

HighTailer Winch

Part Number: IN171



USA

MANUFACTURER:

Harken, Inc.
N15W24983 Bluemound Rd.
Pewaukee, WI, 53072

262-691-3320
harken.com
infoUSA@harkenindustrial.com



Read the manual carefully before using the winch.



HIGHTAILER

HighTailer is a hitch-mounted, field utility winch system designed for lifting and lowering materials in all applications using synthetic fiber rope.



TABLE OF CONTENTS

General information	4
About this manual	4
Glossary and pictograms	4
Risks	4
Intended use	4
Improper use	5
Personal protective equipment	5
Safety information	5
Electrical considerations	6
Technical support	6
Product description and components	6
Dimensions	6
Nomenclature of parts	6
Labeling and description of symbols	7
Labeling on strut	7
Labeling on gear switch	7
Technical data	8
Use	8
Pre-use inspection	10
Reverse direction	10
Operation	11
Load path	12
Correct use	12
Foot pedal operation	13
Incorrect uses	13
Lowering the load	14
Removing from service	15
Annual inspection	15
Lifespan	15
Packaging, storage, transportation	15
Maintenance	15
Records	16
Example 12-month inspection	16
Warranty	16



GENERAL INFORMATION

About This Manual

- ▶ This user manual is an integral part of the device and aims to provide all the information needed for its safe and correct use and proper maintenance.
- ▶ This manual is for qualified operators (refer to the safety information chapter for more information). Improper use of the device or incorrect maintenance could cause severe damage or death.
- ▶ Harken accepts no responsibility for damage, personal injury or death caused by failure to observe the safety information and instructions in this manual.
- ▶ The manufacturer cannot be liable for damage, injury or consequential loss resulting from installation or servicing by unqualified personnel.
- ▶ The manufacturer will also not be liable for damage, injury, or consequential loss resulting from incorrect operation or modification of the equipment.
- ▶ Keep the manual in a safe place for future consultation. This manual may be modified without notice. Updated versions are available on www.HarkenIndustrial.com.
- ▶ If there are instructions you do not understand, please contact Harken.

Glossary and Symbols

- ▶ **Intended Use:** Use of the device according to the information supplied in the instructions for use.
- ▶ **Improper Use:** Use of the device in a way different from that indicated in the instructions for use.
- ▶ **Qualified Operator:** People who have attended specialized training, courses, etc., and are qualified for using lifting devices to the current regulations of the Nation in which the device is used.
- ▶ **General User:** A person that uses the device for lifting loads.

Text preceded by the following symbols contains very important information or instructions, especially in regard to safety. Failure to observe these may lead to:

- danger for operators
- invalidity of the contract warranty
- refusal of the manufacturer to accept responsibility



WARNING!

- this indication denotes the existence of a potential hazard
- this indication precedes important information regarding the machine



Risks

- ▶ Activities involving the use of the HighTailer are inherently dangerous. You are responsible for your own actions and decisions.
- ▶ Read and understand all instructions before use.
- ▶ Get specific training on the HighTailer's proper use.
- ▶ Become acquainted with the HighTailer's capabilities and limitations.
- ▶ Understand and accept the risks involved.
- ▶ Failure to heed any of these warnings could result in severe injury or death.
- ▶ Overloading or dynamic load on the Harken HighTailer may damage system.

Intended Use

- ▶ This winch is designed to be used as an electrically powered, rope-handling winch for lifting, lowering, and pulling loads when mounted to a vehicle.
- ▶ **ONLY** competent and properly trained employees should operate the winch.
- ▶ As with any piece of equipment, safe and effective operation depends on the proper training of personnel. Each operator should be properly trained by their employer regarding their policies and procedures for hoisting, including proper rigging procedures for the loads. Stop operation immediately and secure the load in the event of a safety-related issue.

Improper Use



WARNING!

ROTATING PARTS - TRAPPING RISK



ALWAYS WEAR CLOTHING AND PROTECTIVE GLOVES THAT ARE FORM FITTING. AVOID LOOSE GLOVES OR CLOTHING AND ALWAYS FOLLOW THE INSTRUCTIONS IN THE MANUAL.

