



GDYD SERIES Auto AC Hipot Test Sets



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WARNING

- The following instructions are used by qualified person only to avoid electrical shock, do not perform any service other than contained in the operation instructions unless you are qualified to do so.
- Connect working line well according to your test. The test transformer shell and tester shell should be grounded reliably. HV winding X terminal (HV tail) of test transformer and measurement winding F terminal should be grounded reliably.
- In cascade test, low voltage winding X terminal of 2nd grade, 3rd grade test transformer, measurement winding F terminal and HV winding X terminal (HV terminal) should be connected with first grade test transformer shell. 2nd and 3rd grade test transformer shell should be grounded by insulating bracket.
- Before connected with power, voltage regulator should be adjusted at zero position. Then power on, switch on and pressure boost.
- Operation box (table) should be used together with test transformer. Please refer to Operation box (table) manual to see how to use.



- Rotate regulator handwheel to boost pressure at a constant speed from zero. Boost ways include high speed boost, that is boosting gradually by 20s. Low speed boost, that is boosting gradually by 60s. Two ways are optional. The voltage increased from zero to 75% of rated test voltage, then to the voltage you required according to 2% rated test voltage per second speed. Please pay close attention of the measuring instrument and tested product. In the process of pressure boosting or testing, if you find the instruction of measuring instrument and tested product abnormal, please lower the voltage immediately and cut off power.
- After testing, please adjust regulator at zero position in a constant speed within seconds and then cut off power.
- The product should not be used beyond rated parameters.
- When using our product to test HV, beside our instruction, please execute state standard and operating rules strictly.



Limited Warranty

The warranty period for this series is one year from the date of shipment, please refer to your invoice or shipping documents to determine appropriate warranty dates. Hvhipot corporation warrants to the original purchaser that this product will be free from defects in material and workmanship under normal use. Throughout the warranty period, provide that such defects are not determined by Hvhipot to have been caused by abuse, misuse, alteration, improper installation, neglect or adverse environmental condition, Hvhipot is limited solely to repair or replacement of this instrument during the warranty period.

Maintenance

- After receiving the device, you should check whether the master circuit, and wiring loose or not, and the regulator brush contact good or not.
- If the device is not used for a long period, you should use a 500V megger to measure the insulation of resistance before use, the resistance not less than $0.5M\Omega$;
- The power supply input voltage should be accorded with that indicated in the manual;
- The over-current protection set by factory, has been adjusted to 50% of rated current. For small loads, the parameter should be re-set according to the rating capacity of the test product;

- The control box set over-current protection which has been adjusted to 50% of rated current.
- After use, should shut the door of controller to keep the internal cleaning.

Applications

| | | |
|--|------------------------------|---------|
| Packing | Control Unit | 1pc |
| | Transformer | 1pc |
| | Microammeter | 1pc |
| | Discharging rod | 1pc |
| | Power wire | 1pc |
| | Connecting wire | 1pc |
| | Output wire | 1pc |
| | Ground wire | 1pc |
| | Fuse | 2pcs |
| | User's Guide | 1pc |
| | Test report | 1pc |
| | Calibration Certificate | 1pc |
| | Warranty card | 1pc |
| | Optional Applications | Divider |
| Protective sphere-gap | | |
| Insulation oil cup | | |
| Current limit resistor | | |
| Insulation support | | |
| HV filter capacitor (only for the DC voltage withstand test) | | |

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General Information

This Automatic AC Hipot Tester is designed for insulation resistance and voltage withstand testing of electrical devices and components according to New national standards of the power industry. It uses a multitude of automated testing ways to detect lots of dangerous defects, which ensure the insulation level and avoid any insulation accidents. A wide variety of models can be selected to fulfil the different requirements and test conditions, ensure your effective testing.

HV HIPOT
POWER TEST PILOT LTD.

