

AuRACLE™

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Electronic Gold & Platinum Tester Model AGT1

OPERATING PROCEDURE & OWNERS MANUAL $\mathbb{C}\in\mathbb{C}$

Congratulations on your purchase of the AuRACLE AGT1 gold and platinum tester by GemOro Superior Instruments, the most trusted name in testing instrumentation for the jewelry industry.

IMPORTANT: PLEASE BE CERTAIN TO READ THE FOLLOWING INFORMATION COMPLETELY BEFORE USING THE AGT1.

IMPORTANT DISCLAIMER: THE AGT1 TESTS THE SURFACE OF THE METAL ONLY.

The technology used in the GemOro Superior Instruments AuRACLE AGT1 is recognized as the best performing, most reliable and practical handheld method for electronically testing gold and identifying platinum. While it works incredibly well, be aware that by design the AGT1 only tests the surface of the metal. However, if used properly and in accordance with the instructions, coupled with common sense guidelines as in part are described in detail below, it can and will provide the user with incredible results like no other tester on the market within its class. The AuRACLE AGT1 is an advanced, technologically based tool. The AuRACLE AGT1 is designed to quickly and economically identify the karat of gold, identify platinum and non-gold metals. The AuRACLE AGT1 is not meant to replace the fire assay. That said, the AuRACLE AGT1 test results have repeatedly correlated virtually identical or incredibly close to fire assav results.

CONDITIONS FOR IDEAL OPERATION:

The AuRACLE AGT1 must be used in the following environmental conditions. By not following these instructions you risk compromising the accuracy of the test.

- A. Temperature: The AGT1 is a workhorse and is capable of working in most any normal or professional environment, with room temperature of approximately 65-75F being the best. While it has proven to work just fine in temperatures as high as 100F, ideally it is suggested to avoid using the AGT1 in extreme temperatures. The metal being tested must be dry. If the surface of the metal is wet or has any type of surface moisture it may not test correctly. The metal being tested must be clean of any obvious dirt or contaminant that might interfere with the contact of the pen probe to the metal. The tester may be used otherwise with little concern for normal surface dirt or hand oil and will work perfectly. It is imperative that the pen probe tip be cleaned from time to time, especially when it visibly appears dirty or encrusted with a white granular salt residue. This will enhance its usage life and improve its accuracy.
- **B.** The metal being tested must be dry. If the surface of the metal is wet or has any type of surface moisture it may not test correctly.
- **C.** The metal being tested must be clean of any obvious dirt or contaminant that might interfere with the contact of the pen probe to the metal. The tester may be used otherwise with little

concern for normal surface dirt or hand oil and will work perfectly.

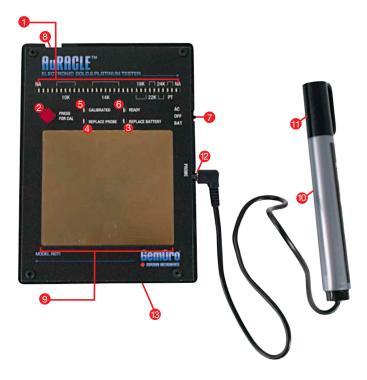
- **D.** It is imperative that the pen probe tip be cleaned from time to time, especially when it visibly appears dirty or encrusted with a white granular salt residue. This will enhance its usage life and improve its accuracy.
- **E.** For best results, allow 2-minutes before performing initial calibration and test.

AuRACLE AGT1 ADVANCED FEATURES:

- Assists to identify the karat of 6K-24K yellow, white, green and pink gold with a nondestructive test.
- 2. If simple steps are followed, also assists to identify non-gold, gold plate and gold-filled material as NA.
- 3. Assists to identify platinum.
- 4. Test results are indicated by an LED bar graph.
- 5. Tests most any size piece of gold and platinum jewelry.
- 6. Immediate test results with no waiting between tests.
- Uses included replaceable pen probe (Item #2000-1) that provides up to approximately 5000 tests if used properly.
- 8. Pen probe uses no messy gel, no staining chemicals and no dangerous acid.
- **9.** LED indicator for battery and pen probe replacement warning.
- **10.** Easy push button calibration. 14K plumb yellow gold (sold separately Item #2002) required to

perform calibration.

- **11.** Portable and powered by 1 included 9V alkaline battery or its accessory 100-240V multi-voltage AC adaptor (sold separately Item #2001).
- **12.** Includes pen probe, 9V alkaline battery, and file.



