trailer king pin is securely locked into fifth wheel. This is to ensure that you do not have a "high hitch" condition where the trailer will initially be pulled, but will come loose at the first bump, and to ensure that the fifth wheel jaws are locked.
4. Hook up all air and electrical hoses and check each for proper operation.
5. Hook up hydraulic hoses and check for leaks.
6. After hookup, check that cargo clearances are maintained.
7. Avoid interference between cargo and headramp when hooking or unhooking trailer.

**Use of Fifth Wheel Add-On Lube Plates (Teflon disks)**

An add-on aftermarket lube plate is a lubricated, impregnated plastic disk which is placed between the fifth wheel top plate and the trailer bolster plate to eliminate the need to lubricate the top plate with grease.

If an add-on lube plate is to be installed, the kingpin must meet the SAE J700 kingpin dimension standards **AFTER** installation of the lube plate. If the kingpin does not meet SAE dimensions standards (see Holland Fifth Wheels Service Bulletin contained in the Appendix), a new kingpin must be installed to accommodate the lube plate thickness.

**⚠WARNING**

**Failure to comply with SAE kingpin dimensions after the installation of an add-on lube plate to the trailer bolster plate could result in coupling difficulties, premature fifth wheel lock and kingpin wear, and the potential for tractor/trailer separation that, if not avoided, could result in death or serious injury.**

See Holland Fifth Wheels Service Bulletin contained in the Appendix.

# PRE-TRIP, IN-TRANSIT AND POST-TRIP INSPECTIONS

Pre-trip, in-transit and post-trip inspections must be performed in compliance with the Federal Motor Carrier Safety Regulations.

**Equipment – Structure and Surfaces**

The pre-trip inspection, which must be performed before each trip with this Equipment, should **also** include the following items:

**⚠WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

1. Check structure, runways, tie downs and suspension for cracks, loose or missing parts and proper friction on walking/working surfaces.
2. Check all ladders, grab handles and handrails for proper attachment to structure, and for cracked welds and/or broken components.
3. Check all walking/climbing surfaces for adequate friction material and repair or replace as necessary.
4. Inspect Equipment for the presence of ice or snow. Do not attempt to load or unload Equipment if ice or snow is present on the track, walking or climbing surfaces. Use available means to remove ice or snow before proceeding.
5. Check for any fluids, debris or other contaminants on decks, walking or climbing surfaces. If found, identify the source, correct the problem, and clean up any residue prior to operating the Equipment.

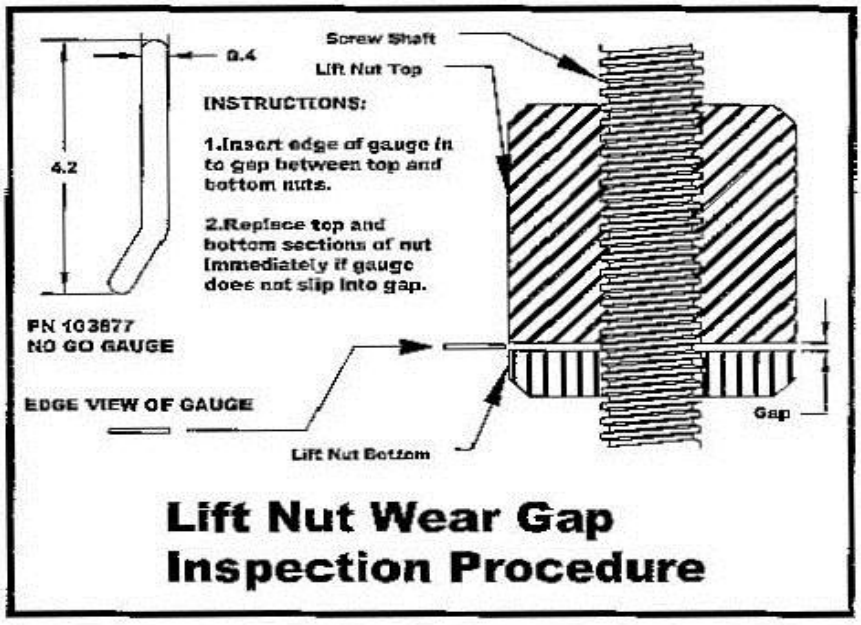
**Equipment – General**

The pre-trip inspection, which must be performed before each trip with this Equipment, should **also** include the following items:

**⚠DANGER**

**Vertical decks that are controlled by hydraulic motors and screws include a two-piece polymer "nut" that runs up and down the rotating screw. These nuts have a visible wear gap between the two pieces that indicate when the nut is worn and needs to be replaced. The wear gap on each nut must be inspected as part of every pre-trip inspection to ensure a proper gap. Utilize the "go/no-go" gauge provided with your Equipment to measure the gap. If the wear gap is too tight, the Equipment must be taken out of service until the nut is replaced. See Figures below. Failure to comply with these Instructions may result in death or serious injury.**

## LIFT NUT WEAR GAP




## WEAR GAP SHOWN

## MEASURING WEAR GAP

**⚠WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

1. Check for proper oil level in all wheel hubs, if applicable.
2. Check all lights, reflectors and conspicuity tape for presence and proper function. Repair or replace as necessary.
3. Check brakes for proper adjustment, broken drums, or missing parts.
4. Check all tires for flats or unusual appearance such as tread beginning to separate, "knots" on sidewall, or unusual tread wear pattern.
5. Check for signs that wheels or brakes have overheated. Look for discoloration of hub or hubcap, deformation of hubcap, blistering of tires, etc.
6. Check wheel nuts for tightness.
7. Check that parking brakes on tractor and trailer are in proper operating condition.
8. Check for air leaks and chafing of air hoses. Repair or replace as necessary.
9. Check that loading skids are not broken or bent, and are in proper working order.
10. Check that all skid-locking pins/devices are in place.
11. If Unit is equipped with a back-up alarm, ensure that alarm is operating properly.
12. Check hydraulic system for proper operation and inspect for leaks. Repair or replace components as necessary.

**Proper Jacking Procedures for Jacking the Equipment**

**⚠ DANGER**

**Failure to follow these instructions will result in death or serious injury.**

1. The Equipment must be on a hard level surface capable of supporting the rated load capacities of both the jack and jack stands. If the ground is too soft or uneven, the Equipment must be moved to an area with a suitable surface for the jack and jack stand.
2. Apply parking brake.
3. Secure the Equipment using two wheel chocks to ensure that Equipment cannot move forwards or backwards. Place wheel chocks on the opposite side from the working position whenever possible.
4. Jacks are designed to lift the Equipment, not support its weight. Equipment that is supported solely by jacks without jack stands is extremely dangerous and poses a serious risk to persons on or under the Equipment. After lifting, the Equipment must be immediately supported by jack stands.
5. Never work under Equipment supported solely by a jack.
6. Never move or dolly Equipment with a jack.
7. Jacks and jack stands must be of sufficient capacity to support their intended load. A fully loaded car hauler with tandem (2) axles will require jacks and jack stands rated for a minimum of 20,000 lbs each.
8. Inspect jacks and jack stands before each use. Do not use if broken, bent, cracked, or damaged in any way.
9. Jack only in the trailer area highlighted in the detailed figures below.
10. Jack both sides working each side up about 1” at a time if loaded, and 2” at a time if unloaded.
11. Use 2 jack stands, one on each side, in the area highlighted or under the axles at their most outboard point.

**NOTE: See Appendix for detailed schematics and additional jacking instructions.**

**Securement Chains and Wheel Straps**

The pre-trip inspection, which must be performed before each trip with this Equipment, should **also** include the following items:

**⚠WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

1. Check all securement chains and wheel straps for damage or excessive wear and replace as necessary. (Refer to sections on chains and wheel straps for additional instructions).
2. Check all securement ratchets for proper operation of quick-release mechanism and for signs of excessive wear. Replace as necessary. Pay particular attention to lower deck ratchets which are subject to pavement damage due to low road clearances, railroad tracks, etc.
3. Do not insert a strap securement hook into any deck pooch or hole that shows signs of cracking or other damage. Replace any decking that shows signs of cracking or other damage through or around pooch holes.
4. Check all idlers and structure for signs of excessive wear or rust, and repair or replace as necessary. Use only Cottrell-supplied replacement idlers.

# LOADING VEHICLES

**Operator Precautions**

**⚠WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

1. Set the parking brake on the Equipment. Failure to do so prior to beginning the loading process will result in death or serious injury.
2. Always maintain "three points of contact" while moving about on the ladders or side frame area of the Equipment. This means two feet and one hand or two hands and one foot. Failure to maintain three points of contact may cause you to lose your balance and fall.
3. Never lie down on the Equipment to affix chains or straps. Lying on the tracks may allow you to roll off the side of the Equipment causing injury.
4. Keep body parts and loose clothing away from moveable objects while hydraulic system is operating.
5. When loading vehicles in conditions of ice or snow, remove ice and snow from ladders and runways before climbing, walking or moving vehicles on the runways. If you believe the vehicle being loaded or unloaded is going to slide or fall off the Equipment, stay inside the vehicle and lean away from the point of impact. Do not attempt to exit the vehicle if you believe it is sliding or falling off the Equipment, as the vehicle may fall on you, resulting in serious injury or death.
6. Keep all body parts (head, arms, hands, elbows, etc.) inside the vehicle while driving on and off of the Equipment.
7. Be sure areas are clear of personnel before operating the hydraulic system.
8. DO NOT walk on runways to ascend or descend from the top of the Equipment. Use the nearest available ladder or steps with non-skid surface to ascend or descend. Use the grab handles provided.
9. DO NOT walk on the tracks or flippers that bridge the gap between the headramp and trailer. DO NOT attempt to step or jump across the gap between the headramp and trailer. DO NOT attempt to step or jump across the gap between the driver's side runways/tracks and the passenger's side runways/tracks.
10. Do not stand or walk on the fuel tank unless steps are provided.
11. Do not step on or attempt to jump over drip pans or any other surface labeled "No Step." Descend from the Equipment using the designated procedure and walk around the equipment to ascend on the other side rather than attempting to step or jump across to the other side. The minimal time saved is not worth the risk of injury or death.
12. Lower all top tracks to the lowest level before loading or unloading.
13. When loading or unloading at night or in any location that is not well lit, be sure to wear the lighted bump cap provided by Cottrell with the purchase of all Equipment.
14. Drive slowly and carefully when driving vehicles on and off the Equipment. In the event you drive the vehicle off the side or over the edge of the Equipment, or if you believe the vehicle is going to slide or fall off the Equipment, do not attempt to

jump out of the vehicle. Stay inside the vehicle and lean away from the point of impact. Do not attempt to exit the vehicle if you believe it is sliding or falling off the Equipment, as the vehicle may fall on you, resulting in serious injury or death.

15. Take care entering and exiting the vehicle while it is loaded on the Equipment. Be careful not to slip, trip, stumble or hit your head.
16. When positioning a vehicle (whether driven on or backed on) on the front-upper position of the headramp (over the tractor cab), proceed with extreme caution and stop when the leading tires contact the provided wheel stops. Continuing to drive the vehicle after the leading tires contact the wheel stops could result in the vehicle falling from the front of the headramp. In the event you drive the vehicle off the side or over the edge of the Equipment, or if you believe the vehicle is going to slide or fall off the Equipment, do not attempt to jump out of the vehicle. Stay inside the vehicle and lean away from the point of impact. Do not attempt to exit the vehicle if you believe it is sliding or falling off the Equipment, as the vehicle may fall on you, resulting in serious injury or death.
17. Do not remove or modify the wheel stops provided on the front-upper position of the headramp.
18. Do not remove or modify the handrails or grab handles provided on the Equipment.

## Hydraulic Decks

Cottrell trailers and headramps are equipped with individual decks which can move vertically and/or horizontally using a hydraulic system. Hydraulic valves mounted on the side of the Equipment control deck movement. The valves are numerically labeled to correspond with the numbers on the deck that they control. Refer to the label on your Equipment for instructions on directional movement of the decks.

### I. Operating Instructions

**⚠ DANGER**

**Failure to follow these instructions will result in death or serious injury.**

1. Identify the deck to be moved by locating the hydraulic valve that corresponds to the number on the deck to be moved.
2. If your Unit is equipped with locking devices, unlock the deck to be moved by identifying and unlocking all of the mechanical locking devices on that deck.
3. Before moving any deck, ensure that the adjacent area is clear of personnel and equipment.
4. Never operate hydraulic controls with any part of your body or anyone else inside the Equipment. Always operate controls standing outside of the Equipment with both feet on the ground.
5. Slowly push or pull the valve from its center position. This will initiate the flow of hydraulic fluid and start the deck to move. Pushing or pulling

the valve handle further will cause the deck to move faster in the desired direction. As the deck is moving, be aware of anything in its path and stop moving the deck immediately if something is in its path. Releasing the valve will return the valve to its neutral position and cause the deck to stop.

6. Repeat steps 1-5 for all decks that need to be moved.
7. Never stand under any hydraulic deck without the decks being properly locked if the Unit is equipped with mechanical locking devices.
8. Once desired deck position is achieved when operating the hydraulic system, be sure to lock the deck in place using the deck-locking devices, if so equipped.

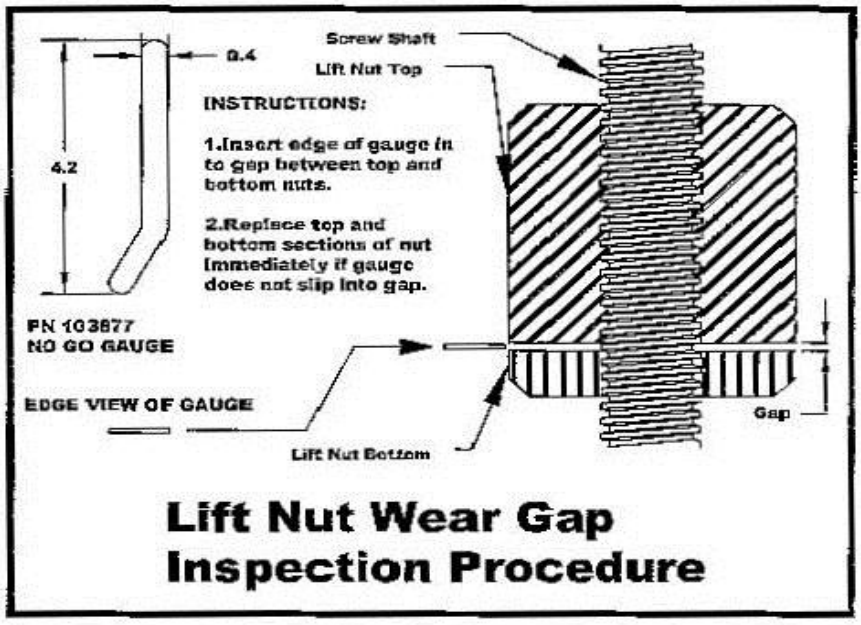
## II. Care and Maintenance

**⚠ DANGER**

**Failure to follow these instructions will result in death or serious injury.**

1. Do not operate, maintain, adjust or repair the hydraulic system unless you have been trained to do so.
2. Vertical decks that are controlled by hydraulic motors and screws include a two-piece polymer "nut" that runs up and down the rotating screw. These nuts have a visible wear gap between the two pieces that indicate when the nut is worn and needs to be replaced. The wear gap on each nut must be inspected as part of every pre-trip inspection to ensure a proper gap. Utilize the "go/no-go" gauge provided with each Equipment to measure the gap. If the wear gap is too tight, the Equipment must be taken out of service until the nut is replaced. See Figures below.

## LIFT NUT WEAR GAP




## WEAR GAP SHOWN

## MEASURING WEAR GAP

3. Never stand under any hydraulic deck without the decks being properly locked if the Unit is equipped with mechanical locking devices.

**⚠WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

1. Use only Cottrell supplied or approved parts for repair and maintenance of the Equipment. Use of parts not approved by Cottrell may void the warranty and create an unsafe condition.
2. Although hydraulic cylinders may appear to be similar, Cottrell hydraulic cylinders are specifically designed for use in certain applications. Replace hydraulic cylinders only with identical-size cylinders manufactured by Cottrell.
3. The shafts of Cottrell hydraulic cylinders are specially coated and are not suitable for any other application. It is unsafe to weld on chrome or chrome-plated cylinders.
4. Do not exceed the factory pressure setting on hydraulic system as set forth on the Warning label on your Equipment. See Figure below.

**PSI WARNING**


↑ **Number will be indicated on Equipment**

5. Prior to each use, check hydraulic system for leaks. If leaks are found, identify source of leak, properly repair it, and clean up residue.
6. Ensure all metal-to-metal sliding surfaces are regularly lubricated with Cottrell authorized lubricant.
7. Use only approved hydraulic fluids and filters. Contact Cottrell, Inc. for recommended oils and filters.
8. Hydraulic oil filters must be changed within two (2) weeks of initial placement in service of the Equipment and, at a minimum, every three (3) months thereafter.
9. Hydraulic fluid must be changed, at a minimum, every twelve (12) months.
10. Hydraulic screw devices are self-lubricating. Do not add any lubricant, including grease, oil, graphite spray, etc.

## Portable Aluminum Ladders

**⚠WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

### I. General

1. READ AND COMPLY WITH ALL LADDER SAFETY LABELS.
2. Use ladder only if you are in good physical condition.
3. Ladder is designed for one person only. Do not use ladder if you exceed the maximum weight duty rating of ladder (see rating label on ladder).

## II. Inspection

1. Inspect for damaged or missing parts before each use.
2. Never use a ladder with missing or damaged parts.
3. Keep ladder and shoes clean and free from grease, oil, mud, snow, wet paint and other slippery materials.
4. Wear full toed, rubber soled shoes when climbing any ladder.
5. Never make temporary repairs of damaged or missing parts.
6. Destroy ladder if broken, damaged, bent, worn, or if exposed to fire or chemical corrosion.

## III. Use-Storage Position

The aluminum ladder may be used to climb up and down while in the vertical storage position (see Photo 1) provided that all of the conditions below are met:

Photo 1, Portable aluminum ladder, storage position

1. The bottom is properly locked into place (see Photo 2).

Photo 2, Bottom of portable aluminum ladder locked into place.

2. Both top retention studs are fully engaged into their respective storage slots in both top brackets (see photo 3).

Photo 3, Portable aluminum ladder, retention studs engaged in storage slots.

3. Neither of the top brackets are broken, bent, or otherwise damaged.

## IV. Use-Positions Other Than Storage Position

1. The portable aluminum ladder is equipped with ladder hooks at the top of the ladder. When using the portable aluminum ladder in positions other than the storage position, the ladder hooks MUST be used per the following instructions:

   a. Open both hooks to the use position before setting up the ladder.
   b. To open, push down on top of hook and rotate. After releasing, make sure hook locks in place to prevent rotation during use.
   c. Hook ladder over upper support point. Make sure both ladder feet are in contact with ground before climbing ladder.

2. The aluminum ladder is designed to be used to assist the securement process on the position over the cab. See photos 4 and 5. Note how ladder hooks are engaged.

Photo 4, Portable aluminum ladder set up to access position over hood.

Photo 5, Ladder hooks engaged in slot behind catwalk.

3. The aluminum ladder is also designed for access to and from the rear upper deck position on some 3 car head ramp models. See photos 6 through 9.

Photo 6, Ladder set up to access rear upper headramp position. Ladder hooks are engaged in slots in deck.

Photo 7, Vehicle door opened.

Photo 8, climbing out of vehicle while maintaining a 3-point stance.

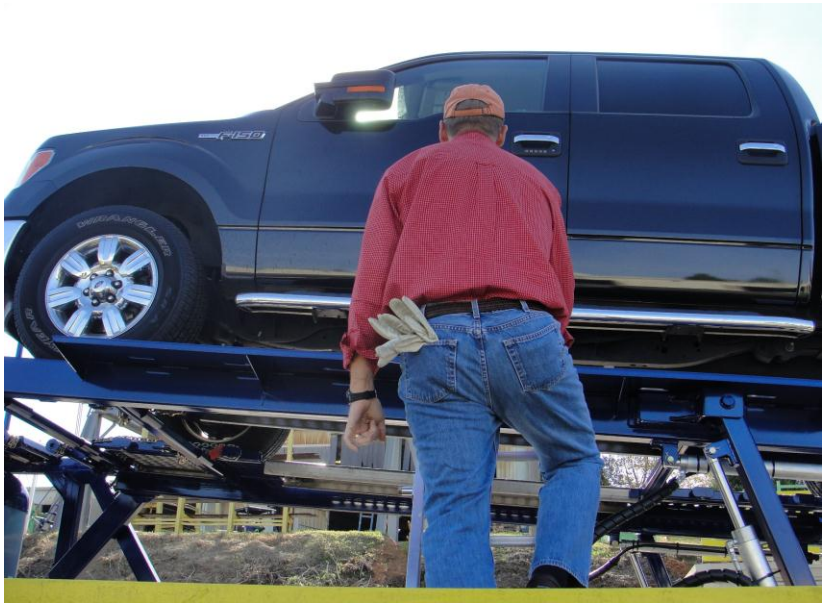


Photo 9, Climbing down ladder while maintaining a 3-point stance.

## Rear Loading Skids

Two aluminum rear-loading skid assemblies are provided at the rear of each Cottrell trailer as a means for vehicles to be driven on and off the Equipment.

**⚠WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

### I. Operating Instructions - Extending Loading Skids

1. Before deploying aluminum loading skids, extend the hydraulic track or extension on the bottom rear of the trailer to its fully extended position.
2. Stand on the ground to the side of the trailer and disengage the spring lock on the skid retaining leg to unlock the skid from the skid storage compartment. Rotate the skid retaining leg down towards the pavement. Note: The skid may roll out a short distance due to gravity when the skid retaining leg is first disengaged. Ensure that you are clear from the rear of the trailer when the skid retaining leg is disengaged.
3. Insert the short, curved end of the Cottrell-supplied 34" or 38.5" bar into the outboard hole in the end plate of the skid. See Figure below.

**SKID OPERATION**

4. Using the bar as a handle, carefully lift up the end of the skid and "walk" the skid out until the skid is fully extended. Use your left hand to walk the passenger side skid out, slowly walking backward as the skid slides with you to your left. This will ensure the skid does not hit your body or land on your feet. Repeat the procedure on the driver's side, using your right hand to walk the skid out. When the skid is fully extended, the bottom

side of the front of the skid will contact a hard stop in the skid storage compartment and the skid will not be able to extend any further.

5. Do not grasp, push or pull on skids with your hands. Use only the Cottrell-supplied bar to handle the loading skids.
6. While pushing or pulling the skid, do not straddle the skid and pass it through your legs.
7. If the skid does not move freely, **STOP IMMEDIATELY**. Do not force the skid. Inspect to determine if the skid or housing is bent or damaged. If damage is found, have the skid or housing repaired or replaced as necessary prior to proceeding. If the skid will not move freely after inspection, call for assistance. Never attempt to force the skid in or out.
8. Once the skid is fully extended, lower the rear end of the skid until it contacts the pavement.
9. Move the loading skid side to side to ensure that the rear of the loading skid is parallel with the runway surface, and disengage the bar from the end of the skid.
10. Repeat steps 2-9 for the opposite side loading skid.

**⚠WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

## II. Operating Instructions – Retracting Loading Skids

1. Insert the short end of the Cottrell-supplied 34" or 38.5" bar into the outboard hole in the end plate of the skid.
2. Using the bar as a handle, carefully lift up the end of the skid and slowly "walk" the skid in towards the trailer until the skid is fully in the storage compartment. Use your left hand to walk the passenger skid in, slowly walking forward as the skid slides with you to your left. This will ensure the skid does not hit your body or land on your feet. Repeat the procedure on the driver's side, using your right hand to walk the skid in.
3. If the skid does not move freely, **STOP IMMEDIATELY**. Do not force the skid. Inspect to determine if the skid or housing is bent or damaged. If damage is found, have the skid or housing repaired or replaced as necessary prior to proceeding. If the skid will not move freely after inspection, call for assistance. Never attempt to force the skid in or out.
4. Do not grasp, push or pull on skids with your hands. Use only the Cottrell-supplied bar to handle the loading skids.
5. Do not straddle the skid and push or pull it through your legs.
6. Stand on the ground to the side of the trailer and rotate the skid retaining leg towards the horizontal position to lock the skid into the skid storage compartment. Use the spring-lock pin to lock the skid retaining leg into position. Failure to properly lock the skid retaining device in place could result in the skid coming loose during transit.
7. Repeat steps 1-5 for the opposite side loading skid.
8. Retract the hydraulic track or extension to the transport position.