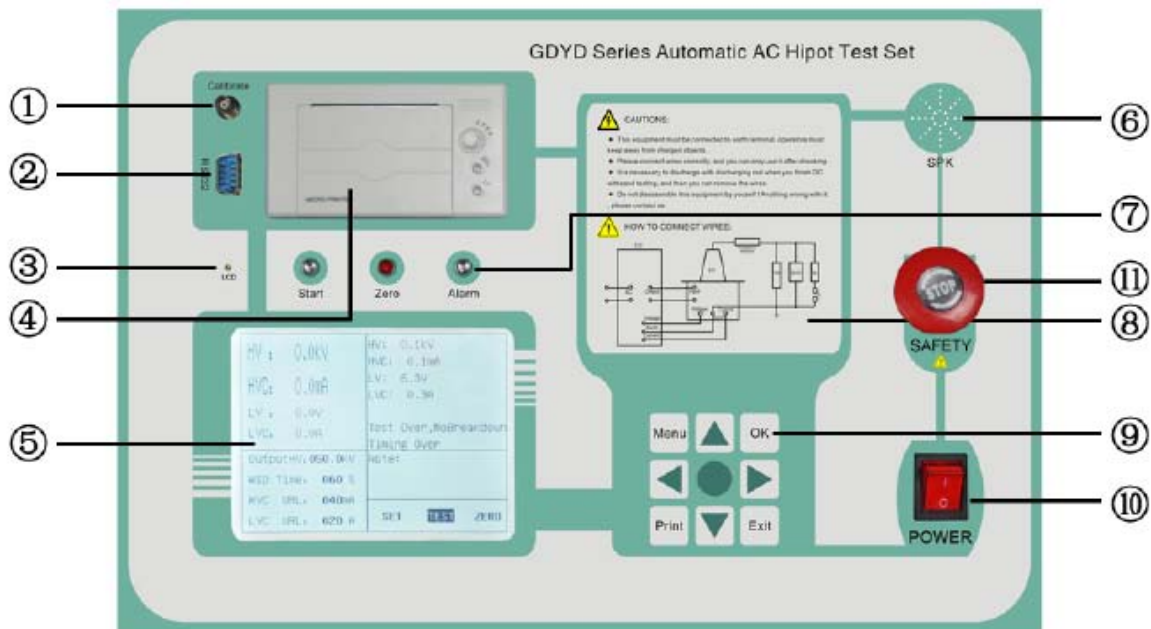


Features

- Enhanced 320×240 LCD Display(Daylight visible);
- Simple and easy to operate;
- Testing process on-screen display;
- Automatic analysis function,easy to detect the spark-over, arcing-over faults;
- Fully System Protect function, avoids Overvoltage, overcurrent operation;
- Automatic capture the peak voltage, current;
- Automatically control the voltage back to zero before the next step, to ensure safety;
- Applicable for discharge test;
- Anti-interference design, can be work in the harsh electromagnetic environment;
- A multitude of extended functions, including Grounding detection, PLC Remote interface and Divider calibration Interface,and so on;

| Numbers | Panel keys | Function |
|---------|-------------------|--|
| 1 | Divider interface | It is optional port, which is set for connecting divider outside. Input voltage is 100V. |
| 2 | RS232 | It is optional port which used to connected with PC. |
| 3 | LCD Contrast | Adjust back light to proper brightness. |
| 4 | Printer | Press "Print" button to get test results. Do not print before returning voltage to zero. |
| 5 | LCD | 320X240, picture element and white back light . |
| 6 | Tips | Some brief tips about Safety and wiring scheme. |
| 7 | Indicator | Consist of start light, Zero light, Alarm light. |
| 8 | Buzzer | Automatically send a security alert in emergency situations |
| 9 | Keyboard | The function is prompted at corresponding location at prompt column on the display. |
| 10 | Power switch | Power Supply with indicator light. |
| 11 | Safety Switch | Press this key at emergency situation to cut off power which keep persons safe. Rotate right this key to return to original state, which can test again. |

