

DuPont Three Gas (Helium, Neon and Argon) Leak Detector Converted From Diatron 20 to Diatron 4

By Frank Juravic

A conversion from Diatron 20 to Diatron 4 has three advantages. The first advantage is economical. Diatron 20 filament costs \$180.00 compared to Diatron 4 filament, \$30.00. The second advantage is multi-gas detection still available. Neon is still detectable by changing switch position and tuning technique. The third advantage is improved helium sensitivity. Factory specifications inform that 2×10^{-9} Atm/cc/sec/division sensitivity with Diatron 20 but, with magnet hanger change, magnet change and tuning technique, $< 2 \times 10^{-10}$ Atm/cc/sec/division sensitivity is attainable.

The change from Diatron 20 to Diatron 4 conversion requires a wiring change in the Diatron plug, P-106.

Wiring Change Procedure:

- Step 1. Clip wire on pin 4
2. Remove wire on pin 2 and move to pin 4
3. Remove wire on pin 6 and move to pin 2
4. Jumper pin 6 to pin 7
5. Clip wire on pin 8

New Wiring Continuity Test:

TB 102 Pin 9	-----	Pin 4
TB 102 Pin 4	-----	Pin 2
TB 102 Pin 8	-----	Pin 6
TB 102 Pin 1	-----	Pin 1

Two Gas (Helium and Neon) Detecting Conversion Procedure:

Helium:

- Step 1. Start-up leak detector per DuPont manual instructions
2. Switch to helium
3. Tune for helium peak

Neon:

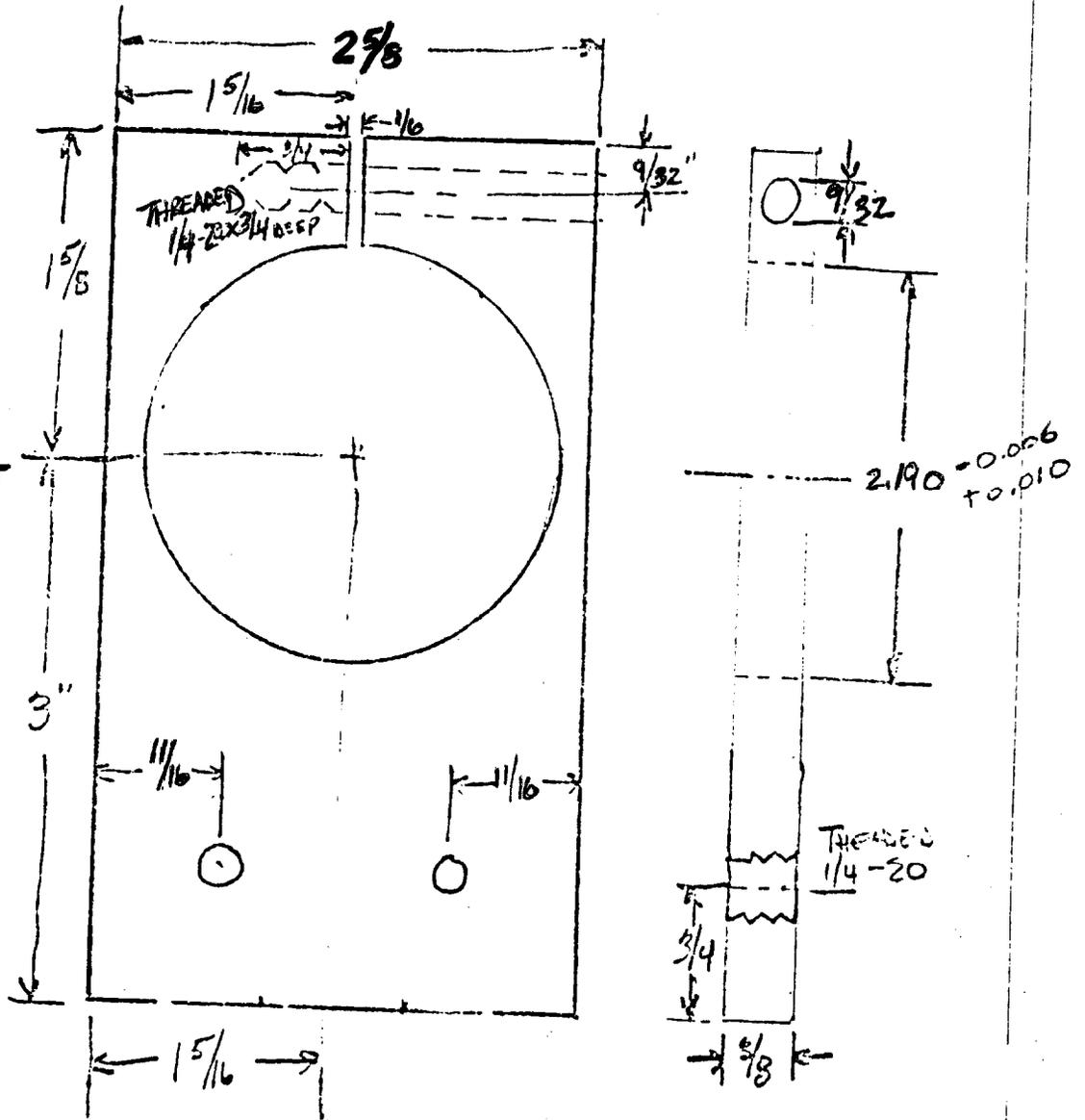
- Step 1. Switch to argon
2. Switch multiplier to on scale (X10, X50)
3. Adjust argon repeller for minimum peak
4. Open neon standard leak and check sensitivity

