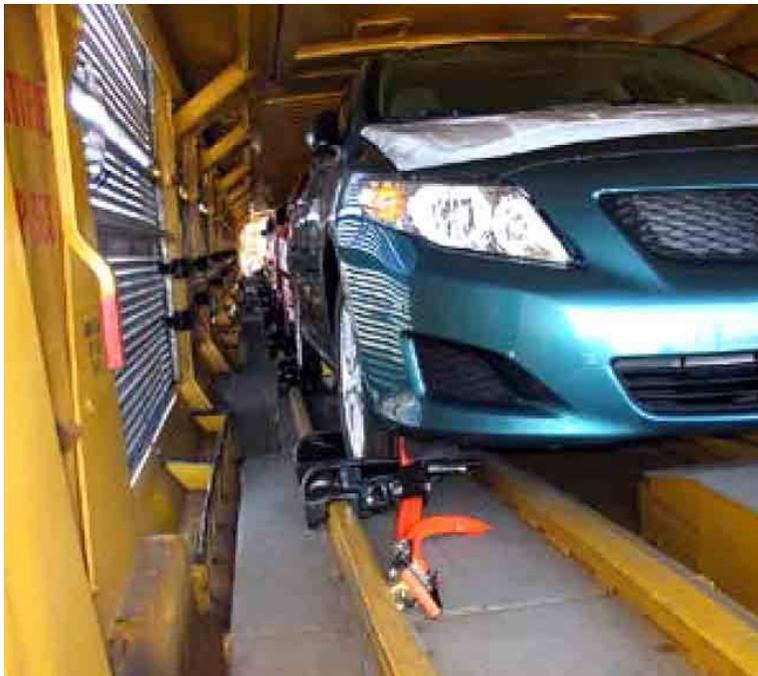


Trinity **GREEN** Chock Vehicle Tie Down System

Installation, Operation, and Maintenance Manual



Trinity Parts & Components, LLC
2525 Stemmons Freeway
Dallas, TX 75207
Phone: 800-631-4420
Fax: 214-589-8171

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Introduction

Trinity Parts & Components Plastic Wedge Chock Securement System

Trinity's plastic wedge chock securement system secures automobiles during rail transit with chocks and a single strap instead of a traditional chain tie-down system. By utilizing the auto's suspension, the system reduces in-transit stress to the vehicle's structure and eliminates the need for securement holes in the auto bodies or frames.

The system is suitable for all auto makes. Auto Rack rail cars equipped with this system are more versatile and need not be unique to a single manufacturer's vehicles.

The Trinity GREEN Chock Securement System is based on the original polymer wedge chock design in which a hand operated strap winch is attached to the raised chock track to create additional clearances in the wheel well. The system eliminates the need for wooden risers.

Trinity's GREEN System is AAR tested and approved. Strap ratchet winches and chock locking pins must be lubricated with an AAR approved lubricant annually or more often if required to operate freely. Straps, winches and locking pins can be easily replaced in the field.

Existing legacy wedge polymer chocks can be refabricated by Trinity Parts & Components, LLC by removing the attached strap winch, machining additional clearances, and adding a strap clevis to the chock bodies. New straps and winches complete the refurbishment. Refer to the back page of this manual for contact information.

Cautions and Notices

CAUTION

All loaders should wear hard hats, safety glasses, steel-toed shoes and protective gloves while handling straps and chocks.

CAUTION

The Trinity GREEN Chock Securement System is only intended for use on Tri-Level Auto Racks to secure passenger vehicles while being transported by rail.

CAUTION

Trinity Chocks are only to be used in accordance with AAR Multi-level Manual instructions.

CAUTION

Do not climb on Auto Racks while carrying chock assemblies. Always keep one hand on side screens for balance while walking on deck.

CAUTION

Always be alert for potential slippery spots due to ice, water, or oils on the Auto Rack deck surfaces.

CAUTION

Always remove all chocks and straps from the deck surfaces before vehicles are loaded or unloaded.

CAUTION

Never throw chocks off a rail car. Always hand them down to a person on the ground.

CAUTION

Remove all debris, ice, and snow from the Auto Rack decks prior to use. **DO NOT** use salt on decks, chocks, or winches.

CAUTION

While operating the hand winches watch for finger pinch points. The hand operating the winch should be on the winch handle; the other hand must be kept clear of the strap and winch.

CAUTION

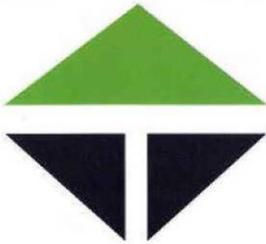
Straps must be maintained free of wear or damage. Worn or damaged straps must be replaced before use. See the instructions in the Maintenance section of this manual for information.

NOTICE

Always use Trinity service parts for rebuild, repair, or refurbishment of the chock and straps assemblies. See the last page for contact information.

NOTE

The decal illustrated below provides a quick reference to the information provided in this manual. It appears in multiple locations on the Tri-Level Auto Rack.