B. CTR (box type)



| Numbers | Panel keys | Function |
|---------|-------------------|--|
| 1 | Divider interface | It is optional port, which is set for connecting divider outside. Input voltage is 100V. |
| 2 | RS232 | It is optional port which used to connected with PC. |
| 3 | LCD Contrast | To adjust the brightness of backlight suitable . |
| 4 | Printer | Press "Print" button to get test results. Do not print before returning voltage to zero. |
| 5 | LCD | 320X240, picture element and white back light . |
| 6 | Tips | Some brief tips about Safety and wiring scheme. |
| 7 | Indicator | Consist of start light, Zero light, Alarm light. |
| 8 | Buzzer | Automatically send a security alert in emergency situations |
| 9 | Keyboard | The function is prompted at corresponding location at prompt column on the display. |
| 10 | Power switch | Power Supply with indicator light. |
| 11 | Safety Switch | Press this button to turn off the power when emergency is happened. |

. Description of screen display

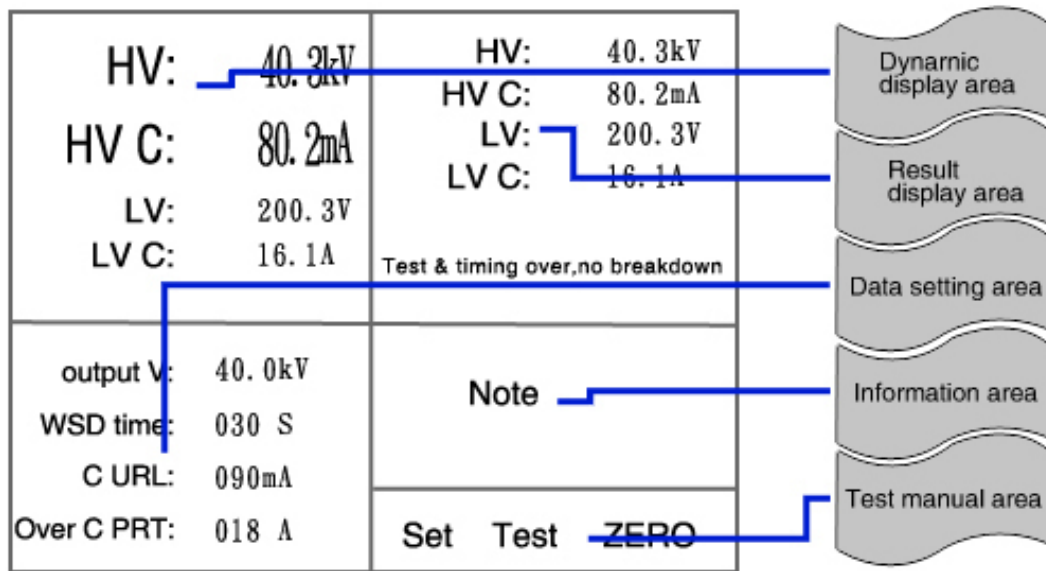


Figure1 Main Interface

| Numbers | Function Areas | Description |
|---------|-----------------|---|
| 1 | Dynamic display | Collecting signals and showing HV, HV Current, LV, HV Current . |
| 2 | Result Display | Shows average HV, average HV C, average LV, and average LV C. If broken down is happened, it will show peak voltage, peak current, LV and LV C. |
| 3 | Data Setting | Shows the following parameters, which need to be set ,Output voltage ,withstand time ,Current limit ,Over-current protection |
| 4 | Inform display | Shows status and tips in the process of testing . |
| 5 | Operation Area | Select Set, Test and Zero. |

Technical Specifications

| | |
|------------------|-----------------------------------|
| Power Supply | AC220V/380V \pm 10% |
| Frequency | 50Hz \pm 1 |
| Voltage Range | 0 ~ 1000kV (based on selectable) |
| Capacity Range | 0 ~ 1000kVA (based on selectable) |
| voltage accuracy | \leq 1.0% (F.S) |
| Current Accuracy | \leq 1.0% (F.S) |
| Timing range | 0-999s |
| Humidity | 85% RH |
| Altitude | <1000m |
| Duty Cycle | Continous |



