Operating Manual

H8L

Hydraulic Winch

This manual must be with the vehicle on which this winch is installed.

Please check the Allied Systems website regularly for updates to this manual.
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A Product of
Allied Systems COMPANY
Sherwood, OR USA

P/N 599043W Printed in U.S.A. 02/12/2024

Winch Model H8L

Serial Number _____

Date Delivered _____

Date Installed _____

Special Equipment or Attachments

_____

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Allied Systems COMPANY

A Product of Allied Systems Company
Sherwood, Oregon
U.S.A.

Allied® WINCH

02/12/2024
Printed in U.S.A.

Foreword

The safe and efficient operation of a winch requires skill and alertness on the part of the operator. To develop the skills required, the operator must:

- Receive training in the proper operation of the winch and the machine on which it is mounted.
- Understand the capabilities and limitations of the winch and the machine on which it is mounted.
- Become familiar with the winch and the machine on which it is mounted and see that they are maintained in good condition.
- Read and understand the SAFETY SUMMARY and OPERATING PROCEDURES contained in this Operating Manual.

In addition, a qualified person experienced in the operation of the winch must guide a new operator through several load handling applications before the new operator attempts to operate the equipment alone. It is the employer's responsibility to make sure that the operator can see, hear, and has the physical and mental ability to operate the equipment safely.

This Operating Manual contains basic information necessary for the operation and maintenance of a winch. Optional equipment is sometimes installed that can change the characteristics described in this manual. Make sure the necessary instructions are available and understood before operating the winch.

Some of the components described in this Operating Manual will NOT be installed on your winch. If you have questions about any item on your winch or described in this Operating Manual, contact your local winch dealer, or contact Allied Systems Company:

Allied Systems Company
21433 SW Oregon Street
Sherwood, OR 97140 USA

Phone: 503-625-2560
Fax: 503-625-7269
E-Mail: marketing@alliedsystems.com

Also visit our website, www.alliedsystems.com, where the most current copy of this manual is always available.

Note: For repairs and overhaul, contact your Allied winch dealer. If you maintain your own equipment, a service manual is available for your specific winch.

Note: This publication may be translated to different languages for sole purpose of easy reference in non-English speaking locations. Should there be differences in interpretations to the text, please refer to the English language edition published by Allied Systems Company as the controlling document.

Contents

Contents

Safety Summary

General Safety Notices

The following pages contain general safety warnings which supplement specific warnings and cautions appearing elsewhere in this manual. All electrical and hydraulic equipment is dangerous. You must thoroughly review and understand the Safety Summary before attempting to operate, troubleshoot or service this winch.

The following symbols/terms are used to emphasize safety precautions and notices in this manual:

⚠ DANGER

The "DANGER" symbol indicates a hazardous situation which, if not avoided, will result in death or serious injury. Carefully read the message that follows to prevent serious injury or death.

⚠ WARNING

The "WARNING" symbol appears wherever incorrect operating procedures or practices could cause serious injury or death. Carefully read the message that follows to prevent serious injury or death.

⚠ CAUTION

The "CAUTION" symbol appears where a hazardous situation which, if not avoided, could result in minor to moderate injury and equipment damage.

NOTICE

This signal word alerts to a situation that is not related to personal injury but may cause equipment damage.

NOTE: ...

The term "NOTE" highlights operating procedures or practices that may improve equipment reliability and/or personnel performance.

Safety Regulations

Each country has its own safety legislation. The operator should be aware of these regulations and comply with them in full. This also applies to local bylaws and regulations in force on a particular worksite.

Should the recommendations in this manual deviate from those in the user' country, the national regulations should be followed.

NOTE: All possible safety hazards cannot be foreseen so as to be included in this manual. Therefore, you must always be alert to potential hazards that could endanger personnel and/or damage the equipment.

⚠ WARNING

The winch shall not be used for hoisting.

⚠ WARNING

Use hearing protection when operating winches.

⚠ WARNING

Maximum system pressure and flow: 4250 PSI / 55 GPM.

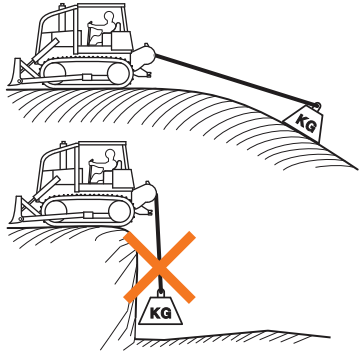
Operation, Inspection, and Maintenance Warnings

Obey the following cautions and warnings before using your winch to avoid equipment damage, personal injury or death.

- Do not operate the winch unless your are authorized and trained to do so.
- Do not operate the winch unless the vehicle is equipped with a screen to protect the operator if the wire rope breaks.
- Read, understand, and follow the operating, inspection, and maintenance instructions in this Operating Manual.
- Do not use the control levers for hand holds when entering or leaving the vehicle.
- Do not permit other people near the control area when you inspect or repair a machine.
- Never inspect, repair, or perform maintenance on a machine that is in motion.
- Inspect the winch before each use:
  - » Make sure that the controls and instruments operate correctly.
  - » Report the need for repairs immediately.
  - » Do not work with a damaged or worn wire rope.
  - » Do not use a winch that needs repairs.
  - » If the wire rope and ferrule must be removed from the drum, make sure the end of the wire rope and ferrule are controlled when the ferrule is released. The end of the wire rope can suddenly move from the drum like a compressed spring when the ferrule is released and cause an injury.
- Stay in the operator's seat when operating the winch.
- Do not stand on the vehicle when operating the winch.
- Avoid winch operation near people or other machines.

- Never stand nor permit others to stand in the bight (loop) of a wire rope.
- Do not stand nor permit others to be near the winch or wire rope when there is tension on the wire rope.
- Observe jobsite rules.
- Be in complete control at all times.
- Do not use the control levers as hangers for clothes, water bags, grease guns, lunch pails, etc.
- Do not leave the vehicle when the winch wire rope is under tension.
- Do not permit riders on the vehicle or load.
- Do not use the winch as an anchor for a double or two-part line.
- Do not pull the hook through the throat or over the drum, which will cause damage.
- When the winch is not in use, make sure the control lever is in **BRAKE-ON** position and the winch brake is applied.

- Do not use winch as a hoist. Tractor and skidder mounted winches are designed for towing.



- Always inspect wire rope, tail chain and other rigging components for wear, damage, broken strands or abuse before use.
- Never use wire rope, tail chain or other rigging that is worn-out, damaged or abused.
- Never overload wire rope, tail chain or rigging.

- Wire rope and tail chain will fail if worn-out, overloaded, misused, damaged, improperly maintained or abused. Wire rope or tail chain failure may cause serious injury or death!

- Do not terminate wire rope to tail chain by the use of a knot.
- Do not handle wire rope if the hook end is not free. A load could break away, suddenly tensioning the wire rope, resulting in serious injury or death.
- Stay clear of wire rope entry areas (fairlead or arch rollers, winch drum etc).
- Make sure ground personnel are in plain view of the operator, and at a distance of at least 1½ times the working length of the wire rope.
- Make sure that any hand signals used by ground personnel are clearly defined and understood by everyone involved.
- Do not attempt to “jerk” or “shock” a load free. Doing so can cause loads in excess of the rated capacity of the wire rope, winch, or mounting hardware.
- Replace any parts only with genuine Allied Winch parts. Refer to Parts Manual.
- Maintain **a minimum of five (3) complete wraps of wire rope** on the drum for normal operation. It may help to paint the last five wraps of wire rope a contrasting color, to serve as a visual indicator.
- Do not handle wire rope with bare hands. Wear leather gloves at all times.

- Align the tractor with the load to prevent side loading the winch, and to maintain even spooling of the wire rope.
- If applying tension to the wire rope manually during spooling:
  - » ensure that the operator is winching in slowly,
  - » keep your hands and clothing well clear of any rollers or the winch drum,
  - » do not maintain tension by letting the wire rope to slip through your hands,
  - » use a hand-over-hand technique to maintain tension.
- Be aware of the ground conditions, and make sure the ground and tractor are stable enough to pull the intended load.
- Do not attempt to pull loads in excess of the rated capacity of the winch.
- Keep yourself informed of any applicable codes, regulations and standards for the job.
- This winch is neither intended, designed, nor rated for any application involved in the lifting or moving of personnel.
- Use only the lubricants listed in the Recommended Oil List. See Page 13.
- Do not weld on any part of the winch. Contact Allied Systems if weld repairs are needed.
- The hydraulic system must be kept clean and free of contamination at all times.

- Be aware of the hazards of pressurized hydraulics:
  - » Wear personal protective equipment, such as gloves and safety glasses, whenever servicing or checking a hydraulic system.
  - » Assume that all hydraulic hoses and components are pressurized. Relieve all hydraulic pressure before disconnecting any hydraulic line.
  - » Never try to stop or check for a hydraulic leak with any part of your body; use a piece of cardboard to check for hydraulic leaks.
  - » Small hydraulic hose leaks are extremely dangerous, and can inject hydraulic oil under the skin, even through gloves.
  - » Infection and gangrene are possible when hydraulic oil penetrates the skin. See a doctor immediately to prevent loss of limb or death.

