Sam CARBIS Solutions Group, LLC

Keeping People **SAFER** and Products **FLOWING**®

INSTRUCTION MANUAL
FOR
TC10 PORTABLE TRUCK
AND RAIL ACCESS
FALL PROTECTION PLATFORM

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1) INTRODUCTION

a) PLEASE READ THIS FIRST PRIOR TO INSTALLATION OR OPERATION

i) On behalf of Sam Carbis Solutions Group LLC., thank you for your purchase of our safety equipment. It is our pleasure helping you with all your fall protection and product handling needs. We value our customer relationships and to ensure you get the most out of your equipment, our experienced support team is available for you to contact throughout your equipment service life. While this manual fully covers our product, if you should you have any questions or concerns please contact us at 1-800-948-7750 or 1-843-669-6668 for international customers.

ii) Please carefully read this Installation, Operation, and Maintenance Manual as it is an integral part of your purchased Carbis equipment. It is the Owner's responsibility ensuring all personnel who operate and or maintain the Carbis equipment receive comprehensive training. It is also the Owner's responsibility ensuring appropriately documented maintenance and inspection activities including: any abnormal operating condition and its associated root cause evaluation, followed by corrective actions implemented to eliminate recurrence. Any identified abnormal operating conditions should be cause for discontinuing use until contacting Sam Carbis Solutions LLC for further assistance.

iii) As equipment ages, associated service life-limiting variables will occur such as corrosion, fatigue, wear, etc., Correct these discrepancies as soon as possible during periodic maintenance to prevent operational failure

iv) This manual provides maintenance personnel safe operating guidance and recommended maintenance practices. However, it is not, and cannot be, a substitute for well-trained personnel. Great reliance must be placed upon the knowledge, background, and experience of the operating and or maintenance personnel with this manual serving as a guide. Willfully or inadvertently disregarding the information contained in this equipment manual automatically voids the warranty.

v) This product was inspected prior to shipment and meets Carbis' Quality Control Standards. It is important to completely review the information contained in this manual before operating the unit including the following

1) Upon delivery, inspect the equipment for shipping damage or any loose or missing hardware. All factory installed fastening hardware has been tightened prior to shipment. If loosening any fastening hardware whether factory or field installed, it must be re-tightened accordingly before use.

vi) It is imperative operating and maintenance personnel become familiar with the safety information contained in section ***3) SAFETY LANGUAGE*** prior to using the equipment

vii) Visually inspect all safety signs and labels for serviceability, visibility, and legibility. Operating personnel must be familiar with the contents of such placards, signs, and decals. See **Section 3) b) for SAFETY LABEL DESCRIPTIONS** for the description of all safety label and signs that appear on the equipment described in this manual.

viii) U.S. Patent 6,746,403 protects the equipment shown is this manual.

b) VEHICLE POSITIONING

Carbis designs equipment in a variety of styles, sizes, and materials accommodating specific customer-requirements in applications including varying heights and types of vehicles. Prior to operational use refer to the specific vehicle dimensional relationships in determining required for proper vehicle positioning.

i) Always leave TC10 cart in the stored position (ladder full down and jacks deployed) until ready to use.

ii) **⚠WARNING Incorrect TC10 positioning on top of the vehicle can cause a dangerous condition leading to a potential for serious injury or death. The access equipment when extended over the vehicle protrudes into the standard vehicle clearance envelope. Always wait until the intended vehicle comes to a complete stop and given proper permission to access before positioning the TC10 over the vehicle. Never access the top of the TC10 cart until properly positioned over a vehicle to prevent a fall gap.**

iii) RAIL CAR POSITIONING

With a railcar centerline considered as a fixed constant relationship with Carbis equipment, correct TC10 positioning requires correct operator input. Carbis TC-10's requires the rail car spotted with the railcar access area centered on the platform.

iv) TRUCK POSITIONING

Given the portable nature of a truck, the truck driver's abilities largely determine correct spotting. Therefore, consider using visual spotting aids such as bollards, curbs, painted guidelines, suspended markers (i.e., tennis balls), etc. enhancing the driver's positioning ability.

v) DEVIATIONS

Unexpected vehicle configuration deviations can cause a hazard even when proper positioning has taken place. (Ref: OSHA 1910.30) requires all operators fall protection equipment training for hazard recognition).

2) PRODUCT DESCRIPTION:

HAND WINCH OPERATED INLINE TC10 CART

SEE PROJECT-SPECIFIC DRAWINGS, FIGURES WITHIN THIS SECTION, AND SECTION 8) PARTS LISTS DRAWINGS AND SPECIFICATIONS

⚠WARNING Only the person performing the work shall operate Carbis equipment. No other personnel are authorized to operate at any time. Failure to adhere to this caution may cause a person to fall risking injury or damage to equipment. All other personnel should maintain a 10-foot/3-meter clearance while Carbis Equipment is in motion. **Do not access or occupy equipment while equipment is moving.**

⚠CAUTION Do not operate Carbis Equipment for any other purpose other than its intended design. Do not modify Carbis equipment to perform beyond its factory settings. Failure to do so could cause a malfunction possibly damaging equipment and causing injury. Contact Carbis for service.

a) GENERAL

i) The TC10 tank car and rail car access system is a versatile, universal, hand winch operated, inline cart and ladder system for safely accessing the tops of a variety of truck and rail car vehicles, and includes optional enclosures such as cages, platforms, and knock down handrails for fall protection as reflected by the following drawings (refer to specific drawing or system that applies):

1) TC10: Ladder Platform on Rail Car - Inline
2) TC10-RC: Ladder Platform and Rail Car Cage on Rail Car – Inline
3) TC10-HC: Ladder Platform and Knock Down ISO Platform on Hopper Car – Inline
4) TC10-TR: Ladder Platform and Knock Down ISO Platform on Tank Truck – Inline
5) TC10-ISO: Ladder Platform and Knock Down ISO Platform on ISO Truck – Inline
6) TC10-HT: Ladder Platform and Knock Down ISO Platform with Rotating Panel on Hopper Truck –Inline
7) Ladder Platform and Knock Down ISO Platform with Flip-Up Panels – Inline
8) Ladder Platform and Full Surround Railcar Cage with Rope-Actuated Pivoting Walk Surface - Inline
9) For any modified TC10 or includes the addition of ancillary components not otherwise identified above, see project-specific drawings that reflect the modification or addition.

ii) The TC10 requires assembly before use. See section ***7) INSTALLATION AND SET UP*** for instructions.

iii) The TC10 cart design load capacity is 500 lbs./227 kg and 200 lbs. /90.1 kg for the handrails. **When used as a stand-alone unit without the addition of any optional enclosure, the locking pins must be fully engaged to support the monolithic ladder fly section and ladder platform**. With the addition of any optional enclosure, support the system by a vehicle or by the locking pins.

iv) While more than one person may access the vehicle, permit only one person at a time to the ladder sections and ladder platform.

v) The TC10 working range height from grade level to the underside of the platform is from a minimum of 9’-10”/2.99 M to a maximum of 16’-6”/5.02 M.

b) MECHANICAL EQUIPMENT

i) BASIC TC10 INLINE CART See **FIGURE 2-1** below.

Features of the basic TC10 cart are as follows:

1) The basic cart consists of a galvanized steel base and a telescoping aluminum ladder fly section with handrails on the sides and a ladder platform at the top.
2) The inline base incorporates an aluminum fixed ladder bolted to a frame support cart, a set of foam- filled pneumatic tires at the rear, and on the front, are dual foam-filled pneumatic tires that are integral with a tow bar/steering mechanism.
3) Leveling jacks mounted on the rear and front outrigger bars of the steel base.
4) Steel counterweight bars fixed to the front counterweight frame.
5) All walk surfaces are slip-resistant.
6) The uprights of the top ladder platform incorporate bolt holes for mounting the following optional aluminum safety enclosures:
   a) Rail car cage
   b) Truck and rail car knock down ISO platform and handrail system that includes a partial walk surface at the ladder platform, with the remaining area within the handrails open
   c) Truck knock down ISO platform and handrail system that includes a partial walk surface at the ladder platform and an optional rotating platform on the outboard handrail
   d) Truck knock down ISO platform and handrail system that includes flip-up panels
7) Wire rope attached to the inside bottom of the telescoping ladder, and running over pulleys on the cart frame, attaching to a hand winch mounted on the frame support. The hand winch is the source of power for raising and lowering the telescoping ladder platform.
8) Pinholes located on 6”/15 cm centers along the fixed ladder rails each side are for pinning the telescoping ladder platform which makes the unit self-supporting.
9) For any TC10 that includes forklift tubes on the underside of the cart base, the forklift tubes the forklift tubes are included to provide optional transport within the same site by forklift from spot to spot or to/from storage.
10) The knock down design of the ladder section and optional platform and handrail sections provides easier shipping/transport from site to site.
11) Cart turning radius when extended is 12’-6”/3.81m measured from the rear wheels**. (SEE FIGURE 2-2)**

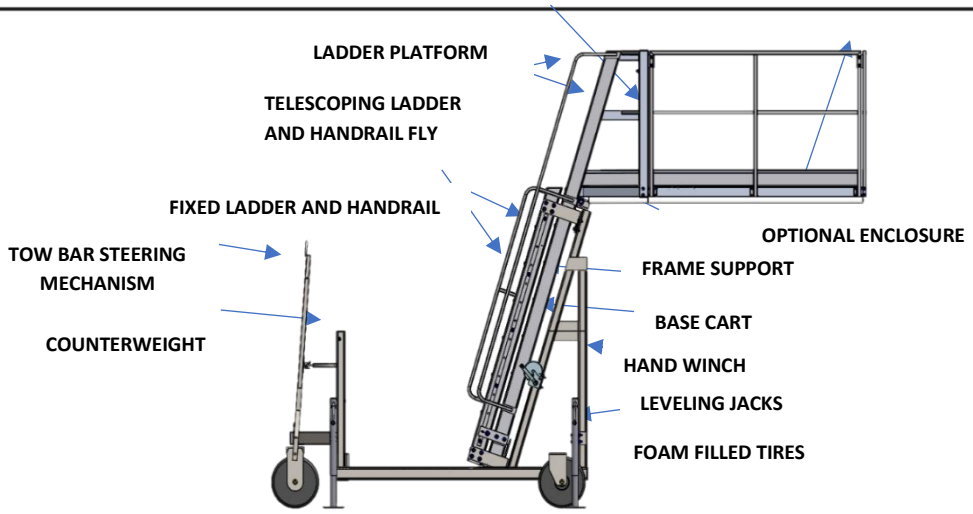


FIGURE 2-1 BASIC TC10 INLINE CART

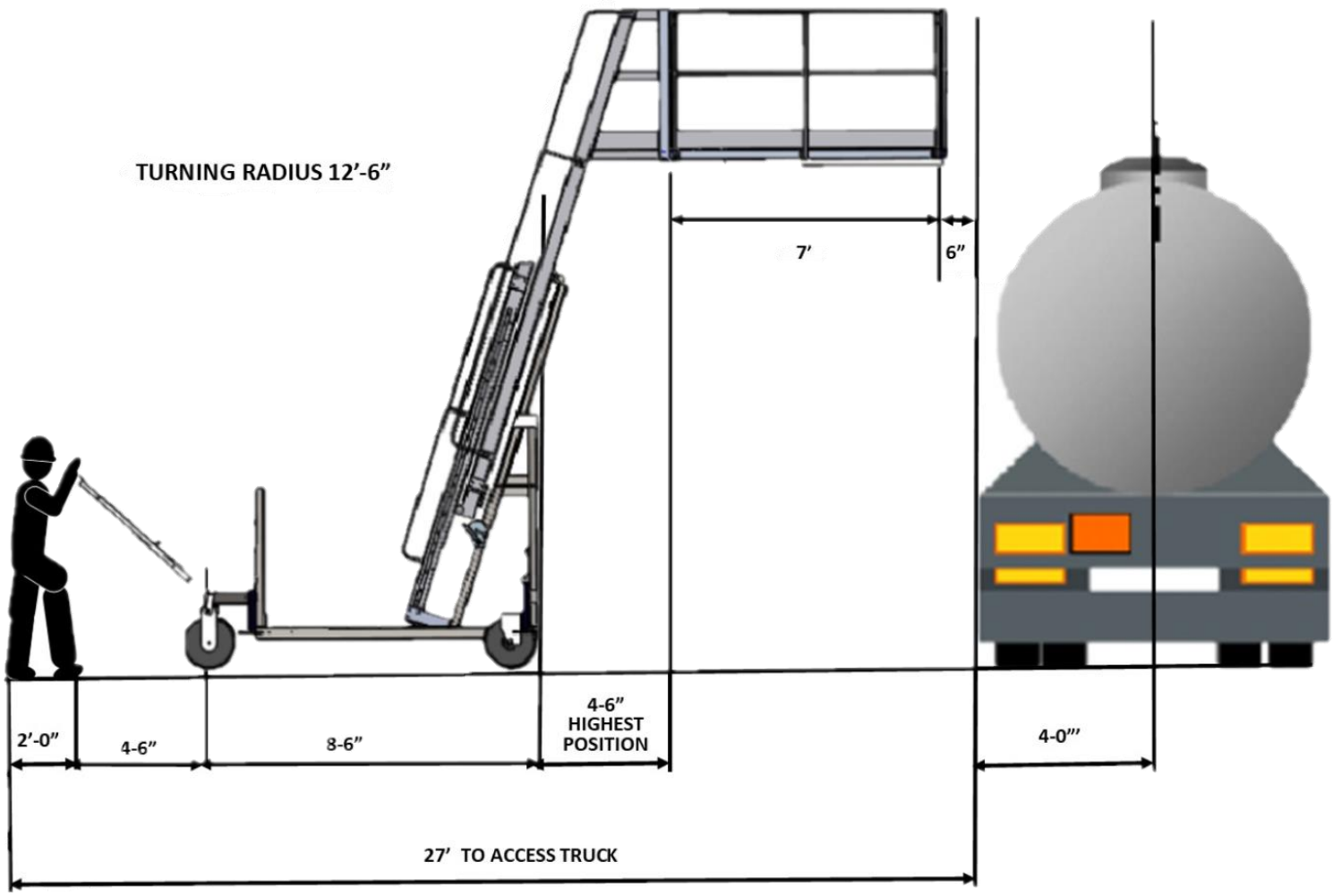


FIGURE 2-2 TC10 CART OPERATIONAL DIMENSIONS

ii) TC10 INLINE CART WITH FULL SURROUND RAILCAR CAGE See F**IGURE 2-3** below.

In addition to the features of the Basic TC10 Inline Cart described above, the TC10 Inline Cart with Full Surround Railcar Cage includes the following added features:

1) An adjustable cart-to-railcar positioning mechanism mounted on the rear end of the cart frame. The positioning mechanism provides repeatable, expedited cart positioning specific to railcar height and crash box size.
2) A pull-up rope actuated inboard pivoting walk surface located on the inboard end of the cage. The pull-up rope operates from ground level to position the pivoting walk surface in the stored or working/deployed position. The operator end of the pull-up rope contains a ring latched over one of two rod latches located on the right side of the ladder stringer.
3) A self-positioning gap closure mechanism located on the outboard side of the cage. The mechanism consists of three basic components: a pivoting curved outboard rail and pivoting bent end rails, one at each end. The pivoting rails pivot into position by contact with the railcar crash box as the cage lowers into place.