**⚠WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

## III. Care and Maintenance

1. Do not use rear-loading skids other than Cottrell-supplied skids for the particular model trailer. Ensure the loading skid looks like the Cottrell-supplied skids pictured in this Manual. Square or "ladder-style" skids are not Cottrell-supplied skids and are not approved replacement skids on Cottrell Equipment. Cottrell is not responsible for injury or property damage incurred while using non-Cottrell skids. Cottrell loading skids are specifically designed for the Cottrell trailer and are not interchangeable with non-Cottrell skids. Use of non-Cottrell supplied skids will increase the operating force needed to move the skid and may also result in sudden stopping of the skid during operation. Either condition could result in personal injury to the operator. Use of non-Cottrell loading skids will also void the Warranty.
2. Prior to each use, inspect the loading skids and housings. Do not operate loading skid if the skid or skid housing is bent, cracked or otherwise damaged.
3. Use only the Cottrell-supplied bar to operate the loading skids.
4. Park the Equipment on an even surface prior to loading or unloading cargo. Attempts to load or unload on uneven surfaces may cause damage to the skid or the Equipment.
5. If there is no cargo on the rear lower position of the trailer, the hydraulic track or extension must be fully retracted prior to transport. Failure to do so could result in serious damage to the Equipment, and the Operator may be subject to an over length citation.

### Jump Skids

Some Equipment utilizes jump skids to temporarily bridge the gap between one deck surface and another.

**⚠WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

1. When using jump skids to bridge between one deck and another, secure the jump skid with skid pins, where provided.
2. Skid pins are equipped with a locking pin to keep the skid pin from sliding out. Ensure the locking pin is properly secured.

3. Never assume a posture when using jump skids that requires you to stand in a straddle position with one foot on each jump skid.
4. Do not perform securement operation while standing on jump skids.

**Flippers**

Some Equipment utilizes flippers to allow shortening or lengthening of a deck surface to accommodate various sized vehicles.

**⚠WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

1. When using flippers as a chain idler or strap securement point in the securement process, secure the flipper in place with the locking pin, where provided.
2. When deploying the flippers, always ensure that your head, hands, fingers, feet and other body parts are not in the path of the unfolding or retracting flipper.

**Cargo**

**⚠WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

1. Unless instructed otherwise in the car manufacturer's vehicle shipping manual, be certain that all vehicles are in "Park" with the parking brake applied before exiting the vehicle. For manual transmissions, vehicles must be in first gear with parking brake applied.
2. Do not operate Equipment if the cargo is not properly distributed and secured in compliance with Federal Motor Carrier Safety Regulations.
3. Be aware of clearance between cargo and structure when operating hydraulic system.
4. Ensure that the vehicle to be loaded or unloaded has sufficient clearance from all surfaces and components on the Equipment before driving on or off.
5. Fully deploy the hydraulic rear loading skid extension and deploy the skids to their fullest position to avoid damage to the undercarriage of Cargo.
6. Position cargo vehicles on the Equipment to allow you to enter and exit the vehicle through the driver's side door. Do not enter or exit vehicles through any other doors or windows.
7. Take care when opening vehicle doors while the vehicle is on the Equipment. Be aware that door openings may be restricted and special care should be taken not to injure yourself or cause damage to the Equipment or cargo when entering and exiting the vehicle.

8. When positioning a vehicle (whether driven on or backed on) on the front-upper position of the headramp (over the tractor cab), proceed with extreme caution and stop when the leading tires contact the provided wheel stops. Continuing to drive the vehicle after the leading tires contact the wheel stops could result in the vehicle falling from the front of the headramp. In the event you drive the vehicle off the side or over the edge of the Equipment, or if you believe the vehicle is going to slide or fall off the Equipment, do not attempt to jump out of the vehicle. Stay inside the vehicle and lean away from the point of impact. Do not attempt to exit the vehicle if you believe it is sliding or falling off the Equipment, as the vehicle may fall on you, resulting in serious injury or death.
9. When some but not all of the cargo is unloaded at one destination, always lower the upper decks to the lowest possible position after unloading any lower-deck cargo. This will reduce the payload center of gravity height, and, therefore, reduce the possibility of equipment rollover.
10. Partial unloading will change the axle weight distribution and could turn a properly distributed load into an improperly distributed load. It is the operator's responsibility to ensure that the load is always properly distributed, and that no axle group is overloaded on the Equipment.

**⚠WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

**Securement Equipment (Bars, Wheel Straps, Chains)**

1. Use the proper length tie-down bar supplied by Cottrell: 24" bar for wheel strap securement, 34" bar for ¼" chain, and 38.5" bar for 5/16" (8.0 MM) chain. See Table below.

**Table of Tie-Down Bar Use with Cottrell Equipment**

| Task to be Performed | 24" Bar | 34" Bar | 38.5" Bar |
|---|---|---|---|
| Secure/Release Wheel Straps | Yes | Yes | As Needed |
| Secure/Release 1/4" Chain | No | Yes | No |
| Secure/Release 5/16" (8.0 MM) Chain | No | No | Yes |
| Operate Rear-Loading Skids | No | Yes | Yes |

2. Do not alter or modify the tie-down bar in any way. Alteration or modification of the tie-down bar may cause the bar to fail, resulting in personal injury or property damage.
3. Do not use the tie-down bar for any purpose other than to secure your load, release your load, operate your loading skids, and unlock post locks on certain Equipment.
4. Inspect your tie-down bar prior to each use. Never use a visibly damaged, bent, cracked or dinged tie-down bar.

5. Pull on the tie-down bar when securing vehicles. Never push on the tie-down bar during the securement process.
6. Do not overtighten chains or wheel straps during the securement process to make height clearance or for any reason. Overtightening may lead to premature wear, damage or unexpected failure of the chain or wheel strap, and could result in personal injury. For the purpose of this warning, "overtightening" means applying more force than is necessary to adequately and properly secure the vehicle to the Equipment. Apply only the force necessary to adequately and properly secure the vehicle to the Equipment in compliance with the vehicle manufacturer's specifications and this Manual.
7. Wheel straps should never be so tight as to cause the tire sidewall to bulge. If the tire sidewall starts to bulge, **STOP IMMEDIATELY,** release the tension on the wheel strap (see procedures for releasing in this Manual), and start the securement process again.
8. Do not use excessive force to secure vehicles. Using excessive force to tighten chains or wheel straps may lead to premature wear, damage or unexpected failure of the chain or wheel strap, and could result in personal injury. For the purpose of this warning, "excessive force" means more force than is necessary to adequately and properly secure the vehicle to the Equipment. Apply only the force necessary to adequately and properly secure the vehicle to the Equipment in compliance with the vehicle manufacturer's specifications and this Manual.
9. Ensure that all driving surfaces are clear of any securement devices (wheel straps, chains, hooks, bars) and any other loose objects prior to loading or unloading.

**Equipment – General**

**⚠WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

1. Once desired deck position is achieved when operating the hydraulic system, be sure to lock the deck in place using the deck-locking devices, if so equipped.
2. Be sure PTO is disengaged or electric hoist system is turned off before driving the Equipment.
3. Walk and/or step only on Equipment surfaces that are prepared with factory installed non-skid material or other slip-resistant surface. Do not step on or attempt to jump over drip pans or any other surface labeled "No Step."

# CHAIN SECUREMENT SYSTEM

**Requirements for Transporting with Chains**

**⚠WARNING**

**Failure to comply with the following Warnings and Instructions could result in death or serious injury.**

1. Do not secure or transport vehicles with chains unless approved by the vehicle manufacturer.
2. Do not substitute straps for chains.
3. Consult and comply with vehicle manufacturer's shipping manual and Federal Motor Carrier Safety Regulations.
4. Use the appropriate hook as required by the vehicle manufacturer.
5. Attach chains with hooks in the appropriate tie-down slots specifically designed for that purpose by the vehicle manufacturer.

**Care and Maintenance**

**⚠WARNING**

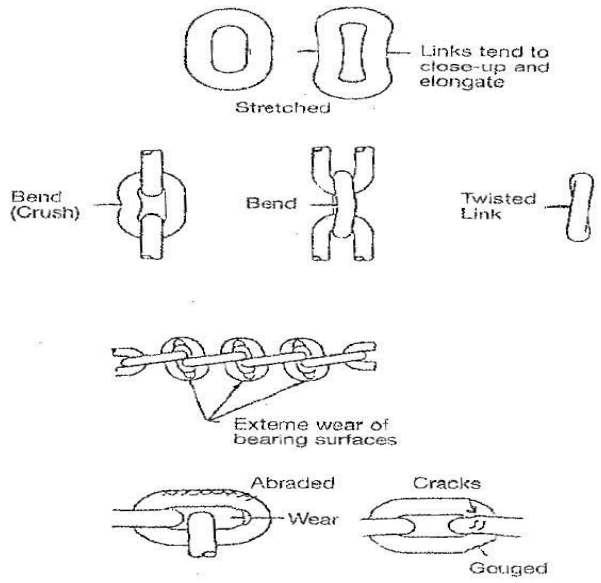
**Failure to comply with the following Warnings and Instructions could result in death or serious injury.**

1. Use only Cottrell-supplied tie-down bar, chain and hook assemblies. Chains not supplied by Cottrell may break during securement, resulting in injury to the operator from unexpected movement or falling.
2. Before each use, inspect the chain and hook assemblies for wear or damage. Chains and hooks not in proper condition may break during securement, resulting in injury to the operator from unexpected movement or falling. Refer to the table and figure below and replace the chain or hook assembly if damage or unacceptable wear is found. Properly dispose of any non-conforming chain or hooks to prevent inadvertent use at a later date.

**Table of Minimum Allowable Thickness**
**Measurement at Any Location on the Chain**

| Trade Size | | Chain Grade | Nominal Material Diameter | | Minimum Allowable Thickness on Link | |
|---|---|---|---|---|---|---|
| Inches | MM | | Inches | MM | Inches | MM |
| 1/4" | 7.0 | 70 | .276 | 7.0 | .239 | 6.07 |
| 5/16" | 8.0 | 70 | .312 | 8.0 | .278 | 7.06 |

**Out Of Service Criteria For Chain Links**




3. Inspect your tie-down bar prior to each use. Never use a visibly damaged, bent, cracked or dinged tie-down bar.
4. Do not use the tie-down bar for any purpose other than to secure your load, release your load, operate your loading skids, and unlock post locks on certain Equipment.
5. Ensure that there is no more than a single layer of chain on the ratchet shaft and that chain is not “balled up.” Chains with more than one layer or that is "balled up" could result in sudden movement of the chain on the ratchet shaft during securement or release causing personal injury to the operator.
6. Ensure that chains are not twisted or kinked. Twisted or kinked chains may be damaged when tension is applied, or may fail unexpectedly, leading to injury during securement.
7. Do not use excessive force to secure vehicles. Using excessive force to tighten chains may lead to premature wear, damage or unexpected failure of the chain, and could result in personal injury. For the purpose of this warning, “excessive force” means more force than is necessary to adequately and properly secure the vehicle to the Equipment. Apply only the force necessary to adequately and properly secure the vehicle to the Equipment in compliance with the vehicle manufacturer’s specifications and this Manual.
8. Do not overtighten chains during the securement process. Overtightening may lead to premature wear, damage or unexpected failure of the chain, and could result in personal injury. For the purpose of this warning, “overtightening” means applying more force than is necessary to adequately and properly secure the vehicle to the Equipment. Apply only the force necessary to adequately and properly secure the vehicle to the Equipment in compliance with the vehicle manufacturer’s specifications and this Manual.

**Tie-Down Bars**

During the first quarter of 2005, Cottrell increased the length of the standard tie-down bar supplied with all new Cottrell Equipment from an overall length of 34" to an overall length of 38.5" to allow the operator to perform the securement procedure with less effort. At that same time, Cottrell increased the diameter of the transport chain on new Equipment from 1/4" Grade 70 Transport Chain to 5/16" (8.0 MM) Grade 70 Transport Chain. As a result, Cottrell Equipment manufactured prior to the first quarter of 2005 with a chain and ratchet securement system was equipped with 1/4" transport chain and came standard with a 34" tie-down bar. Cottrell Equipment manufactured since the first quarter of 2005 with a chain and ratchet securement system was and still is equipped with 5/16" (8.0 MM) transport chain and comes with a 38.5" tie-down bar. Use only the tie-down bar designated for use with your Equipment as set forth in Table below. Never use any sort of "bar extension" or "cheater bar" with your Cottrell Equipment. Do not use the tie-down bar for any purpose other than to secure your load, release your load, operate your loading skids, and unlock post locks on certain Equipment. Inspect your tie-down bar prior to each use. Never use a visibly damaged, bent, cracked or dinged tie-down bar.

**⚠WARNING**

**Failure to comply with the following Warnings and Instructions could result in death or serious injury.**

1. Use only Cottrell-supplied tie-down bars.
2. Use only the 34" tie-down bar with 1/4" Chain. Use of the longer 38.5" bar may place excessive force on the 1/4" Chain which could result in chain breakage and lead to serious personal injury. See Table below.
3. Do not use the 38.5" tie-down bar on any chain other than 5/16" (8.0 MM) Grade 70 Transport Chain supplied by Cottrell. See Table below.
4. Each 5/16" (8.0 MM) Grade 70 Transport Chain supplied by Cottrell has a bright orange warning tag affixed near the hook assembly that is color coded to coincide with the bright orange warning label on the longer 38.5" tie-down bar supplied by Cottrell. Use only the orange-labeled tie-down bar with the orange-tagged chain. Use of the longer 38.5" bar with 1/4" Chain may place excessive force on the 1/4" Chain which could result in chain breakage and lead to serious personal injury.
5. Always pull on the tie-down bar during the chain-tightening process. Never push on the tie-down bar during the securement process. Pushing on the bar during securement may cause you to lose your balance and fall.
6. Do not use the tie-down bar for any purpose other than to secure your load, release your load, operate your loading skids, and unlock post locks on certain Equipment.
7. Inspect your tie-down bar prior to each use.
8. Never use a visibly damaged, bent, cracked or dinged tie-down bar.

**Table of Tie-Down Bar Use with Cottrell Equipment**

| Task to be Performed | 24” Bar | 34” Bar | 38.5” Bar |
|---|---|---|---|
| Secure/Release Wheel Straps | Yes | Yes | As Needed |
| Secure/Release 1/4” Chain | No | Yes | No |
| Secure/Release 5/16” (8.0 MM) Chain | No | No | Yes |
| Operate Rear-Loading Skids | No | Yes | Yes |

**Chain Securement Procedure**

**⚠WARNING**

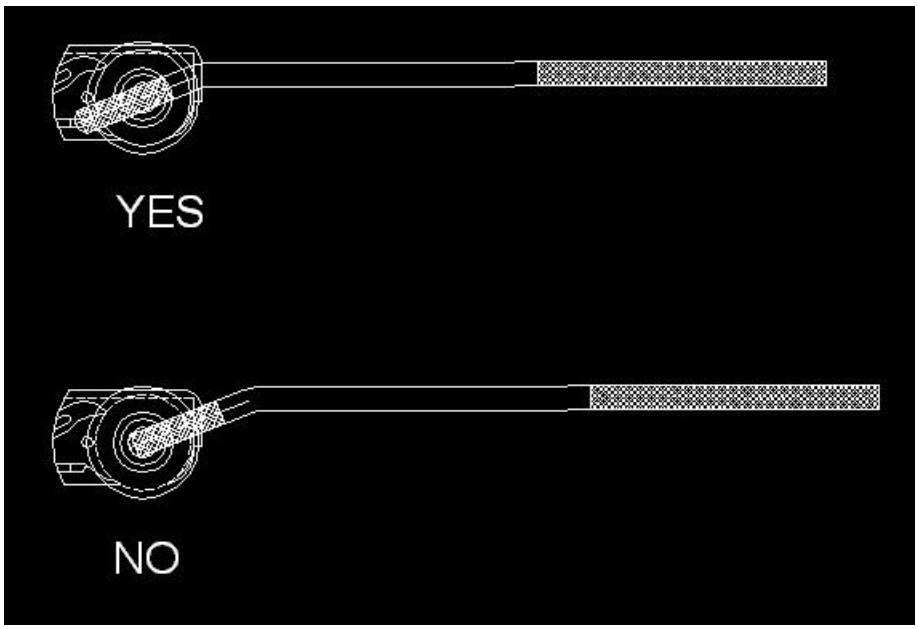
**Failure to comply with the following Warnings and Instructions could result in death or serious injury.**

1. Properly position the vehicle on the deck in preparation for securement.
2. Inspect chain links, hooks and idlers for excessive wear prior to use.
3. Select the specified hook for the vehicle to be secured.
4. Remove any twists or kinks in the chain.
5. Attach chains with the specified hook in the appropriate tie-down slots specifically designed for that purpose by the vehicle manufacturer.
6. Route chains through idlers, if necessary, to achieve the proper chain angle as set forth by the vehicle manufacturer. See Figure below.

**CHAIN SHOWN AROUND IDLER**

7. Manually turn the ratchet head to take up the slack in the chain until you reach approximately one and one-half wraps of chain on the ratchet shaft.
8. Ensure that there is no more than a single layer of chain on the ratchet shaft and that chain is not “balled up.”
9. Use the grab hook, if necessary, to remove any remaining slack in the chain.
10. Insert the short end of the proper length tie-down bar (34” for 1/4” chain, 38.5” for 5/16” 8.0 MM chain) through two parallel holes on the ratchet head. See Figure below.

## BAR PLACEMENT IN RATCHET HEAD




11. Using an approved two or three-point stance as appropriate to safely maintain your balance, pull on the tie-down bar to further tension the chain. Never push on the tie-down bar during the securement process.
12. Using a steady, slow, non-jerking movement, exert enough force on the tie-down bar to secure the vehicle. A good rule of thumb for most vehicles is to compress the vehicle's suspension approximately 2" from its unsecured state. Some vehicles, such as commercial or heavy-duty vehicles, may show less suspension compression when properly secured.
13. When one vehicle must be hauled on two (2) decks (split-decking), proceed in this order:
    a. Insert the proper hooks into the appropriate tie-down slots specifically designed for that purpose by the vehicle manufacturer.
    b. Manually take up most of the slack in the chain, but do not secure the vehicle using the tie-down bar.
    c. Move the decks into final transport position and then properly secure the vehicle. Do not secure a vehicle for transport on two (2) decks and then operate the hydraulic system to move those decks. Never use the equipment hydraulics to secure a vehicle.
14. Do not use excessive force to secure vehicles. Using excessive force to tighten chains may lead to premature wear, damage or unexpected failure of the chain, and could result in personal injury. For the purpose of this warning, "excessive force" means more force than is necessary to adequately and properly secure the vehicle to the Equipment. Apply only the force necessary to adequately and properly secure the vehicle to the Equipment in compliance with the vehicle manufacturer's specifications and this Manual.

15. Do not overtighten chains during the securement process. Overtightening may lead to premature wear, damage or unexpected failure of the chain, and could result in personal injury. For the purpose of this warning, "overtightening" means applying more force than is necessary to adequately and properly secure the vehicle to the Equipment. Apply only the force necessary to adequately and properly secure the vehicle to the Equipment in compliance with the vehicle manufacturer's specifications and this Manual.
16. During the chain tensioning process, the ratchet pawl will "click" on each successive ratchet tooth.
17. Repeat this procedure at the other three (3) corners of the vehicle, for a total of four (4) chains per vehicle.
18. After all four (4) corners are initially tensioned, recheck all four (4) corners and re-tension as required.
19. Re-inspect chains on the ratchet shaft to ensure that there is no more than a single layer of chain on the shaft and that chain is not "balled up" as set forth above.

**Achieving Appropriate Height Clearances**

**⚠ DANGER**

**Do not transport vehicles if proper height clearances are not attained. If all vehicles are properly secured and positioned yet appropriate height clearance cannot be attained, reposition vehicles or remove one or more vehicles from the load in order to attain proper height clearances. Failure to follow this instruction could result in a collision with bridges or other structures and loss of vehicles during transport, which may result in death or serious injury to the operator and/or the motoring public.**

**⚠ WARNING**

**Failure to comply with the following Warnings and Instructions could result in death or serious injury.**

1. Be aware of and comply with all height requirements, which vary by jurisdiction.
2. Proper load make-up is the most important factor in achieving appropriate height clearance.
3. Position decks and vehicles on decks properly to achieve appropriate height and cargo clearance. NEVER overtighten chains as a means to meet height clearance. Overtightening may lead to premature wear, damage or unexpected failure of the chain, and could result in personal injury. For the purpose of this warning, "overtightening" means applying more force than is necessary to adequately and properly secure the vehicle to the Equipment. Apply only the force necessary to adequately and properly secure the vehicle to the Equipment in compliance with the vehicle manufacturer's specifications and this Manual.
4. If you cannot meet height clearance using the above procedures, contact the originating shipper or dispatcher for reconfiguration of the load.

**Chain Releasing Procedure**

**⚠WARNING**

**Failure to comply with the following Warnings and Instructions could result in death or serious injury.**

1. Always keep hands, fingers, and all body parts clear of the chain and vehicle while releasing the vehicle.
2. Insert the Cottrell-supplied tie-down bar into the hole on the outboard side of the ratchet pawl and apply pressure on the bar to release the pawl (quick-release mechanism).
3. Be aware that the secured vehicle may move upward when the chain is released.
4. When the chain is slack, remove the tie-down hook from its securement location on the vehicle.
5. Secure chain assembly to prevent contact with cargo. Never drive over chain assembly with vehicle during loading or unloading.
6. Repeat steps 1-5 for the other three (3) corners of the vehicle. Note: when releasing chains on a vehicle parked on a deck that is at an angle, ensure that the last chain released is pulling in the opposite direction from the downward slope.
7. When one vehicle has been hauled on two (2) decks (split-decking), proceed with the releasing process in this order:
    a. Release the chains using the quick-release mechanism as described above, but do not remove the hooks from the tie-down slots specifically designed for that purpose by the vehicle manufacturer.
    b. Move the decks into final position for unloading.
    c. Remove the hooks and chains from the vehicle.

# WHEEL STRAP SECUREMENT SYSTEM

**Requirements for Transporting with Wheel Straps**

**⚠WARNING**

**Failure to comply with the following Warnings and Instructions could result in death or serious injury.**

1. Do not secure or transport vehicles with wheel straps unless approved by the vehicle manufacturer.
2. Do not substitute straps for chains.
3. Do not secure or transport vehicles with wheel straps if tires do not have adequate tread depth to maintain the cleats in position on the tire.
4. Do not secure or transport vehicles with wheel straps if tires are under-inflated or cannot maintain correct inflation pressure during transport.
5. Do not secure straps from an elevated position.
6. Comply with all vehicle manufacturer requirements for utilizing straps with their vehicles.

**Care and Maintenance**

**⚠WARNING**

**Failure to comply with the following Warnings and Instructions could result in death or serious injury.**

1. Use only Cottrell-supplied wheel strap and hook assemblies. Non-Cottrell strap and hook assemblies may fail during securement or transport and result in personal injury.
2. Inspect wheel straps before each use for wear. Refer to the enclosed strap care and maintenance guide for inspection procedures. Do not use any wheel strap that is fraying or showing signs of excessive wear. See examples of Damaged Straps (Synthetic Web Tie Downs) in the Figures below:

## FIGURES - DAMAGED SYNTHETIC WEB TIE DOWNS

**Figure 1**
Holes, Tears
Cuts, Snags

**Figure 2**
Broken Or Worn Stitching
In Load Bearing Sew
Patterns

**Figure 3**
Excessive
Abrasive Wear

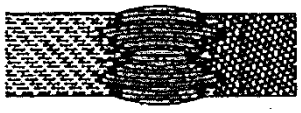


**Figure 4**
Knots In The
Tie Down

**Figure 5**
Melting Or Charring
Of The Tie Down,
Or Weld Spatter
On The Tie Down

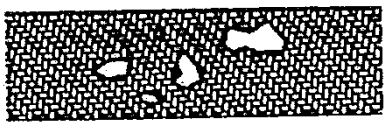


**Figure 6**
Chemical
Burns

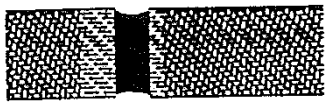


**Figure 7**
Damaged Loop,
Eye Hook Too
Small Or Too Rough

**Figure 8**
Tear In Webbing
At The Fitting

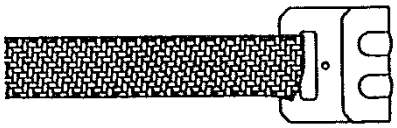
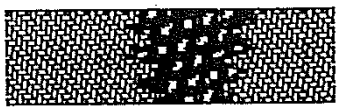


**Figure 9**
Other Apparent Damages
That May Affect Strength
Ratings; Such As Crushed
Webbing, Etc.





3. Inspect wheel straps to ensure that protective sleeves and cleats are in place. Do not use wheel strap if protective sleeves or cleats are missing or damaged.
4. Store wheel straps on the ratchet spool as far inboard as possible when not in use. Failure to store wheel straps properly could result in premature wear, damage or unexpected failure.
5. Store wheel straps in a cool, dry and dark place when not being used for prolonged periods of time.

