
INSTRUCTION MANUAL FOR OPERATION AND MAINTENANCE CARBIS HOSE HANDLER





Keeping People **SAFER** and Products **FLOWING**TM

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1) INTRODUCTION

a) PLEASE READ THIS FIRST PRIOR TO INSTALLATION OR OPERATION

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 have any questions or concerns please contact us at 1-800-948-7750 or 1-843-669-6668 for international customers. Please have your model number, serial number, or drawing number available to expedite your request.

- i) 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 first 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.
- ii) With aging of equipment and associated service life-limiting variables, such as corrosion, fatigue, wear, etc., remedy these discrepancies as soon as possible during periodic maintenance to preclude operational failure.
- iii) This manual provides guidance to operating and maintenance personnel in the matter of safe operation and recommended practices. However, it is not, and cannot be, a substitute for well-trained personnel. Great reliance requires 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 manual automatically voids the warranty on the equipment.
- iv) 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, in addition to:
 - 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, re-tighten accordingly before use.
- v) It is imperative operating and maintenance personnel prior to using the equipment become familiar with the safety information contained in section **3) SAFETY LANGUAGE**.
- vi) Visually inspect attached any operational labels for serviceability, visibility and legibility. Operating personnel must be familiar with the contents.

2) PRODUCT DESCRIPTION:

HOSE HANDLER DESCRIPTION

**SEE PROJECT-SPECIFIC DRAWINGS, FIGURES WITHIN THIS SECTION,
AND SECTION 8) SPECIFICATION SHEETS AND DRAWINGS**

⚠ WARNING

Only the person performing the work can 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.

⚠ 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

The hose handler is a mobile apparatus designed to work in conjunction with other fall protection equipment to safely position and hold chemical loading/unloading hoses in place over the vehicle while the operator safely positions and operates the hose. The hose handler consists of two types: manually or hand winch operated. Each type includes a 150 lb./ 68 kg or a 300 lb./136 kg lifting capacity model. This manual covers all four hose handler types. The hose handler generally works in conjunction with, but not limited to, gangways, elevating and extended cages, allowing the operator to safely access and load/unload various types of vehicles.

The hose handler equipment requires assembly, connections, and startup before use. See section 7) **INSTALLATION AND STARTUP** for instructions.

b) MECHANICAL EQUIPMENT (SEE FIGURE 2-1)

- i) The Hose Handler system consists of the following components:
 - 1) An “L” shaped gusseted under slung mounted assembly consisting of a galvanized steel lower base and upper pivot tube attaching to the underside and front of an existing platform for support.
 - 2) The upper pivot tube extends into the lower base tube included with a sleeve that rests on the top end of the base pivot tube. A turn handle allows for upper tube and boom rotation and a base pivot tube mounted lock handle secures the upper pivot tube and boom in the desired position.
 - 3) The Hand winch positioned handler incorporates an upper pivot tube mounted winch with a top mounted pulley for the boom support cable allowing for height adjustment.
 - 4) The hose handler booms arm pivots about a support pin mounted on the upper pivot tube and includes a tube boom extension on the outer end locked in place utilizing the same pivot lock mounted on the base tube. The curved hose sleeve support is shackled to the end of the boom extension on the underside.
 - 5) The manual handler type boom arm is pinned to the top of the upper pivot tube and includes an extension on the backside for the adjustment rod pin.
 - 6) The winch operated boom arm is pinned to the front side of the upper pivot tube. The cable end is attached to an angle mounted towards the front on the boom arm

- 7) A boom extension limit cable internally mounted within the boom extension prevent over travel.
- 8) Boom extension for both types of boom arms is 2'/.6M.

