75 SERIES WINCH INSTRUCTIONS

MILE MARKER

Tested to the Extreme

HYDRAULIC WINCH & P.T.O. SYSTEM

Affordable • Lightweight • Dependable

Warning: This winch is never to be used for lifting.

75 SERIES WINCH FEATURES:

Complete System
Hydraulic
Smooth Power
Reversible Mounting
Planetary Gears
Multiple Safety Features
Completely Sealed
NO BATTERY DRAIN

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CABLE MUST SPOOL OFF BOTTOM OF DRUM

75 Series Kit Includes:

1 winch, 1 motor mount solenoid valve, 2 hose assemblies (78 and 60 inches), 1 roller fairlead, 1-100' cable with hook, 2 fittings that connect to valve, 1 small parts kit (nuts, bolts, circuit breaker, etc.), and harness and hand control. Each kit requires a vehicle adapter kit. See list on opposite page for your vehicle's application.

Plumbing Connections:

Please refer to Figure 1 if your vehicle has vacuum brakes. Refer to Figure 2 if your truck has hydroboost brakes. Keep all hoses away from any areas where heat may be considered too extreme (such as exhaust manifold or turbo). All lines are not to be allowed to rub on any abrasive or vibrating surfaces.

*Your solenoid valve is equipped with a flow restrictor (Fig. 3). You will find that one of the ports attaching to the winch motor will have a restrictor valve disc. **DO NOT REMOVE!!!** If this is accidentally removed, it must be re-installed with the flat portion of the restricted disc facing the solenoid valve body. The purpose is to maintain a back pressure when lowering a load. Use four allen bolts supplied to mount the solenoid valve to the winch motor. **Make sure to Lock-Tite the allen bolts using no washers.**

INSTALL HOSE ASSEMBLY

On the motor solenoid valve you will see a P and a T. P is the receiving port from the steering pump. T is the return (bypass) port to the steering box. Connect male-to-male hydraulic fittings to solenoid valve. Torque O-ring fittings tight. Connect hose assemblies to ports P & T. Torque flare fittings 1/4 turn past finger tight. **DO NOT OVER TIGHTEN FLARE FITTINGS!**

NOTE

Power steering pump and steering box adapters are supplied in the vehicle adapter kit. Remove power steering gearbox high pressure line (the low pressure will typically have a hose clamp). If your truck has hydroboost brakes, remove the hose that runs from the hydroboost to the steering box. Make sure and re-use any O-rings or seals from original power steering pressure line. Connect power steering box adapter to power steering pump. Torque to factory specifications. Connect steering box adapter to steering box. Torque to factory specifications. Take the hose that is connected to P on the solenoid valve and connect to power steering pump adapter (this is a flare fitting – torque 1/4 turn past finger tight). Take the remaining hose (T) on solenoid valve and connect to steering box adapter (this is a flare fitting – torque 1/4 turn past finger tight).

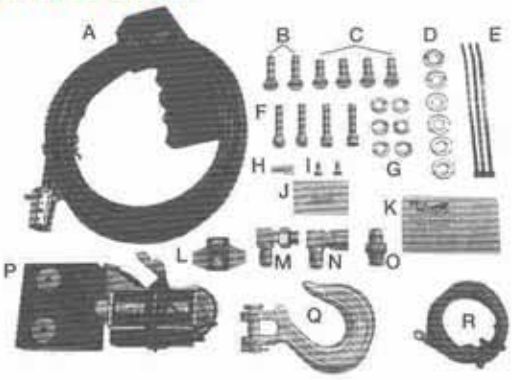
ELECTRICAL CONNECTION

Please refer to Figure 1. The power source to the solenoid is not energized until the four-pole quick connector plug is plugged in. Each solenoid has two black wires that are connected to each other at the factory. The other black wires will plug into the white and green wires shown in Figure 1. Attach the circuit breaker to the vehicle under the hood. Connect all wiring as shown in illustration. Test hand control unit, solenoids will make a slight "Click" sound if connected correctly.

