



# METAL DEFENDER

AFFORDABLE PROFESSIONAL SECURITY

MD-6A

User Manual



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# MEDICAL SAFETY

Metal Defender makes every effort to ensure its products are safe for use. Extensive research by Metal Defender has produced no information which would indicate that its products have any adverse effects on medical implants, pregnancy, recording media or magnetic strips. Metal Defender makes every effort to cooperate with medical device manufacturers and to communicate with agencies such as the United States Food and Drug Administration and Health Canada as a means of assuring product safety. The electromagnetic fields produced by Metal Defender products are similar to those encountered in the daily environment and meet U.S. and International standards for electromagnetic emissions.

Metal Defender recognizes that certain medical devices may have additional requirements which may require special care. Any recommendations or directives issued by personal physicians or medical device manufacturers should be followed. If, for any reason, (e.g. doctors orders, etc.), a patron objects to being scanned with a metal detector, it is recommended that alternative procedures be used.

The following should be considered when developing a security checkpoint screening plan.

- **Traffic Flow** - Traffic flow should remain consistent and encourage unrestricted traffic flow as a means of minimizing the time a person remains within the archway of a walk- through metal detector.
- **Alternative Screening** - Alternative screening methods such as scanning with a handheld metal detector, hand searching or denial of access should be clearly defined in checkpoint screening procedures as approved alternatives to screening with the walk- through metal detector.
- **Personnel Training** - Security screening personnel should be instructed in the care of persons with special medical needs and use of alternative screening methods that meet the requirements of medical practitioners or medical device manufacturers.

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## **Parts of the Detector**

Head Unit (1)
Left Probe (1)
Right Probe (1)
Bolts and Nuts (8)
AC Power Cord (1)
Serial Port Plug (2)
Allen Wrench (1)
Instruction Manual (1)
Keys (2)

## PLEASE READ THE FOLLOWING INSTRUCTION CAREFULLY BEFORE OPERATON



Please follow the corresponding instructions to operate the unit safely and accurately.

1. The unit can be used indoors and outdoors. If used outdoors a canopy must be provided to ensure the unit is kept safe from the elements.
2. Chose a smooth and non-vibrating surface to install the metal detector on. Do NOT touch the machine during screening as it can cause false alarms.
3. Within 4-6 feet ensure there are no other heavy metal objects in the environment except for other walk-through metal detectors.
4. Keep unit far from any power cables or other communication lines that may cause interference.
5. Do not install unit in 105 degree + weather or wet environments.
6. Do not disassemble any of the pieces inside the head-unit without explicit instructions from a trained technician.
7. Allow 1 minute after turning the machine on to allow for the unit to self-calibrate.

# Technical Specifications

Metal Defender's MD-6 Walk-through Metal Detector provides pinpoint accuracy and discrimination features. This detector is effective in all environments including but not limited to airports, government buildings, correctional facilities, and sports venues. While being cost effective it also provides the same security that professionals worldwide receive from other brands.

<b>Standard Programs</b>	Has 6 "Occasions" for pre-programming Unit
<b>Sensitivity</b>	6 Adjustable Zones with sensitivity levels 0-255
<b>Zone Indications</b>	6 Zones
<b>Overhead Control Unit</b>	All Electronics- LCD, Alarm light, LED bar graph, Control Touch pads- Integrated to eliminate wire exposure
<b>Tamper-Proof Settings</b>	4- Digit customizable passcode and physical key for Overhead Control Unit
<b>Self Diagnostics</b>	Upon Startup/Reset Unit will Self-Diagnose
<b>Battery Pack (Optional)</b>	8-10 Hours of Backup Battery Charge
<b>Warranty</b>	24-Month standard warranty Limited Parts/Labor
<b>Interior Size</b>	79.2in(H)x27.25in(W)x19.7in(D)
<b>Exterior Size</b>	86.6in(H)x32in(W)x19.7in(D)
<b>Shipping weight</b>	2 Pieces per unit - Legs:160lbs Head:45lbs
<b>Temperatures</b>	-20C to 60C Operating-20C to 50C Storing
<b>Power</b>	110-230VAC ± 10%
<b>Weatherproofing</b>	IP65 Water/Dust resistant
<b>Networking (Optional)</b>	Perform statistical analysis of throughput
<b>Camera (Optional)</b>	2 mega pixel IR Cube Network Camera/ 128 GB SD card / Motion Capture