6. Do not drive over wheel straps or hooks with vehicles. Failure to follow this instruction could result in premature wear, damage or unexpected failure.
7. Ensure wheel straps are lying flat (not twisted) and running in a straight line from the ratchet shaft to the tire. Failure to follow this instruction may cause wheel straps to become loose during securement or transport, or could result in premature wear, damage or unexpected failure. (See "Enclosed Equipment" Section for procedures when operating hand-ratcheting device.)
8. Position protective sleeves over wheel strap as needed to prevent abrasion, which can lead to premature wear, damage or unexpected failure.
9. Do not use excessive force to secure vehicles. Using excessive force to tighten wheel straps may lead to premature wear, damage or unexpected failure of the straps, and could result in personal injury. For the purpose of this warning, "excessive force" means more force than is necessary to adequately and properly secure the vehicle to the Equipment. Apply only the force necessary to adequately and properly secure the vehicle to the Equipment in compliance with the vehicle manufacturer's specifications and this Manual.
10. Do not overtighten wheel straps. Overtightening may lead to premature wear, damage or unexpected failure of the wheel strap, and could result in personal injury. For the purpose of this warning, "overtightening" means applying more force than is necessary to adequately and properly secure the vehicle to the Equipment. Apply only the force necessary to adequately and properly secure the vehicle to the Equipment in compliance with the vehicle manufacturer's specifications and this Manual.
11. Wheel straps should never be so tight as to cause the tire sidewall to bulge. If the tire sidewall starts to bulge, **STOP IMMEDIATELY,** release the tension on the wheel strap (see procedures for releasing in this Manual), and start the securement process again.
12. Do not twist the wheel strap during the securement procedure.

## Tie-Down Bars

Cottrell Equipment manufactured with a wheel strap and ratchet securement system comes standard with two (2) tie-down bars. The 24" tie-down bar is to be used in the securement process only and is supplied for convenience to the operator. The 38.5" tie-down bar is to be used when operating the rear-loading skids and in the securement process when the operator needs a longer bar, such as to release the quick-release ratchets. Use only the tie-down bar designated for use with the task you are performing on your Equipment as set forth in Table below. Never use any sort of "bar extension" or "cheater bar" with your Cottrell Equipment. Do not use the tie-down bar for any purpose other than to secure your load, release your load, operate your loading skids, and unlock post locks on certain Equipment. Inspect your tie-down bar prior to each use. Never use a visibly damaged, bent, cracked or dinged tie-down bar.

**⚠WARNING**

**Failure to comply with the following Warnings and Instructions could result in death or serious injury.**

1. Use only Cottrell-supplied tie-down bars.
2. Use only the 34" or 38.5" bar to operate the rear-loading skids. Use of the 24" bar to operate the skids will require you to be in an undesired bent posture, which could result in serious personal injury. See Table below.
3. Use the 24" tie-down bar only in the securement process and not to operate the rear-loading skids. Use of the 24" bar to operate the skids will require you to be in an undesired bent posture, which could result in serious personal injury. See Table below.
4. Always pull on the tie-down bar during the chain-tightening process. Never push on the tie-down bar during the securement process. Pushing on the bar during securement may cause you to lose your balance and fall.
5. Do not use the tie-down bar for any purpose other than to secure your load, release your load, operate your loading skids, and unlock post locks on certain Equipment.
6. Inspect your tie-down bar prior to each use.
7. Never use a visibly damaged, bent, cracked or dinged tie-down bar.

**Table of Tie-Down Bar Use with Cottrell Equipment**

| Task to be Performed | 24" Bar | 34" Bar | 38.5" Bar |
|---|---|---|---|
| Secure/Release Wheel Straps | Yes | Yes | As Needed |
| Secure/Release 1/4" Chain | No | Yes | No |
| Secure/Release 5/16" (8.0 MM) Chain | No | No | Yes |
| Operate Rear-Loading Skids | No | Yes | Yes |

**Wheel Strap Securement Procedure**

**⚠DANGER**

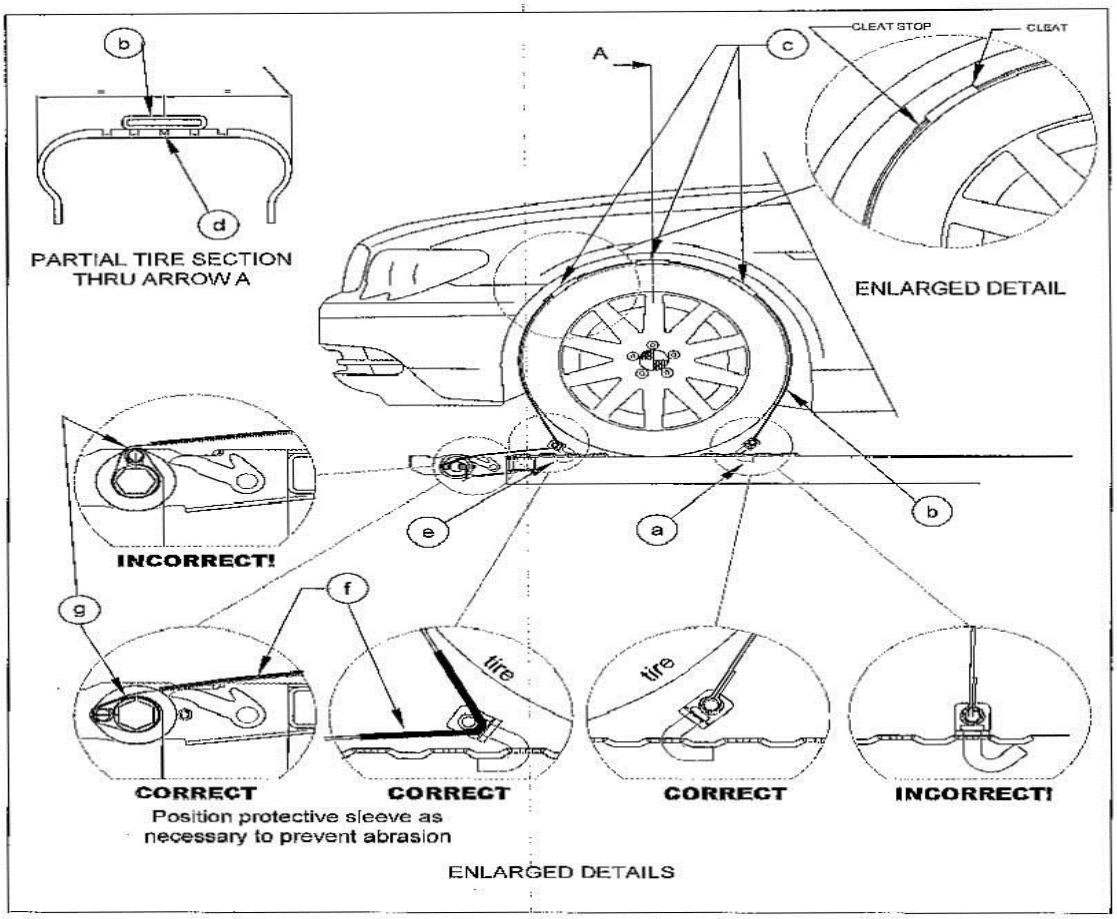
**Use four (4) wheel straps, one (1) on each tire, to secure vehicles for transport. Failure to follow this instruction could result in detachment and loss of vehicles during transport, which may result in death or serious injury to the operator and/or the motoring public. (See # 22 below).**

**⚠WARNING**

**Failure to comply with the following Warnings and Instructions could result in death or serious injury.**

1. Lower all top tracks to the lowest level before installing wheel straps. Attempting to install or tighten wheel straps with tracks in a position other than the lowest level may not provide an adequate posture or a balanced position, and may cause you to fall.
2. Insert hook in a hole in the deck as far under the tire as possible and centered on the tire. See Figure below – (a). As shown, ensure the hook is loaded at the crotch of the hook and not the tip of the hook. Tip loading will result in higher stresses and may cause hook failure.
3. Place wheel strap over the tire, ensuring that the rubber cleats are centered across the width of the tire. See Figure below – (b).
4. Ensure that the cleats are spaced equally over the top of the tire, and remove any slack between the first hook and the cleats. Push the first cleat as far towards the ratchet end as the cleat stop will allow. See Figure below – (c).
5. Position the cleats to ensure that the dimples are securely inserted into the tire tread. See Figure below – (d).
6. Insert hook in a second hole in the deck as far under the tire as possible. See Figure below – (e). As shown, ensure the hook is loaded at the crotch of the hook and not the tip of the hook. Tip loading will result in higher stresses and may cause hook failure.
7. Position protective sleeve as needed to prevent abrasion of the wheel strap. See Figure below – (f).
8. Slide the strap on the ratchet shaft to align it with the wheel strap over the tire.
9. Insert the wheel strap into the gap between the large main shaft and the small parallel shaft and pull it to eliminate slack in the strap. For Units equipped with a sliding spool, insert the wheel strap into the strap spool and pull it to eliminate slack in the strap.
10. Ensure wheel strap is lying flat (not twisted) and running in a straight line from the ratchet shaft to the tire. Failure to follow this instruction may cause wheel straps to become loose during securement or transport, or could result in premature wear, damage or unexpected failure. (See "Enclosed Equipment" Section for procedures when operating hand-ratcheting device.)
11. Rotate the ratchet with your hand to provide initial tension.
12. Insert the short end of the proper length tie-down bar (24" to secure wheel straps) through two parallel holes on the ratchet head.
13. Using an approved two or three-point stance as appropriate to safely maintain your balance, pull on the tie-down bar to further tension the wheel strap. Never push on the tie-down bar during the securement process.
14. See Figure (g) below for final correct position of strap on spool. Note that strap is threaded into slot in an "over-center" position on spool for securement.

## STRAPS WITH INTEGRAL RATCHET SYSTEM




15. Using a steady, slow, non-jerking movement, exert enough force on the tie-down bar to securely tension the wheel strap around the circumference of the tire. During the strap tensioning process, the ratchet pawl will "click" on each successive ratchet tooth.
16. When one vehicle must be hauled on two (2) decks (split-decking), proceed in this order:
    a. Insert the hooks into holes in the deck as close as possible to the tire, as set forth above.
    b. Manually take up the slack in the wheel strap, but do not secure the vehicle using the tie-down bar.
    c. Move the decks into final transport position and then properly secure the vehicle. Do not secure a vehicle for transport on two (2) decks and then operate the hydraulic system to move those decks. Never use the equipment hydraulics to secure a vehicle.
17. Do not use excessive force to secure vehicles. Using excessive force to tighten wheel straps may lead to premature wear, damage or unexpected failure of the straps, and could result in personal injury. For the purpose of this warning, "excessive force" means more force than is necessary to adequately and properly secure the vehicle to the Equipment. Apply only the force necessary to adequately and properly secure the vehicle to the Equipment in compliance with the vehicle manufacturer's specifications and this Manual.

18. Do not overtighten wheel straps. Overtightening may lead to premature wear, damage or unexpected failure of the wheel strap, and could result in personal injury. For the purpose of this warning, "overtightening" means applying more force than is necessary to adequately and properly secure the vehicle to the Equipment. Apply only the force necessary to adequately and properly secure the vehicle to the Equipment in compliance with the vehicle manufacturer's specifications and this Manual.
19. Wheel straps should never be so tight as to cause the tire sidewall to bulge. If the tire sidewall starts to bulge, **STOP IMMEDIATELY,** release the tension on the wheel strap (see procedures for releasing in this Manual), and start the securement process again.
20. Ensure that the amount of strap on the ratchet spool does not exceed the outer diameter of the strap ratchet spool.
21. Do not insert a strap tie-down hook into any deck pooch or hole that shows signs of cracking or other damage. Replace any decking that shows signs of cracking or other damage through or around pooch holes.
22. **Repeat this procedure at the other three (3) corners of the vehicle, for a total of four (4) wheel straps per vehicle. Failure to use four (4) straps when transporting vehicles could result in detachment and loss of vehicles during transport, which could cause serious personal injury or death to the motoring public. (See ⚠ DANGER section above.)**

**Achieving Appropriate Height Clearances**

**⚠ DANGER**

**Do not transport vehicles if proper height clearances are not attained. If all vehicles are properly secured and positioned yet appropriate height clearance cannot be attained, reposition vehicles or remove one or more vehicles from the load in order to attain proper height clearances. Failure to follow this instruction could result in a collision with bridges or other structures and loss of vehicles during transport, which may result in death or serious injury to the operator and/or the motoring public.**

**⚠ WARNING**

**Failure to comply with the following Warnings and Instructions could result in death or serious injury.**

1. Be aware of and comply with all height requirements, which vary by jurisdiction.
2. Proper load make-up is the most important factor in achieving appropriate height clearance.
3. Position decks and vehicles on decks properly to achieve appropriate height and cargo clearance. Do not overtighten wheel straps as a means to meet height clearance. Overtightening may lead to premature wear, damage or unexpected failure of the wheel strap, and could result in personal injury. For the purpose of this warning, "overtightening" means applying more force than is necessary to adequately and properly secure the vehicle to the Equipment. Apply only the force necessary to adequately and properly secure the vehicle to the Equipment in compliance with the vehicle manufacturer's specifications and this Manual.
4. If you cannot meet height clearance using the above procedures, contact the originating shipper or dispatcher for reconfiguration of the load.

**Wheel Strap Releasing Procedure**

**⚠ WARNING**

**Failure to comply with the following Warnings and Instructions could result in death or serious injury.**

1. Always keep hands, fingers, and all body parts clear of the wheel strap and vehicle while releasing the vehicle.
2. Insert the Cottrell-supplied tie-down bar into the hole on the outboard side of the ratchet pawl and apply pressure on the bar to release the pawl (quick-release mechanism).
3. Be aware that the secured vehicle may move upward when the wheel strap is released.

4. When the wheel strap is loose, remove the cleats from the tire tread and remove the wheel strap from the tire.
5. Secure wheel strap assembly to prevent contact with cargo. Never drive over wheel strap assembly with vehicle during loading or unloading.
6. Repeat steps 1-5 for the other three (3) corners of the vehicle.
7. When one vehicle has been hauled on two (2) decks (split-decking), proceed with the releasing process in this order:
    a. Release the tension on the wheel straps using the quick-release mechanism as described above, but do not remove the straps from the vehicle tires.
    b. Move the decks into final position for unloading.
    c. Remove the wheel straps from the vehicle tires.

## LOADING SEQUENCE

**⚠ DANGER**

**Do not transport vehicles if proper height clearances are not attained. If all vehicles are properly secured and positioned yet appropriate height clearance cannot be attained, reposition vehicles or remove one or more vehicles from the load in order to attain proper height clearances. Failure to follow this instruction could result in a collision with bridges or other structures and loss of vehicles during transport, which may result in death or serious injury to the operator and/or the motoring public.**

Please refer to the detailed drawings/schematics in the Appendix at the end of this Manual for loading sequence diagrams and instructions.

# TRANSPORTING VEHICLES

**⚠ DANGER**

**When transporting vehicles with wheel straps, use four (4) wheel straps, one (1) on each tire, to secure vehicles. Failure to follow this instruction could result in detachment and loss of vehicles during transport, which may result in death or serious injury to the operator and/or the motoring public.**

**⚠ DANGER**

**Do not transport vehicles if proper height clearances are not attained. If all vehicles are properly secured and positioned yet appropriate height clearance cannot be attained, reposition vehicles or remove one or more vehicles from the load in order to attain proper height clearances. Failure to follow this instruction could result in a collision with bridges or other structures and loss of vehicles during transport, which may result in death or serious injury to the operator and/or the motoring public.**

**⚠ WARNING**

**Failure to comply with the following Warnings and Instructions could result in death or serious injury.**

1. Follow all Federal Motor Carrier Safety Regulations in transport.
2. Be aware of low clearance of Equipment when crossing railroad tracks or other uneven roadway surfaces.
3. Be aware of overhead load clearance at all times during transport.
4. Be aware of and comply with all height requirements, which vary by jurisdiction.
5. Periodically check tension in the securement straps/chains and retighten as needed.
6. Periodically check for signs that wheels or brakes have overheated. Look for discoloration of hub or hubcap, deformation of hubcap, blistering of tires, etc.
7. If there is no cargo on the rear lower position of the trailer, the hydraulic track or extension must be fully retracted prior to transport. Failure to do so could result in serious damage to the Equipment, or subject the Operator to an over length citation.
8. If there is cargo loaded on the position over the tractor cab, be sure not to obstruct the field of vision through the front windshield.
9. Secure all securement devices (wheel straps, chains, hooks, bars) and any other loose objects prior to transport. Never drag chains or wheel straps during transport.
10. Never stand under any hydraulic deck without the decks being properly locked if the Unit is equipped with mechanical locking devices.
11. Once desired deck position is achieved when operating the hydraulic system, be sure to lock the deck in place using the deck-locking devices, if so equipped. Do not transport vehicles until all decks are locked with such deck-locking devices.

# UNLOADING VEHICLES

**Operator Precautions**

**⚠WARNING**

**Failure to comply with the following Warnings and Instructions could result in death or serious injury.**

1. Set the parking brake on the Equipment. Failure to do so prior to beginning the unloading process could result in serious personal injury or property damage.
2. Always maintain "three points of contact" while moving about on the ladders or side frame area of the vehicle. This means two feet and one hand or two hands and one foot. Failure to maintain three points of contact may cause you to lose your balance and fall.
3. Never lie down on the Equipment to detach chains or straps. Lying on the tracks may allow you to roll off the side of the Equipment causing injury.
4. Keep hands and other body parts from contact with moveable objects while hydraulic system is operating.
5. When unloading vehicles in conditions of ice or snow, remove ice and snow from ladders and runways before climbing, walking or moving vehicles on the runways.
6. Keep all body parts (head, arms, hands, elbows, etc.) inside the vehicle while driving on and off of the Equipment.
7. Be sure areas are clear of personnel before operating hydraulic system.
8. DO NOT walk on runways to ascend or descend from the top of the Equipment. Use the nearest available ladder or steps with non-skid surface to ascend or descend. Use the grab handles provided.
9. DO NOT walk on the tracks or flippers that bridge the gap between the headramp and trailer. DO NOT attempt to step or jump across the gap between the headramp and trailer. DO NOT attempt to step or jump across the gap between the driver's side runways/tracks and the passenger's side runways/tracks.
10. Do not stand or walk on the fuel tank unless steps are provided.
11. Do not step on or attempt to jump over drip pans or any other surface labeled "No Step."
12. Lower all top tracks to the lowest level before loading or unloading.
13. When loading or unloading at night or in any location that is not well lit, be sure to wear the lighted bump cap provided by Cottrell with the purchase of all Equipment.
14. Drive slowly and carefully when driving vehicles on and off the Equipment. In the event you drive the vehicle off the side or over the edge of the Equipment, or if you believe the vehicle is going to slide or fall off the Equipment, do not attempt to jump out of the vehicle. Stay inside the vehicle and lean away from the point of impact. Do not attempt to exit the vehicle if you believe it is sliding or falling off the Equipment, as the vehicle may fall on you, resulting in serious injury or death.
15. Take care entering and exiting the vehicle while it is loaded on the Equipment. Be careful not to slip, trip, stumble or hit your head.
16. When approaching a vehicle to unload it, be careful not to open the door into yourself, as you may lose your balance and fall from the Equipment causing injury.

17. Be aware that axle weights will change as you unload cargo. Reposition cargo as needed to maintain proper axle weights.
18. When positioning a vehicle (whether driven on or backed on) on the front-upper position of the headramp (over the tractor cab), proceed with extreme caution and stop when the leading tires contact the provided wheel stops. Continuing to drive the vehicle after the leading tires contact the wheel stops could result in the vehicle falling from the front of the headramp. In the event you drive the vehicle off the side or over the edge of the Equipment, or if you believe the vehicle is going to slide or fall off the Equipment, do not attempt to jump out of the vehicle. Stay inside the vehicle and lean away from the point of impact. Do not attempt to exit the vehicle if you believe it is sliding or falling off the Equipment, as the vehicle may fall on you, resulting in serious injury or death.
19. Do not remove or modify for any reason the wheel stops provided on the front-upper position of the headramp.
20. Do not remove or modify the handrails or grab handles provided on the Equipment.

**Equipment – Structure and Surfaces**

**⚠WARNING**

**Failure to comply with the following Warnings and Instructions could result in death or serious injury.**

1. Check structure, runways, tie downs and suspension for cracks, missing parts and proper friction on walking/working surfaces.
2. Check all ladders, grab handles and handrails for proper attachment to structure, and for cracked welds and/or broken components.
3. Check all walking/climbing surfaces for adequate friction material and send to shop for replacement as necessary.
4. Inspect Equipment for the presence of ice or snow. Do not attempt to load or unload Equipment if ice or snow is present on the track, walking or climbing surfaces. Use available means to remove ice or snow before proceeding.
5. Check for any fluids, debris or other contaminants on decks, walking or climbing surfaces. If found, identify the source, correct the problem, and clean up any residue prior to proceeding.

## Hydraulic Decks

Cottrell trailers and headramps are equipped with individual decks which can move vertically and/or horizontally with a hydraulics system. Hydraulic valves mounted on the side of the Equipment control deck movement. The valves are numerically labeled to correspond with the numbers on the deck that they control. Refer to the label on your Equipment for instructions on directional movement of the decks.

## I. Operating Instructions

**⚠ DANGER**

**Failure to follow these instructions will result in death or serious injury.**

1. Identify the deck to be moved by locating the hydraulic valve that corresponds to the number on the deck to be moved.
2. If your Unit is equipped with locking devices, unlock the deck to be moved by identifying and unlocking all of the mechanical locking devices on that deck.
3. Before moving any deck, ensure that the adjacent area is clear of personnel and equipment.
4. Never operate hydraulic controls with any part of your body or anyone else inside the Equipment. Always operate controls standing outside of the Equipment with both feet on the ground.
5. Slowly push or pull the valve from its center position. This will initiate the flow of hydraulic fluid and start the deck to move. Pushing or pulling the valve handle further will cause the deck to move faster in the desired direction. As the deck is moving, be aware of anything in its path and stop moving the deck immediately if something is in its path. Releasing the valve will return the valve to its neutral position and cause the deck to stop.
6. Repeat steps 1-5 for all decks that need to be moved.
7. Never stand under any hydraulic deck without the decks being properly locked if the Unit is equipped with mechanical locking devices.
8. Once desired deck position is achieved when operating the hydraulic system, be sure to lock the deck in place using the deck-locking devices, if so equipped.

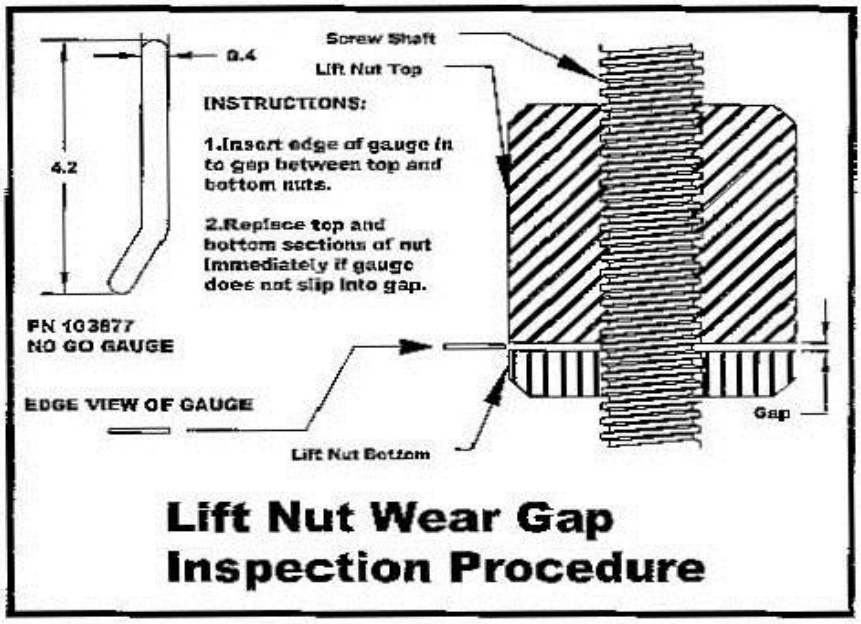
## II. Care and Maintenance

**⚠ DANGER**

**Failure to follow these instructions will result in death or serious injury.**

1. Do not operate, maintain or repair the hydraulic system unless you have been trained to do so.
2. Vertical decks that are controlled by hydraulic motors and screws include a two-piece polymer "nut" that runs up and down the rotating screw. These nuts have a visible wear gap between the two pieces that indicate when the nut is worn and needs to be replaced. The wear gap on each nut must be inspected as part of every pre-trip inspection to ensure a proper gap. Utilize the "go/no-go" gauge provided with each Equipment to measure the gap. If the wear gap is too tight, the Equipment must be taken out of service until the nut is replaced. See Figures below.