AuRACLE AGT1 Diagram:

- LED karat value, platinum & not gold "NA" indicator.
- 2. Calibration button.
- 3. Replace battery indicator.
- 4. Replace pen probe indicator.
- 5. Calibrated indicator.
- 6. System ready indicator.
- 7. Power switch Battery & external AC.
- 8. AC receptacle.
- 9. Testing plate.
- 10. Pen probe.
- 11. Pen probe protective cap.
- 12. Pen probe male connection jack.
- 13. Battery compartment.

SPECIFICATIONS:

- \cdot Working Voltage: DC 9V (1) \times 9V alkaline battery (approximately 11.5 hours of continuous use).
- Warm-Up Stabilization Time: Approximately 3 seconds. For best results, allow 2-minutes before performing initial calibration and test.
- Ideal Working Temperature: Room temperature of 65F to 75F is best, although higher and lower temperatures work just fine.
- Ideal Air Relative Humidity: 25% to 50%. As with any electronics, do not use the AuRACLE AGT1 in or around water.
- · Net Weight: 128.5g (tester only).

CAUTION:

Disassembling the AGT1 other than opening the battery compartment door for battery replacement voids the warranty.

VIDEO OPERATIONAL INSTRUCTIONS:

Please go to www.auracletester.com or www. gemoroproducts.com/goldtester640x480.mov

OPERATION:

- 1. 9V Alkaline Battery Installation: Open the battery compartment door located on the bottom side of the AGT1 by pressing the locking mechanism area of the battery compartment door with your index finger and pry the door off. With the AGT1 in the OFF power position, insert the (1) supplied 9V alkaline battery into the battery compartment as indicated with the direction of positive (+) and negative (-) polarity correctly positioned in the battery holder. Replace the battery compartment door. To conserve the battery life, be certain to turn the power switch to the (OFF) position when not in use. Please be aware that by incorrectly inserting the battery by force into the battery holder the wrong way with the polarity reversed, while the power switch is in the BATT position, you will likely damage the AGT1 and void the warranty.
- 2. To turn on the AGT1, turn the power switch located on the right side of the tester to BATT if using batteries or to EXT/AC if using the optional AC adaptor. The green LED labeled READY will then become illuminated when the tester is ready to be used. For best results, allow a 2-minute warm-up time before performing the initial calibration and test.
- 3. Take the pen probe and plug its male jack into its corresponding female receptacle located on the right side of the AGT1. Now remove its cap. With fresh pen probes, at times they may be slightly overfilled and excess solution could come out

during the testing process. If this occurs, simply dab the pen probe tip on a dry paper towel a few times and this should remedy the problem. ALWAYS REINSTALL THE CAP WHEN NOT IN USE. Because the chemical properties of the pen probe will continually change over time and normal use as the solution is depleted, it is recommended that the pen probe calibration be checked periodically throughout ongoing use. Please note that sometimes when the pen probe is plugged in the REPLACE PROBE light will illuminate briefly. This should be ignored. If when the pen probe is first plugged in the REPLACE PROBE light remains illuminated, this is a normal occurrence and will be remedied by simply calibrating the AGT1 as described in **#4 below.** If calibration does not remedy this. it is a sign of a defective or spent pen probe. If it is a defective pen probe, be aware that the **REPLACE PROBE** light will not go out until a good pen probe is connected to the AGT1 and it is then recalibrated.

4. **BEFORE USING THE AGT1 AND EACH TIME IT IS TURNED ON, IT MUST BE CALIBRATED.** To calibrate the AGT1 to ensure its accuracy, you must first obtain a piece of yellow 14K plumb gold for use as its calibration standard reference piece. (An approved GemOro calibration standard reference piece of plumb 14K yellow gold is available separately as an optional accessory Item #2002.) **FOR CALIBRATION ONLY USE YELLOW GOLD THAT IS PRECISELY 14K.** Be aware that not all gold marked as 14K is actually .583 - .585

plumb gold and if the calibration piece isn't plumb the accuracy of the AGT1 will be compromised. Then, using a standard jewelers file (supplied), file a small spot in the calibration standard of yellow 14K plumb gold. It is critical that you file through the top layer of your calibration standard since it is very common for gold to be flashed with a higher karat gold to brighten its appearance and this flashing will effect the calibration and accuracy, especially when testing gold above 18K. To avoid the need to calibrate the AGT1 each time it is turned on, and assuming you intend to use it continuously, it is recommended to use the optional AC adaptor and keep the AGT1 turned on throughout the day without fear of damaging the device.