**Trinity Parts
&
Components**
(800) 336-7305

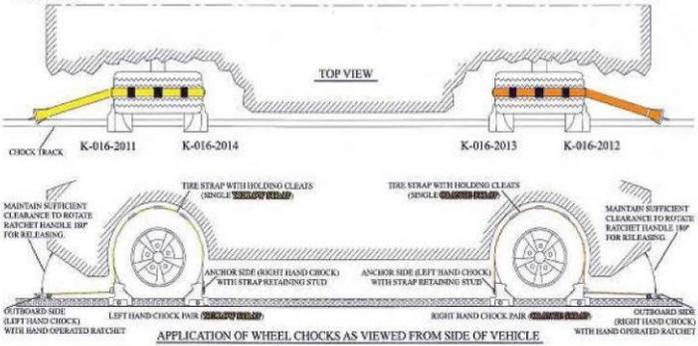
**TRINITY GREEN
LOW-PROFILE
POLYMER CHOCK
SYSTEM**

PRE-TRIP INSPECTION:

1. OPERATE ALL CHOCK LOCK PINS AND HAND RATCHETS (REMOVING ANY ICE OR SNOW, IF PRESENT) TO VERIFY EQUIPMENT IS IN GOOD WORKING ORDER.
2. IF DIFFICULT TO OPERATE, LUBRICATE CHOCK LOCK PIN OR HAND RATCHET (THAT WILL NOT FREE WHEEL WHEN STRAP IS PULLED) WITH AN AAR APPROVED DRY LUBRICANT. IF HAND RATCHET IS REMOVED FROM STRAP, RE-THREAD STRAP INTO HAND RATCHET WITH THE STRAP LETTERING FACING UP. DO NOT TWIST STRAP.

INSTALLATION INSTRUCTIONS:

1. AS VIEWED FROM THE SIDE OF THE VEHICLE (AS SHOWN BELOW), THE PAIR OF CHOCKS WITH THE ORANGE STRAP IS TO BE PLACED ON THE TIRE ON THE RIGHT AND THE PAIR OF CHOCKS WITH THE YELLOW STRAP IS TO BE PLACED ON THE TIRE ON THE LEFT. PLACE AND LOCK THE CHOCKS INTO THE TRACK, AS CLOSE AS POSSIBLE TO BOTH SIDES OF THE TIRE, AS SHOWN BELOW. CENTER STRAP ON TOP OF TIRE AND INSERT CLEATS INTO TREAD.
2. INSERT THE HAND RATCHET "J" HOOK INTO A HOLE IN THE CHOCK TRACK THAT POSITIONS THE HAND RATCHET OUTBOARD OF THE VEHICLE'S BUMPERS. ALLOW ENOUGH CLEARANCE TO ENSURE RATCHET HANDLE WILL ROTATE 180 DEGREES WITHOUT HITTING THE VEHICLE. TAKE UP ANY SLACK IN STRAP.
3. FINISH BY TIGHTENING STRAP WITH HAND RATCHET AND LOCK HANDLE IN THE DOWN POSITION. PLACE HAND RATCHET ON AN ANGLE TO ALLOW THE HANDLE TO FULLY CLOSE. NOTE: TO LOOSEN STRAP, SQUEEZE RELEASE BAR ON HAND RATCHET AND ROTATE HANDLE 180 DEGREES FROM THE LOCKED POSITION.



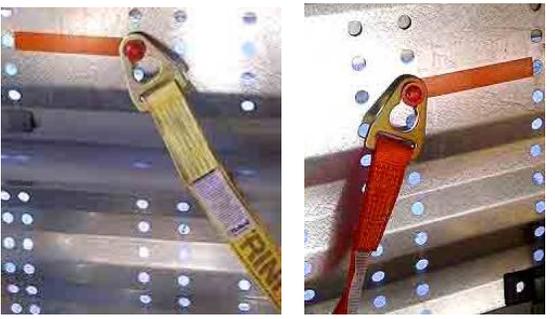
APPLICATION OF WHEEL CHOCKS AS VIEWED FROM SIDE OF VEHICLE.

Pre-Trip Inspection

CAUTION Refer to the Cautions section at the beginning of this manual.

	<p>Remove any ice or snow if present on the chocks or winches.</p>
	<p>Operate all chock lock-pins and hand ratchets to verify equipment is in good working order.</p>
	<p>If a lock-pin is difficult to operate, lubricate the chock lock-pin with an AAR approved lubricant. Refer to the Maintenance section.</p>
	<p>Lubricate the chock lock-pin spring with an AAR approved lubricant. Refer to the Maintenance section.</p>
	<p>If a hand-ratchet will not free-wheel when its strap is pulled, lubricate the ratchet with an AAR approved lubricant. Refer to the Maintenance section.</p>

	<p>If the strap was pulled out of the hand ratchet, rethread the strap into the hand ratchet with the strap lettering facing up. Be careful to not twist the strap.</p>
	<p>Straps that have been over-wound on the strap ratchet winch mandrel can be pulled out by using another GREEN Chock strap winch. Refer to the Unspooling section below.</p>
	<p>Straps with frayed or cut edges must be replaced. Refer to the Maintenance section.</p>
	<p>Replace any missing 1/4-20 nylon bolts and nuts used to retain the strap. Refer to the Maintenance section.</p>

