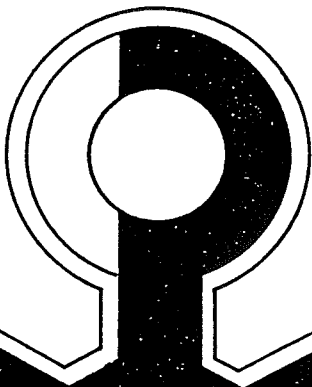
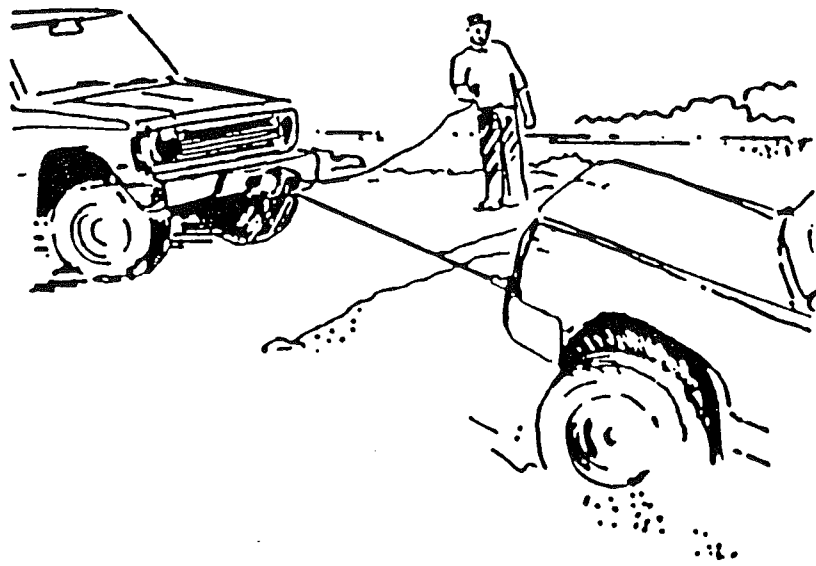




OWNER'S MANUAL

Electric Winch - 12 Volt
Models 316, VR-192



READ ENTIRE INSTRUCTIONS BEFORE STARTING INSTALLATION. FOLLOW ALL CAUTIONS, WARNINGS AND NOTES TO PREVENT INJURY OR DAMAGE TO WINCH, OR TO SELF.

SECTION I

INSTALLATION/WIRING

BE SAFE

- A. Read your Owner's Manual. Only let people who have read and understand the Powerwinch safety rules use your winch.
- B. NEVER use your winch to lift or move people or animals.
- C. DO NOT USE YOUR WINCH AS A HOIST! It is not made to be used for vertical lifting.
- D. KEEP the winching area FREE OF CHILDREN! ONLY let adults use your winch.
- E. ALWAYS wire your winch with the circuit breaker. This is your assurance against overheating and fire potential.
- F. ALWAYS stand clear of the area between the load or anchoring point, and your winch. Should the cable snap while you are in this area you could be seriously hurt.
- G. ALWAYS inspect the entire cable before use to check for fraying or kinking. The cable could break if it is frayed (worn by rubbing) or kinked (short, tight twists or curls).
- H. If you are using the emergency hand crank, BE SURE to remove it from the winch after use. Under power the crank will turn and could cause an injury.
- I. If you need to replace the cable, ALWAYS replace it with one of the same size and strength. Use Powerwinch cable only! The winch rating and cable strength are carefully matched. Your warranty is void if any other cable is used.
- J. Never use rope instead of cable. Your winch under load has the force to snap rope easily—causing possible damage.
- K. ONLY attempt to pull as much as your winch is rated for.
- L. NEVER wrap the winch cable around the load. This causes cable kinking, which breaks down cable strength. Use an Eco-Strap or chain.
- M. DO NOT USE your winch to secure a load for traveling or to hold or support a load once you finish the job. It is not meant to be used this way. ALWAYS secure the load properly! If you do not you risk injury, damage or loss of the load.
- N. ALWAYS wear leather gloves when handling the cable. Steel cable can be hard on the hands.
- O. ALWAYS keep your hands and feet clear of the drum area (where the cable winds on spool).