Product Modifications

- Any alterations to the winch that have not been approved by Allied Systems Company, or use of any non-OEM replacement parts, will void the warranty, and may introduce serious safety hazards.
- Any non-OEM parts used, or any alterations made are done so at your own risk to personnel safety. This includes the addition of accessories and attachments not manufactured or approved by Allied Systems Company.

Notes

General

Introduction

This Operating Manual contains basic information necessary for the operation and maintenance of the winch installed on:

- Case 1650M/2050M (R42),
- Caterpillar D7E (C511),
- Komatsu D85X-15 (K50),
- John Deere 750K/850K (E460), 850L (E470)

Operating Principles of Winch

A winch is normally installed on a skidder or tractor to:

- increase the pulling power of the skidder or tractor.
- reach into an area where a skidder or tractor cannot go.
- make lift functions available when special attachments are installed.

The winch is powered by an internal hydraulic motor connected to the tractor hydraulic system. Oil flow and pressure are converted to rotational energy by the winch motor. On the winch, torque is transmitted through a holding brake, a planetary speed reducer and two gear reductions to the drum. Hydraulic oil is supplied by the tractor mounted pump. The winch utilizes oil, filtration and cooling provided by the tractor circuit. Operation of the winch is controlled by a control lever located at the tractor's control station.

Caterpillar D7E (C511)

To operate the winch, the tractor must be running, the implement lockout switch unlocked and the winch lockout switch unlocked. (See Figure 1). **LINE-IN**, **LINE-OUT, BRAKE-ON** and **BRAKE-OFF** are controlled by a proportional control lever.

When the control lever is in the **BRAKE-ON** or centered position, the holding brake is automatically applied. Pushing the control lever away from the operator releases the brake and reels wire rope off the drum (**LINE-OUT**). Pulling the control lever towards the operator releases the brake and reels wire rope onto the drum (**LINE-IN**). Releasing the control lever causes it to return to the **BRAKE-ON** position, which stops the drum rotation and applies the holding brake. Moving the control lever a small amount results in slow wire rope movement for inching control. Line speed increases proportionally as the control lever is moved farther.

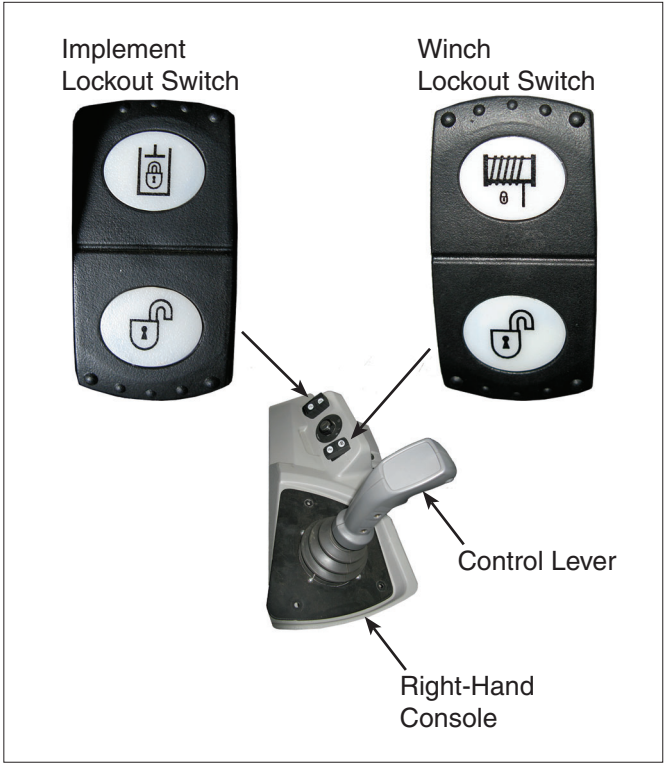


Figure 1 Control Lever & Switches
Caterpillar D7E

By moving the control lever to full stroke, high speed is activated. Control pressure actuates the motor swash plate to reduce motor displacement and increase motor rpm. If pressure in the main circuit exceeds a factory set level, the motor will automatically increase displacement to prevent motor stall. Motor stall will occur when the load exceeds winch capacity. When the control lever is returned to the **BRAKE-ON** position, the brake is automatically applied.

BRAKE-OFF is controlled by moving the control lever to the left. This function is spring centered to **BRAKE-ON** position, but if the control lever is moved far enough, it locks into a detented position.

BRAKE-OFF is used when there is a load attached to the winch wire rope and the operator wants to move the tractor away from the load with wire rope spooling off the drum in a controlled manner.

In **BRAKE-OFF**, hydraulic pressure is applied to release the brake-off clutch. As wire rope is pulled from the winch, the turning drum back-drives the winch gear train to the brake-off clutch. The winch motor, brake, and planetary reducer remain stationary. Mechanical drag through the gear train and viscous drag in the brake-off clutch keep the wire rope from bird-nesting as it is spooled off the drum.

⚠ WARNING

BRAKE-OFF should not be used to lower a suspended load or a load that can slide down a slope.

Case 1650M/2050M (R42), Komatsu D85X-15 (K50) & John Deere 750K/850K (E460) 850L (E470)

To operate the winch, the tractor must be running and the equipment lockout lever unlocked. (See Figure 2). **LINE-IN**, **LINE-OUT** and **BRAKE-ON** are controlled by a proportional control lever.

NOTICE

Control lever geometry and switch location varies by tractor.

When the control lever is in the **BRAKE-ON** or centered position, the holding brake is automatically applied. Pushing the control lever away from the operator releases the brake and reels wire rope off the drum (**LINE-OUT**). Pulling the control lever towards the operator releases the brake and reels wire rope onto the drum (**LINE-IN**). Releasing the control lever causes it to return to the **BRAKE-ON** position, which stops the drum rotation and applies the holding brake. Moving the control lever a small amount results in slow wire rope movement for inching control. Line speed increases proportionally as the control lever is moved farther.

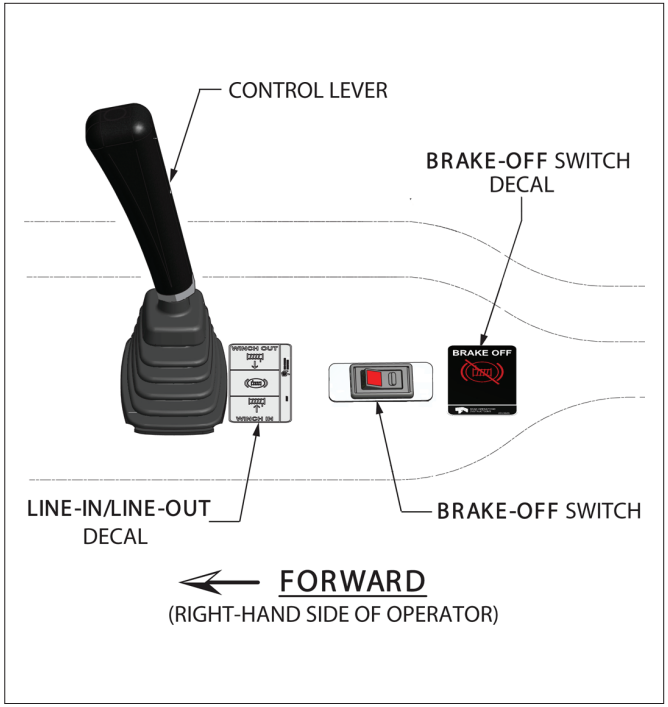


Figure 2 Control Lever & Switch
Case 1650M/2050M, Komatsu D85X-15
& John Deere 750K/850K/850L

By moving the control lever to full stroke, high speed is activated. Control pressure actuates the motor swash plate to reduce motor displacement and increase motor rpm. If pressure in the main circuit exceeds a factory set level, the motor will automatically increase displacement to prevent motor stall. Motor stall will occur when the load exceeds winch capacity. When the control lever is returned to the **BRAKE-ON** position, the brake is automatically applied.

BRAKE-OFF is controlled by a switch located on the operator console and directs hydraulic pressure to release the brake-off clutch.

BRAKE-OFF is used when there is a load attached to the winch wire rope and the operator wants to move the tractor away from the load with wire rope spooling off the drum in a controlled manner.

In **BRAKE-OFF**, hydraulic pressure is applied to release the brake-off clutch. As wire rope is pulled from the winch, the turning drum back-drives the winch gear train to the brake-off clutch. The winch motor, brake, and planetary reducer remain stationary. Mechanical drag through the gear train and viscous drag in the brake-off clutch keep the wire rope from bird-nesting as it is spooled off the drum.

⚠ WARNING

BRAKE-OFF should not be used to lower a suspended load or a load that can slide down a slope.

Winches with option Code D have a **HI-SPEED** switch to override automatic motor displacement control. See Figure 3.

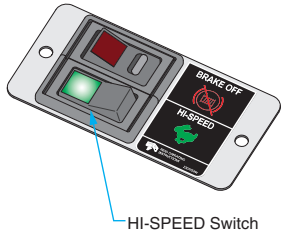


Figure 3 HI-SPEED Switch (Option Code D)

Nameplate

Each winch is shipped from the factory with a nameplate as shown in Figure 4. The nameplate is stamped with:

- winch model
- winch serial number
- maximum rated bare drum line pull
- maximum wire rope diameter

DO NOT operate the winch with larger diameter wire rope. If the nameplate is missing, DO NOT operate the winch until its capacity is known.

