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Ⅰ. Overview

Type DJ-9 holiday detector is a high-voltage special detector that is used to detect the quality of metal anti-corrosion coating. This detector can detect different thickness of coatings, such as glass lining, glass reinforced plastic, epoxy coal tar, rubber lining and so on. The detector will emit bright sparks and with sound alarm when something is wrong with the coating, such as the emergence of pinhole, air bubbles, fissures and cracks. As powered by Ni-MH battery, and with small size and light in weight, it is especially suitable for field operation. The detector is the essential tool used for detecting the quality of metal anti-corrosion coating and can be used widely in many industries including chemical, petroleum, rubber and ceramic, due to its sophisticated design and stable & reliable performances.

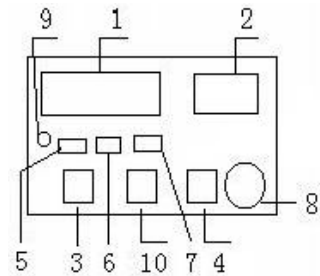
Ⅱ. Specification:

1. Applicable detection thickness: 0.05 ~ 10mm
2. Output High-voltage: 0.6kv~30kv (stepless and continually adjustable)
3. Leakage points showed
4. Direct indication of output high-voltage
5. Battery:12V/2800mA
6. Power consumption: about 6W
7. Dimension: 220×130×88 mm
8. Back light
9. Instantaneous boot, and automatic shutdown
10. 3–digit LCD displays output voltage, and with all-touch panel
11. Alarm: Dual alarm with earphone and buzzer

III. Detection Principle and Structure Description:

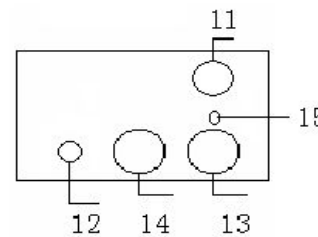
1. Detection principle: the spark leak detector performs detection of the anti-corrosion coating by exerting a certain amount of pulse high-voltage on the surfaces of anti-corrosion coatings of various conductive matrix, and the pulse high-voltage will form air gap and breakdown, and result in spark discharge, and send a pulse signal to alarm circuit to occur sound alarm when it pass through, if the anti-corrosion coating is much thin, metal leaks or there are leakage pinholes.

Detector Structure Diagram
(1) Front panel: (Figure 1) (2) Rear panel :(Figure 2) (3) High –voltage probe: (Figure 3)



(Figure 1)

Figure 1: Front Panel Sketch
1. High-voltage LCD
2. Leakage points showed
3. Startup key
4. Reset key
5. Power indicator
6. Lack-of -power indicator
7. Charging indicator
8. Voltage knob
9. Lighting hole
10. Power-off /Charge- up key



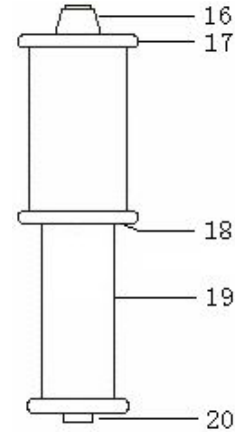
(Figure 2)

Figure 2: Rear Panel Sketch
11. Fuse
12. Earthing base
13. Charge-up base
14. Socket of high-voltage output

15. Earphone (socket)

Figure 3: High-voltage Probe:

16. Connecting terminal of Probe
17. Rubber sheath
18. Light alarm
19. Knob
20. Multi-pin plug



(Figure 3)

2. Structure description: this instrument consists of three parts including main detector, high-voltage probe and probe.

(1) Main detector: comprising integrated control circuit, sound alarm detector, etc.

(2) High- voltage probe: comprising high-voltage generator, outlet of high-voltage output, etc.

(3) Probe: Copper brush probe.

Ⅳ. Operation Procedures:

1.Please read up the Manual of this detector to make clear all parts of functions; as to their specific names, please see Detector Structure Diagram.

(1) High-voltage LCD: its value directly indicates output high-voltage.

(2) Leakage points showed: showed the number of leakage points.

(3) Startup Key: (used for starting machine).

(4) Reset key.

(5) Power indicator: it is lighting when press Startup key.

(6) Lack-of -power indicator: please charge up if it lights.

(7) Charging indicator: if it is on，it means charge up; if it is off, it means charge up is end.

