

CM 5000D

Conventional and Tunnel Instructions



PRO-TECH



THEM CHICKENS



IN A HURRY?

Flip to Pages 6-13 for
Wiring Diagrams 4-11.



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Investigate The REEL-FREE Winch Handle

The REEL-FREE Winch Handle adds features to your curtain winching system



THE WINCH PICTURED IS AN EXISTING WINCH. THE ORIGINAL HANDLE WAS REMOVED AND REPLACED ON THE FARM WITH THE **NEW REEL-FREE HANDLE**

THE WINCH KIT HOLDS THE CORD, WHICH CONNECTS TO THE WINCH HANDLE.

THE HANDLE CANNOT GO PAST THE TWO O'CLOCK POSITION WHEN RELEASED. THIS MAKES THE HANDLE SAFER.

THE REEL-FREE HANDLE OPERATES THE WINCH SIMILAR TO THE ORIGINAL HANDLE UNTIL DISENGAGED.

THE CURTAIN-MINDER GETS BETTER

The REEL-FREE winch handle drops curtains quickly without tangling the curtain cables. It winds up curtains similar to the standard handle. When the handle is in control, the curtains can be adjusted. When the handle is released, the reel is free to turn releasing the cable in 2 seconds. Since the handle hardly turns, the handle presents little danger to the operator and losing the string is lessened. The REEL-FREE handle retrofits most winches so a new winch is not required. The curtain drop does not have to be replaced.

*****CM 5000D CURTAIN-MINDER INSTRUCTIONS*****

- 1- Unpack your **CM 5000D** Curtain-Minder. Remove the transformer and the winch kit.
- 2- The transformer mounts on a 7/8" knock out of a junction box, handy box, or breaker panel. It is best to wire the primary wire leads of the transformer to a fan power supply circuit, preferably the workhorse fan breaker.
- 3- Mount the CM 5000D Curtain-Minder on the wall so the white wires will reach the transformer. Connect the white lamp cord from the 24 VAC terminals of the Curtain-Minder to the screw terminals on the transformer. Apply power to the unit and see that the **AC POWER** light is on. Disconnect the power and continue the installation.
- 4- You have two reliable choices for installing the Winch Kit(s). The parts are included for both.
 - (A) The **DIRECT-CONNECT** method (Page 7, Figure 1A), eliminates the loss of the braided cord with the handle hook. The cord is tied above and to one side of the winch kit so the winch kit can swing out of the way of the winch handle. To operate, the winch kit is closed so the hinge meets the blue electro-magnet. The string loop (with the HANDLE HOOK) is draped over the hinge. Make sure the loop drapes over the knuckle of the hinge and does not make contact with the tilt screw. Now let the winch handle cradle in the handle hook. You may prefer to crimp the handle hook to the winch handle to prevent it from getting lost.
 - (B) The **ORIGINAL** method (Page 7, Figure 1B) provides good holding power, especially when curtain machines are used. Mount the winch kit on a mounting surface as near the winch handle as possible, using the holes in the top of the plate. The hinge, when open, should point toward the winch handle. Make sure the tilt screw is in enough for the hinge to contact the magnet. Remove the handle hook from the short loop by cutting or untying the cord. Cut a piece of PVC pipe nearly as long as the cord. Thread the looped end of the cord through the piece of PVC pipe. Refer to Figure 1B. Drape the looped end of the braided cord over the hinge so that it rests at the knuckle of the hinge. Keeping the cord as short as possible, tie the handle hook on the other end of the cord and cradle the winch handle in the handle hook. Remove the ratchet on the winch! Now the winch kit is carrying the weight of the winch handle. When you positively do not want to release the winch handle, let the hinge hang down and connect the looped end of the cord to the tilt screw.
- 5- You should use 18-gauge two-conductor lamp cord to make all of your connections. Other wire may not be as satisfactory in the long run.
- 6- There are six terminal blocks with four screw terminals each on the right side of the front door for all of the wiring connections. The terminal blocks can be unplugged for easy access. The second through the fifth terminal block is used to wire the winch kits. The fifth terminal block is labeled *Magnet 1* and the second terminal block is labeled *Magnet 4*. There is no particular order for numbering the winch kits.

The **CM 5000D** will accommodate up to five winches. There is a small yellow screwdriver included for making the connections. Please leave the screwdriver inside the Curtain-Minder!

(a) **Wiring for ONE Winch Kit** (Page 10, *Figure 4*) Extend the magnet wires on the Winch Kit to the Curtain-Minder using 18-gauge lamp cord. Connect the other end of the lamp cord to the bottom screw labeled *Magnet 1* and the top screw labeled *Magnet 4*. The reed switch wires should be wired to the Normally Closed circuit on an alarm such as our MARK 220.

(b) **Series Wiring for TWO Winch Kits** (Page 10, *Figure 5*) Extend the magnet wires on two Winch Kits using 18-gauge lamp cord. Connect one wire from each Winch Kit together. The other end connects to the bottom screw labeled *Magnet 1* and the top screw labeled *Magnet 4*.

(c) **Series Wiring for THREE Winch Kits** (Page 11, *Figure 6*) Extend the magnet wires on three Winch Kits using 18-gauge lamp cord. Connect one wire from each Winch Kit together. A wire from the 1st Winch Kit connects to the bottom screw labeled *Magnet 1* and a wire from the 3rd Winch Kit connects to the top screw labeled *Magnet 4*.

(d) **Series Wiring for FOUR Winch Kits** (Page 11, *Figure 7*) Extend the magnet wires on four Winch Kits using 18-gauge lamp cord. Connect one wire from each Winch Kit together. A wire from the 1st Winch Kit connects to the bottom screw labeled *Magnet 1* and a wire from the 4th Winch Kit connects to the top screw labeled *Magnet 4*.

NOTE: A warning label is included with each winch kit. For safety, attach it near the curtain winch. Being near the winch can be very hazardous, so STAY CLEAR!