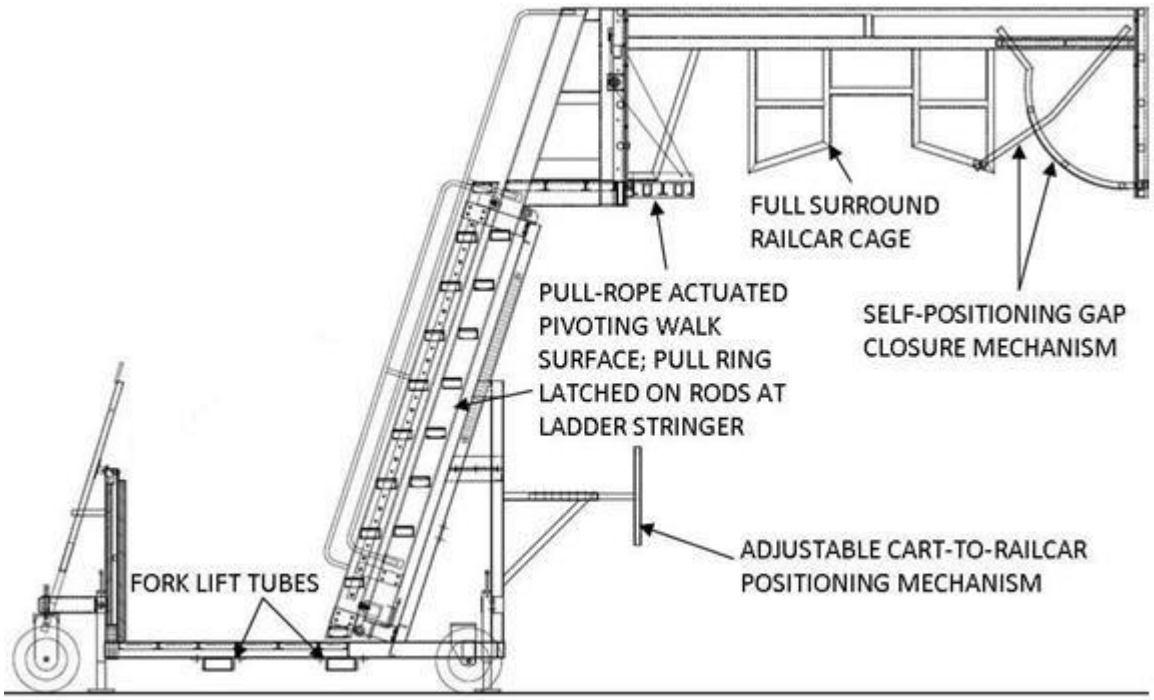


FIGURE 2-3

3) SAFETY LANGUAGE

a) **HAZARDS**

The following safety notes are grouped by hazard and used throughout this manual. Please carefully read and understand these notes before performing any task contained in this manual.

i) DANGER **Failure to comply with these DANGER warnings WILL result in serious injury or death.**

1) This equipment CAN conduct electricity.
2) Perform required grounding procedures per the owner's safety code.
3) Do NOT allow this unit to contact live electrical wires.

ii) WARNING **Failure to comply with these warnings COULD result in serious injury or death.**

1) Correct vehicle positioning is imperative to ensure proper deployment and function of Carbis equipment. Incorrect vehicle positioning or improper use of this equipment increases the risk of serious injury or death. Carbis equipment is designed to function only as described in this manual and depicted on applicable drawings. **IT IS THE SOLE RESPONSIBILITY OF THE OWNER TO ENSURE PROPER USE OF CARBIS EQUIPMENT. IF ANY QUESTIONS, PLEASE CONTACT CARBIS BEFORE PROCEEDING.**
2) First ensure Carbis equipment is properly stored and secured before **correctly** positioning a vehicle underneath.
3) Operator must ensure nonessential personnel are clear of Carbis equipment during any controlled operation.
4) No personnel including the operator must not occupy Carbis equipment while it is in motion.
5) Do not force Carbis equipment by any means to overcome any seen or unseen obstacle or obstruction. You must use Carbis Equipment within its designated operating limits.
6) Keep hands clear of equipment while in motion.
7) If the equipment will not function as intended, discontinue use, and immediately contact maintenance.
8) Never make repairs of damaged or missing parts. Replace missing parts only with Carbis approved suitable parts.
9) Material loaded onto or unloaded from vehicles may present a health hazard. It is the sole responsibility of the owner ensure operating personnel are familiar with any associated material hazards and implement appropriate safety measures to protect personnel against such hazards.
10) Do not access or occupy equipment while equipment is moving.
11) Never access the top of the TC10 cart until properly positioned over a vehicle to prevent a fall hazard.
12) The TC10 is only self-supporting when the locking pins are fully engaged; otherwise, the unit MUST rest on a vehicle. NOTE: Without the addition of any optional enclosure,

the locking pins MUST support the unit.

iii) **⚠CAUTION Failure to comply with these cautions COULD result in personnel injury or damage to equipment**

1) Carefully read this manual before unpacking and installing Carbis equipment.
2) Only permit personnel in good physical condition and trained in the proper operation of this equipment to operate it.
3) When operating Carbis Equipment personnel should always wear appropriate Personal Protective Equipment (PPE), such as gloves, safety glasses, safety shoes, helmet etc.
4) For operator safety, Carbis recommends storing and not using the equipment when wind speed gusts exceed 35 mph/56 kph.

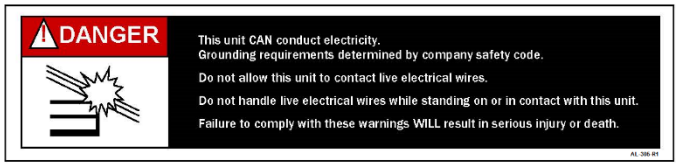
iv) *NOTICE* Failure to comply or adhere to these notices COULD result in equipment damage or degradation.

1) Qualified maintenance personnel must be familiar with manual instructions as well as all accompanied system schematics and drawings before performing component adjustments.
2) Ensure local safety **LOCKOUT-TAGOUT** procedures are correctly adhered before performing work on Carbis Equipment.
3) Whenever transporting the unit, ensure the ladder is in the lowest stored position and the leveling jacks are in the horizontal stored position.

a) SAFETY LABEL AND SIGNS DESCRIPTIONS (SEE FIGURE 3-1)

Please ensure the following safety labels below are eligible and properly affixed on the equipment as described in this manual before use. Contact Carbis when requiring replacement labels.

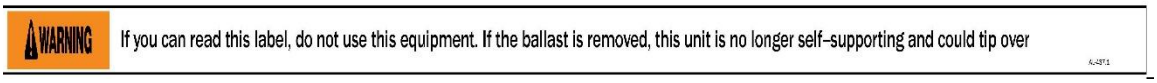
AL-305-R1 (Front of ladder tread one on each ladder section)



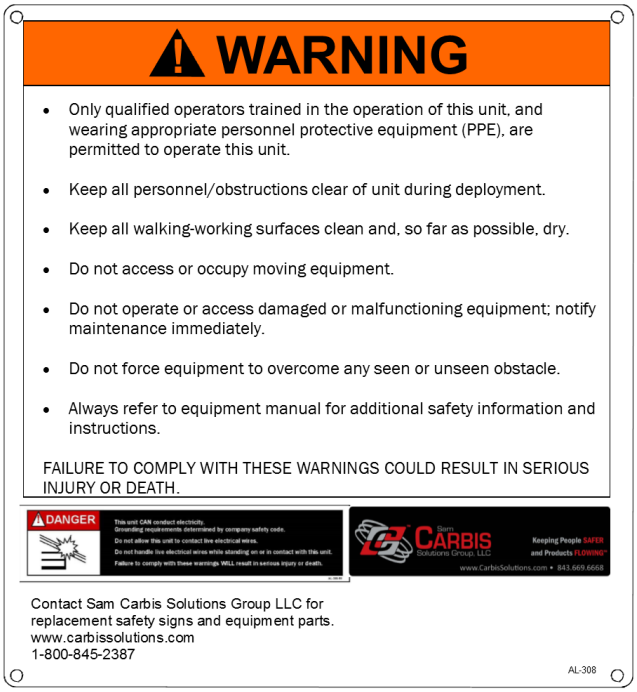
AL-422 (Bottom Ladder Section front of Tread Eye Level)

AL-423 (Front of Ladder Stringers between 4th and 5th Tread)

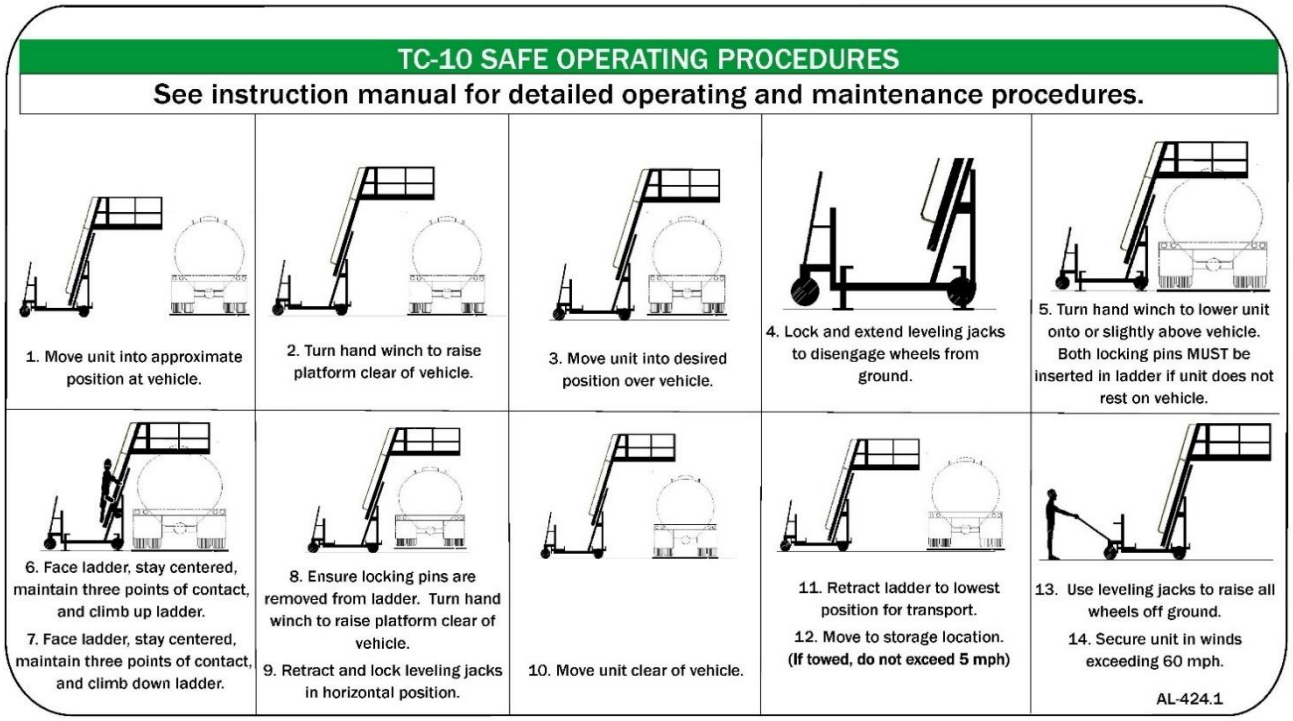
AL-437.1 (Located underneath counterweight)



AL-308 (Counterweight Frame Ladder Side Top Right Corner)



AL-424.1 (Top Counterweight Plate Opposite to Platform)



AL-418.1 (Left Vertical C4 Brace Eye Level Mounted to Plate with Shipping Tag)

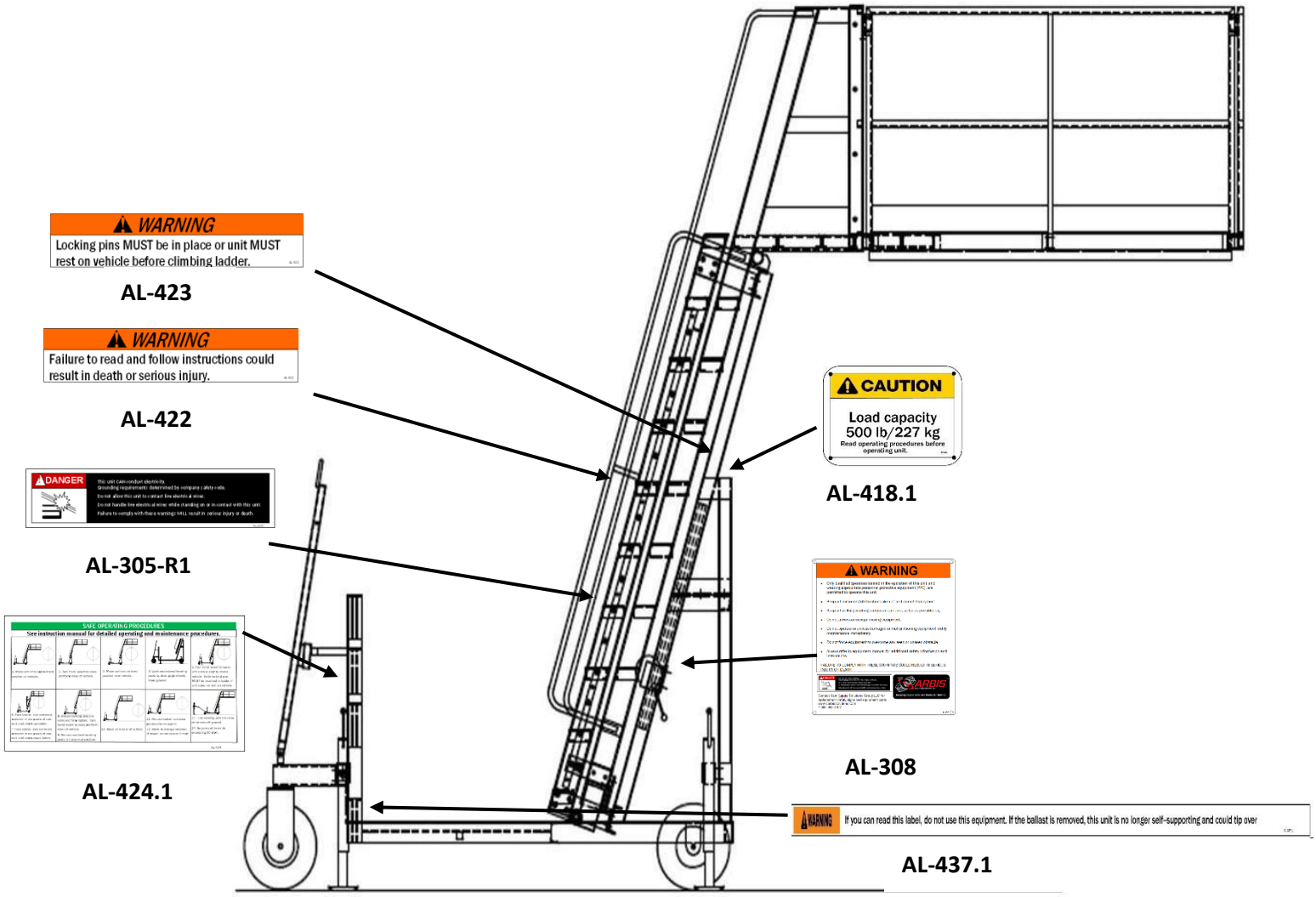


FIGURE 3-1 (SIGN AND LABEL PLACEMENT)

4) OPERATION

a) PRE-USE INSPECTION

i) **WARNING** **DO NOT USE Carbis Equipment if wind speed gusts exceed 35 mph/56 kph.**

1) TC10 live load limit design is for single person occupancy with PPE, tools and must not exceed 500 lbs./227 kg and handrails 200 lbs. /90kg.
2) Visually inspect the assemblies before use. If discovered damaged or broken components replace before returning to service. If component replacement requires any disassembly, refer to Section **7) INSTALLATION AND SETUP** for restoring the system to operational status.
3) Keep the unit clean and free of dirt and debris.
4) Verify all safety sign and labels are clearly visible, legible, and in good repair. Operating personnel must be familiar with the contents of such signs, and labels. See section **3 SAFETY LANGUAGE b) SAFETY LABEL DESCRIPTIONS** for all safety labels and signs appearing on the equipment described in this manual.
5) Before operating the equipment, inspect between the equipment and the vehicle for any obstruction that would impede correct movement or create a tripping hazard. Remove any obstructions before proceeding.

ii) *NOTICE* **Before spotting any vehicle, the TC10 must always be in full upright position before proceeding.**

iii) With no vehicle berthed, ensure the TC10 is in the full upright position. Correctly spot the accessed vehicle noting the work area in front of the platform. If available, use visual aids to assist in spotting the vehicle.

b) OPERATING SEQUENCE

i) **WARNING** If the TC10 will not raise or lower, **immediately discontinue** use and contact Maintenance. Failure to follow instructions or attempt to dislodge obstructions may result in severe injury or death.

ii) **WARNING** **The TC10 is only self-supporting when the locking pins are fully engaged; otherwise, the unit MUST rest on a vehicle. NOTE: Without the addition of any optional enclosure, the locking pins MUST support the unit. Failure to fully engage the locking pins could cause the unit to be unstable causing possible severe injury even death.**

1) Remove wheel chocks (if used) and raise the leveling jacks used to store the unit.
2) With the ladder in the lowest stored position, move the unit into approximate position at the vehicle
3) Using the hand winch, extend the ladder and platform full height ensuring the unit will clear any point on the vehicle.
4) Move the unit over the vehicle so that the ladder platform/enclosure is over the work area.
5) The following step options are determined by operational requirements, **and they determine whether the unit is self-supporting. If the unit does not include an optional enclosure, follow Step (a), otherwise proceed to b):**
   a) Extend or retract the ladder as needed for optimum position with the ladder pinholes aligned. Verify no part of the unit is resting on any vehicle component subject to damage when applying

a load. For units with the self-positioning gap closure mechanism, as you adjust the ladder height, observe the mechanism engagement with the vehicle uniform with no fall gaps. Insert the locking pins, verifying they are fully engaged ensuring the unit is self-supporting.

b) Lower the ladder/enclosure so the protective bumpers on the underside of the system rest on the vehicle. ensure the bumpers or any part of the enclosure are not resting on any vehicle component subject to damage when applying a load. **If the locking pins are not engaged, the unit must rest on the vehicle as it is not self-supporting.**

c) For units with rope-actuated pivoting walk surface, after engaging the locking pin to support the unit, gradually pull the rope to deploy the walk surface to ensure clearance with the railcar. If interference occurs, reposition the TC10 cart as needed. Properly position the cart, then adjust the cart-to-railcar positioning mechanism to expedite future use on similar vehicles.

6) Rotate, lock, and extend the leveling jacks in the vertical position to disengage the wheels from the ground.

7) ⚠WARNING **If the unit is not self-supporting, again lower the ladder and platform/enclosure to rest on the vehicle as noted in Step 5 b).**

8) Face the ladder when climbing up or down. Maintain center of gravity, i.e., belt buckle between ladder side rails.

9) Maintain a firm grip; use both hands when climbing.

10) For systems with enclosure flip-up panels, perform the following sub-steps:

a) Enter the platform and ensure all flip-up panels are lying flat and securely resting on their supports, and that no tripping hazards are apparent. Adjust as needed.

b) At this point, it is safe to access the vehicle. Lift only the flip-up panels required to perform the work. Ensure the flip-up panels are secure against the handrail.

c) Before leaving the vehicle, ensure all flip-up panels are lowered and flush with the walk surface.

