ADJUSTMENT PROCEDURE

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NO	ITEM	SPEC.	CONDITION	ADJ. POINT	ADJ. SPEC.

Precaution for the instrument under tested:

1) Complete Function Test before burn-in, and output 5kV during burn-in.
2) Burn-in under 50℃ for 4 hours more.
3) Warm-up time: 30 minutes at least before adjustment.
4) Adjusting environment: 23±5℃ / RH 80% below.
5) Adjustment devices: Current Meter (4 1/2 digits or more), High voltage meter, High voltage load fixture, Fixture used for remote controller, AC source.
6) Add load test: When add 5000V~100mA load to GPT-805/815 and GPI-825, the test period can only last 180 seconds, the machine must have 15 minutes interval time, then proceed another test of 180 seconds. GPI-826 has the same test situation, except the adding load becomes 5000V~20mA.

Note:

There are up to 5000V~6100V high voltage exist at internal/external of instrument during the calibration and adjustment, for safety, only qualified personnel can be allowed to performance the procedure.

1-1	**Withstanding Test**	----------	1. Turn SW on. 2. Proceed withstanding test between two ends of AC cord and earth at AC1.2kV/3mA.	AC1.2kV/ 3mA
1-2	**Insulation Test**	unplug	AC cord to GND	≧DC500V/30MΩ

2 **Calibration Method**: The functions check including: Main PCB, IR board, AC withstanding voltage, DC withstanding voltage, Insulation resistor, Short circuit check, Electric arc detection. Please refer to the following:

Model	Main PCB	IR BOARD	AC withstanding voltage	DC withstanding voltage	Insulation Resistance	----------	Electric ARC detection
GPT-805(AC)	*	-	*	-	-	----------	*
GPT-815(AC/DC)	*	-	*	*	-	----------	*
GPI-825/826(AC/IR)	*	*	*	-	*	----------	*

3-1	**Voltage Adjusting Method and Confirmation for Main PCB**	----------	1. For safety, first remove the connector (J106, 110V) or (J107, 220V) between main PCB and high voltage transformer.	----------	----------
			2. Power on and check with DMM to see whether the voltage on every point is normal:	---------	---------
			TP100 (GND)	Check	
			TP104, TP105	Check	+5V±0.3V
			TP106	Check	+15V±0.3V
			TP107	Check	-15V±0.3V