## LIFT NUT WEAR GAP




## WEAR GAP SHOWN

## MEASURING WEAR GAP

3. Never stand under any hydraulic deck without the decks being properly locked if the Unit is equipped with mechanical locking devices.

**⚠WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

1. Use only Cottrell supplied or approved parts for repair and maintenance of the Equipment. Use of parts not approved by Cottrell may void the warranty and create an unsafe condition.
2. Although hydraulic cylinders may appear to be similar, Cottrell hydraulic cylinders are specifically designed for use in certain applications. Replace hydraulic cylinders only with identical-size cylinders manufactured by Cottrell.
3. The shafts of Cottrell hydraulic cylinders are specially coated and are not suitable for any other application. It is unsafe to weld on chrome or chrome-plated cylinders.
4. Do not exceed the factory pressure setting on hydraulic system as set forth on the Warning label on your Equipment. See Figure below.

**PSI WARNING**


↑ **Number will be indicated on Equipment**

5. Prior to each use, check hydraulic system for leaks. If leaks are found, identify source of leak, properly repair it, and clean up residue.
6. Ensure all metal to metal sliding surfaces are regularly lubricated with Cottrell authorized lubricant.
7. Use only approved hydraulic fluids. Contact Cottrell, Inc. for recommended oils.
8. Hydraulic oil filters must be changed within two (2) weeks of initial placement in service of the Equipment and, at a minimum, every three (3) months thereafter.
9. Hydraulic screw devices are self-lubricating. Do not add any lubricant, including grease, oil, graphite spray, etc.

## Portable Aluminum Ladders

**⚠WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

### I. General

1. READ AND COMPLY WITH ALL LADDER SAFETY LABELS.
2. Use ladder only if you are in good physical condition.
3. Ladder is designed for one person only. Do not use ladder if you exceed the maximum weight duty rating of ladder (see rating label on ladder).

## II. Inspection

1. Inspect for damaged or missing parts before each use.
2. Never use a ladder with missing or damaged parts.
3. Keep ladder and shoes clean and free from grease, oil, mud, snow, wet paint and other slippery materials.
4. Wear full toed, rubber soled shoes when climbing any ladder.
5. Never make temporary repairs of damaged or missing parts.
6. Destroy ladder if broken, damaged, bent, worn, or if exposed to fire or chemical corrosion.

## III. Use-Storage Position

The aluminum ladder may be used to climb up and down while in the vertical storage position (see Photo 1) provided that all of the conditions below are met:

Photo 1, Portable aluminum ladder, storage position

1. The bottom is properly locked into place (see Photo 2).

Photo 2, Bottom of portable aluminum ladder locked into place.

2. Both top retention studs are fully engaged into their respective storage slots in both top brackets (see photo 3).

Photo 3, Portable aluminum ladder, retention studs engaged in storage slots.

3. Neither of the top brackets are broken, bent, or otherwise damaged.

## IV. Use-Positions Other Than Storage Position

1. The portable aluminum ladder is equipped with ladder hooks at the top of the ladder. When using the portable aluminum ladder in positions other than the storage position, the ladder hooks MUST be used per the following instructions:

    a. Open both hooks to the use position before setting up the ladder.
    b. To open, push down on top of hook and rotate. After releasing, make sure hook locks in place to prevent rotation during use.
    c. Hook ladder over upper support point. Make sure both ladder feet are in contact with ground before climbing ladder.

2. The aluminum ladder is designed to be used to assist the securement process on the position over the cab. See photos 4 and 5. Note how ladder hooks are engaged.

Photo 4, Portable aluminum ladder set up to access position over hood.

Photo 5, Ladder hooks engaged in slot behind catwalk.

3. The aluminum ladder is also designed for access to and from the rear upper deck position on some 3 car head ramp models. See photos 6 through 9.

Photo 6, Ladder set up to access rear upper headramp position. Ladder hooks are engaged in slots in deck.

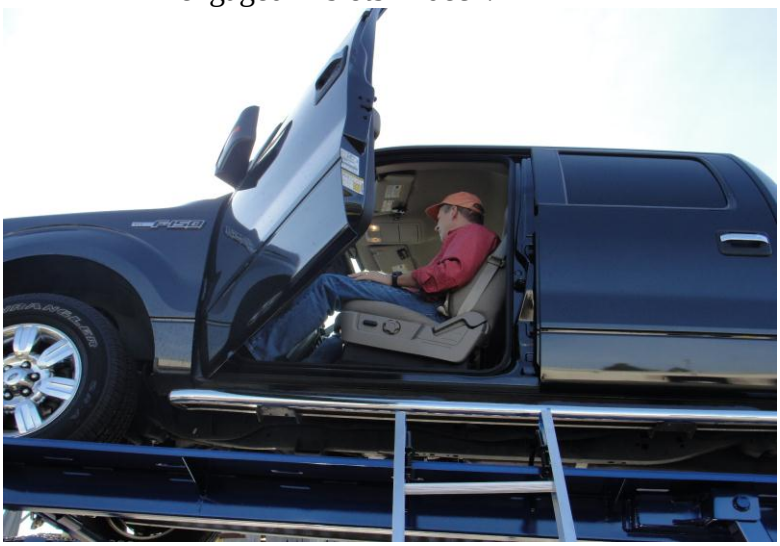


Photo 7, Vehicle door opened.

Photo 8, climbing out of vehicle while maintaining a 3-point stance.

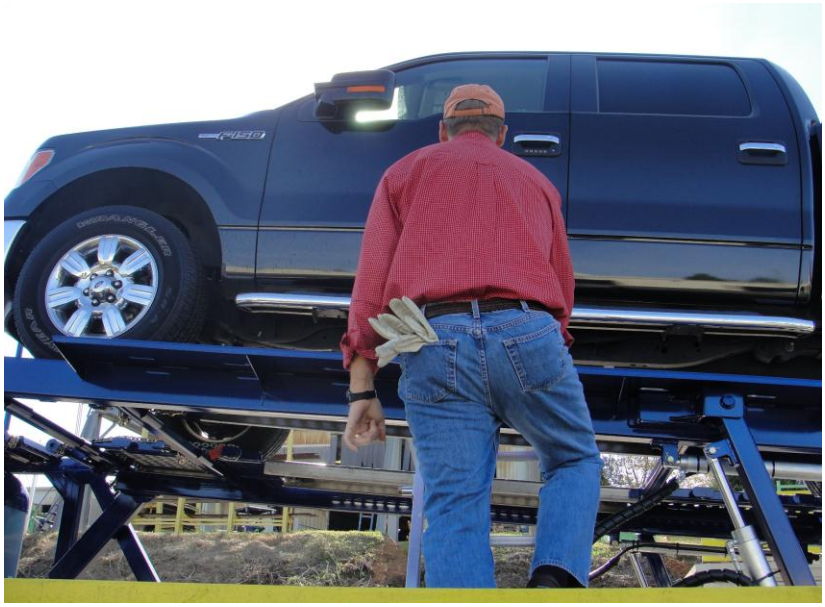


Photo 9, Climbing down ladder while maintaining a 3-point stance.

## Rear Loading Skids

Two aluminum rear-loading skid assemblies are provided at the rear of each Cottrell trailer as a means for vehicles to be driven on and off the Equipment.

**⚠WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

### I. Operating Instructions - Extending Loading Skids

1. Before deploying aluminum loading skids, extend the hydraulic track or extension on the bottom rear of the trailer to its fully-extended position.
2. Stand on the ground to the side of the trailer and disengage the spring lock on the skid retaining leg to unlock the skid from the skid storage compartment.
3. Rotate the skid retaining leg down towards the pavement. Note: The skid may roll out a short distance due to gravity when the skid retaining leg is first disengaged. Ensure that you are clear from the rear of the trailer when the skid retaining leg is disengaged.
4. Insert the short, curved end of the Cottrell-supplied 34" or 38.5" bar into the outboard hole in the end plate of the skid. See Figure below.

**SKID OPERATION**

5. Using the bar as a handle, carefully lift up the end of the skid and "walk" the skid out until the skid is fully extended. Use your left hand to walk the passenger skid out, slowly walking backward as the skid slides with you to your left. This will ensure the skid does not hit your body or land on your feet. Repeat the procedure on the driver's side, using your right hand to

walk the skid out. When the skid is fully extended, the bottom side of the front of the skid will contact a hard stop in the skid storage compartment and the skid will not be able to extend any further.

6. Do not grasp, push or pull on skids with your hands. Use only the Cottrell-supplied bar to handle the loading skids.
7. While pushing or pulling the skid, do not straddle the skid and pass it through your legs.
8. If the skid does not move freely, **STOP IMMEDIATELY**. Do not force the skid. Inspect to determine if the skid or housing is bent or damaged. If damage is found, have the skid or housing repaired or replaced as necessary prior to proceeding. If the skid will not move freely after inspection, call for assistance. Never attempt to force the skid in or out.
9. Once the skid is fully extended, lower the rear end of the skid until it contacts the pavement.
10. Move the loading skid side to side to ensure that the rear of the loading skid is parallel with the runway surface, and disengage the bar from the end of the skid.
11. Repeat steps 2-9 for the opposite side loading skid.

**⚠WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

## II. Operating Instructions – Retracting Loading Skids

1. Insert the short end of the Cottrell-supplied 34" or 38.5" bar into the outboard hole in the end plate of the skid.
2. Using the bar as a handle, carefully lift up the end of the skid and slowly "walk" the skid in towards the trailer until the skid is fully in the storage compartment. Use your left hand to walk the passenger skid in slowly walking forward as the skid slides with you to your left. This will ensure the skid does not hit your body or land on your feet. Repeat the procedure on the driver's side, using your right hand to walk the skid in.
3. If the skid does not move freely, **STOP IMMEDIATELY**. Do not force the skid. Inspect to determine if the skid or housing is bent or damaged. If damage is found, have the skid or housing repaired or replaced as necessary prior to proceeding. If the skid will not move freely after inspection, call for assistance. Never attempt to force the skid in or out.
4. Do not grasp, push or pull on skids with your hands. Use only the Cottrell-supplied bar to handle the loading skids.
5. While pushing or pulling the skid, do not straddle the skid and pass it through your legs.
6. Stand on the ground to the side of the trailer and rotate the skid retaining leg towards the horizontal position to lock the skid into the skid storage compartment. Use the spring-lock pin to lock the skid retaining leg into position. Failure to properly lock the skid-retaining device in place could result in the skid coming loose during transit.

7. Repeat steps 1-5 for the opposite side loading skid.
8. Retract the hydraulic track or extension to the transport position.

**⚠WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

## III. Care and Maintenance

1. Do not use rear-loading skids other than Cottrell-supplied skids for the particular model trailer. Ensure the loading skid looks like the Cottrell-supplied skids pictured in this Manual. Square or "ladder style" skids are not Cottrell-supplied skids and are not approved replacement skids for Cottrell Equipment. Cottrell is not responsible for injury or property damage incurred while using non-Cottrell skids. Cottrell loading skids are specifically designed for the Cottrell trailer and are not interchangeable with non-Cottrell skids. Use of non-Cottrell supplied skids will increase the operating force needed to move the skid and may also result in sudden stopping of the skid during operation. Either condition could result in injury to the operator. Use of non-Cottrell loading skids will also void the Warranty.
2. Prior to each use, inspect the loading skids and housings. Do not operate loading skid if the skid or skid housing is bent, cracked or otherwise damaged.
3. Use only the Cottrell-supplied bar to operate the loading skids.
4. Park the Equipment on an even surface prior to loading or unloading cargo. Attempts to load or unload on uneven surfaces may cause damage to the skid or the Equipment.
5. If there is no cargo on the rear lower position of the trailer, the hydraulic track or extension must be fully retracted prior to transport. Failure to do so could result in serious damage to the Equipment, or subject the Operator to an over length citation.

### Jump Skids

Some Equipment utilizes jump skids to temporarily bridge the gap between one deck surface and another.

**⚠WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

1. When using jump skids to bridge between one deck and another, secure the jump skid with skid pins provided, where provided.

2. Skid pins are equipped with a locking pin to keep the skid pin from sliding out. Ensure the locking pin is properly secured.
3. Never assume a posture when moving about on the Equipment that requires you to stand in a straddle position with one foot on each jump skid.
4. Do not perform securement operation while standing on jump skids.

**Flippers**

Some Equipment utilizes flippers to allow shortening or lengthening of a deck surface to accommodate various sized vehicles.

**⚠WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

1. When using flippers as a chain idler or strap securement point in the securement process, secure the flipper in place with the locking pin, where provided.
2. When deploying the flippers, always ensure that your head, hands, fingers, feet and other body parts are not in the path of the unfolding or retracting flipper.

**Cargo**

**⚠WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

1. Unless instructed otherwise in the car manufacturer's vehicle shipping manual, be certain that all vehicles are in "Park" with the parking brake applied before exiting the vehicle. For manual transmissions, vehicles must be in first gear with parking brake applied.
2. Do not operate Equipment if the cargo is not properly distributed and secured in compliance with Federal Motor Carrier Safety Regulations.
3. Be aware of clearance between cargo and structure when operating hydraulic system.
4. Ensure that the vehicle to be loaded or unloaded has sufficient clearance from all surfaces and components on the Equipment before driving on or off.
5. Position cargo vehicles on the Equipment to allow you to enter and exit the vehicle through the driver's side door. Do not enter or exit vehicles through any other doors or windows.
6. Take care when opening vehicle doors while the vehicle is on the Equipment. Be aware that door openings may be restricted and special care must be taken not to injure yourself or cause damage to the Equipment or cargo when entering and exiting the vehicle.
7. When positioning a vehicle (whether driven on or backed on) on the front-upper position of the headramp (over the tractor cab), proceed with extreme caution and

stop when the leading tires contact the provided wheel stops. Continuing to drive the vehicle after the leading tires contact the wheel stops could result in the vehicle falling from the front of the headramp. In the event you drive the vehicle off the side or over the edge of the Equipment, or if you believe the vehicle is going to slide or fall off the Equipment, do not attempt to jump out of the vehicle. Stay inside the vehicle and lean away from the point of impact. Do not attempt to exit the vehicle if you believe it is sliding or falling off the Equipment, as the vehicle may fall on you, resulting in serious injury or death.

8. When some but not all of the cargo is unloaded at one destination, always lower the upper decks to the lowest possible position after unloading any lower-deck cargo. This will reduce the payload center of gravity height, and, therefore, reduce the possibility of equipment rollover.
9. Partial unloading will change the axle weight distribution and could turn a properly distributed load into an improperly distributed load. It is the operator's responsibility to ensure that the load is always properly distributed, and that no axle group is overloaded on the Equipment.

**Securement Equipment (Bars, Wheel Straps, Chains)**

**⚠WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

1. Use the proper length tie-down bar supplied by Cottrell: 24" bar for wheel strap securement, 34" bar for ¼" chain, and 38.5" bar for 5/16" (8.0 MM) chain. See Table below.

**Table of Tie-Down Bar Use with Cottrell Equipment**

| Task to be Performed | 24" Bar | 34" Bar | 38.5" Bar |
|---|---|---|---|
| Secure/Release Wheel Straps | Yes | Yes | As Needed |
| Secure/Release 1/4" Chain | No | Yes | No |
| Secure/Release 5/16" (8.0 MM) Chain | No | No | Yes |
| Operate Rear-Loading Skids | No | Yes | Yes |

2. Do not alter or modify the tie-down bar in any way. Alteration or modification of the tie-down bar may cause the bar to fail, resulting in personal injury or property damage.
3. Pull on tie-down bar when securing vehicles. Never push on the tie-down bar during the securement process.
4. Do not overtighten chains or wheel straps used for securement to make height clearance or for any reason. Overtightening may lead to premature wear, damage or unexpected failure of the chain or wheel strap, and could result in personal injury. For the purpose of this warning, "overtightening" means applying more force than is necessary to adequately and properly secure the vehicle to the Equipment. Apply

only the force necessary to adequately and properly secure the vehicle to the Equipment in compliance with the vehicle manufacturer's specifications and this Manual.

5. Wheel straps should never be so tight as to cause the tire sidewall to bulge. If the tire sidewall starts to bulge, **STOP IMMEDIATELY,** release the tension on the wheel strap (see procedures for releasing in this Manual), and start the securement process again.
6. Do not use excessive force to secure vehicles. Using excessive force to tighten chains or wheel straps may lead to premature wear, damage or unexpected failure of the chain or wheel strap, and could result in personal injury. For the purpose of this warning, "excessive force" means more force than is necessary to adequately and properly secure the vehicle to the Equipment. Apply only the force necessary to adequately and properly secure the vehicle to the Equipment in compliance with the vehicle manufacturer's specifications and this Manual.
7. Ensure that all driving surfaces are clear of any securement devices (wheel straps, chains, hooks, bars) and any other loose objects prior to loading or unloading.

**Equipment – General**

**⚠WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

1. Once desired deck position is achieved when operating the hydraulic system, be sure to lock the deck in place using the deck-locking devices, if so equipped.
2. Be sure PTO is disengaged or electric hoist system is turned off before driving the Equipment.
3. Walk and/or step only on Equipment surfaces that are prepared with factory installed non-skid material or other slip-resistant surface. Do not step on or attempt to jump over drip pans or any other surface labeled "No Step."

# ENCLOSED EQUIPMENT

The following features/characteristics are unique to the enclosed car-hauler. Refer to the individual sections of this Manual for other warnings and instructions.

**Enclosed Equipment – General**

**⚠ DANGER**

**Ensure area above and behind Enclosed Equipment is clear of all obstacles and power lines prior to raising the roof or the rear aerodynamic bubbles. Failure to comply with these Instructions may result in death or serious injury.**

**⚠ WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

1. Ensure area behind Equipment is clear of personnel, vehicles or obstacles prior to raising or lowering the rear aerodynamic bubble.
2. If Unit is equipped with a roof that raises and lowers, you must lower the roof completely for transport.
3. If Unit is equipped with a rear aerodynamic bubble, you must close and secure the bubble prior to transport.
4. Ensure doors between tractor and trailer are properly secured during loading and unloading and are properly latched during transport.
5. Ensure side curtains are properly latched and tensioned during transport.
6. Do not alter tractor or trailer ride heights from factory settings.
7. When loading or unloading, always open the curtains on both sides of the Equipment to ensure proper access to ladders, wheel straps and steps.
8. Keep hands, fingers and other body parts clear of side-curtain latches when opening the side curtains because the latches may "spring" away from the Equipment when tension is first released.
9. If the side curtain does not slide easily, **STOP IMMEDIATELY**. Do not force the side curtain. Inspect to ensure that curtain doors or curtains are not interfering with any structural components. Inspect to determine if the curtain, curtain rail or curtain rollers are damaged. If damage is found, have components repaired or replaced as necessary prior to proceeding.

***NOTICE***

**Failure to follow these warnings and instructions could result in property damage.**

1. Do not allow the side curtains to contact any sharp objects.
2. Be aware of low clearance of the rear aerodynamic bubble when ascending steep inclines, crossing railroad tracks or driving on uneven terrain.

**Hand-Ratcheting Securement Procedure**

**⚠ DANGER**

**Use four (4) wheel straps, one (1) on each tire, to secure vehicles for transport. Failure to follow this instruction could result in detachment and loss of vehicles during transport, which may result in death or serious injury to the operator and/or the motoring public. (See # 20 below).**

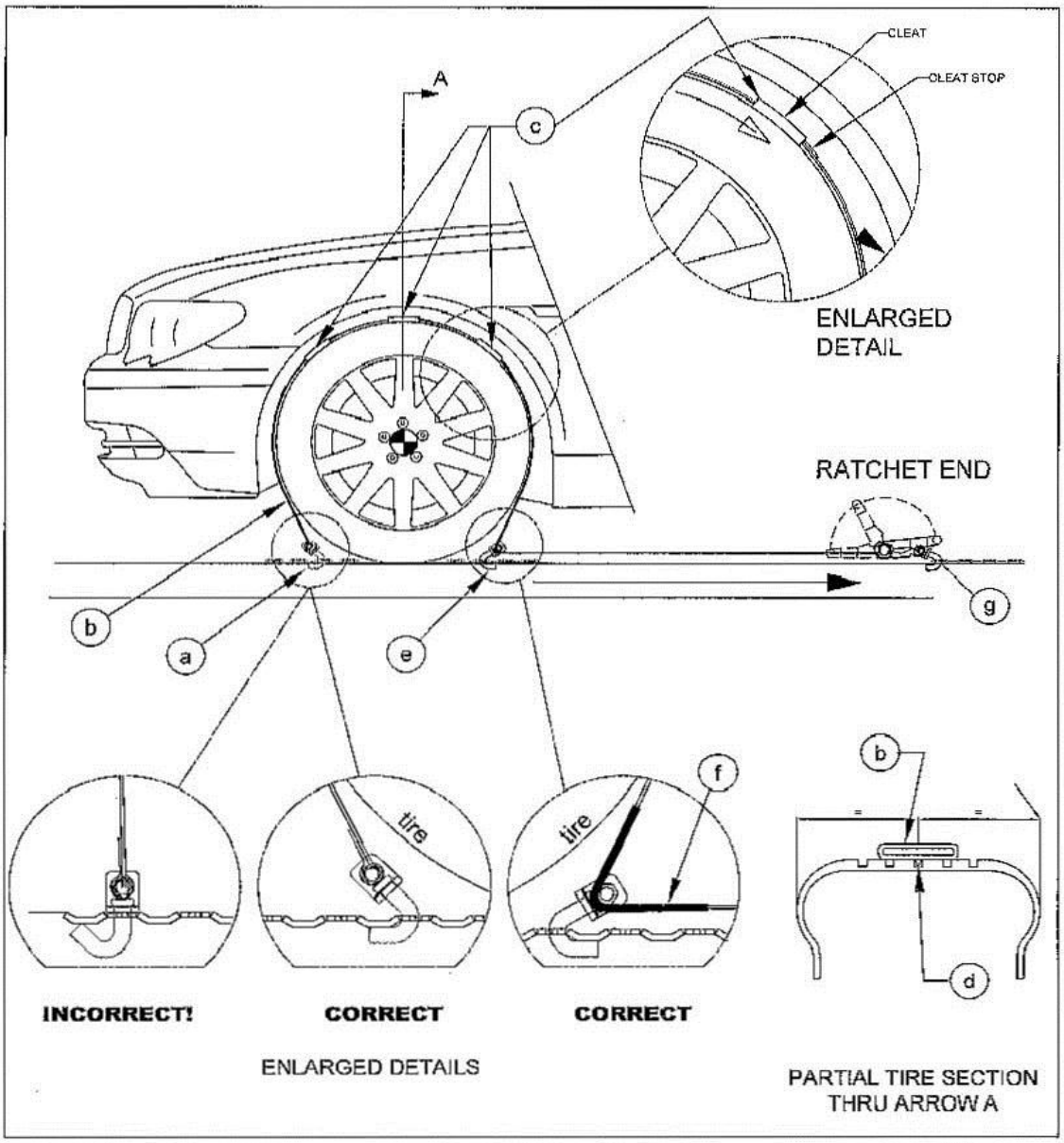
**⚠ WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

1. Lower all top tracks to the lowest level before installing wheel straps. Attempting to install or tighten wheel straps with tracks in a position other than the lowest level may not provide an adequate posture or a balanced position, and may cause you to fall.
2. Insert hook in a hole in the deck as far under the tire as possible. See Figure below – (a). As shown, ensure the hook is loaded at the crotch of the hook and not the tip of the hook. Tip loading will result in higher stresses and may cause hook failure.
3. Place wheel strap over the tire, ensuring that the rubber cleats are centered across the width of the tire. See Figure below – (b).
4. Ensure that the cleats are spaced equally over the top of the tire, and remove any slack between the first hook and the cleats. Push the first cleat as far towards the ratchet end as the cleat stop will allow. See Figure below – (c).
5. Position the cleats to ensure that the dimples are securely inserted into the tire tread. See Figure below – (d).
6. Insert hook in a second hole in the deck as far under the tire as possible. See Figure below – (e). As shown, ensure the hook is loaded at the crotch of the hook and not the tip of the hook. Tip loading will result in higher stresses and may cause hook failure.
7. Position protective sleeve as needed to prevent abrasion of the wheel strap. See Figure below – (f).
8. Hook hand ratchet into hole in the deck. See Figure below – (g).
9. Insert the wheel strap into the gap between the large main shaft and the small parallel shaft and pull it to eliminate slack in the strap. For Units equipped with a sliding spool, insert the wheel strap into the strap spool and pull it to eliminate slack in the strap.
10. Ensure wheel strap is lying flat (not twisted) and running in as straight a line as possible from the ratchet to the tire. Failure to follow this instruction may cause wheel straps to become loose during securement or transport, or could result in premature wear, damage or unexpected failure.
11. Using a three-point stance, operate hand ratchet until proper tension is applied.