- ▶ The winch must not be used:
 - in any way or for any purpose not outlined in the intended use chapter of this manual
 - if unauthorized modifications or interventions have been carried out
 - in an explosive atmosphere
 - after it has fallen from a height of more than one meter onto a hard surface. In this case, the device must be returned to the manufacturer or to a Harken authorized repair center
 - with wire rope, natural fiber ropes or polypropylene rope
 - with loads in excess of the Maximum Working Load (MWL) of 1500 lbs
- ▶ NEVER exceed the capacity of any component of the winching system, including rope, blocks, and rigging.
- ▶ ALWAYS check the weight rating for single blocks. Single blocks will be subject to greater forces. As an example, if a single block is used to lift a load weighing 400 lbs, it must be rated for a minimum of 880 lbs.

Personal Protective Equipment

- ▶ It is necessary to use gloves when operating the device.
- ▶ Wearing an appropriately rated safety helmet and safety glasses are recommended.



SAFETY INFORMATION

Caution: ALWAYS be aware of and comply with all federal, state, and local safety regulations, industry standards, and internal safety guidelines. The equipment covered in this manual must be used and serviced only by competently trained personnel familiar with and that follow approved work and safety practices. This manual is not intended as a substitute for adequate training and experience in safety procedures for this type of equipment. These instructions neither cover all details or situations in equipment use nor do they provide for every possible contingency to be encountered in relation to installation, operation, or maintenance. Should additional information and details be desired or if situations arise which are not covered adequately for the user's purpose, the specifics should be referred to Harken Technical Support.

Caution: Under extreme loading, when operating an electric winch from a limited power source such as a truck-driven generator, the hoist motor may stall before reaching maximum capability. The hoist should not be operated under these conditions to avoid damage to the motor.

Warning: Polypropylene rope is seriously weakened whenever use of it generates friction heat. This is particularly true if it is used over a capstan. Because of this condition, the continued slipping of polypropylene rope over a capstan should be avoided. Poly Dacron rope is suggested as it has a higher heat-resistant capability.

Never use the winch to lift or move people. Capstan winches are NOT designed to lift personnel. Overhead loads can fall and will cause damage to equipment, severe injury, or death. Do not allow people to stand under or near the load. Keep rope securely on capstan drum and under control by the operator. Do not remove wraps of rope from the drum while supporting a load.

Do not allow the rope to overwrap itself or to ride up over the end of the drum flange. Always complete the attachment of the rope through the self-tailing head of the drum.

Warning: Read all instructions and follow your company work rules. Use only with mounts authorized by Harken Industrial. Do not obscure or remove labels. Do not use this hoist unless you are properly trained. Do not lift more than the rated load. Do not use if damaged or malfunctioning. Do not stand between load and hoist.



WARNING!
NEVER TWO-BLOCK THE LOAD.

Electrical Precautions:

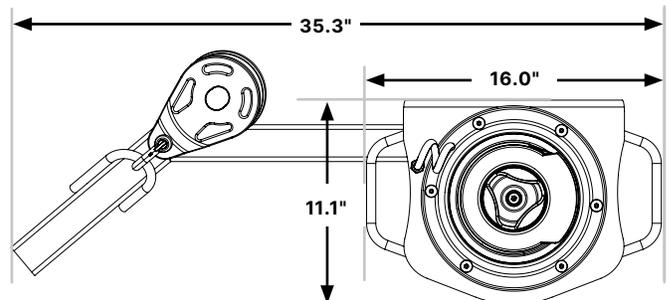
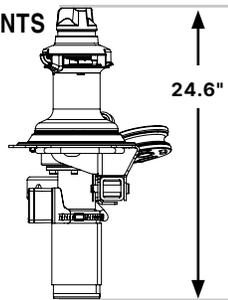
- ▶ Do not use electrical wire sizes or types other than those specified or included with this product.
- ▶ Protect extension cords from sharp objects, excessive heat, and damp or wet areas.
- ▶ This model is intended to work only with 110-115 VAC; 15A Max Draw.
- ▶ NEVER route electrical cables across sharp edges.
- ▶ NEVER route electrical cables near parts that get hot.
- ▶ NEVER route electrical cables through standing water.
- ▶ NEVER route electrical cables through or near moving parts.

