TOP 10 METAL DETECTOR FAQS

1. **What Is A Metal Detector & How Does It Work?**
   A metal detector is an electronic device for detecting the presence of unwanted metal. It is made up of a transmitter and receiver antenna. The electronics look at signal changes and decide if the changes are caused by metal.

2. **Why Do I Need A Metal Detector?**
   There are two reasons. The first is protection of your expensive processing equipment. The second is to protect the integrity of your product. One small piece of metal can be devastating to your company's reputation and equipment if found in a product.

3. **Where Should I Put The Metal Detector?**
   If you are trying to protect equipment, then it should be placed as close to the infeed section as possible; while still allowing ample space to stop before metal can enter. If you want to protect your final product, then it should be located as close to the end of the production line as possible — after the product has been packed.

4. **How Do I Choose A Metal Detector?**
   Make sure that the metal detector is appropriate for your unique application, the aperture size is appropriate for the various products that will be tested and that the detector is in the right location.

5. **What Is Product Effect?**
   Factors that influence the signals picked up by the metal detector. Moisture, fat, acidity, temperature, salinity, orientation and mass are all factors.

6. **What Is Sensitivity?**
   The minimum diameter sphere that can be consistently detected at the center of the metal detector opening. There are two kinds of sensitivity: "maximum" or "in-product". Maximum is the best sensitivity possible under ideal conditions. In-product is the sensitivity obtained when actually inspecting the product.

7. **What Factors Influence Sensitivity?**
   Product effect, size, shape, type and orientation of metal contaminants, the size of the opening of the metal detector; as well as the environment of operation that the metal detector occupies.

8. **What Are The Different Types of Metals?**
   Ferrous, non-ferrous, and stainless steel. Ferrous metals are magnetic metals like steel and iron. These are the easiest to detect. Non-ferrous metals are copper, aluminum, brass and bronze. And finally, stainless steel metals such as: 302, 304 and 316 are the hardest to detect. Generally, a piece of non-magnetic stainless steel must be 1.5 times larger, than a ferrous metal, in order to be detected by a metal detector.

9. **What Should I Do If Metal Is Found?**
   It should be collected and examined in order to trace the metal back to its source. If an automatic reject device (removes contaminants automatically) is not feasible, then the product needs to be removed from the line and manually inspected.

10. **How Do HACCP Rules Relate To Detection?**
    The main purpose of the HACCP initiative is to develop a procedure that identifies possible locations in your production line where product contamination can occur and to create a method of inspecting those locations on a regular basis to prevent contamination. Documentation of these inspections is a major feature of any HACCP plan. Modern metal detectors have a record keeping ability to provide a history of contamination incidents.

free PRODUCT TESTING

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NUMERIC CONVERSION GUIDE

Fahrenheit ⇄ Centigrade

-40	**-40**	-40	2.2	**36**	96.8	27.8	**82**	179.6
-34.4	**-30**	-22.0	3.3	**38**	100.4	28.9	**84**	183.2
-28.9	**-20**	-4.0	4.4	**40**	104.0	30.0	**86**	186.8
-23.3	**-10**	14.0	5.6	**42**	107.6	31.1	**88**	190.4
-17.8	**0**	32.0	6.7	**44**	111.2	32.2	**90**	194.0
-16.7	**2**	35.6	7.8	**46**	114.8	33.3	**92**	197.6
-15.6	**4**	39.2	8.9	**48**	11804	34.4	**94**	201.2
-14.4	**6**	42.8	10.0	**50**	122.0	35.6	**96**	204.8
-13.3	**8**	46.4	11.1	**52**	125.6	36.7	**98**	208.4
-12.2	**10**	50.0	12.2	**54**	129.2	37.8	**100**	212.0
-11.1	**12**	53.6	13.3	**56**	132.8	43	**110**	230
-10.0	**14**	57.2	14.4	**58**	136.4	49	**120**	248
-8.9	**16**	60.8	15.6	**60**	140.0	54	**130**	266
-7.8	**18**	64.4	16.7	**62**	143.6	60	**140**	284
-6.7	**20**	68.0	17.8	**64**	147.2	66	**150**	302
-5.6	**22**	71.6	18.9	**66**	150.8	71	**160**	320
-4.4	**24**	75.2	20.0	**68**	154.4	77	**170**	338
-3.3	**26**	78.8	21.1	**70**	158.0	82	**180**	356
-2.2	**28**	82.4	22.2	**72**	161.6	88	**190**	374
-1.1	**30**	86.0	23.3	**74**	165.2	93	**200**	392
0.0	**32**	89.6	24.4	**76**	168.8	99	**210**	410
1.1	**34**	93.2	25.6	**78**	172.4	100	**212**	414
			26.7	**80**	176.0			

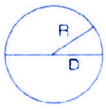
In using this table, the given temperature is in bold and, if the given temperature is Fahrenheit, its equivalent in the Centigrade scale will be the figure to the left. If the given temperature is Centigrade, its equivalent in Fahrenheit will be bound to the right.

Measurement Conversion
U.S. – Metric

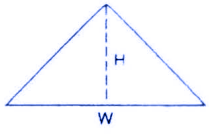
	U.S. System	Metric Equivalent	
Length			
	1 inch	25.4	millimeters or
		2.54	centimeters
	1 foot	0.3048	meter
	1 yard	0.9155	meter
	1 mile	1.6093	kilometers
Areas			
	1 square inch	654.15	square millimeters or
		6.542	square centimeters
	1 square foot	0.0929	square meter
	1 square yard	0.8361	square meter
	1 square mile	2.59	square kilometers
Volumes			
	1 cubic inch	16387.2	cubic millimeters or
		16.3872	cubic centimeters
	1 cubic foot	0.02832	cubic meter
	1 cubic yard	0.7646	cubic meter
Capacities			
	1 fluid ounce	29.573	millimeters
	1 liquid pint	0.47317	liter
	1 liquid quart	0.94633	liter
	1 gallon	3.78533	liters
Weights			
	1 ounce	28.35	grams
	1 pound	0.4536	kilogram

USEFUL FORMULAS

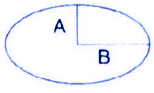
Circle
Area = 3.142 X R X R
Circumference = 3.142 X D
Radius = D/2
Diameter = 2 X R



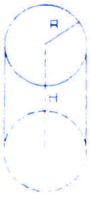
Triangle
Area = $\frac{W \times H}{2}$



Ellipse
Area = 3.142 X A X B

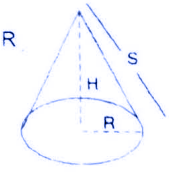


Cylinder
Area = 6.283 X R X H + 6.283 X R X R
Volume = 3.142 X R X R X H



Sphere
Area = 12.56 X R X R
Volume = 4.188 X R X R X R

Cone
Area = 3.142 X R X S + 3.142 X R X R
Volume = 1.047 X R X R X H



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