12. During the strap tensioning process, the ratchet pawl will “click” on each successive ratchet tooth.
13. Once appropriate tension level is achieved, close ratchet handle fully to engage safety lock.
14. When one vehicle must be hauled on two (2) decks (split-decking), proceed in this order:
    a. Insert the hooks into holes in the deck as close as possible to the tire, as set forth above.
    b. Manually take up the slack in the wheel strap, but do not secure the vehicle using the hand-ratcheting device.
    c. Move the decks into final transport position and then properly secure the vehicle. Do not secure a vehicle for transport on two (2) decks and then operate the hydraulic system to move those decks. Never use the equipment hydraulics to secure a vehicle.

## STRAPS WITH HAND-RATCHET SYSTEM




15. Do not use excessive force to secure vehicles. Using excessive force to tighten wheel straps may lead to premature wear, damage or unexpected failure of the straps, and could result in personal injury. For the purpose of this warning, "excessive force" means more force than is necessary to adequately and properly secure the vehicle to the Equipment. Apply only the force necessary to adequately and properly secure the vehicle to the Equipment in compliance with the vehicle manufacturer's specifications and this Manual.
16. Do not overtighten wheel straps. Overtightening may lead to premature wear, damage or unexpected failure of the wheel strap, and could result in personal injury. For the purpose of this warning, "overtightening" means applying more force than is necessary to adequately and properly secure the vehicle to the Equipment. Apply only the force necessary to adequately and properly secure the vehicle to the

Equipment in compliance with the vehicle manufacturer's specifications and this Manual.

17. Wheel straps should never be so tight as to cause the tire sidewall to bulge. If the tire sidewall starts to bulge, **STOP IMMEDIATELY,** release the tension on the wheel strap (see procedures for releasing in this Manual), and start the securement process again.
18. Ensure that the amount of strap on the ratchet spool does not exceed the outer diameter of the strap ratchet spool.
19. Do not insert a strap tie-down hook into any deck pooch or hole that shows signs of cracking or other damage. Replace any decking that shows signs of cracking or other damage through or around pooch holes.
20. **Repeat this procedure at the other three (3) corners of the vehicle, for a total of four (4) wheel straps per vehicle. Failure to use four (4) straps when transporting vehicles could result in detachment and loss of vehicles during transport, which could cause serious personal injury or death to the motoring public. (See ⚠ DANGER section above.)**

**Hand-Ratcheting Releasing Procedure**

**⚠WARNING**

**Failure to comply with these Warnings and Instructions could result in death or serious injury.**

1. Pull the release lever to disengage the safety lock on the hand ratchet.
2. Rotate the ratchet handle upward until it stops.
3. Using the palm of your hand, push down on the handle until the tension releases. Failure to release with the palm of your hand could result in injury to knuckles and fingers.
4. Be aware that the secured vehicle may move upward when the wheel strap is released.
5. When the wheel strap is loose, remove the cleats from the tire tread and remove the wheel strap from the tire.
6. Secure wheel strap assembly and hand ratchet to prevent contact with cargo. Never drive over wheel strap assembly or hand ratchet with vehicle during loading or unloading.
7. Repeat steps 1-6 for the other three (3) corners of the vehicle.
8. When one vehicle has been hauled on two (2) decks (split-decking), proceed with the releasing process in this order:
    a. Release the tension on the wheel straps using the hand-ratcheting device as described above, but do not remove the straps from the vehicle tires.
    b. Move the decks into final position for unloading.
    c. Remove the wheel straps from the vehicle tires.

# REPAIR AND MODIFICATION OF THE EQUIPMENT


**Failure to follow these warnings and instructions may result in death or serious injury.**

1. Do not modify or alter your Equipment without the prior written consent of Cottrell, Inc. Modifications or alterations may compromise the structural integrity or safety aspects that exist in the original design of the Equipment. Such modifications or alterations may also cause property damage and void the Warranty.

2. Conversion of chain equipment to strap equipment is considered an unauthorized modification unless performed by Cottrell or otherwise approved in writing by Cottrell.

3. All repairs and modifications/refurbishments must be made by Cottrell, Inc. or a Cottrell authorized repair facility. Contact Cottrell, Inc. at 1-800-827-0132 or refer to www.cottrelltrailers.com for a current listing of authorized repair facilities.

# LIMITED WARRANTY

**THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, EXCEPT AS SPECIFICALLY SET FORTH HEREIN.**

Cottrell warrants to Buyer for the period set forth below (the "Warranty Period"), from the "In-Service Date" submitted by the customer and approved by Cottrell or Cottrell's Authorized Dealer, that each new Headramp and Trailer will be free from design failures and defects in workmanship under normal use and service as follows:

(1) Headramp and Trailer Mainframe Structure: Twenty-four (24) Months.
** Does not include wear items such as pivot points, linkages, track sheets, flippers, etc.

(2) Hydraulic cylinders manufactured by Cottrell: Twelve (12) Months. (Hydraulic cylinders, hoses and valves are not covered under this Warranty if the Headramp and Trailer are not purchased as a complete Unit unless proper documentation is included with the claim. As used herein, "proper documentation" refers to any documentation requested by Cottrell on Equipment other than a complete Cottrell Unit, including but not limited to, pressure readings, flow rates, and other information as deemed necessary by Cottrell to approve warranty coverage).

(3) Paint Manufacturer warrants paint on Headramp/Trailer for 500,000 miles or five (5) years from application date, whichever first occurs as follows:

(A) Years 1 and 2 - 100% of materials and labor
(B) Year 3 - 100% of materials and 50% of labor
(C) Year 4 - 50% of materials and labor
(D) Year 5 - 50% of materials and 25% of labor

Track surfaces and moly-lubed surfaces on the Headramp/Trailer are excluded from this paint warranty. (See Paint Manufacturer's Warranty for additional details).

(4) Axles, suspension, lighting, hydraulic valves, hydraulic hoses and other related items supplied to Cottrell by various component manufacturers are warranted by that particular manufacturer under its warranty policy and not by Cottrell. All claims for warranty work should be directed to Cottrell for determination and handling.

(5) All warranty work must be approved and a work order issued by Cottrell before repair/replace work is commenced. Photographs of alleged failed parts shall be furnished by Buyer/Customer/Dealer at the request of Cottrell. Failed parts shall be returned to Cottrell on all claims.

**THE FOREGOING WARRANTIES APPLY ONLY TO THE ORIGINAL BUYER (WARRANTIES ARE NOT TRANSFERABLE OR ASSIGNABLE), AND ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, INCLUDING, WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.**

Cottrell's obligations under this Warranty are limited to repair or replacement at Cottrell's option and at Cottrell's facility in Gainesville, Georgia, or at a location approved by Cottrell, of any product or parts thereof that Cottrell determines may not conform to this Warranty. Buyer shall promptly notify Cottrell in writing of any alleged defect in the Product and specifically describe the problem. Cottrell shall have no obligation under this Warranty with respect to any defect unless it receives notice and a description of such defect during the Warranty Period. Upon receipt of such notice, Cottrell shall advise Buyer that warranty service shall be provided, or that the problem is not covered under this Warranty. Buyer shall pay the costs of transportation for warranty work.

The foregoing warranties shall not apply to the Product in the event it has been (i) used or operated in a manner inconsistent with the use intended by Cottrell, (ii) modified or repaired by anyone other than Cottrell's personnel or Cottrell's authorized representatives, (iii) damaged because of accident, neglect or misuse by anyone other than Cottrell's personnel, or (iv) damaged during shipment and/or when returning the Product to Cottrell for repair or replacement. Any statements made about the Product by salespersons, dealers, distributors or agents are not warranties, shall not be relied upon by Buyer, and are not part of the sale.

Cottrell shall in no event have obligations or liabilities to Buyer or any other person for loss of profits, loss of use or collateral (including cargo damage), incidental, special or consequential damages, whether based on contract, tort (including negligence), strict liability, or any other theory or form of action, even if Cottrell has been advised of the possible theory or form of action, arising out of the sale, delivery, use, repair or performance of the Product, or any failure or delay in connection with any of the foregoing. In no event shall the liability of Cottrell arising out of or in connection with the sale of the Product exceed the actual amount paid by Buyer to Cottrell for the Product.

# WARRANTY PROCEDURES AND GUIDELINES

Following are the procedures and guidelines for submitting and processing warranty claims:

1. Registration of your Equipment is required for warranty coverage. You may register on-line at www.cottrelltrailers.com.
2. Cottrell must receive an estimate for repair, with an agreed-upon labor rate, before a Purchase Order will be issued.
3. Cottrell must issue a Purchase Order prior to the repair work being done.
4. All Purchase Order numbers must be referenced on invoices in order for the invoice to be processed for payment by Cottrell.
5. Pictures may be required of any structural damage before work will be authorized.
6. When a warranty claim involves a failed part, that part must be returned to Cottrell for evaluation.
7. Cottrell must issue a Returned Goods Authorization ("RGA") number before returning the part(s).
8. When a warranty claim involves failed parts, Cottrell will provide replacement parts. You will initially be charged for these parts, but your account will be credited once the failed parts have been returned and approved for warranty. The RGA number to return the failed parts will be on the packing slip of the replacement parts.
9. Cottrell will pay you your cost plus 10% for parts used out of your inventory, provided the parts were purchased from Cottrell.
10. When a warranty claim involves a vendor part, Cottrell may choose to get the vendor involved.
11. Parts in question MUST be returned (or pictures, if structural or fabrication). Such parts or pictures must be received before credits are applied and labor is paid.
12. Please review Cottrell's Limited Warranty for further information and explanation. (Refer to prior section in this Manual).
13. Check Cottrell's website (www.cottrelltrailers.com) regularly for service bulletins and other updates concerning your Equipment.

# INFORMATION PACKET

All Cottrell Equipment comes with two (2) copies of this Operator's Manual. One copy is affixed to your Equipment and is to stay with the Equipment at all times for reference. The second copy is included with other items in the Information Packet that accompanies the sale of all Cottrell Equipment, and allows the owner or operator to keep a copy of the Operator's Manual with the file of other important documents pertaining to the Equipment, should the owner or operator desire to do so.

Inside the Information Packet, you will find a colored "Contents" page that lists the items included in the Packet. A **SAMPLE** list of contents, as may be included in your Information Packet, is as follows:

1. Operator's Manual (which includes a "go/no-go gauge for measuring the wear gap on the hydraulic screw device, and Recommended Operating, Care/Maintenance and Inspection Manual for Synthetic Web Tie Downs)

2. Limited Warranty

3. Warranty Procedures

4. Current Listing of Authorized Repair Facilities - Contact Cottrell at 1-800-827-0132 or refer to our website at www.cottrelltrailers.com for a current listing of authorized repair facilities.

5. Parker - Safety Guide for Hoses/Fittings

6. Parker - Mobile Service Guide

7. Michelin Tire - Warranty and Maintenance Guide

8. Alcoa Wheels – Safety and Maintenance Instruction Guide

9. Truck-Lite - Product Information/CD

10. Curtis-Wright - Teledyne Valve Warranty Policy

11. Meritor Wabco - Easy-Stop ABS Manual

12. Meritor Wabco – Blink Code Diagnostic Guide

13. Arvin Meritor – Trailer Axle Manual

14. Arvin Meritor – PSI Tire Inflation Manual

15. Arvin Meritor – Service TB Axles

16. Arvin Meritor – Service TL Axles

17. OnTrac – Technical Support

18. Hendrickson - Suspension Wheel End Maintenance Procedures

19. Hendrickson – Suspension Shock Mount Replacement Procedures

20. Hendrickson – Intraax Axle Maintenance

21. Hendrickson – Tiremaax Technical Procedures

22. Hendrickson – Tiremaax Parts List

23. Fontaine – Fifth Wheel Instructions

24. Raydan – Sliding King Pin

25. Holland Fifth Wheels Service Bulletin concerning Add-On Aftermarket Lube Plates

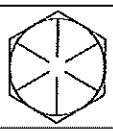
# INDEX

**INDEX (CONT'D)**

# APPENDIX

# CONTENTS

## Bolt and Nut Torque Values (ft. lbs.)

| Thread Size | SAE Grade 5 Bolts  | | | SAE Grade 8 Bolts  | | |
|---|---|---|---|---|---|---|
| | Bolt Finish | | | Bolt Finish | | |
| | Plain | Zinc Plated | Waxed | Plain | Zinc Plated | Waxed |
| 1/4–20 | 9 | 10 | 5 | 13 | 14 | 6 |
| 1/4–28 | 10 | 12 | 5 | 15 | 16 | 7 |
| 5/16–18 | 19 | 21 | 9 | 27 | 29 | 13 |
| 5/16–24 | 21 | 23 | 10 | 30 | 33 | 15 |
| 3/8–16 | 33 | 37 | 17 | 47 | 52 | 24 |
| 3/8–24 | 38 | 42 | 19 | 54 | 59 | 27 |
| 7/16–14 | 53 | 59 | 27 | 76 | 83 | 38 |
| 7/16–24 | 60 | 66 | 30 | 85 | 93 | 42 |
| 1/2–13 | 82 | 90 | 41 | 116 | 127 | 58 |
| 1/2–20 | 92 | 101 | 46 | 131 | 144 | 65 |
| 9/16–12 | 118 | 129 | 59 | 167 | 184 | 84 |
| 9/16–18 | 131 | 144 | 66 | 186 | 205 | 93 |
| 5/8–11 | 162 | 179 | 81 | 231 | 254 | 115 |
| 5/8–14 | 184 | 202 | 92 | 261 | 287 | 131 |
| 3/4–10 | 288 | 317 | 144 | 409 | 450 | 205 |
| 3/4–16 | 322 | 354 | 161 | 457 | 503 | 228 |

Data Source: Industrial Fasteners Institute

# Service Bulletin
## Holland Fifth Wheels

SAF-HOLLAND Group

## Add-On Aftermarket Lube Plate Guidelines for Fifth Wheel Models Requiring Lubrication

October 2010

**IMPORTANT:** This document **DOES NOT** apply to the Holland NoLube or LowLube top plates (FW31, FWAL and FW33) which are engineered with original equipment lube plates that do not require a longer kingpin. For more information on Holland NoLube fifth wheels, visit www.safholland.com.

**IMPORTANT:** The improper use of add-on lube plates will void your SAF-HOLLAND fifth wheel warranty.

### Fifth Wheel Add-On Lube Plates

An add-on aftermarket lube plate is a lubricated, impregnated plastic disc which is placed between the fifth wheel top plate and trailer bolster plate to eliminate the need to lubricate the top plate with grease (***Figure 1***).

1. Add-on lube plates **MAY ONLY** be used with Holland fifth wheels when physically attached to the trailer bolster plate (***Figure 1***).

**IMPORTANT:** Lube plates should not be used if loose.

**IMPORTANT:** The effects of adding a lube plate to the trailer/fifth wheel coupling interface without taking into account the length of the kingpin will result in coupling difficulties (***Figure 3***).

2. If an add-on lube plate is to be installed, the kingpin must meet the SAE J700 kingpin dimension standards **AFTER** installation of the lube plate. If the kingpin does not meet SAE dimensions standards (***Figure 2***), a new kingpin must be installed to accommodate the lube plate thickness.

**⚠WARNING** Failure to comply with SAE kingpin dimensions after the installation of an add-on lube plate to the trailer bolster plate may result in coupling difficulties, premature fifth wheel lock and kingpin wear, and the potential for tractor/trailer separation which, if not avoided, could result in death or serious injury.

*Figure 1*

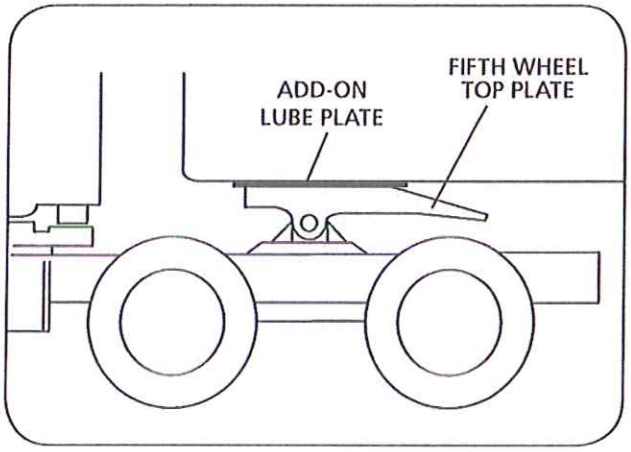
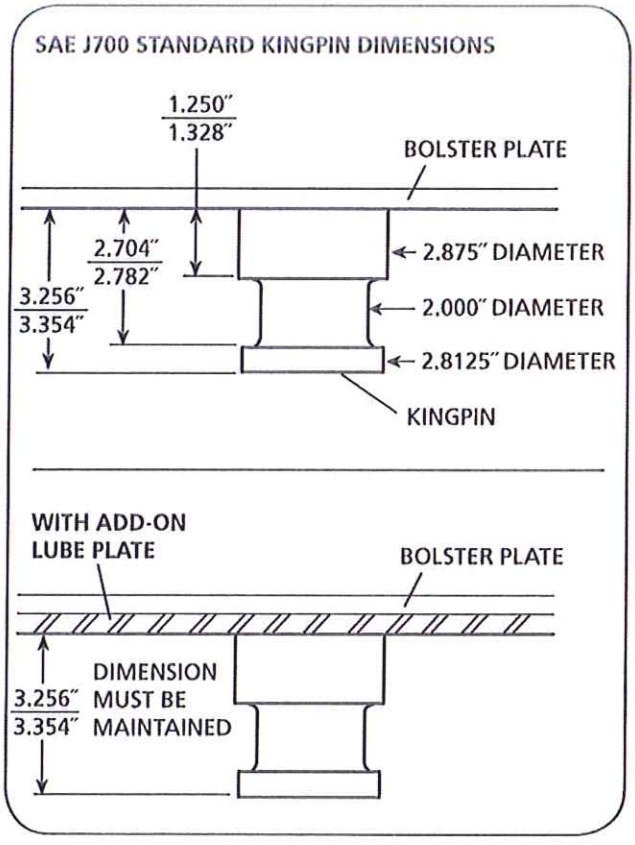



*Figure 2*



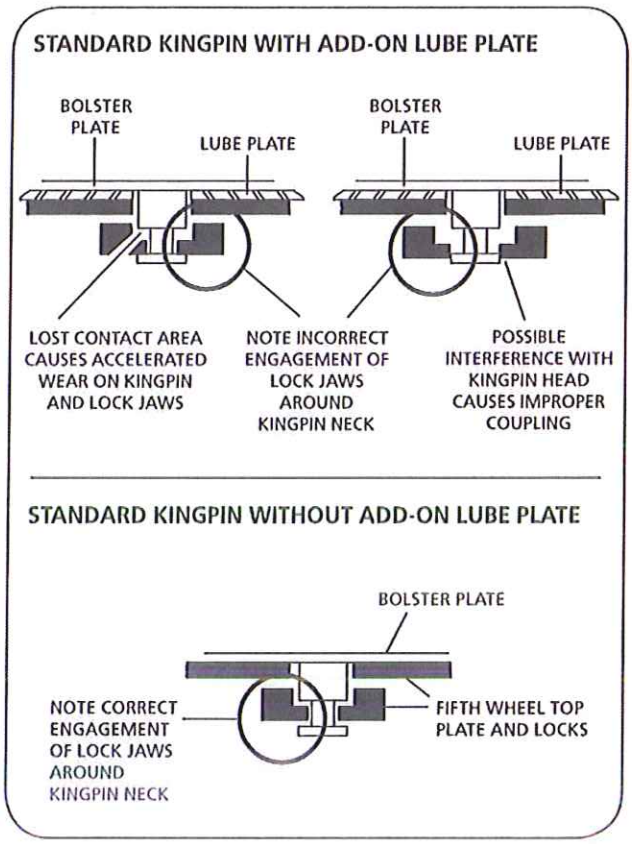
3. **NEVER** install an add-on aftermarket lube plate directly to a Holland fifth wheel top plate.

**NOTE:** The use of add-on aftermarket lube plates on a Holland fifth wheel top plate will void the warranty coverage.

**IMPORTANT:** An aftermarket add-on lube plate used on a Holland fifth wheel that is not designed for a lube plate changes the kingpin interface dimension of the fifth wheel locks (***Figure 3***).

**⚠WARNING** DO NOT install add-on lube plates directly to Holland fifth wheel top plates. Failure to observe this instruction may result in coupling difficulties, premature fifth wheel or kingpin failure, and the potential of tractor/trailer separation which, if not avoided, may result in death or serious injury.

***Figure 3***



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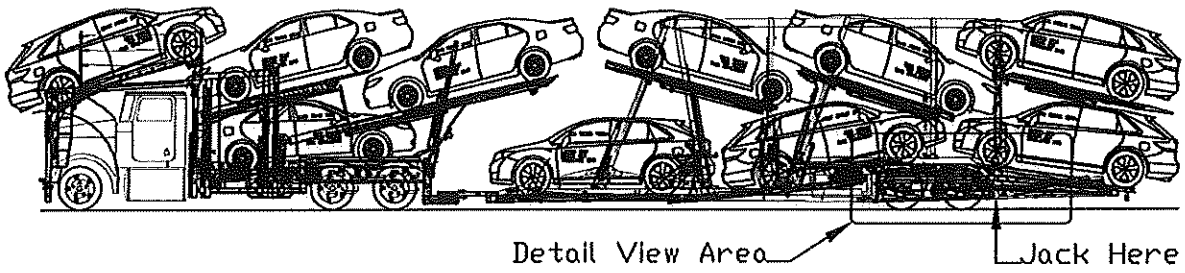
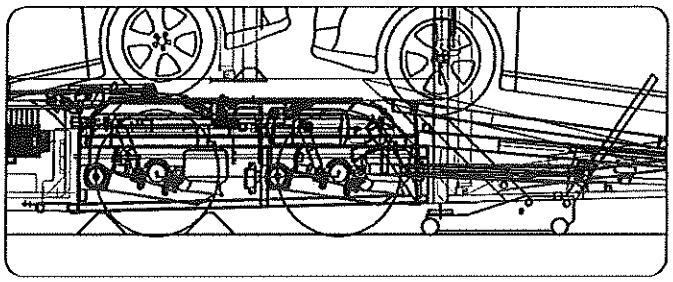
SAF-HOLLAND Canada Limited · 519.537.3494 · Fax 800.565.7753
Western Canada · 604.574.7491 · Fax 604.574.0244
www.safholland.us

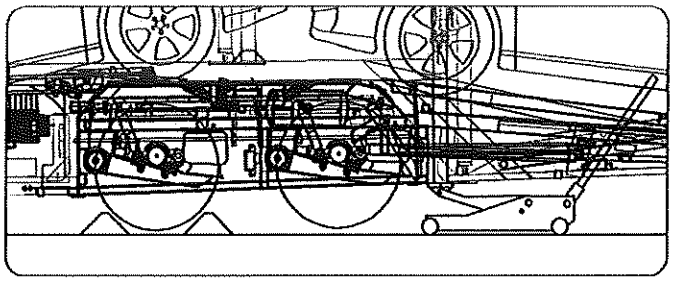
Jacking Instructions
Typical TrailerJacking Location



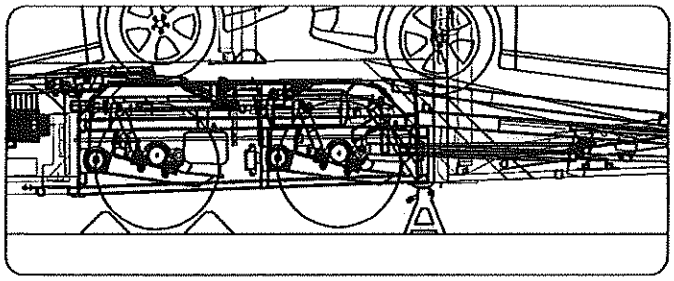

Detail 1
Apply parking brake, chock, and place Jack into proper position



Detail 2
Jack up until tires are just off ground and Jack stands will fit under structure



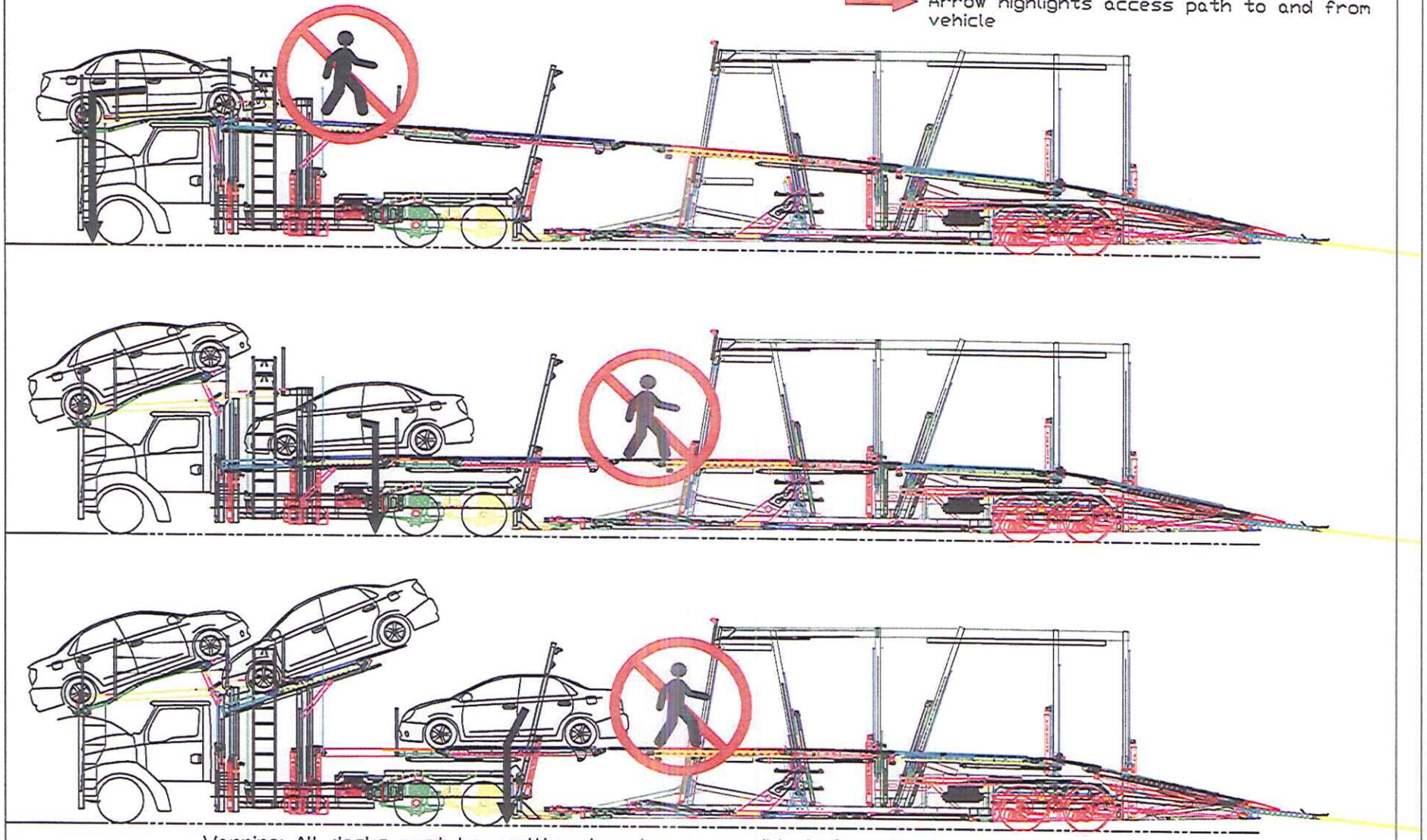
Detail 3
Place jack stands on each side under rear bulkhead as wide as possible and remove Jack



Note:
All loading views are shown from the drivers side (left hand side) of the rig for clarity. All vehicles are to be exited and entered through the drivers side door of the vehicle being loaded or unloaded.