PROCEDURE FOR CALIBRATION:

CHECK THE PEN PROBE – Prior to calibrating, touch and hold the probe pen tip to the gold testing area. If the LED's do not climb from right to left there may be a problem with the pen probe. If there is a problem with the pen probe replace it and repeat start-up process.

STEP 1: While resting the yellow 14K plumb gold on the AGT1's large square gold colored testing plate, touch the pen probe to the **filed area** on the yellow 14K plumb gold calibration standard piece and do not move the pen probe from this spot. **STEP 2:** When the reading settles, press the CALIBRATION button on the left side of the AGT1 control panel and hold it down until the green light labeled CALIBRATED illuminates and the green light in the center of the 14K range simultaneously illuminates.

STEP 3: You may now remove your finger from the calibration button and immediately move the pen probe away from the calibration standard reference piece. At this time the AGT1 should be calibrated. Recheck once again that your calibration standard reference piece now tests in the center of the 14K range. If it does not, simply repeat this procedure. You may now begin testing gold and platinum.

IMPORTANT: PERIODIC RECALIBRATION IS NECESSARY AS THE TESTER IS USED. The act

of testing gold and especially testing gold-filled or base metals will cause slight chemical changes in the pen probe. As such, a simple recalibration should be used to confirm and maintain accurate readings. The readings will have a tendency to drift upwards as contamination to the pen probe tip occurs. This contamination is a natural byproduct of using the tester and is adjusted for in the recalibration process of the AGT1. Plumb 14K yellow gold should always read in the center of the 14K LED range. If when tested your reference piece of 14K plumb gold does not fall in the center of the 14K range, it is time to recalibrate the AGT1. There is no harm in recalibrating your AGT1 often and this will also help to eliminate poor results due to these slight chemical changes in your pen probe. To recalibrate, follow the instructions above in #4.

5. ALWAYS FILE METAL FIRST BEFORE TESTING.

To utilize the AGT1 technology to its fullest and to protect yourself from potential fraud from heavily plated or other fake gold products being represented as true karat gold, <u>it is critical that</u> you first file down to the underlying metal in every sample being tested and then test the filed area. While this is the most effective method to penetrate the surface, some people have had success using a thumbtack to penetrate the surface of the gold or even a pencil eraser vigorously rubbed on the gold surface as an alternative method has been used. <u>Heavily gold</u> plated and gold-filled jewelry will test as karat gold if not filed first.

USE COMMON SENSE BEFORE INTERPRETING THE TEST RESULTS. You should always follow some common sense guidelines before making your final determination of the karat or authenticity of the precious metal being tested. Please keep in mind that those misrepresenting fake jewelry as real can be extremely clever and will use many tricks to make you think it is real. Be aware that scam artists may allow you to test a real piece of gold jewelry and then while distracting you they will switch the piece for a fake.

COMMON SENSE GUIDELINES:

GUIDELINE A. Check the markings on the piece for a karat stamp (10K or .417, 14K or .585,18K or .750, 22K or .916, 24K or .999, GF or gold filled, GEP or

gold electroplated, YGF or yellow gold filled, RGP or rolled gold plated, etc.) and then if when tested the results indicate anything to the contrary, the metal should be suspect. Test results below the 10K range must be interpreted by the user and estimated whether it is 6K-9K. In the UK while 9K gold may be found, gold below this karat range is extremely rare, and the gold content is minimal. If it tests in a lower karat than 9K or in a lower karat than is marked, it is advised to simply not buy it.

GUIDELINE B. Be aware that any piece that tests as NA is not gold.

GUIDELINE C. Check the weight of the metal you are about to test and if it seems too light, it should be suspect. Gold is a dense metal and has an associated greater weight than most other non-precious metals. Platinum is an even denser metal than gold, while weighing approximately 1/3 more than 18K gold.

GUIDELINE D. Check the color of the gold, since non-gold substitutes are often flashed or plated with 24K gold to enhance its color and consequently the gold will look too yellow. Since 24K gold is a rich yellow color and this pure gold is very uncommon in jewelry, any rich yellow gold color should be suspect. Look for tarnishing or variations in the color and finish of the jewelry as a sign of it being a fake.

