



METAL DEFENDER

AFFORDABLE PROFESSIONAL SECURITY

MD-1

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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1. Please assemble and deploy on a flat, vibration-free surface in order to avoid false alarms caused by shaking the security gate.
2. Wait 1 minute after you turn on the metal detector in order to get the best detection results.
3. Please make sure that people walk through the unit at the standby time or alarm time setting (Preset at 1 second), and pass one by one. Do not crowd around the gate, it may cause interference with the infrared sensors. Patrons should pass through one at a time and allow a minimum of 1 second after the person walks through.
4. Do not hit or collide with the gate, if this happens there will be a false alarm.
5. If the unit gets dirty, wipe it gently with a cloth dipped in water or alcohol. Do not use other chemicals.
6. Each unit has a 2 year warranty.

Product Description

The MD-1 is a single zone walk thru metal detector with only one changeable zone. This metal detector is only recommended when individuals passing through are eliminating all portions of metal on their entire body. Due to this unit only having one zone, determining or pin pointing the exact location of the metal can be difficult that is why we all suggest having an on staff security screener administrating the unit. The one zone on the MD-100s is adjustable in terms of sensitivity. Users can dial the sensitivity to their desired settings based on the type of metal they wish to detect.

Product Performance (also use teq Speqs)

Alarming mode: sound and light alarm, pitch's frequency is used to indicate the size of metal object, a variety of alarm volume modes is available for different occasions.

Detection sensitivity: the highest sensitivity can detect the metal objects of paper clip's size, each zone's adjuster can be adjusted to the appropriate sensitivity according to the detection requirements of such zone, and meanwhile, the overall sensitivity can be separately adjusted. The pre-setting of metal objects' weight, volume, size and location can exclude the false alarm caused by key, jewelry, belt buckle and other objects.

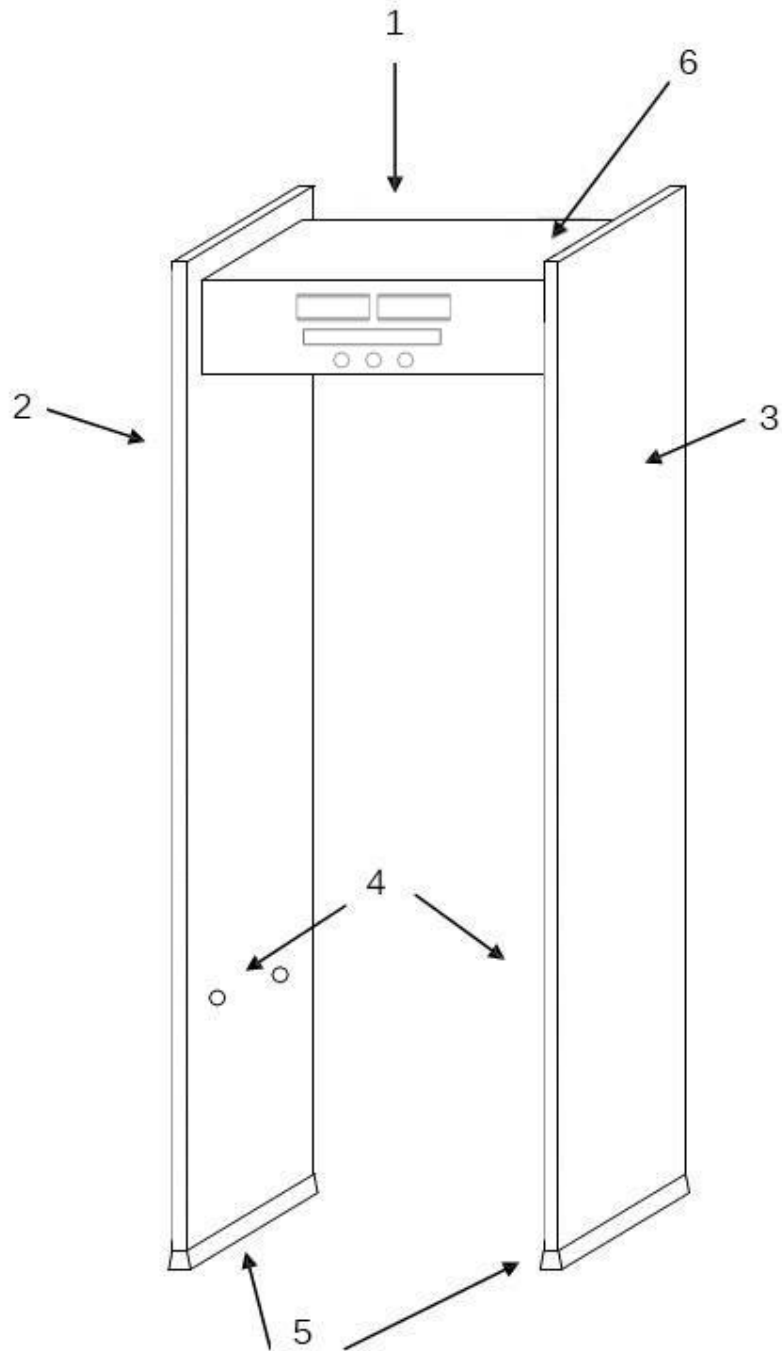
Appearance process: it is made of PVC synthetic materials and special manufacturing process; it is featured by luxury and beautiful appearance and suitable for large-scale and high-end locations.