The serial number for the winch is also stamped into the frame next to the nameplate.

Figure 4 Nameplate

Wire Rope Selection

Each winch model can have a variety of wire rope sizes, lengths, or grades installed by the user. The maximum wire rope size is shown on the nameplate. The maximum rated line pull stamped into the nameplate is based on the maximum wire rope size, EEIPS grade. When a smaller diameter wire rope, or a different grade is installed, the line pull is limited by the capacity of the wire rope.

See Figure 5 for approved wire rope sizes, drum capacities and maximum rated line pulls. When a larger diameter wire rope is used, the length of wire rope installed on the drum will be shorter. Be aware that the winch can create a tension in the wire rope that is greater than the strength of the wire rope. The user must be careful to select a wire rope that has enough strength and length for the job.

⚠ WARNING

Load loss hazard.

A wire rope that breaks under high tension can suddenly whip back towards the winch, causing injury or product damage.

Be sure the operator knows the capacity of the wire rope and the winch.

⚠ WARNING

Load loss hazard.

A loaded wire rope with fewer than three complete wraps on the drum could disengage from the ferrule pocket, causing load loss and possible injury.

Paint the last five wraps of wire rope a contrasting color to alert the operator that end of the wire rope has been reached.

Wire Rope Diameter in (mm)	Capacity for Full Drum Fill ft (m)	Capacity for 2/3 Drum Fill ft (m)	EIPS Maximum Rated Line Pull Lbs (N)	EEIPS Maximum Rated Line Pull Lbs (N)
7/8 (22)	430 (131)	287 (87)	56,800 (252,600)	62,500 (278,000)
1 (25)	334 (102)	222 (68)	73,800 (328,200)	81,200 (361,100)
1 1/8 (28)	267 (81)	178 (54)	92,800 (412,700)	102,100 (454,100)

NOTE:
1. Loosely or unevenly spooled line will reduce capacities.
2. Use flexible wire rope with independent wire rope center.
3. Ferule size: 2 1/4 inches diameter, 2 3/8 inches long.

Figure 5 Wire Rope Sizes and Capacities

Wire Rope Reel

When the wire rope is transferred from a reel to the drum, or from the drum back onto a reel, it must go from “top to top” for overwind winches, or “bottom to bottom” for underwind winches, as shown in Figure 6, to avoid putting a reverse bend into the wire rope.

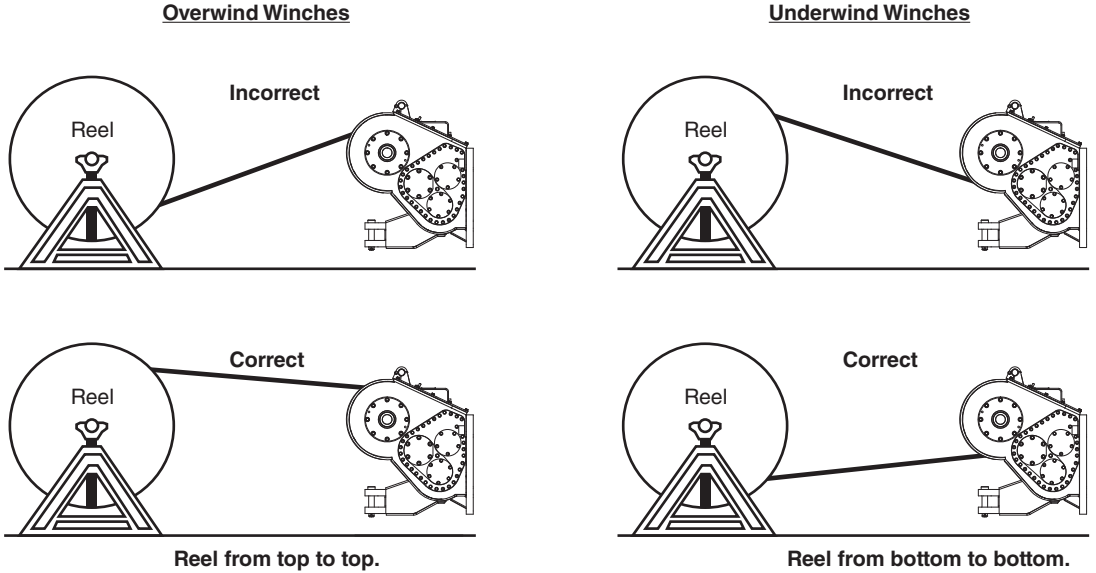


Figure 6 Transferring Wire Rope from or to Reel

Wire Rope Installation

⚠ WARNING

Gloves should be worn when working with or near wire rope to prevent cuts and abrasions.

NOTE: The illustrations in this section show a winch with an "overwind" configuration, which is standard. Some winches are configured for "underwind", with the wire rope spooling onto the bottom of the drum instead of the top. The procedures for installation are the same.

Seat the ferrule on the drum end of the wire rope in the ferrule pocket in the drum. See Figure 7. Use the keeper and related hardware to secure the ferrule. Torque the capscrew to 49 ft-lbs.

Once the ferrule is properly secured in the pocket, the wire rope may be spooled slowly onto the drum. Apply enough tension to the wire rope as it is being spooled to ensure that it spools neatly and tightly on the drum.

Tension may be created by a variety of methods. The methods described here are not exclusive.

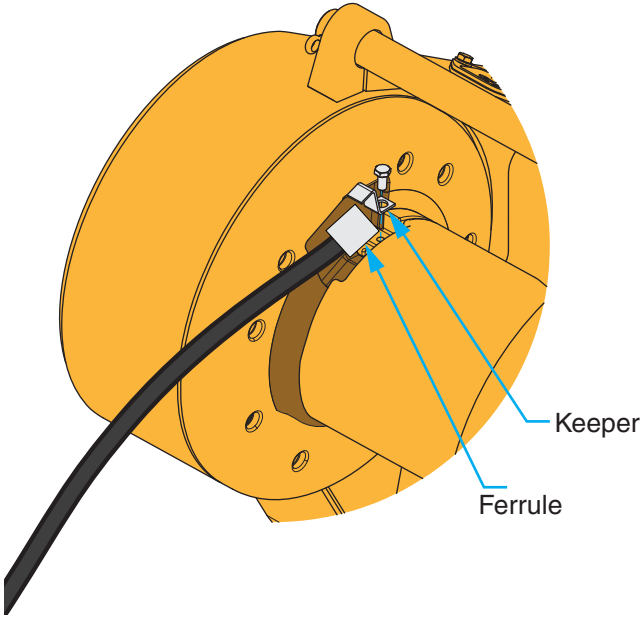


Figure 7 Secure Ferrule in Pocket with Keeper

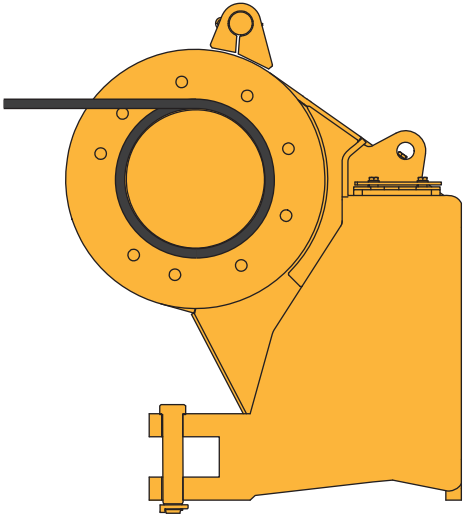


Figure 8 First Layer, Overwind Configuration

One method is to create a wooden plank lever, as shown in Figure 9 to apply pressure to the reel flange(s). The friction between the wooden plank and the reel flange(s) will create resistance to rotation of the reel, which will create tension in the wire rope as it is slowly spooled onto the winch drum.

Another method is to use the tines of a forklift to bear against the reel flange(s). Again, the friction generated between the tines and the flange(s) will create tension in the wire rope.

Finally, the end of the wire rope may be fastened to a forklift. The forklift may be driven away from the winch drum as the wire rope is paid out, and the forklift operator may use the brake on the forklift to provide tension on wire rope as the wire rope is spooled back onto the winch drum. The movement of the forklift and the paying out or spooling back onto the winch drum shall be coordinated to prevent the wire rope from contacting the ground.