WARNING: ALWAYS UNPLUG THE WIRING HARNESS TO PREVENT ACCIDENTAL STARTING WHEN SETTING UP, ADJUSTING OR MAKING REPAIRS TO YOUR WINCH.

WHEN YOU FINISH USING YOUR WINCH UNPLUG THE PLUG FROM THE SOCKET. IF THE PLUG STAYS IN THE SOCKET MOISTURE MAY COLLECT IN THE SOCKET AND CAUSE A SHORT CIRCUIT.

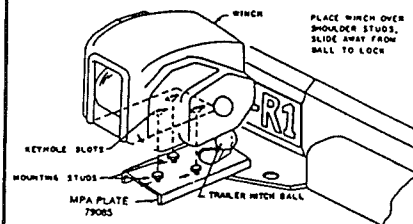
ANY LIMITED WARRANTY WHICH MAY APPLY TO THIS PRODUCT MAY BE VOID IF SAID PRODUCT HAS BEEN DAMAGED DUE TO ACCIDENT, UNREASONABLE USE, NEGLIGENCE, MODIFICATION, OR FAILURE TO OBSERVE THESE SAFETY RULES.

2

NOTE: Be careful to mount your winch in a location with enough support to handle the rating of the winch. A little common sense when mounting will help eliminate hazards.

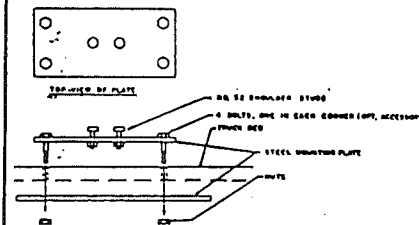
REAR VEHICLE MOUNT

For mounting on a vehicle with a trailer hitch we recommend the Powerwinch Multi-Purpose Adapter Plate (optional accessory #79085) on Model 316. This method is the most versatile, as movement from front of vehicle to the rear—or from vehicle to vehicle is possible.



TRUCK BED MOUNT

The beds of most trucks are not made to support the pulling capacity of your Powerwinch, and should be reinforced with a steel plate capable of withstanding the rating of your winch.



WIRING HARNESS ASSEMBLY AND INSTRUCTIONS

The Harness Assembly Instructions for Model 316 are included in the poly bag for the parts.

VR-192 WIRING INSTRUCTIONS:

STEP 1

Connect the BLACK wire to the negative (-) terminal of your battery or ground it to the vehicle frame.

NOTE: If the winch is mounted at the rear of the vehicle make the ground connection to the frame.

STEP 2

If the frame is used as a ground;

a. Sandpaper both sides of the metal areas where you are attaching the wire.

Use the #8-5/16" ring terminal and attach it to the wire. (Use a terminal crimper and wire stripper.)

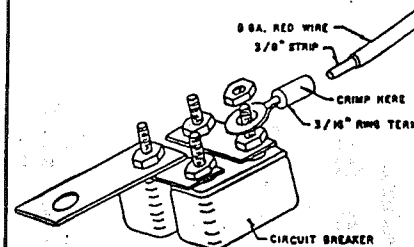
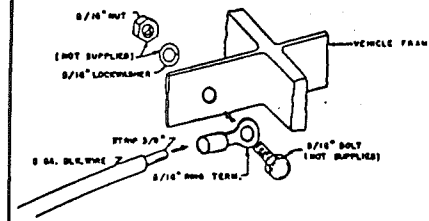
c. Attach the wire to the frame with a 5/16" bolt, nut, and lockwasher (not supplied), as shown in Fig. 2.

STEP 3

a. Connect the RED wire to the circuit breaker. See Fig. 3.

b. Place the wire where you can easily attach it to your starter solenoid or to the positive (+) terminal of your vehicle battery.