"Do not walk down deck" symbol

Arrow highlights access path to and from vehicle



Warning: All decks must be positioned as low as possible before loading and unloading.



Load Sequence Drawing

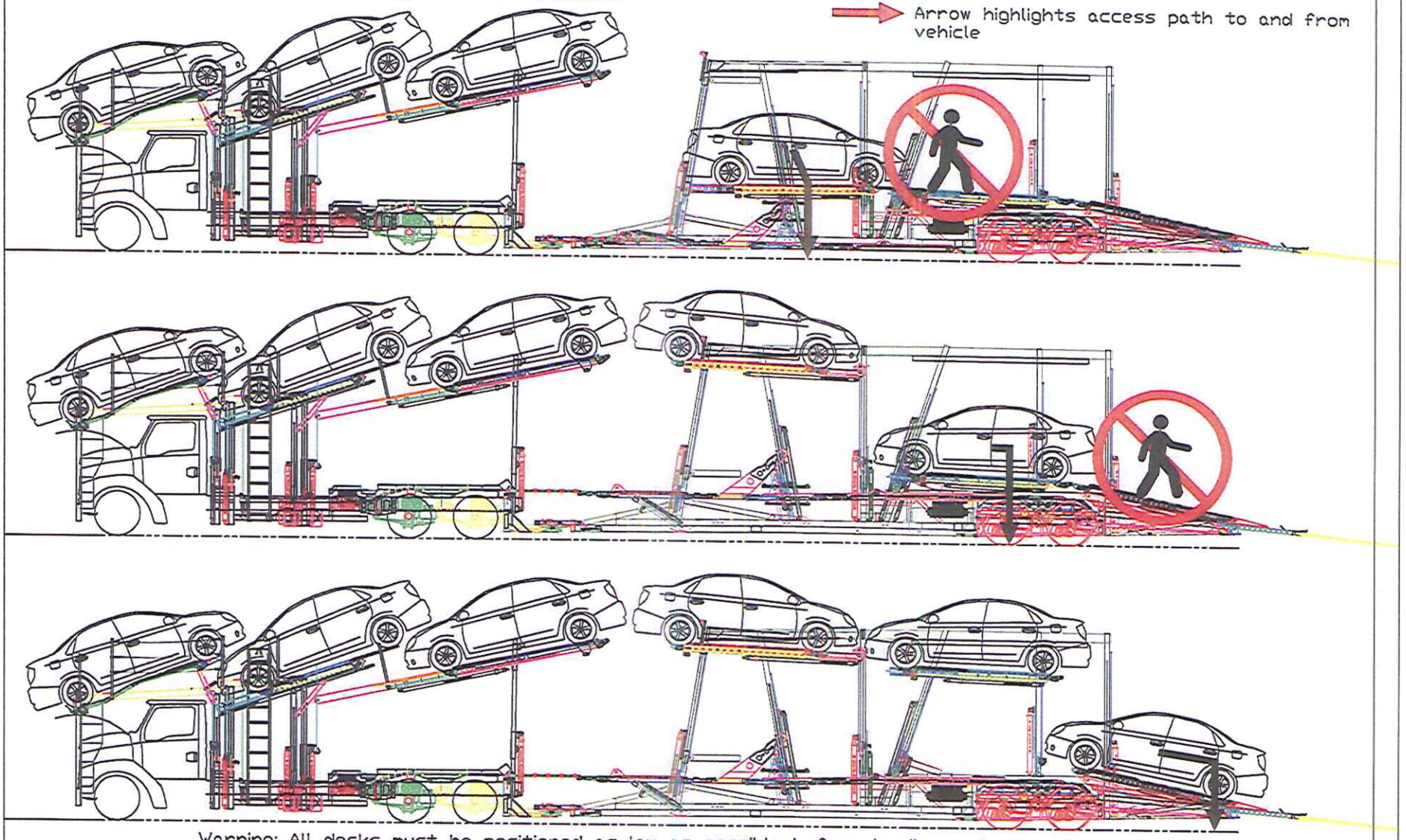
Typical configuration shown, specific configurations may vary

| Head Ramp: 4 Car CS | Tractor: Conventional day cab | Trailer: CX-11HCS |
|---|---|---|
| Load: 11 compact vehicle load | | |

Note:
All loading views are shown from the drivers side (left hand side) of the rig for clarity. All vehicles are to be exited and entered through the drivers side door of the vehicle being loaded or unloaded.

"Do not walk down deck" symbol

Arrow highlights access path to and from vehicle



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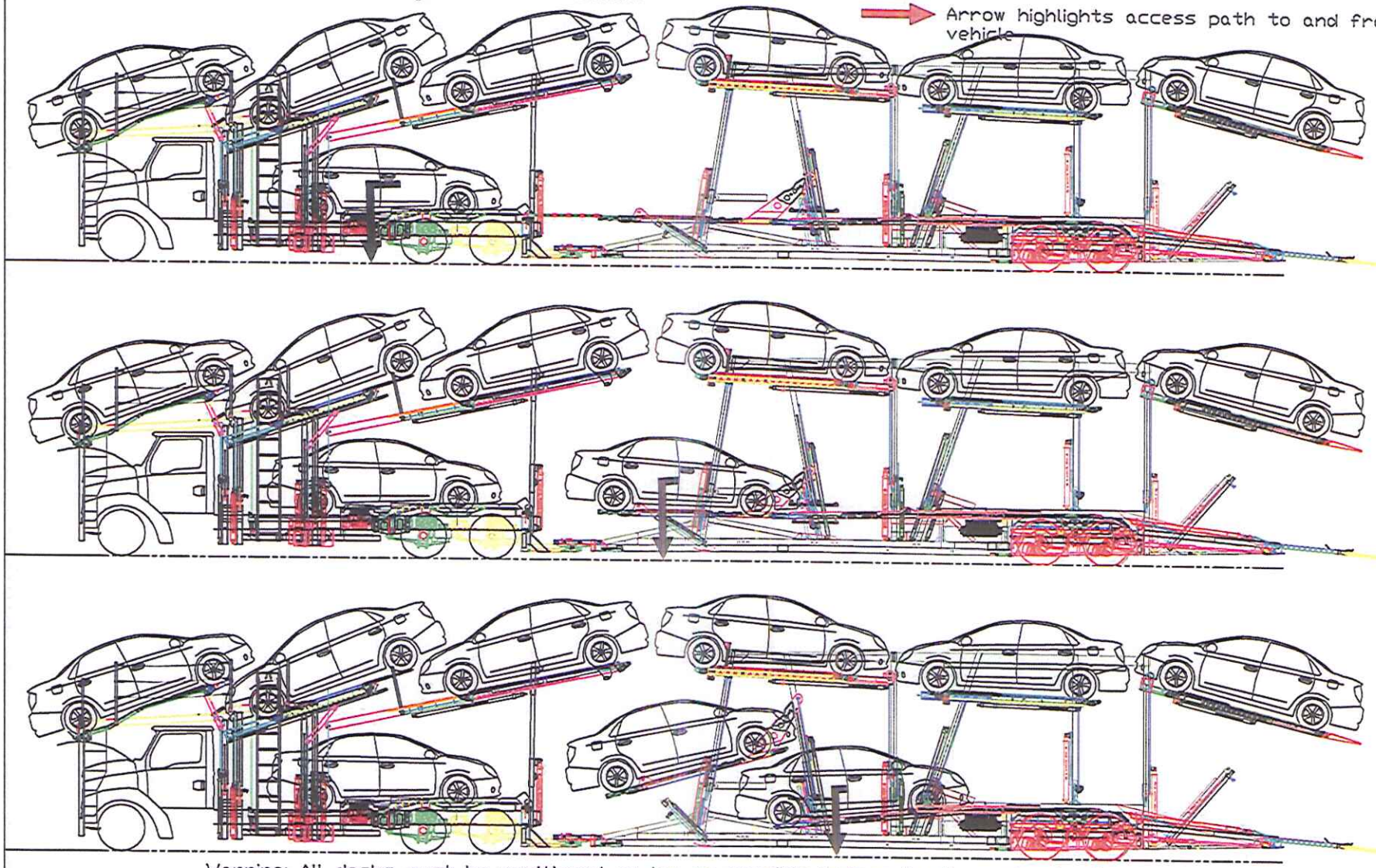

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Load Sequence Drawing

Typical configuration shown, specific configurations may vary

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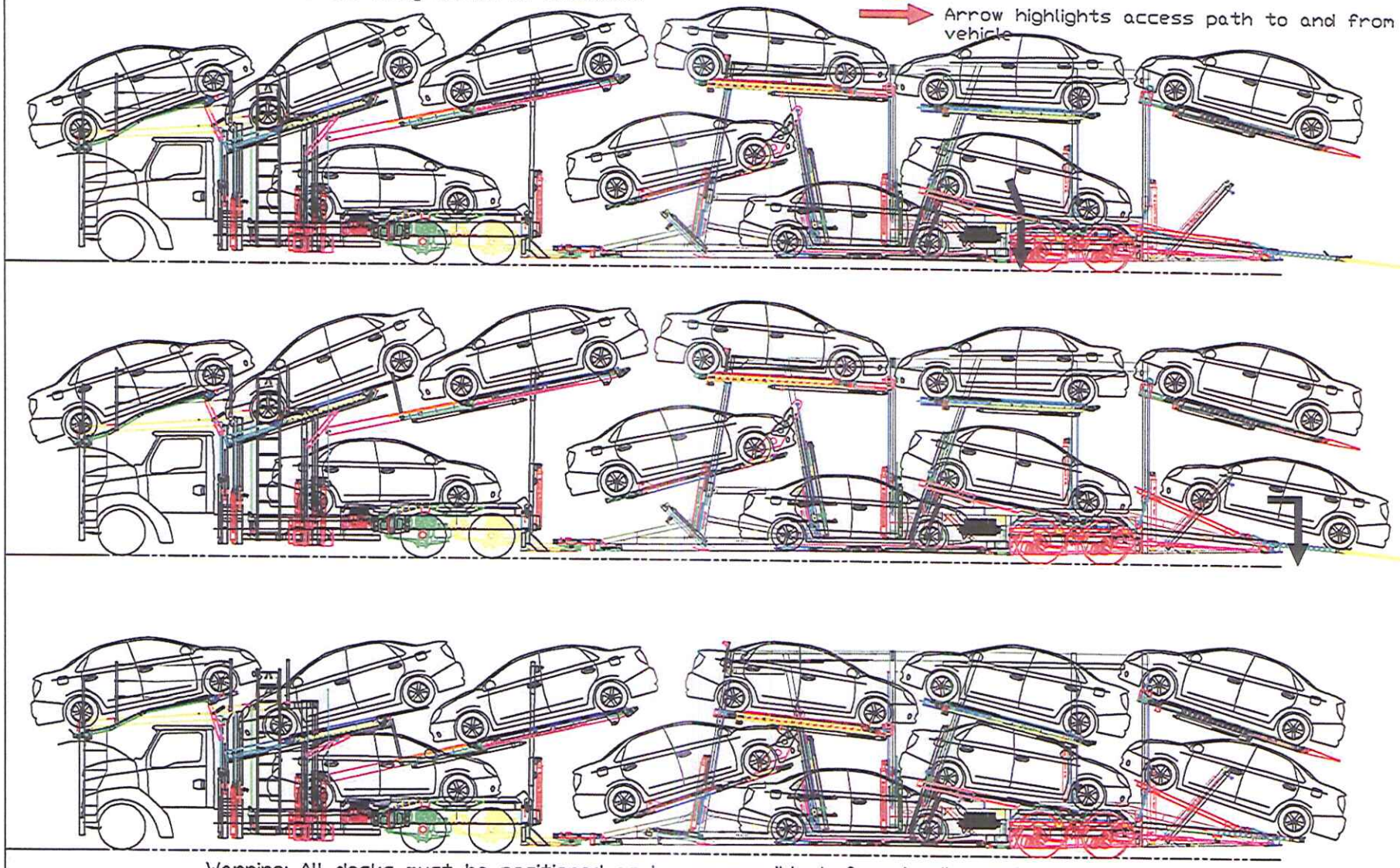
|---|---|---|
| Load: 11 compact vehicle load | | |

Note:
All loading views are shown from the drivers side (left hand side) of the rig for clarity. All vehicles are to be exited and entered through the drivers side door of the vehicle being loaded or unloaded.

"Do not walk down deck" symbol

Arrow highlights access path to and from vehicle



Warning: All decks must be positioned as low as possible before loading and unloading.



Load Sequence Drawing

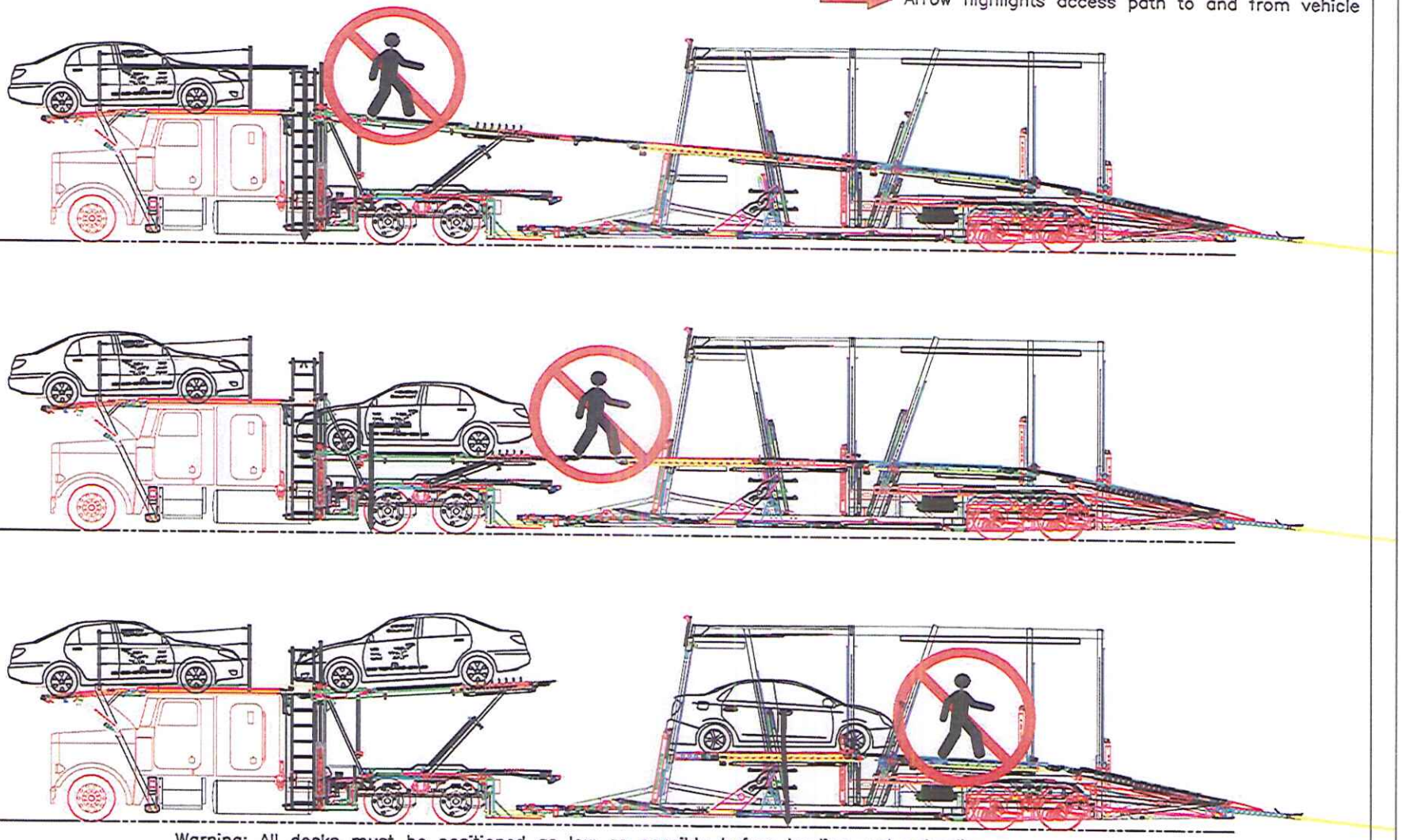
Typical configuration shown, specific configurations may vary

| Head Ramp: 4 Car CS | Tractor: Conventional day cab | Trailer: CX-11HCS |
|---|---|---|
| Load: 11 compact vehicle load | | |

Note:
All loading views are shown from the drivers side (left hand side) of the rig for clarity. All vehicles are to be exited and entered through the drivers side door of the vehicle being loaded or unloaded.

"Do not walk down deck" symbol

Arrow highlights access path to and from vehicle



Warning: All decks must be positioned as low as possible before loading and unloading.



Load Sequence Drawing

Typical configuration shown, specific configurations may vary

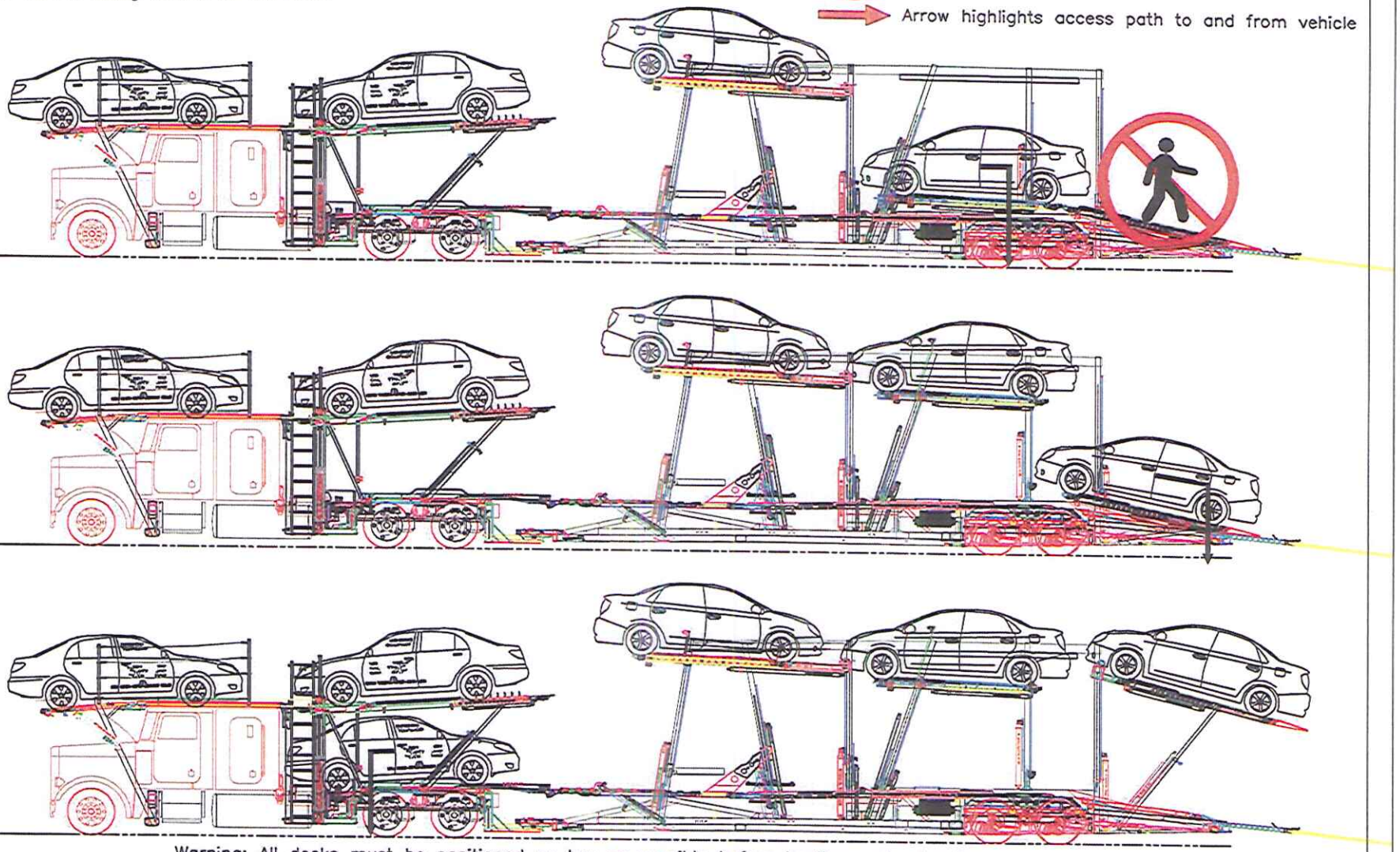
| Head Ramp: 3 Car CS | Tractor: Conventional tractor with sleeper | Trailer: CX-11HCS |
|---|---|---|
| Load: 10 compact vehicle load | | |

DOC: 00001819 Sheet 1 OF 4

Note:
All loading views are shown from the drivers side (left hand side) of the rig for clarity. All vehicles are to be exited and entered through the drivers side door of the vehicle being loaded or unloaded.

"Do not walk down deck" symbol

Arrow highlights access path to and from vehicle



Warning: All decks must be positioned as low as possible before loading and unloading.