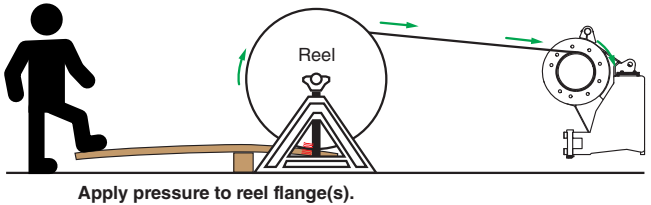


Figure 9 Create Tension

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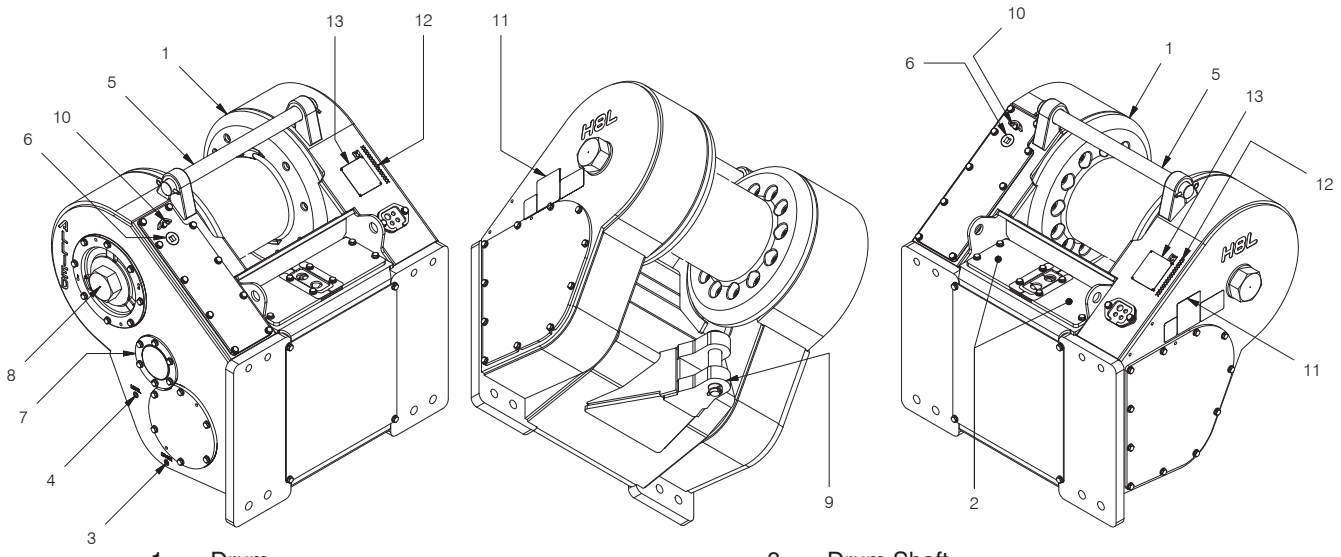
H8L Winch Descriptions



1. Drum
2. Access Cover for Motor and Hydraulics
3. Plug to Drain Oil
4. Plug to Check Oil Level
5. Tie Bar
6. Fill Plug
7. Bearing Retainer for Intermediate Shaft
8. Drum Shaft
9. Drawbar
10. Breather
11. Maintenance & Warning Decals
12. Serial Number Stamp
13. Nameplate

Figure 10 H8L Towing Winch

Oil Specifications

The hydraulic winch motor and control system operate off of the tractor implement hydraulic system. The winch gear case is filled with hydraulic transmission oil and is separate from the tractor hydraulic system. Factory fill for the gear case is oil meeting **Caterpillar TO-4 specification SAE 30 weight**. For proper oeration of the **BRAKE-OFF** clutch, only oils meeting this specification should be used in the winch gear case.

Other hydraulic oils meeting this specification are:

ExxonMobil, **Mobiltrans HD-30**
Chevron, **Chevron Drive Train Fluid HD SAE 30**.

Oil Capacity

The oil capacity for H8L winch is 4 gallons (15 liters).

Recommended Oil List

Oil Supplies	LOCATION IN WINCH	
	HYDRAULIC SYSTEM (PUMP)	WINCH CASE (GEAR TRAIN)
Caterpillar	Use Tractor Fluid	TO-4
Chevron	Use Tractor Fluid	Drive Train Fluids HD
Exxon-Mobil	Use Tractor Fluid	Mobiltrans HD Series
Note: For necessary detailed information, refer to Hydraulic Winch Maintenance Decal on page 22 in this manual, or on the right-hand side of the winch.		

Figure 11 Recommended Oil List

Serial Number Codes

H8L H 1 B 1001 C511

Winch Model
H8L = Standard
KH8L = Specially Designed

Hydraulic Operation Type
H = Hi Performance
Direction Control in Winch
T = Standard
Tractor Controls and Pump

Gear Ratio Code
1 = 207:1
2 = 259:1
3 = 292:1

Vehicle Code
See Figure 12

Sequence Number

Internal Options
B = PFPR, BRAKE-OFF Clutch
D = PFPR, BRAKE-OFF Clutch & 2-Speed Control

Notes: 1. In addition to the serial number plate, the serial number is stamped on the top left-hand side of the frame.
2. Circled numbers in Figure 12 indicate possible gear ratio.

Tractor Make/Model and Starting Tractor Serial Number Where Applicable

CODE	C Caterpillar	E John Deere	K Komatsu	R Case
42				1650M/2050M ①
460		750K/850K ①		
470		850L ①		
50			D85X-15/18 ①②③	
511	D7E ①			

Figure 12 Tractor Identification Codes and Available Gear Ratios for H8L Winch

Optional Equipment

The H8L winch may be equipped with an optional fairlead assembly. A fairlead consists of a set of top and bottom horizontal rollers and side rollers that the wire rope is fed through. With this attachment, if the direction of line pull is not directly behind the fairlead rollers instead of across the frame, thus protecting both the frame and the wire rope from excessive wear.

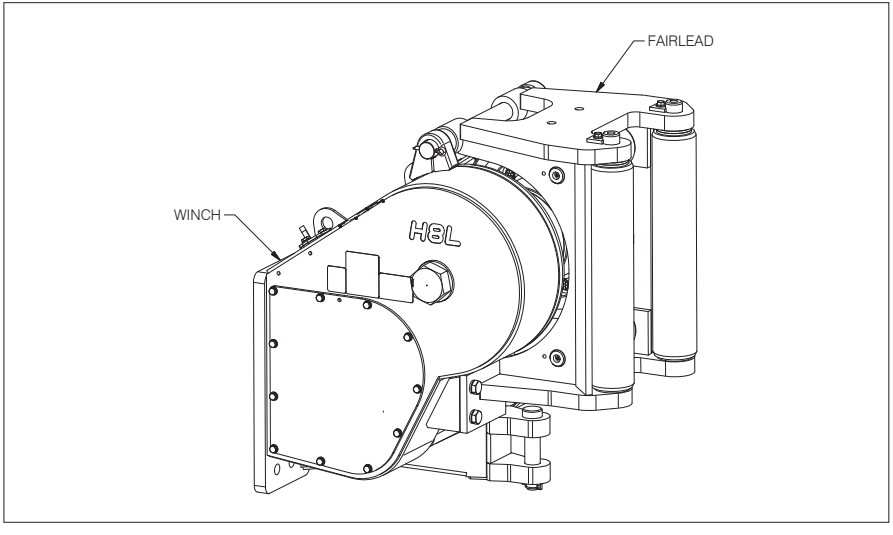


Figure 13 Fairlead for H8L Winch

Operation

Checks Before Operation

Check the wire rope and hook for wear or damage. Check that the periodic inspection and maintenance have been done at the recommended operating hours. See Figure 18 on page 25 (Maintenance Schedule).

Checks During Operation

The Troubleshooting Chart, Figure 16 on page 22, can be used by the operator to identify a problem with the winch operation. A trained service person is needed for additional troubleshooting and repair that requires disassembly of parts of the winch.

Operating Procedures

The H8L winch is designed to operate on a load sense, pilot operated hydraulic system. With the tractor running, the implement lockout switch unlocked and the winch lockout switch unlocked, the winch is ready to operate.

The control lever and switches are used to select the following operations:

- **BRAKE-ON** (spring-centered position)
- **LINE-IN**
- **LINE-OUT**
- **BRAKE-OFF**
- **HI-SPEED (Option Code D)**

BRAKE-ON

When the control lever is in the neutral or spring-centered position, the winch is in **BRAKE-ON** mode. In the **BRAKE-ON** position, no oil is directed to the motor, and the spring-applied holding brake prevents drum movement, unless **BRAKE-OFF** is selected.

LINE-IN

Moving the control lever directs a pilot signal to the directional control valve, which in turn controls oil flow to the hydraulic winch motor. Pilot pressure is sequenced to release the holding brake as the directional valve begins supplying flow to the motor. Moving the control lever toward the operator causes the drum to begin turning and reeling in wire rope.

The control lever is a proportional controller: the amount of flow is proportional to the amount of the control lever movement. Moving the control lever a small amount turns the drum slowly; the speed increases as the control lever is moved further. Gradually releasing the control lever slows the line speed until the drum stops. When the drum stops, the brake is automatically set. Inching control of the line can be achieved by small movements of the control lever.