7- The **CM 5000D** has a relay with a dry contact that can be tied to your alarm to tell you when the unit has detected low power. There are three terminals at the top of the board (see Figure 3) for this output. The alarm can be wired **Normally Open (NO)** or **Normally Closed (NC)**.

8- Remove the green paper from the double-sided tape in the back of the unit and set the battery on the tape. Connect the 12-volt lead acid rechargeable battery to the *RED* and *BLACK* wires being sure to observe polarity.

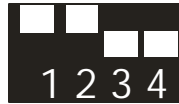
9- Close the unit, reconnect the power to the unit, set the desired time delay and you are ready to connect the winch handles.

10- A very nice feature of the **CM 5000D** is that you can test the Curtain-Minder with a short time delay. Set the timer knob to 1 and remove the power from the circuit being monitored. The **Low Power/Timing** light should be blinking and the curtains should drop. After testing, be sure to set the knob to your desired delay time and reconnect the winches.

NEW TO THE CM 5000D –

Please follow these suggested wiring instructions when you are using the **WK 1510** winch kit for “Automatic Tunnel Mode.” We recommend using 4-conductor 18-22 gauge wire.

(1T)- Open the unit and set the DIP switch for the number of winches you are using. The DIP switch is located on the left hand side of the board. Push the switch or switches up for each winch being used. The switches on the next page show the selection for 1, 2, 3 or 4 winches.



(2T)- If you use fewer than 4 winch kits, it is necessary to put a jumper between the two terminals for each reed switch that is not used. You will need to cut a piece of scrap-stranded wire about 3 inches long and strip it on both ends. See the wiring diagrams on pages 11 and 12 for the correct locations of the jumpers.

(A) **Wiring ONE WK 1510 in “Automatic Tunnel Mode”** (Page 12, Figure 8) Using the black and white conductor of 4 conductor 18-22 gauge wire extend the reed switch wires. Connect the other end of the black and white wires to the 2 screws labeled *Reed Switch 1*. Extend the magnet wires with the red and green conductor. Connect the green wire to the bottom screw labeled *Magnet 1* and connect the red wire to the top screw labeled *Magnet 4*.

(B) **Wiring TWO WK 1510 in “Automatic Tunnel Mode”** (Page 12, Figure 9) Using the black and white conductor of 4 conductor 18-22 gauge wire extend the reed switch wires. Connect the other end of the black and white wires to the four screws labeled *Reed Switch 1* and *Reed Switch 2*. Extend the magnet wires with the red and green conductor. Connect the green wires to the bottom screws labeled *Magnet 1* and *Magnet 2*. Connect the red wire of the 1st to the bottom screw of *Magnet 1*. Connect the red wire of the second magnet to the top screw of *Magnet 4*.

(C) **Wiring THREE WK 1510 in “Automatic Tunnel Mode”** (Page 13, Figure 10) Using the black and white conductor of 4 conductor 18-22 gauge wire extend the reed switch wires. Connect the other end of the black and white wires to the six screws labeled *Reed Switch 1*, *Reed Switch 2* and *Reed Switch 3*. Extend the magnet wires with the red and green conductor. Connect the green wires to the bottom screws labeled *Magnet 1*, *Magnet 2* and *Magnet 3*. Connect the red wire of the 1st and 2nd magnet to the top screws labeled *Magnet 1* and *Magnet 2*. Connect the red wire of the 3rd magnet to the top screw labeled *Magnet 4*.

(D) **Wiring FOUR WK 1510 in “Automatic Tunnel Mode”** (Page 13, Figure 11) Using the black and white conductor of 4 conductor 18-22 gauge wire extend the reed switch wires. Connect the other end of the black and white wires to the eight screws labeled *Reed Switch 1*, *Reed Switch 2*, *Reed Switch 3* and *Reed Switch 4*. Extend the magnet wires with the red and green conductor. Connect the green wires to the bottom screws labeled *Magnet 1*, *Magnet 2*, *Magnet 3* and *Magnet 4*. Connect the red wire of the 1st, 2nd and 3rd magnet to the top screw labeled *Magnet 1*, *Magnet 2* and *Magnet 3*. Connect the red wire of the 4th magnet to the top screw labeled *Magnet 4*.

11- To test the battery set the timer knob to 2 minutes or more then push the battery test switch up and hold for 15+ seconds. If the **Timing** light blinks and the magnets hold, the battery is good. If the magnets drop, your battery needs to be replaced. Make sure you replace the battery with a 12-volt sealed lead acid rechargeable battery that is at least 2.5 amp hours.

12- An extra safety feature is also on the board. If for some reason, the curtains have not dropped in the amount of time you have set on the **CM 5000D**, after 10 minutes the circuit dies and the magnets release.

A CONFESSION

We at Pro-Tech, Inc. have done our best to build your **Curtain-Minder** free of defects. However, we are human; therefore, your **Curtain-Minder** was subjected to human error. Please test the **Curtain-Minder** thoroughly and frequently. We promise the Curtain-Minder will fail. We hope it does not fail in your lifetime. When it fails, it will likely fail when you need it most. Please remember that Terry Allen and Jim Sutton designed this product so anything is possible !

13- A back-up high temperature thermostat can release the curtains or windows. The best way is to connect a **Ther-Minder**, by Pro-Tech, Inc. to the Curtain-Minder using the **NC** instructions in Fig. 2b on page 7. Another way to achieve this is to connect a cooling thermostat, **NO** contacts, which can also be the **Ther-Minder** shown in Fig. 2a on page 7. When the low power light blinks, the alarm relay energizes. If the alarm relay is wired to an alarm, you should be notified.

14- The **CM 5000D** Curtain-Minder is the most fail-safe Curtain Release device available. The **CM 5000D** will release curtain winches upon power outages and low voltages. If the Curtain-Minder releases the curtain winches upon low voltage, the **LOW POWER** light will be blinking or on if, the unit has timed out.