Do Not Connect The Circuit Breaker To The Starter Solenoid Or Battery Until Steps 4, 5 and 6 Are Completed.



3

SECTION II

HOW TO USE YOUR WINCH

WIRING HARNESS (Con't.)

STEP 4

Run the RED wire under or through the vehicle to the Powerwinch. If you need to drill holes to feed the wires, be sure the wires are protected from damage. It is a good idea to use grommets (not supplied). Wire insulation can rub off and cause short circuits if grommets are not used. See Fig. 4.

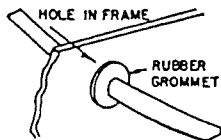


FIG. 4

STEP 5

Use "twisties" or nylon wire ties (not supplied) to secure the wire to the frame of the vehicle about every 18" along the way. You can also use electrician's tape.

Be Sure Wires Do Not Hang Down And Are Away From All Moving Parts And Hot Parts, Such As The Exhaust System.

STEP 6

Place the winch in its working position and decide how much wire you need to reach the socket. Add an extra 6" to each wire and cut off the rest. Strip off $\frac{3}{8}$ " of insulation from each wire. Put the RED wire in the GOLD terminal of the plug, and the BLACK wire in the SILVER terminal, as shown in Fig. 5. Firmly tighten the screws that hold the wires in place. Fasten the top to the plug using three screws.

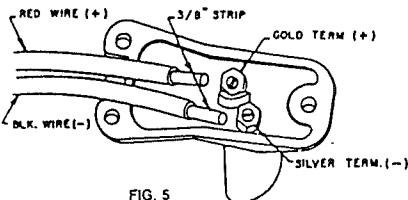


FIG. 5

Incorrect Wiring Will Short Circuit And Damage Your Circuit Breaker Which Could Damage Your Vehicle And The Winch.

STEP 7

With all wires securely tied down and connected to the plug, connect the circuit breaker to the solenoid, or battery, as shown in Fig. 6.

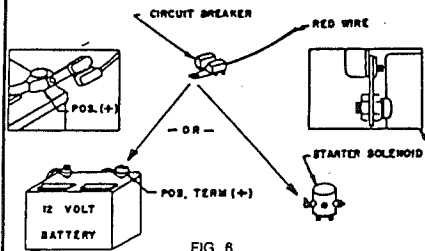


FIG. 6

Now you are ready to use your winch!

Temporary Wiring

To use your winch with a temporary wire hook-up:

1. Attach two (2) "Alligator" type clips to the ends of the RED and BLACK wires.
2. Run the RED wire to the battery and clip it to the hot —Positive (+)—side.
3. Clip the BLACK wire to the vehicle frame.

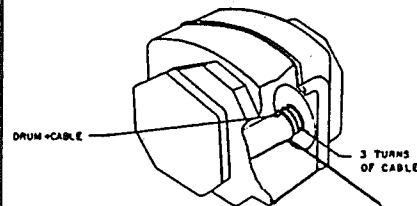
NOTE: The voltage output of an automotive battery is 12 volts. With an alternator and the motor running, 13 volts are available. However, voltage is "lost" as the current travels through the many connections and down the wire.

For example: the current has to travel 25 feet (from the vehicle battery to the winch). One volt is "lost" for every 8 feet of wire. Consequently, only 9 volts are available for use by the winch.

As all ratings are given assuming use of this long harness. Performance (speed and maximum load capacity) will increase markedly as the harness is shortened up (up to 25% to 30% if the battery is located next to the winch).

PREPARATION

Always leave the last three (3) turns of cable on the drum. This prevents the cable fastener from pulling out under heavy load.



- The winch must be securely attached to a structural member or frame that is capable of sustaining loads in excess of the winch capacity. When attaching the winch to a vehicle, make sure the mounting pad area is rigidly supported by the vehicle frame.

- ALWAYS block the wheels to prevent the vehicle from rolling when pulling a load with the winch.

- Keep the winching area free of all unnecessary personnel.

- NEVER stand between the load and the winch.