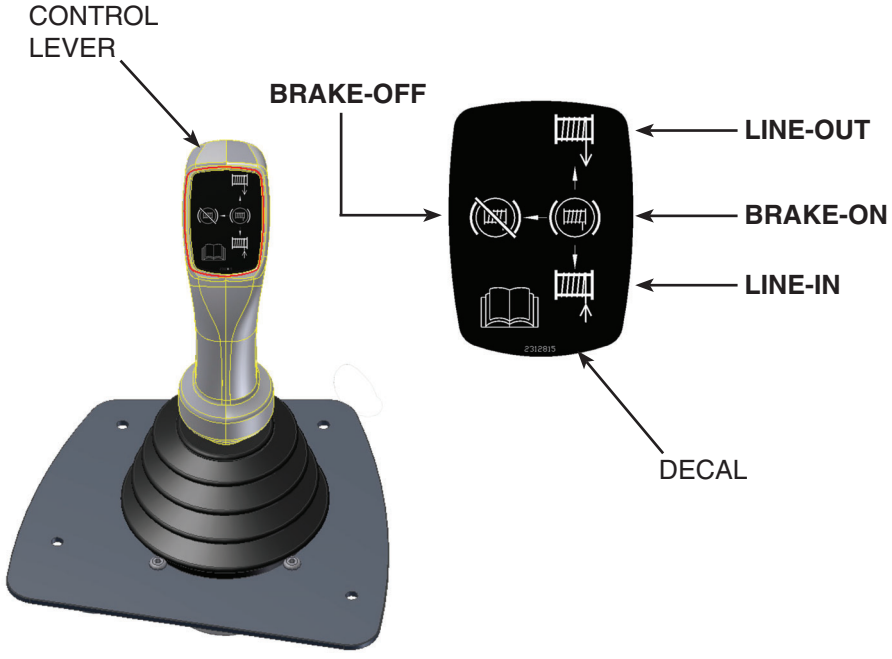


Figure 14 H8L Towing Winch Operator Controls Caterpillar D7E

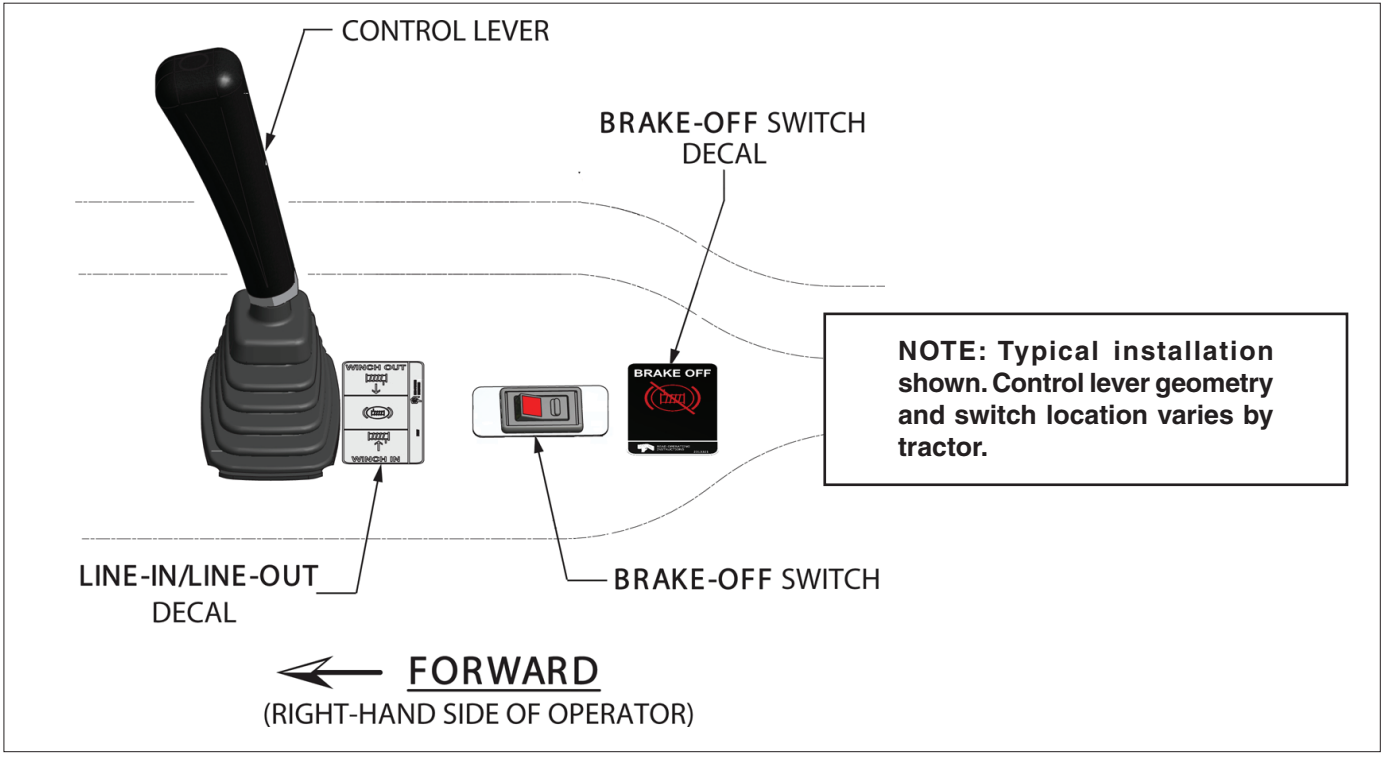


Figure 15 H8L Towing Winch Operator Controls
Case 1650M/2050M, Komatsu D85X-15 & John Deere 750K/850K/850L

LINE-OUT

LINE-OUT is controlled in the same manner as **LINE-IN**, except the control lever is moved away from the operator. **LINE-OUT** speed is also proportional to the control lever movement. When the contrtol lever is returned to the **BRAKE-ON** position, the brake is automatically applied.

BRAKE-OFF

⚠ WARNING

BRAKE-OFF should not be used to lower a suspended load or a load that can slide down a slope.

The **BRAKE-OFF** position is used when there is a load on the wire rope. It allows the operator to move the tractor away from the load yet still keep the wire rope tight.

In **BRAKE-OFF**, hydraulic pressure is applied to release the **BRAKE-OFF** clutch.

- **Caterpillar D7E**

BRAKE-OFF is controlled by moving the control lever to the left. This function is spring centered to **BRAKE-ON** position, but if the control lever is moved far enough it locks into a detented position.

- **Case 1650M/2050M, Komatsu D85X-15 & John Deere 750K/850K/850L**

BRAKE-OFF is controlled by a two-position rocker switch on the operator console.

HI-SPEED

HI-SPEED (option code D) is controlled by a two-position rocker switch on the operator console. When activated, displacement to the motor is reduced to the minimum setting, increasing line speed.

Troubleshooting Chart

PROBLEM	POSSIBLE CAUSE	CORRECTION
Winch does not operate.	Winch lockout switch is in locked position.	Unlock winch lockout switch.
	Implement lockout switch is in the locked position.	Unlock the implement lockout switch.
Operation is rough or not regular.	Hydraulic oil is too cold.	Allow tractor hydraulics to warm up.
	Low oil level.	Add oil.
Hydraulic oil becomes too hot.	Winch is operated for long periods.	Allow unit to rest.
	Low oil level.	Add oil.
Brake begins to release before the motor moves the drum.	Brake is worn or needs replacement.	See the Service Manual for additional information.
	Brake valve is out of adjustment.	
Winch brake does not apply or release correctly.	Brake is worn.	See the Service Manual for additional information.
	Brake valve is out of adjustment or low pressure.	

Figure 16 Troubleshooting Analysis Chart

Maintenance

The Maintenance Schedule is a program that includes periodic inspection and lubrication. Use the operating time on the hour meter of the tractor to determine the maintenance time for the winch.

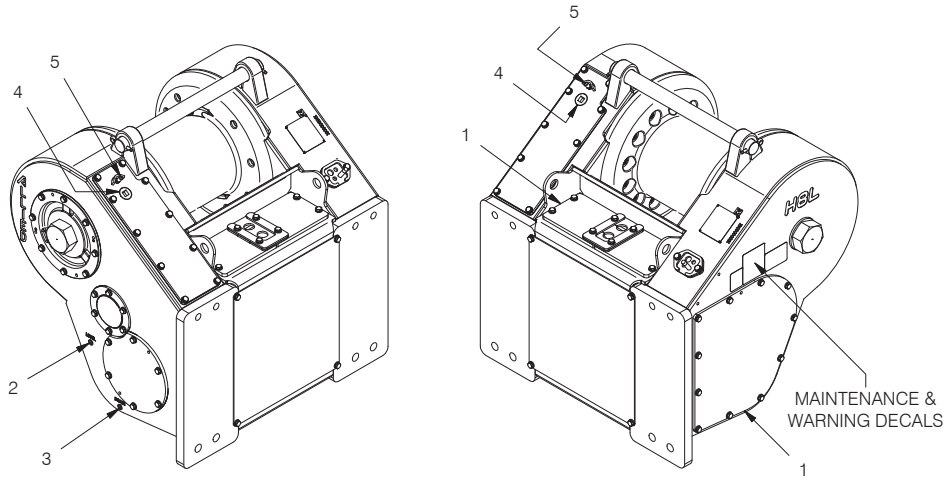
⚠ WARNING

Hydraulic oil remains pressurized after tractor engine has stopped. Be aware of the hazards of pressurized hydraulics. See Page xi in the Safety Summary for important information.

Before servicing the hydraulic system:

1. Shut engine off, but turn tractor key switch back on to provide electrical power to the winch.
2. Unlock winch lockout switch (turn ON).
3. Move the winch control lever from **BRAKE-ON** to **BRAKE-OFF** several times to discharge hydraulic oil pressure from the accumulators.
4. Lock-out winch with Winch Lockout Switch, and turn tractor key switch off.
5. Loosen hydraulic fittings slowly to assure that there is no residual hydraulic pressure in the system. If hydraulic oil pressure is still present, repeat these steps until all pressure is relieved.