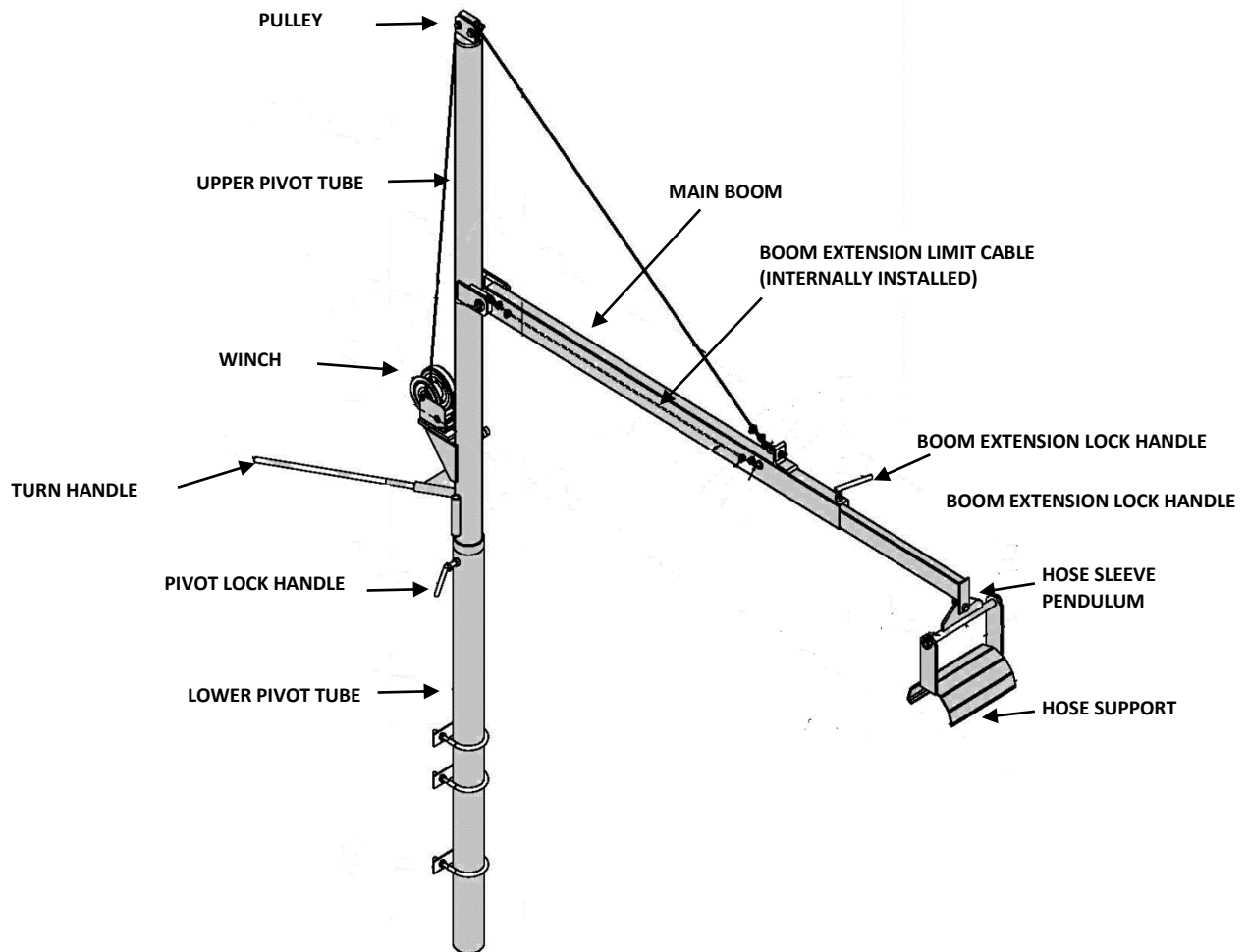




FIGURE 2-1 HOSE HANDLER ASSEMBLY COMPONENTS


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)  **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)  **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) Before accessing Carbis equipment, correctly spot a vehicle, then ensure Carbis equipment is properly deployed, supported, and secured.
 - 3) Operator must ensure nonessential personnel are clear of Carbis equipment during any controlled operation.
 - 4) No personnel including the operator must contact 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 winch cable (if optioned) when 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.

- iii)  **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, respirators, safety glasses, safety shoes, helmet etc.
 - 4) For operator safety, Carbis recommends the equipment stored and not used when wind speed gusts exceed 35 mph.


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.

b) **SAFETY LABEL DESCRIPTIONS**

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 (Mounted on lower base tube)

	<p>This unit CAN conduct electricity. Grounding requirements determined by company safety code.</p> <p>Do not allow this unit to contact live electrical wires.</p> <p>Do not handle live electrical wires while standing on or in contact with this unit.</p> <p>Failure to comply with these warnings WILL result in serious injury or death.</p>
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AL-305-R1

AL-446

(Mounted on boom extension. Model dependent)

AL-447

⚠ CAUTION!

**DO NOT EXCEED HOSE
HANDLER LIFTING
CAPACITY OF
150 LB/68 KG**

AL-446

⚠ CAUTION!

**DO NOT EXCEED HOSE
HANDLER LIFTING
CAPACITY OF
300 LB/136 KG**

AL-447

- i) **SAFETY LABEL LOCATION** (See Figure 3-1) for safety label locations on this equipment as described in this manual. For TCG's with adjustable uprights, see Figure 7-2 for lift label placement.



FIGURE 3-1 SAFETY LABEL LOCATIONS

4) OPERATION

**SEE THE FINAL/ASSEMBLY/ELECTRICAL SCHEMATIC DRAWINGS
ASSOCIATED WITH AND/OR INCLUDED IN THIS MANUAL**

a) PRE-USE INSPECTION

- i) For systems that include gangways, elevating cages, loading arms, see separate instruction manual for operation.

- ii) **CAUTION** DO NOT USE Carbis Equipment if wind speed gusts exceed 35 mph.

- 1) As the Hose Handler System interacts with other equipment, it is important to also inspect those systems ensuring correct Hose Handler operation 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) Verify all safety placards, signs, and labels are clearly visible, legible and in good repair. Operating personnel must be familiar with the contents of such placards, signs, and labels.
- 4) Before operating the equipment, inspect between the equipment and vehicle for any obstruction that would impede correct movement. Remove any obstructions before proceeding.

iii) **SERVICING OPERATIONS**

This section covers the operation of the manual and winch operated type Hose Handler assemblies with differences noted accordingly. The original boom arm setup can be performed either on the platform or on the vehicle. Please follow local safety procedures as applicable in determining which on-site operations are allowed



Before servicing operations, ensure the site location associated safety fall protection equipment is properly deployed and in use with the vehicle safely spotted in place.

- 1) Feed the hose open end through the hose sleeve pendulum and hose support mounted on the end of the boom arm extension.
- 2) The upper pivoting tube function allows for vehicle spotting variations. To pivot the upper pivot tube and boom assembly, rotate the pivot lock handle counterclockwise to unlock the upper pivoting tube. Grasp the turn handle and pivot the upper pivoting tube to the desired position. Rotate the pivot lock handle clockwise locking the upper pivot tube in place.
- 3) The vertical angle adjustment allows for variation in vehicle height and hose length. To change height adjustment:
 - a) For a **winch-type** hose handler: crank the winch handle in the appropriate direction to raise or lower the boom arm to the desired height.
 - b) For a **manual-type** hose handler: Loosen the nut on the slotted plate, then raise or lower the boom to the desired height, then tighten the nut to secure the boom in place.
- 4) When finished with the work, to store the hose handler, lower the boom as follows:
 - a) For a **winch-type** hose handler: crank the winch handle in the appropriate direction to raise or lower the boom arm to a safe storage position.
 - b) For a **manual-type** hose handler: Loosen the nut on the slotted plate, then raise or lower the boom to safe storage position, then tighten the nut to secure the boom in place.
- 5) Rotate the pivot lock handle counterclockwise to unlock the upper pivoting tube. Grasp the turn handle and pivot the upper pivoting tube to a safe storage position. Rotate the pivot lock handle clockwise locking the upper pivot tube in place.
- 6)  **Verify the hose handler is safely stored out of the vehicle envelope to prevent equipment damage or injury from traversing vehicles.**

5) TROUBLESHOOTING

a) **GENERAL**

i)



Failure to comply with these warnings CAN 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) The barrier gate components are listed in section 2) **PRODUCTION DESCRIPTION**, Section 4) **OPERATION**, and Section 6) **MAINTENANCE**. 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, lock out and tag out Carbis equipment according to local safety directives.
- ii) Carbis equipment is designed and built to minimize periodic maintenance and does not require further inspection and maintenance than noted in this section. Any parts needing replacement require replacement with equally rated parts to ensure product integrity. Contact Carbis for guidance and parts information.

b) INSPECTION

- i) Visually inspect the system before each use. Replace any damaged parts. Monthly inspection and lubrication of the unit is recommended as a minimum. Harsh atmosphere or heavy use may dictate more frequent intervals.
- ii) All factory installed fastening hardware has been tightened snug. If loosening any factory installed hardware, it must be re-tightened before using the equipment.
- iii) For winch installed systems, follow the manufacturer's instructions posted in the back of this manual.