Helium $< 2 \times 10^{-10}$ Atm/cc/sec/division sensitivity:

- Step 1. Replace magnet hanger with dual magnet hanger in up position
(For Two gas, down position, MA69-1)
2. Replace 3900 Gauss magnet with a 2350 Gauss magnet, MA 192-1
Hitachi
Neff Plaza South
Edmore, MI 48829
Phone: 517-427-5151
3. Switch gas to argon
4. Tune for helium using argon acceleration voltage control

T. SURVIL
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MAGNET
ADJUSTMENT
HANGER
PLATE

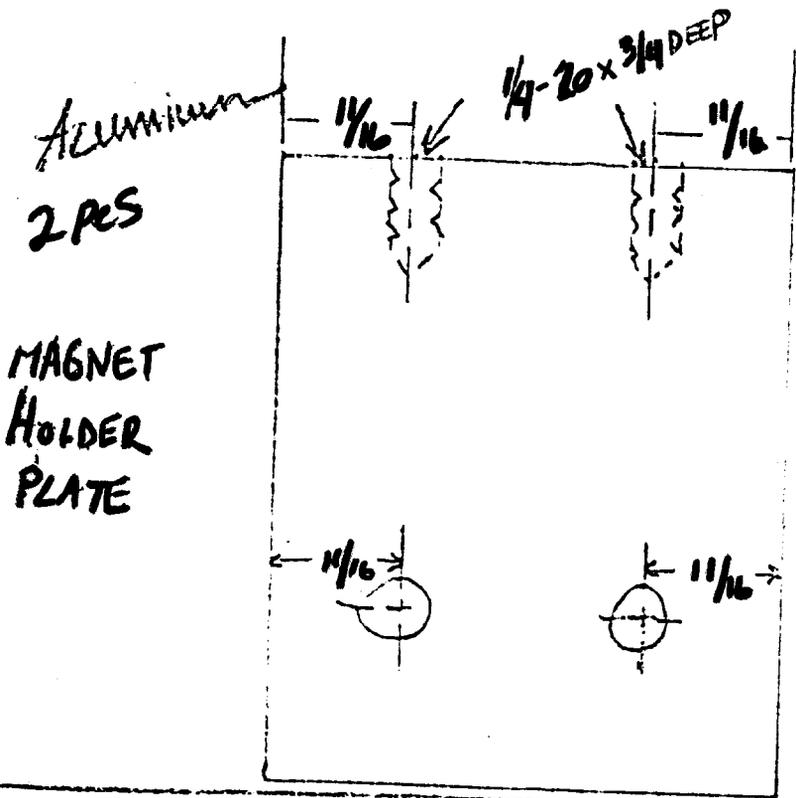


ALUMINUM
2 Pcs

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MAGNET
ADJUSTMENT
PLATE

ALUMINIUM
2 PCS