Maintenance Points



1. Access Cover for Motor and Hydraulics
2. Oil Level Check Plug
3. Oil Drain Plug
4. Fill Plug
5. Breather

Figure 17 H8L Winch Maintenance Points

Maintenance Schedule

INTERVAL	PROCEDURE OR QUANTITY	SPECIFICATION
50 hours or weekly	Check oil level at plug (item 2). Add oil as necessary through fill plug (item 4). (See Figure 17). **Do not operate winch when checking the oil level. If oil level increases, see Troubleshooting Chart.**	See Oil Selection and Oil Capacity for details.
	Clean the breather (item 5).	Remove debris around breather. Clean the breather with solvent if necessary.
	Lubricate the rollers on the integral arch or the fairlead assembly, if the winch is equipped with either of these options.	Use multi-purpose grease with 2-4% molybdenum disulfide.
2000 hours or every 12 months	Change the gear oil. Drain oil from plug (item 3). Add oil through fill plug (item 4). Check the oil level at oil level check plug (item 2).	See Oil Selection and Oil Capacity for details.

Figure 18 Maintenance Schedule

Maintenance Decal

Hydraulic Winch Maintenance

Recommended Winch Service Intervals

Hours or **	Months **	Filter ***	Winch Gear Oil	Brake & Clutch	Major Overhaul
First 250	1	Change			
Every 500	3	Change			
Every 2,000	12		Change		
Every 5,000				* Inspect	
Every 10,000					* Evaluate

Lube rollers and check oil level and filter light weekly.

* Evaluate = Service based on average winch use;
  - if used more than once a day, perform overhaul.
  - if used less than once a day, remove covers and check to determine need.

* Inspect = disassemble and inspect for wear.

** Service winch using the tractor's hour meter or the length of time the winch is mounted to the tractor, whichever occurs first.

*** Follow tractor schedule if using tractor filter.

Recommended Gear Compartment Oil:

Caterpillar -TO-4
Chevron -Drive Train Fluids HD
ExxonMobil -Mobiltrans HD Series

Allied WINCH

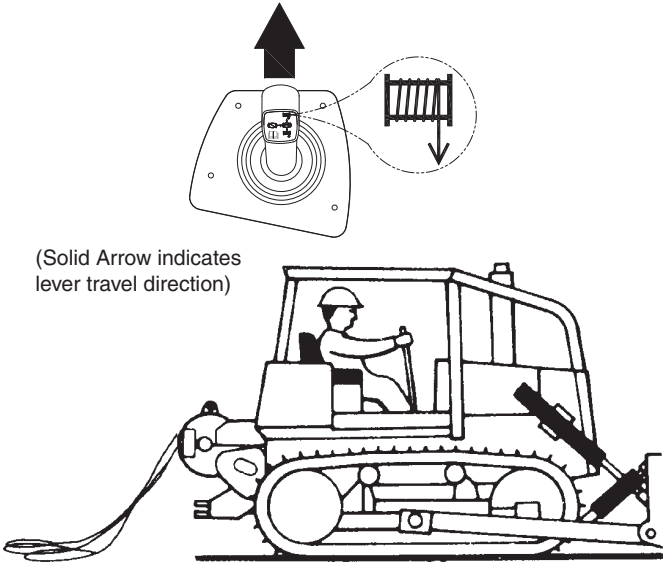
Consult service/operating manual for low temperature oils and other details. Use of non-recommended oil may void warranty.

2310796 Rev D

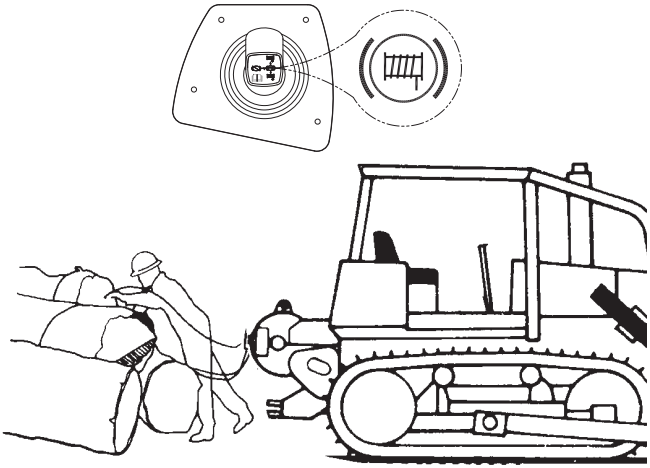
Figure 19 Hydraulic Winch Maintenance Decal

Caterpillar D7E

Tractor Operation

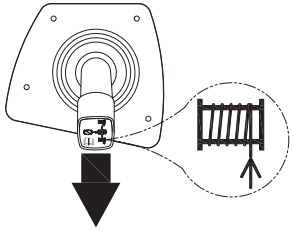


Step 1. The tractor or skidder is moved to an area where a load will be connected. The operator moves the control lever to the **LINE-OUT** position to unspool enough wire rope to connect the load.

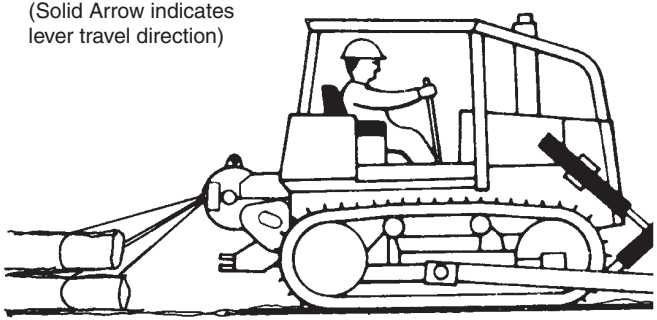


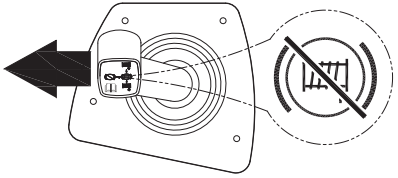
Step 2. The load is connected to the wire rope.

Caterpillar D7E

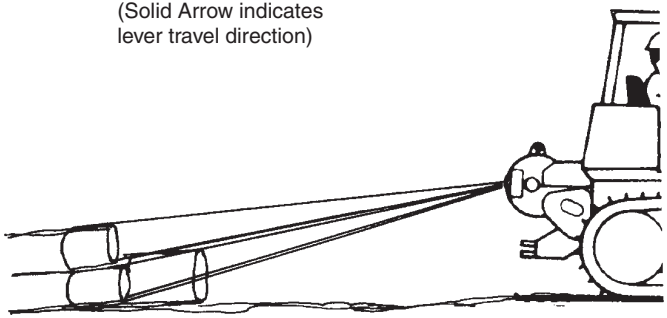


(Solid Arrow indicates lever travel direction)





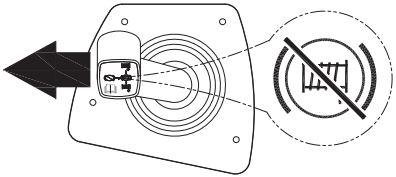
(Solid Arrow indicates lever travel direction)



Step 3. The operator can move the control lever to the **LINE-IN** position. If the load is less than approximately 50% of the maximum line pull, the operator can begin traveling with the vehicle at the same time. The winch will wind the load toward the vehicle as it travels. If the load is nearly the capacity of the line pull, the operator must move the load close to the vehicle before beginning to travel.

Step 4. If the tractor or skidder must travel through an area with bad traction conditions, the operator can move the control lever to **BRAKE-OFF** position. This will permit the vehicle to move slowly through the bad traction area without pulling the load at the same time.

Caterpillar D7E



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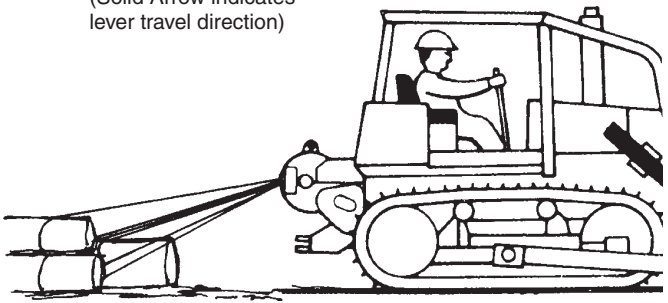
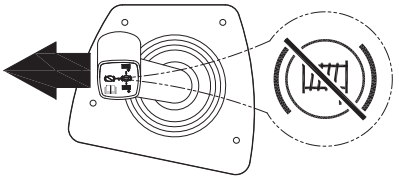
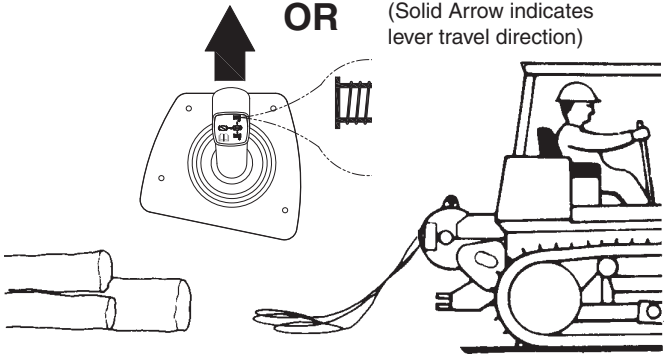


Step 5. When the vehicle is on firm ground, the operator can deactivate **BRAKE-OFF** and move the control lever to **LINE-IN** position to pull the load toward the vehicle.