CABLE

- The winch cable is a high quality aircraft cable selected to withstand loads in excess of the rated capacity. NEVER exceed this rating when using the winch.

- Inspect the cable periodically for individual strand breakage or abnormal stiffness. NEVER replace cable with one of smaller size and capacity. Check the cable fittings for tightness. Cable life can be increased up to 300% by frequent lubrication with a good grade of oil.

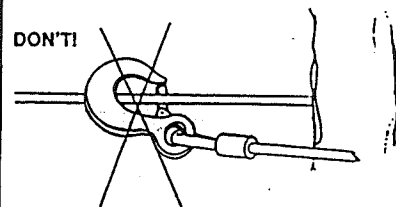
"DEADMAN" CABLE

Do not wrap the cable around a load and hook to self. When attempting to do this use the Powerwinch "eco-strap" to insure the cable does not fray or kink. See below for do and don't examples.

DO!



DON'T!



CAUTIONS

- Keep hands and fingers clear of the drum and cable area of the winch when operating.
- Model VR-192 is provided with an emergency crank handle, and it is available as an optional accessory for the 316.

DO NOT USE it as an "assist" to the motor when the motor is running. DO NOT leave the crank handle on the winch or run the winch while the handle is attached.

SECTION II

HOW TO USE YOUR WINCH

Continued

NOW USE YOUR WINCH

Tri-Matic Control Knob and Cable

The Tri-Matic Control Knob on the side of the winch controls the braking of the winch. Turn the knob all the way counterclockwise (↺). This releases the clutch and brake so the cable can be pulled out.

To Pull The Cable Out By Hand

1. Turn the Tri-Matic Control Knob counterclockwise (↺) as far as it will go.
2. Pull the cable out by the hook to the length you want.

Always Leave The Last Three (3) Turns Of Cable On The Drum. This Prevents The Cable Fastener From Pulling Out Under Heavy Load.

Winch A Load Under Power

1. Turn the Tri-Matic Control Knob clockwise (↻) until fingertip tight only! DO NOT overtighten or the clutch will be damaged.
2. Press the button on the remote control to winch in the load.

Never Winch A Load With Your Vehicle's Automatic Transmission in "Park." This Could Damage Your Transmission. Put Your Vehicle In "Neutral" With Your Emergency Brake On, And Block The Wheels.

Winch Objects To Your Vehicle

1. Do not jerk any object free using vehicle power. This will cause severe shock damage to the winch.
2. Keep the vehicle standing still with the engine running and the transmission in Fig. 8. Use your emergency brake and block the wheels.

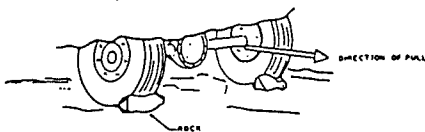


FIG. 8

Keep Vehicle Engine Running Full Power

Your winch will run at its best if it gets full power from your battery and alternator. To be sure of this keep the vehicle engine running.

When To Use Your Emergency Hand Crank

The Emergency Hand Crank should ONLY be used when there is NO electric power—for example: a dead battery. It should NEVER be used to help out a

running motor. This could damage the winch and/or hurt the user.

*Hand Crank is optional on Model 316.

How To Use Your Emergency Hand Crank (See Fig. 10)

1. Tighten the Tri-Matic Control Knob all the way clockwise (↻) or there is no braking action.
2. Remove the outer nut.
3. Put the Emergency Hand Crank on the shaft.
4. Replace the outer nut.

When you have finished using the Emergency Hand Crank:

1. Remove the outer nut.
2. Remove the Emergency Hand Crank.
3. Replace the outer nut for locking.

VR-192 Shown. On Model 316 attach hand crank on tri-knob shaft.