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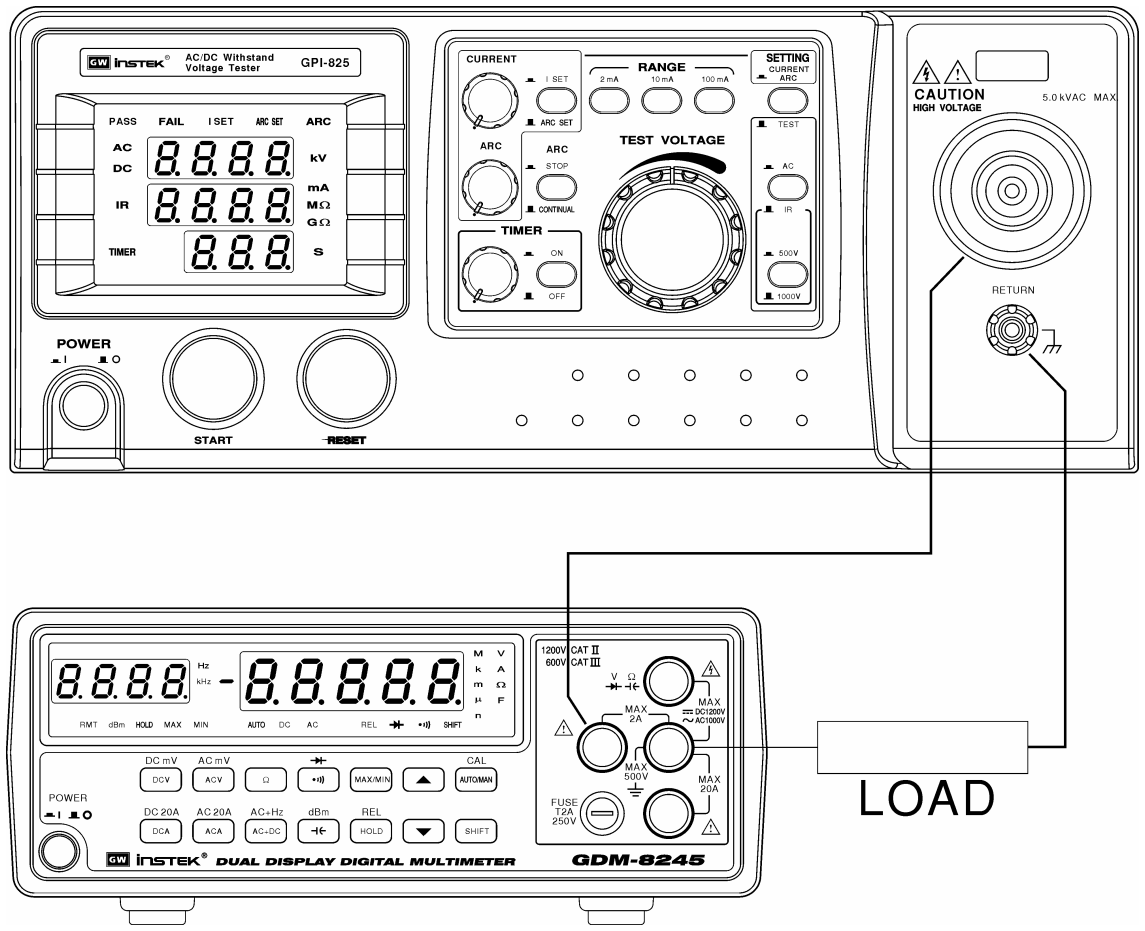
NO	ITEM	SPEC.	CONDITION	ADJ. POINT	ADJ. SPEC.
3-2	**Insulation Board Voltage Adjusting Method Only for : GPI-825/826**	----------	Check power voltage with DMM: TP404(+)~TP400(-) TP405(+)~TP400(-)	 Check Check	 -15V±0.3V +15V±0.3V
			Connect TP401(+) to I/P of high voltage meter, and TP403(-) to GND of high voltage meter, then adjusted with DC high voltage meter.	VR401	-1150V±2V
			a. First press 500V button, adjust DC-513V, then connect TP401(+) to I/P of high voltage meter, and TP400(-) to GND of high voltage meter.	VR402	-513V±2V
			b. Switch to 1000V to adjust DC 1025V, and connect TP401 (+) to I/P of high voltage meter, and TP400 (-) to GND of high voltage meter.	VR403	-1025V±2V



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NO	ITEM	SPEC.	CONDITION	ADJ. POINT	ADJ. SPEC.
4-1	**GPT-815 Calibration Procedure** Note: During mode calibration, can press "RESET" at any time to leave the procedure. First, set the timer to 0. During the calibration, the LED at the top of output terminal of high voltage will be flickering continuously. Calibrate AC range by switching the high voltage meter to AC and calibrate DC range by switching the high voltage meter to DC.		First set the timer to 0. 1. Switch high voltage meter to AC range, connect one high voltage cord from the GND of high voltage meter to the Return terminal of GPT-815, and connect another one between two high voltage output terminals of high voltage meter and GPT-815. 2. Connect high voltage transformer to J106 (110V) or J107(220V). 3. ~~Power on, repress START for 2 minutes~~ to get into calibration mode. 4. Now, the Version and model will be displayed. 5. When AC 01 0.150 is displayed, adjust the high voltage knob to set the value of high voltage meter at 0.150kV, press START to enter AC 02. 6. When AC 02 3.000 is displayed, adjust the high voltage knob to set the value of high voltage meter at 3.000kV, press START to enter DC 11, and counter-clockwise rotate the knob to the end. 7. Switch the high voltage meter to DC range to display DC 11 0.150, adjust the high voltage knob to set the value of high voltage meter at 0.150kV, press START to enter DC 12. 8. When DC 12 3.000 is displayed, adjust the high voltage knob to set the value of high voltage meter at 3.000kV, press START to enter AC 21, and counter-clockwise rotate the knob to the end. 9. Remove the high voltage cord from high voltage output terminal and Return terminal in sequence.	----------	----------