You have made a wise purchase; however, the **CM 5000D** Curtain-Minder is only a management tool and *NOT* an insurance policy. It does not replace the attendant or make a poor attendant a good one. For *MAXIMUM PROTECTION*, make sure that:

- (A) The ratchet is removed.
- (B) The weight of the winch handle is sufficient to flip the hinge completely down.
- (C) The curtains will fall when the winch handle is released.

NEED MORE STRENGTH? There are two ways :

- (1) The Winch Kit has a yellow dot on the part of the magnet, which holds the hinge. This dot reduces the holding power of the Winch Kit. You may remove this yellow dot with your fingers and increase the strength. Please test the unit to see the Winch Kit(s) turn the winch loose, as you would expect.
- (2) For use with Curtain Machines to make the Curtain-Minder heavy duty (Double holding power): See (Figure 3, page 8) and do the following:
 - (A) Open the door to the Curtain-Minder.
 - (B) Locate J4 to the left of the terminals for wiring *Magnet 4*. There is a "shorting jumper" connecting the middle pin and the lower pin.
 - (C) Remove the "shorting jumper" and put the "shorting jumper" on the middle pin and the upper pin.

Note:

We are asked occasionally if one transformer can operate both the Curtain-Minder and the Mark 220 Alarm. The answer is yes if you use the transformer that comes with the Mark 220 Alarm. Both transformers have the same input and the same output. The Mark 220 has twice the amperage, so it is bigger and heavier. The alarm transformer is rated at 40 VA while the Curtain-Minder transformer is rated at 20 VA.

Connections for a CM 5010D to be used as a stand alone alarm system

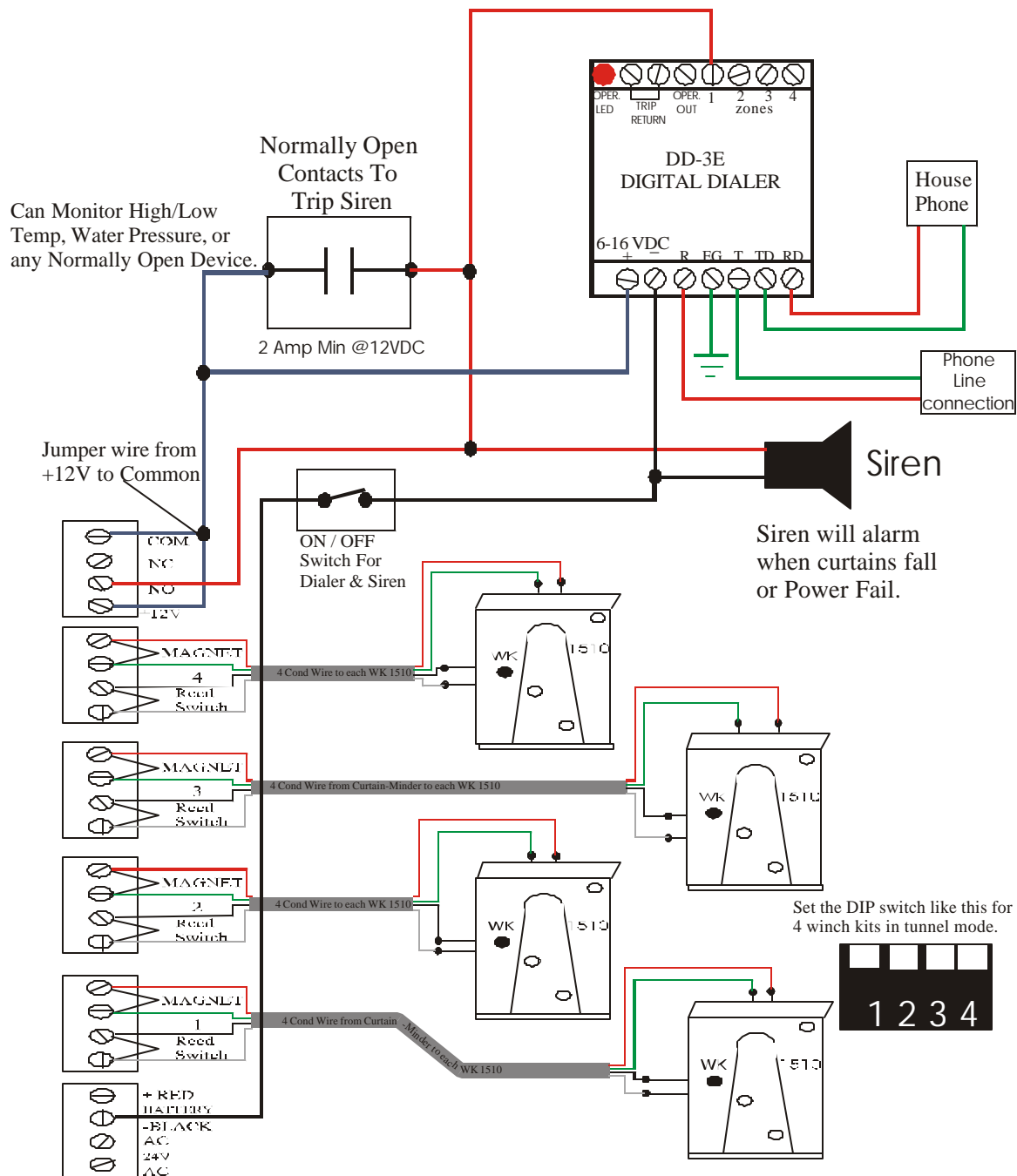
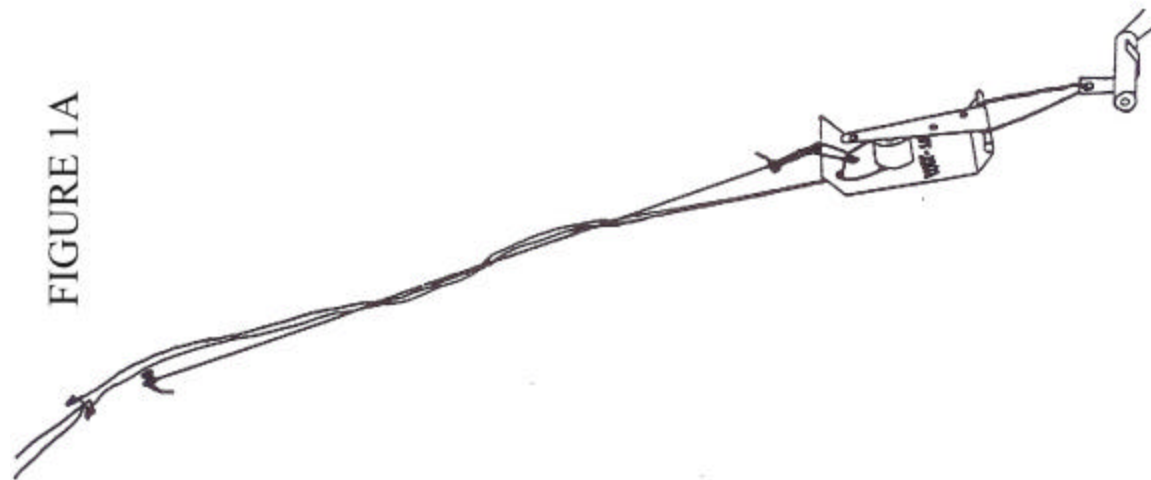
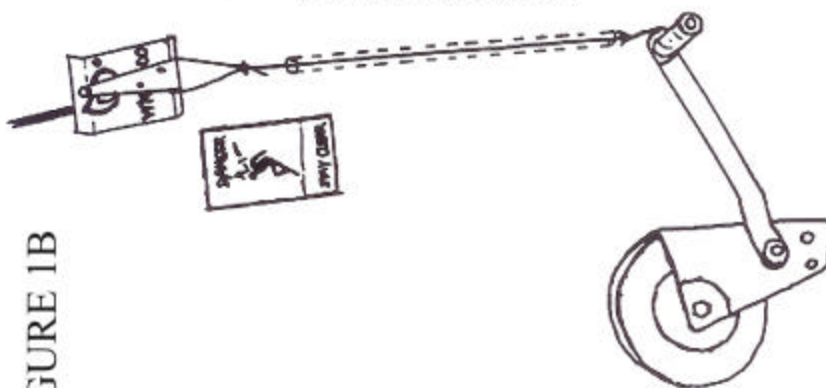