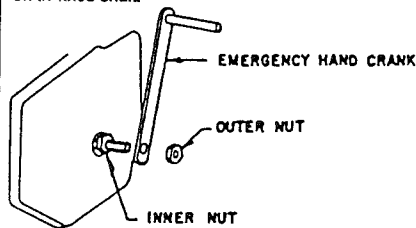


FIG. 10

A Caution: Be Careful With The Cable Hook

DO NOT let the cable hook go into the drum area of the winch. (The drum area is where the cable winds.) The hook will bend the levelwind plate or the levelwind spring if it goes too far into the winch. Your motor will idle for a second or two after the winch is released and about 1 foot of cable will unwind. Be sure to allow for this!

Remove The Plug When Winch Is Not In Use

Inspect the cable often and spray with a light oil or LPS-3. We recommend spraying the cable once a week if in regular use.

Gears - Every 6 Months

To grease the gears:

1. Remove the Tri-Matic Control Knob (Part #79402).
2. The right and left Side Covers.
3. Use any marine type grease.

SECTION III

MAINTENANCE/SERVICE

GENERAL MAINTENANCE

- A. CABLE**—Lubricate the cable occasionally with Whitmore's Wire Rope Spray, WD40 or a similar product. Spray the drum and the cable as it is being wound.
- B. IMPROPERLY WOUND CABLE**—If for some reason your cable is not properly wound (either wound loosely or wound on one side) unwind the cable and rewind under power, keeping tension on it. This should wind the cable tightly and evenly. Otherwise the wrap of the cable may squeeze down to a lower layer—causing sticking, loss of power, and risk damage to the levelwind springs.
- C. REPLACING THE CABLE**—Cut and remove the old cable from the drum. Insert the new cable into the drum shaft hole at the end opposite the counterbored end. Draw the cable through the hole and out the counterbored side of the shaft. Push the cable through the fastener until it is flush with the shoulder end, and sol-

solder the end of the cable to the fastener. Insert the cable fastener into the counterbored hole in the drum shaft, tapping lightly until the top of the fastener is flush with the drum shaft. Bend the cable sharply around the first groove of the drum shaft. Rewind the cable onto the drum under power, keeping tension on the cable.

WARNING: When replacing the cable, use an exact replacement cable. The winch rating and cable strength are carefully matched. Your warranty is void if any other cable is used.

D. CARE OF THE LEVELWIND SPRINGS ON DRUM—Your motor will continue to run for a second or two after the spring loaded switch is released, especially without a load. Be sure to allow for this. Don't let the hook go into the winch and bend the levelwind springs. When winding cable onto the drum with no load, keep the cable taut going into the drum.

SERVICING TRI-MATIC ROLL-N-GAGE CONTROL

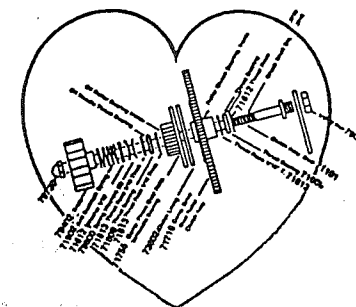
MODEL VR-192 ONLY

- A.** The Tri-matic Roll-n-Gage Control is the heart of your Powerwinch unit. It controls loading, unloading and braking.
- B.** Since this is a highly engineered assembly, care should be taken on its maintenance.
- C.** To lubricate, remove nut (79720) and unscrew Tri-matic Control Knob #79402. Remove case on control side, put control knob back on so that parts of the Roll-n-Gage Control will not slip off.

Using a good grade grease, lubricate the stud, #71101, thrust bearings #71609, roller clutch bearing inside #71716 compound drive gear and needle bearing inside #71755 compound pinion clutch gear assembly and needle thrust bearing #71609.

NOTE: Extreme care should be taken to avoid getting any grease on clutch lining, #73602, as this may cause slippage.

CAUTION: Do not try to remove bearings from inside compound drive gear or compound pinion gear.