NO	ITEM	SPEC.	CONDITION	ADJ. POINT	ADJ. SPEC.
	Note: Now, the O/P terminal must be connected to Load, then to DMM, or it will damage DMM with high voltage. When calibrate AC/DC range, make sure the current wiring is well done.		10. As shown in Figure 1, the first high voltage cord is connected from 2A red terminal of DMM (AC range) to Return terminal, the second cord is connected from black GND of DMM to COM terminal of fixture, and 10mA fixture terminal is connected to high voltage output terminal through another high voltage cord. 11. When AC 21 0.5 is displayed, adjust the high voltage knob to set the current value of DMM at 0.5mA, press START to enter AC 22, and counter-clockwise rotate the knob to the end. 12. As shown in Figure 1, change the fixture terminal from 0.5mA to 100mA. 13. When AC 22 90.0 is displayed, adjust the high voltage knob to set the current value of DMM at 90.0mA, press START to enter AC 23, and counter-clockwise rotate the knob to the end. 14. As shown in Figure 1, set the DMM to DC range, change the fixture terminal to 0.5mA. 15. When AC 23 0.5 is displayed, adjust the high voltage knob to set the current value of DMM at 0.5mA, press START to enter AC 24, and counter-clockwise rotate the knob to the end. 16. As shown in Figure 1, change the fixture terminal from 0.5mA to 10mA. 17. When AC 24 9.0 is displayed, adjust the high voltage knob to set the current value of DMM at 9mA, press START to enter CL 99 SAVE, and counter-clockwise rotate the knob to the end. 18. Press START to appear Storage picture “DATA SAVE”.		

NO	ITEM	SPEC.	CONDITION	ADJ. POINT	ADJ. SPEC.
4-2	**GPT-805 Calibration Procedure** Note: During mode calibration, can press "RESET" at any time to leave the procedure. First, set the timer to 0. During the calibration, the LED at the top of output terminal of high voltage will be flickering continuously. Calibrate AC range by switching the high voltage meter to AC. Note: Now, the O/P terminal must be connected to Load, then to DMM, or it will damage DMM with high voltage. When calibrate AC/ DC range, make sure the current wiring is well done.		First set the timer to 0. 1. Switch high voltage meter to AC range, connect one high voltage cord from the GND of high voltage meter to the Return terminal of GPT-805, and connect another one from input terminal of the high voltage meter to the output terminal of GPT-805. 2. Connect high voltage transformer to J106 (110V) or J107 (220V). 3. Power on, repress START for 2 seconds to get into calibration mode. 4. Now, the Version and model will be displayed. 5. When AC 01 0.150 is displayed, adjust the high voltage knob to set the value of high voltage meter at 0.150kV, press START to enter AC 02. 6. When AC 02 3.000 is displayed, adjust the high voltage knob to set the value of high voltage meter at 3.000kV, press START to enter AC 21, and counter-clockwise rotate the knob to the end. 7. Remove the high voltage cord from high voltage output terminal and Return terminal in sequence. 8. As shown in Figure 1, the first high voltage cord is connected from 2A red terminal of DMM (AC range) to Return terminal, the second cord is connected from black GND of DMM to COM terminal of fixture, and 10mA fixture terminal is connected to high voltage output terminal through another high voltage cord. 9. When AC 21 0.5 is displayed, adjust the high voltage knob to set the current value of DMM at 0.5mA, press START to enter AC 22, and counter-clockwise rotate the knob to the end. 10. As shown in Figure 1, change the fixture terminal from 0.5mA to 100mA. 11. When AC 22 90.0 is displayed, adjust the high voltage knob to set the current value of DMM at 90mA, press START to enter CL 99 SAVE, and counter-clockwise rotate the knob to the end. 12. Press START to appear Storage picture "DATA SAVE".		---

