

ACCELERATOR DIVISION DEPARTMENTAL PROCEDURE

PROTON SOURCE DEPARTMENT

**ADDP-PR-2003**

**LOW ENERGY LINAC 7835 GAS TEST PROCEDURE**

PREPARED BY \_\_\_\_\_ DATE \_\_\_\_\_

APPROVED BY \_\_\_\_\_ DATE \_\_\_\_\_  
Head of Linac

APPROVED BY \_\_\_\_\_ DATE \_\_\_\_\_  
Proton Source Department Head

REVISION NO. \_\_\_\_ REVISION ISSUE DATE \_\_\_\_\_

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REVIEW AND CONCURRENCE RECORD

REVIEWED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

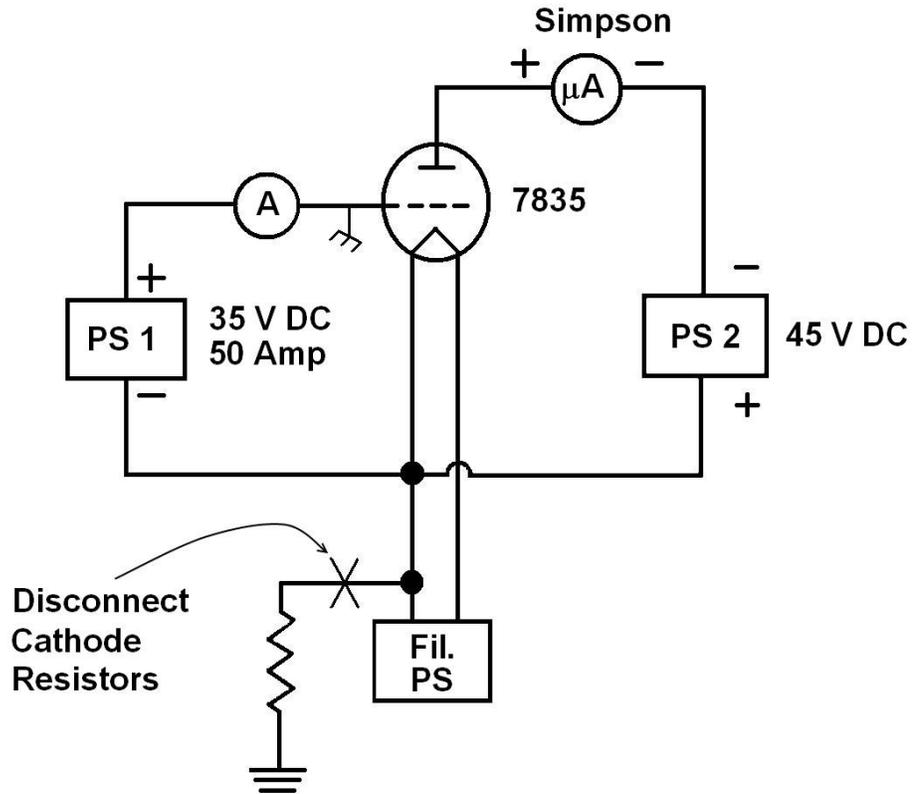
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LOW ENERGY LINAC 7835 GAS TEST PROCEDURE



- 2.1 Connect the 7835 as shown, making sure the cathode resistors are disconnected. The filament must be floating before **PS1** can be turned on.
- 2.2 Turn ON **PS2** (-45 Volt supply) and measure the water leakage current with the filament OFF.
- 2.3 Turn the filament ON and bring up to normal operating value (~ 6700 Amps.).
- 2.4 Allow the filament to operate for at least 5 minutes to give the getter a chance to remove gas released when the filament was turned ON.
- 2.5 Turn ON **PS1** and set to 50 Amps. grid current. Make the initial gas current reading as soon as possible.
- 2.6 After 5 minutes read the gas current value again. The final value to be recorded is the 5 minutes reading of gas current minus the water leakage current.

**The tube is considered acceptable if the final value is less than 20  $\mu$ Amp.**

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Date		<b>7835 Conditioning</b>	
PA FIL Hrs		<b>7835 tube S/N</b>	
HVPS Hrs			
SWTU HRS			

**Perform gas test**

Time	Current		
Leakage		<-- Anode leakage before turning Filament ON	
0 Minutes		<-- Initial reading	
1 min		Anode E	-45 Volts
2 min		Grid I	50 Amps
3 min		Grid E	
4 min		Fil Current	
5 min		<-- Should be less than 20uA	
10 min			

**Complete the following steps ONLY for tubes without ion pump**

**DRIVER BREAK-IN (typical 2 hours 30 minutes)**

Power	Duration	Actual Pwr	Time	Power	Duration	Actual Pwr	Time
35 kw	30 min			125 kw	15 min		
55 kw	15 min			145 kw	15 min		
75 kw	15 min			165 kw	15 min		
95 kw	15 min			175 kw	15 min		
115 kw	15 min						

**R.F. OPERATION BREAK-IN (typical 20 hours)**

Raise the anode current in 10 amp steps about once per hour.

Current	Duration	Actual Pwr	Time	Current	Duration	Actual Pwr	Time
10 amps	1 hour			160	1 hr		
20 amps	1 hr			170	1 hr		
30 amps	1 hr			180	1 hr		
40 amps	1 hr			190	1 hr		
50 amps	1 hr			200	1 hr		
60 amps	1 hr			210	1 hr		
70 amps	1 hr			220	1 hr		
80 amps	1 hr			230	1 hr		
90 amps	1 hr			240	1 hr		
100 amps	1 hr			250	1 hr		
110 amps	1 hr			260	1 hr		
120 amps	1 hr			270	1 hr		
130 amps	1 hr			280	1 hr		
140 amps	1 hr			290	1 hr		
150 amps	1 hr			300	1 hr		

**Final Readings:**

Fil Current		High Voltage	
Mod Output E		Driver Out	