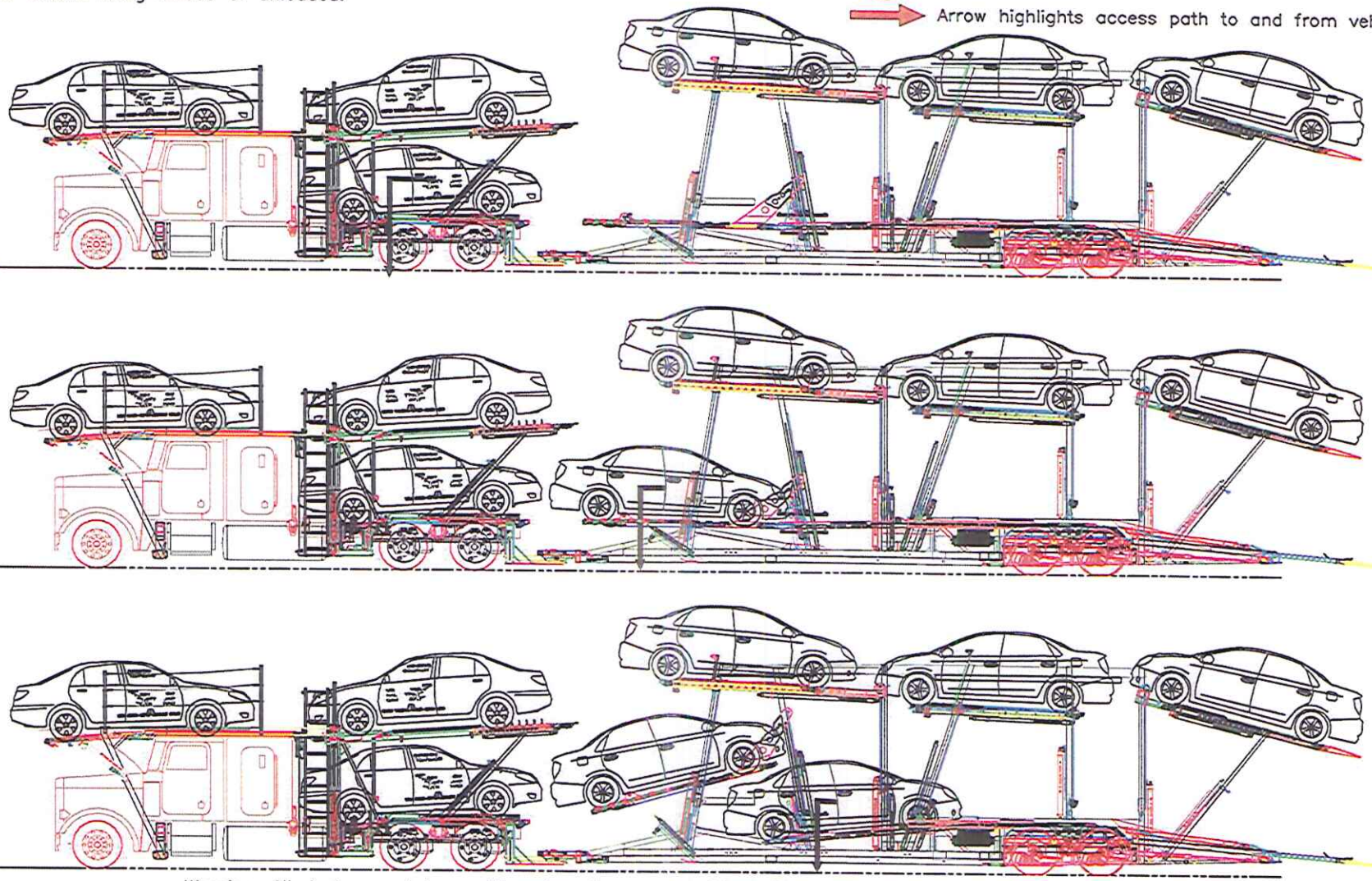
Load Sequence Drawing
Typical configuration shown, specific configurations may vary

| Head Ramp: 3 Car CS | Tractor: Conventional tractor with sleeper | Trailer: CX-11HCS |
|---|---|---|
| Load: 10 compact vehicle load | | |

Note:
All loading views are shown from the drivers side (left hand side) of the rig for clarity. All vehicles are to be exited and entered through the drivers side door of the vehicle being loaded or unloaded.

"Do not walk down deck" symbol

Arrow highlights access path to and from vehicle



Warning: All decks must be positioned as low as possible before loading and unloading.



Load Sequence Drawing
Typical configuration shown, specific configurations may vary

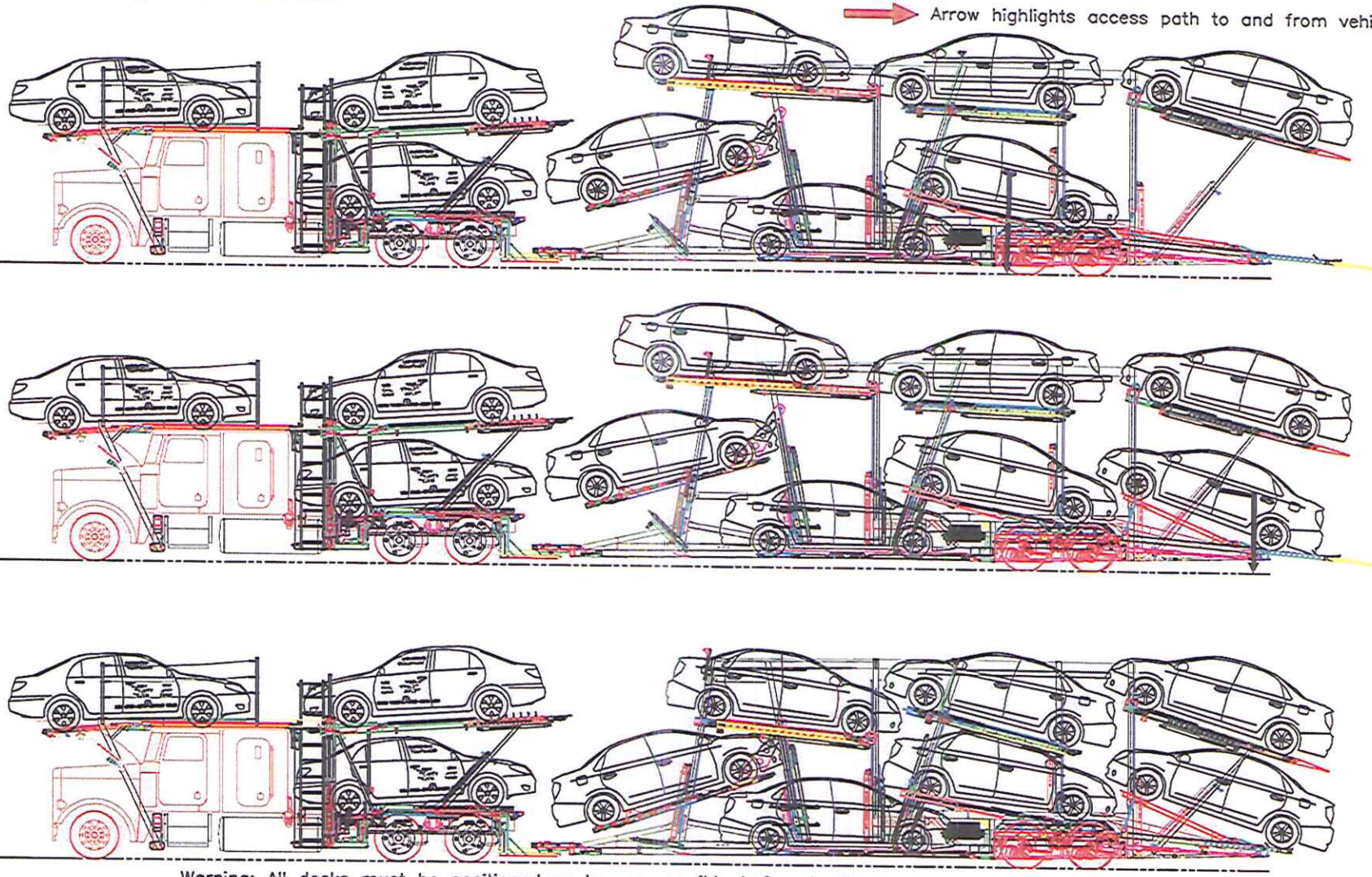
| Head Ramp: 3 Car CS | Tractor: Conventional tractor with sleeper | Trailer: CX-11HCS |
|---|---|---|
| Load: 10 compact vehicle load | | |

DOC: DOC01619 Sheet 3 OF 4

Note:
All loading views are shown from the drivers side (left hand side) of the rig for clarity. All vehicles are to be exited and entered through the drivers side door of the vehicle being loaded or unloaded.

"Do not walk down deck" symbol

Arrow highlights access path to and from vehicle



Warning: All decks must be positioned as low as possible before loading and unloading.



## Load Sequence Drawing

Typical configuration shown, specific configurations may vary

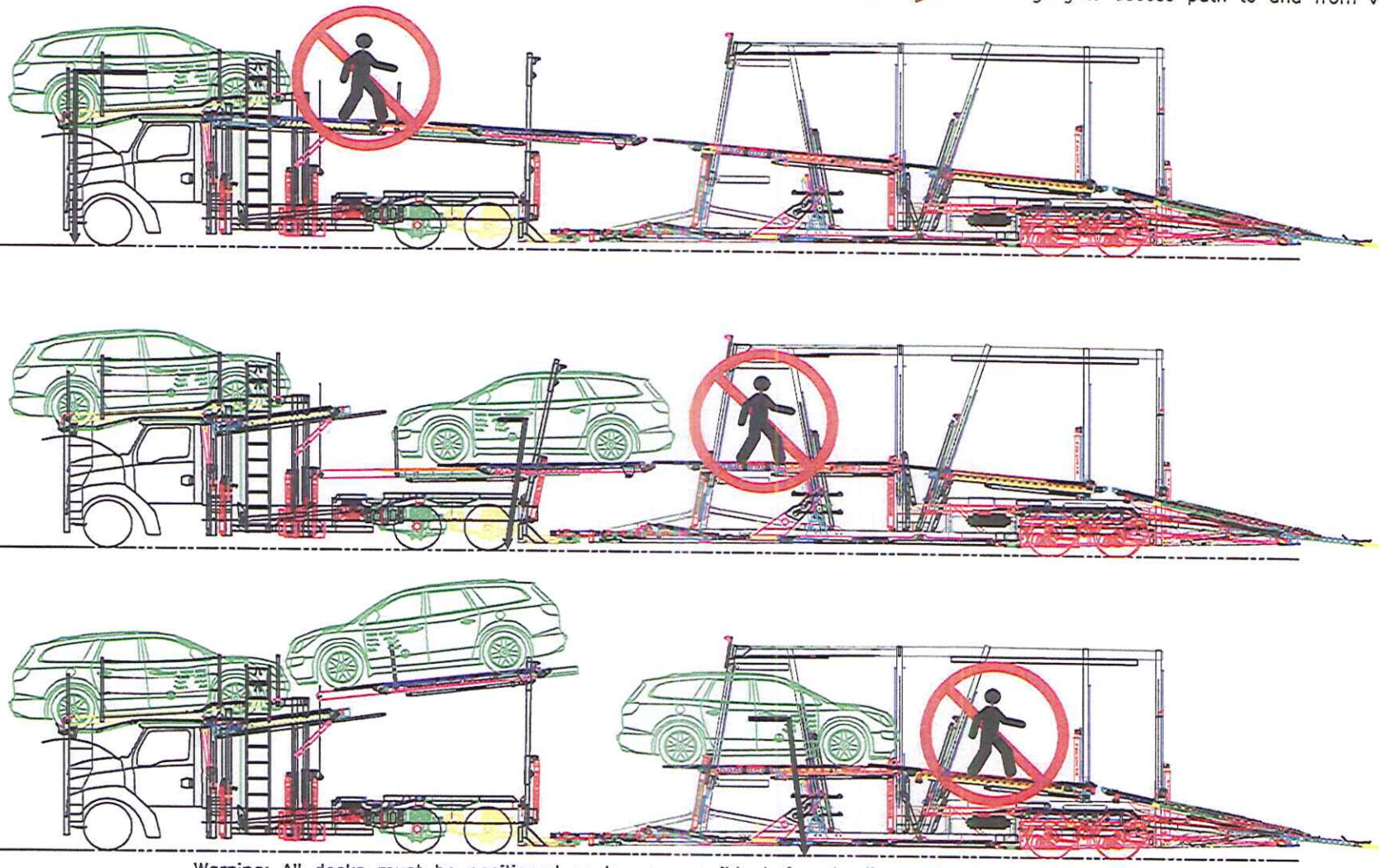
| | | |
|---|---|---|
| Head Ramp: 3 Car CS | Tractor: Conventional tractor with sleeper | Trailer: CX-11HCS |
| Load: 10 compact vehicle load | | |

DOC: 00001819 | Sheet 4 of 4

Note:
All loading views are shown from the drivers side (left hand side) of the rig for clarity. All vehicles are to be exited and entered through the drivers side door of the vehicle being loaded or unloaded.

"Do not walk down deck" symbol

Arrow highlights access path to and from vehicle



Warning: All decks must be positioned as low as possible before loading and unloading.



Load Sequence Drawing

Typical configuration shown, specific configurations may vary

| | | |
|---|---|---|
| Head Ramp: 4 Car CS | Tractor: Conventional day cab | Trailer: CX-11HCS |
| Load: 8 vehicle SUV load | | |

DOC: 00001821 Sheet 1 of 3

Note:
All loading views are shown from the drivers side (left hand side) of the rig for clarity. All vehicles are to be exited and entered through the drivers side door of the vehicle being loaded or unloaded.

"Do not walk down deck" symbol

Arrow highlights access path to and from vehicle

Warning: All decks must be positioned as low as possible before loading and unloading.



Load Sequence Drawing
Typical configuration shown, specific configurations may vary

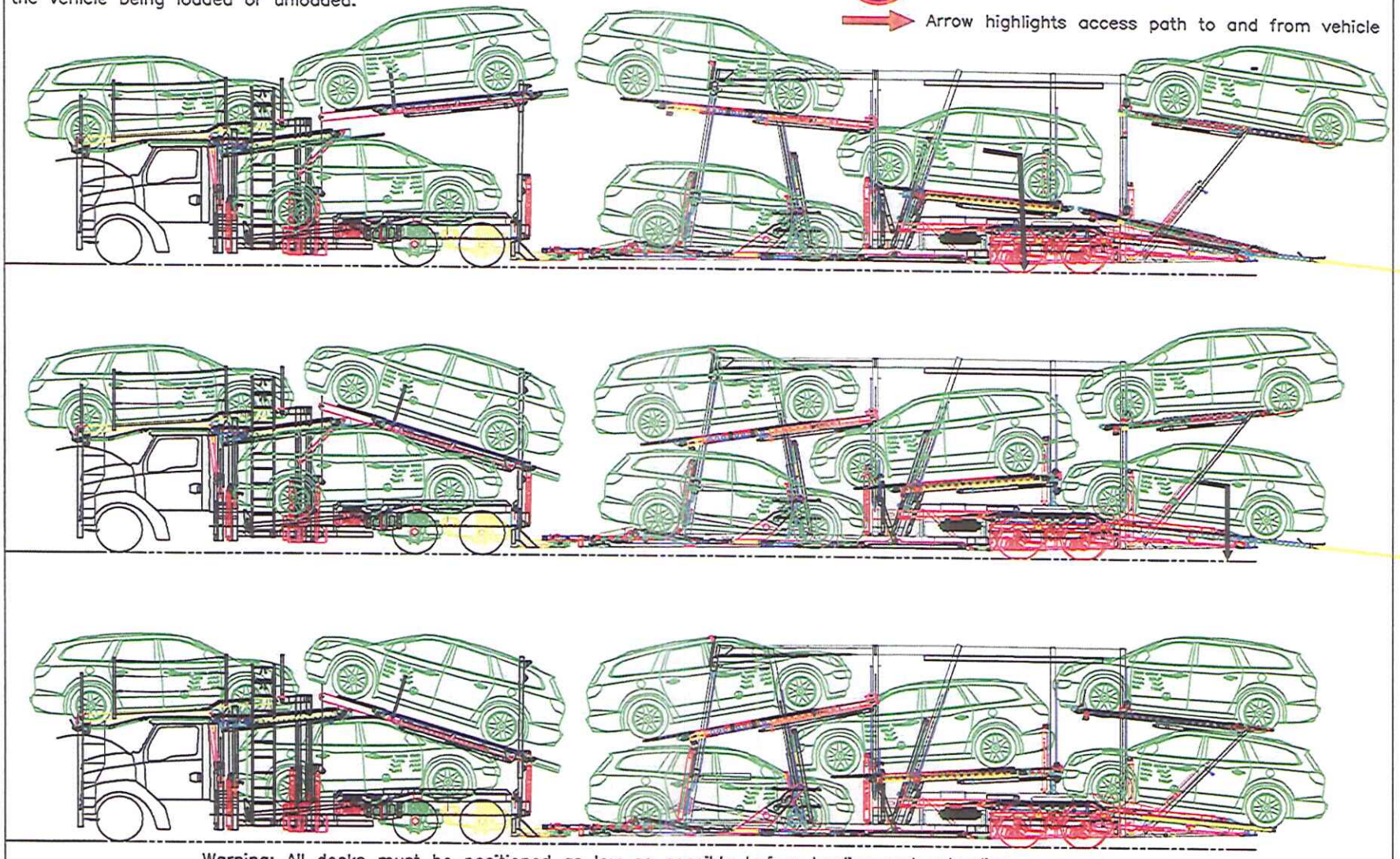
| | | |
|---|---|---|
| Head Ramp: 4 Car CS | Tractor: Conventional day cab | Trailer: CX-11HCS |
| Load: 8 vehicle SUV load | | |

DOC: 00001821 Sheet 2 of 3

Note:
All loading views are shown from the drivers side (left hand side) of the rig for clarity. All vehicles are to be exited and entered through the drivers side door of the vehicle being loaded or unloaded.

"Do not walk down deck" symbol

Arrow highlights access path to and from vehicle



Warning: All decks must be positioned as low as possible before loading and unloading.



Load Sequence Drawing

Typical configuration shown, specific configurations may vary

| Head Ramp: 4 Car CS | Tractor: Conventional day cab | Trailer: CX-11HCS |
|---|---|---|
| Load: 8 vehicle SUV load | | |

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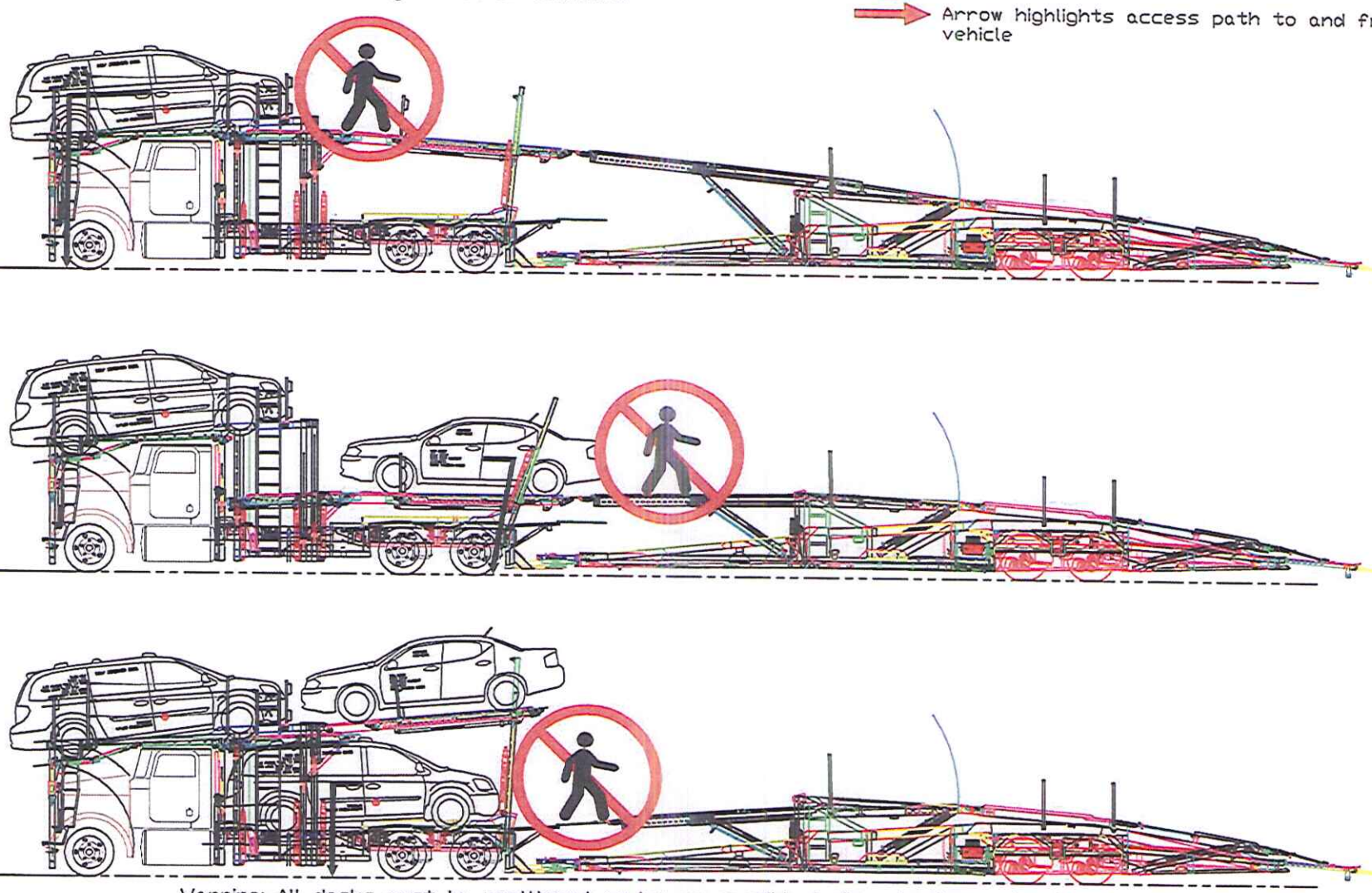
Note:
All loading views are shown from the drivers side (left hand side) of the rig for clarity. All vehicles are to be exited and entered through the drivers side door of the vehicle being loaded or unloaded.

'Do not walk down deck' symbol

Arrow highlights access path to and from vehicle



Warning: All decks must be positioned as low as possible before loading and unloading.



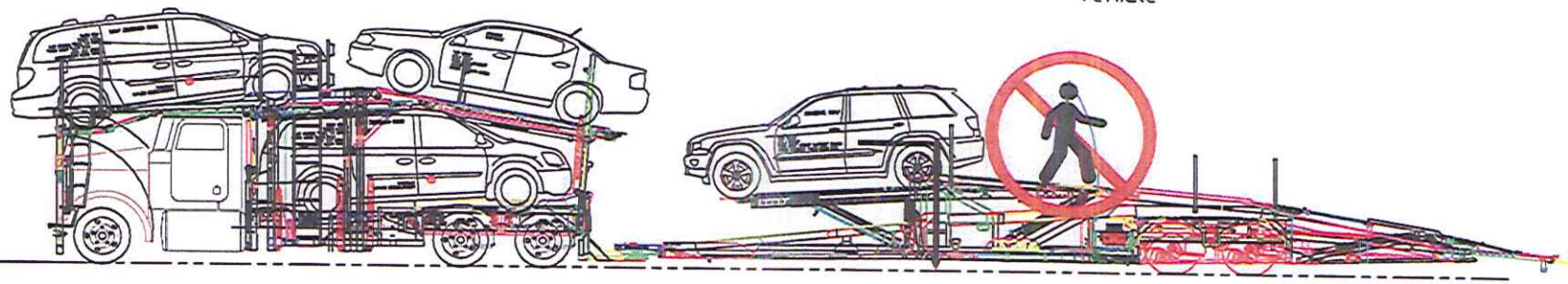
Load Sequence Drawing
Typical configuration shown, specific configurations may vary

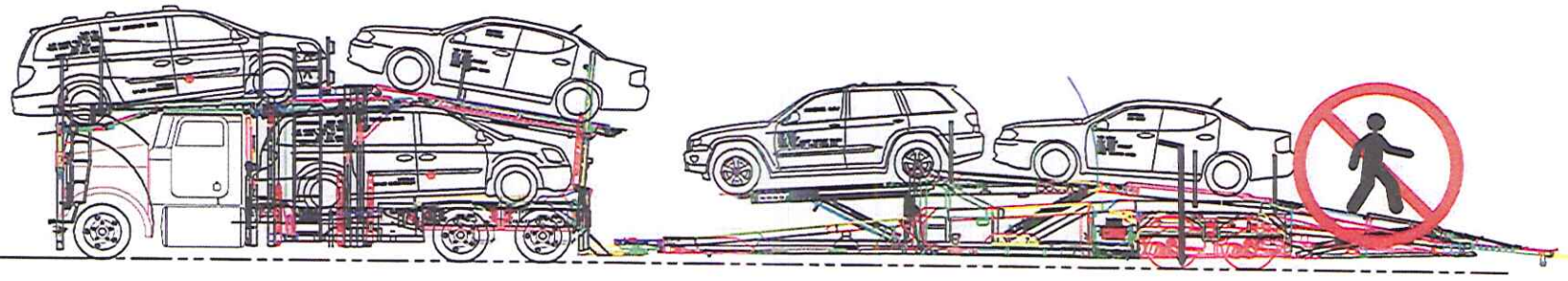
| Head Ramp: 4 Car CS | Tractor: Conventional day cab | Trailer: CX-09LS2 |
|---|---|---|
| Load: 9 vehicle mixed load | | |

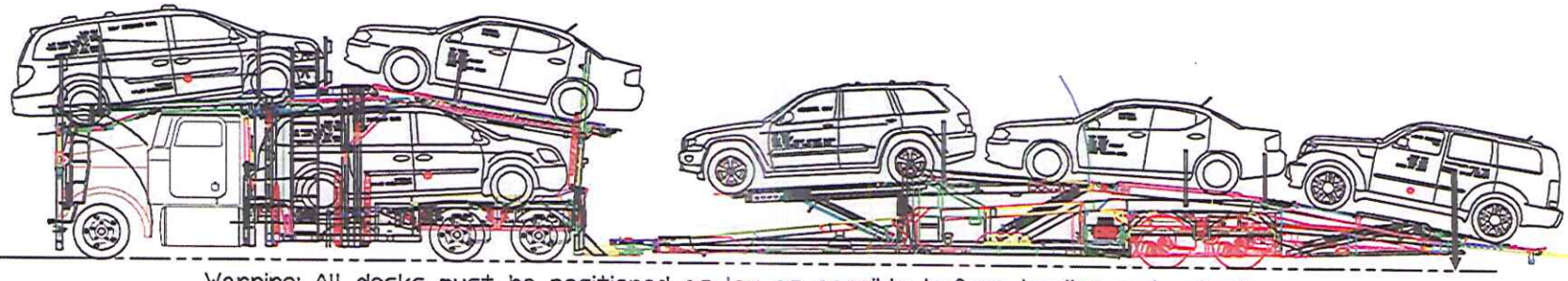
Note:
All loading views are shown from the drivers side (left hand side) of the rig for clarity. All vehicles are to be exited and entered through the drivers side door of the vehicle being loaded or unloaded.