11) When finished with the work, remove any tools from the cage area, platform, or ladder stand.

12) Face the ladder to descend, maintain center of gravity, and firmly grip the ladder with both hands when climbing back down.

13) When finished with the unit, remove the locking pins (if used), and extend the ladder and platform full height to clear any point on the vehicle for when the wheels engage the ground and the unit is moved away from the vehicle. For units with rope-actuated pivoting walk surface, raise the walk surface is to the stored position before extending the ladder avoiding any potential interference when extending the ladder.

14) Retract, rotate, and secure the leveling jacks to allow the wheels to engage the ground.

15) Move the unit clear of the vehicle.

16) Lower the ladder to its lowest position for transport.

17) Steer the unit to its stored location. Chock the wheels, and rotate, secure, and extend the jacks to disengage the associated wheels from the ground to keep the unit immobile.

18) If towing the unit, connect the tow bar to the towing vehicle, and do not exceed a tow speed of 5 mph/8 kph.

19) For units with the optional forklift tubes, if transporting the unit using a forklift, secure the unit is on the forklift tines.

20) ⚠WARNING If the unit will not move when pushed or pulled, or if the ladder will not extend or retract when using the hand winch, or if any leveling jack will not function as needed, discontinue use and contact Maintenance immediately. Failure to follow instructions, or any attempt to dislodge

obstructions, may result in severe injury or death.

5) *TROUBLESHOOTING*

a) GENERAL

i) **WARNING Failure to comply with these warnings WILL result in serious injury, death, or damage to equipment. It is the Owner's responsibility to correctly follow procedures in this manual.**

1) Ensure maintenance personnel troubleshooting Carbis equipment are completely familiar with the equipment, have thoroughly read this manual, and possess the necessary maintenance skillset to work on this equipment. Contact Carbis if requiring further troubleshooting assistance.
2) Discontinue equipment use until correctly resolving maintenance issues**.**

b) SPECIFIC COMPONENT TROUBLESHOOTING

i) Section **2**) **PRODUCTION DESCRIPTION,** Section **4) OPERATION**, and Section **6) MAINTENANCE** list the TC10 components**.** Refer to the specific component in these sections when performing required troubleshooting procedures. If troubleshooting exceeds maintenance personnel capabilities or if questions still arise, please contact Carbis for further troubleshooting assistance.

6) MAINTENANCE

a) GENERAL

i) **WARNING Before performing any maintenance on a Carbis system, lock out and tag out the Carbis equipment according to local safety directives. Fully retract the platform and cage to the stored position. Do not stand or walk under the platform.**

ii) Carbis mechanical equipment is designed and built to minimize periodic maintenance and does not require extensive inspection and maintenance other than noted in this manual. The following are recommended inspection procedures for incorporating into an inspection program. Any parts needing replacement, replace with equally rated parts to ensure product integrity. Contact Carbis for guidance and parts information.

b) PERIODIC INSPECTION AND CLEANING

i) As a minimum, Carbis recommends a monthly inspection of the assemblies. Harsh atmosphere and/or heavy use may dictate more frequent inspection and maintenance.

ii) When inspecting the TC10, ensure the equipment is properly "locked out and tagged" per safety regulations. As an added safety precaution when fully raising the TC10, ensure the unit is self-supporting or safely supported before beginning maintenance.

iii) Thoroughly clean the equipment ensuring walk surfaces are free of material that would otherwise interfere with the safe, slip- resistant feature of the walk surface. K e e p t he walking-working surfaces clean and a dry as much as possible preventing inadvertent tripping hazards.

iv) Carbis does not advocate pressure washer use for cleaning as it could damage surfaces and inadvertently remove safety labels.

v) Use proper fall protection equipment prior to conducting periodic maintenance.

vi) Using a wrench or ratchet socket, check all bolted connections for a secure snug fit. Do not over torque

vii) Check all rotating/pivoting connections for proper fit, corrosion, and excessive wear or play. Repair or replace as required.

viii) Inspect component surface welds including those hidden from view for cracks, distortion, and corrosion. If found discontinue use until addressing items. Contact Carbis for guidance.

ix) Remove the foam-filled wheels and thoroughly check for excessive tread wear. Remove all debris caught in the treads. If any wheel is punctured, remove the object, and externally repair the wheel. Replace any wheel whose condition is beyond repair or excessively worn. Install wheels and lubricate wheel bearings with lithium-based grease. **NOTE:** The caster wheels and brakes are maintenance-free.

x) Check each leveling jack for corrosion, excessive wear, and ease of operation. Replace any leveling jack whose condition so warrants. Install leveling jacks.

xi) Check hand winch per manufacturer's recommendations noted in this instruction manual for inspection and lubrication procedures.

xii) Wire rope and associated components maintenance procedures:

1) Refer to the hand winch manufacturer's literature to let out the wire rope enough to slip the rope away from the sheaves for inspection.
2) Never inspect a wire rope by passing bare hands over the rope body.)
3) Clean the rope with a cloth or wire brush to thoroughly inspect.
4) Check the entire length of the wire rope, and replace if any distortion such as kinking, crushing, un-stranding, bird-caging, main strand displacement, or if finding core protrusion.
5) Replace any end connection that is severely corroded, cracked, bent, worn, or broken per **Section 7 INSTALLATION AND SETUP c) iii) 8):**

7) INSTALLATION AND SET UP

a) GENERAL

i) NOTICE **AVOID PROBLEMS WITH STAINLESS STEEL BOLTS.** Keep bolts and nuts free of grime and other contaminants from entering threads. Lubricate stainless steel bolts and nuts prior to tightening. Avoid the use of impact speed wrenches. The impact wrench will introduce heat and cause the bolt to seize.

ii) Carbis must approve any alterations required to this system.

iii) It is the Owner's responsibility to:

1) Ensure that their existing area supports new Carbis equipment.

2) Identify to Carbis any conditions or obstructions that may interfere with the location or proper operation of Carbis equipment.

3) Remove or relocate any obstructions in preparation for use of the new Carbis equipment.

b) PRE- INSTALLATION INSPECTION AND OFF-LOADING

i) Care has been taken to package Carbis equipment and components in the best manner possible for safe shipping and practical off-loading purposes.

ii) It is the owner's responsibility to inspect the shipment for completeness by comparing the shipment with the parts identified in the Parts Lists, including the items identified in the Hardware and Component Lists. Check for any shipping damages or missing components and report the same to Carbis.

iii) It is also the owner's responsibility to provide the appropriate off-loading devices to safely and effectively rig and handle the Carbis equipment and components during the off-loading process, paying attention to eccentric loading conditions such as counterweighted components, including those whose eccentric loads are visually apparent.

iv) Some components may ship pre-assembled.

c) ASSEMBLY

i) REQUIRED BOLT TENSIONING FOR STRUCTURAL CONNECTIONS

1) A325 Bolts - Snug Tight Condition

a) S nug tight condition defined as the tightness when all plies in a joint are in firm contact. Attain snug condition by a few rotations of an impact wrench or the full effort of a man using an ordinary wrench. Carbis' standard bolt installation is snug tight in a bearing type connection. The drawings will specifically detail different requirements.

b) Any bolts less than 1/2"/1.27 cm diameter, torque to 60 in.-lbs./6.77 NM

2) Stainless Hardware - Snug Tight Condition

a) Snug Tight condition defined same as A325 bolts.

b) Keep bolts and nuts free of grime and other contaminants that may get into threads. Lubricate

stainless steel bolts and nuts prior to tightening.

c) Any bolts less than 1/2"/1.27 cm diameter, torque to 60 in.-lbs./6.77 NM

ii) A qualified erector should perform the assembly and installation of the Carbis equipment in conformity with industry standards and local building code requirements, and in accordance with the most recent industry practices for safe rigging. The procedures outlined in this section describe safe and practical sequences. Any deviation preferred by the erector/rigger must be in conformance with the above-referenced standards, codes, and practices. **NOTE:** Some parts may be pre-assembled.

iii) Unless noted otherwise, use Carbis-supplied hardware to assemble the components listed in the Parts Lists per the following sequence:

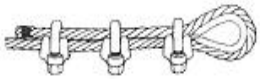
1) Where applicable, assemble the ISO knock down platform and handrail system, including the rotating panel or flip-up panels as required.
2) Where applicable, assemble the platform or cage to the top of the telescoping ladder.
3) Where applicable, assemble any modified or additional ancillary component.
4) Assemble the aluminum handrails to the telescoping ladder platform.
5) Assemble the aluminum fixed ladder to the front of the steel base.
6) Assemble screw jacks to the ends of each steel outrigger bar.
7) Run the wire rope from the hand winch up over the two block pulleys on the steel base down between the steel base and the extension ladder. Loop the thimble through the hole in the bracket mounted on the inside of the bottom step of the telescoping ladder.
8) Install wire rope clips per the following steps:

STEP 1

Apply the first clip one base width from the rope dead end. Place the U-bolt over the dead end with the wire end resting in the clip saddle. Tighten the nuts evenly to the recommended torque.

STEP 2

Apply the second clip nearest the loop as possible, with the U- bolt over the dead end. Turn on nuts firm, but do not tighten.

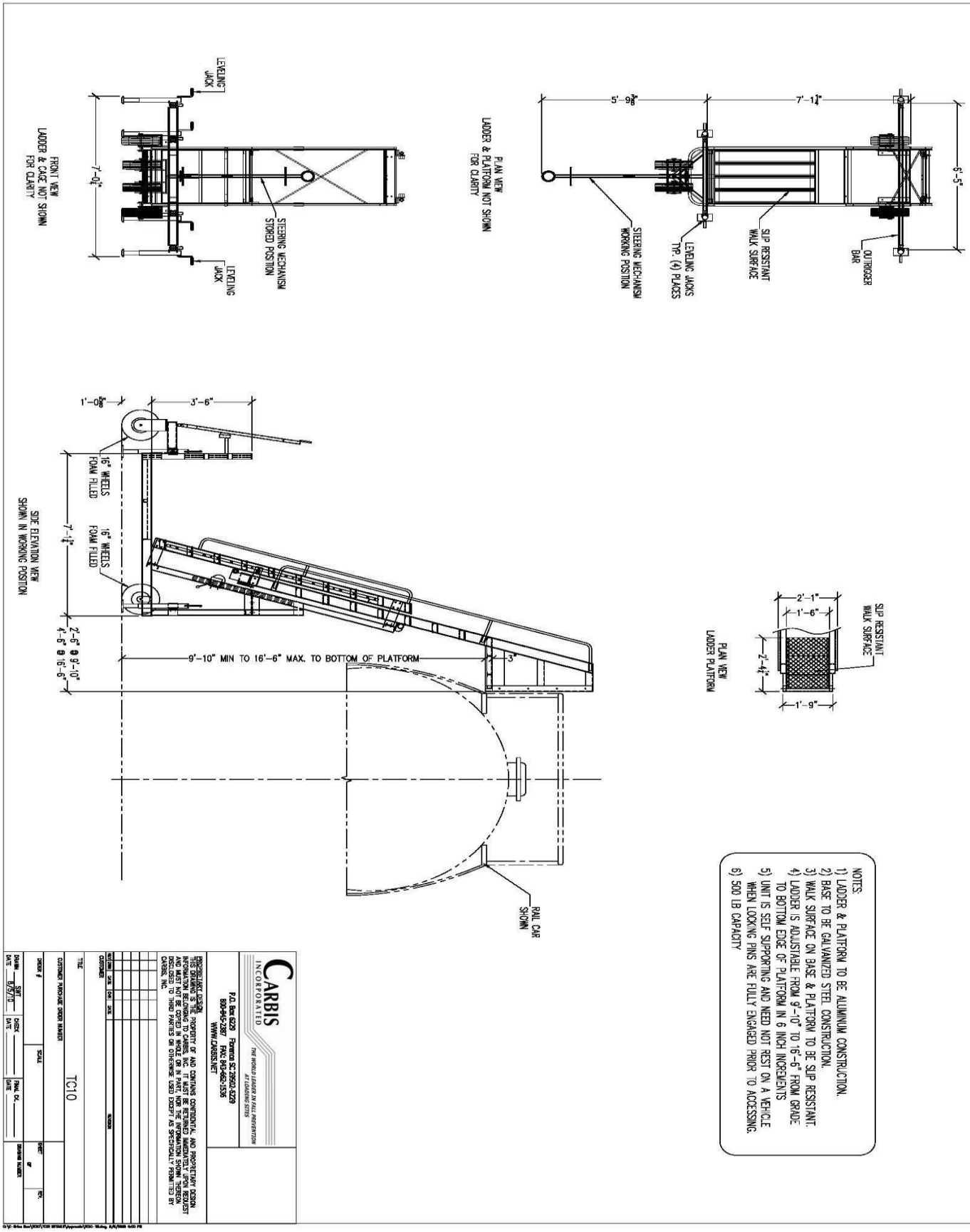


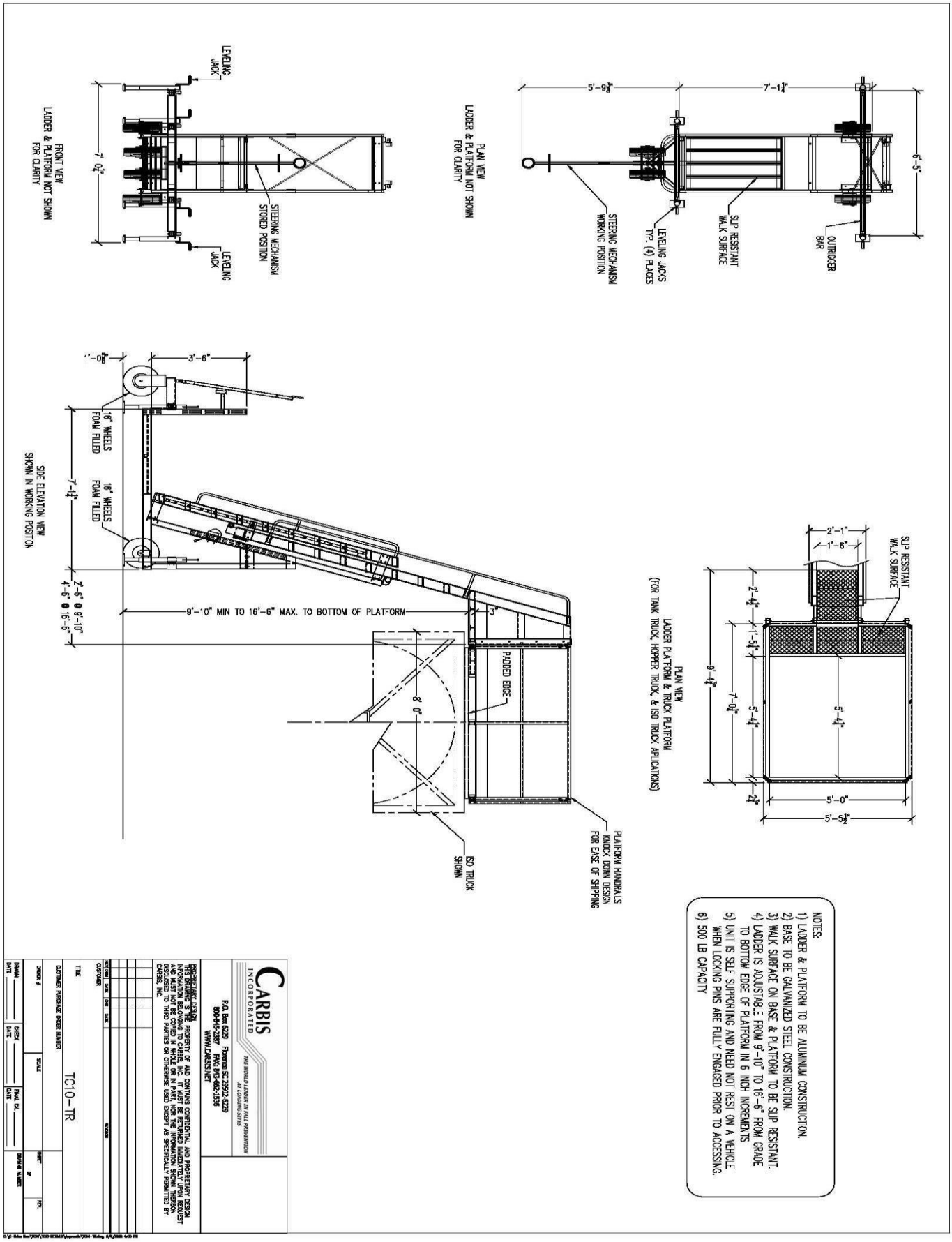
STEP 3

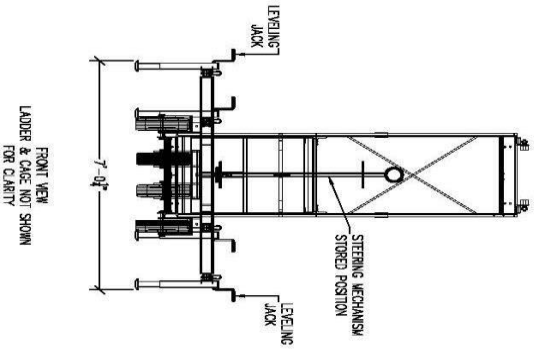
Space other clips equally between the first two no more than one base clip apart. Turn on the nuts, take up the rope slack, and tighten all nuts evenly on all clips to the rec- recommended torque.