GUIDELINE E. Check the clasp used on the jewelry. Costume jewelry often has a spring ring style clasp and this should be suspect. Karat jewelry more often than not will have a lobster style clasp. Do not test the clasp only as it is common for a karat gold clasp to be attached to a fake gold necklace or bracelet in an attempt to fool you.

While these facts and common sense guidelines will prove to be very helpful when buying gold and platinum, they should not be your only tools to determine the authenticity of the jewelry in question.

6. TESTING GOLD.

STEP A. Take the metal you wish to test and rest it against the gold colored testing plate on the AGT1 and keep it stable.

STEP B. Then, take the pen probe and touch only its tip (not side) gently to the filed area on the metal while keeping both the probe and test piece still and stable. It is sufficient to merely make contact with the metal and not necessary to apply much pressure. **STEP C.** If it is not gold or platinum, the LED bar graph will go to NA. If it is karat gold, the LED bar graph will go to an area within a certain range within that karat. Please note that due to the different characteristics of the varied colors of gold, the LED bar graph will go to a different location within the range of that karat.

TESTING HIGH KARAT GOLD. Due to the subtle differences in karat gold above 18K, including the fact that the alloys used vary from silver to copper, nickel, zinc, palladium, rhodium, and aluminum, the testing results for this higher karat gold could be inconsistent. It is important to note that in the vast

majority of the times, the AGT1 will test gold above 18K perfectly well and better than any other tester in its class. Also, since the vast majority of gold is 18K or lower, the occurrence of an inconsistent test for high karat gold above 18K will be very small.

TESTING PLATINUM. When testing a white metal piece of jewelry and it is platinum, the LED bar graph will go to PT or it may also rest at NA at the end of the spectrum at the far right LED often times because of a rhodium plating commonly applied over the platinum. Be aware that rarely stainless steel will test as PT if it has not been filed first, but once filed it will always test as NA.

MAINTENANCE:

- 1. The AGT1 is a very sensitive instrument. You should always protect it when it is not in use.
- 2. Always replace the protective cap on the pen probe when not in use to keep the pen probe tip from becoming damaged, dried out or contaminated. The cap should be pushed fully onto the pen such that it "clicks" into place. If the cap is not replaced for an extended period of time, a granular salting substance will appear corroding the probe tip and if this happens simply use a paper towel to remove this crust. If the probe is left uncapped for a long period of time the probe will likely need to be replaced.
- 3. If using a 9V alkaline battery, always replace the battery after long periods of time to prevent corrosion or battery leakage, which is common with old or spent 9V alkaline batteries. Be aware

that damage to the AGT1 may occur if there is battery leakage and if this occurs it will void the warranty.

- 4. Always clean the pen probe tip periodically or especially if a lot of costume jewelry or nongold jewelry has been tested. The probe tip appearing dark and/or dirty or having the granular salt substance will be evidence of the probe tip requiring cleaning. To clean the probe tip, take a piece of dry paper towel and gently wipe the tip while understanding that some discoloration from usage will remain and that this is normal. It may also be necessary to recalibrate the AGT1 after testing a non-gold sample. It is therefore recommended to avoid testing known costume jewelry to prolong the life of the pen probe and avoid the need for more frequent recalibration.
- 5. The gold testing plate may be cleaned by gently wiping it using only a dry paper towel.
- 6. The need for battery replacement will be identified by the red LED labeled REPLACE BATTERY becoming illuminated. The AGT1 will not function once the change battery light becomes illuminated as it can no longer deliver accurate readings. After the battery is replaced the product will resume normal function. Simply recalibrate the system and resume testing. If the battery has been replaced and the REPLACE BATTERY light remains illuminated, this is an indication the AGT1 is in need of service.
- 7. The need for pen probe replacement will be identified by the red LED labeled REPLACE PROBE becoming illuminated after a calibration.

If this occurs, first attempt recalibrating the AGT1 as this may remedy the problem. If the REPLACE PROBE light remains on, the pen probe must be replaced. Please note that it is recommended that for best results you should consider replacing the pen probe if it becomes excessively dirty from repeated exposure to fake gold or other contaminates. A probe in this condition will begin to deliver erratic readings and this is a good indicator that it should be replaced even without the "REPLACE PROBE" light illuminating.