GDYD Models

A. Automatic AC Hipot Test Sets (table type)

| Models | Capacity | Low Voltage Side | | High Voltage Side | | Ratio | Temperature rise in 6mins | Impedance Voltage | No-load Current | Weight | Dimension |
|--------|----------|------------------|---------|-------------------|---------|-------|---------------------------|-------------------|-----------------|--------|--------------|
| | KVA | Voltage | Current | Voltage | Current | | | | | | |
| | | V | A | kV | mA | | | | | | |
| 10/50 | 10 | 200 | 50 | 50 | 200 | 500 | 50 | 10 | <4 | 60 | 260×375×750 |
| 15/50 | 15 | 400 | 37.5 | 50 | 300 | 500 | 50 | 8 | <4 | 70 | 270×420×800 |
| 20/50 | 20 | 400 | 50 | 50 | 400 | 500 | 50 | 8 | <4 | 85 | 285×440×820 |
| 30/50 | 30 | 400 | 75 | 50 | 600 | 500 | 50 | 8 | <4 | 100 | 295×386×840 |
| 50/50 | 50 | 400 | 125 | 50 | 1000 | 500 | 50 | 8 | <4 | 120 | 320×416×910 |
| 10/100 | 10 | 200 | 50 | 100 | 100 | 1000 | 50 | 10 | <4 | 65 | 350×475×1300 |
| 15/100 | 15 | 400 | 37.5 | 100 | 150 | 1000 | 50 | 8 | <4 | 85 | 510×390×1320 |
| 20/100 | 20 | 400 | 50 | 100 | 200 | 1000 | 50 | 8 | <4 | 100 | 540×400×1340 |
| 30/100 | 30 | 400 | 75 | 100 | 300 | 1000 | 50 | 8 | <4 | 110 | 560×410×1360 |
| 50/100 | 50 | 400 | 125 | 100 | 500 | 1000 | 50 | 8 | <4 | 125 | 600×460×1410 |
| 10/150 | 10 | 200 | 50 | 100 | 66.7 | 1500 | 50 | 10 | <4 | 90 | 265×380×1750 |
| 15/150 | 15 | 400 | 37.5 | 150 | 100 | 1500 | 50 | 8 | <4 | 100 | 510×390×1800 |
| 20/150 | 30 | 400 | 50 | 150 | 133 | 1500 | 50 | 8 | <4 | 110 | 540×415×1800 |
| 30/150 | 30 | 400 | 75 | 150 | 200 | 1500 | 50 | 8 | <4 | 125 | 560×430×1800 |
| 50/150 | 50 | 400 | 125 | 150 | 333 | 1500 | 50 | 8 | <4 | 140 | 640×490×1850 |



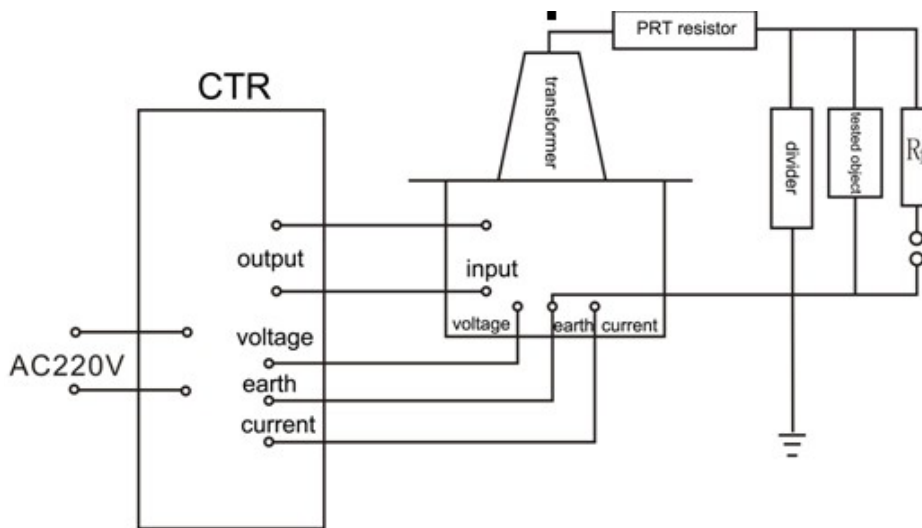
B. Automatic AC Hipot Test Sets (box type)