Check fluid level. Replace lost fluid to system and purge. Start engine. Run for three seconds and shut off engine. Check fluid level again. Add fluid until full. After system has been purged, turn wheels from lock to lock position five times. This will aid in bleeding out any air that may have gotten into the system. If the hand control unit is working backwards, simply reverse the connections at the solenoids.

PARTS IDENTIFICATION

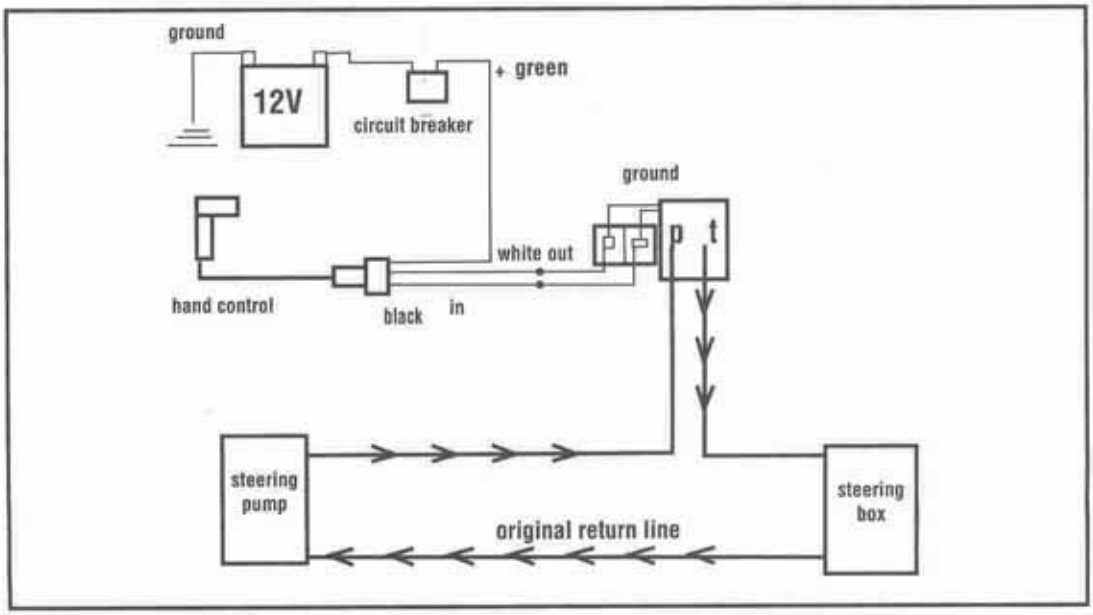
			Quantity
A.	93-50010	Hand Control	1
B.	90-50101	⅜-16 x 1¼ SS Hex Head Bolt for Roller	2
C.	90-50099	⅜-16 x 1 SS Hex Head Bolt for Winch	4
D.	86-50020	⅜ SS Washer For Roller & Winch	6
E.	Wire Tie	Secure Wire & Hoses	3
F.	90-50121	¼-18 x 1½ Socket Head Cap Screw SS for Securing Valve	4
G.	86-50030	⅜ SS Lockwasher For Roller & Winch	6
H.	93-50090	Female Connector for Ground Wire	1
I.	90-501 4	Phillips Head SS Screw 8 x ½ for Circuit Breaker	1
J.	983-0067	U-Drive Screw 6 x ¼ SS Install with Hammer	4
K.	983-0060	Lever Configuration Plate Drill ⅛" Hole for Plate Install	1
L.	93-80036	Circuit Breaker	1
M.	90-50067	90° for Valve	1



N.	90-50060	90° for Valve	1
O.	90-50091	Straight for Valve	1
P.	35-50300	75 Series Valve Attaches to Motor	1
Q.	19-51202	¾" Hook for Cable End	1
R.	93-50027	9 Feet of Red Wire	1
S.	88-50060	60" Hydraulic Hose (not shown)	1
T.	88-50078	78" Hydraulic Hose (not shown) Attach Power Steering Pump	1