Intelligent statistics: Intelligent passengers and alarms counting function that can automatically count the number of passengers and alarms.

Strong anti-interference ability: it adopts digital, analog, left and right balance technologies to prevent false and omission alarms, and greatly improves the anti-interference capability. Electromagnetic radiation: it complies with EMC's electromagnetic radiation standard; its weak magnetic field technology is harmless to pacemaker user, pregnant women, floppy disks, film rolls, videotapes, etc.

Installation & commissioning: this series of metal detection doors uses integrated design, it only takes 20 minutes to complete installation or disassembly, installation and commissioning instruction will be delivered with product.

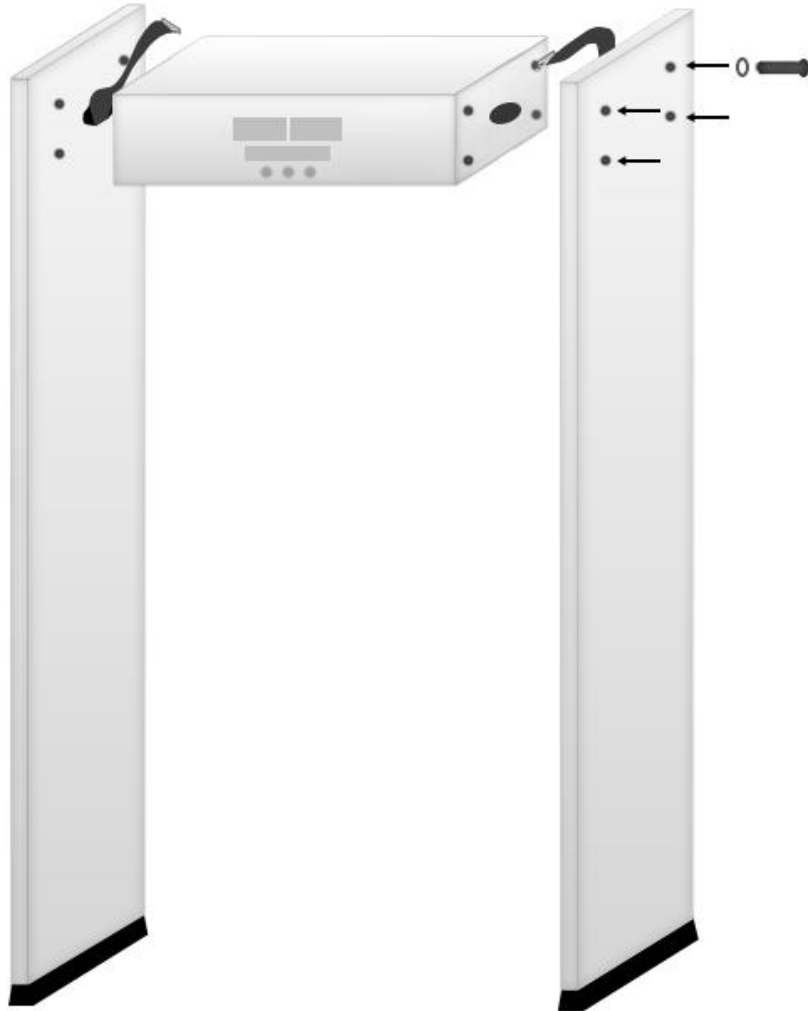
Introduction of Components



1. Main board
2. Panel
3. Built-in infrared sensor probe
4. Infrared sensor
5. Waterproof feet
6. Power socket

Installation Instructions

1. Open the carton, take objects out from the packaging, and placed them on the foam board according to the following figure:

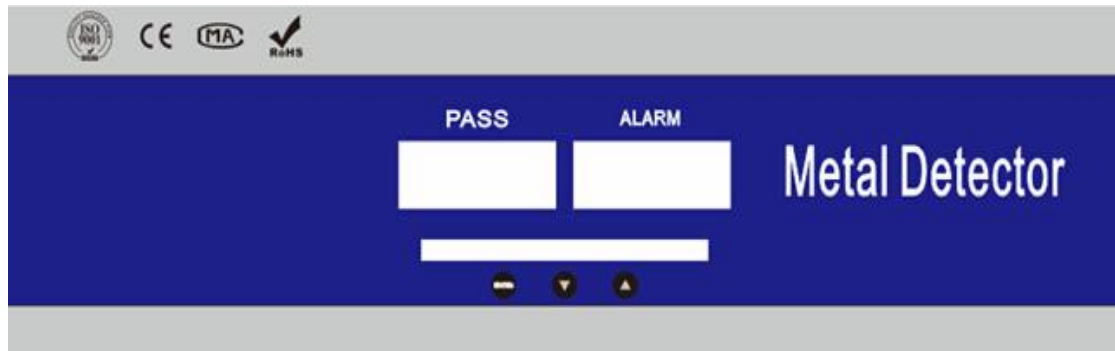


2. Place the main case with its display panel facing up, after you properly place the components, open main case's lower panel with key, fix the left and right panels on the main case with screws.

3. Insert the signal cable into the signal cable interface, and then lock the main case.

4. After all the objects are fixed; two persons erect it to the vertical position, then connect the power using power cable and enter the starting and self-inspection status.

Description of Display Panel



Number of passengers: Counting of personnel walking through the security door