WIRE ROPE CLIP INSTALLATION

8) SPECIFICATION SHEETS

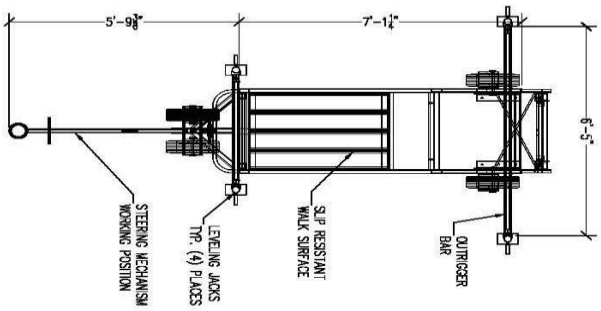


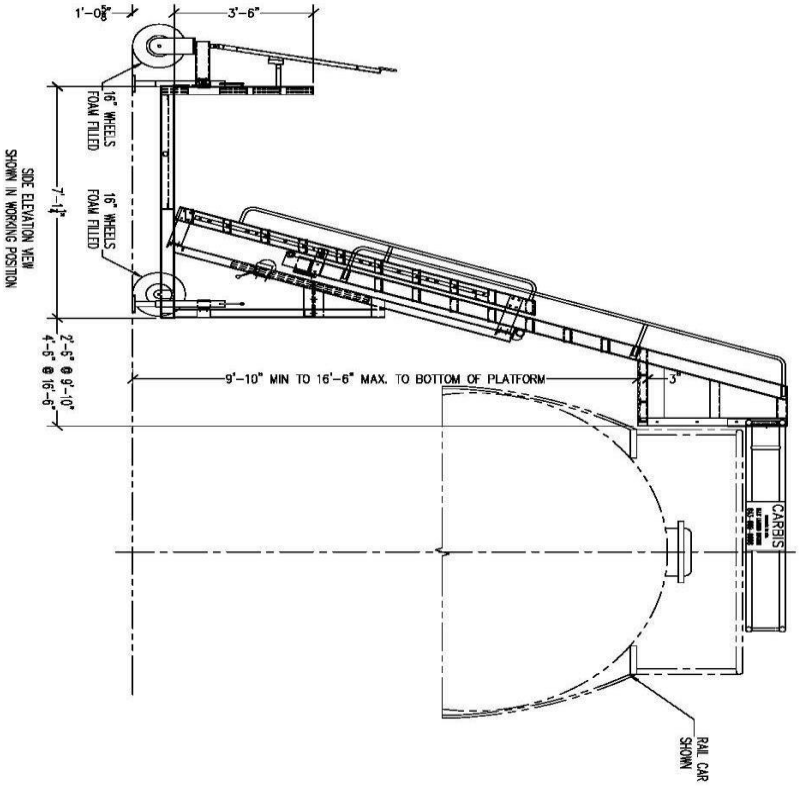




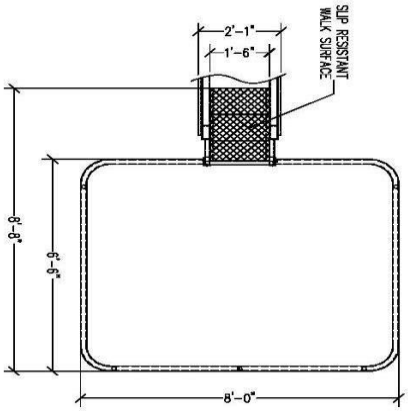
FRONT VIEW LADDER & CAGE NOT SHOWN FOR CLARITY

PLAN VIEW LADDER & PLATFORM NOT SHOWN FOR CLARITY





SIDE ELEVATION VIEW SHOWN IN WORKING POSITION



PLAN VIEW LADDER PLATFORM & RAIL CAR CAGE

NOTES:
1) LADDER & PLATFORM TO BE ALUMINUM CONSTRUCTION.
2) BASE TO BE GALVANIZED STEEL CONSTRUCTION.
3) WALK SURFACE ON BASE & PLATFORM TO BE SLIP RESISTANT.
4) LADDER IS ADJUSTABLE FROM 9'-10" TO 16'-6" FROM GRADE TO BOTTOM EDGE OF PLATFORM IN 6 INCH INCREMENTS
5) UNIT IS SELF SUPPORTING AND NEED NOT REST ON A VEHICLE WHEN LOCKING PINS ARE FULLY ENGAGED PRIOR TO ACCESSING.
6) 500 LB CAPACITY

CARBIS INCORPORATED
THE WORLD LEADER IN FALL PREVENTION AT LOADING SITES
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800-845-2387 FAX: 843-662-1536
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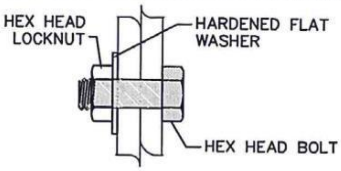
CUSTOMER
CUSTOMER PURCHASE ORDER NUMBER
TITLE
TC10-RC
DRAWN SKF 8/5/15
CHECK
APPR'D
SCALE
SHEET
REV.
DRAWING NUMBER

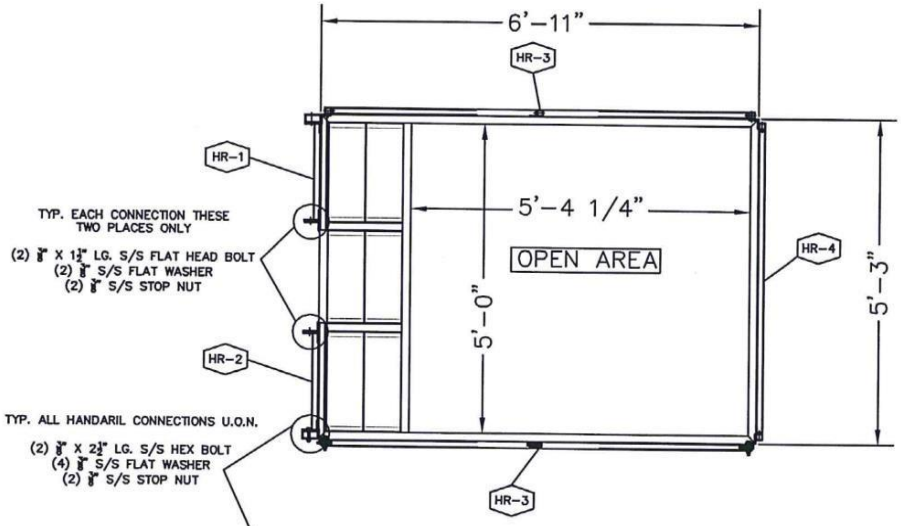
HANDRAIL TO ISO PLATFORM ASSEMBLY ONLY

LOCKNUT TIGHTENING REQUIREMENTS

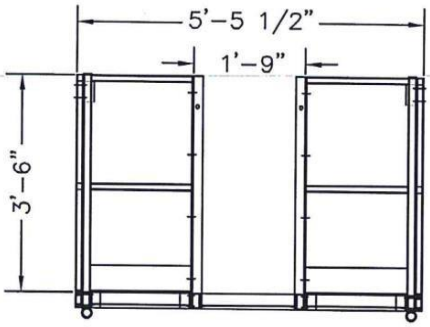


* BOLTS FITTED WITH LOCKNUTS OF ⅜" DIA. OR SMALLER SHOULD BE TIGHTENED TO A TORQUE OF 60 IN–POUNDS.

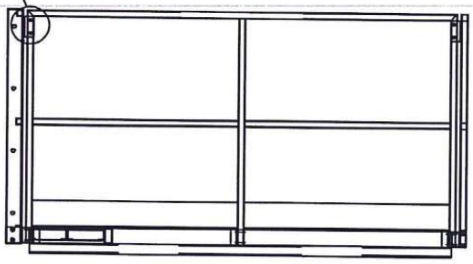
PART NO	QTY	DESCRIPTION	MAT'L
HR–1	1	LEFT FRONT HANDRAIL	A
HR–2	1	RIGHT FRONT HANDRAIL	A
HR–3	2	SIDE HANDRAIL	A
HR–4	1	BACK HANDRAIL	A



PLAN VIEW OF PLATFORM AND HANDRAILS

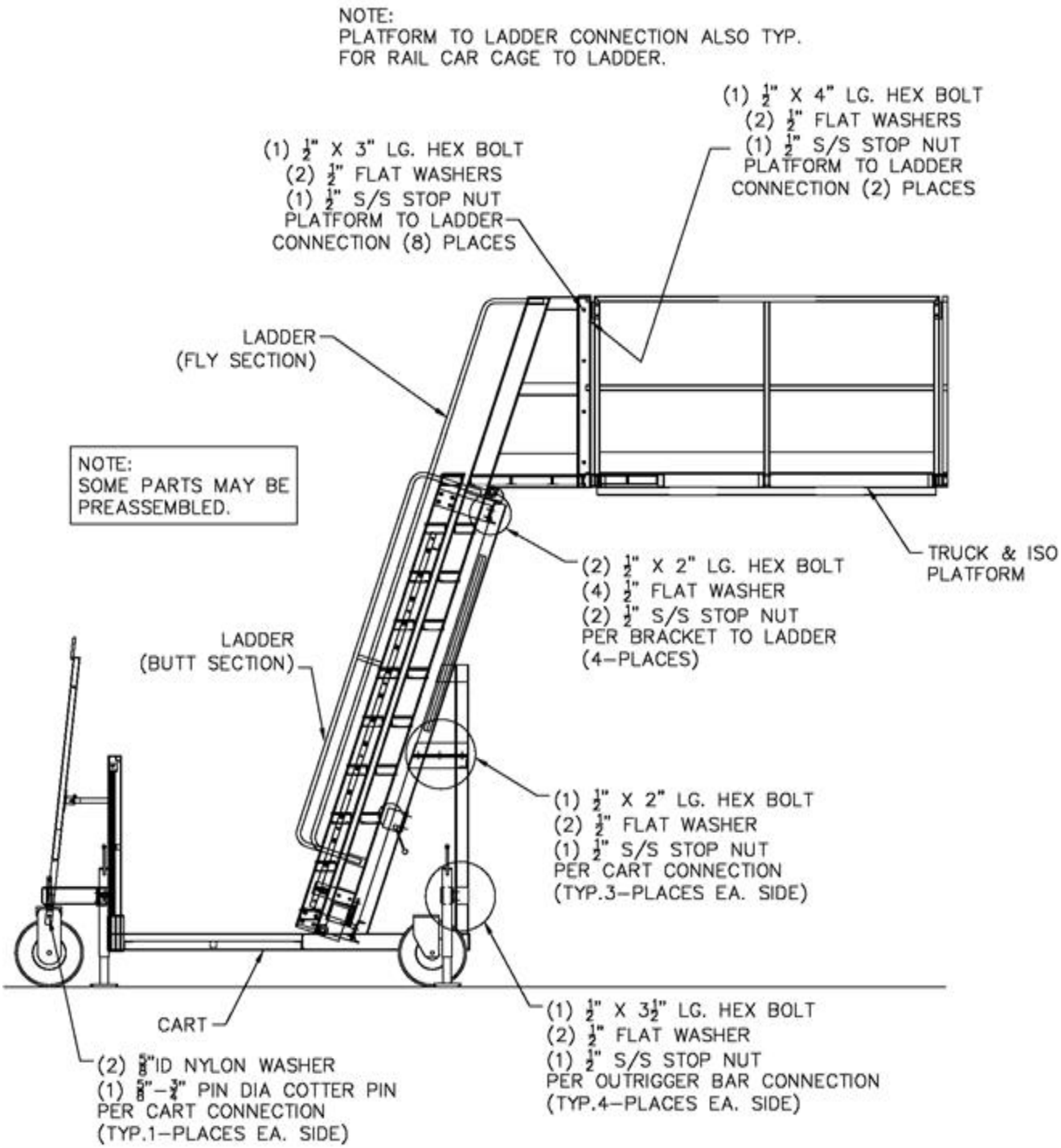


FRONT VIEW OF PLATFORM AND HANDRAILS

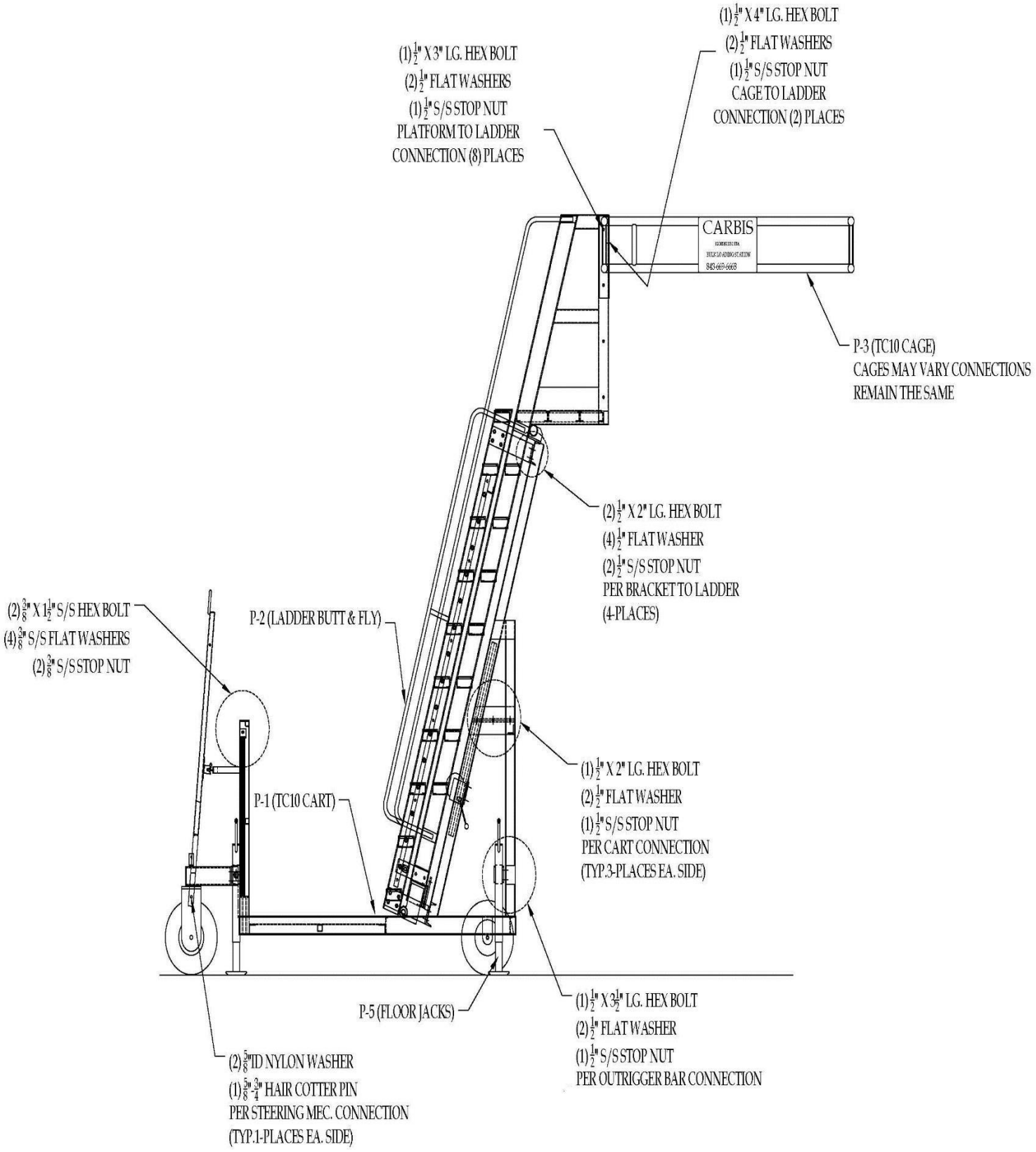


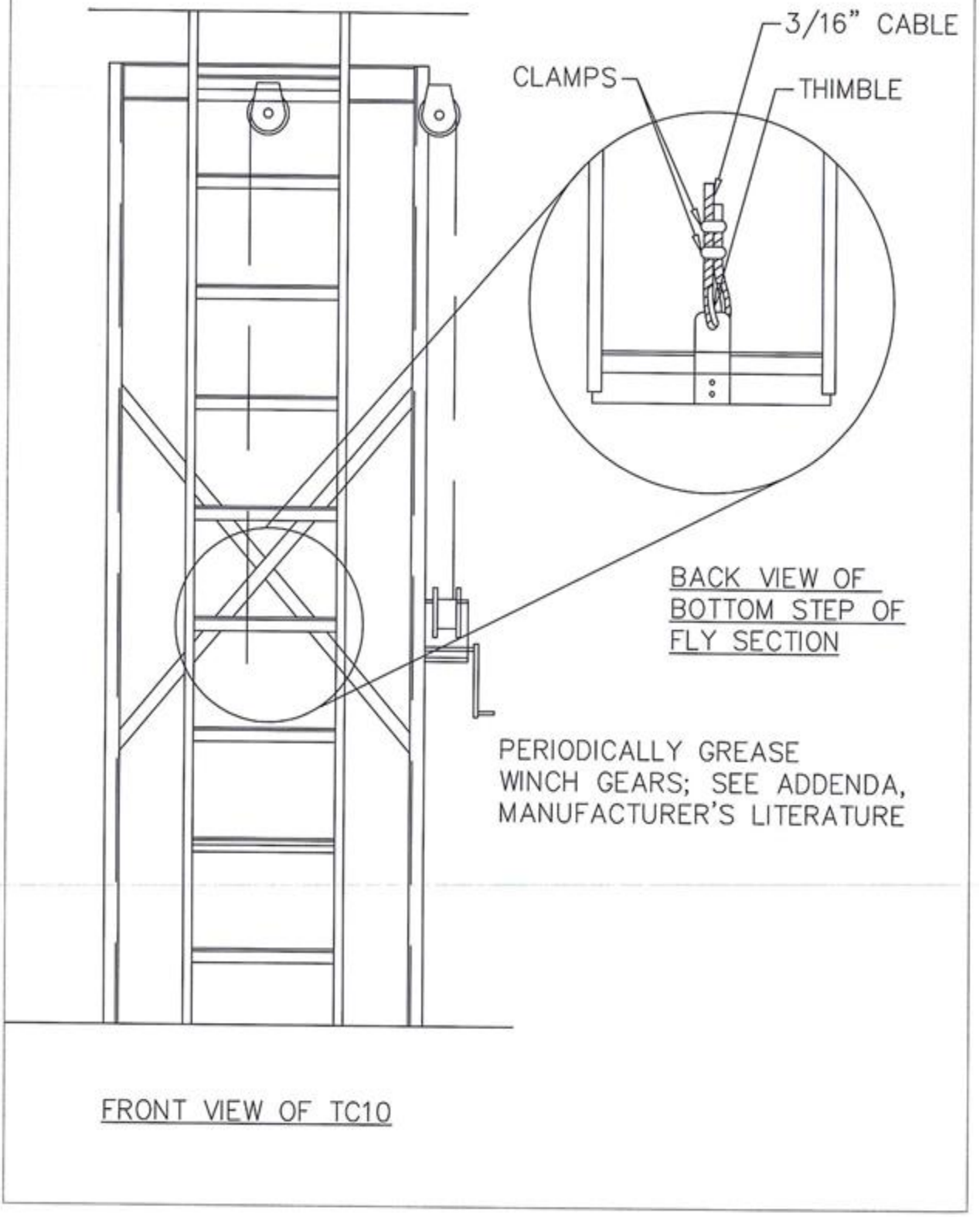
SIDE VIEW OF PLATFORM AND HANDRAILS

TC10 CART ASSEMBLY DRAWING



TC10 CART ASSEMBLY DRAWING





NOTES:

1. LADDER, INBOARD PLATFORM AND CAGE TO BE ALUMINUM CONSTRUCTION.
2. CART BASE, STEERING CASTER AND STEERING HANDLE TO BE GALVANIZED STEEL CONSTRUCTION.
3. ALL WALK SURFACES TO HAVE OPEN SERRATED METAL PLANK FLOORING.
4. CAGE AND INBOARD PLATFORM TO BOLT TO LADDER.
5. CAGE HAS A PADDED LOWER EDGE FOR VEHICLE PROTECTION.
6. LADDER IS ADJUSTABLE FROM 9'-10" MIN TO 16'-6" MAX FROM GRADE TO BOTTOM OF CAGE IN 6" INCREMENTS.
7. UNIT IS SELF SUPPORTING AND NEED NOT REST ON A VEHICLE WHEN LOCKING PINS ARE FULLY ENGAGED PRIOR TO ACCESS.
8. 500 LBS. CAPACITY (INCLUDING PPE, CLOTHING AND TOOLS)
9. MAXIMUM SUGGESTED EQUIPMENT WORKING WIND SPEED IS 35 MPH. IF EXCEEDED, UNIT SHOULD BE STORED FOR OPERATOR'S SAFETY.

WARNING:

CORRECT VEHICLE POSITIONING AND PROPER DEPLOYMENT OF CARBIS EQUIPMENT ARE IMPERATIVE TO ITS FUNCTION. INCORRECTLY POSITIONED VEHICLES, OR IMPROPER USE OF THIS EQUIPMENT, INCREASE THE RISK OF INJURY OR DEATH. CARBIS EQUIPMENT IS DESIGNED TO FUNCTION ONLY AS DESCRIBED IN THE MANUAL AND DEPICTED ON THE DRAWINGS. IT IS THE SOLE RESPONSIBILITY OF THE OWNER TO ENSURE USE OF CARBIS EQUIPMENT IS WITHIN THE SCOPE OF DESIGN AS SHOWN HEREIN.

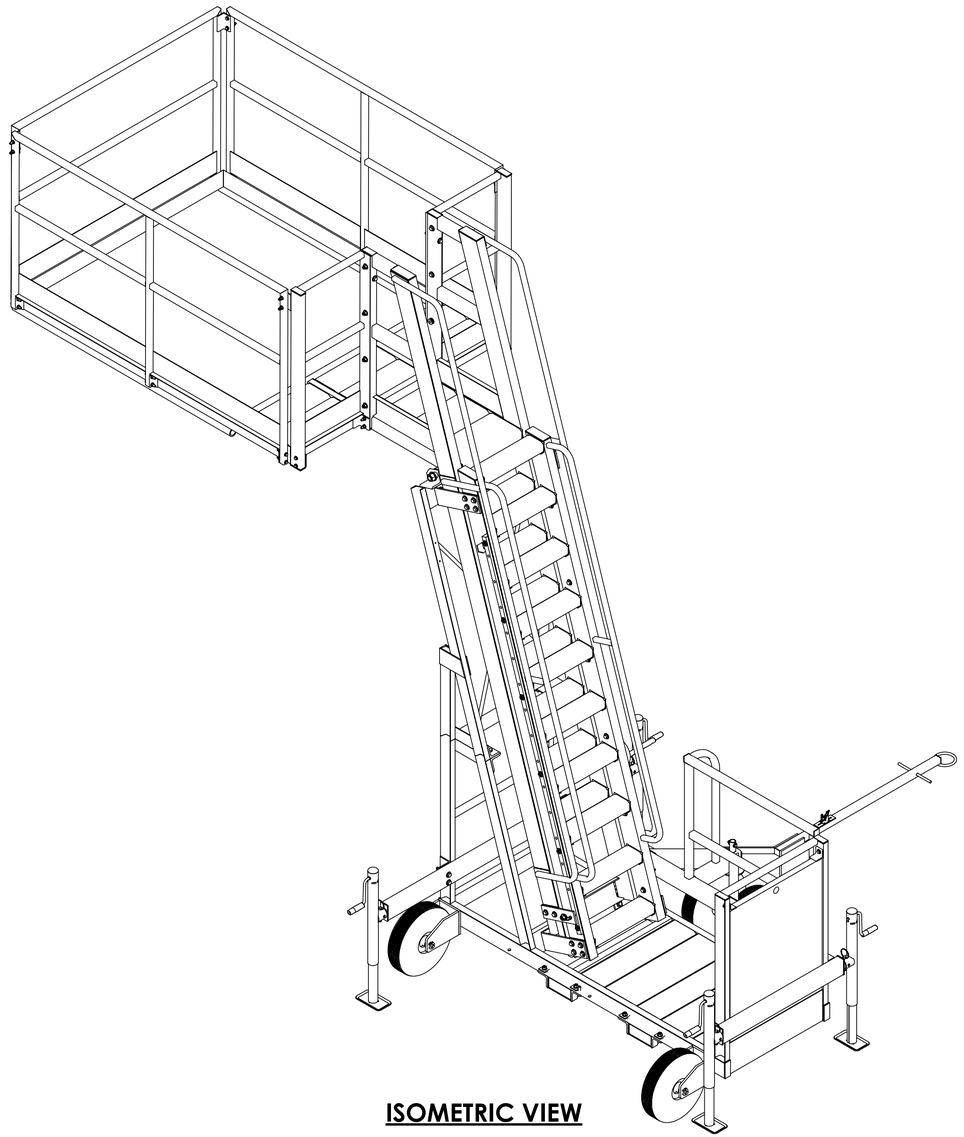
THERE IS A PATENT(S) PENDING FOR THE EQUIPMENT ON THIS DRAWING

LEGEND:

B.O.C. = BOTTOM OF CAGE
B.O.S. = BOTTOM OF STEEL
T.O.G.R. = TOP OF GUARDRAIL
T.O.W.S. = TOP OF WALK SURFACE
T.O.S. = TOP OF STEEL

DESIGN CRITERIA

LIVE LOADS	
TC10 CART	500 LBS (INCLUDES PPE, CLOTHING AND TOOLS)
HANDRAIL	200 LBS (ANY DIRECTION)



ISOMETRIC VIEW

REV.	DWN	DATE	CHK	DATE	REVISION
A	ST	12/07/2020			FOR APPROVAL ONLY-NOT FOR CONSTRUCTION

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WWW.CARBISSOLUTIONS.COM

CUSTOMER

TITLE
TC10 SIDE MOUNT CART ASSEMBLY

CUSTOMER PURCHASE ORDER NUMBER

WEIGHT 1892.0 LBS.

VIN

SCALE 1:16

SHEET 1 OF 3

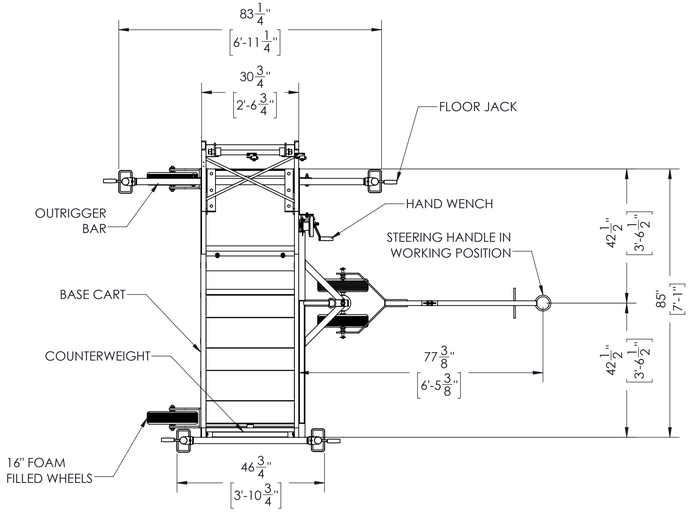
REV. B

DRAWN ST
DATE 12/07/2020

CHECK
DATE

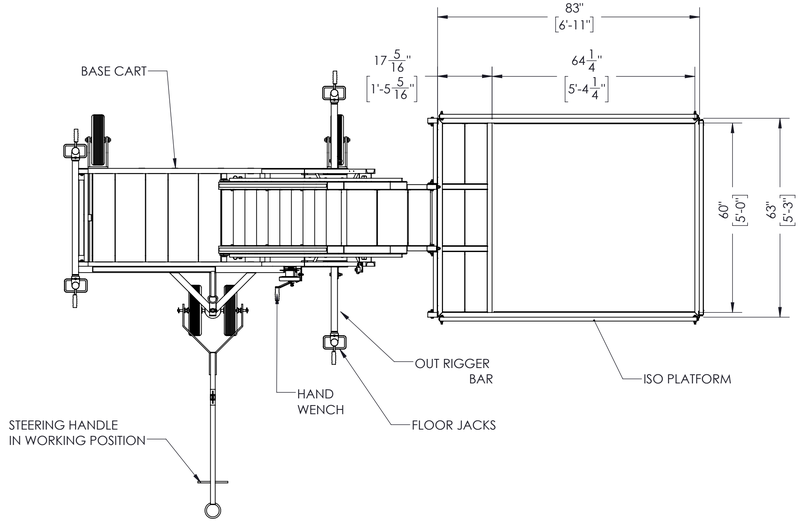
DRAWING NUMBER
STANDARD TC10 SIDE F01

THERE IS A PATENT(S) PENDING FOR THE EQUIPMENT ON THIS DRAWING



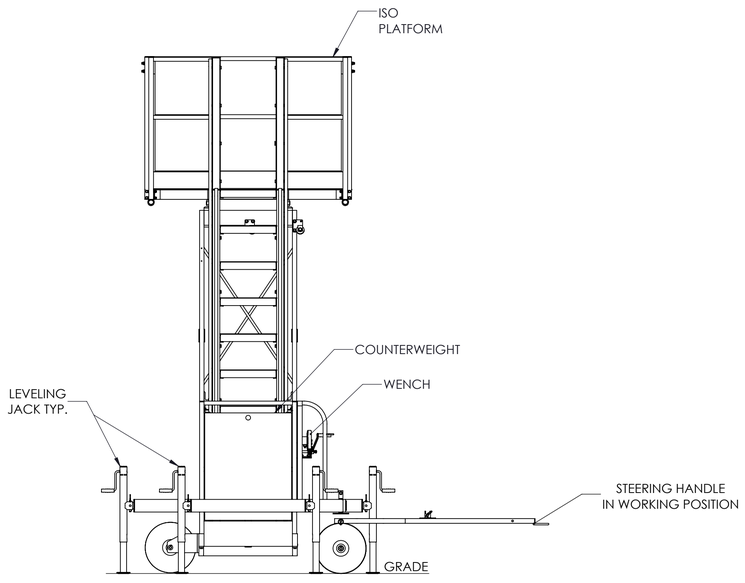
PLAN VIEW

SOME COMPONENTS NOT SHOWN FOR CLARITY



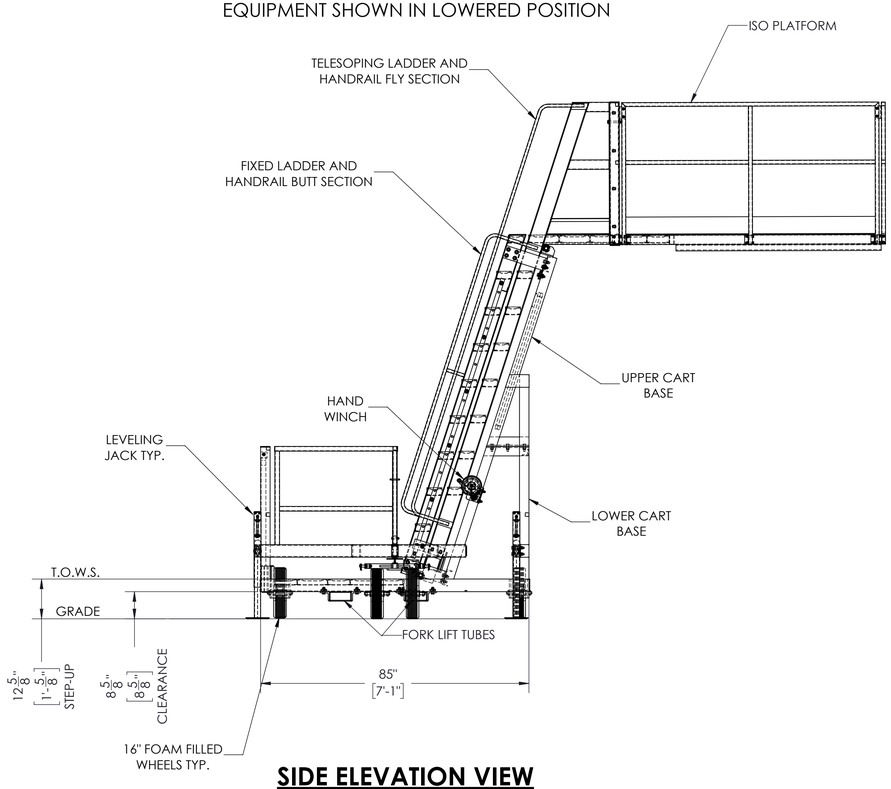
PLAN VIEW

EQUIPMENT SHOWN IN LOWERED POSITION



FRONT VIEW

SOME COMPONENTS NOT SHOWN FOR CLARITY



SIDE ELEVATION VIEW

EQUIPMENT SHOWN IN LOWERED POSITION

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CUSTOMER

TITLE
TC10 SIDE MOUNT CART ASSEMBLY

CUSTOMER PURCHASE ORDER NUMBER

WEIGHT 1892.0 LBS.