VEHICLES WITH VACUUM BRAKES

Figure 1



VEHICLES WITH HYDROBOOST BRAKES

Figure 2

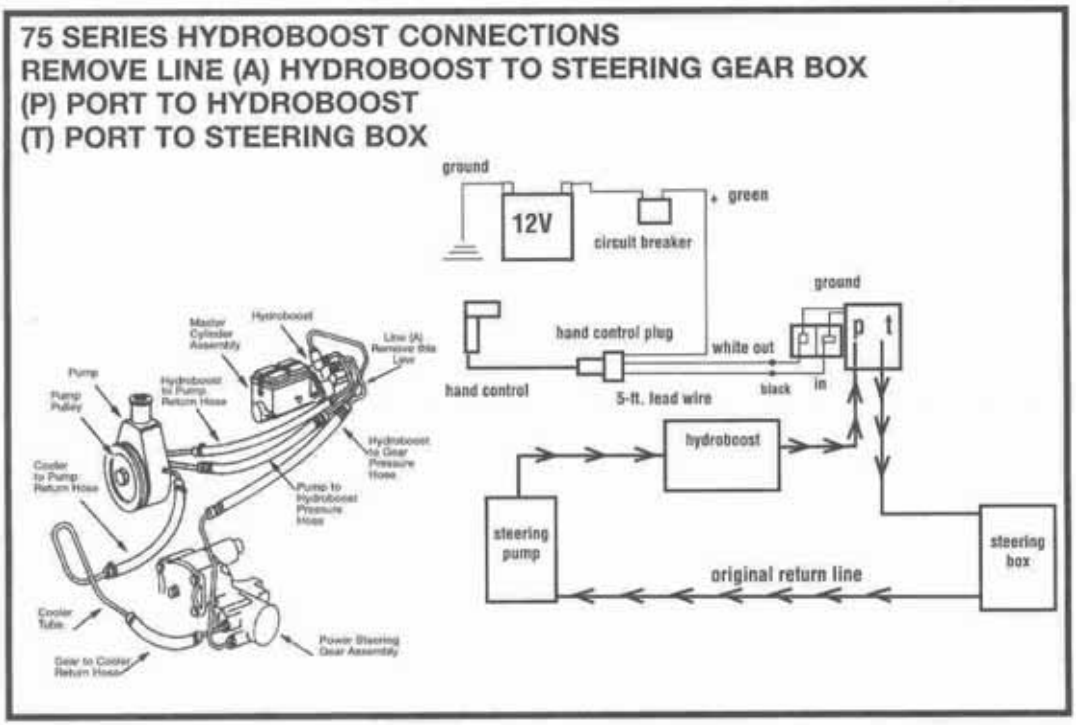
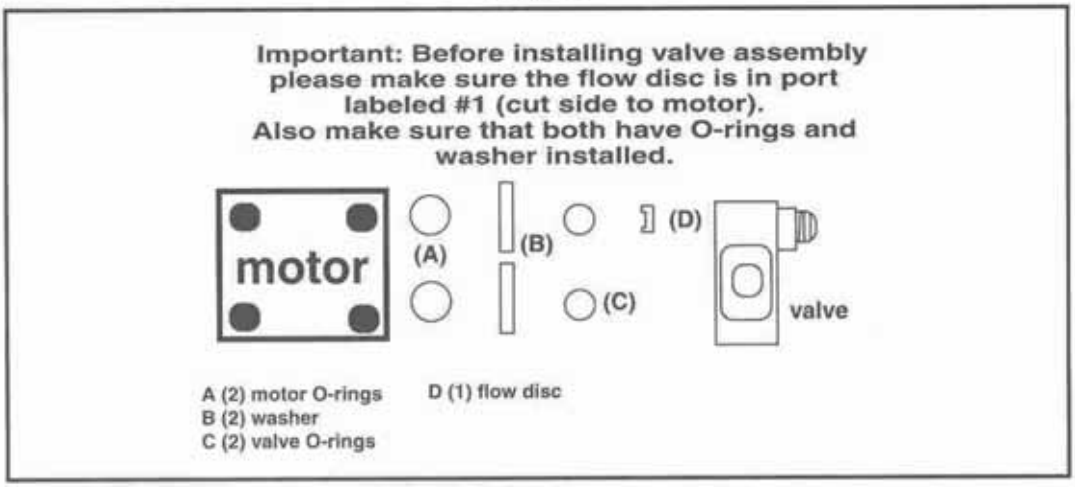


Figure 3



MILEMARKER 2-SPEED WINCH OPERATION

A. General

The vehicle's steering pump is used to power the winch. The engine must be running while operating the winch, as the engine turns the power steering pump which pumps fluid to rotate the winch. The winch will have full pulling capabilities at an engine idle. The winch is operated by an electric activated switching valve. When engaging or disengaging the clutch and/or shift lever, it may be necessary to rotate the drum by hand to align gears.