Number of alarms: Counting of security door's alarming times

Counting board (8 digital LED tubes): The left four LEDs indicate the number of passengers, the right four LEDs indicate the number of alarms, for the indication meaning of settings, please check operation procedures.

Strength indication: When the metal is detected, the bigger the signal is, the more the lamps are turned on

Sensitivity: Higher sensitivity is used to detect the small metal objects; lower sensitivity is used to detect the big metal objects.

Volume: Alarm's sound volume.

Operation Procedures

The security door of this model is easy to operate, press the program key to enter sensitivity adjustment mode, use upper and lower keys to select required sensitivity, adjustable between (0-99); then press the program key again to enter frequency selection mode, use upper and lower keys to select required frequency, adjustable between 1-12.

Adjustment of Object Detection

How to exclude small pieces of metal and detect large pieces of metal?

During the inspection of metal objects carried by people, we do not want to detect small pieces of metal objects such as rings, keys, etc., and need to detect large pieces of metal; you can adjust the product according to the following methods:

1. Select a small metal as sample; the sample will be used as the boundary for that we do not want to detect, such as a bunch of keys.
2. Increase the sensitivity, let metal sample pass through the security door and trigger alarm.
3. Appropriately decrease the sensitivity, let the sample pass through the detection door again, if it still send alarms, reduce the sensitivity again until the sample will slightly lower than the alarm triggering threshold.