TECHNICAL SUPPORT

HighTailer winch is covered by a warranty as laid out in the general conditions of sale. If during the warranty period the device proves defective or suffers breakages, per the warranty, the manufacturer, after checking the device, will repair or replace the defective components. You are reminded that modifications carried out by the user, without explicit written authorization from the manufacturer, will invalidate the warranty and relieve the manufacturer of any responsibility for damage caused by the defective product. The same considerations apply when spare parts are not original or different from those explicitly indicated by the manufacturer. For all these reasons we advise customers to contact Harken Technical Support.

PRODUCT DESCRIPTION AND COMPONENTS

Dimensions



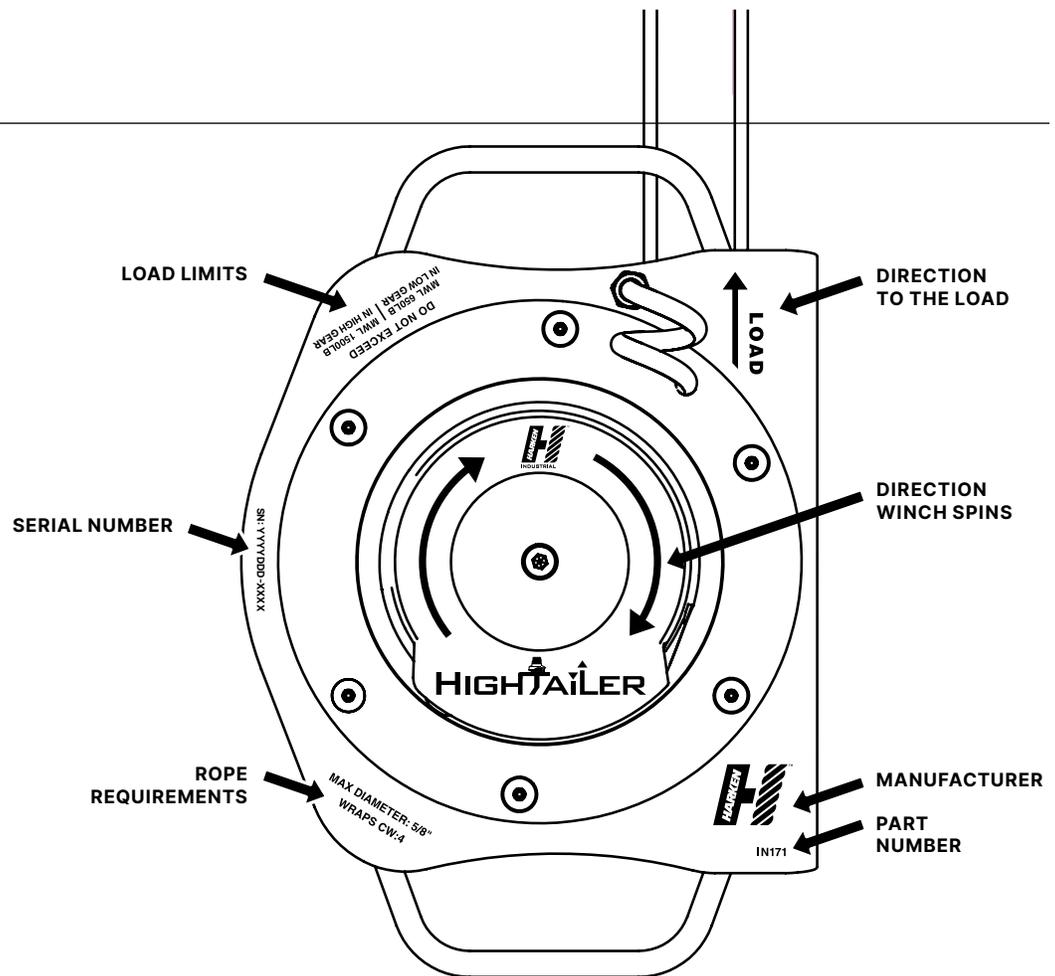
Nomenclature of parts



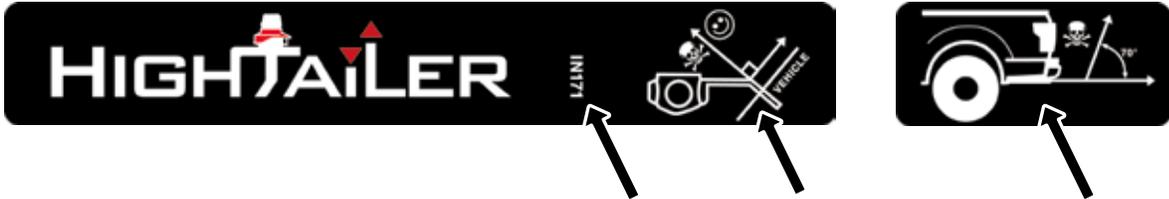
Labeling and description of symbols

Serial Number Example:
 SN: 2024164-0040

20	24	164	0040
Year	Day	Production #	
	(164 of 365)		



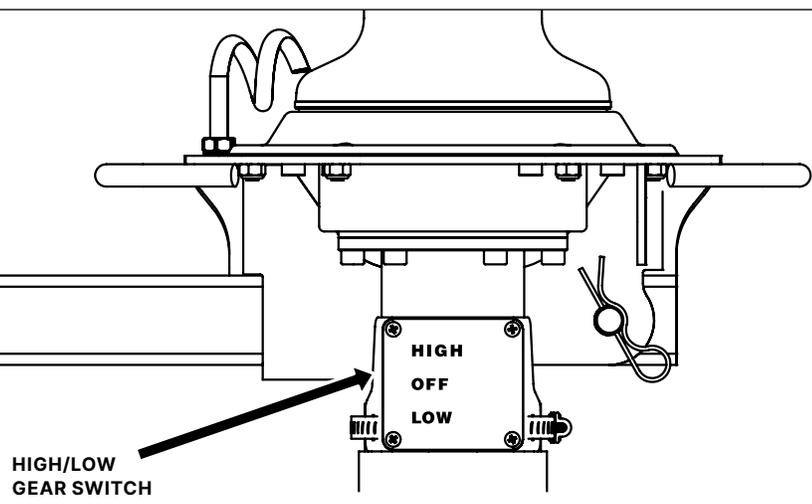
Labeling on strut



The rope should be in line with strut to parallel with the back of the vehicle. It should not form a more acute angle to the winch.

Do not exceed a 70° angle with the rope.
 Do not place winch directly under the load.

Labeling on gear switch



TECHNICAL DATA

- ▶ Rope size and type: ½"- 5/8", 12.5 mm to 16 mm, synthetic fiber rope, which can be three strand, kernmantle, double braid, but NOT polypropylene.
- ▶ Max working load
 - High: 1,500 lb
 - Low: 650 lb
- ▶ Weight
 - Winch on bracket: 56 lb
 - Strut armature: 16 lb
 - Total package weight: 72 lb
- ▶ Line speed at working loads
 - High: 18 ft/min
 - Low: 43 ft/min
- ▶ Temperature range -10°C to 50°C

PRE-OPERATION SETUP

- ▶ Before use
 - Read and understand these user instructions and warnings
 - Get specific training
 - Familiarize yourself with its capabilities and limitations

▶ Selecting other components for the system:

The most important part of the hoisting process is proper planning to ensure your safety and the safety of others before starting the work. Knowing proper hoisting techniques can help keep you and others around you safe. Please be aware of the information in this owner's manual is general in nature. Because no two situations are alike, it would be impossible to review every potential use of a capstan hoist. This manual provides you with the general principles and techniques to help you use the capstan hoist safely and effectively.

