

Greenwich Instrument Co. Inc.

Sales and Service: 128 Old Church Road, Greenwich, CT 06830

www.giciman.com jon@giciman.com 1-(203)-661-0398

Application Note Number 10

The Proper Use of H917 Voltage Dividers



ANODE SIDE Switch for both CATHODE SIDE

NOTE: One BNC connector is dedicated to the ANODE, and is in line with Anode High Voltage Federal Standard connectors. The other BNC is for the CATHODE and is in line with the Cathode High Voltage Connectors. The SWITCH controls the gain and impedance for BOTH BNC outputs

. #1: The Parker Medical H917 / GiCi 2000/ Fluke 07-469 divider has two modes of operation from the switch on top. One mode is for direct connection to an oscilloscope, without probes... just a BNC cable. When the switch is set for 10,000:1, it is set for a 1 meg ohm load, 1 Volt out of divider is equivalent to 10 KV. Do not use a scope probe, just connect it directly to Ch1 (anode), and Ch2 (cathode). Set the gain to 1 volt per division, so each division is 10 KV. Set invert Ch2, and ADD Ch1+Ch2. If you are doing mammography with just the Anode Ch1, then set the scope to 0.5 volt/ division, so each division is 5KV. If you are doing normal radiology, then you probably want to view the total A-C voltage on the scope on a

single trace, so set Ch1 and Ch 2 to 2 volts/division, invert Ch 2, and use the ADD mode. Then a single trace will be 20 KV/division.

#2, If you are connecting the H917/ GiCi 2000 divider to a digital volt meter for either peak capture or steady state reading from a long exposure, use the 1000:1 range which is set for 10 meg ohm load. Fluke 87 and other assorted pocket DVM's are usually 10 meg ohm input resistance on the DC volt

In the event you are experiencing doubt about the Anode side, when doing MAMMO calibrations, the Cathode is identical. It has no actual polarity and is equally accurate and can be used as a backup divider. Really, you can use either side of the divider. The labels are there for use with Radiographic equipment. Also, there is no "in" and "out" difference on each side. Each pin is individually wired to the corresponding pin. on the opposite side, L=large filament, C= filament common, S= small filament

Do not rotate the connectors if you overtighten your HV cables as you will rip the wires out.

Please pack this unit carefully. Most dividers have plastic BNC connectors, and if too much pressure is put on them, the nut will strip. I double box these dividers with a 12" cube box for the inner box (with a 12" square piece of 2" foam rubber on the bottom, and then put this box into a 16" cube box with a piece of foam rubber in its bottom. I roll up a piece of bubble wrap next to the BNC's so it takes some of the pressure if the box it turned over. Double boxing prevents dents to the oil can. Put the can in a plastic bag when shipping to absorb any small leaks.

SUMMARY

Voltage dividers provide an unambiguous means of measuring the high voltage applied to an x-ray tube. Most voltage dividers have an accuracy better than 1%, if calibration is in date. They can be used improperly, which will negate the inherent accuracy of the instrument. In its most basic form, a high meg... ohm, high voltage resistor is connected in series with a resistor of much lower value. The divider is then connected to the inputs of the oscilloscope, or to the 10 x scope probe, depending on the manufacturer's instructions

Dr. Jonathan Shapiro
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For sales and service:
Greenwich Instrument Co. Inc.
128 Old Church Road
Greenwich, CT 06830
203-661-0398
www.dynalyzer.com

The H917 Voltage divider is Manufactured in the USA and sold by:
Parker Medical
Bridgewater, CT
860-350-4304
www.Parkermed.com