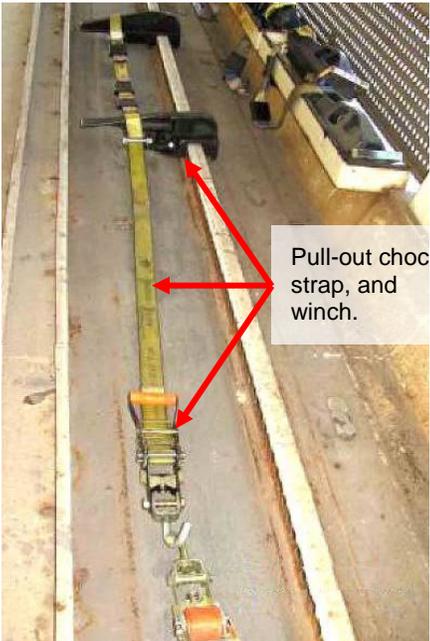
	<p>Chocks placed in storage boxes need to alternate between right hand (RH) and left hand (LH) to reduce extra chock handling in a loaded Auto Rack.</p> <p>Start with an orange strap / right hand (RH) chock at the B end Left (BL) corner box.</p> <p>Store chock bodies in boxes along the side screens. The locking-pin pawl must face the inside of the Auto Rack to protect it from the weather.</p>
	<p>The strap ratchet is to be placed on top of the chock body.</p> <p>The orange strap must always be crossed over in front of the yellow strap when hung.</p>
	<p>Straps must not be twisted or tangled and must not hang out of the side screens.</p> <p>Hanging the straps allows them to dry and prevents freezing.</p> <p>Hanging also avoids twisting and eliminates tripping hazards.</p>

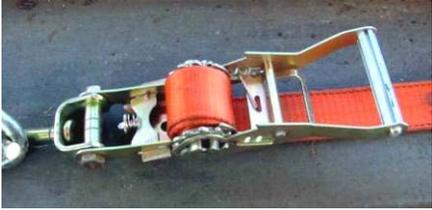
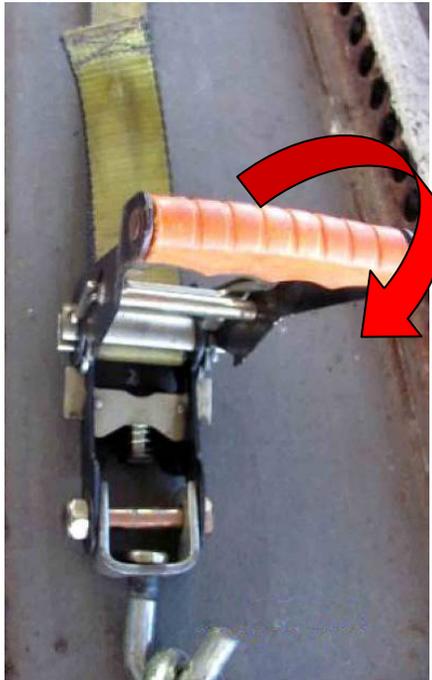
Procedure to Unspool Over-wound Strap on Hand Winch

CAUTION Refer to the Cautions section at the beginning of this manual.

The straps pictured below have been misapplied. Strap slack needs to be pulled out before winching. Otherwise strap can be over-wound.

	<p>This winch has been jammed by the over-wound strap. Pulling the strap out of the winch and unwinding the strap will resolve the problem.</p>
	<p>Another jammed winch caused by an over-wound strap. Over-wound straps can be unwound by the following procedure:</p>

 <p>Pull-out chocks, strap, and winch.</p>	<p>CAUTION: Wear safety glasses and other personal protection equipment (PPE) as required by your employer.</p> <p>Set up the pull-out winch. Select a fully operational winch to be used as the pull-out winch. Layout the chocks along the track and lock them into place. Stretch the strap to make it almost taut.</p>
	<p>Set up the over-wound winch. Place the over-wound winch on the deck so that the hook will engage the pull-out winch hook. Layout the over-wound winch chocks along the track. Stretch the strap to make it almost taut. Lock the chocks into place.</p>
	<p>Hook the two winches together and draw out the slack strap on the pull-out winch.</p>