MODEL 316

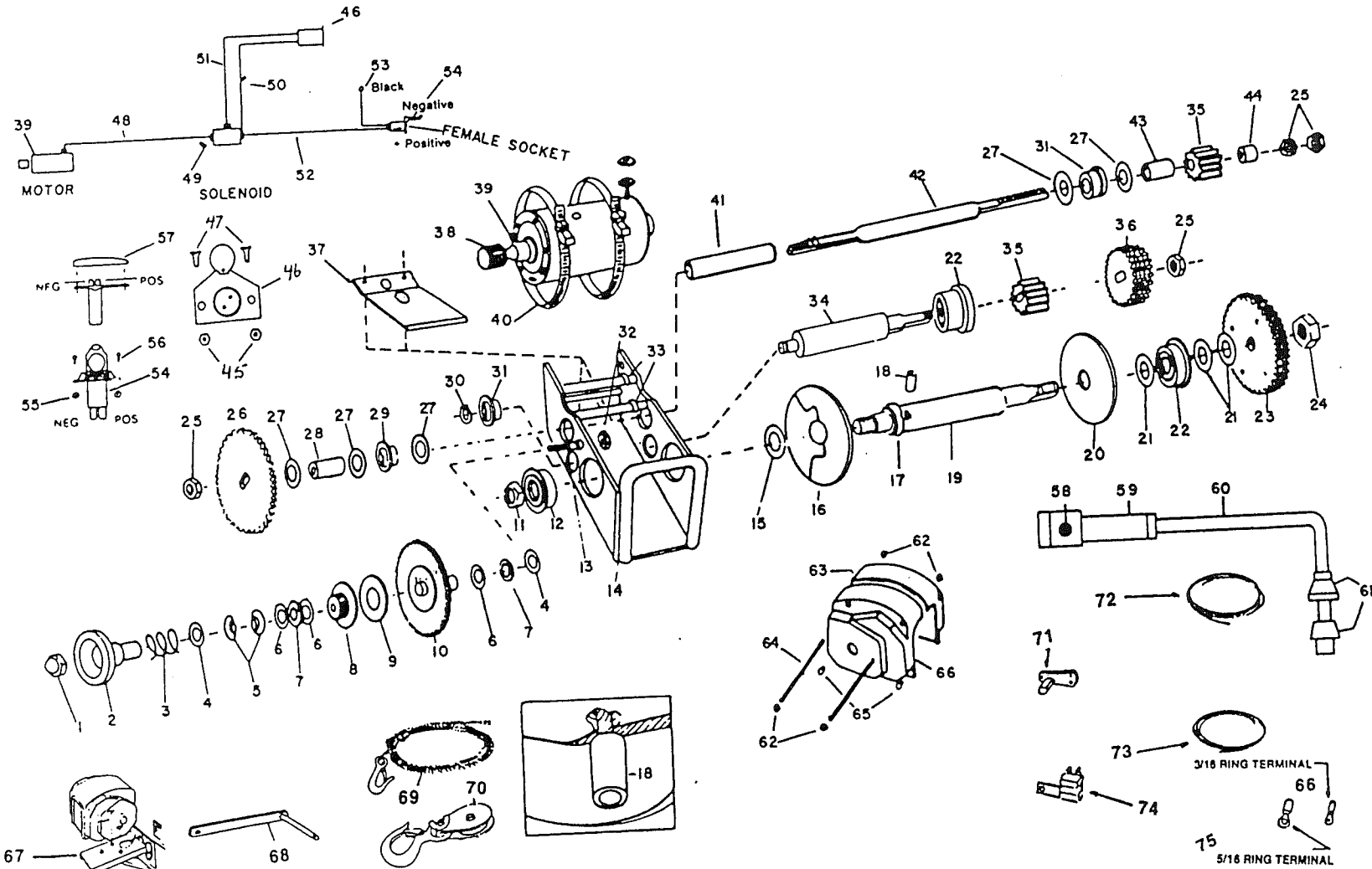
| KEY # | PART # | ID # | DESCRIPTION | QTY USED |
|-------|--------|-------|---------------------------------|----------|
| 1 | | 78161 | Socket | 2 |
| 2 | | 78118 | Solenoid | 1 |
| 3 | | 78604 | 12-10 Ring Terminal | 1 |
| 4 | | 78113 | Switch for Remote Control assy. | 1 |
| 5 | | 74100 | Remote control housing | 1 |
| 6 | | 72012 | Motor | 1 |
| 7 | 23 | 72203 | Motor Strap | 2 |
| 8 | | 71721 | Motor Gear | 1 |
| 9 | 16 | 70204 | Levelwind spring retainer | 3 |
| 10 | 15U | 70203 | Levelwind spring | 1 |
| 11 | 33 | 79712 | 1/2-20 Nut | 5 |
| 12 | C12 | 71704 | Pinion Gear | 1 |
| 13 | 13 | 76107 | Bearing | 4 |
| 14 | | 71212 | Rear Shaft | 1 |
| 15 | 25 | 75302 | Clutch Plate | 2 |
| 16 | | 73601 | Clutch Lining | 2 |
| 17 | | 72999 | Clutch Gear | 2 |
| 18 | | 79405 | Clutch Knob | 1 |
| 19 | | 71779 | Drum Gear | 1 |
| 20 | C6A | 71822 | Spacers | 6 |
| 21 | 35 | 71956 | Drum Flange Split | 1 |
| 22 | 303 | 71303 | Drum Shaft | 1 |
| 23 | 3AR | 71865 | Cable Fastener | 1 |