B. Preparation for Use

1. For use in pulling objects other than self recovery, park vehicle directly facing object to be winched. Apply parking brake.
2. Place transmission shift lever in "N" (neutral).
3. Start engine.
4. Chock wheels.

C. Unwinding Winch Cable

To unwind cable by hand, turn top lever to **"FREE"** (free spool). Turn side lever to **"FREE"** (free spool). Both levers should be in **"FREE"** positions to unwind cable.

WARNING

- Wear leather gloves when handling winch cable. Do not handle cable with bare hands. Broken wires cause injuries.
- When fully extending winch cable, make sure that five wraps of winch cable remain on drum at all times. Failure to do this may cause serious injury.
- Pull off cable by hand to desired length. Connect to load leaving one foot of slack in cable.

D. Pulling load

1. Turn top lever to "LOW" (lock low gear). Leave the side lever at **"FREE"** (free spool). This will engage the winch into low gear.

WARNING

- Direct all personnel to stand clear of winch cable during winch operation. A snapped winch cable will cause serious injury or death.
- Do not activate winch electric connector when engine is OFF with a LOAD on cable. This can put the winch into a retarded free spool mode.

2. Operate remote control switch to **"IN"** or **"OUT"** until load has been retrieved. Secure winch after operation.

CAUTION

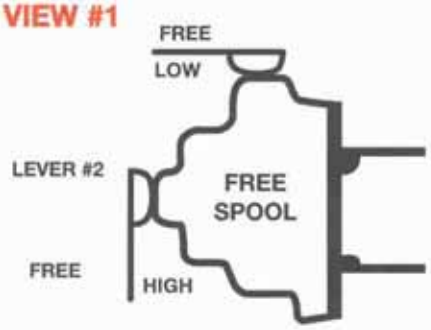
- Winch cable must be wound onto the drum under a load of at least 500 lbs. or outer wraps will draw into the inner wraps and damage the winch cable.

OPERATION OF HIGH GEAR

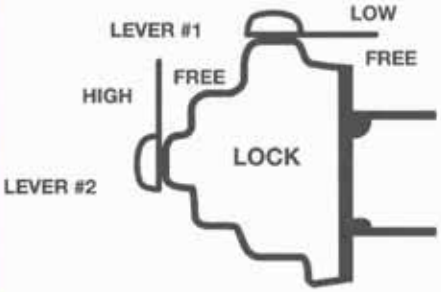
Turn top lever to **"FREE."** Turn side lever to **"HIGH"** (lock high gear).

MILE MARKER HYDRAULIC 2-SPEED WINCH LEVER POSITIONS

VIEW #1

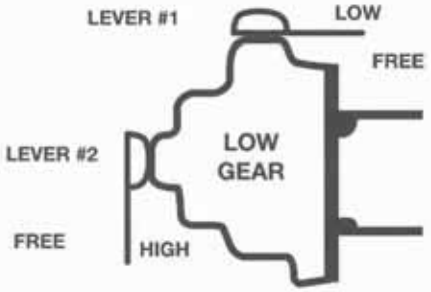


VIEW #2

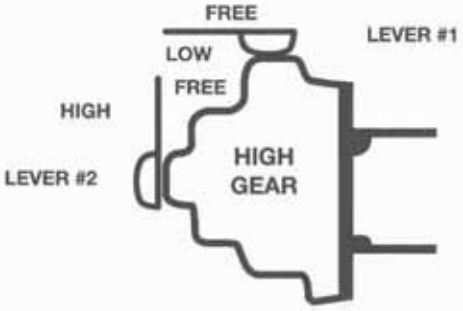


WARNING
DO NOT MOVE SHIFT LEVERS WITH LOAD ON WINCH CABLE!!