VIN

SCALE 1:24

SHEET 2 OF 3

REV. B

DRAWN ST DATE 12/07/2020

CHECK DATE

DRAWING NUMBER STANDARD TC10 SIDE F01

WARNING:
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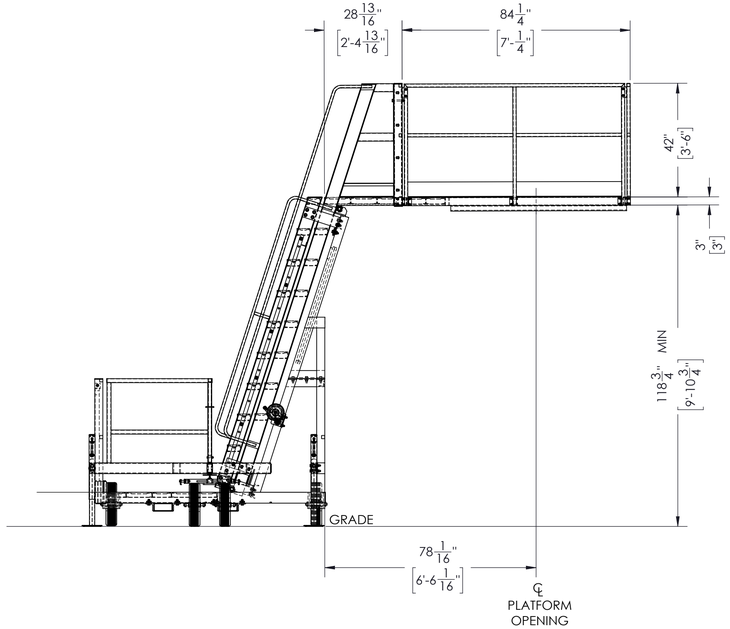
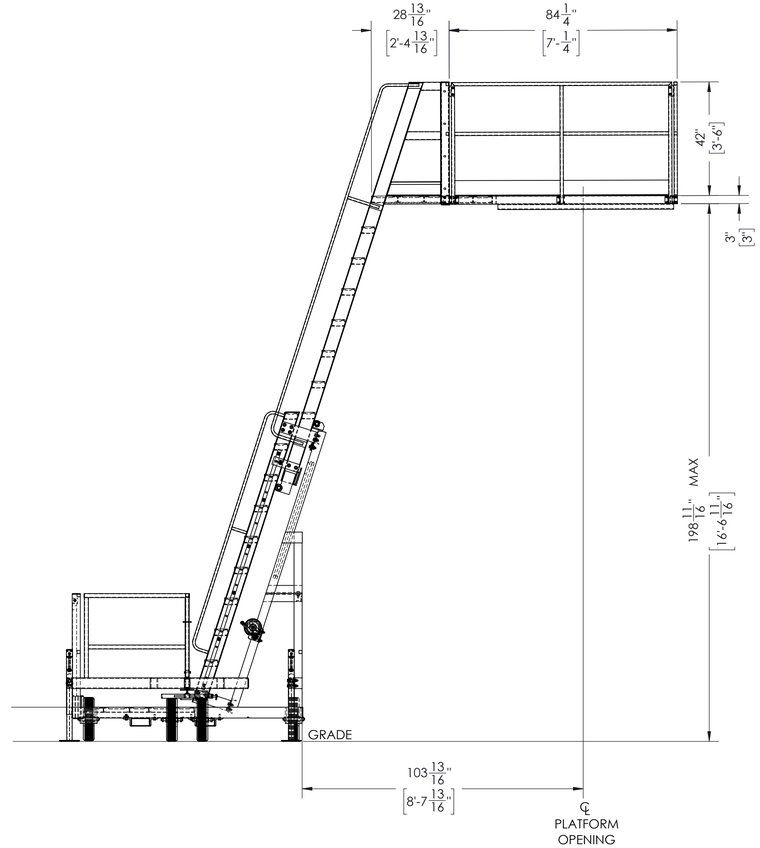
THERE IS A PATENT(S) PENDING FOR THE EQUIPMENT ON THIS DRAWING



ELEVATION VIEW
EQUIPMENT SHOWN IN LOWEST WORKING POSITION



ELEVATION VIEW
EQUIPMENT SHOWN IN HIGHEST WORKING POSITION

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CUSTOMER

TITLE
TC10 SIDE MOUNT CART ASSEMBLY

CUSTOMER PURCHASE ORDER NUMBER

WEIGHT
1892.0 LBS.

VIN

SCALE
1:28

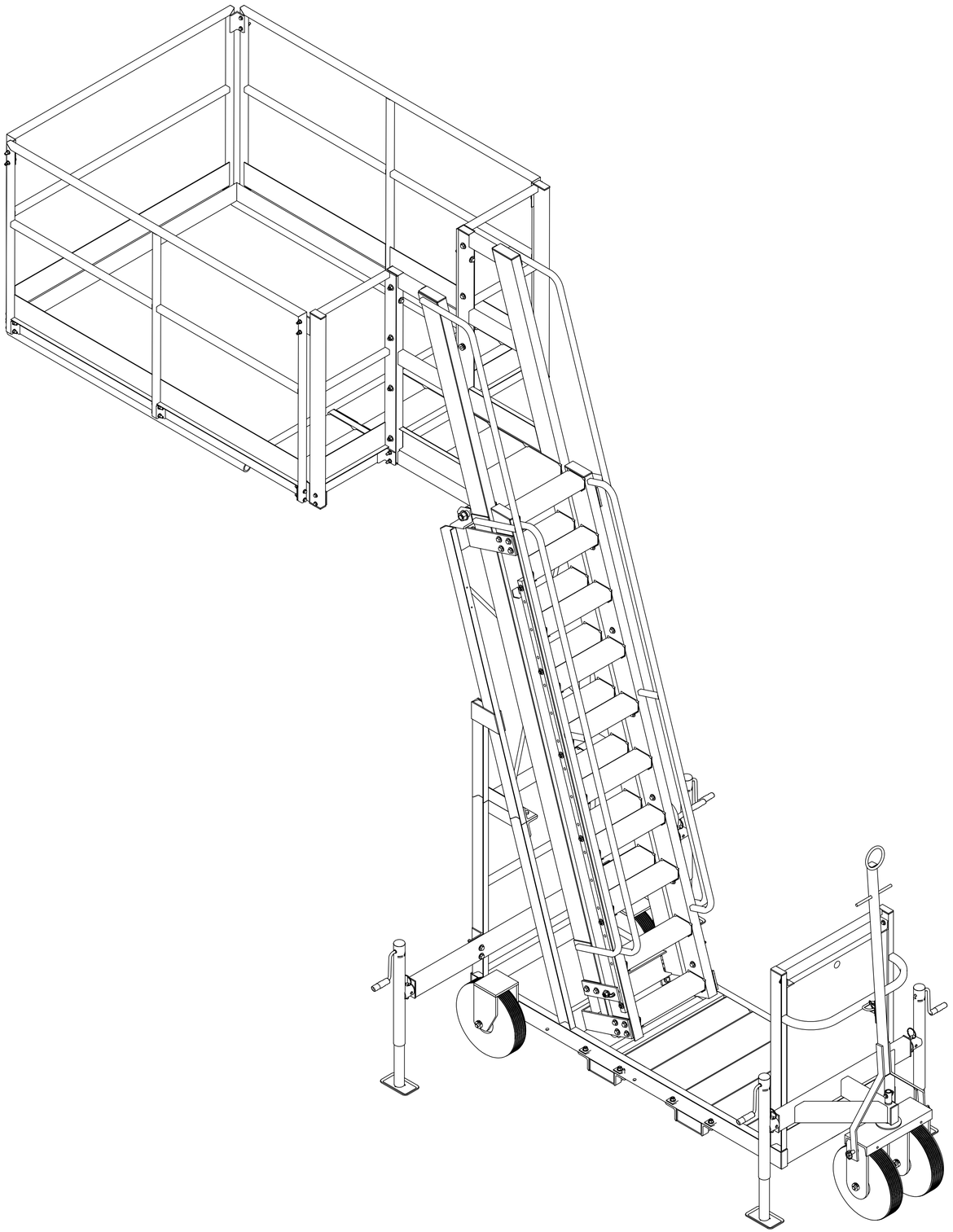
SHEET
3 OF 3

REV.
B

DRAWN ST
DATE 12/07/2020

CHECK
DATE

DRAWING NUMBER
STANDARD TC10 SIDE F01



ITEM NO.	QTY.	PART NUMBER	DESCRIPTION	WEIGHT (LBS.) / PIECE
1	1	P-1B	TC10 BOTTOM BASE ASSEMBLY, GALV. STL.	655.7
2	1	P-1T	TC10 TOP BASE ASSEMBLY, GALV. STL.	122.8
3	1	P-2	TC10 LADDER ASSEMBLY, ALUM	260.5
4	1	P-3	PLATFORM AND GRAB RAILS	149.2
5	1	P-4	TC10 COUNTERWEIGHT, GALV. STL.	398.0
6	2	P-5	TC10 GALV. STEEL FORK LIFT TUBE	44.4
7	1	TC6-S101	TC6 OUTRIGGER BAR	56.6
8	1	TC6-S103	STEERING CASTER	113.2
9	1	TC6-S104.1	TC CART STEERING HANDLE ASSEMBLY	16.4
10	1	TC6-S105	STEERING SPACER	0.3
11	2	TC4-G005	PULLEY MOUNT	1.5
12	1	WINCHDLB1200A	DLB1200A WINCH 05605110	1.2
13	4	FLRJACK2000	2000LB CAPACITY AG FLOOR JACK DUTTON LAINSON	1.7
14	1	0-24522	2-1/4" ID X .362 WIRE DIA WELDED D RING	0.2
15	2	BOLTSS.5X4.25	1/2"-13 X 4-1/4" SS HEX BOLT (30S)	0.04
16	4	BOLTSS.5X3.5	1/2"-13 X 3-1/2" SS HEX BOLT (27S)	0.03
17	8	BOLTSS.5X2.75	1/2"-13 X 2-3/4" SS HEX BOLT (24S)	0.03
18	6	BOLTSS.5X2	1/2"-13 X 2" SS HEX BOLT (21S)	0.02
19	8	BOLTSS.5X1.75	1/2"-13 X 1-3/4" SS HEX HEAD BOLT (20S)	0.02
20	50	WASHERFTSS.5	1/2" SS FLAT WASHER (82S)	0.003
21	28	NUTSTPSS.5	1/2"-13 SS STOP NUT (74S)	0.05
22	1	BOLTSS.375X2	3/8"-16 X 2" SS HEX BOLT (05S)	0.01
23	2	BOLTSS.375X1.5	3/8"-16 X 1-1/2" SS HEX BOLT (03S)	0.01
24	7	BOLTSS.375X1.25	3/8"-16 X 1-1/4" SS HEX BOLT (02S)	0.01
25	18	WASHERFTSS.375	3/8" SS FLAT WASHER (81S)	0.001
26	10	NUTSTPSS.375	3/8"-16 SS STOP NUT (73S)	0.020
27	12	BOLTGALV.5X1.75	1/2"-13 X 1-3/4" GALV HEX BOLT (20G)	
28	8	WASHERBVGALV.5	1/2" GALV BEVEL WASHER (86G) IRON	
29	8	WASHERFTGALV.5	1/2" GALV FLAT WASHER (82G)	0.002
30	8	NUTGALV.5	1/2"-13 HEX NUT GALV (70G)	0.01
31	2	WASHERBVGALV.375	3/8" GALV BEVEL WASHER (85G)	0.09
32	2	LIFTARMPIN21210	LIFT ARM PIN	0.5
33	1	UHMW5X.25	UHMW STEERING PAD	
34	2	LOCKPIN.1875X1.625	LOCKING PIN WITH RING	0.007

EXTRA HARDWARE		
QTY	PART NUMBER	DESCRIPTION
1	LOCTITE38181	PKG OF ANTI SEIZE
1	0-21183	3/16" ROPE THIMBLE
1	BOLTSS.5X2	1/2"-13 X 2" SS BOLT
1	BOLTSS.5X3.5	1/2"-13 X 3 1/2" SS BOLT
1	BOLTSS.5X4	1/2"-13 X 4" SS BOLT
1	BOLTSS.5X3	1/2"-13 X 3" SS BOLT
2	NUTSTPSS.5	1/2"-13 SS STOP NUT
4	WASHERFLTSS.5	1/2" SS FLAT WASHER
2	BOLTSS.375X2.5	3/8"-16 X 2 1/2" SS BOLT
1	BOLTFHSS.375X1.5	3/8"-16 X 1 1/2" FLATHEAD BOLT
2	NUTSTPSS.375	3/8"-16 SS STOP NUT
4	WASHERFLTSS.376	3/8" SS FLAT WASHER
1	COTTERPIN.625TO.75	HAIR PIN COTTER
2	WSHNY.625X1.25X.125	5/8" ID X 1 1/2" OD NYLON WASHER

REV.	DWN	DATE	CHK	DATE	REVISION
A	ST	12/10/2020			FOR APPROVAL ONLY-NOT FOR CONSTRUCTION

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CUSTOMER

TITLE
MODIFED TC10 CART ASSEMBLY

CUSTOMER PURCHASE ORDER NUMBER

WEIGHT
1878.7 LBS.

VIN

SCALE
1:24

SHEET
1 OF 2

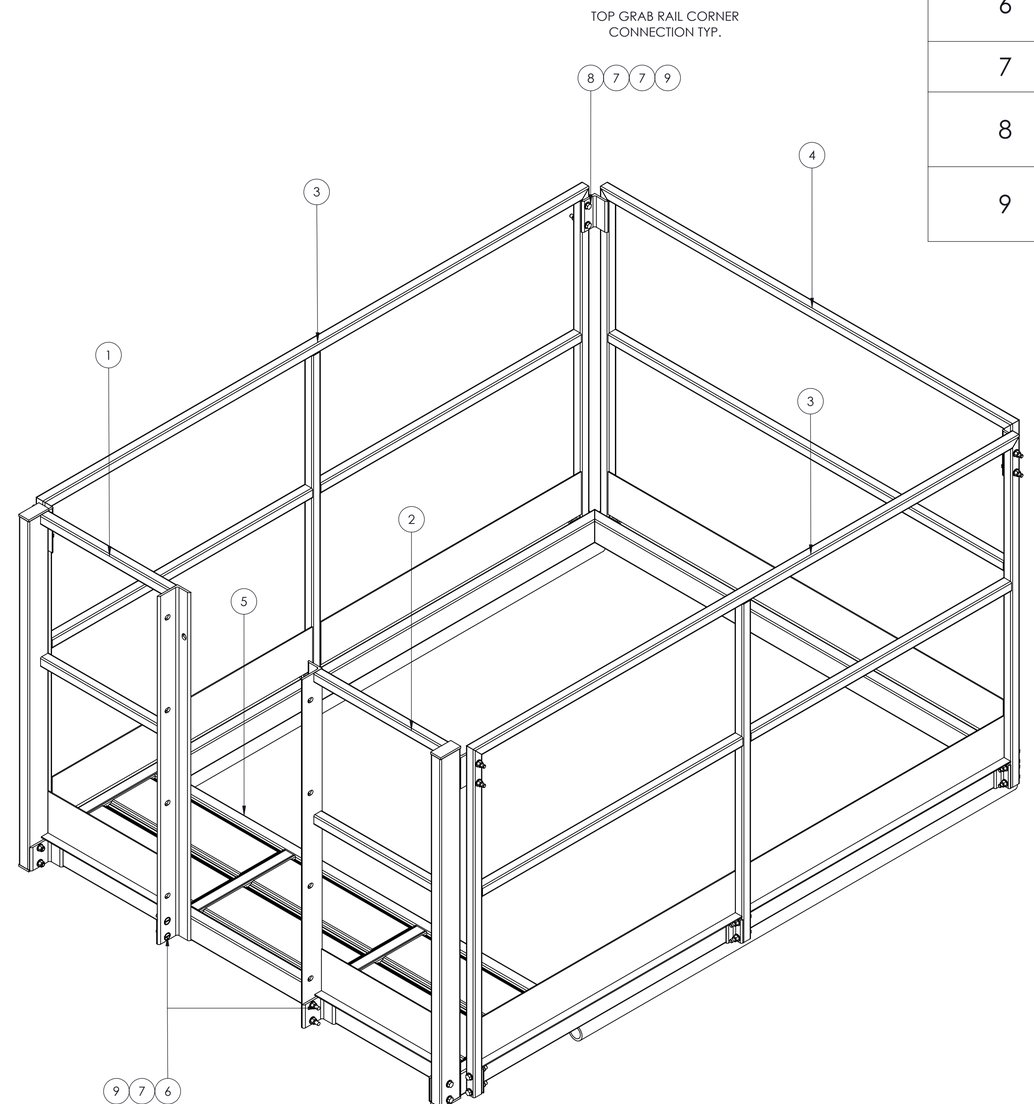
REV.
A

DRAWN ST
DATE 12/10/2020

CHECK ST
DATE 2/17/2021

DRAWING NUMBER
STANDARD TC10 E01

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION	MATERIAL	WEIGHT (LBS.)
1	1	GR-1	TC10 LEFT FRONT GRAB RAIL GR-1	6063-T52	13.8
2	1	GR-2	TC10 RIGHT FRONT GRAB RAIL GR-2	6063-T5	13.8
3	2	GR-3	TC10 SIDE GRAB RAIL GR-3	6063-T52	21.5
4	1	GR-4	TC10 OUTBOARD GRAB RAIL GR-4	6063-T52	16.3
5	1	P-3	TC10 SEATAINER PLATFORM P-3	6063-T5	61.2
6	4	BOLTFHSS.375X1.5	3/8-16 X 1 1/2 F.H. SLTD. M/S 18-8 SS	18-8 STAINLESS STEEL	
7	60	WASHERFTGALV.375	3/8" GALV FLAT WASHER (81G)	ASTM F436	0.001
8	28	BOLTSS.375X2.5	3/8"-16 X 2-1/2" SS HEX BOLT (07S)	18-8 STAINLESS STEEL	0.01
9	32	NUTSTPSS.375	3/8"-16 SS STOP NUT (73S)	18-8 STAINLESS STEEL	0.020



BOTTOM GRAB RAIL CONNECTION (4-PLACES)

BOTTOM GRAB RAIL CONNECTION TYP. U.N.O.

REV.	DWN	DATE	CHK	DATE	REVISION
A	ST	12/10/2020	ST	2/17/2021	INITIAL RELEASE

TITLE
PLATFORM AND GRAB RAILS

VIN

WEIGHT
149.2 LBS.