## **Product Description**

The MD-6A from Metal Defender utilizes a unique 6 zone detection system. This 6 zone detection system can help identify what portion of the body has metal on it. This unit should specifically be used for detecting and preventing metal and alloy materials from being hidden on the human body. The MD-6A by Metal Defender has 6 individual zones that can all be programmed based on the users desired settings. The sensitivity can be adjusted up or down; The highest sensitivity could detect metal similar to the size of a paper clip. The MD-6A from Metal Defender is a great security solution for most but not limited to: Schools, Recycling plants, Airports, Night Clubs, and Venues.

## **Common Troubleshooting Tips & Tricks**

### **1. Machine won't power on**

- Check and ensure the power is connected properly and securely
- Check whether the power switch is on.
- Check to make sure a fuse did not blow out.

### **2. Unit is not counting pass throughs**

- Make sure the unit isn't installed in strong sunlight as it uses infrared communication to operate properly
- Make sure that the infrared sensors are lined up properly, clean, and void of any physical defect
- Lastly call a technician to take troubleshooting steps further and decide whether or not the sensors are malfunctioning

### **3. Unit is alarming without metal content**

- Make sure the unit is still working properly by ensuring there is no metal on a test persons body including jewelry, buttons, etc. If it still alarms in specific zone turn down the coordinating zones respectively until it doesn't alarm.

- Make sure there are no heavy metal objects in the near vicinity that can cause interference.
- If there are other metal detectors installed nearby ensure that they are on different operating frequencies.
- Lastly make sure the unit is installed on a flat vibration free surface.

#### **4. Unit is not alarming even though metal content is on a persons' body**

- Following the user manual increase zone sensitivity as well as total sensitivity until it detects metal that is similar to what you are trying to screen for.
- Metal detectors can detect coins up to 25mm in diameter. If the object being screened is smaller than that and you try to adjust the machine you may receive multiple false alarms per screen.

#### **5. A single zone is not alarming**

- This is likely caused by the corresponding zone not being sensitive enough. Can be caused by a zone card not operating as it should. If problem persists at highest sensitivity reach out to a technician.

#### **6. LCD Screen Problems, LED Bar Graph Not Lighting, Buttons Not Working**

- Make sure all cables are seated properly, especially the ones connecting to the back of the display.

# Interference

## Frequency and Interference information

### Electronic Jamming

The working frequency for the metal detector is between 4KHz-8KHz. The working frequency should exclude certain electronic objects around the unit such as other units, tv, and radios.

### Moving metal objects Interference

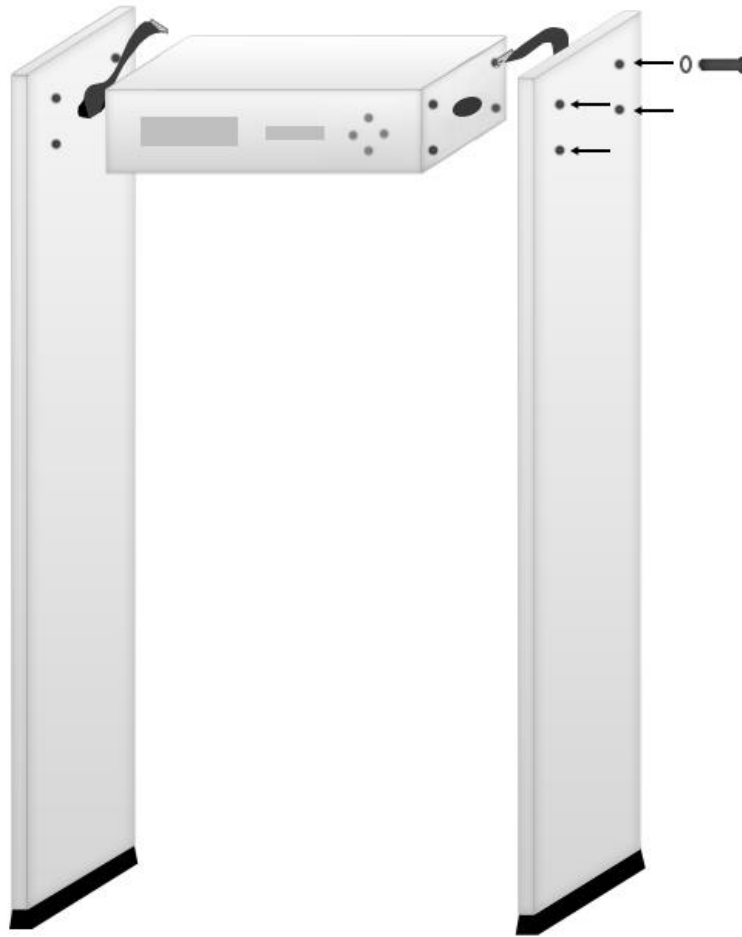
The walk-through metal detector will receive interference based on heavy metal content in the environment. This includes turnstiles, fork lifts, elevators, metal doors etc.