VIEW #3



VIEW #4



WARNING
DO NOT MOVE SHIFT LEVERS WHEN POWERING WINCH IN OR OUT!
LEVER POSITIONS AND WINCH MODES:

LEVER #1	LEVER #2	MODE	VIEW #
FREE	FREE	FREE SPOOL	1
LOW	HIGH	LOCK	2
LOW	FREE	LOW GEAR	3
FREE	HIGH	HIGH GEAR	4

GENERAL OPERATION

The vehicle's hydraulic pump is used to power the winch. The engine must be running for winch operation. The winch has maximum pulling capabilities at engine idle.

The winch is operated by an electrically activated hydraulic switching valve.

- Wear leather gloves when handling winch cable. **DO NOT** handle cable with bare hands as broken wires can cause injuries.
- When extending winch cable, ensure that at least five wraps of cable remain on drum under load. Serious personal injury or property damage may result.
- Ensure that all persons stand well clear of winch cable and load during winch operation, 1.5 times the cable length is recommended. If a cable pulls loose or breaks under load it can lash back and cause serious personal injury or death.
- Draping a heavy blanket or similar object over the extended winch cable is recommended as it will dampen any lash back should a failure occur.
- Ensure rated "D" or bow shackles are used in conjunction with an approved tree trunk protector to provide a safe anchor point.
- **DO NOT** operate the winch control when the engine is **OFF** and a load remains on the cable. This may put the winch into freespool mode when not required, therefore not holding the load.
- Ensure the winch clutch is totally engaged before starting any winch operation. When engaging or disengaging the clutch it may be necessary to rotate the drum by hand to align the clutch pin.
- **NEVER** disengage the winch clutch under load.
- Store the winch with clutch lever function in the **HIGH GEAR** position.
- The maximum winch capacity is available on the first layer of rope on the bare winch drum. During all winching operations it is recommended to unspool the rope back to the first layer so as to provide maximum capacity and avoid rope damage. Ensure that at least five wraps of cable remain on the drum at all times.
- The use of a snatch block will aid recovery operations by providing: A doubling of the winch capacity and a halving of the winching speed; and the means to maintain a direct line pull to the center of the rollers.
- The MileMarker winch is a 2-speed unit, low speed for vehicle recovery winching and high speed for line retrieval.
- **DO NOT** use the winch to lift, support or otherwise transport personnel.
- **DO NOT** drive your vehicle to assist the winch in any way. Vehicle movement in combination with winch operation may overload the cable, the winch itself, or cause damaging shock loads.
- Shock loads when winching are dangerous! A shock load occurs when an increased force is suddenly applied to the cable. A vehicle rolling back on a slack cable may induce a damaging shock load.

WINCHING TIPS AND USE OF A SNATCH BLOCK

1. Use OEM tow hooks, recovery eyes or a clevis mount for attachment of a tow strap or winch cable. Warning: Never use a ball and/or ball mount as an anchor point for tow strap or winch cable. Severe personal injury or death could occur.
2. Always heed all winch manufacturer's recommendations, cautions and warnings.
3. Attach return cable to tow hook or recovery eye when using a snatch block. Always use a clevis to secure snatch block to strap, or severe damage could occur to persons and vehicle. (See Figure 4). Caution: Do not attach return cable to winch mount. This may overload winch mount and/or front receiver.

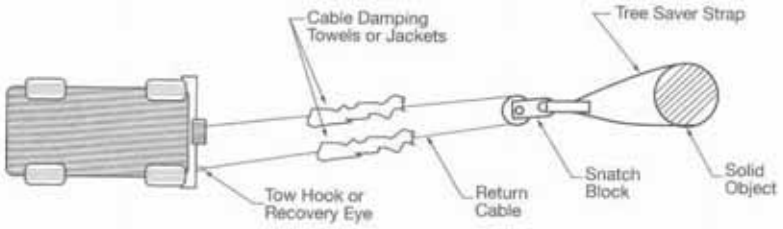


Figure 4

Rating:

For maximum line pull rating, winch cable direction must not exceed:

1. 15° angle up or down from horizontal. (See Figure 5).
2. 45° angle left or right from straight ahead (See Figure 6). Caution: Exceeding the maximum line pull rating may overload winch, winch mount, and/or front mounted receiver.