'Do not walk down deck' symbol

Arrow highlights access path to and from vehicle







Warning: All decks must be positioned as low as possible before loading and unloading.



Load Sequence Drawing

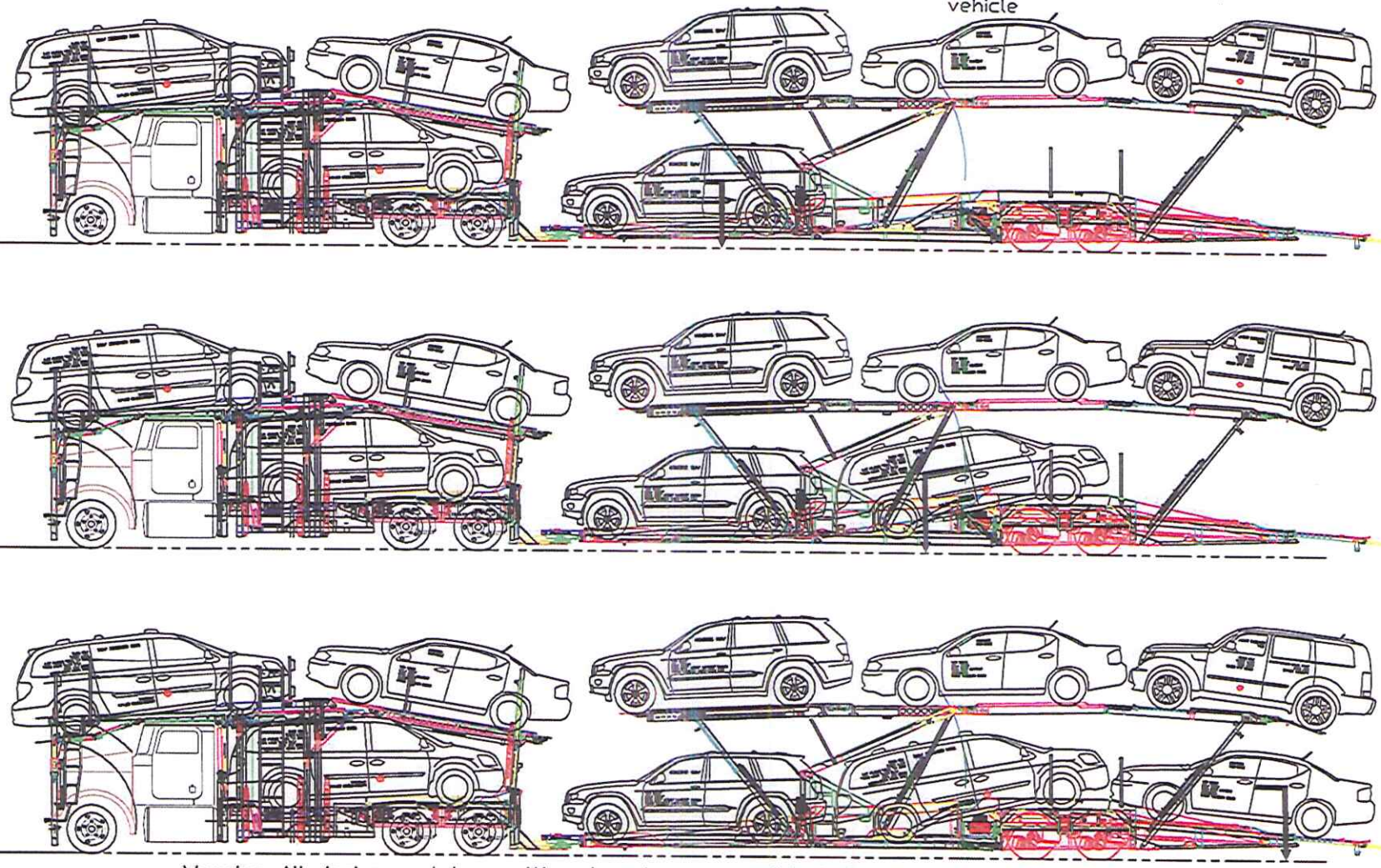
Typical configuration shown, specific configurations may vary

| Head Ramp: 4 Car CS | Tractor: Conventional day cab | Trailer: CX-09LS2 |
|---|---|---|
| Load: 9 vehicle mixed load | | |

Note:
All loading views are shown from the drivers side (left hand side) of the rig for clarity. All vehicles are to be exited and entered through the drivers side door of the vehicle being loaded or unloaded.

'Do not walk down deck' symbol

Arrow highlights access path to and from vehicle



Warning: All decks must be positioned as low as possible before loading and unloading.



Load Sequence Drawing
Typical configuration shown, specific configurations may vary

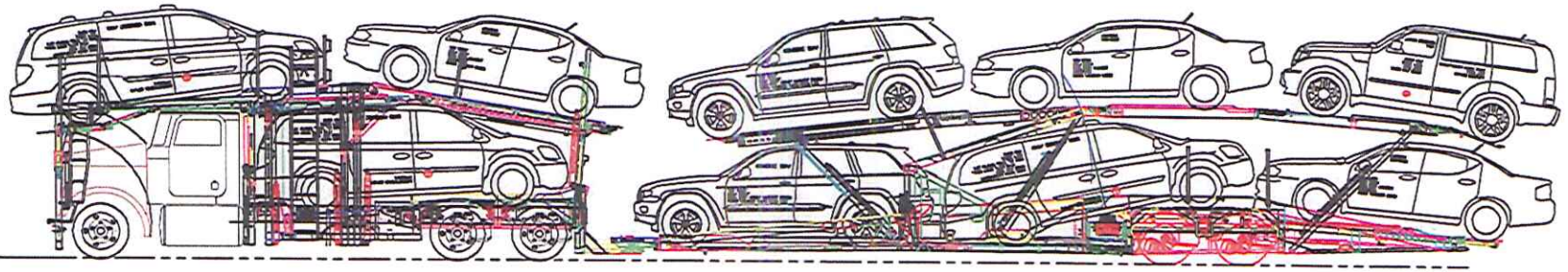
| Head Ramp: 4 Car CS | Tractor: Conventional day cab | Trailer: CX-09LS2 |
|---|---|---|
| Load: 9 vehicle mixed load | | |

BOD 0003815 Sheet 3 OF 4

Note:
All loading views are shown from the drivers side (left hand side) of the rig for clarity. All vehicles are to be exited and entered through the drivers side door of the vehicle being loaded or unloaded.

'Do not walk down deck' symbol

Arrow highlights access path to and from vehicle



Warning: All decks must be positioned as low as possible before loading and unloading.



Load Sequence Drawing
Typical configuration shown, specific configurations may vary

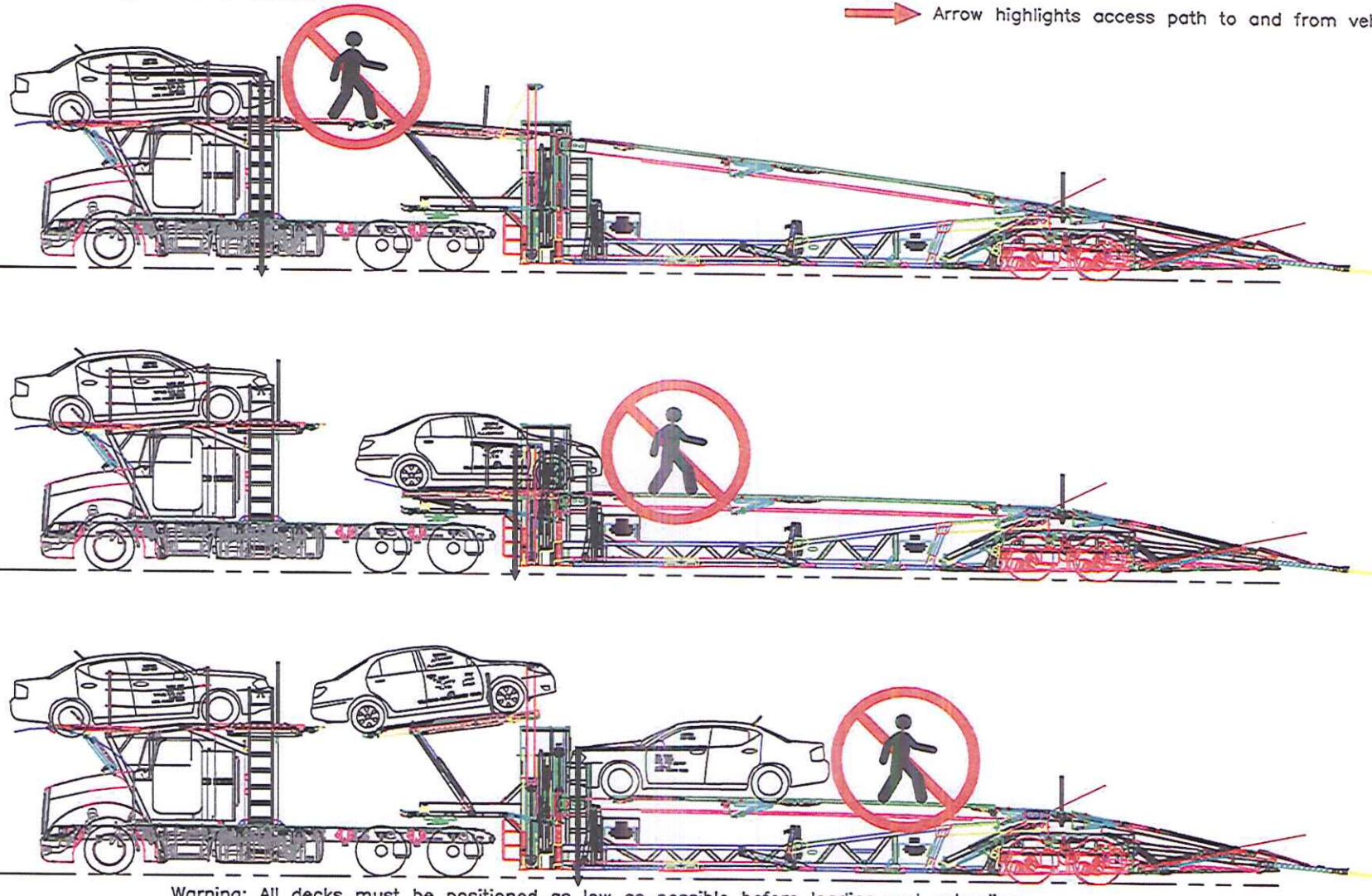
| Head Ramp: 4 Car CS | Tractor: Conventional day cab | Trailer: CX-09LS2 |
|---|---|---|
| Load: 9 vehicle mixed load | | |

BOD 3003805 Sheet 4 of 4

Note:
All loading views are shown from the drivers side (left hand side) of the rig for clarity. All vehicles are to be exited and entered through the drivers side door of the vehicle being loaded or unloaded.

"Do not walk down deck" symbol

Arrow highlights access path to and from vehicle



Warning: All decks must be positioned as low as possible before loading and unloading.



Load Sequence Drawing

Typical configuration shown, specific configurations may vary

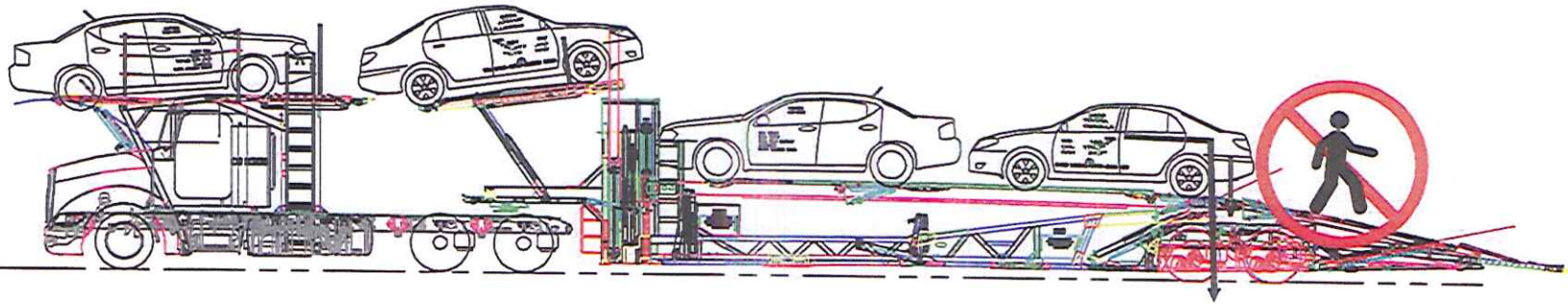
| | | |
|---|---|---|
| Head Ramp: 1 Car CS | Tractor: Conventional Day Cab | Trailer: High Mount Trailer |
| Load: 9 Mixed vehicle load | | |

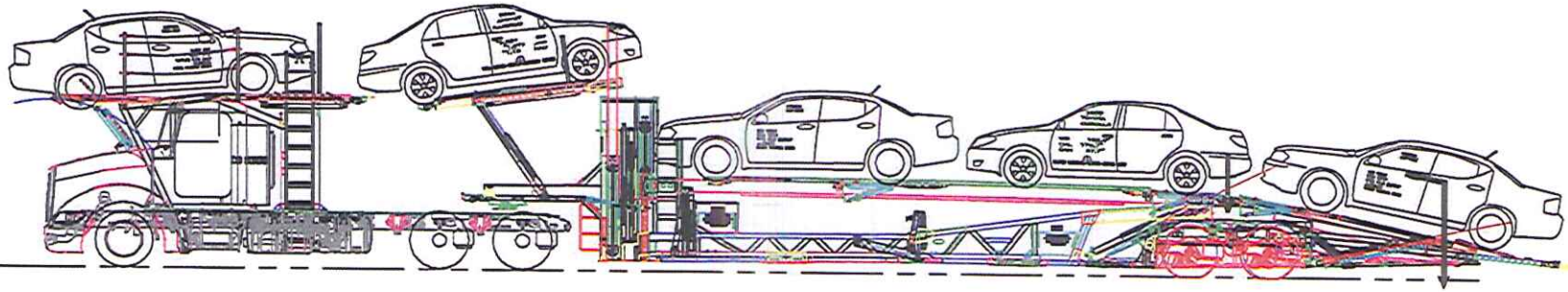
DOC: 00001817 Sheet 1 OF 4

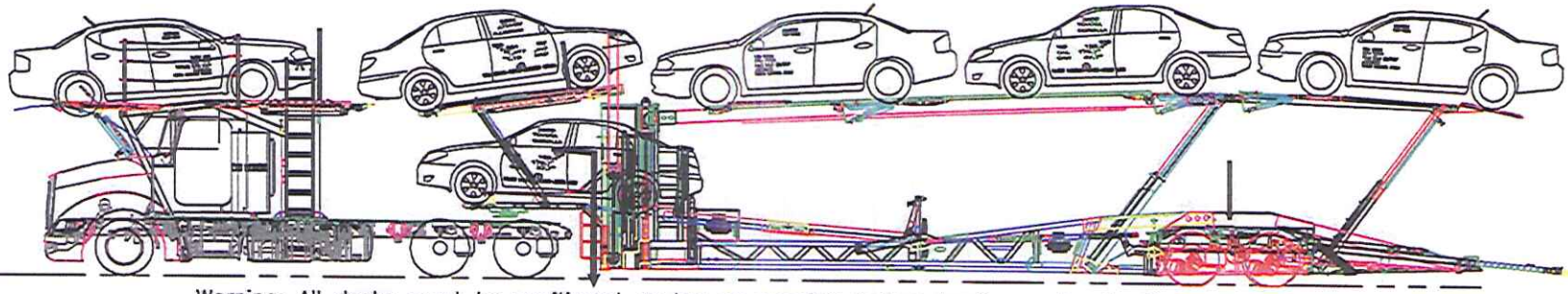
Note:
All loading views are shown from the drivers side (left hand side) of the rig for clarity. All vehicles are to be exited and entered through the drivers side door of the vehicle being loaded or unloaded.

"Do not walk down deck" symbol

Arrow highlights access path to and from vehicle







Warning: All decks must be positioned as low as possible before loading and unloading.



Load Sequence Drawing

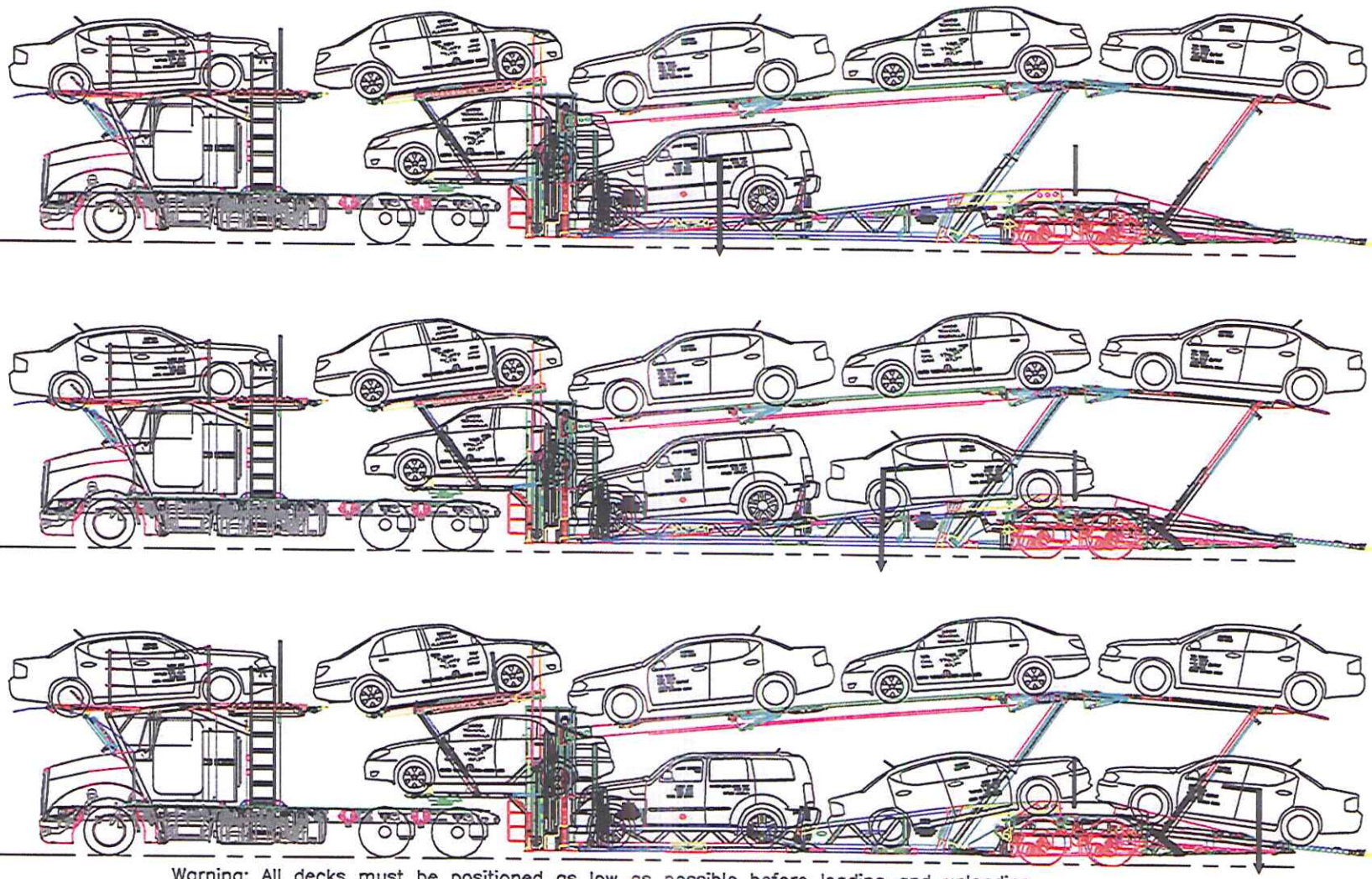
Typical configuration shown, specific configurations may vary

| Head Ramp: 1 Car CS | Tractor: Conventional Day Cab | Trailer: High Mount Trailer |
|---|---|---|
| Load: 9 Mixed vehicle load | | |

Note:
All loading views are shown from the drivers side (left hand side) of the rig for clarity. All vehicles are to be exited and entered through the drivers side door of the vehicle being loaded or unloaded.

"Do not walk down deck" symbol

Arrow highlights access path to and from vehicle



Warning: All decks must be positioned as low as possible before loading and unloading.



Load Sequence Drawing

Typical configuration shown, specific configurations may vary

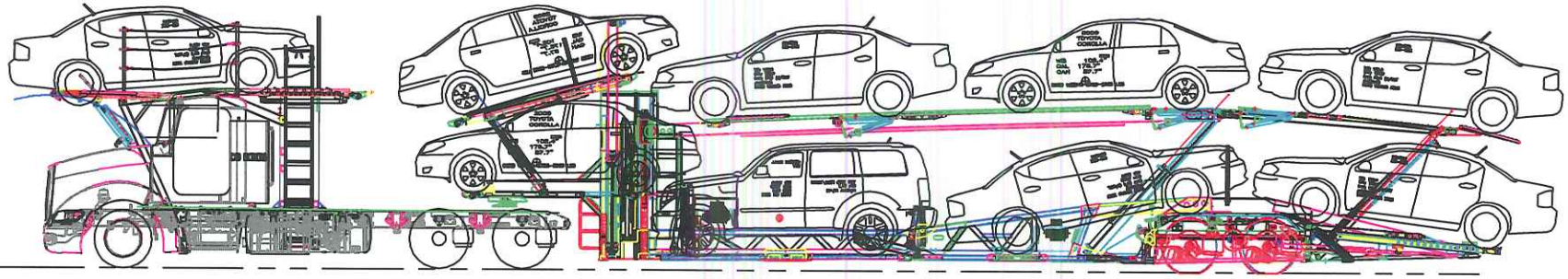
| Head Ramp: 1 Car CS | Tractor: Conventional Day Cab | Trailer: High Mount Trailer |
|---|---|---|
| Load: 9 Mixed vehicle load | | |

DOC: 00001817 | Sheet 3 of 4

Note:
All loading views are shown from the drivers side (left hand side) of the rig for clarity. All vehicles are to be exited and entered through the drivers side door of the vehicle being loaded or unloaded.

"Do not walk down deck" symbol

Arrow highlights access path to and from vehicle



NOTE:

**Load shown is for representation only and may not meet dimensional requirements for vehicle overhang or overall length in all jurisdictions or provinces.**

Warning: All decks must be positioned as low as possible before loading and unloading.



Load Sequence Drawing
Typical configuration shown, specific configurations may vary

| Head Ramp: 1 Car CS | Tractor: Conventional Day Cab | Trailer: High Mount Trailer |
|---|---|---|
| Load: 9 Mixed vehicle load | | |