HELPFUL SUGGESTIONS:

- When replacing the battery on the AGT1, only do so if the AGT1 power switch is in the OFF position. Always use a high quality, fresh 9V alkaline battery for best results. Be certain not to lay the AGT1 upside down when inserting the battery or damage to the AGT1, including its LED's may occur and void the warranty.
- 2. If using an AC adaptor for the AGT1, only use the specified factory AC adapter or damage to the AGT1 may occur and void the warranty.
- 3. The AGT1 is designed to easily test gold and platinum. However, please keep in mind that it is not designed to replace the fire assay and common sense should always be used along with experience prior to determining the authenticity and/or karat of gold or whether it is platinum.
- 4. The AGT1 must be properly calibrated prior to being used. If this is not done correctly the accuracy of the AGT1, especially when testing karat gold above 18K will be compromised.

- 5. It is recommended that you keep a set of 10K, 14K, 18K, 22K and 24K reference gold samples nearby to compare against the gold you are testing if a questionable test occurs.
- 6. Always file the piece of metal being tested prior to performing the test and then touch the pen probe tip to the filed area. Be aware that in rare cases gold plated, gold-filled and stainless steel jewelry may react as karat gold or platinum unless filed prior to testing.
- 7. The AGT1 is not user serviceable other than battery replacement and probe cleaning or probe replacement. If service is required, please contact your supplier or the factory. Any attempt to repair the tester will void the warranty.

TROUBLESHOOTING GUIDELINES:

TESTER START-UP

Warm-Up Time – For best results, allow a 2 minute warm-up time PRIOR to performing the initial calibration of the tester. If using the optional AC adaptor, after the AGT1 has warmed-up and been calibrated, you may keep the unit turned on with no fear of damaging the electronics and this will allow you to avoid the need for ongoing warm up time delays.

Excess Solution – Fresh pen probes may be slightly overfilled when first used and excess solution could come out during the testing process. Simply dab the pen probe tip on a dry paper towel a few times to remedy this.

Test Pen Probe – Prior to calibrating, touch and hold

the probe pen tip to the gold testing area. If the LED's do not climb from right to left there may be a problem with the pen probe. If there is a problem with the pen probe replace it and repeat start-up process.

Calibration Requirement – Failure to use plumb 14K yellow gold to calibrate the AGT1 may illuminate the REPLACE PROBE light and consequently impact the accuracy of the tester. **Always file the calibration gold** and touch the pen probe to the filed spot. The 14K yellow gold calibration piece must be large enough so that the pen probe tip and solution inside it does not make contact with the testing plate or it will not calibrate properly. The recommended minimum size for the calibration piece is 10mm round. An approved GemOro 14K yellow gold calibration piece is available as an accessory (Item #2002).

Replace Probe Light – Sometimes the REPLACE PROBE light will illuminate when the AGT1 is first turned on and if this occurs, simply calibrate the AGT1 and this will remedy the problem. If not, it is an indication that the pen probe is spent or defective and needs to be replaced.

TESTING METAL

Pen Probe To Gold Contact Pressure – It is sufficient to merely make contact with the metal and NOT necessary to apply much pressure.

Quickly Touch Gold And Then Remove Pen Probe – When testing gold, once the LED has stabilized and settled on a specific karat, remove the pen probe. If you hold the pen probe on the gold for more than a couple of seconds after it has settled on a karat it can

then climb to a higher karat, especially in the higher karat ranges above 18K.

Only Touch Pen Probe Tip To Gold – When testing, only touch the pen probe tip to the metal in question. You may obtain a different karat reading if the side of the pen probe is touched.

Metal Must Be Clean And Drv - If the surface of the metal is wet or has visible dirt that could create a barrier between the pen probe and the metal, you should clean and dry the surface prior to testing for best results. Generally speaking most surface dirt will not interfere with the AGT1's ability to test properly. Platinum Indication – While platinum will typically register at the LED's labeled PT, often times it will register next to it at the far right end of the spectrum. This is a normal reading for platinum, especially if the platinum has not been filed first before testing. Always File Gold Before Testing - When buying unknown metals, always file it first to avoid being fooled. Remember, the AGT1 is a surface tester. For best results, and to avoid being fooled by plating, etc. it is critical that you first file down to the underlying metal in every sample being tested, and then test this area. Be aware that stainless steel will sometimes react as karat gold or platinum if not filed first. Periodic Pen Probe Tip Cleaning – If the "replace probe" light illuminates or if the pen probe tip appears dirty or encrusted with a white residue, clean the pen probe tip by gently wiping it with a dry paper towel. It is normal for the pen probe tip to appear dirty after being used and for it to take on a slight arev color. Avoid testing pieces known to be gold plated to minimize buildup of contaminants on tip

and to prolong useful life of the probe tip.