Figure 5

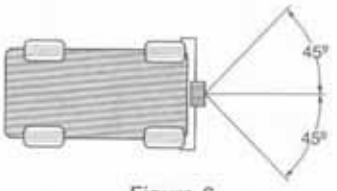


Figure 6

SAFETY TIPS

1. **Never disengage Low Gear clutch lever when there is a load on the winch.** To manually lock the winch to hold a load, engage **BOTH HIGH** and **LOW GEARS.** First, engage low gear. After low gear is engaged, engage high gear. Power the winch IN momentarily. You will hear the high gear engage and the winch will "lock up." In this position, it is mechanically locked up and will not freespool, power IN or OUT. To disengage locked position, disengage high gear lever to **"FREE."** Power the load OUT momentarily and the spring loaded high gear will disengage, leaving the winch in low gear.
2. Store the remote control cord in a safe place when not in use to prevent use by children or other unauthorized persons who could injure themselves or others or damage the controls.
3. Do not operate winch under the influence of drugs, alcohol or medications.
4. Isolate winch before putting your hands in or around the fairlead or wire rope drum (The Danger Zone).
5. **Do not overload your winch.** Do not maintain power to the winch if the drum stops. Overloads can damage the vehicle, winch or winch rope and create unstable operating conditions.
6. It is recommended to lay a heavy blanket or jacket over the rope about half way along to the hook attachment. If a rope failure should occur, the weight of the cloth will act as a damper and help prevent the broken rope from whipping. (See Figure 7). Remember to move the blanket or coat as winching proceeds, but halt winching when doing so. Partially raising the hood of the vehicle will also give a measure of protection to its occupants from broken rope, consistent with sufficient forward visibility for the operator.

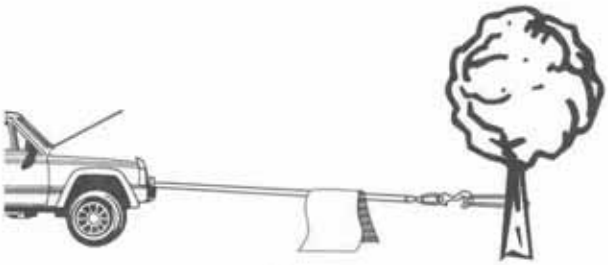


Figure 7

SELF RECOVERY

1. Always aim to get the cable as straight as possible to the direction of the vehicle. It is acceptable to start a pull at an angle if it is obvious that the vehicle will turn towards the hook anchoring point. Turning the steering wheel will assist the process. It is recommended that the driver is in the vehicle.
2. Make sure hand brake and foot brake are free and that the transmission is in neutral.
3. When the driver's attempt to regain vehicle traction is successful, he or she should be careful not to overrun the cable and risk the possibility of it being trapped under the vehicle.
4. DO NOT move your vehicle in reverse to assist the winch. The combination of the winch and vehicle pulling together could overload the cable and winch itself.

USE OF A PULLEY BLOCK OR SNATCH BLOCK

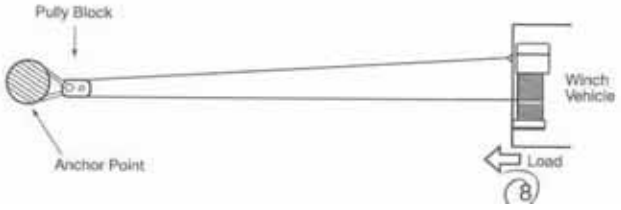


Figure 8: Vehicle self-recovery using the pulley block attached to the anchor point for direct pull. In this instance the vehicle becomes the "load" and the actual pulling power on the vehicle will be double at half winch rope speed.