### Interference Between Units

When using 2 or more units in close proximity ensure they are on different operating frequencies. As well make sure that they are more than 2 feet away from each other.



## Installation Instructions



1. Two (2) people are required for the initial setup.
2. Carefully unpack your new walk thru metal detector.
3. On a Flat Clean surface, set the head module on the pad provided. The head unit should be face up with the LED screens facing the ceiling. Once the head module is positioned correctly; insert the keys to open and access the motherboard.
4. Attach the Left and Right Uprights/Legs using the Bolts Provided - DO NOT OVER TIGHTEN

5. Connect the commutation cables from each leg to the corresponding spot on the motherboard. Next connect the white led strip from each leg to the corresponding spot on the motherboard. Once both of the connectors are secured and fastened in place connect the master power plug to whichever leg you would prefer the power cord to be running from.

6. Now the unit should be fully assembled & preprogrammed by us ready to go. With one person on each side of the unit, carefully pick it up and stand it upright.

7. Your power cord can be plugged into either leg but the master power plug located in the head module must be connected to the same leg.

(Never plug two metal detectors into the same set of outlets. Each unit must operate on its own circuit.)

8. Make sure your unit is at least 3-4 feet away from any metal doors, over ductwork or other metal objects

## Product Guide

Operating the metal detector is extremely simple. A quick overlay of the changeable features are listed below.

### **Password:**

By default to access the machine settings you will press the enter button and be shown a password entry screen. The password is 800 0000 as to make it easier to access for the customer.

### **Sensitivity:**

The first options presented to you after the password is entered is the sensitivities. Ranging from zones 0-6.

“0” controls the overall sensitivity. When cycling through zones 1-6, the user is allowed to change the sensitivity of specific zones. With a programmable sensitivity range of 0-255, you’ll be able to set each individual zone to detect any desired metallic object.

### **Additional Settings:**

There are 3 “A” options which control different features within the unit.

A-1: This controls the volume. Max volume is 255. 0 turns volume off.

A-2: This is alarm duration. Programmable 1-20 seconds of alarm.

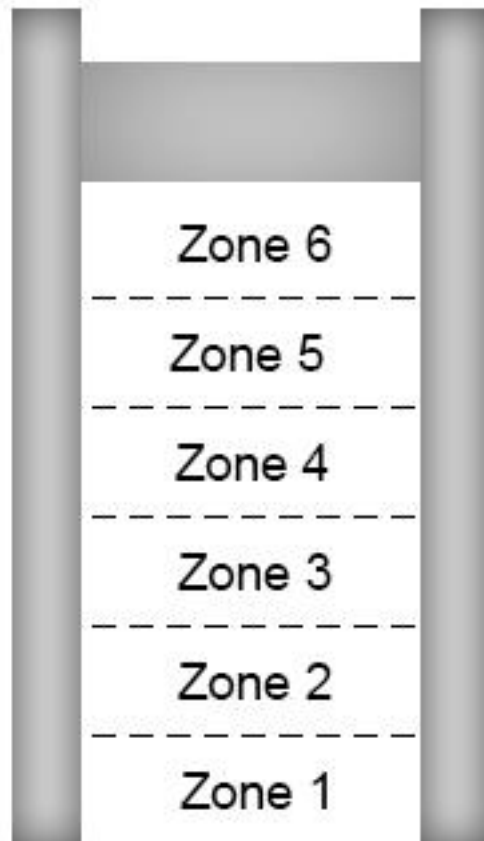
A-3: This is the tone feature. 12 distinct tones for units set-up in tandem.