- ▶ ALWAYS take your time to assess your situation and plan your lift carefully.
- ▶ ALWAYS be aware of and comply with all federal, state, and local safety regulations, industry standards, and internal safety guidelines. A competent person shall apply careful thought to choose the safest arrangement possible. As with any project involving the lifting of loads, a competent person must analyze the forces, the direction of those forces, and consider what can happen in the event that there is a failure of a component of the rigging system. This allows the competent person to ensure the proper hoist, rope, blocks, and rigging are used to minimize risks. A competent person shall thoroughly inspect the worksite and equipment to spot potential safety issues. When mounting the hoist, verify the frame-mounted receiver hitch can withstand the forces the capstan will apply and will not be adversely impacted by the mounting and operation of the capstan hoist. This may include having a documented rigging plan for lift.
- ▶ ALWAYS inspect winch, rope, and any rigging equipment before use. Frayed, kinked, or damaged rope must be replaced immediately. Protect parts from damage.
- ▶ Always use a minimum class 3 receiver hitch.
- ▶ ALWAYS use with mounts, components, and accessories authorized by Harken Industrial.
- ▶ NEVER alter the strut or other components of the winch system.
- ▶ ALWAYS USE WITH SUPPLIED BLOCK, it is integral to the geometry of the system.
- ▶ NEVER use with another connector type, which could interfere with the geometry of the system.

1,500lb max working load in HIGH

18 ft/min line speed

OFF

650lb max working load in LOW

43 ft/min line speed

- ▶ ALWAYS keep foot control and power cords clear of the capstan, rope, and rigging. Inspect for cracks, pinches, frayed wires, or loose connections.
- ▶ ALWAYS remove any element or obstacle that may interfere with the safe operation of the winch.
- ▶ NEVER operate a capstan winch without the appropriate foot control switch.
- ▶ Extension cord length recommendations (115V and 230V models):

Cord Length	1-100'	101-250'
CORD GAUGE (min)	115V: 14 AWG	115V: 12 AWG
	230V: 14 AWG	230V: 14 AWG

- ▶ Never Overload the Winch:

Unlike a block and tackle, when operating a capstan winch, the operator can't "feel" the weight. This makes lifting loads nearly effortless for the operator. Because of this, the operator must know what the weight of the object or the force to pull the rope will be before starting the job.

- ▶ ONLY the operator should handle the rope and operate the foot control.
- ▶ The vehicle needs to outweigh the load being lifted.

- ▶ Hitch pin minimum: Grade 5

ALWAYS use the right equipment for your situation.

Confirm the adequacy of the rated capacity for the hoist, rope, blocks, and rigging before use. Inspect all load components for damage prior to use and replace or repair all damaged components.

► Pre-operation



- Check that the cover slides up and down.



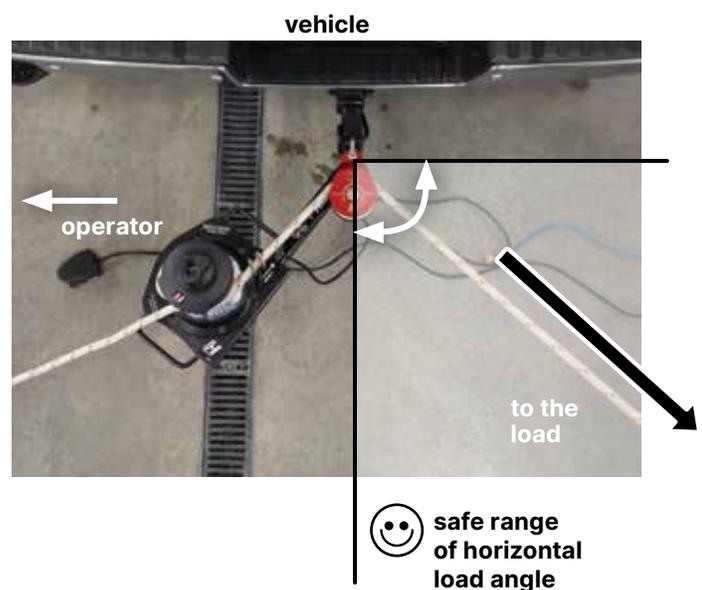
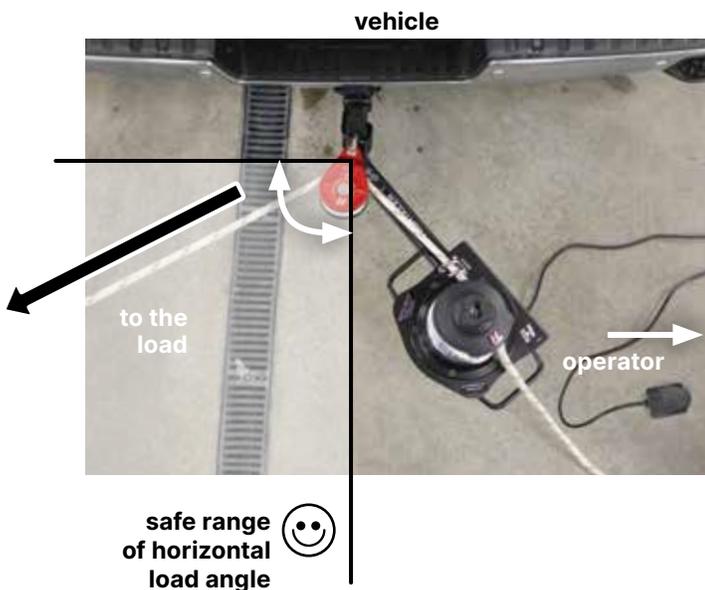
- Check that the release knob opens the jaws by rotating and releasing it several times.
- Secure shackle clevis pin on block.
- Secure hitch pin and bracket pin with cotter pin.