After the above adjustment, the metals that are smaller than the sample will not trigger the alarm and those are bigger than the sample can be accurately detected.

When the person to be inspected passes through the security door, if alarm sound is triggered, which means that he has hidden metal objects on himself, if you want to determine the exact location of metal objects and find it, you can purchase the hand-held metal detector produced by our company.

Interference Description

The following interference may happen during the operation of metal detection door:

Mechanical interference

Revolving door: the distance between detector and revolving door should be 1000 mm. Make sure that revolving door is open outward. If there has two doors, then the detection door should be installed on one of them, we recommend that you have to lock another door. If it is a metal door, we recommend cutting the corner of metal door's frame to isolate its metal ring. After the detector is installed, turn the revolving door back and forth to check the performance of installed metal detection door.

Electronic interference

There are many objects that can cause electronic interference to metal detection door, such as elevators, engines, televisions, computers, telephone lines, mobile phones, and so on. These objects should be kept away from metal detection door; consult your dealer if there has continuous serious interference.

Moving objects

If the installation location of metal detection door is too close to road, large vehicles passing by may affect its normal operation. Therefore, we recommend that the installation of metal detection door shall be as far away from the roadside as possible.

Parallel connection requirements

For parallel application, the minimum distance between two doors should be at least 700mm to avoid mutual interference between two metal detection doors

Precautions

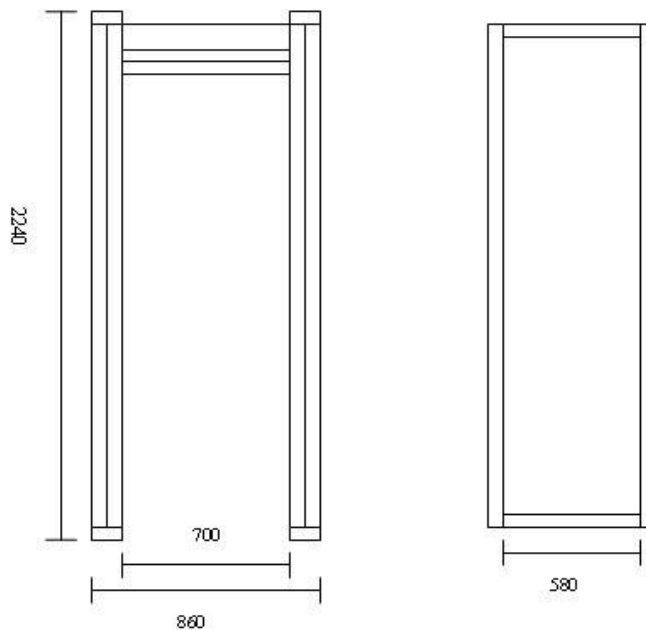
1. This product is only suitable for indoor use, if it needs to be installed outdoor, please select waterproof products or install rain shelters and other weather proof facilities.
2. There shall not have any large metal and strong magnetic field within 2 meters around the detection door to avoid interference. If the door near the installation site is metal door, the distance between metal detection door and metal door must be at least 500 mm (depending on the size of metal door).
3. Detection door shall not be installed in a high temperature, humid environment.
4. Non-professionals are not allowed to disassemble or maintain the security door.
5. Detection door achieves the best detection status within 1-2 minutes after starting.
6. The detection door should be installed on smooth and vibration-free ground; people shall avoid collision when passing through the door.
7. Each metal detection door is provided with a warranty, it can receive the free repair service during the warranty period.
8. This manual is applicable for LED walk through metal detection door - single zone version, the appearance of security door purchased by you may not be inconsistent with the appearance described in this manual, but which will not affect your operation and use.