7) INSTALLATION AND SET UP

**SEE THE FINAL DRAWINGS, ASSEMBLY DRAWINGS, AND POWER SYSTEM DRAWINGS
ASSOCIATED WITH THIS MANUAL**

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.

b) SITE PREPARATION

- i) **NOTICE** Any new or existing structural components shall be true and plumb before attaching Sam Carbis Solutions Group, LLC equipment. The structure shall also be sufficient for supporting all imposed equipment loads. Improper load support can negatively affect equipment operation.
- ii) It is the owner's responsibility to prepare the site prior to installing Carbis equipment. Site preparation includes, but not limited to, the following:
 - 1) Removal and/or relocation of existing obstructions.
 - 2) Field drilling mounting holes as required per mounting hole patterns as shown on the Final Drawings and/or Assembly Package.
 - 3) Adding any new customer-supplied members to existing structures as required by the Carbis Equipment.
 - 4) Any foundation work required by Carbis equipment should be constructed using only the information on the Final Drawings.
- iii) Hose Handler location determination should be based upon considering new or existing fall prevention equipment, work area traffic patterns, vehicle clearances to include vehicle turning radius.

c) PRE- INSTALLATION INSPECTION AND OFF-LOADING

- i) Carbis properly packages equipment and components in the best manner possible for safe shipping and practical off-loading purposes.
 - 1) It is the owner's responsibility for ensuring shipment completeness validating the shipped equipment with the identified Parts and the Hardware Component Lists. Check for any shipping damages and missing components and report any discrepancies to Carbis before continuing.
 - 2) It is also the owner's responsibility for providing appropriate off-loading devices to safely handle Carbis equipment and components. When offloading pay strict attention to eccentric loads such as counterweighted components.
 - 3) Some components (i.e., telescoping arm) may ship pre-assembled.

d) ASSEMBLY (SEE FIGURE 7-1)**i) REQUIRED STRUCTURAL CONNECTION BOLT TENSIONS**

- 1) A325 Bolts - Snug Tight Condition
 - a) Snug tight condition is defined as the tightness when all plies in a joint are in firm contact. Attain this 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. Different requirements will be specifically detailed on the drawings.
 - b) Any bolts less than 1/2" diameter, torque to 60 in.-lbs./6.75NM
- 2) Stainless Steel 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" diameter, torque to 60 in.-lbs./6.75NM
- 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 erector should also be familiar with electric linear actuator products and their associated assembly and installation requirements that conform to electric linear actuator product standards. 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. See Assembly Drawings for Carbis-supplied components and hardware lists. Foundation anchor bolts to be supplied by customer.
- iii) Some components may ship pre-assembled.
- iv) Unless noted otherwise, use Carbis-supplied hardware to assemble the components listed in the Parts Lists on the Assembly Drawings

ITEM NO.	QTY	PART NUMBER	DESCRIPTION
1	1		GALV STL OUTER PIVOT TUBE
2	1		GALV STL OUTER PIVOT TUBE
3	1		GALV STL MAIN BOOM
4	1		GALV STL INNER TELESCOPING ARM
5	1		HOSE SLEEVE PENDULUM
6	1		SS TURN HANDLE
7	2		SS LOCK HANDLE
8	1		SS PIVOT PIN - MAIN BOOM
9	1		SS PIVOT PIN - HOSE SLEEVE
10	1	HH-HOSESUPRT	GALV STL HOSE SUPPORT
11	1	WINCHDLB1200A	DLB1200A WINCH 05605110
12	4	C0-20025	3/4" ONE PC SPLIT LOCKING COLLAR ZINC YELLOW
13	2	WSHNY.765X1.25X.08	.765" ID X 1.25" OD X .08" THK NYLON WASHER
14	1	EYEBOLTZD.375X1.25SH	3/8"-16 X 1-1/1" ZD FORGED SHOULDER EYEBOLT
15	3	0-16324.1	3/8-16 X 1 3/8 HEX C/S 18-8 SS
16	7	WASHERFTSS.375	3/8 X 1 FLAT WASHER 18-8 S.S.
17	3	NUTSS.375	3/8-16 HEX NUTS 18-8 STAINLESS STEEL
18	1	NUTSTPSS.375	3/8"-16 SS STOP NUT
19	1	BOLTGALV.625X2.25	5/8-11 X 2 1/4 A325 HVY STRUCTURAL BOLTS H.D.G.
20	1	NUTGALV.625	5/8-11 HEX NUTS HOT DIP GALV.
21	2	BOLTSS.5X2.5	1/2-13 X 2 1/2 HEX CAP SCREW 18-8 STAINLESS STEEL
22	4	WASHERFTSS.5	1/2 X 1 1/4 FLAT WASHER 18-8 STAINLESS STEEL
23	2	NUTSTPSS.5	1/2-13 ELASTIC STOP NUT "NE" 18-8 STAINLESS STEEL
24	2	PULLEYSTL2	2" STEEL PULLEY FOR 3/16" DIA WIRE ROPE 3434T117
25	1	0-21190	3/16" DIAMETER CABLE ~16' LENGTH
26	1	WIREROPE1X7	3/32" DIA 1 X 7 STRAND WIRE ROPE 3461T12 - CUT TO 6' LENGTH
27	3	0-21183	3/16" WIRE ROPE THIMBLE 3494T12
28	6	0-21170	3/16" WIRE ROPE CLIP GALV 125
29	3	UBOLTGALV.5X4.5	1/2"-13 RUBBER COATED GALV U-BOLT FOR 4 1/2" DIA #30555T37