FABRICATION

SCALE 1:12

SHEET 2 OF 2

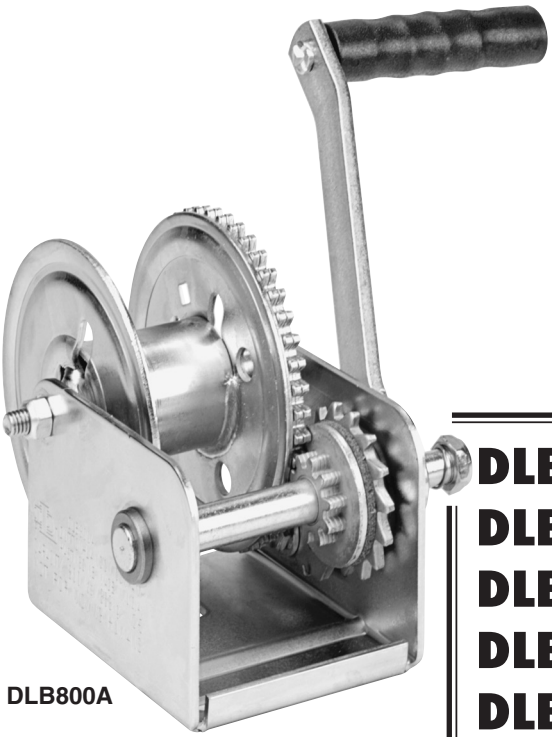
REV. A

DRAWN ST DATE 12/10/2020

CHECK ST DATE 2/17/2021

ORDER NUMBER/PART NUMBER STANDARD TC10 E01

BRAKE WINCHES



DLB800A

DLB350A
DLB350AG
DLB800A
DLB800AG
DLB1200A
DLB1200AG
DLB1500A
DLB1500AG
DLB2000AG
DLB2500A

MANUFACTURED BY **MADE IN U.S.A.**

DUTTON-LAINSON COMPANY *SINCE 1886*

451 West 2nd St. • Hastings, NE 68902-0729 • TEL: 402-462-4141 • FAX: 402-460-4612
Web Site www.dutton-lainson.com

ISO 9001 Certified Q.M.S.

Dwg. No. 206306DD 7/19

⚠ WARNING READ INSTRUCTIONS CAREFULLY BEFORE ATTEMPTING TO INSTALL, OPERATE OR SERVICE THIS WINCH. FAILURE TO COMPLY WITH INSTRUCTIONS COULD RESULT IN SERIOUS OR FATAL INJURY. RETAIN THESE INSTRUCTIONS FOR FUTURE REFERENCE.

⚠ IMPORTANT SAFETY INFORMATION

- This brake winch is built for multi-purpose hauling and lifting operations. It is not to be used as a hoist for lifting, supporting or transporting people, or for loads over areas where people could be present.
- Respect this winch. High forces are created when using a winch, creating potential safety hazards. It should be operated and maintained in accordance with instructions. Never allow children or anyone who is not familiar with the operation of the winch to use it. A winch accident could result in personal injury.
- Check winch for proper operation on each use. Do not use if damaged. Seek immediate repairs.
- Never exceed rated capacity. Excess load may cause premature failure and could result in serious personal injury. This winch is rated on first layer of cable on the hub. Using more layers of cable increases the load on the winch.
- Never apply load on winch with cable fully extended. Keep at least three full turns of cable on the reel. Check cable on every use. Replace at the first sign of kinks, broken wires, deformation or any other damage.
- Secure load properly. When winching operation is complete, do not depend on winch to support load.
- Operate with hand power only. This winch must not be operated with a motor of any kind. If the winch cannot be cranked easily with one hand, it is probably over-loaded.
- If winch will be used in freezing, icy conditions, apply silicone spray to ratchet pawl and spacer items, V, W, X, or Y. Do not spray other brake mechanism parts.

ASSEMBLY – Thread the handle onto the winch drive shaft and be certain that a clicking noise is produced when the handle is turned clockwise. Install the spring and locknut (Items E and G) on the end of the drive shaft as shown on parts drawing. These parts may appear to serve no function, but they provide several important fail-safe features, and must not be altered or removed.

WINCH MOUNTING AND CABLE ATTACHMENT – For maximum strength and safety, this winch must be mounted with three 3/8" bolts (M10), washers and lock washers. Use Grade 8 for 1500 lb/680 kg or greater capacity. (See parts drawing). Using fewer bolts or alternate locations will result in damage to the winch base and the winch may malfunction.

Attach cable or rope by method shown in sketch.

OPERATING INSTRUCTIONS – Wind cable on winch reel by turning winch handle in clockwise direction. This should produce a loud, sharp, clicking noise. The load will remain in position when the handle is released. Wind cable off the winch reel by turning winch handle counterclockwise (no noise will be produced). The load will remain in position when the handle is released, but for extra security it is recommended that the handle be turned clockwise until at least two clicks are heard. This will add extra tightness to the brake mechanism. Always satisfy yourself that the winch is holding the load before releasing the winch handle.

⚠ IMPORTANT: Sufficient load must be applied to the cable to overcome internal resistance and operate the brake properly, otherwise turning the crank handle counterclockwise will only remove the handle from the shaft – the reel will not turn. The minimum operating load requirement is 50 lb (23 kg) for Models DLB350A, DLB350AG, DLB800A, DLB800AG, DLB1200A and DLB1200AG, 75 lb (34 kg) for DLB1500A and DLB1500AG, 175 lb (80 kg) for DLB2000AG and DLB2500A.

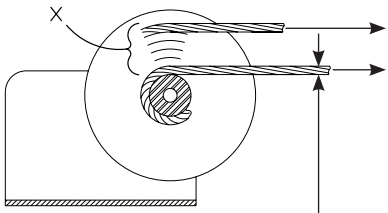
A lockout lever for the purpose of 'freewheeling' cable out when there is no load on the winch can be added to all DLB winches except the 350 lb (160 kg) models. To 'freewheel' cable out, simply turn the handle counterclockwise until lockout lever can be engaged behind handle hub. In this condition cable can be easily pulled from the winch drum.

⚠ WARNING: Never put winch in freewheel mode if any potential for a load on the cable exists. Engaging the lockout lever keeps the winch from stopping in the event that a load is accidentally applied.

WINCH MAINTENANCE – In order to insure maximum performance, a periodic inspection for any necessary preventive maintenance must be made. Check at least once annually and more frequently when the winch is exposed to an environment which is particularly dirty or wet. For continued smooth performance and increased life, occasionally grease gears, reel shaft and handle threads. An occasional drop of oil on the drive shaft bearings is also recommended. If winch will be used in freezing, icy conditions, apply silicone spray to ratchet pawl and spacer items V, W, X or Y. **Note: Do not oil or grease brake mechanism items H and J.**

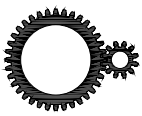
Keep winch in good working order. Damaged or severely-worn parts create unnecessary dangers and could result in personal injury or property damage.

NOT FOR THE MOVEMENT OF HUMAN BEINGS



	X	
DLB350A, DLB350AG	10 1	110 lb/50kg 350 lb/159kg
DLB800A, DLB800AG	9 1	330 lb/150kg 800 lb/363kg
DLB1200A, DLB1200AG	8 1	551 lb/250kg 1200 lb/544kg
DLB1500A, DLB1500AG	6 1	728 lb/330kg 1500 lb/680kg
DLB2000AG	5 1	959 lb/435kg 2000 lb/905kg
DLB2500A	5 1	1308 lb/593kg 2500 lb/1134kg

DLB350A DLB350AG	3.2:1
DLB800A DLB800AG	4.4:1
DLB1200A DLB1200AG	5.4:1
DLB1500A DLB1500AG	5.4:1
DLB2000AG DLB2500A	17.3:1



DLB350A	1/8" (2000 lb) x 84'
DLB350AG	3mm (480kg) x 24.9m
DLB800A	3/16" (4200 lb) x 68'
DLB800AG	4mm (1080kg) x 23.0m
DLB1200A	7/32" (5600 lb) x 69'
DLB1200AG	5mm (1640kg) x 19.7m
DLB1500A	1/4" (7000 lb) x 60'
DLB1500AG	6mm (2040kg) x 15.1m
DLB2000AG	7mm (2720kg) x 8.9m
DLB2500A	5/16" (9800 lb) x 34'

ENGLISH – DECLARATION OF CONFORMITY - Dutton-Lainson Company, Hastings, NE 68902-0729 U.S.A. manufactures and declares that the winch identified above fulfills all relevant provisions of the Directive 2006/42/EC. 'G' models also conform to harmonized standards EN 13157 and EN ISO 12100. The technical file may be obtained from the persons listed below.

DEUTSCH – KONFORMITÄTSERKLÄRUNG - Dutton-Lainson Company, Hastings, NE 68902-0729, USA, der Hersteller der Winde, erklärt, dass die oben angegebene Winde alle relevanten Bestimmungen der Richtlinie 2006/42/EG erfüllt. Die ‚G'-Modelle entsprechen außerdem den harmonisierten Normen EN 13157 und EN ISO 12100. Die technischen Unterlagen sind bei den nachfolgend aufgeführten Personen erhältlich.

ITALIANO – DICHIARAZIONE DI CONFORMITÀ - Il fabbricante, Dutton-Lainson Company, Hastings, NE 68902-0729 USA, dichiara che il verricello di cui sopra è conforme alle disposizioni della direttiva 2006/42/CE e che i modelli 'G' sono inoltre conformi alle norme armonizzate EN 13157 e EN ISO 12100. Il fascicolo tecnico può essere richiesto agli individui indicati qui di seguito.

NORSK – SAMSVARSERKLÆRING - Dutton-Lainson Company, Hastings, NE 68902-0729 U.S.A. produserer og erklærer at vinsjen angitt ovenfor oppfyller alle relevante krav i direktivet 2006/42/EC. "G"-modellene samsvarer også med de harmoniserte standardene EN 13157 og EN ISO 12100. Den tekniske filen kan skaffes fra personene som er opplistet nedenfor.

PORTUGUÊS – DECLARAÇÃO DE CONFORMIDADE - A empresa Dutton-Lainson Company, Hastings, NE 68902-0729, nos E.U.A., fabrica o guincho acima identificado e declara que este cumpre todas as provisões relevantes da Directiva 2006/42/CE. Os modelos "G" cumprem também as normas harmonizadas EN 13157 e EN ISO 12100. Poderá obter o processo técnico junto das pessoas indicadas abaixo.

ESPAÑOL – DECLARACION DE HOMOLOGACION - Dutton-Lainson Company, de Hastings, NE 68902-0729 EE.UU., fabrica y declara que el cabrestante arriba identificado satisface todas las provisiones pertinentes de la directriz 2006/42/EC. Los modelos 'G' también satisfacen las normas armonizadas EN 13157 y EN ISO 12100. El archivo técnico puede obtenerse de las personas mencionadas a continuación.

SVENSKA – FÖRSÄKRAN OM ÖVERENSSTÄMMELSE - Dutton-Lainson Company, Hastings, Nebraska 68902-0729 U.S.A, tillverkar och försäkrar att denna vinsch överensstämmer med alla tillämpliga bestämmelser i Direktiv 2006/42/EC. 'G'-modeller är också förenliga med samordnade normer EN 13157 och EN ISO 12100. Den tekniska filen kan erhållas från de personer, som upptas nedan.

ΕΛΛΗΝΙΚΑ – ΔΗΛΩΣΗ ΣΥΜΜΟΡΦΩΣΗΣ - Η Dutton-Lainson Company, Hastings, NE 68902-0729 U.S.A. κατασκευάζει και δηλώνει ότι το βαρούλκο που καθορίζεται παραπάνω πληροί όλες τις σχετικές διατάξεις της Οδηγίας 2006/42/ΕΚ. Τα μοντέλα 'G' επίσης συμμορφώνονται με τα εναρμονισμένα πρότυπα EN 13157 και EN ISO 12100. Ο τεχνικός φάκελος είναι διαθέσιμος από τα άτομα τα οποία αναγράφονται παρακάτω.

DANSK – OVERENSSTEMMELSESERKLÆRING - Dutton-Lainson Company, Hastings, NE 68902-0729 USA fremstiller og erklærer, at skraldespillet identificeret ovenfor er i overensstemmelse med alle relevante krav i direktiv 2006/42/EU. "G" modeller er ligeledes i overensstemmelse med de harmoniserede standarder EN 13157 og EN ISO 12100. Den tekniske fil kan rekvireres gennem de nedennævnte personer.

SUOMI – VAATIMUSTENMUKAISUUSVAKUUTUS - Dutton-Lainson Company, osoite Hastings, NE 68902-0729 U.S.A, vakuuttaa tämän vintturin valmistajana, että tämä vintturi noudattaa direktiivin 2006/42/EY olennaisia määräyksiä. G-mallit ovat myös harmonisoitujen standardien EN 13157:n ja EN ISO 12100 mukaisia. Tekniset tiedot on saatavissa alla ilmoitetuilta henkilöiltä.

NEDERLANDS – VERKLARING VAN OVEREENSTEMMING - Dutton-Lainson Company, Hastings, NE 68902-0729 VS, fabrikant, verklaart dat de bovengenoemde lier voldoet aan alle betreffende bepalingen van richtlijn 2006/42/EC. 'G' modellen voldoen ook aan de geharmoniseerde normen EN 13157 en EN ISO 12100. Het technische bestand kan bij de hierna vermelde personen worden aangevraagd.

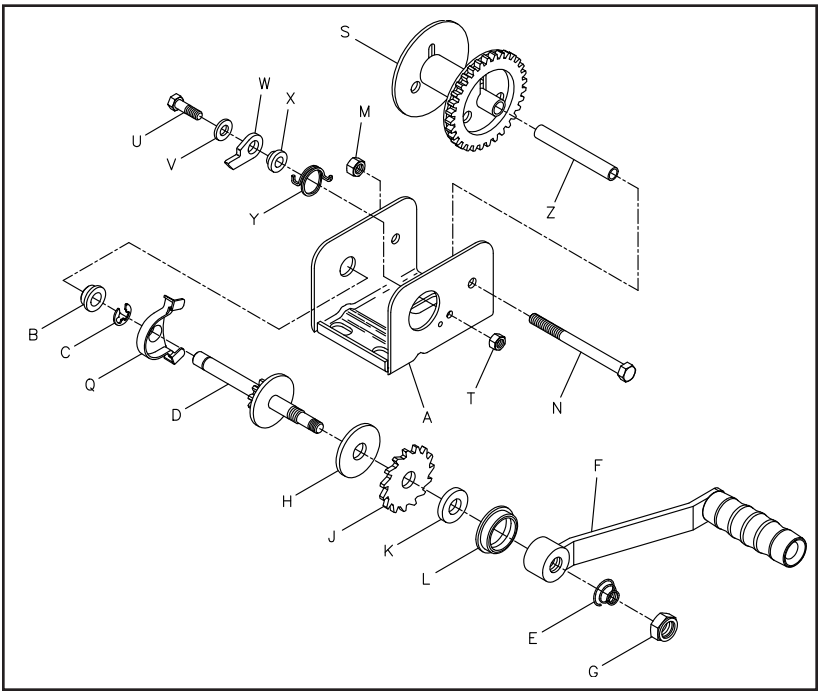
FRANÇAIS – DÉCLARATION DE CONFORMITÉ - Dutton-Lainson Company, Hastings, NE 68902-0729 U.S.A. construit le treuil mentionné ci-dessus et déclare qu'il répond à toutes les dispositions applicables de la Directive 2006/42/CE. Les modèles 'G' sont également conformes aux normes harmonisées EN 13157 et EN ISO 12100. Le dossier technique peut être obtenu auprès des personnes indiquées ci-dessous.