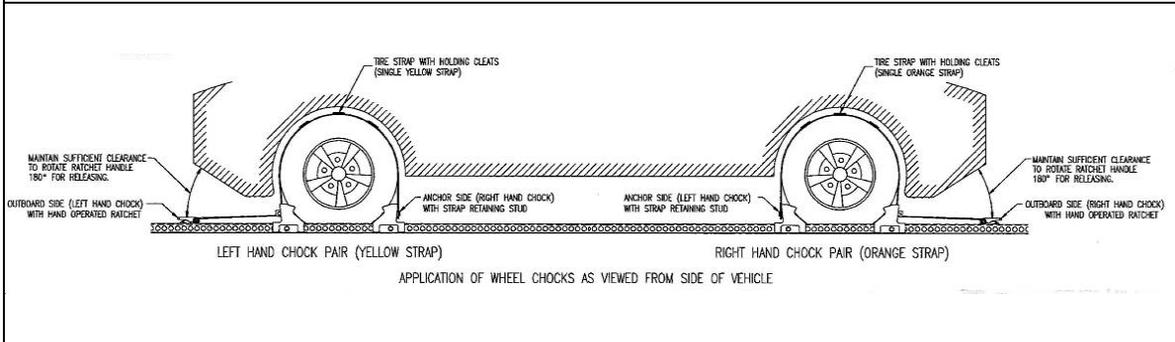
 A close-up photograph of a metal over-wound winch mechanism with an orange strap partially wound around it.	<p>Open the over-wound winch to release the strap.</p>
 A close-up photograph of a pull-out winch handle with a red curved arrow indicating the direction of rotation to operate the winch.	<p>Operate the pull-out winch to apply tension to the over-wound winch and strap. The pull-out winch will unwind the over-wound winch. As necessary, unwind the pull-out winch, take up slack, and repeat. Be careful to not over-wind the pull-out winch.</p>
 A photograph showing the orange strap fully unwound from the winch mechanism, lying flat on a metal surface.	<p>When the over-wound strap is unwound the strap should be free in the winch with nylon nut and bolt retainer. Lubricate the winch before putting it back into service. Refer to the Maintenance section.</p>

Installation Instructions



Refer to the Cautions section at the beginning of this manual.

As viewed from the side of the vehicle (see diagram below), the pair of chocks with the orange strap is to be placed on the tire to the right and the pair of chocks with the yellow strap is to be placed on the tire to the left.



Place the chock pair on either side of the automobile tire with the winch mechanism away from the automobile body.
The strap must be oriented with the legend “Trinity Parts” facing upwards

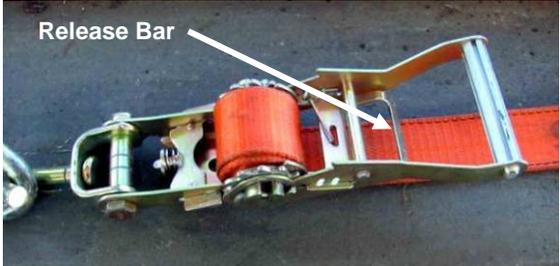


On the inside chock (the chock toward the center of the automobile, with only the strap latch), pull the pawl back to retract the locking pin and lift the pawl up to restrain the pin against the spring force.

While still holding the pawl, slide the chock as tight as possible against the tire and release the pawl.

Slide the chock away from the tire until the locking pin snaps into the lock hole on the track.

	<p>Repeat the pawl retraction and latching process for the chock on the other edge of the tire</p>
 <p>A close-up photograph showing a black tire being secured with a red and yellow strap. A black chock is positioned against the tire, and a yellow pawl is visible at the bottom, latching onto a stud on the chock.</p>	<p>Verify that the strap latch is positioned on the stud. Pull the strap over the tire tight enough to prevent the strap latch from slipping loose. Verify that the cleats face down on the tire tread.</p>
 <p>A photograph of a tire with a red and yellow strap wrapped around it. The strap has several red and yellow cleats attached to its surface, which are positioned to grip the tire tread.</p>	<p>Pull the excess strap toward the winch. Center the strap across the top diameter of the tire.</p>
 <p>A photograph of a wheel with a chrome hubcap and a black tire. The tire is secured with a red and yellow strap, and the strap is centered across the top diameter of the tire.</p>	<p>Ensure that at least two of the cleats are evenly spaced to each side of the wheel centerline.</p>

 <p>Tread Guides</p>	<p>Insert the cleats into the tread and pull the strap tight.</p> <p>[Photograph shows underside of the cleat with tread guides to be inserted into tire tread.]</p>
	<p>Insert the winch hand ratchet J-hook into a hole in the chock track that positions the hand ratchet beyond the vehicle's bumpers.</p> <p>Allow enough clearance to ensure the ratchet handle will rotate 180 degrees without hitting the vehicle. Take up any slack in the strap.</p>
	<p>Finish by tightening the strap with the hand ratchet. Place hand ratchet at an angle to allow the handle to fully close and lock the handle in the down position.</p>
 <p>Release Bar</p>	<p>Note: to loosen the strap, squeeze the release bar on the hand ratchet and rotate the handle 180 degrees from the locked position.</p>

