

WARN® WINCH OPERATOR'S MANUAL

MANUAL DE USO
CABRESTANTE WARN

MANUEL D'UTILISATION
TREUIL WARN



READ AND UNDERSTAND THIS MANUAL BEFORE INSTALLATION AND OPERATION OF WINCH. SEE SAFETY PRECAUTIONS.

ANTES DE INSTALAR O USAR EL CABRESTANTE SE DEBE LEER Y COMPRENDER ESTE MANUAL. VEANSE LAS PRECAUCIONES DE SEGURIDAD.

LISEZ ET COMPRENEZ LE LIVRET D'INSTRUCTION AVANT L'INSTALLATION OU L'UTILISATION DE VOTRE LE TREUIL. LISEZ LES CONSEILS DE SECURITE.



**WARN
INDUSTRIES**

12900 S.E. CAPPS RD., CLACKAMAS, OR 97015 (503) 722-1200

IMPORTANT WARRANTY NOTE:

Record the following information before submitting your warranty card.

Model No. _____

Serial No. _____

Date of Purchase _____

APPLICATION INFORMATION

This winch is designed primarily as a front mount vehicle recovery unit. It is not rated for use as a hoist.

This winch is not to be used to lift or move persons.

This winch is rated for intermittent duty cycles due to heat build up characteristics of various components.



CARELESS WINCH OPERATION CAN RESULT IN SERIOUS INJURY OR PROPERTY DAMAGE. READ AND UNDERSTAND ALL SAFETY PRECAUTIONS AND OPERATING INSTRUCTIONS BEFORE INSTALLING AND OPERATING THE WINCH.

SAFETY PRECAUTIONS

1. Never touch the wire rope or hook while they are in tension or under load. Even at rest, the winch may have the wire rope in tension.
2. **Do not** have the remote control lead plugged into the winch while free spooling, rigging, or sitting idle. Have the remote control lead plugged in **only** during the actual winching operation.
3. While the remote control lead is plugged into the winch, always keep clear of the drum and fairlead area and the wire rope and rigging.
4. Never handle the wire rope or rigging while anyone else is at the control switch or during the winching operation.
5. Always stand clear of the wire rope and load during the winching operation. Keep helpers and spectators at a safe distance. If a wire rope pulls loose or breaks under load, it can lash back with tremendous force.

6. Before winching, inspect the remote control lead for cracks, pinched spots, frayed wire or loose connections. A damaged, shorted lead could cause the winch to run as soon as it is plugged in. When using the remote control inside a vehicle, always pass it through a window to avoid pinching the lead in the door. Always store the remote control lead in a clean, dry area where it will not be damaged.
7. Always be certain that the anchor you intend to use is capable of withstanding the load. Always use a choker chain, wire choker rope, or tree trunk protector on the anchor. Never put the winch wire rope around an object and hook back to it; this will cause damage to the wire rope.
8. Never winch with less than five wraps of wire rope around the winch drum. With fewer wraps the wire rope could break loose from the drum under heavy load.
9. The wire rope must always spool off of the drum as indicated by the drum rotation decal on the winch. Some winches are equipped with an automatic brake and this brake **WILL NOT FUNCTION** if the wire rope spools off in the opposite direction. The wire rope spooling can accidentally be reversed by running the wire rope all the way out and respooling in with the control switch in the "power out" mode.
10. Never exceed the rated capacity for winching. Double line with a snatch block to reduce the load on the winch and wire rope by almost half.
11. Use the switch intermittently to take up wire rope slack to avoid shock loads which can momentarily far exceed the winch and wire rope rating.
12. Always unspool as much wire rope as possible when preparing rigging. Double line with a snatch block or pick an anchor as far away as practical. This will minimize wire rope damage, such as mashing and kinking, caused from top layers pulling down into the bottom layers when short pulls are made. The greatest pulling power is available at the First Layer on the drum, decreasing with each successive layer.
13. Always pull as straight as possible to minimize the buildup of wire rope on only one end of the drum. Always inspect and carefully rewind the wire rope after use. Mashed, pinched or frayed areas severely reduce the original tensile strength. For safety's sake, replace wire rope when damaged.