NO	ITEM	SPEC.	CONDITION	ADJ. POINT	ADJ. SPEC.
4-3	**GPI-825/826 Calibration Procedure** Before calibration, adjust VR401/402/403 on the IR board first. **Note:** 1) Now, the O/P terminal must be connected to Load, then to DMM, or it will damage DMM with high voltage. 2) When calibrate AC/ DC range, make sure the current wiring is well done. 3) When enter IR31, the voltage knob must be adjust counter-clockwise to the end.		First set the timer to 0. Before adjustment, proceed previous 3-2 step, then proceed the following: 1. Switch high voltage meter to AC range, connect one high voltage cord from the GND of high voltage meter to the Return terminal of GPI-825/826, and connect another one between two high voltage output terminals of high voltage meter and GPI-825/826. 2. Connect high voltage transformer to J106 (110V) or J107 (220V). 3. Power on, repress START for 2 seconds to get into calibration mode. 4. Now, the Version and model will be displayed. 5. When AC 01 0.150 is displayed, adjust the high voltage knob to set the value of high voltage meter at 0.150kV, press START to enter AC 02. 6. When AC 02 3.000 is displayed, adjust the high voltage knob to set the value of high voltage meter at 3.000kV, press START to enter AC 21, and counter-clockwise rotate the knob to the end. 7. Remove the high voltage cord from high voltage output terminal and Return terminal in sequence. 8. As shown in Figure 1, the first high voltage cord is connected from 2A red terminal of DMM (AC range) to Return terminal, the second cord is connected from black GND of DMM to COM terminal of fixture, and 0.5mA(10mA) fixture terminal is connected to high voltage output terminal through another high voltage cord.		

NO	ITEM	SPEC.	CONDITION	ADJ. POINT	ADJ. SPEC.
			9. When AC 21 0.5(0.5) is displayed, adjust the high voltage knob to set the current value of DMM at 0.5mA(0.5mA), press START to enter AC 22, and counter- clockwise rotate the knob to the end. 10. As shown in Figure 1, change the fixture terminal from 0.5mA (0.5mA) to 19mA. 11. When AC 22 19.0(90.0) is displayed, adjust the high voltage knob to set the current value of DMM at 19mA (90mA), press START to enter IR 31, and counter-clockwise rotate the knob to the end. 12. Set IR switch to 500V range. 13. When display IR 31 2000, connect the Return terminal to 0 of the high voltage resistance box, and connect the high voltage output to 2000M of the resistance box, press START to enter IR 32. 14. When display IR 32 50, connect the high voltage output to 50M of the resistance box, press START to enter IR 33. 15. When display IR 33 100, connect the high voltage output to 100M of the resistance box, press START to enter IR 34. 16. When display IR 34 2.5, connect the high voltage output to 2.5M of the resistance box, press START to enter IR 35. 17. Set IR switch to 1000V range. 18. When display IR 35 2000, connect the high voltage output to 2000M of the resistance box, press START to enter IR 36. 19. When display IR 36 50, connect the high voltage output to 50M of the resistance box, press START to enter IR 37. 20. When display IR 37 100, connect the high voltage output to 100M of the resistance box, press START to enter IR 38. 21. When display IR 38 2.5, connect the high voltage output to 2.5M of the resistance box, press START to enter CL 99 SAVE. 22. Press START to appear storage picture “DATA SAVE”.		

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NO	ITEM	SPEC.	CONDITION	ADJ. POINT	ADJ. SPEC.
5-1	**ACV Voltage Calibration Procedure For GPT-805/815, GPI-825/826**	Switch high voltage meter to AC range. ±3%±3 digits of reading	Connect the output terminal of the instrument to the high voltage meter, adjust the knob and press RESET key, then press START key and check the following voltage(50Hz/60Hz power source): a. 100V b. 300V c. 1000V d. 3000V e. 5000V	Base on the value of high voltage meter. ±3%±3 digits of reading	Base on the value of high voltage meter ±3%±3 digits of reading
5-2	**DCV Voltage Calibration Procedure Only for models: GPT-815**	Note: Switch high voltage meter to DC, set range to 10mA, otherwise, the buzzer will be sounding and a "FAIL" signal will be appeared. ±3%±3 digits of reading	Connect the output terminal of the instrument to the high voltage meter, adjust the knob and press RESET key, then press START key and check the following voltage(50Hz/60Hz power source): a. 100V b. 300V c. 1000V d. 3000V e. 5000V	Base on the value of high voltage meter. ±3%±3 digits of reading	Base on the value of high voltage mete ±3%±3 digits of reading
5-3	**ACI Current Confirmation For GPT-805/815, GPI-825/826**	Note: Now, the O/P terminal must be connected to the load first. ±3%±2 digits of reading	1. Please refer to the wire connection of Figure 1 and the test condition of Table (a), but change the load resis tance to 250kΩ. 2. Please refer to the wire connection of Figure 1 and the test condition of Table (b), but change the load resistance to 50kΩ. 3. Set output frequency to 50Hz, check the error of current value on display and current meter. 4. Set output frequency to 60Hz and re-check above voltage points.	Base on the value of DMM ±3%±2 digits of reading	Base on the value of DMM ±3%±2 digits of reading