Instructions d'Installation Résumé

Installation des systèmes d'attaches pour wagon automobile à trois niveaux

<p>Préparation avant chargement: Préparer en plaçant les ensembles oranges sur le côté gauche et les ensembles jaunes sur le côté droit tel qu'illustré. Au besoin lubrifier les barrures et vous assurer qu'elles ne sont pas prises dans la glace. Lubrifier les manivelles qui ne permettent pas aux courroies de glisser librement. Si requis, replacer les courroies dans les manivelles. Les courroies doivent être enfilées avec le lettrage vers le haut. Ne pas tortiller le courroies.</p>	
<p>Les ensembles oranges doivent être installées sur le pneu droit lorsque vous faite face au véhicule. Les ensembles jaunes sont installées sur le pneu gauche. Placer un ensemble de barrures sur le rail le plus près possible du pneu et verrouiller. Centrer la courroie et insérer les crochets dans la sculpture du pneu.</p>	
<p>Installer la manivelle en avant du pare-choc . Insérer le crochet en J à l'extrémité de la manivelle dans le trou du rail du plancher tout en gardant de l'espace pour la poignée. Serrer la courroie. Placer la manivelle à angle pour permettre à la poignée de fermer complètement.</p>	
<p>Compléter en serrant la courroie avec la manivelle et barrer en abaissant la poignée.</p>	

Pour toutes questions veuillez contacter Bob Cencer au 734 604-4230

Resumen de Instrucciones de Instalación

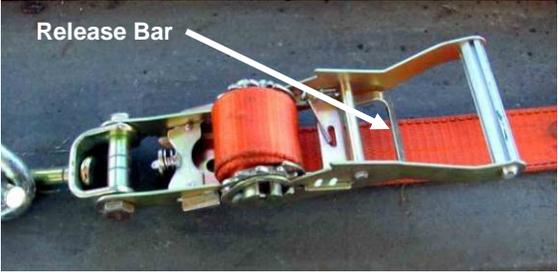
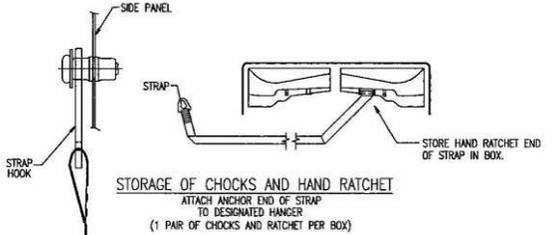
<p>Previo al viaje el Carro de Ferrocarril de tres niveles tiene instalados el juego de cuñas con correa color naranja en el lado izquierdo y en el lado derecho el juego de cuñas con correa color amarillo como se muestra.</p> <p>Lubricar cualquier perno pivote si se dificulta su operación. Liberar los pernos congelados.</p> <p>Lubricar cualquier manivela cuando no gire fácilmente cuando se estira la correa.</p> <p>Enrollar la correa en la manivela. La correa debe estar enrollada con las letras con la cara hacia arriba, no torcer la correa.</p>	
<p>Las cuñas con correa anaranjada son instaladas en el neumático de tu derecha enfrente a la lateral del carro cercana al riel, y las correas amarillas son instaladas en el neumático de tú izquierda.</p>	
<p>Ubicar la manivela en frente de la defensa por fuera del neumático. Insertar el gancho en forma de J del final de la manivela en los agujeros del riel permitiendo claro suficiente para la operación de la manivela. Eliminar cualquier holgura en la correa. Colocar la manivela en un ángulo que se pueda operar fácilmente hasta contraerse completamente</p>	
<p>Terminar de apretar la correa con la manivela y poner la palanca en posición baja.</p>	

Llame a Bob Cencer de al 734 604-4230 si tiene alguna pregunta

Removal Instructions

CAUTION Refer to the Cautions section at the beginning of this manual.

To remove the GREEN Chock System from each automobile on the Auto Rack:

	<p>Squeeze the release bar on the hand ratchet and rotate the handle 180 degrees from the locked position to loosen the strap.</p>
	<p>Pull the strap free and remove it from the tire.</p>
	<p>Remove the winch hand ratchet J-hook from the hole in the chock track.</p>
	<p>On the outside chock (the chock with the strap toward the winch), pull the pawl back to retract the locking pin and lift the pawl to restrain the pin against the spring force.</p>
	<p>Slide the chock away from the tire and lift it off the track.</p>
	<p>Repeat the locking pin retraction and unlatching process for the chock on the inside edge of the tire</p>
	<p>Place the chock pair into the side screen box and hang the straps on the railcar side screen.</p> <p>Refer to the Pre-Trip Inspection section at the beginning of this manual for instructions on storing the chocks, ratchets, and straps.</p>

Maintenance

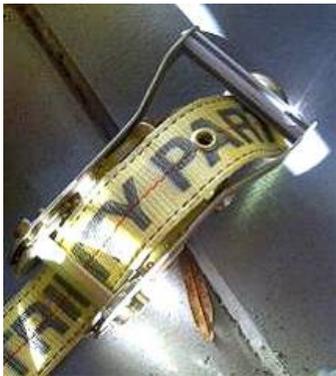
CAUTION Refer to the Cautions section at the beginning of this manual.

Step by step procedures to remove and replace straps, winches and locking pins.

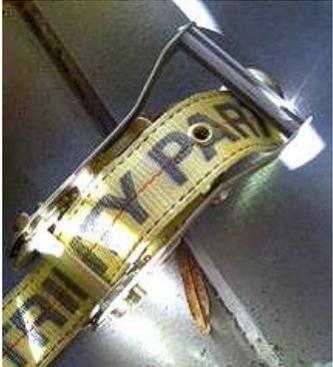
CAUTION: Wear safety glasses and other personal protection equipment (PPE) as required by your employer when performing these procedures.