| Models | Capacity | Low Voltage Side | | High Voltage Side | | Ratio | Temperature rise in 6mins | Impedance Voltage | No-load Current | Weight | Dimension |
|--------|----------|------------------|---------|-------------------|---------|-------|---------------------------|-------------------|-----------------|--------|-------------|
| | KVA | Voltage | Current | Voltage | Current | | | | | | |
| | | V | A | kV | mA | | | | | | |
| 1.5/50 | 1.5 | 200 | 7.5 | 50 | 30 | 500 | 50 | 10 | <4 | 19.5 | 200×275×640 |
| 3/50 | 3 | 200 | 15 | 50 | 60 | 500 | 50 | 10 | <4 | 27 | 240×300×690 |
| 20/50 | 5 | 200 | 25 | 50 | 100 | 500 | 50 | 10 | <4 | 52 | 250×355×710 |

CAUTIONS:

- The equipment must be connected with earth terminal, operators must keep away from charged objects.
- Please connect wires correctly, and you can only use it after checking.
- It is necessary to discharge with discharging rod when you finish DC withsand testing, and then you can remove the wires.
- Do not disassemble this equipment by yourself ! Any problem, please contact us.

Wiring Methods



AC test: Must insert short circuit rod at the top of transformer and pinch it firmly.

Figure 2 Connect Wires Diagram

A. Power cables of CTR

CTR(box): A black three-core cable.

CTR(table): A black two-core cable which contains red cable and black cable, to connect AC power supply and CTR.

B. Connecting cables of CTR(table)

CTR(table): A black two-core cable which connect the output of CTR and the input of transformer .

CTR(box) :A black three-core cable contains green cable, black cable and red cable. Terminals between CTR and transformer should be homologous as voltage-green cable, earth-black cable, current-red cable.

C. Ground cable of transformer

Ground cable of transformer must be connected with earth, and the black thin terminal with clamp connect with the earth terminal of transformer , the other terminal connected with reliable earth.

D. HV cable of transformer

HV cable terminal of transformer connects with HV terminal of transformer, the other terminal connects with tested object, and HV cable should not contact with the ground.

Operation Procedure

. Start the device

1. Start device and it shows "**Welcome interface**" as following Figure 3

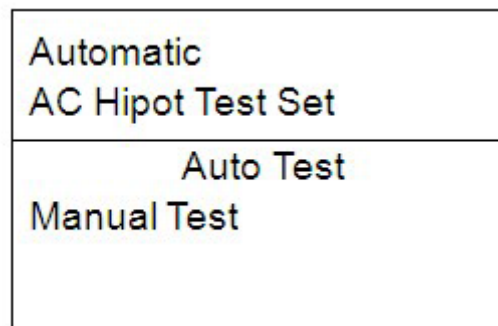


Figure 3 Welcome Interface

2. Press **up** , **down** , **left** , **right** to choose "**Auto test**" or "**Manual test**" according to the following Figure 4







Figure 4 keyboard

3. After choosing test mode , enter Figure 5 "**Main Interface**" .

. Seps setting

1. Select "**Set**" from main interface, then press "**OK**" to enter set interface as following Figure 5

2. Press  ,  to shift position and  ,  to modify cursor's location. Cursor's location and numerical value which are cyclic, have standard default values . Press "**Cancel**" to exit . Return to "**Main Interface**" after all parameters have been set .

| | |
|--|---------------|
| HV 40.3kV HV C 80.2mA LV 200.3V LV C 16.1A | |
| Output V 40.0kV WSD time 030S C URL 090mA Over C PRT 018A | Note |
| | Set Test Zero |

Figure 5 Set Interface



.Two methods to test

A. Manual Test

Zero check — After choosing “**Test**” , press “**OK**” to enter note test status. If voltage regulator doesn't at zero, it appears“ Please return to Zero before testing”, then exit and return to zero.