FIGURE 1A



DIRECT CONNECT

FIGURE 1B



ORIGINAL

THREADING THE STRING
THROUGH A PIECE OF
PLASTIC PIPE WORKS WELL
TO PREVENT THE STRING
FROM TANGLING IN THE
WINCH OR HANDLE. THE
STRING IS ALSO EASIER TO
FIND AFTER IT IS
RELEASED.

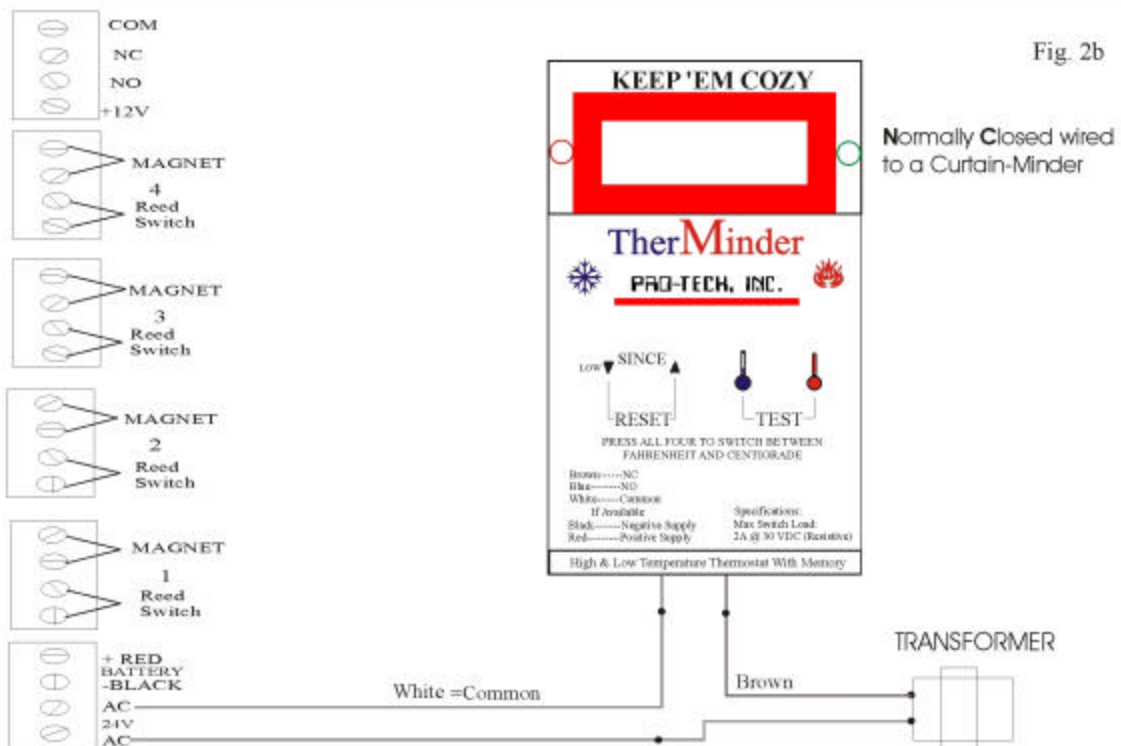
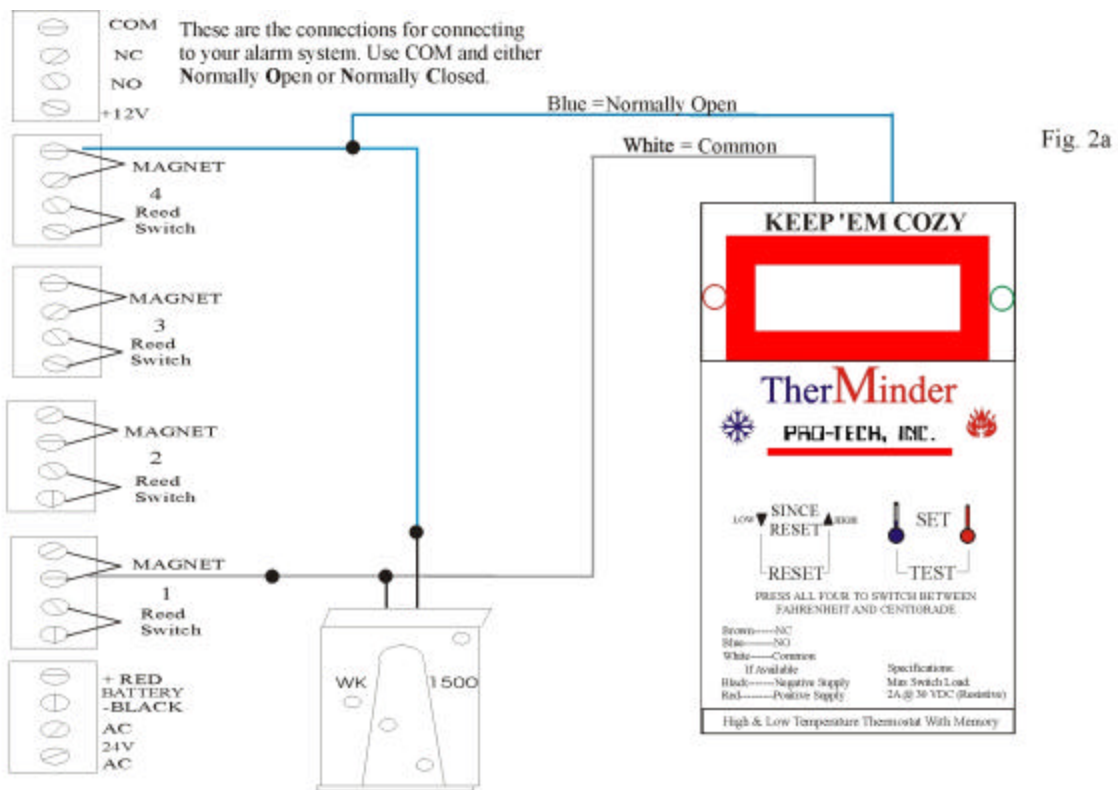
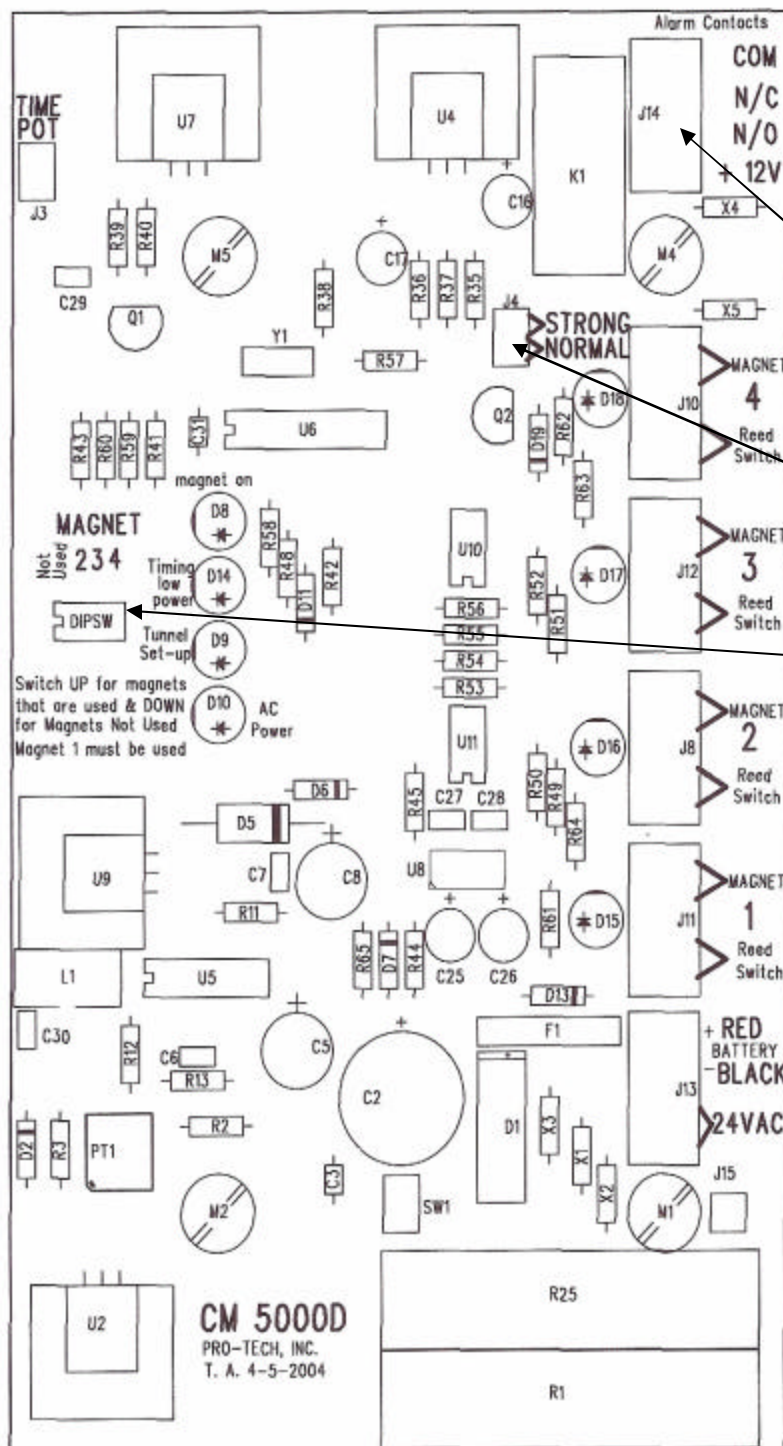


Figure 3



You can monitor low AC or no AC power by wiring your CM 5000D into your alarm system.