 **CAUTION**

When powering in wire rope during side pull operations, the wire rope will stack up at one end of the drum. Eventually this stack will become large enough to cause serious damage to the winch. To prevent this damage, line pulls should be as straight in front of the vehicle as possible. Stop winching if the wire rope comes close to the tie rods or mounting plate. To correct an uneven stack, spool out the stacked section of the wire rope and reposition it to the opposite end of the drum. This will free up space for continued winching.

14. The life of the wire rope is directly related to the care and use it receives. The wire rope on a new winch, and any replacement ropes, **MUST BE STRETCHED AND RESPOOLED UNDER LOAD** before using the winch. Failure to do this will result in wire rope damage.

15. At times it may be necessary to temporarily respool the wire rope under no load after use. The correct procedure is to hold the remote control lead in one hand and the wire rope in the other. Start as far from the vehicle as the remote control will allow, activate the switch, walk in several feet of rope and release the switch. Repeat the process. ALWAYS release the switch when your hand is AT LEAST FOUR FEET from the fairlead (the physical opening through which the wire rope passes).

Always wear heavy leather gloves when handling wire rope.

Do not let the wire rope slip through your hands.

16. ALWAYS release the switch when the HOOK is a MINIMUM OF FOUR FEET from the fairlead. The following procedures are important to PERSONAL SAFETY and to avoid wire rope damage caused by over-tightening.

If your winch is equipped with a clutch unplug the remote control lead, release the clutch, and rotate the drum by hand to retrieve the remainder of the wire rope. Re-engage the clutch.

If your winch is not equipped with a clutch place the hook on a suitable spot on the mounting kit. Then, keeping your hands completely clear of the hook, the wire rope, and the fairlead, jog the switch intermittently to take up the slack. Do not overtighten or damage may occur to the wire rope.

17. When anchoring the pulling vehicle, set the parking brake and block the wheels. Place automatic and manual transmissions in neutral.
18. When retrieving or spooling in wire rope, be sure to distribute the wire rope evenly and tightly on the drum. This prevents the top layers of wire rope from being drawn into the bottom layers of wire rope and creating a "bind". If the wire rope binds on the drum, the winch and/or the wire rope may be damaged. A "bound" wire rope will reel out only a short distance and then will reel back in even though the remote control is held in the "out" position. Should the wire rope become "bound" connect the hook to a load. By alternately powering "in" and "out", the wire rope will usually work itself free. In any event, DO NOT PUT YOUR HANDS ANYWHERE NEAR THE WIRE ROPE WHEN WORKING A "BIND" FREE.

OPERATING INSTRUCTIONS

REMOTE CONTROL SWITCH

The control switch, when engaged in the receptacle, is used to power in, or power out wire rope. The toggle switch activates the winch motor. There are three positions for the switch, the middle position being "Off", and the other two positions are "power in" and "power out" as indicated on the control. The switch must be held in the power positions as the switch is spring-loaded and will automatically return to the "Off" position.

AUTOMATIC BRAKE (If so equipped)

Any time the control switch is in the neutral or off position, the brake will automatically activate against a load.

OVERLOADING — OVERHEATING

This winch is rated for intermittent duty. It should not be operated with the motor lugged down to a low RPM. When the motor approaches stall speed, a very rapid heat buildup occurs which could cause permanent motor damage. The best way to judge safe running time is to stop winching and lay your hand on the motor occasionally. When it reaches the point that it is uncomfortable to leave your hand there, shut down and cool for a while. The cool down period can be used to advantage to recharge the battery. Double lining with a snatch block substantially reduces amperage draw which in turn will allow longer "on time".

BATTERY RECOMMENDATIONS

A fully charged conventional automotive battery with a minimum rating of 500 cold cranking amps is recommended to obtain peak performance from your winch. Make sure all electrical connections are clean and tight.

MAINTENANCE

No internal lubrication by the owner is needed for the life of the winch. Winch should not be submerged in water. If winch is accidentally submerged, it should be operated within 3 days until motor is warm to the touch. This should drive out any moisture that has entered the motor.