Hastings, NE USA
February 6, 2019

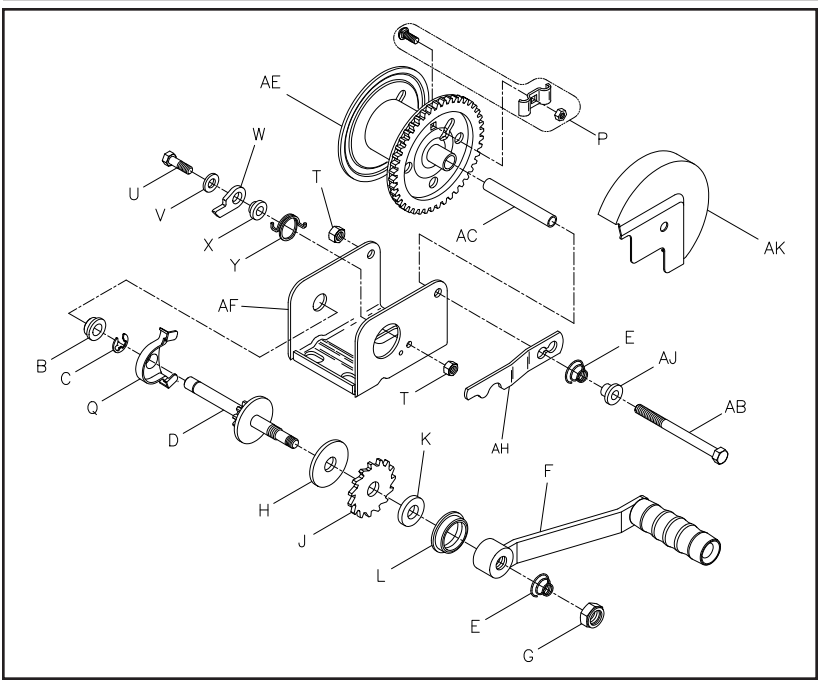
Director of Engineering
Dutton-Lainson Company

Jack Singleton
Bainbridge International Limited
8 Flanders Park, Hedge End, Southampton,
Hampshire, SO30 2FZ UK

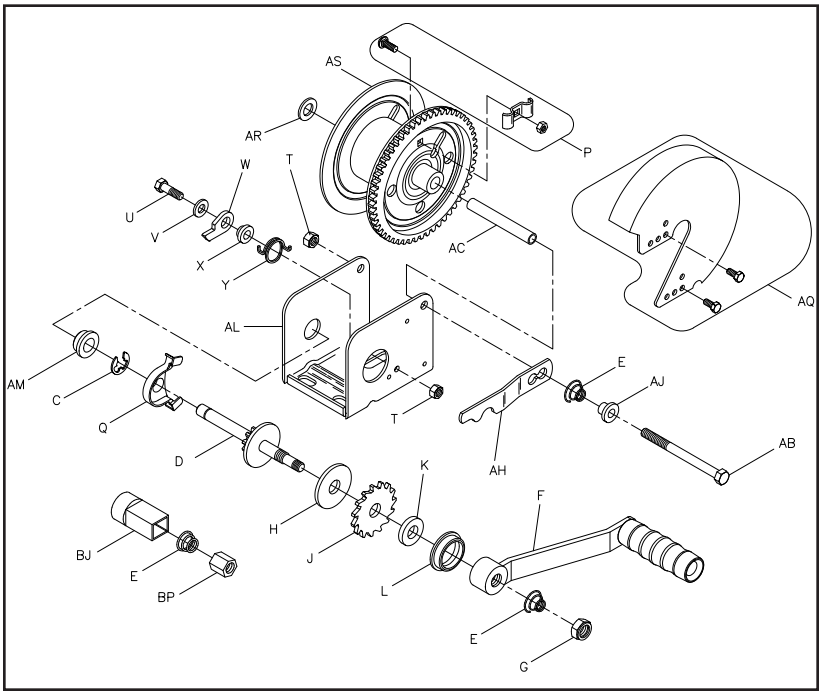
DLB350A & DLB350AG Winch



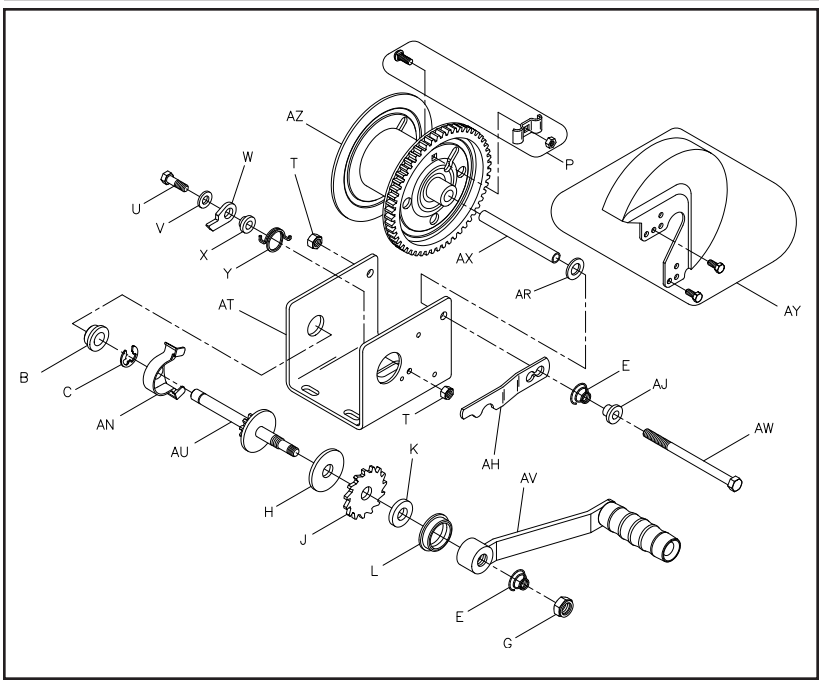
DLB800A & DLB800AG Winch



DLB1200A & DLB1200AG Winch



DLB1500A & DLB1500AG Winch



PARTS LIST

Ref	Description	Part No.
A	Base	404900*
A	Base – DLB 350AG	404945*
B	Bushing	204012
C	"E" Ring	205116
D	Drive Shaft	306061
E	Spring	204364
F	Handle – 7" (DLB350AG)	5703061
	(DLB800AG)	
	Handle – 9-3/8" (DLB1200AG)	5703103
G	Nut	205033
H	Pressure Plate	204362
H	Pressure Plate "G" Series	206620
J	Ratchet Wheel	404164
K	Pressure Washer	404163
L	Bushing	206328
M	Nut	205316
N	Bolt	205332
P	Rope Clamp Kit	5243506
Q	Gear Cover – "G" Series	406114
S	Reel	306075*
	Reel - DLB350AG	306167
T	Locknut	204803
U	Bolt	205167
V	Flat Washer	205055
W	Pawl	404409
	Pawl – "G" Series	404190
X	Spacer	404166
	Spacer – "G" Series	404191
Y	Spring	204363
	Spring – "G" Series	204460
Z	Reel Spacer	207183
AB	Bolt	203161
AC	Reel Spacer	204807
AE	Reel	306062*
AF	Base	404893*
	Base – DLB 800AG	404895*

Ref	Description	Part No.
AH	Lockout Lever (optional)	404579
AJ	Spacer (optional)	406160
AK	Gear Cover (optional)	
	Painted Bronze	5240346
	Plated	5240361
AL	Base	404896*
	Base – DLB 1200AG	404897*
AM	Bushing	204009
AN	Gear Cover – "G" Series	406115
AQ	Gear Cover (optional)	
	Painted Bronze	5240122
	Plated	5240221
AR	Spacer Washer	205120
AS	Reel (DLB1200AG)	304754*
AS	Reel – 1-7/8" (optional)	304768*
AT	Base	404891*
	Base – DLB 1500AG	404892*
AU	Drive Shaft	304760
AV	Handle – 9-3/8" (DLB2000AG)	5703103
	Handle – 12" (DLB1500AG)	5703111
AW	Bolt	204804
AX	Reel Spacer	204808
AY	Gear Cover (optional)	
	Painted Bronze	5240387
	Plated	5240403
AZ	Reel	304755*
BA	Base – DLB2500A	406047*
	Base – DLB 2000AG	404899*
BB	Spacer	404434
BC	Bolt	205006
BD	Flat Washer	205139
BE	Intermed. Drive Shaft	306035
BF	Nut	205014
BH	Reel	304756*
BJ	Drive Hub (Optional)	304562
BM	Handle w/Lock Pin (Opt)	5703426
BN	Handle Hub (Optional)	304630
BP	Special Nut (Optional)	404970
BQ	"E" Ring	206162
BR	Bushing	206163
BS	Bolt	205335

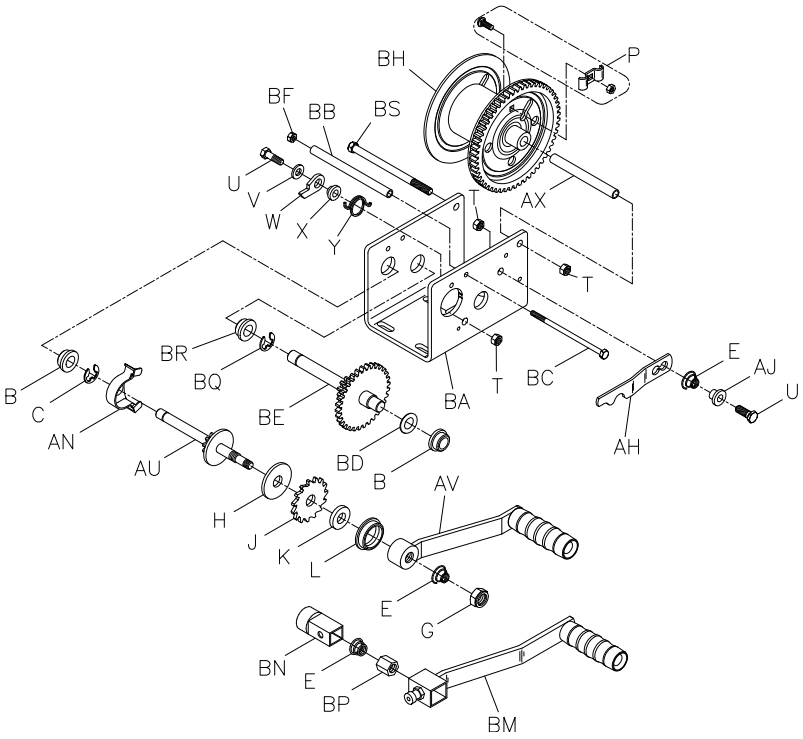
*Specify Color When Ordering

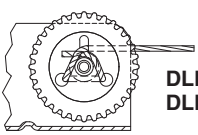
To order replacement parts contact:

Dutton-Lainson Company
www.dlco.com
Tel: 800-569-6577
Fax: 402-460-4612
e-mail: DLsales@dutton-lainson.com

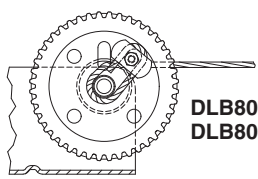
In Europe Contact
Bainbridge International Ltd.
8 Flanders Park
Hedge End
Southampton
Hampshire, SO30 2FZ UK
Tel: +44 (0) 1489-776050
Fax: +44 (0) 1489-776055
www.bainbridgemarine.co.uk

DLB2000AG & DLB2500A Winch





DLB350A
DLB350AG



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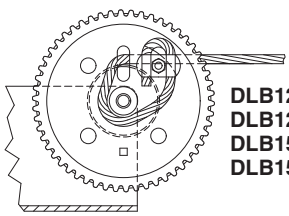
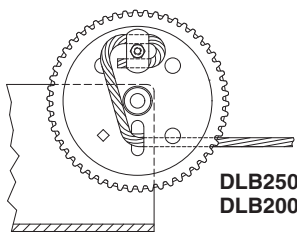
DLB800AG



DLB1200A
DLB1200AG
DLB1500A
DLB1500AG



DLB2500A
DLB2000AG

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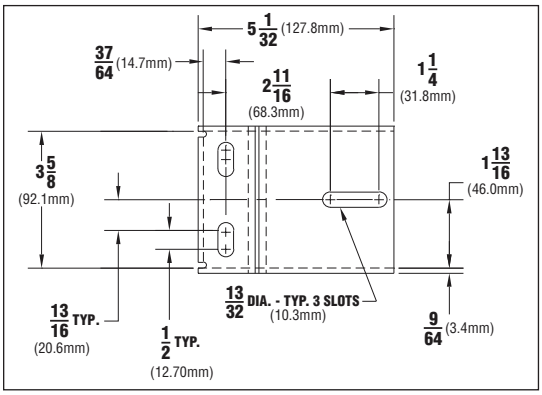
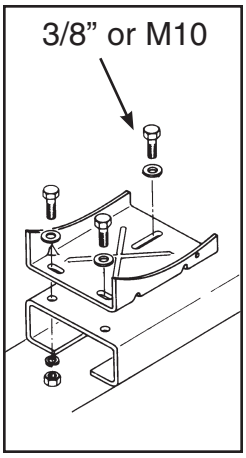
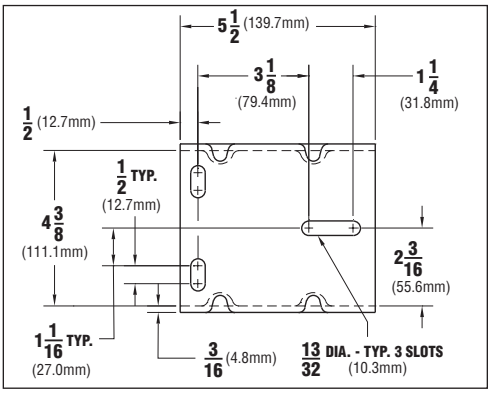
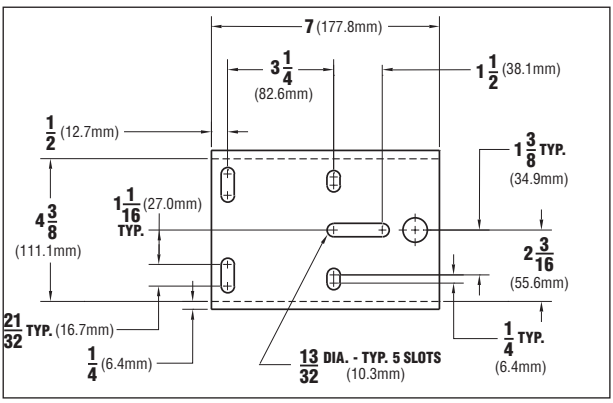




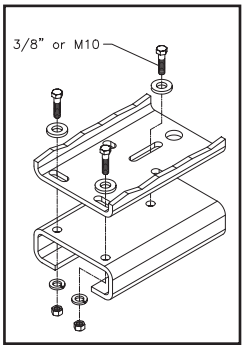
DLB350A, DLB350AG,
DLB800A, DLB800AG,
DLB1200A, DLB1200AG

DLB1500A
DLB1500AG





DLB2000AG
DLB2500A



WARNING **Component parts should not be interchanged with the component parts of any other Dutton-Lainson model or other manufacturer's winches.**

ACHTUNG: **Die Komponenten dürfen nicht gegen andere Komponenten anderer Modelle der Dutton-Lainson Company oder der Winden anderer Hersteller ausgetauscht werden.**

ATTENZIONE: **Questi componenti non devono essere utilizzati in modo intercambiabile con i componenti di qualsiasi altro modello della Dutton-Lainson Company o con i verricelli di un altro fabbricante.**

ADVARSEL: **Disse komponentdelene skal ikke byttes om med komponentdeler for noen annen vinsj verken fra Dutton-Lainson Company eller noen annen produsent.**

ADVERTENCIA: **No se debe intercambiar estas piezas con las de algún otro modelo de cabrestante de la Dutton-Lainson Company o de otro fabricante.**

VARNING: **Byt inte ut komponentdelarna mot komponentdelar från andra vinschar tillverkade av Dutton-Lainson Company eller från andra tillverkares vinschar (eller tvärtom).**

ΠΡΟΕΙΔΟΠΟΙΗΣΗ Αυτά τα συνθετικά μέρη να μην αντικατασταθούν με συνθετικά μέρη άλλου μοντέλου της εταιρίας Δυττον-Λαινσον ή βαρούλκα άλλου εργοστασίου.

ADVARSEL: **Disse komponentdele må ikke blive udskiftet med komponentdele, der hører til andre modeller fra Dutton-Lainson Company eller til spil af andre fabrikater.**

VAROITUS: **Tämän mallin ja muiden Dutton-Lainson Companyn tai muiden valmistajien vintturien osia ei saa vaihtaa keskenään.**

WAARSCHUWING: **Deze onderdelen mogen niet verwisseld worden met de onderdelen van andere liermodellen van Dutton-Lainson Company of van lieren van andere fabrikanten.**

MISE EN GARDE: **Ces composants ne doivent pas être utilisés de manière interchangeable avec les composants d'aucun autre modèle de Dutton-Lainson Company ou avec les treuils d'un autre fabricant.**

ADVERTÊNCIA: **Esses componentes não devem ser intercambiados com componentes de nenhum outro modelo da Dutton-Lainson Company nem de guinchos de outros fabricantes.**

ENGLISH-To obtain a copy of the warranty in English, send a self-addressed envelope to: Dutton-Lainson Company; P.O. Box 729; Hastings NE 68902-0729; U.S.A.

DEUTSCH-Wenn Sie eine deutsche Kopie der Garantibestimmungen erhalten möchten, senden Sie bitte einen adressierten Rückumschlag an: Dutton-Lainson Company; P.O.Box 729; Hastings NE 68902-0729; USA

ITALIANO-Per ricevere una copia della garanzia in italiano, inviare una busta riportante il proprio indirizzo a: Dutton-Lainson Company, P.O. Box 729, Hastings NE 68902-0729 USA.

NORSK-En kopi av denne garantien på norsk fås ved å sende en konvolutt med eget navn og adresse, til Dutton-Lainson Company, P.O. Box 729, Hastings NE 68902-0729, USA

PORTUGUÊS-Para obter uma cópia da garantia em português, envie um envelope com a sua morada para: Dutton-Lainson; P. O. Box 729; Hastings NE 68902-0729; E.U.A.

ESPAÑOL-Para obtener una copia de la garantía en español, envíe un sobre con su dirección impresa a: Dutton-Lainson Company, P.O. Box 729; Hastings NE 68902-0729 EE.UU.

SVENSKA-För att erhålla ett exemplar av garantin på svenska skicka ett adresserat kuvert till: Dutton-Lainson Company, P.O.Box 729, Hastings NE 68902-0729 U.S.A.

ΕΛΛΗΝΙΚΑ-Για να λάβετε ένα αντίγραφο της εγγύησης στα Ελληνικά, στείλτε ένα φάκελο εσωκλείοντας τα ταχυδρομικά τέλη αποστολής στην εξής διεύθυνση: Dutton-Lainson Company, P.O.Box 729, Hastings NE 68902-0729 U.S.A..

DANSK-Man kan få garantibeviset på dansk ved at sende en svarkuvert til: Dutton-Lainson Company, P.O. Box 729, Hastings NE 68902-0729, USA.

SUOMI-Takuutodistuksesta saa suomenkielisen kopion lähettämällä riittävällä postimaksulla ja vastaanottajan osoitteella varustetun kirjekuoren osoitteeseen Dutton-Lainson Company, P.O. Box 729, Hastings NE 68902-0729, USA.

NEDERLANDS-Voor een exemplaar van de garantie in het Nederlands dient u een aan u zelf geadresseerde enveloppe te zenden naar: Dutton-Lainson Company; P.O. Box 729; Hastings NE 68902-0729; U.S.A.

FRANÇAIS-Pour obtenir une copie de la garantie en français, envoyer une enveloppe à votre nom et adresse à : Dutton-Lainson Company; P.O. Box 729; Hastings NE 68902-0729; U.S.A.