Frayed Strap

	<p>Remove the strap and replace with the same color strap either on the Auto Rack or in the workshop.</p>
--	---

<p>Remove and replace strap only</p>	<p>Refer to the back of this manual for drawings K-016-2011 and K-016-2012 during the following procedure.</p>
	<p>Unwind the strap from the winch mandrel.</p>
	<p>Remove the ¼" nylon nut and bolt from end of strap and unthread the strap from winch mandrel.</p>
	<p>Pull strap through clevis on chock body.</p>
	<p>Rethread new strap through the clevis on the chock body and then through the strap winch mandrel with the lettering on the strap face up.</p>

	<p>Re-install the ¼" nylon bolt and nut at end of the strap and hand tighten.</p>
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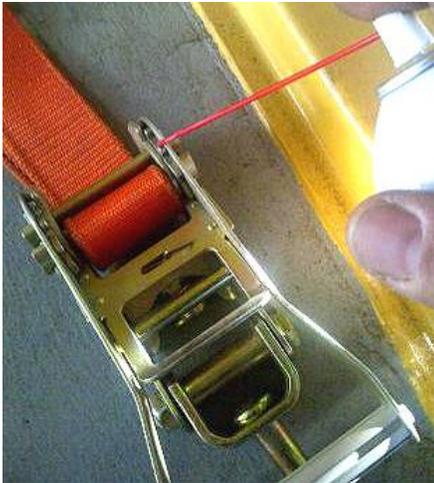
<p>Remove and replace both strap and winch</p>	<p>Unbolt shoulder bolt and nut at clevis on chock body.</p>
	<p>Remove the strap and winch assembly.</p>
	<p>Place strap and winch assembly with lettering up in clevis and oriented so that the strap winch is going away from the vehicle's wheel.</p>
	<p>Re-install the bolt and nut. The nylon nut should be tightened to the shoulder of the bolt. The shoulder bolt should be free to spin in the clevis.</p>

Inoperable Locking Pin Due to Corrosion

	<p>Remove rusted locking pin and replace.</p>
---	---

<p>Locking Pin Removal and Replacement</p>	<p>Locking pin should be in the fully extended position.</p>
	<p>Retract spring with fingers and remove pawl.</p>
	<p>Remove locking pin Bent or corroded pins may be removed by using another loose pin and a hammer to drive the lock pin through the access holes in the chock body.</p>
	<p>Install new locking pin into chock body and spring.</p>
	<p>Retract spring and align pawl hole with L-groove in chock body.</p>
	<p>Install pawl through the L-groove through the chock body and through the pin. The pawl end must be through the locking pin to retain the spring.</p>
	<p>Lubricate the pin assembly with an approved AAR lubricant. Work the lubricant into the pin assembly by pressing the pin in and out several times.</p>
	<p>Lubricate the spring with an approved AAR lubricant. Work the lubricant into the spring by pressing the pin in and out several times.</p>

Inoperable Hand Operated Strap Ratchet

	<p>Free with lubrication on Auto Rack or replace the hand ratchet. Work the lubricant into the hand ratchet by operating the ratchet several times. The mandrel must rotate and the strap totally unwind.</p>
---	---

<p>Remove and replace winch only</p>	<p>Refer to drawings K-016-2011 and K-016-2012 for the following procedure.</p>
	<p>Un-bolt the shoulder bolt and nut at clevis on chock body.</p>
	<p>Remove the strap and winch assembly</p>
	<p>Place strap and winch assembly with lettering up in clevis and oriented so that the strap winch is going away from the vehicle wheel.</p>
	<p>Re-install the bolt and nut. The nylon nut should be tightened to the shoulder of the bolt. The shoulder bolt should be free to spin in clevis.</p>

Engineering Drawings

Left Hand Chock (Drawing Number K-016-2011)

PARTS LIST		
ITEM	PART NO.	DESCRIPTION
1	6-12-2008	WHEEL CHOCK
2	6-12-2008	WHEEL CHOCK BRACKET
3	6-12-2008	LOCK PIN
4	6-12-2008	WHEEL CHOCK BRACKET
5	6-12-2008	WHEEL CHOCK BRACKET
6	6-12-2008	WHEEL CHOCK BRACKET
7	6-12-2008	WHEEL CHOCK BRACKET
8	6-12-2008	WHEEL CHOCK BRACKET
9	6-12-2008	WHEEL CHOCK BRACKET
10	6-12-2008	WHEEL CHOCK BRACKET

NOTES:

- LOCK PINS ARE TO BE OILED IN LUBRICANT WHICH MEETS AN STD. #4-211, PRIOR TO ASSEMBLY.
- LUBRICANT IS TO FULLY DRY BEFORE INSTALLING LOCK PIN IN CHOCK.
- ITEMS 3 AND 4 MUST MATCH.
- NO BURRS OR SHARP EDGES ARE ACCEPTABLE.
- FINAL STUD MUST BE FULLY SEATED.
- ODS (ITEM 2) SHOULD BE FREE TO ROTATE SMOOTHLY.