Common Faults & Solutions

S/N	Fault Phenomenon	Solution
1	The signal lamp flashes or lights up during the starting	<ol style="list-style-type: none"> 1. Keep away from the wall 2. Change the direction of security door 3. Change the installation location
2	Security door continuously alarms	<ol style="list-style-type: none"> 1. Shut down and re-start 2. Restore to factory settings 3. Change the frequency setting
3	Missing or false alarming during the detection	Repeatedly adjust the sensitivity and test according to the size of object to be detected (during the factory acceptance test, standard sensitivity test is conducted with uniform Ø15mm steel ball, so the sensitivity needs to be improved for detecting smaller metal objects, for detection of larger metal objects, sensitivity needs to be reduced to exclude metal objects of Ø15mm ball size)

Metal Defender MD-1 Tech Specs

1 Zone pinpoint Walk-through Metal Detector



Standard Programs:	Comes preprogrammed based on customer needs
Sensitivity:	1 Adjustable Zones with sensitivity levels 0-99
Tamper-Proof Settings:	Tamper proof design
Self-Diagnostics:	Upon Startup/Reset Unit performs Self-Diagnostics
Warranty	24-Month standard warranty Limited Parts/Labor
Input operating voltage:	AC 90V-127V 50-60Hz
Product weight:	33kg or 72lbs
Power consumption:	<30W
Packaging Weight:	32kgs Leg Crate 9 kgs Head Crate
Dimensions:	2250mm (height) × 900mm (width) × 600mm (depth)
Working environment:	- 25C - + 55C
Passage size:	2000mm (height) × 720mm (width) × 600mm (depth)

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 passerbys, 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's sensitivity is defaulted at 70).

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.

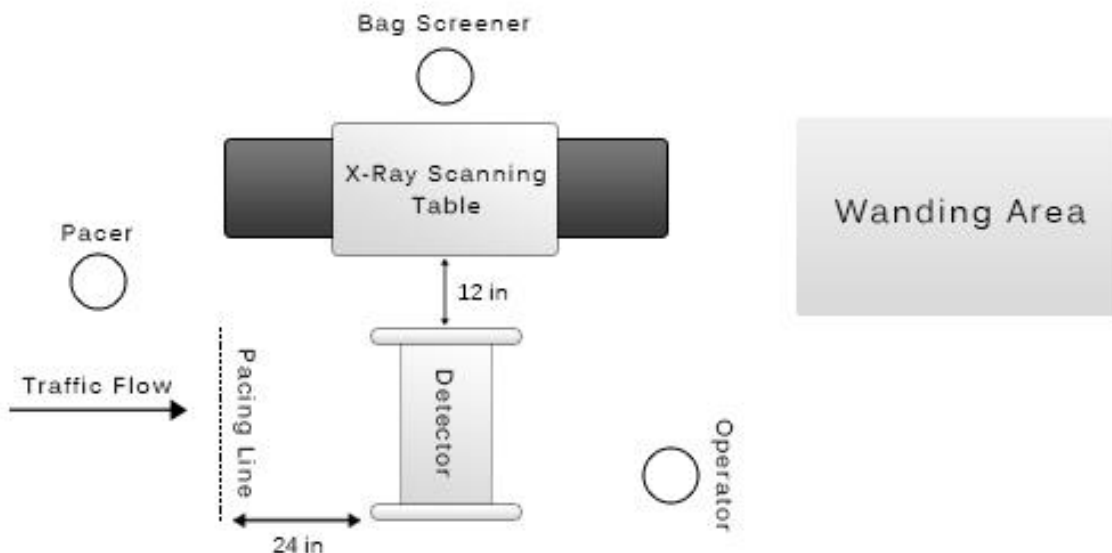
The passerby units are not adjusting or are continuously increasing. What should I do?

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 passerby, 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.