METHODS OF RIGGING

Take your time when rigging and include a reasonable factor for safety. Sloppy rigging can result in damage to vehicle and equipment and possibly injury.

Figure 'A' illustrates the most commonly used rigging. Notice that a tree trunk protector is used to protect the tree when it is used as an anchor, and the wire rope is attached to it. The use of a chain or wire rope is not recommended due to the damage it could cause to the tree. Also, the winch wire rope should never be wrapped around the anchor and hooked back to itself, as the tensile strength of the wire rope will be greatly reduced.

Figure 'B' illustrates a method of rigging commonly used to obtain a mechanical advantage. The use of a single snatch block will give you a 2:1 mechanical advantage which will almost double your pulling capacity. This is a preferred method of rigging for several other reasons. For example, if you are pulling a maximum load the line speed will be slow and the amperage draw will be high. Rigging the same load with a snatch block will reduce the load on the line and winch by approximately one-half. This in turn will allow the motor to run faster and reduces the amperage draw. The line speed of the electric winch is not reduced by one-half when using a snatch block as is true with P.T.O. Winches. Longer pulls can be made without overheating the motor.

Figure 'C' is basically the same as Figure 'B'. A chain with spreader bar is used to spread the load on the vehicle components.

Figure 'D' is an example of using a snatch block to change the direction of pull. Mechanical advantage can be obtained by attaching a snatch block to the tree trunk protector with a shackle and running the wire rope to the anchor.

Figure 'E' illustrates the correct method of restraining a vehicle for pulling heavy loads when wheel blocks are not sufficient. The restraining wire rope or chain should be hooked low on the anchor, run under the vehicle and securely attached to solid points at the winch mounting plate. The commonly used method of hooking to the rear frame or differential is risky. Your Warn Winch is so powerful that frame or drive train components can be bent or broken.

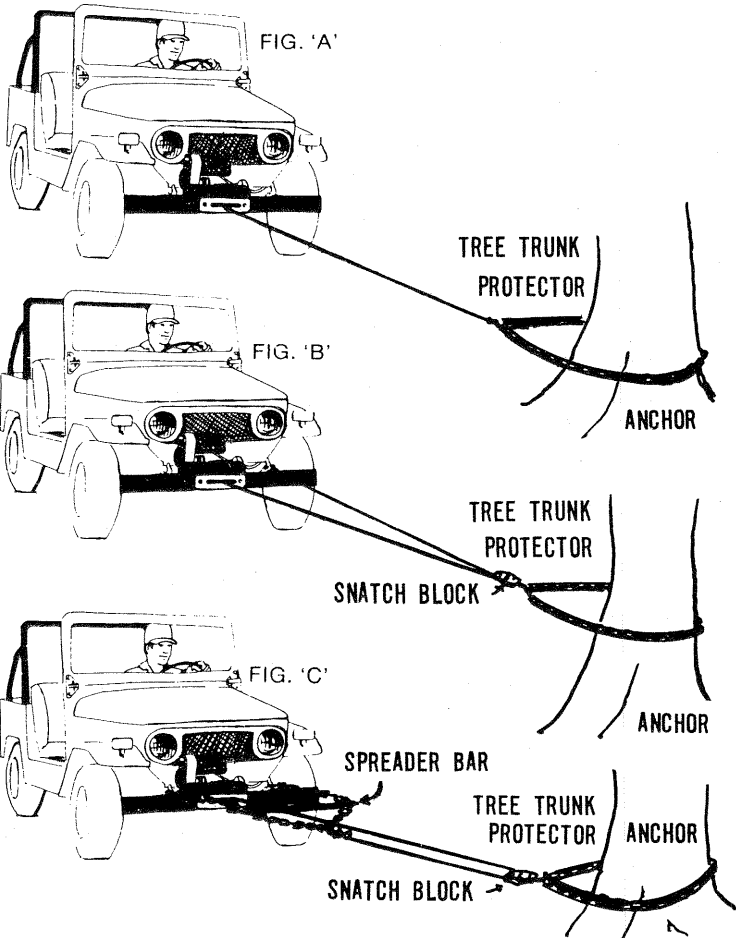


FIG. 'D'