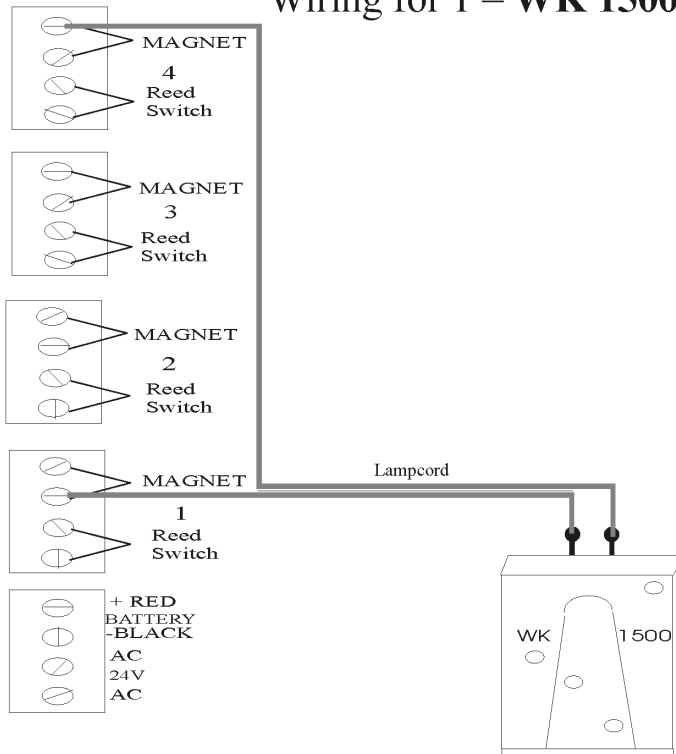
Connect the alarm contacts labeled *COM* and either the *N/C* or *N/O* terminal to your alarm system. The *N/C* is used for **N**ormally **C**losed and the *N/O* is used for **N**ormally **O**pen.

You can make the winch kits stronger by moving J4 to the top 2 pins when no more than 4 Winch Kits are used.

DIP Switches

Wiring for 1 – WK 1500 Winch Kit

Figure 4

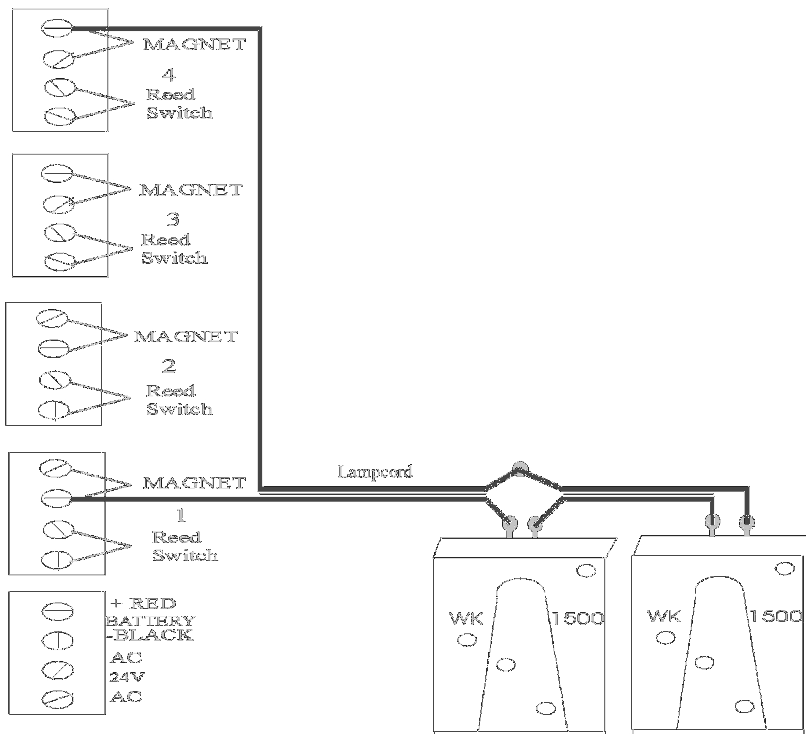


The DIP switch should be factory set like this.