OR

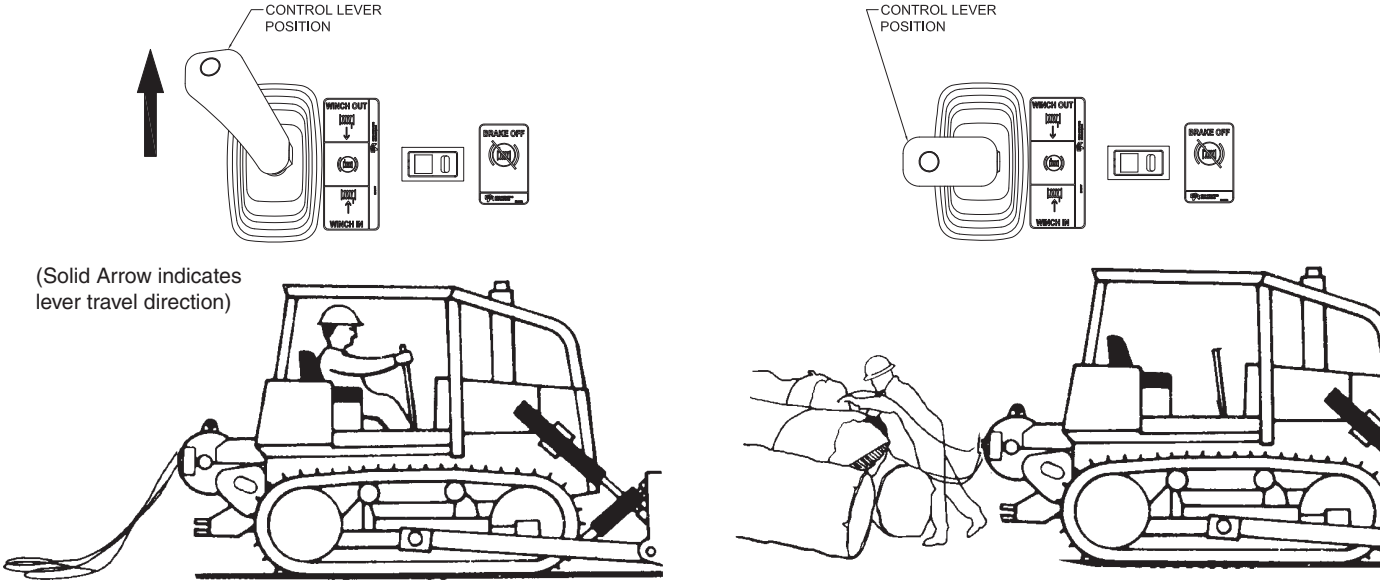
(Solid Arrow indicates lever travel direction)



Step 6. When the operator wants to disconnect from the load, the vehicle is stopped and the control lever is moved to the **BRAKE-OFF,** or **LINE-OUT** position to loosen the wire rope. The wire rope is then disconnected from the load.

Case 1650M/2050M
Komatsu D85X-15
John Deere 750K/850K/850L

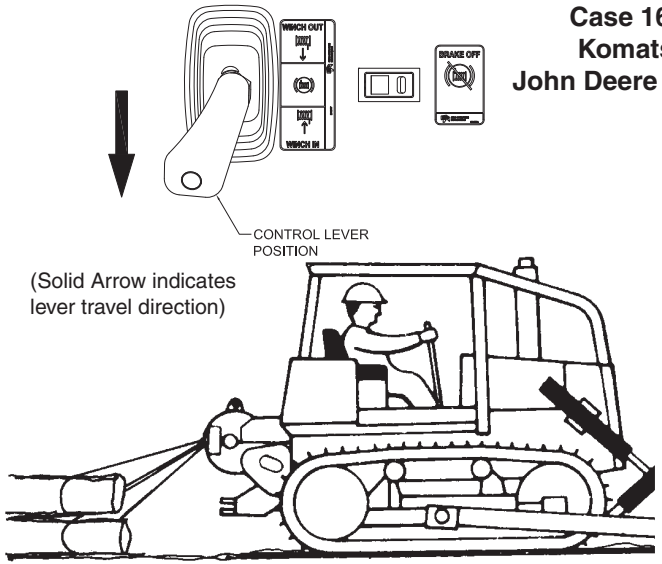
Tractor Operation



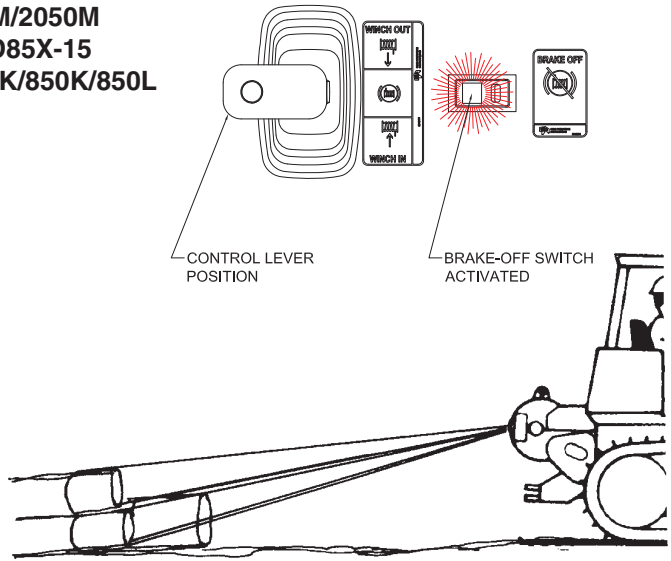
Step 1. The tractor or skidder is moved to an area where a load will be connected. The operator moves the control lever to the **LINE-OUT** position to unspool enough wire rope to connect the load.

Step 2. The load is connected to the wire rope.

Case 1650M/2050M
Komatsu D85X-15
John Deere 750K/850K/850L

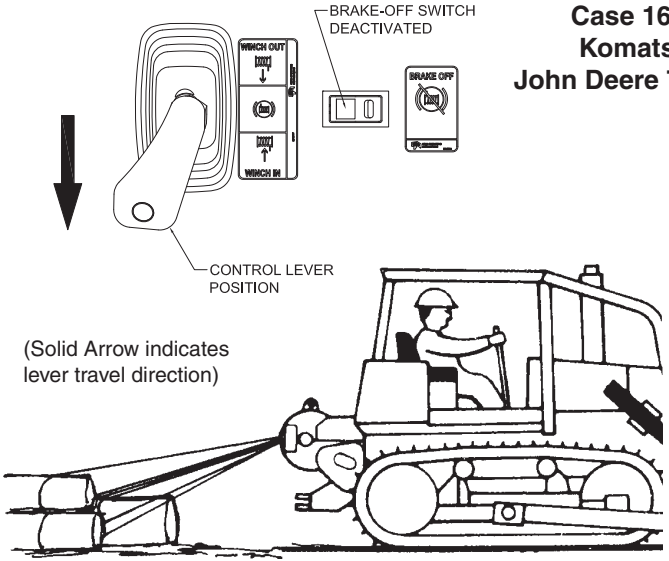


Step 3. The operator can move the control lever to the **LINE-IN** position. If the load is less than approximately 50% of the maximum line pull, the operator can begin traveling with the vehicle at the same time. The winch will wind the load toward the vehicle as it travels. If the load is nearly the capacity of the line pull, the operator must move the load close to the vehicle before beginning to travel.

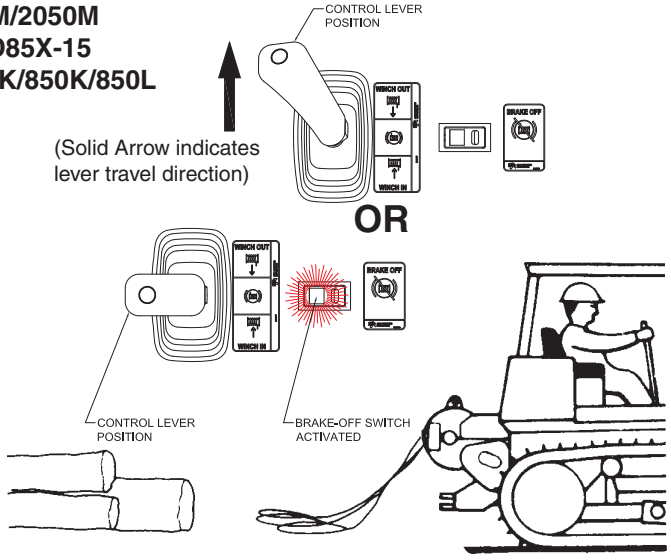


Step 4. If the tractor or skidder must travel through an area with bad traction conditions, the operator can activate **BRAKE-OFF**. This will permit the vehicle to move slowly through the bad traction area without pulling the load at the same time.

Case 1650M/2050M
Komatsu D85X-15
John Deere 750K/850K/850L



Step 5. When the vehicle is on firm ground, the operator can deactivate **BRAKE-OFF** switch and move the control lever to **LINE-IN** position to pull the load toward the vehicle.



Step 6. When the operator wants to disconnect from the load, the vehicle is stopped and the operator can move the control lever to **LINE-OUT** position, or activate **BRAKE-OFF,** to loosen the wire rope. The wire rope is then disconnected from the load.