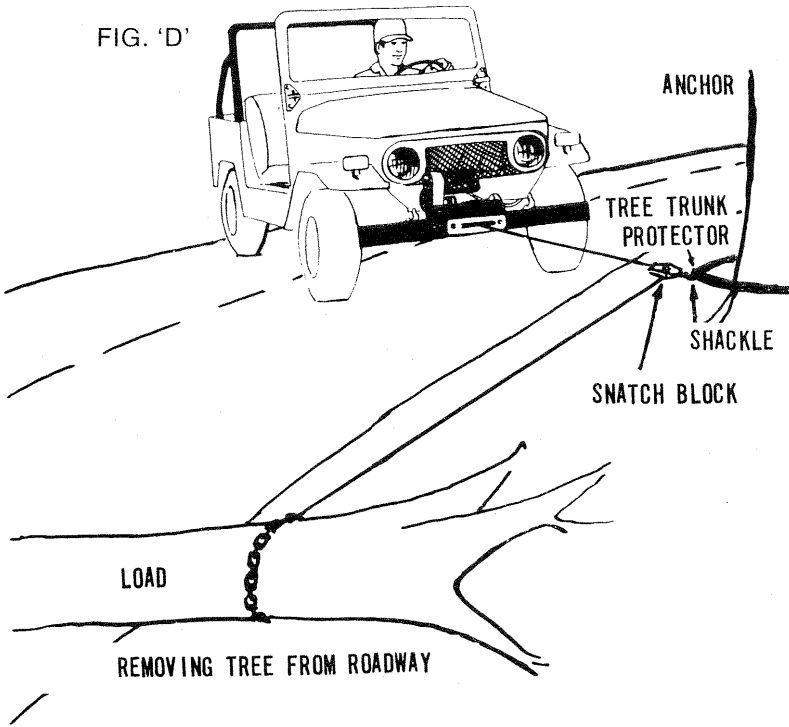
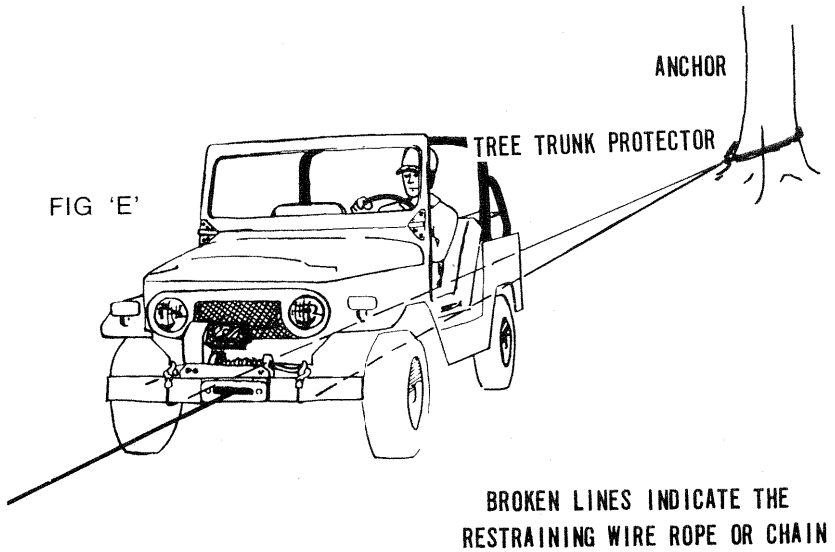
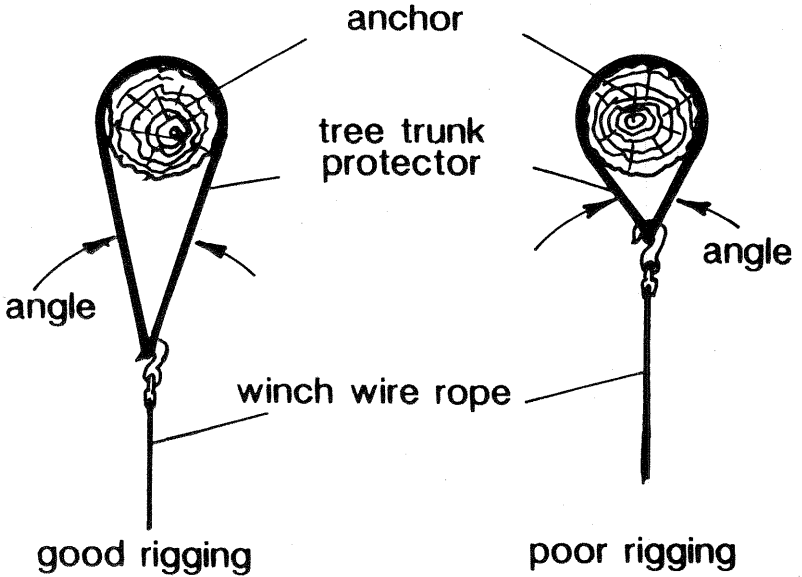