### **Frequency:**

Lastly, there is the frequency option which gives you values between 4.00-8.00 to determine the best operating frequency for your machine.

If you notice too many false alarms on the unit; the first option is always to adjust the frequency to cancel any outside noise. When setting units up close to each other always ensure that the units are set to differing frequencies to eliminate any interference from one another.

## Understanding the Zones



A: Alarm Zone Locations – There are 6 unique and precise zones that will monitor and attempt to detect for metal each time somebody walks through. Each zone can be individually programmed for a specific sensitivity. Each individual zone will light up when metal is detected and a beep will sound to alert security as to where the metal is located. B: Infrared Sensor – Records each person that passes by.

## FAQ

### **What does the signal strength indicator mean?**

This is how the unit detects metal. This indicates the density and presence of metal. Sometimes if there are any overhead pipes, hvac vents, metal doors, metal cabinets or florescent light fixtures this may trigger this indicator to light up. Ideally you would want to keep 2-3 feet from these items and find a location where this indicator won't light up continuously.

### **What if I cannot put in a location where the signal strength indicator will not go off?**

If you cannot find a fitting location where the signal strength indicator will not turn off, that is ok, it will just make the unit less sensitive. It will still pick up metal from passer bys, but the sensitivity levels will have to be adjusted higher. A good indication is to adjust your sensitivity 2 points higher for every LED that remains lighted on the signal strength indicator. If your desired sensitivity setting is 70, and if your unit's signal strength indicator continuously has 2 LED's lit at all times, adjust your sensitivity to 74 to accommodate for the surrounding metal around the unit. Sometimes, even moving the unit a few inches or even 90 degrees can help decrease the LED indicator.

### **What is the right sensitivity setting for me?**

The best way to determine what sensitivity setting would work best for you is to start on the lowest sensitivity setting – 01 and find an article of metal that you wish to pick up. Walk through with the object and increase gradually until the detector picks up the metal. Start with a smaller piece of metal you wish to detect and work from there. If set for smaller traces of metal, the unit will alarm for larger pieces too. (The unit is defaulted at a 70 sensitivity).

### **I set up my unit, but it will not sound when I walk through with metal?**

Always remember that the control panel with the buttons and LED should always be facing away from the people walking through. Continue with the flowchart and make sure that your alarm time length is not set at y-00. If set at y-00, the unit is on mute mode and will not give an audio alarm when metal is detected. Secondly, please make sure that the internal AC plug is plugged into the panel where the internal power source is plugged in. Also, please make

sure that the correct serial ports inside the head unit are securely fastened in the proper locations.

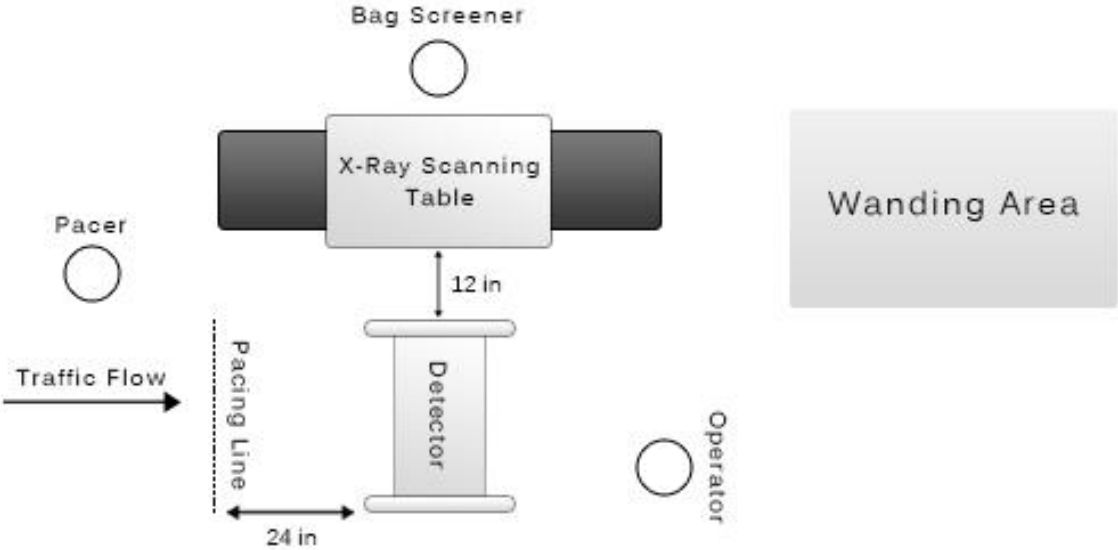
**There seems to be a lot of alarm detections occurring, more than we want or expected. Why is this?**