SECTION A-A
FULL SIZE

TYPICAL APPLICATION OF WHEEL CHOCKS
FULL SIZE

TRINITY

TRINITY PARTS & COMPONENTS
1000 W. 10TH AVE. SUITE 100
DENVER, CO 80202
TEL: 303.733.1100
WWW.TRINITYPARTS.COM

GREEN WHEEL CHOCK ASSEMBLY
LEFT HAND WITH
YELLOW STRAP ASSEMBLY

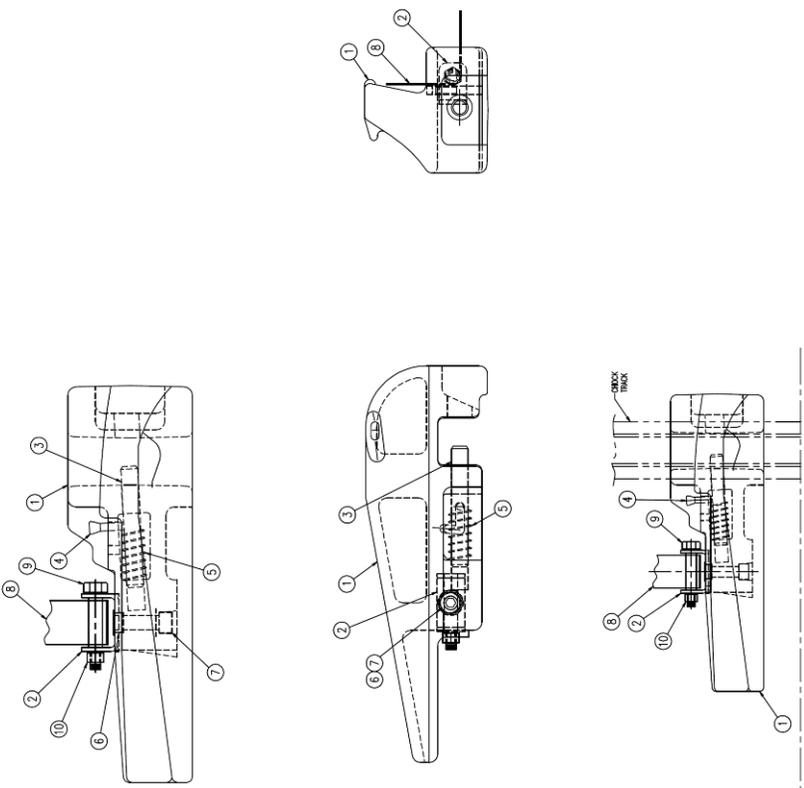
DRAWING NO. K-016-2011
SHEET NO. 1
OF 1

Right Hand Chock (Drawing Number K-016-2012)

PARTS LIST		
ITEM	PART NO.	DESCRIPTION
1	K-121-2012	WHEEL CHOCK
2	K-121-2005	WHEEL CHOCK BRACKET
3	K-121-2009	LOCK PIN
4	K-121-2008	SHAKE PIN HANDLE
5	K-121-2009	WHEEL CHOCK BRACKET
6	K-121-2009	WHEEL CHOCK BRACKET
7	686-73877	FRAM. STRIP, 1/2" X 1/4" X 1/4" X 3 1/4" LG. OR. 8 - P/WEB
8	686-73877	FRAM. STRIP, 1/2" X 1/4" X 1/4" X 3 1/4" LG. OR. 8 - P/WEB
9	686-73877	FRAM. STRIP, 1/2" X 1/4" X 1/4" X 3 1/4" LG. OR. 8 - P/WEB
10	686-73877	FRAM. STRIP, 1/2" X 1/4" X 1/4" X 3 1/4" LG. OR. 8 - P/WEB

NOTES:

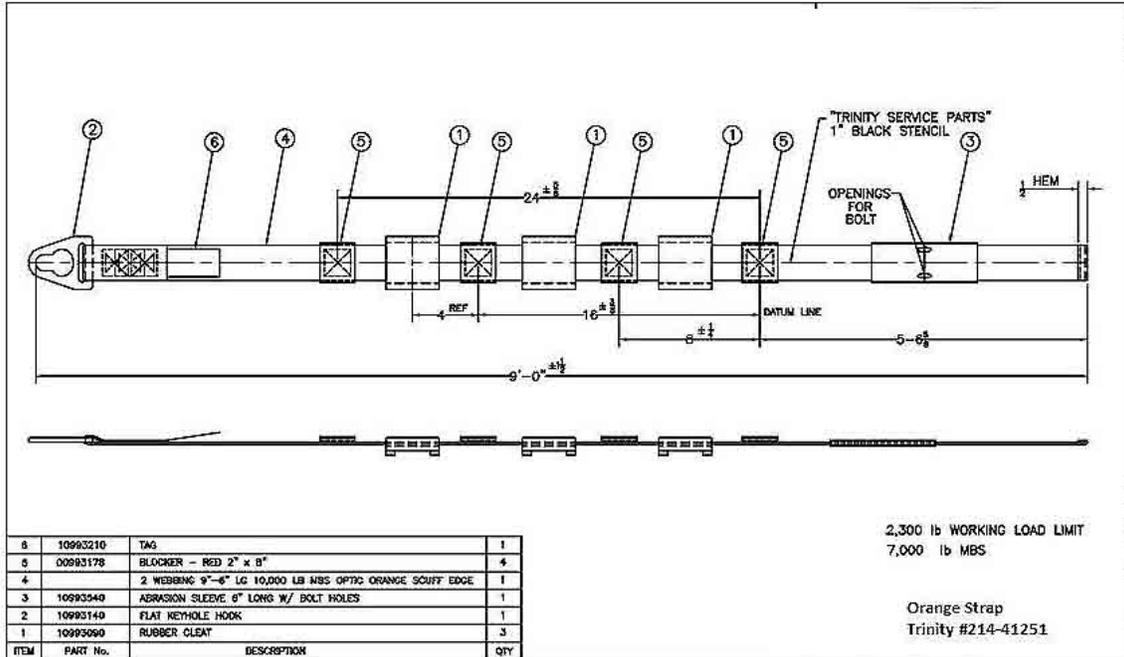
1. OILS AND GREASES TO BE APPLIED TO LUBRICANT WHEN METS ARE SPEC. REPAIR. MAKE TO ASSEMBLY. LUBRICANT IS TO FULLY OIL BEFORE INSTALLING LOCK PIN IN BRACKET.
2. METS 3 AND 4 MUST MOVE FREELY.
3. NO GIBBS OR SHARP EDGES ARE ACCEPTABLE.
4. FRAM. STRIP MUST BE FULLY SEATED.
5. CLEAR (ITEM 2) SHOULD BE FREE TO ROTATE SMOOTHLY.



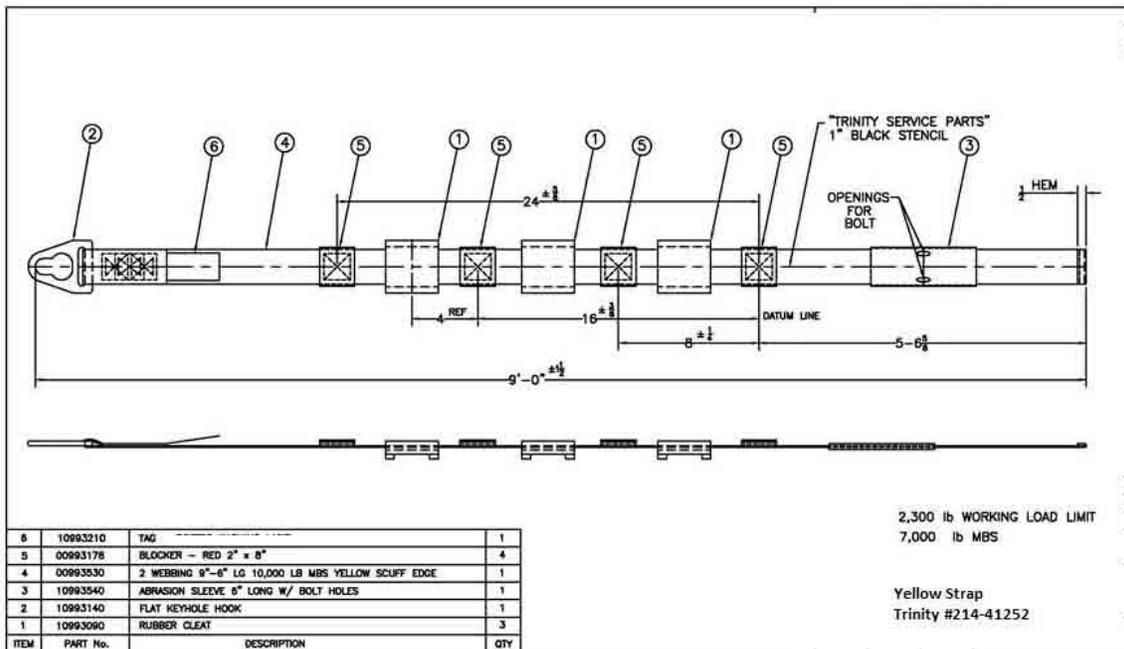
TYPICAL APPLICATION OF WHEEL CHOCKS
PLAN VIEW
HALF SIZE

TRINITYRAIL®
K-016-2012
GREEN WHEEL CHOCK ASSEMBLY
RIGHT HAND WITH
ORANGE STRAP ASSEMBLY

Orange Strap (Part Number 214-41251)



Yellow Strap (Part Number 214-41252)





Service, Parts, and Rebuilding

Send Chocks for rebuild to:
Trinity Parts & Components, LLC
2548 N. E. 28th Street
Fort Worth, TX 76111
By FEDEX Ground Truck "Collect."

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