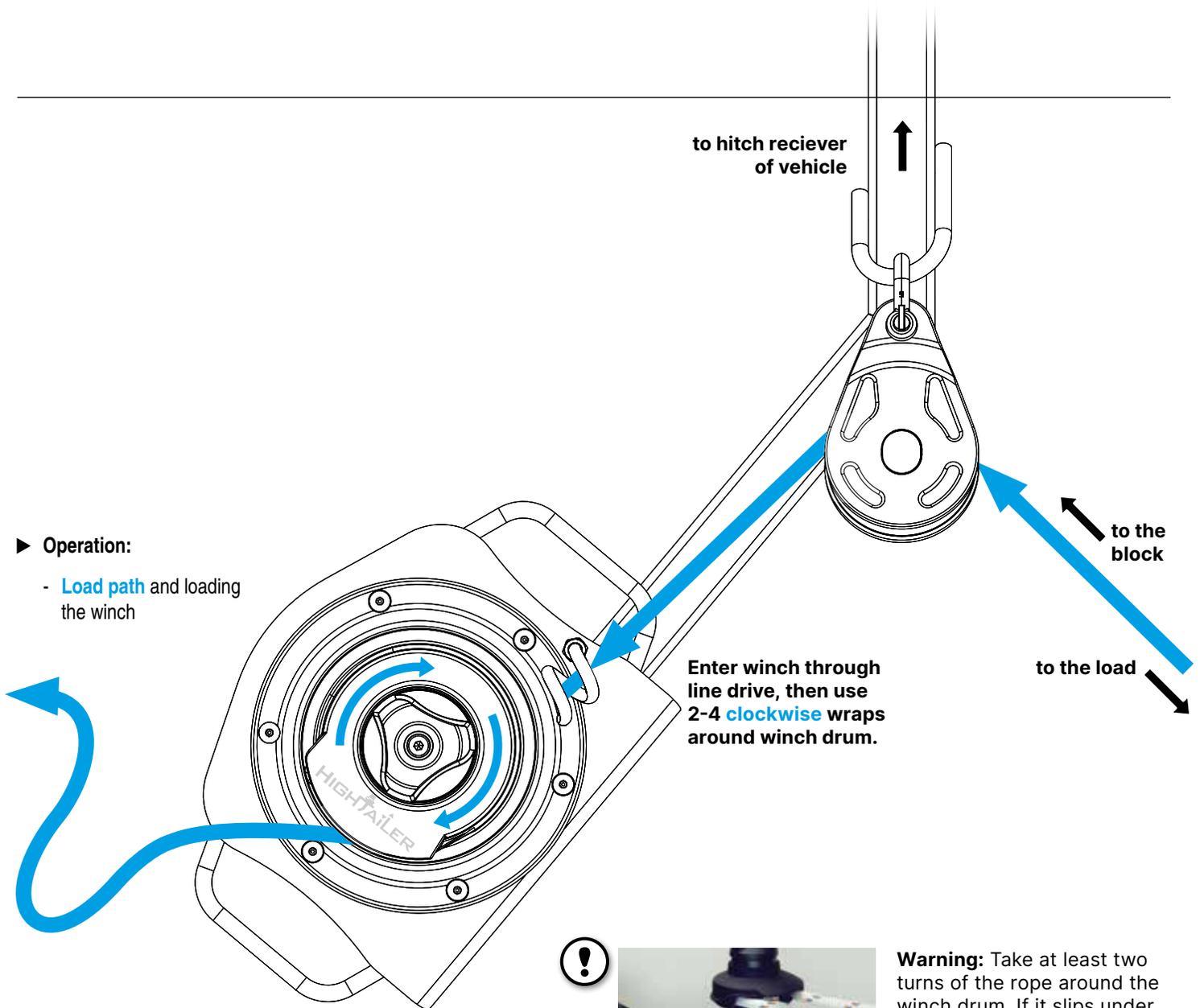
The Harken Hightailer strut can be positioned angled to the right or left. This allows the load to come in at an optimal angle based on the location to the truck. The load should be kept in the quadrant straight out from the hitch to parallel with the back of the truck where the winch isn't located.