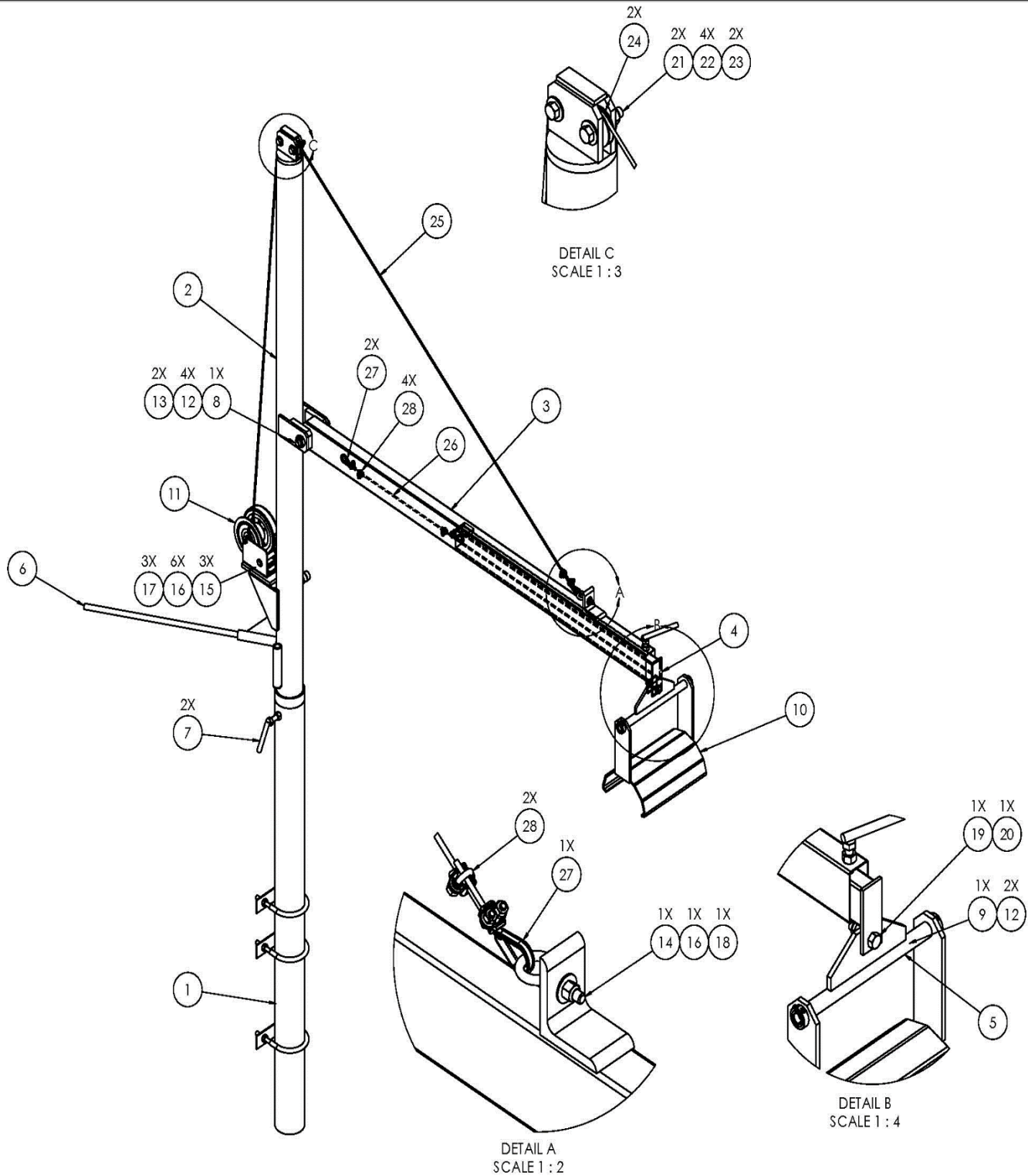
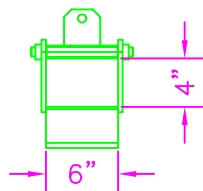
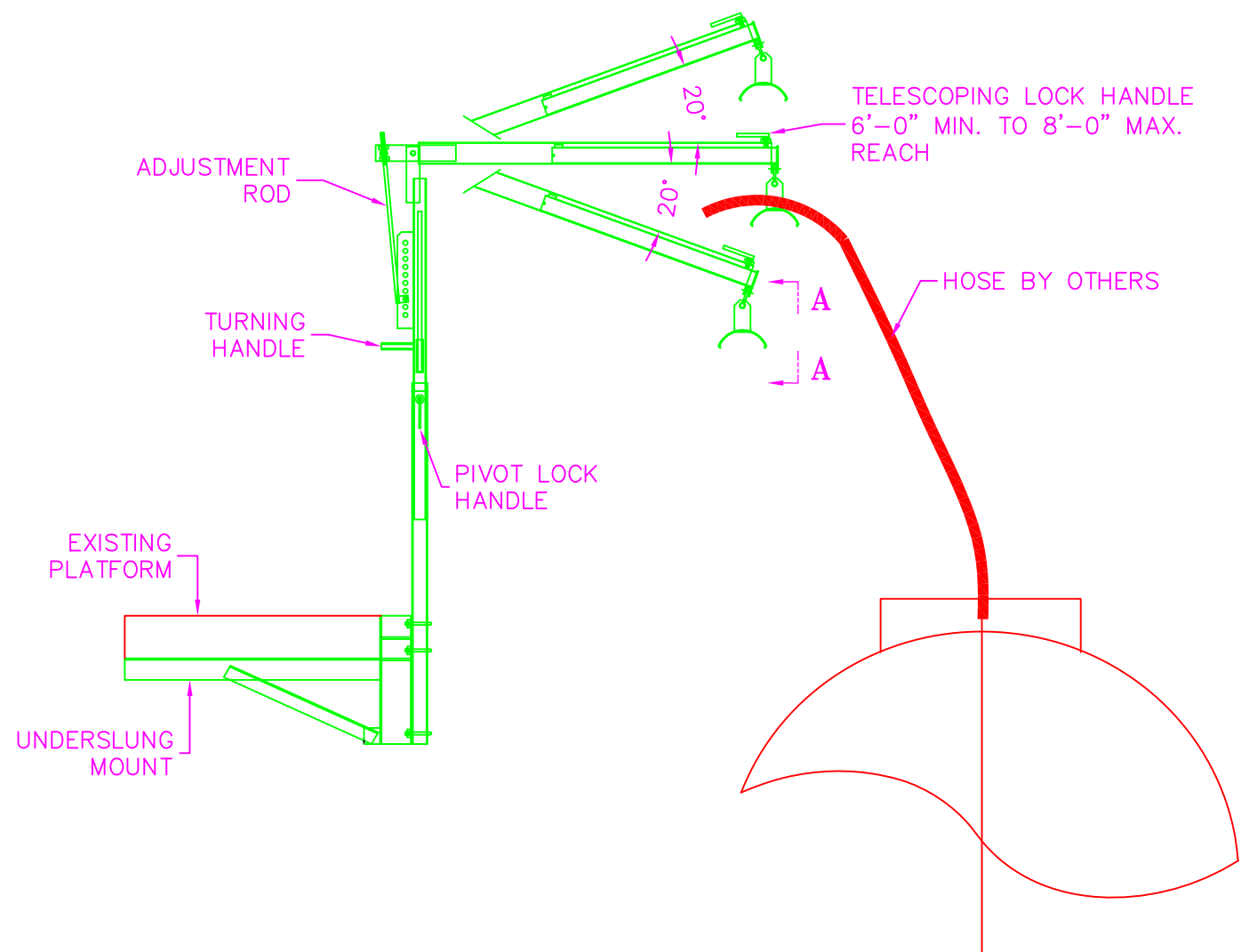