Series wiring for 2 – WK 1500 Winch Kits

Figure 5

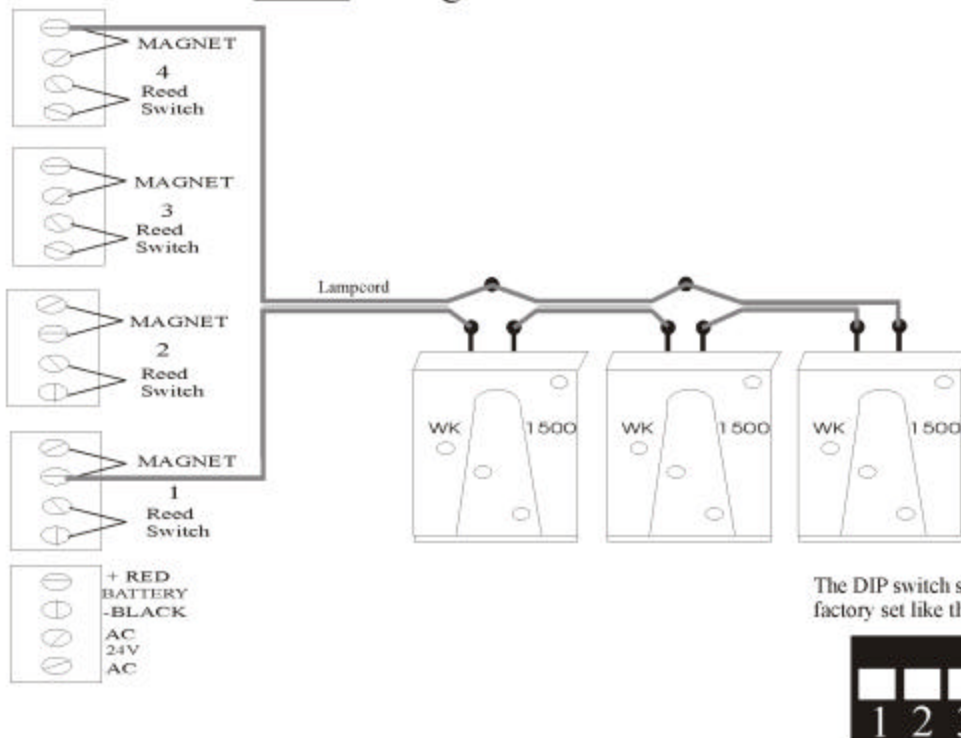


The DIP switch should be factory set like this.



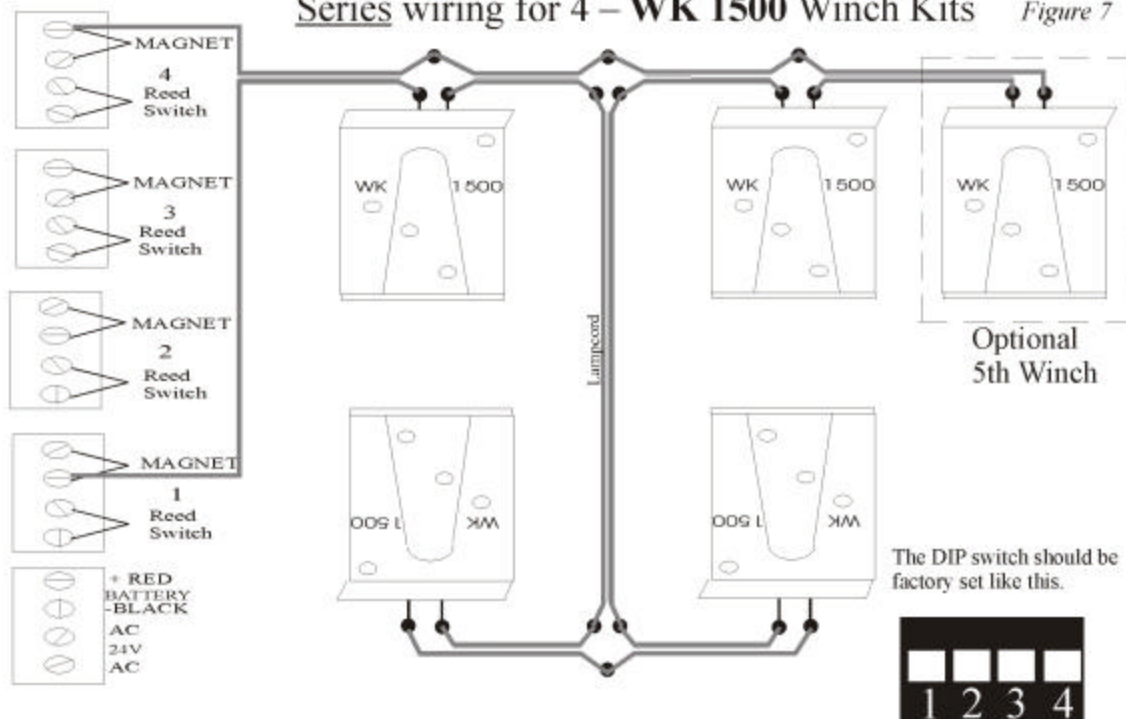
Series wiring for 3 – WK 1500 Winch Kits

Figure 6



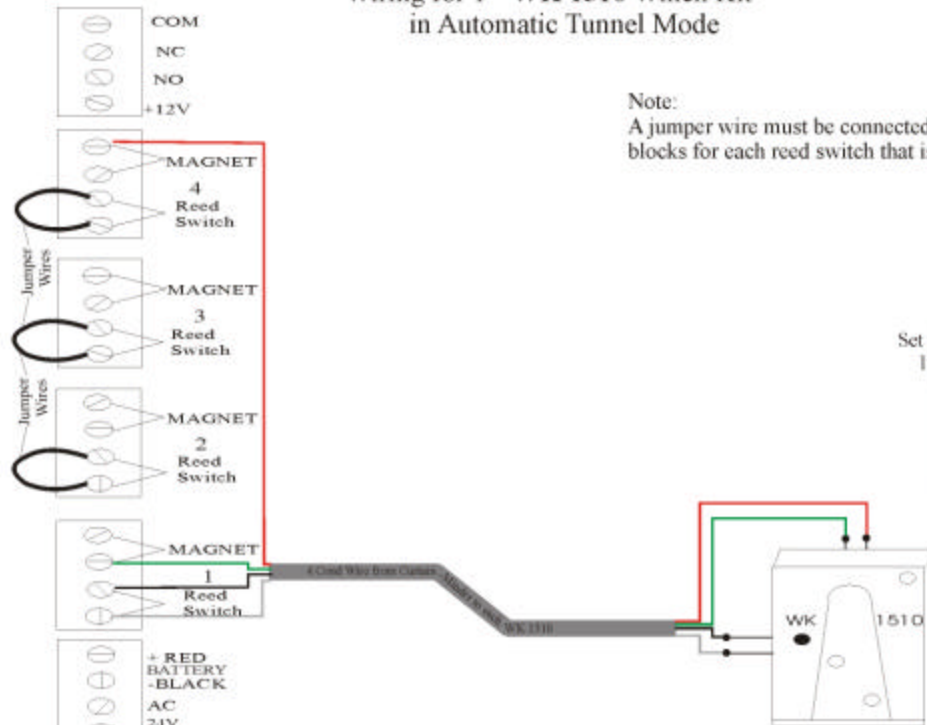
Series wiring for 4 – WK 1500 Winch Kits