Before implementing a metal detector into your security, one must have a plan as to how the equipment is going to best work for them. The best way is to consult who is going to be monitoring the unit and what is the purpose of the unit. For example, if you are looking to catch people stealing small computer IC chips in their pockets, you are going to need a high sensitivity to detect them. One must have a plan as to which items are needed to be put aside before walking through. If you are not sure, or would like a product specialist to assist creating a plan, feel free to contact us at (815) 467-6464.

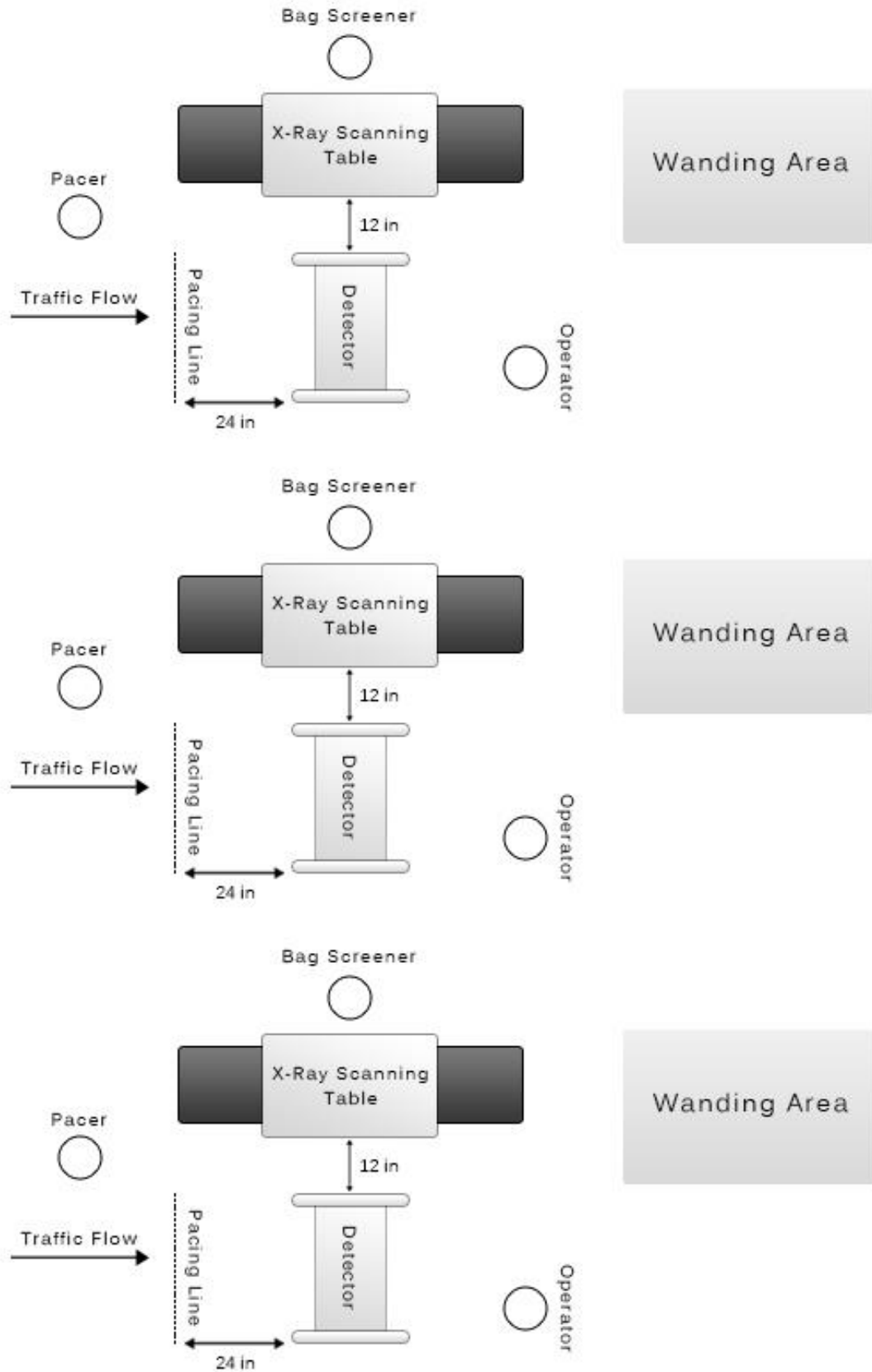
**The passerby units are not adjusting or are continuously increasing. What should I do?**