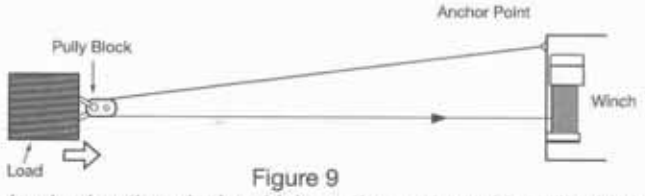


Figure 9

Figure 9: Direct pull on load using the winch vehicle as the anchor with pulley block attached to the load. Actual pulling power on load will be double at half winch rope speed.

The most important aid to successful winching (after the winch) is the pulley block, which can be used to increase the pulling power of the winch or for indirect pulls. Pulley blocks can be used in two modes. First mode is attached to the load and second is secured to an anchor point.

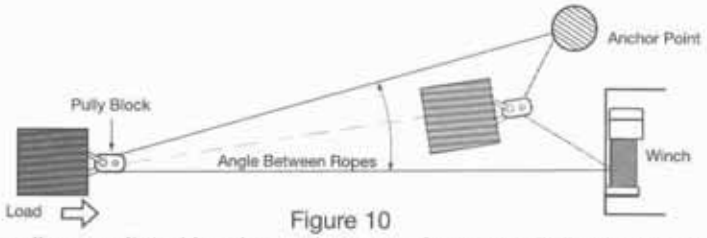


Figure 10

Figure 10: Indirect pull necessitated by obstructions or soft ground. Pulley block attached to load using a suitable anchor point. Note the angled direction taken by the load and subsequent angle of rope feed-back on the winch drum (extreme example shown). There may be unavoidable circumstances requiring this mode, though in general it is not recommended unless applied in stages by moving the anchor point or vehicle to avoid the sharp angled rewind on the winch drum. The actual load pulling power and rope speed will depreciate with any increased angle between the ropes.

The anchor point, when used must be secure, using a tree, another vehicle or any firm structure to which a pulley block can be attached with a chain or stout rope or tree saver. Figs. 8-10 show typical examples where a pulley block can be used to your advantage.

USE OF A NYLON SLING & SHACKLE

A shackle should always be used when attaching winch hooks to nylon slings. NOTE: The shackle must pass through both eyes of the sling. The safe working load of the nylon sling is based on the use of both eye ends.

USE OF GLOVES

When handling or rewinding the cable always use gloves to eliminate the possibility of cuts caused by burrs and broken strands. Inspect cable and equipment frequently. The cable should be inspected for damage that could reduce its breaking strength. A frayed cable with broken strands should be replaced immediately. Always replace the cable with a MileMarker recommended replacement part. Any substitution must be IDENTICAL in strength, quality, lay and stranding. Never hook the cable back onto itself. Hooking the cable back onto itself creates an unacceptable strain, breaking individual strands which in turn weakens the entire cable. Use a sling. Avoid continuous pulls from extreme angles as this causes cable to pile up at one end of the drum.

WINCH ACCESSORIES

Winch Cover

Part Number 8502

Wireless Remote Winch

For Truck Mounted Winches

With MileMarker's Wireless Winch Remote Control, you will save steps - and protect yourself from accidents. Stand at a protected position which is more than 10-12 feet from the winch. When you are ready to winch, simply aim the remote unit on your key chain back to the cab-mounted receiver and winching begins from any safe location. Special safety features make certain the unit can not be operated accidentally.

Specifications

Electric Winch Only
Part Number 8501

MileMarker Hydraulic Winch
Part Number 7075

Heavy Duty Snatch Block

Part Number 60-50085

24,000 lb. Rating. Uses grease fitting to provide less friction on pulley rotation.

Part Number 60-50086

¾ Shackle. 5,000 lb. weight and over. (Not shown)

Mile Marker Inc. Hydraulic Winch Limited Warranty

Mile Marker, Inc. warrants each winch when used in normal service against factory defects in materials and workmanship to the original purchaser, (Commercial and recreational warranty) for the period of two (2) years. (Exclusion from this warranty are cables, the finish, and any condition Mile Marker determines to have been caused by mis-use, abnormal use. The Mile Marker hydraulic motor has a five (5) year warranty. The owner will be responsible for removing the winch and returning it to the Mile Marker freight prepaid. Mile Marker will repair or replace all or any winch parts, which after inspection it determines to be defective. See each individual product package for more detailed warranty information.