FIGURE 7-1

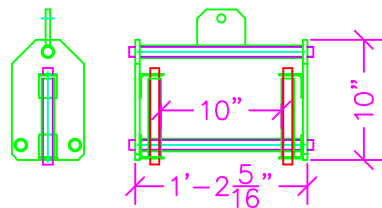
8) SPECIFICATION SHEETS AND DRAWINGS

HOSE HANDLER MODEL HH-1000-1

HOSE HANDLER ASSEMBLY DESIGNED TO BOLT TO EXISTING PLATFORM.
UNIT HAS CAPABILITY OF 150# MAX.



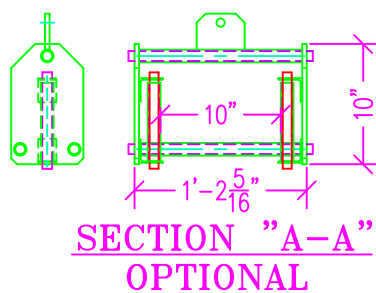
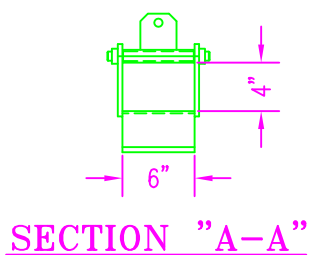
SECTION "A-A"



SECTION "A-A"
OPTIONAL

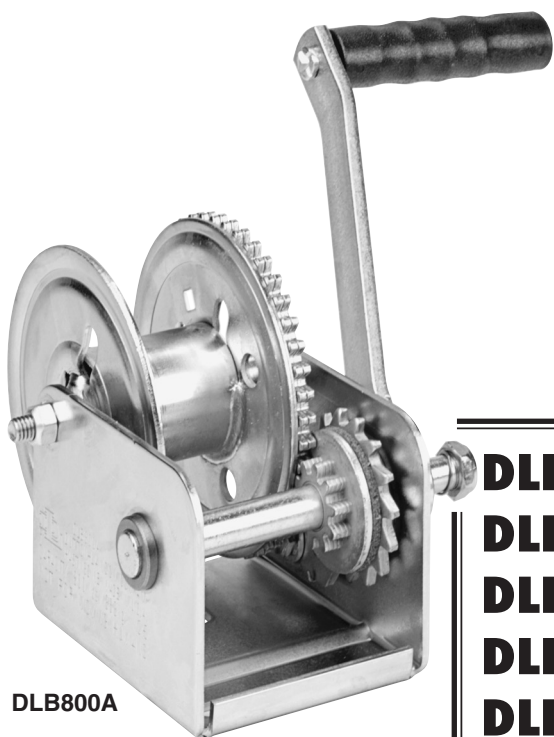
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 Keeping People SAFER and Products FLOWING P.O. Box 6408 Florence SC 29502-6408 843-669-6668 800-845-2387 FAX: 843-662-1536 WWW.CARBISOLUTIONS.COM					
PROPRIETARY DESIGN THIS DRAWING IS THE PROPERTY OF AND CONTAINS CONFIDENTIAL AND PROPRIETARY DESIGN INFORMATION BELONGING TO Sam CARBIS Solutions Group, LLC . IT MUST BE RETURNED IMMEDIATELY UPON REQUEST AND MUST NOT BE COPIED IN WHOLE OR IN PART, NOR THE INFORMATION SHOWN THEREON DISCLOSED TO THIRD PARTIES OR OTHERWISE USED EXCEPT AS SPECIFICALLY PERMITTED BY Sam CARBIS Solutions Group, LLC .					
CUSTOMER					
TITLE HOSE HANDLER 1000-1					
CUSTOMER PURCHASE ORDER NUMBER					
ORDER #		SCALE		SHEET OF 100	
DRAWN		CHECK		DRAWING NUMBER	
DATE		DATE		HH-1	

HOSE HANDLER ASSEMBLY DESIGNED TO BOLT TO EXISTING PLATFORM
UNIT HAS CAPACITY OF 150# MAX.

[illegible]



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*

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Web Site www.dutton-lainson.com



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 han-

dle 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.

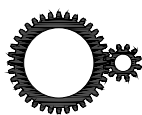
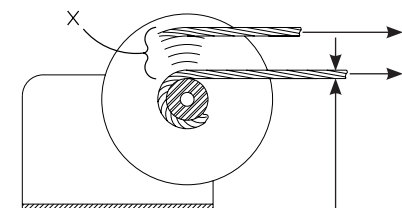
WINCH MAINTENANCE – In order to insure maximum performance, a periodic inspection for any necessary preventive maintenance must be made. Check at least once annually and more frequently when the winch is exposed to an environment which is particularly dirty or wet. For continued smooth performance and increased life, occasional 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



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

	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	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 – KONFORMITÄTSEKLRÄUNG - 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 – SAMSVARSEKLRÆING - 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 – OVERENSSTEMMELSESEKLRÆING - 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.