The black circular discs on the inside of the panels are the infrared sensors. These pick up when a person walks through the unit. If the unit is not picking up the passerbys, the sensors may have fingerprints or dirt on them. With a cloth towel with rubbing alcohol or window cleaner, rub around the sensor to clean. Also, please check and make sure that the cables are securely fastened to the metal detector leg panels and PC board. If this connection is loose, the unit may not work.

# SUGGESTED SINGLE LANE CONFIGURATION



# SUGGESTED MULTI-LANE CONFIGURAT





## 2 YEAR WARRANTY INFORMATION

Metal Defender warrants that each piece of security equipment manufactured by Metal Defender is protected by the following limited parts and labor warranty for a period of 24 (twenty-four) months (the "Warranty"). During this 24-month period Metal Defender will inspect and evaluate all equipment returned to its authorized repair station or factory to determine if the equipment meets Metal Defender's performance specifications. Metal Defender will repair or replace at no charge to the owner all parts determined faulty. This Warranty does not cover batteries nor any and all failures caused by abuse, tampering, theft, failure due to weather, battery acid or other contaminants and equipment repairs made by an unauthorized party.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THE WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THE BUYER ACKNOWLEDGES THAT ANY ORAL STATEMENTS ABOUT THE MERCHANDISE DESCRIBED IN THIS CONTRACT MADE BY SELLERS' REPRESENTATIVES, IF ANY SUCH STATEMENTS WERE MADE, DO NOT CONSTITUTE WARRANTIES, SHALL NOT BE RELIED UPON BY THE BUYER, AND ARE NOT A PART OF THIS CONTRACT FOR SALE. THE ENTIRE CONTRACT IS EMBODIED IN THIS WRITING. THIS WRITING CONSTITUTES THE FINAL EXPRESSION OF THE PARTIES' AGREEMENT AND IS A COMPLETE AND EXCLUSIVE STATEMENT OF THE TERMS OF THIS AGREEMENT.

The parties agree that the Buyers' sole and exclusive remedy against Seller shall be for the repair and replacement of defective parts. The Buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost sales, lost profits, injury to person or property) shall be available to him.

## Replacement Parts

Replacement Legs	<b>Please Call Us Directly For Price:</b> (815-290-5354) (815-467-6464)
Replacement Head Unit	<b>Please Call Us Directly For Price:</b> (815-290-5354) (815-467-6464)
Speaker	\$19.99
Zone Card	\$22.99
Fuse	\$15.99
Power Supply	\$34.99
Motherboard	\$79.99
Power Cords	\$21.99
Set of Nuts + Bolts	\$14.99
Battery Back Up	\$165.00
Casters	\$140.00
Leg Feet (pair x2)	\$59.99
Infrared Sensors (pair x2)	\$19.99



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