To reverse strut direction:

- Pull the bracket pin and remove winch from strut.
- Remove strut from hitch receiver on vehicle and flip the strut to opposite direction.
- Replace strut in vehicle's hitch receiver.
- Replace the winch on the strut and replace bracket pin.

(refer to parts nomenclature)





► **Operation:**

- **Load path** and loading the winch

Enter winch through line drive, then use 2-4 clockwise wraps around winch drum.



Warning: Take at least two turns of the rope around the winch drum. If it slips under load, increase the number of turns to a maximum of four, taking care not to overlap the rope.



NOTE! The number of turns needed around the winch drum depends on the load and the condition of the rope. Check the device's descending capacity in its working configuration.

Verify that the load can be lowered at an appropriate rate. If the load lowers too slowly for the application, decrease the number of wraps on the drum until you find the optimal number of wraps. Always have at least two wraps. Do not unwind under load.



WARNING!

NEVER ALLOW ROPE TO (OVERRIDE) OVERLAP ON WINCH DRUM. THIS CAN CAUSE ROPE TO JAM AND CAN PREVENT LOAD FROM BEING LIFTED/ LOWERED. TENSION ON ROPE TO LOAD MUST BE RELIEVED TO CLEAR OVERRIDE. THIS PROCEDURE CARRIES A RISK OF SERIOUS INJURY OR DEATH IF LOAD DROPS OR BECOMES UNCONTROLLABLE.

SEE INCORRECT USES ON P13.

Loading the system:

- 1 Select which direction the strut should angle based on the load/truck orientation. Truck wheels should be chocked.
- 2 Use a pin and cotter pin to secure strut to hitch.
- 3 Attach winch to strut using supplied bracket pin and cotter pin.

ALWAYS direct the load through the pulley at the strut to hitch connection. The rope must run through the block and the line drive before wrapping around the winch in a clockwise direction.



4 Lead rope through pulley: swivel plate open and put rope on sheave.



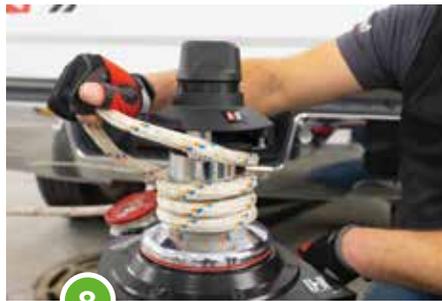
5 Align pulley sideplates, connect to bail welded to the strut with shackle that keeps the sideplates closed.



6 Feed rope through line drive.



7 Start at the base of the winch and wind the rope in a clockwise direction. Ensure that the rope does not override on winch.



8 Pull rope through to take up any slack, then pass the rope on the stripper arm by winding rope clockwise and pulling tight to engage.