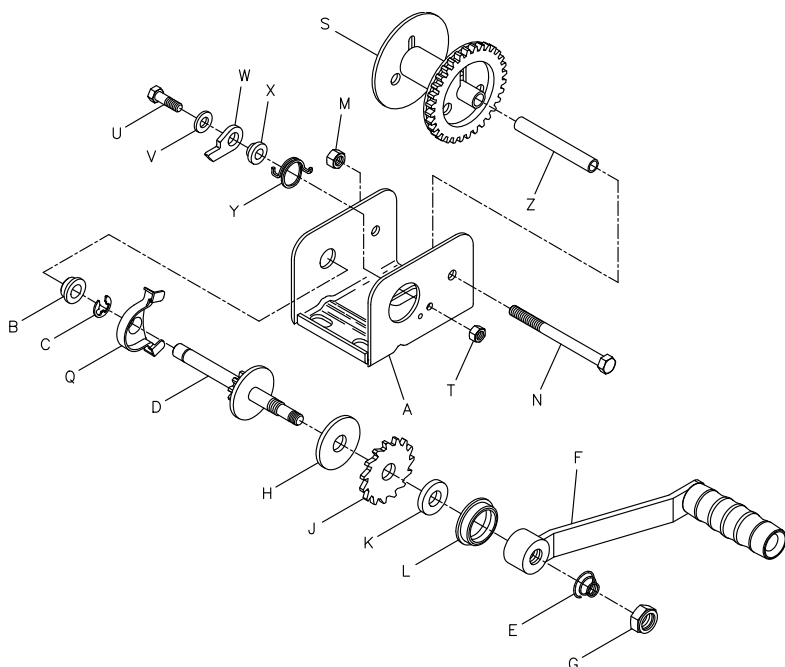
NEREDLANDS – VERKLARING VAN OVEREENSTEMMING - Dutton-Lainson Company, Hastings, NE 68902-0729 VS, fabrikant, verklaart dat de bovengenoemde lier voldoet aan alle betreffende bepalingen van richtlijn 2006/42/EC. 'G' modellen voldoen ook aan de geharmoniseerde normen EN 13157 en EN ISO 12100. Het technische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

FRANÇAIS – DECLARATION 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.