Table (a) Only for GPI-826	Table (b) For GPT-805/815, GPI-825
1. I=1mA	1. I=1mA
2. I=5mA	2. I=10mA
3. I=10mA	3. 20mA
4. I=15mA	4. 50mA
5. I=20mA	5. I=100mA

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NO	ITEM	SPEC.	CONDITION	ADJ. POINT	ADJ. SPEC.
5-4	**DCI Current Adjusting and Calibration procedure Only for GPT-815**	Note: Now, the O/P terminal must be connected to the load first, then set to 10mA range, otherwise, the buzzer will be sounding and a "FAIL" signal will be appeared.	1 Please refer to the wire connection of Figure 1, , but change the connection of load resistance to 500kΩ to parallel with the DCI range of current meter. 2 When AC source is at 50Hz/60Hz, check the current error value between the display and the current meter. a. I=1mA b. I=3mA c. I=5mA d. I=7mA e. I=10mA	Base on the value of DMM ±3%±2 digits of reading	Base on the value of DMM ±3%±2 digits of reading
5-5	**IR Insulation Resistor Adjusting and Calibration procedure For GPI-825/826**	Note: Connect Return terminal to 0MΩ. For accurate reading, when proceeding calibration and measurement, the Test terminal of SR-2 high resistance box can not be touched except test lead. 1~500m: ±5% of reading 501~2000m: ±10% of reading	1. Connect the instrument to SR-2 high resistance box, set voltage to 500V and time to 5 seconds, then test the following ranges: a. 1MΩ b. 100MΩ c. 500 MΩ d. 1000 MΩ e. 2000 MΩ 2. When AC source is at ±10% 50Hz/60Hz, set voltage to 1000V, check above ranges.	 ±0.05 ±5 ±25 ±100 ±200	 ±0.05 ±5 ±25 ±100 ±200
5-6	**Remote I/O Function Test**	----------	1. Connect the fixture to the REMOTE I/O on the rear panel, then confirm the following functions: a. The function of RESET and START. b. The function of TEST, FAIL and PASS. c. The function of INTERLOCK.	 --------- 	 Check Check Check
5-7	**ARC Test**	Note: Due to the ARC fixture will be worn out gradually, the stop voltage could be varied every time.	Connect ARC fixture, set ARC to STOP, and set ARC current to 2mA-3mA, O/P voltage to AC3000V-3500V, and time to 5 seconds, when ARC LED lights, check if the FAIL signal and Buzzer work and the test is stopped.	---------	Check

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NO	ITEM	SPEC.	CONDITION	ADJ. POINT	ADJ. SPEC.
5-8	All "R" Full Load Test GPT-805/815, GPI-825 AC Voltage Regulation	AC Voltage Regulation: 15% DC Voltage Regulation: 20%	When AC source is at 50Hz/60Hz, check the step as shown by Figure 1 wiring, no current meter is added, and inspect full load output: a. Change load to 50kΩ, set ACV to 5000Vapprox., and Imax to 100mA. b. Change load to 250kΩ, set ACV to 5000Vapprox., and Imax to 20mA. c. Change load to 500kΩ, set DCV to 5000V approx., and Imax to 10mA.	---------	Check
	GPT-826 AC Voltage Regulation				Check
	GPT-815 DC Voltage Regulation				Check
5-9	Current Monitor Test	Note: During the inspection, the short circuit plate must be removed, after inspection, the short circuit plate should be put back.	Connect a current meter to monitor the current running over the terminals.	---------	Check

Note:

a. When set the TIMER to ON, the range can be set:
   0.3mA - 100mA(GPT-805/815/GPI-825).
   0.3mA - 20mA(GPI-826)
   and DC can be set at 0.3mA - 10mA (GPT-815)

b. When set the TIMER to OFF, the range can be set:
   0.3mA - 50mA(GPT-805/815/GPI-825).
   0.3mA - 10mA(GPI-826)
   and DC can be set at 0.3mA - 10mA (GPT-815)