| 24 | 32 | 71955 | Drum Flange Solid | 1 |
| 25 | | 70143 | Frame | 1 |
| 26 | A37 | 79028 | 3/8 Nut | 1 |
| 27 | | 79713 | 1/2-20 Thin Nut | 1 |
| 28 | | 75603 | Compound Gear Stud | 1 |
| 29 | | 71770 | Compound Gear | 1 |
| 30 | 29W | 79852 | Split Ring Retainer | 1 |
| 31 | | 75600 | Pawl Stud | 1 |
| 32 | | 71903 | Pawl Spring | 1 |
| 33 | | 73853 | Pawl | 1 |
| 34 | | 77041 | Crank Handle (optional) | 1 |
| 35 | | 79014 | Lanyard Cord (optional) | 1 |
| 36 | | 71887 | 3/16 x 30 Cable | 1 |
| 37 | | 78530 | 15 ft. 12 ga. Red Wire | 1 |
| 38 | 5-47B | 78160 | Plug | 1 |
| 39 | | 78106 | Circuit Breaker | 1 |
| 40 | | 74021 | Cover | 1 |
| 41 | C41N | 79719 | 6-32 Acorn Nuts | 4 |
| 42 | C41R | 75603 | Cover Rod | 2 |
| 43 | C41S | 79584 | 1-32 x 1/2 Self Tap Screw | 4 |
| 44 | | 78128 | Boot | 1 |
| 45 | | 79544 | 5-40 Flat Head Screw | 4 |
| 46 | | 79703 | 5-40 Nut | 4 |
| 47 | | 78531 | 5 Ft. 12 ga. Black Wire | 1 |
| 48 | | 78602 | 12-10 56 Ring Terminal | 1 |
| 49 | | 78305 | Remote Switch assy. | 1 |