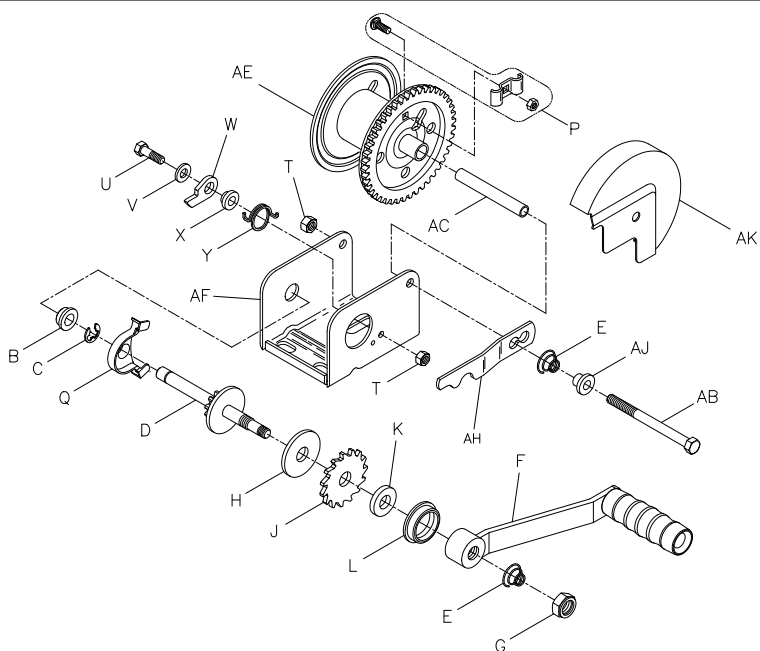
Hastings, NE USA
October 11, 2018

Director of Engineering
Dutton-Lainson Company

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

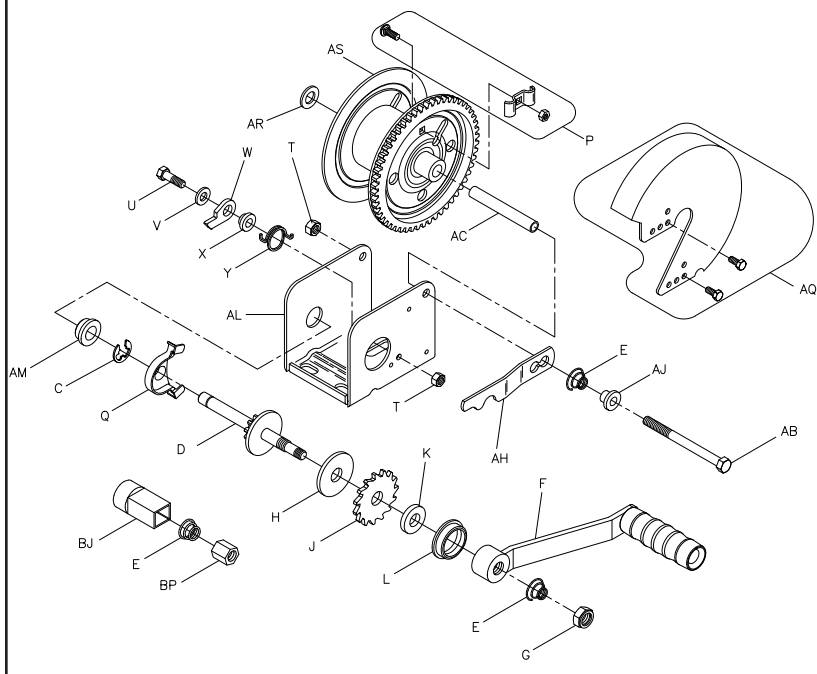


DLB800A & DLB800AG Winch

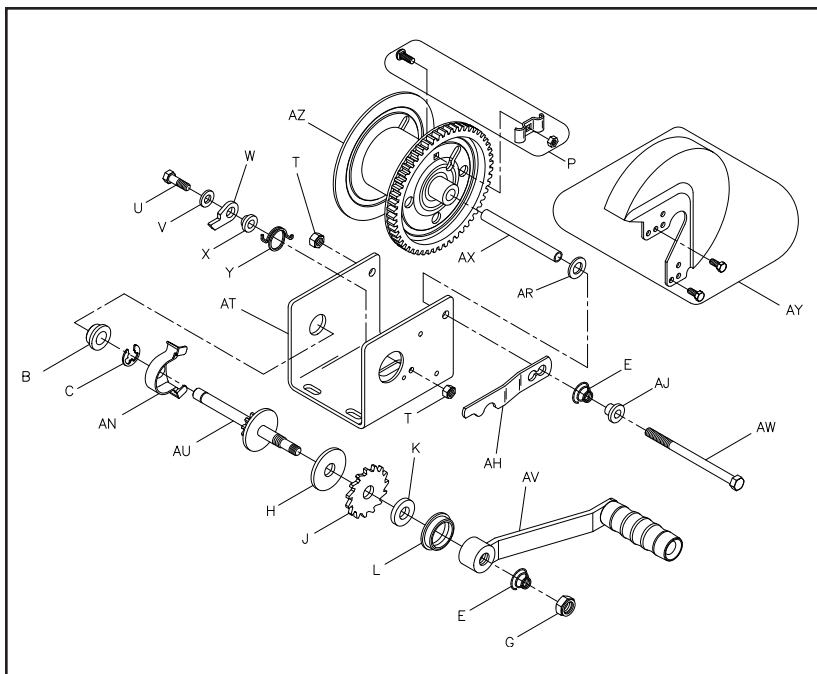




DLB1200A & DLB1200AG Winch



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

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

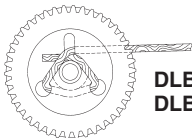
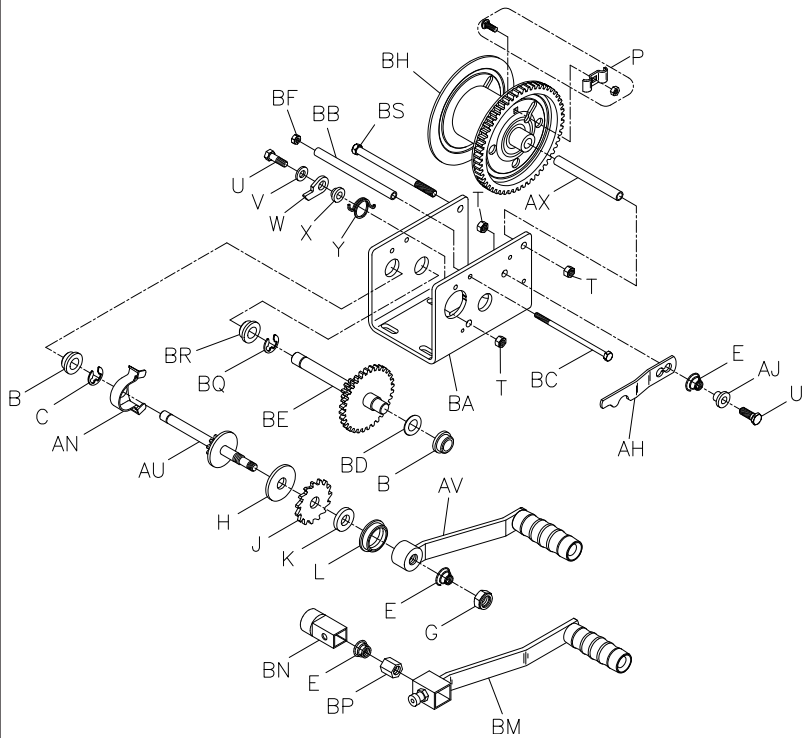
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www.bainbridgmarine.co.uk