Testing — After return to zero , test can start. Select “**Test**” and then press “**OK**”, contactor switch on, at this time output voltage is nearly zero as following Figure 6.

| | |
|--|--|
| HV 40.3kV HV C 80.2mA LV 200.3V LV C 16.1A | Timing:004S |
| Output V 40.0kV WSD time 030S C URL 090mA Over C PRT 018A | Note: Timing... RV ↑ Timing < DV ↓ Cancel > |
| | Set Test Zero |

Figure 6 Manual note interface



Press **Full** , HV will keep raising unless you release , it will note “**range is full**”.

Press **Zero** , HV will keep reducing unless you release it will note “**It’s returned to Zero**”.

Press **Timing** it starts timing . And the test is over when it stops timing.

Press **Cancel** , Cancel the test.

In the process of pressure booster,if the HV peak current is more than "current limit"value or low voltage peak current is more than "overcurrent protection"value,tested product is considered as breakdown. Contactor break brake immediately and show the test result,including peak voltage,peak current,low voltage current.Voltage regulator starts return to zero.Tests finished when regulator back to zero.In the process of withstand voltage,if high voltage peak current and low voltage peak current is less than setting upper limit value,tested product is not considered as breakdown.The result shows withstand voltage, high voltage current,low voltage current,insulation resistance.At the moment,voltage regulator starts return to zero.Contactor break brake test finished when regulator back to zero.

B. Auto test

Checking the main interface and returning to zero , then enter to the following interface Figure 7 .

| | |
|--|-----------------------|
| HV 40.3kV HV C 80.2mA LV 200.3V LV C 16.1A | |
| Output V 40.0kV WSD time 030S C URL 090mA Over C PRT 018A | Note: Start Cancel |
| | Set Test Zero |

Figure 7 Auto note interface

Following the method above , switch to the "**Start**" and confirmed to test . And the device will automatically boost at the "**output**" , which process is different from manual test , then the timing.

The way of step process is approaching , which first close to target, and then fine-tuning adjust to ensure the high voltage almost is output voltage .

C. Select Function

Press the Key "**Setting**" enter into the function interface, as shown as in Figure 8.

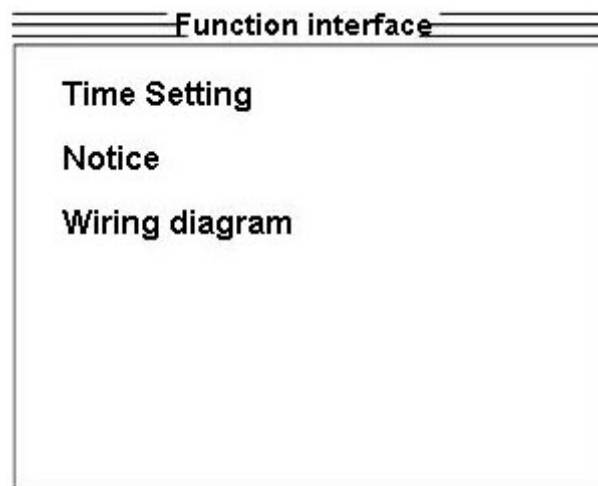


Figure 8 Function interface

In the functional interface, you can select "**Clock Setting**", "**Notice**" and other interfaces.

Clock Set: Setting the clock time, which provide the basis to print the report.

Notice: provide some prompts about safety and operation .

D. Print

Press "**Print**" key to print the test results.