Figure 7



Wiring for 1 - WK 1510 Winch Kit in Automatic Tunnel Mode

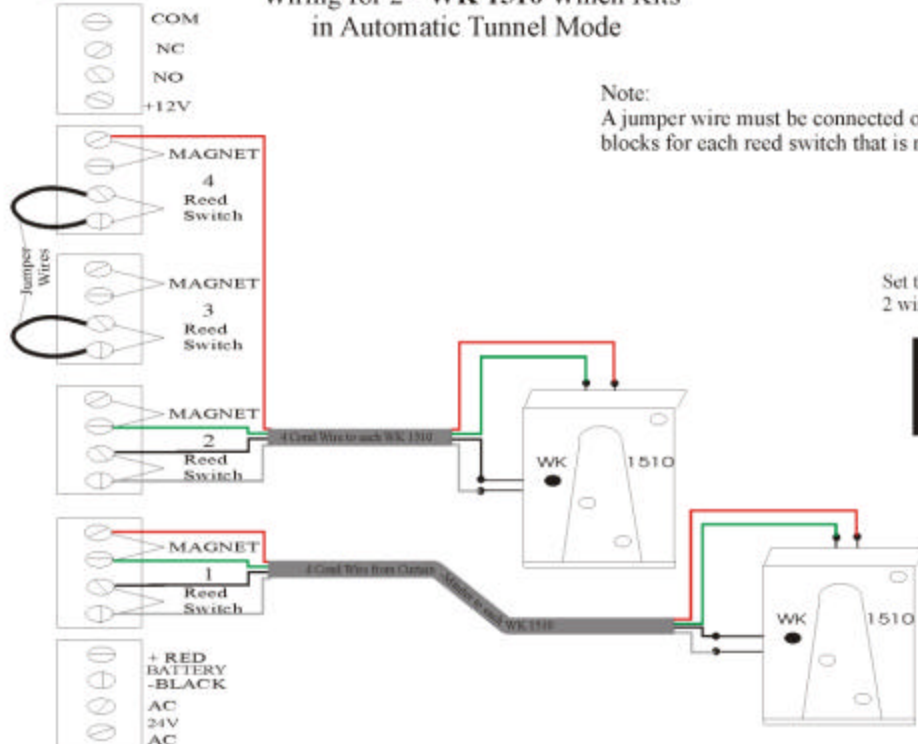
Figure 8



Note:
A jumper wire must be connected on the terminal blocks for each reed switch that is not used.

Wiring for 2 - WK 1510 Winch Kits in Automatic Tunnel Mode

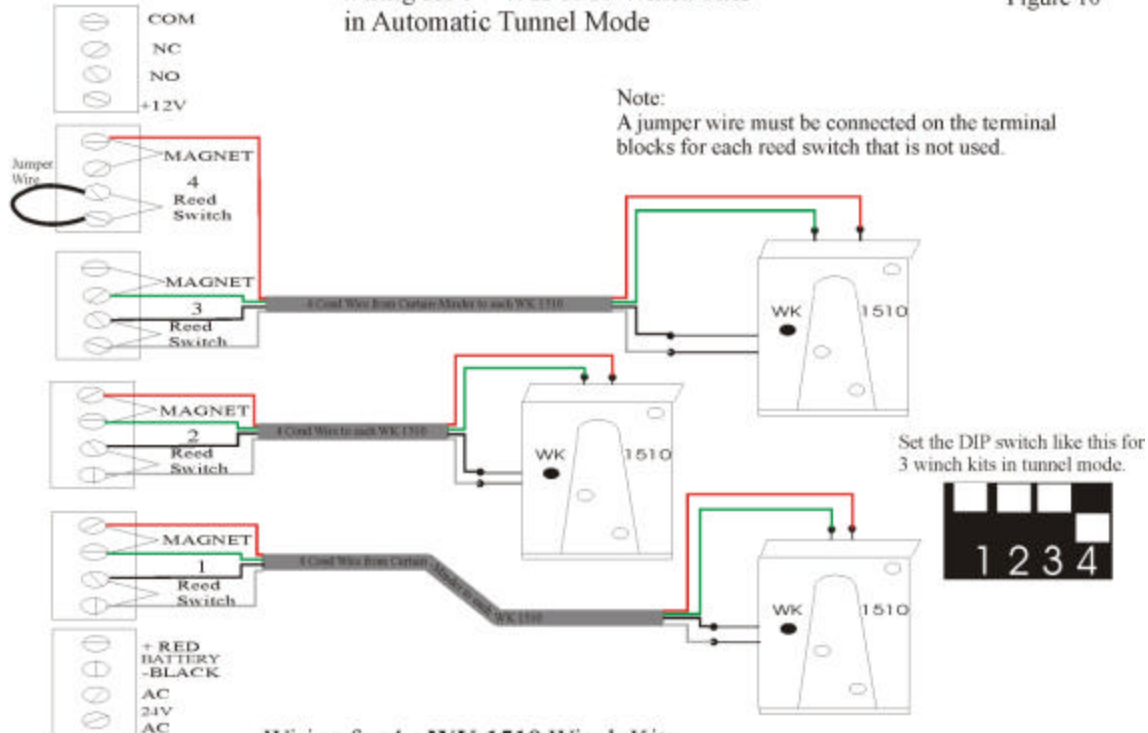
Figure 9



Note:
A jumper wire must be connected on the terminal blocks for each reed switch that is not used.

Wiring for 3 - WK 1510 Winch Kits
in Automatic Tunnel Mode

Figure 10



Wiring for 4 - WK 1510 Winch Kits
in Automatic Tunnel Mode

Figure 11