9 Insert the rope into the rope grab. Raise the cover for ease.

 **CORRECT USE:**

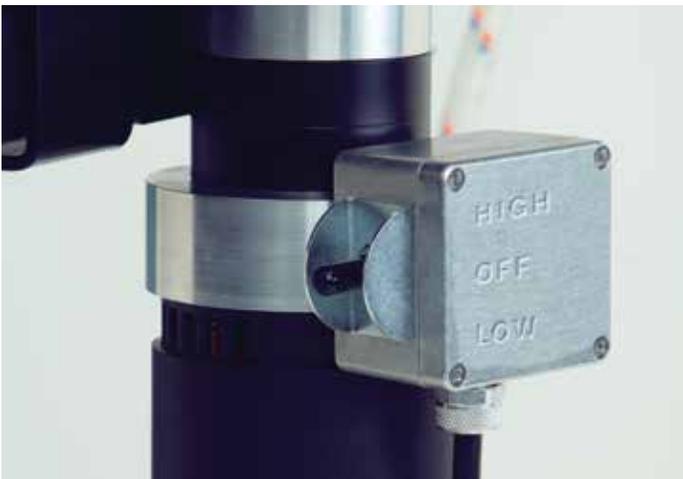


Foot pedal operation:

- Perform a load test in gear based on the amount of weight being lifted.
- Select gear, lift at least 10 ft. Stop and lower load.

NOTE: Assess if the load is descending at an appropriate rate, and adjust number of wraps on winch to optimize.

- The foot pedal is a remote on/off switch and does not have speed control functionality.



INCORRECT USES:

NEVER allow rope pass outside of the line drive pigtail.

NEVER allow rope to override (overlap) on winch drum.

NEVER wind rope around the winch drum in a counterclockwise direction.

NEVER let rope pass under the stripper arm.

WARNING!
ENSURE CORRECT PLACEMENT OF THE ROPE ON THE STRIPPER ARM AND INTO THE SPRING LOADED SELF-TAILING JAWS.

LOWERING THE LOAD:

With one hand, grasp the rope.

With the other hand, turn the release knob clockwise to allow the rope to slip on the winch drum and permit a controlled descent. To adjust descent speed, manually control the speed at which the rope leaves the winch by holding rope with arm out and bringing it in toward the winch drum.

To stop the descent, release the release knob.





REMOVING FROM SERVICE:

- Product can be severely damaged if exposed to chemical reagents and should be removed from service if the safe function is in doubt.
- After it has fallen from a height of more than one meter onto a hard surface. In this case, the device must be returned to the manufacturer or to a Harken authorized repair center.
- If unsure, contact Harken.
- ▶ **Annual Inspection:** Winch must be completely overhauled, cleaned, and lubricated every 12 months. For best performance, we recommend having the winched serviced annually at a Harken service center.
- ▶ **Lifespan:**
 - Operating temperature is between -10°C and 50°C, 14°F to 122°F. Extreme heat may distort composite parts. Extreme cold can cause the material to become brittle and cause the lubrication to congeal.
 - This product has an unlimited lifespan.

PACKAGING, STORAGE, TRANSPORTATION:

- ▶ Store away from solvents and corrosive materials.
- ▶ Do not store at extreme temperatures or with direct exposure to UV.



MAINTENANCE

- ▶ If soiled, rinse in clean, warm water (maximum temperature 25°C) with mild detergent at appropriate dilution, and thoroughly rinse. When the equipment becomes wet, it should be allowed to dry naturally, and should be kept away from direct heat. Light surface corrosion may be removed with a wire brush (no power tools). Retire if corrosion is heavy.
- ▶ Cleaning and lubrication by Harken's service center may cure a defective mechanism. If it does not, replace the product immediately.
- ▶ Periodic check:
 - Check drum, and if it has become smooth, or there is damage to the surface finish order replacement from Harken.
 - Inspect self-tailing jaws for damage to anodizing. Inspect stripper arm for wear and sharp edges. Verify that the stripper arm support is installed below the stripper arm in the self-tailing jaws.
- ▶ **Spare parts** (go to: infoUSA@harkenindustrial.com)

Description	Part number
BLOCK	IN166
SHACKLE	IN2127
STRUT ASSEMBLY	H-87102.R
FOOT PEDAL	IN907
BRACKET PIN WITH COTTER PIN	IN908
LINE DRIVE ASSEMBLY	A97016200