How to Move a Disabled Vehicle

A. A tractor or skidder often travels in areas where traction conditions are bad. A vehicle equipped with a winch can be used to remove itself from mud or other areas where it cannot move using only the drive wheels or tracks. See Figure 20. Use the following procedure:

1. Fasten the wire rope to a structure, tow bar of another vehicle, or a tree that has enough strength for the line pull. The wire rope must be in a direction that is approximately parallel to the direction of travel of the vehicle.

2. Use the throttle to set the engine speed at a power level to operate both the winch and the tracks or drive wheels. (Operator experience is required, because the winch can use most of the engine power in some vehicles.)

3. Put the control lever in the **LINE-IN** position to tighten the wire rope. When the wire rope is tight, put the vehicle transmission in **REVERSE** and engage the tracks or drive wheels. Use the power from the engine to the winch and tracks together to remove the vehicle from the bad area.

4. If the vehicle travels faster than the winch winds the wire rope, disengage the transmission until the wire rope is tightened again. Do not drive over the wire rope.

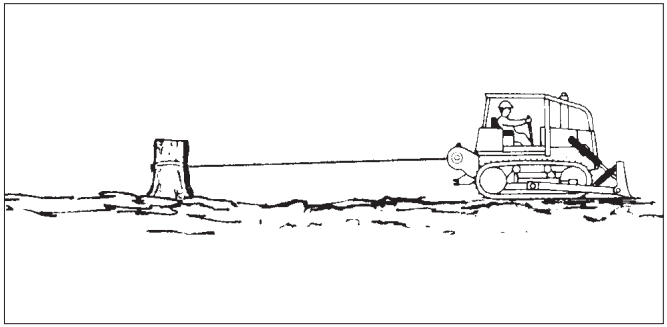


Figure 20 Moving a Disabled Vehicle (Step A)

B. A tractor or skidder equipped with a winch can be used to pull another vehicle from mud or other areas where it cannot move using only the drive wheels or tracks. See Figure 21. Use the following procedure:

⚠ WARNING

Use extra care if traction conditions are bad or if the vehicles are on a slope. Bad traction can cause the disabled vehicle or the tractor to slide. A slope can require additional distance to stop the vehicles.

Ensure the wire rope and tow chain have the capacity to do the job. If the disabled vehicle does not have a tow pin or other equipment for towing, carefully fasten the tow chain around the axle of the disabled vehicle. Make sure the tow chain is fastened so that the chain will not injure people or damage the vehicle.

An operator must be on the disabled vehicle to operate the steering and brakes when it is towed.

1. Fasten the wire rope to the tow bar of the other vehicle. The wire rope must be in a direction that is approximately parallel to the direction of travel of the vehicle. Apply the brakes on the tractor or skidder. Use the throttle to set the engine speed at a power level to operate the winch. (Operator experience is required, because the winch can use most of the engine power in some vehicles.)

2. Put the control lever in the **LINE-IN** position to tighten the wire rope. When the wire rope is tight, use the power from the engine to the winch to pull the vehicle from the bad area. If the disabled vehicle moves under its own power, keep the towing wire rope tight so that the wire rope does not pass under the drive wheels or tracks of the vehicle being towed.

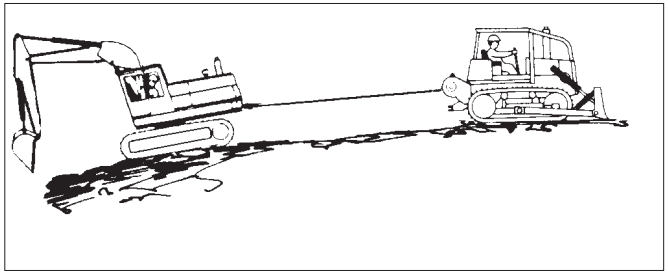


Figure 21 Moving a Disabled Vehicle (Step B)

Working on a Steep Slope

⚠ WARNING

The winch and the tractor must be in good condition for the following procedures. Make sure that the required maintenance has been done on the tractor and winch. Use only a wire rope that is in good condition. Make sure the wire rope and winch have enough capacity for the load. Make sure the anchor for the wire rope has enough capacity for the load. A failure of the tractor, winch, or wire rope while working on a steep slope can cause death or injury and loss of equipment.

Tractor is Down the Slope (See Figure 22).

Sometimes a tractor must work on a steep slope and can use a winch to give assistance when moving on the slope. Fasten the wire rope to the drawbar of another tractor, a structure or a tree that has enough strength to hold the tractor on the slope.

A. Moving down the slope:

1. Set the throttle on the tractor for the required engine speed.

2. Put the tractor in **FORWARD.** At the same time, move the winch control lever to a position between **BRAKE-ON** and **LINE-OUT** (inching) to control the speed of the tractor down the slope.

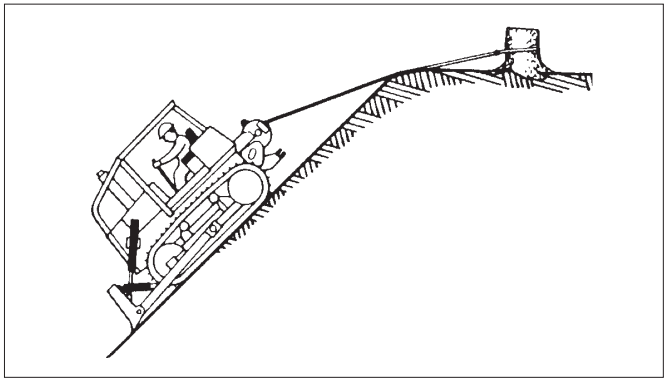


Figure 22 Working on a Steep Slope

B. Moving up the slope:

1. Set the throttle on the tractor for the required engine speed.

2. Put the lever in **LINE-IN** position to tighten the wire rope. When the wire rope is tight, put the tractor transmission in the **FIRST** speed range and **REVERSE** and engage the tracks or drive wheels. At the same time, move the control lever on the winch to **LINE-IN**.

3. Use the steering on the tractor to keep the travel of the tractor in line with the wire rope.

4. Engage **LINE-IN** as necessary. Do not permit the wire rope to loosen and pass under the drive wheels or tracks of the tractor.

Other Equipment is Down the Slope (See Figure 23).

In this operation, the tractor and winch are on stable ground and other equipment is working on a steep slope. The winch is used to give additional control to the equipment working on the steep slope. A winch with a fairlead option is recommended for this operation if alignment of the other equipment with the winch and tractor is a problem.

Make sure the tractor and winch are on stable ground and will not slide when the load is applied. Align the tractor and winch with the load. Apply the parking brake on the tractor.

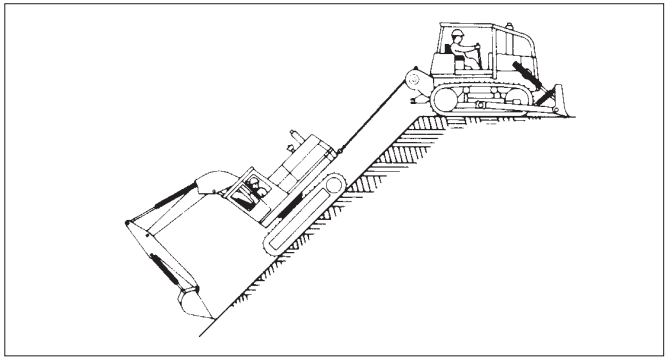


Figure 23 Other Equipment on a Steep Slope

A. Lowering the equipment on the slope:

1. Set the throttle on the tractor for the required engine speed. Operator experience is required for this operation so that the load is carefully controlled.

2. Keep the wire rope tightened between the tractor and the equipment being lowered down the slope. Use the control lever in the **LINE-OUT** position to control the lowering of the equipment down the slope.

3. Move the control lever between **LINE-OUT** and **BRAKE-ON** if inching is required.

B. Raising the equipment on the slope:

1. Set the throttle on the tractor for the required engine speed. Operator experience is required for this operation so that the load is carefully controlled.

2. Keep the wire rope tightened between the tractor and the equipment being raised up the slope. Use the control lever in the **LINE-IN** position to control the raising of the equipment up the slope.

3. Move the control lever between **LINE-IN** and **BRAKE-ON** if inching is required.

4. Keep the equipment being raised in alignment with the winch and tractor. Do not permit the wire rope to loosen and pass under the drive wheels or tracks of the tractor.

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Optional Equipment

Fairlead

A fairlead consists of a set of top and bottom horizontal rollers and side rollers that the wire rope is fed through. With this attachment, if the direction of line pull is not directly behind the fairlead rollers instead of across the frame, thus protecting both the frame and the wire rope from excessive wear.

Stability of the tractor is affected somewhat by the fact that the fairlead rollers are more rearward than the drum, thus putting slightly more moment on the tractor during side pulls. The operator must take care to assure stability on slopes.

Drawbar

Do not use the drawbar as an anchor point for a multipoint (over puller) line from the winch. Loads applied to the drawbar are transmitted to the bolts holding the winch to the tractor. Standard integral drawbars are designed to handle pulls of 66% of winch rated capacity; bolt on drawbars are 60%. Optional heavy duty and extended drawbars are available which increase the capacity of the drawbar and/or move the pin farther back so it is not under the winch drum.

Notes

NO MATTER HOW YOU SAY IT . . .

La Prudence Paye
La Seguridad Paga
Betriebssicherheit Macht Sich Bezahlt
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Segurança Paga
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