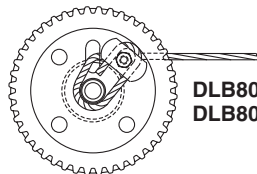
*Specify Color When Ordering



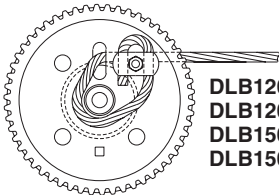
DLB2000AG & DLB2500A Winch



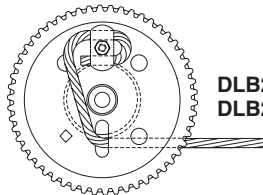
**DLB350A
DLB350AG**



**DLB800A
DLB800AG**



**DLB1200A
DLB1200AG
DLB1500A
DLB1500AG**

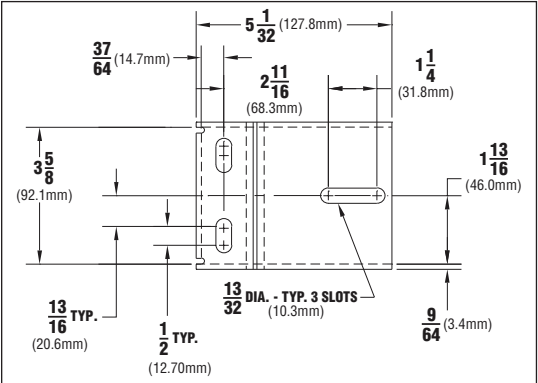


**DLB2500A
DLB2000AG**

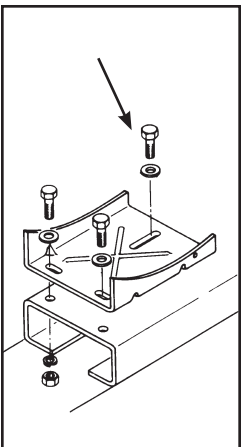
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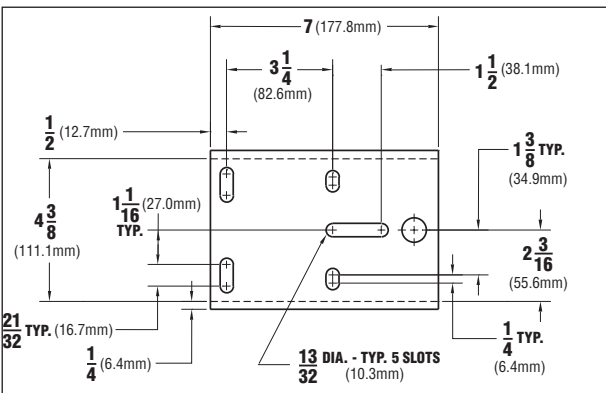
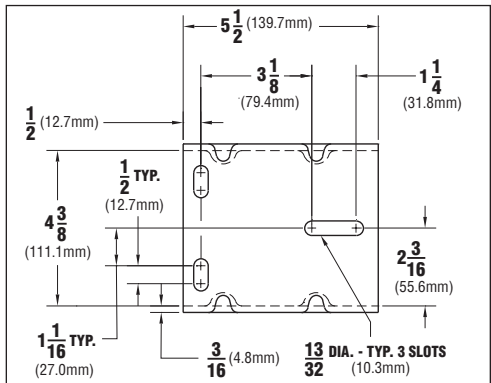
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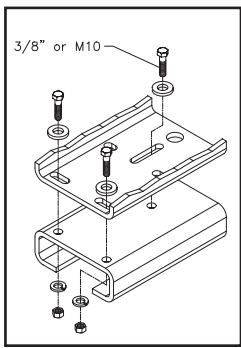
**DLB350A, DLB350AG,
DLB800A, DLB800AG,
DLB1200A, DLB1200AG**



**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 spill 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.

ESPA—OL—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.

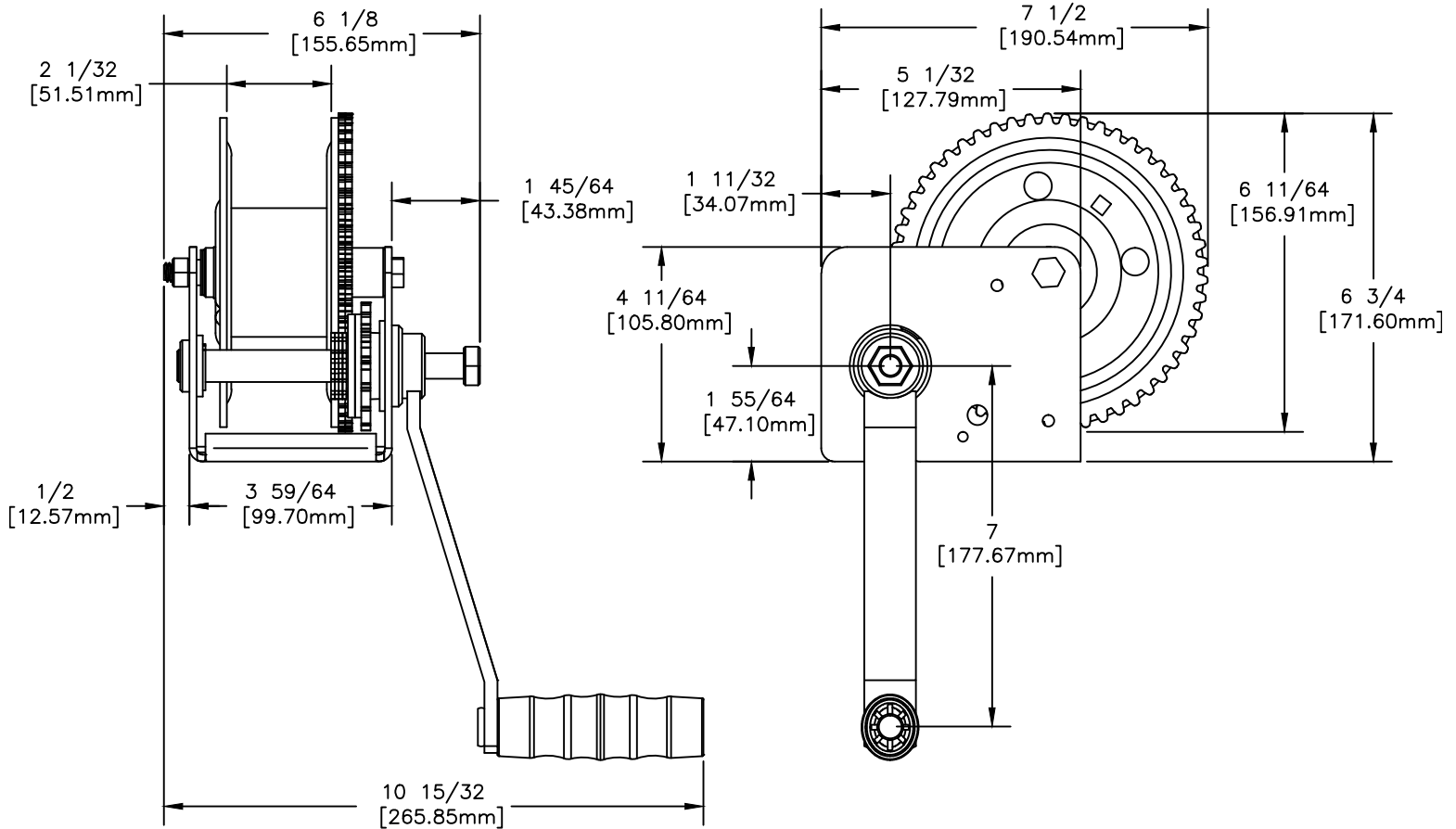
SUOMI—Takuutodistuksesta saa suomenkielisen kopion lähettämällä riittävällä postimaksulla ja vastaanottajan osoitteella varustetun kirjekuoren osoitteeseen Dutton-Lainson Company, P.O. Box 729, Hastings NE 68902-0729, USA.

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.

MODEL
DLB1200A/DLB1205A
1200lb/545kg CAPACITY
BRAKE WINCH

FRONT & SIDE VIEW



BASE HOLE PATTERN