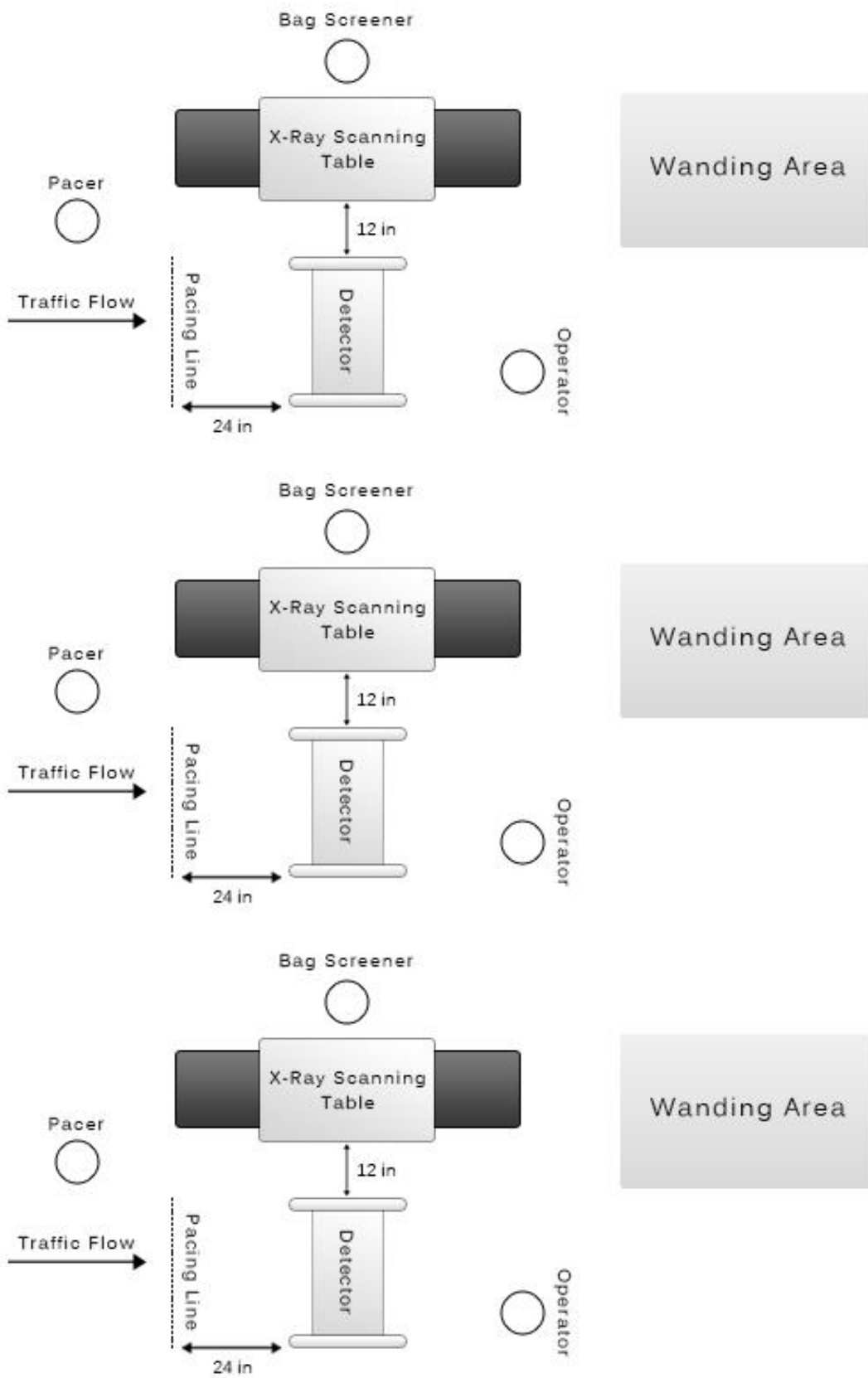
Examples of minimum sensitivities settings and what will set unit off:

- 99 – Paper clip, 90 – Coin cell batteries, 80 – Ring/Zippers/Buttons
- 75 – Box cutter, 70 – Gun/Knife, 65 – Cell Phone, 60 – Belt Buckles/Keys

SUGGESTED SINGLE LANE CONFIGURATION



SUGGESTED MULTI-LANE CONFIGURATION



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	Please Call Us Directly For Price: (815-290-5354) (815-467-6464)
Replacement Head Unit	Please Call Us Directly For Price: (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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