FIG 'E'



CHOKERS

The choker should be as long as possible, especially when anchoring the vehicle. The following data illustrates how a chain with a safe working load of 8,000 pounds has its strength severely reduced through improper rigging.



Angle °	Safe Working Load
5° or less	8,000 Pounds
60°	6,800 Pounds
90°	5,600 Pounds
120°	4,000 Pounds

Chokers with a slide hook must be used with care as angles in excess of 120° are very likely to occur. The recommended minimum diameter for slide wire rope Choker is 7/8".

WINDING WIRE ROPE ONTO DRUM

Wire rope must be wound onto the drum under a load of at least 500 lbs., or outer wraps will draw into the inner wraps and damage the wire rope.

NOTE: Since factory installed wire rope is not put on under load, it must be spooled on under a load prior to using the winch. First spool out the entire wire rope length to the last 5 wraps on the drum, then rewind the wire rope under a load.



THE WIRE ROPE MUST BE SPOOLED ON THE DRUM ACCORDING TO THE DIRECTION OF ROTATION LABEL ON THE WINCH OR THE BRAKE WILL NOT FUNCTION.

ANCHORS

Natural anchors such as trees, stumps, and rocks are the handiest when available. Always select your anchor carefully to be sure it is strong enough to withstand the load. Hook the wire rope as low as possible on the anchor to avoid pulling the anchor down. If several possible anchors are available, but they are not strong enough, it may be practical to attach a wire rope or chain to several of them to form a strong collective anchor point.

Constructed anchors are used when there are no natural anchors available. They can be made from items you carry with you or whatever may be picked up at hand.

Figure "C" illustrates a popular method of using stakes. This is very effective where soil conditions allow their use. If you anticipate a need for this type of anchor, carry 3 or 4 sharpened axes with you. They should be driven at an angle to increase holding power.

Figure "D" shows how to make use of items carried with you. A spare tire works well in sandy soil.

Figure "E" illustrates a typical log deadman. This can be made into a very strong anchor. A wide variety of materials can be substituted for the log if necessary, such as a steel beam or pipe, a bundle of small poles, or even a 55 gallon drum.

Portable Anchor — Figure "F"

The most versatile portable anchor you can carry is a Danforth type boat anchor. Homemade or modified versions have been used by some four-wheel drivers in the west for many years with great success. An anchor around twenty pounds can hold well enough to get you out of almost any predicament. They hold in most terrain including mud, wet and dry sand, and hard ground. It is usually necessary to close the angle between the shank and flukes by one-half to improve the burying and holding characteristics of the anchor. The buried anchor can be easily retrieved by driving over it. This anchor has a definite advantage when winching through areas where several pulls are required to get you through. You can always spool out the amount of wire rope you want and put the anchor in the most suitable location.