Periodic Re-Calibration – Always use plumb 14K YELLOW gold to calibrate the AGT1 and make sure you file the area of the calibration piece prior to performing this function and touch the pen probe tip to the filed area. Testing gold and gold-filled or base metals will cause slight chemical changes in the pen probe. To adjust for this chemical change, the calibration process is needed. To ensure accurate readings, recalibrate the unit from time to time and wipe the pen probe tip to clean it with a dry paper towel each time prior to recalibrating.

Effects of Alloys – When alloyed with gold, COPPER and NICKEL will drive readings downwards while PALLADIUM, PLATINUM and SILVER will drive readings upwards.

WARRANTY:

Your AGT1 features a ONE YEAR LIMITED WARRANTY against defects in material and workmanship as determined by the factory. The pen probe is covered by a 30 day limited warranty against defects in materials and workmanship as determined by the factory. The pen probe is not covered against overuse, misuse and drying out due to not replacing the protective cap after use. The battery is not covered by this warranty. These warranties become effective from the date of original purchase after the purchaser fills out the WARRANTY **REGISTRATION FORM at www.gemoroproducts.** com/warrantyregistration within 30 days of its purchase. If this criteria is not followed, the AGT1 will automatically be covered by a 90 DAY LIMITED WARRANTY from the date of your AGT1 purchase. as noted on the bill of sale (if supplied) or through the AGT1 serial number tracking system as interpreted by the factory. The purchaser shall incur the cost for postage, insurance and handling for all warranty and non-warranty repairs.

Declaration of Conformity		
Manufacturer's Name: Manufacturer's Address:	Valley Enterprises Inc. 724 Claremont Ave. Tamaqua, PA 18252	
Application of Council Directive(s):	Low Voltage – 2006/95/EC EMC – 2004/108/EC	
Standard(s):	Safety – "IEC/EN61010-1:2010" EMC Directive 2004/107/EC"	
Product Name(s):	Electronic Gold Tester	
Product Model Number(s):	GemOro AuRacle (AGTI)	
Year in which conformity is declared:	2011	
I, the undersigned, hereby declare that the equipment specified above conforms to the Directive(s) and Standard(s).		
Location: 724 Claremont Avenue Tamaqua, PA 18252	Signature: On File	
Date: December 22, 2011	Full Name: Gerald Petrole Sr.	
Position: General Manager		

Addendum to the Documentation for AuRacle AGT-1 Gold Tester

Technical specifications: Volts: 100-240VAC Amps: 0.2 A Hz: 50/60 Hz Max ambient % Relative Humidity: 60% Max permissible % Relative Humidity: 75%

Please note: The following warning statements are made a part of this documentation:



"Operator must consult documentation before using." "Power Switch must be in OFF position when changing battery"

Power Supply:

Voltage/Voltage Range: Frequency/Frequency Range: 50/60 Hz Power/Current Rating:

100-240VAC 0.2 A

Acceptable Environmental Conditions:

Indoor Use Only Altitude <1600m; Temperatures 5°C to 40°C; Maximum relative humidity 75% for temperatures exceeding 31°C: Pollution degree 2: Mains supply voltage fluctuations not exceeding ±10% of the nominal voltage; Other supply voltage fluctuations ±10%; Transient over voltages according to overage category II:

The AuRacle Model AGT1 is rated to IP20 according to IEC 60529

Please note:

- · This equipment should not be positioned in a way that makes it difficult to operate the disconnect device (i.e. power supply plug).
- Using this equipment in a manner not specified may impair the protection provided.
- The manufacturer strongly recommends using only the power supply provided; safety may be impaired if a power supply not specified by FMS Technologies is used.
- · Warning labels are constructed as follows:

Material:	Polyester
Adhesive:	Hydrogel
Ink Combination:	Deep Printers Ink



10455 Olympic Drive Dallas, Texas 75220 USA 214.351.0380 or 800.527.0719 214.351.1903 or 800.832.9871 FAX gemoroservice@sykessler.com www.gemoroproducts.com/warrantyregistration www.gemoroproducts.com www.auracletester.com