TO MAINTAIN EFFICIENCY OF UNIT LUBRICATE
CABLE OCCASIONALLY WITH WHITMORE'S
WIRE ROPE SPRAY—LPS-3, OR
SIMILAR PRODUCT.

**THIS IS A PERMANENT MAGNETIC MOTOR
AND IS POLARIZED FOR ROTATION.**

Make sure your wiring connections conform to instructions.
Reversing may cause motor gear to back off the threaded shaft,
and/or possible damage to motor or wiring.

VR-192



MODEL VR-192

| KEY # | ID # | DESCRIPTION | QTY USED |
|-------|-------|------------------------|----------|
| 1 | 79720 | Acorn Nut | 1 |
| 2 | 79402 | Knob | 1 |
| 3 | 71902 | Backlash spring | 1 |
| 4 | 71612 | Thrust race .030 | 1 |
| 5 | 79800 | Spring washer | 2 |
| 6 | 71613 | Thrust race .060 | 2 |
| 7 | 71609 | Bearing | 3 |
| 8 | 71755 | Pinion Gear | 2 |
| 9 | 73602 | Clutch lining | 1 |
| 10 | 71716 | Powdered metal gear | 1 |
| 11 | 79715 | 5/8-18 hex nut | 1 |
| 12 | 71605 | Bearing | 1 |
| 13 | 71101 | Clutch assy stud | 1 |
| 14 | 70132 | Frame | 1 |
| 15 | 71820 | Spacing Washer | 1 |
| 16 | 71953 | Drum shaft flange | 1 |
| 17 | 79087 | Drum collar | 1 |
| 18 | 71858 | 7/32 cable fastener | 1 |
| 19 | 71402 | Drum shaft | 1 |
| 20 | 71951 | drum shaft flange | 1 |
| 21 | 71821 | Spacing washer | 1 |
| 22 | 71606 | Bearing | 3 |
| 23 | 71751 | Gear | 2 |
| 24 | 79716 | 3/4-16 hex nut | 1 |
| 25 | 79712 | 1/2-20 hex nut | 1 |
| 26 | 71703 | Drive gear | 4 |
| 27 | 71822 | Spacing washer | 1 |
| 28 | 71818 | Shaft spacer | 5 |
| 29 | 71607 | Bearing | 1 |
| 30 | 79851 | Snap ring | 1 |
| 31 | 71608 | Bearing | 1 |
| 32 | 79713 | 1/2-20 shaft nut | 2 |
| 33 | 72111 | Motor spacer | 1 |
| 34 | 71301 | Intermediate shaft | 2 |
| 35 | 71704 | Pinion gear | 1 |
| 36 | 71708 | Idler gear | 2 |
| 37 | 70205 | Levelwind plate | 4 |
| 38 | 71772 | 18T motor gear | 1 |
| 39 | 72003 | Motor | 1 |
| 40 | 72203 | Motor straps | 2 |
| 41 | 71819 | Rear shaft spacer | 1 |
| 42 | 71201 | Rear shaft | 1 |
| 43 | 71817 | Shaft spacer "B" | 1 |
| 44 | 71816 | Shaft spacer "A" | 1 |
| 45 | 79703 | 5-40 nut | 1 |
| 46 | 78161 | Socket | 2 |
| 47 | 79544 | 5-40 x 1/2 screw | 1 |
| 48 | 78108 | Buss bar | 2 |
| 49 | 78118 | Solenoid | 1 |
| 50 | 78003 | Wire assy 5" red | 1 |
| 51 | 78016 | Wire assy 6" brown | 1 |
| 52 | 78018 | Wire assy 11" red | 1 |
| 53 | 78017 | Wire assy 6" black | 1 |
| 54 | 78103 | Socket | 1 |
| 55 | 79701 | 10-32 hex nut | 1 |
| 56 | 79567 | 10-32 x 1/2 screw | 3 |
| 57 | 78105 | Plug | 3 |
| 58 | 78113 | Switch | 1 |
| 59 | 74100 | Remote switch housing | 1 |
| 60 | 78553 | Remote wire 96" black | 1 |
| 61 | 78160 | Plug | 1 |
| 62 | 79719 | 6-32 acorn nut | 1 |
| 63 | 74160 | Case grey | 4 |
| 64 | 75603 | Cover rod | 1 |
| 65 | 79584 | 10-32 x 3/8 screw | 2 |
| 66 | 78601 | 3/16 ring terminal | 4 |
| 67 | 79085 | Adapter plate | 1 |
| 68 | 77041 | Crank handle | 1 |
| 69 | 71888 | 7/32" x 40' easel | 1 |
| 70 | 79043 | Pulley block and hook | 1 |
| 71 | 78105 | Plug | 1 |
| 72 | 78510 | 15 ft. 8 ga. red wire | 1 |
| 73 | 78511 | 5 ft. 8 ga. black wire | 1 |
| 74 | 78322 | Circuit breaker | 1 |
| 75 | 78603 | 5/16 ring terminal | 1 |