FIG. "C"

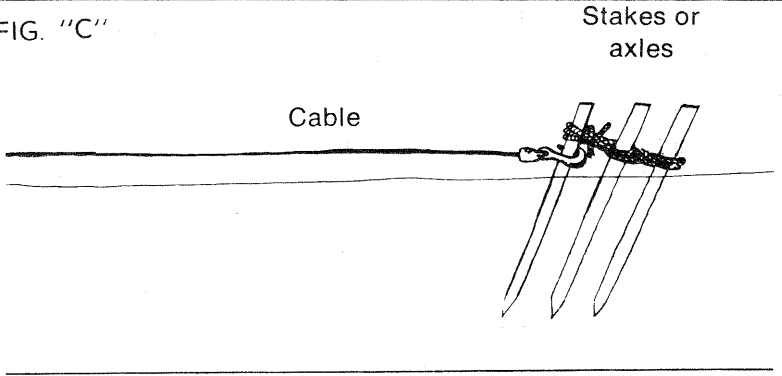


FIG. "D"

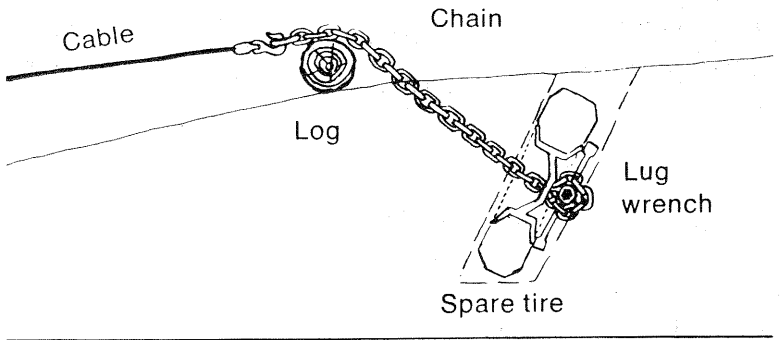


FIG. "E"

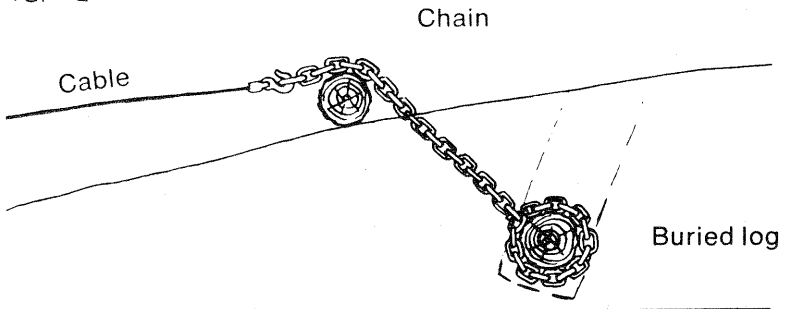
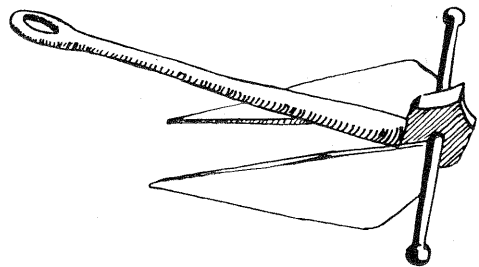


FIG. "F"



ACCESSORIES FOR YOUR WINCH

Following is a list of accessories available for most or, in many cases, all Warn Winch models. For more detailed information, consult a current catalog of Warn products.

- Vinyl Winch Cover
- Roller Fairlead
- Winch Lock
- Battery Isolator
- Snatch Block
- Tow Hook
- Screw Eye Clevis
- Choker Chain
- Wire Choker Rope
- Replacement Wire Rope
- Tree Trunk Protector
- "Tug-Em" Straps; 2" x 30' x 20,000 Lbs.
3" x 30' x 27,000 Lbs.
4" x 30' x 36,000 Lbs.
- Nylon Tow Strap w/Hooks
- Winch Guard
- Winch Mounting and Bumper Kits
(Available for many vehicles)
- Winch Accessory Kits

To purchase accessories or to obtain service for or information about your winch, contact your nearest authorized dealer or distributor.