(8) High-voltage knob: adjusting output high-voltage to meet detection requirements of different anti-corrosion coatings.
(9) Lighting hole: Back light is turned on when the light is weak.
(10) Power off /Charge up key: The detector will power off by press it for 3 seconds when the detector is working. The charge up is beginning when the Charge up key is connected with the charger.
(11) Fuse: power supply fuse is 1A.
(12) Earthing base: used for connecting earthing long wire.
(13) Charge-up base: connecting the charger.
(14) Socket of high-voltage output: used for connecting high-voltage probe with the main detector.
(15) Earphone socket: it will make a sound alarm when high-voltage spark is produced, and earphone alarm is needed.
(16) Connecting terminal of Probe: used for connecting various probes.
(17) Rubber sheath
(18) Light alarm
(19) Knob: hold it by hand when detecting.
(20) Multi-pin plug: it is connected with (14) socket.

2. How to use

(1) The connecting cable of high-voltage probe is connected with multi-pin plug(20), and plugged in the socket of high-voltage output(14).
(2) One side of earth wire is connected to the earthing base of main detector (12), and the other side of it is in good contact with the detected objects.
(3) Select a suitable probe based on the different detection requirements.
(4) Check the operating condition of machine;
a. The power supply indicator shall light when pressing Startup

key.
b. Adjust high-voltage knob to the required detection voltage.
c. Sparks shall be producing and followed by sound alarm when the bare point of earth long wire is close to the probe; the distance between spark production become larger and larger when the high-voltage output is raised accordingly, which indicates the detector works normally and you can begin to detect (See the attached table for detail).
(5) Select a suitable detection voltage according to the thickness of anti-corrosion coating(See the attached table for detail).
Its high-pressure adjustment process is as follows: output the high-voltage according the a and b in (4) firstly, and adjust the knob of high-voltage output to indicate an appropriate value and begin to detect.
(6) Choose a better detecting speed to maintain a better detection quality when detecting according to different anti-corrosion materials and thickness. (If the detection is carried out in a noisy environment, you can use earphone to monitor the alarm sound)
(7) After detection is completed, this detector will automatically shutdown after thirty minutes, or shutdown by pressing Power-off key.
(8) Leakage points is automatically cleared after the shutdown.

Ⅴ. Charge Up

1. After shutdown, the power supply of charger is connected to 220V power supply and the charge-up base of rear panel of detector (13), at this time, the charging indicator lights.
2. After charging up for 8-10 hours, the charging indicator will automatically turn off, which means the built-in battery is full.
3. Notes:
The lack-of-power indicator will not light when the battery

voltage of the detector is normal; it will light when the battery voltage is down to 10V, and must charge up to prevent damage due to battery over-discharge.

Ⅵ. Precautions:

1. After startup, the probe is strictly prohibited to contact with the ground. The startup with the charger is strictly forbidden when the detector is in charge up state.

2.（1）The operator shall master the Manual of this detector, and use it by strictly following operation condition and protect the detector from the break, bump and high temperature. Do not put it close to the wet and corrosive gas.

（2）Please use the same size of fuse after being damaged, and the random increase is strictly prohibited.

3. The appropriate earthing location shall be selected to guarantee the detection quality when you begin to detect.

（1）For the detection of anti–corrosion coating on the surface of small metal object, the detected object is required to support up more than 20cm with an insulator, then the earthing wire is connect well to the metal object to detect.

（2）For the detection of anti–corrosion coating on the surface of large or plane object, the detection can be performed after connecting well the earthing wire to the ground only, when the detected object is good contact with the ground.

4. During detection, the detecting personnel shall put on the high-voltage insulated gloves, and any persons shall not contact the probe and the detected object to avoid electric shock.

5. The surface of detected anti-corrosion coating shall be dry, if it is stained with conductive layer (dust) or water, it is difficult to determine the precise location of leakage point.

6. When the detector is not used, it shall be stored in packing box, and please note that battery short-circuit is absolutely

prohibited.
7. If the detector is not used for long time, it shall be charged up every two months as the case may be, and stored after being charged up for 8-10 hours.

Ⅶ. Detector and accessories (packing list)

(1)	Type DJ-9 Holiday Detector	1set
(2)	High-voltage probe	1 piece
(3)	Probe brush	2 pieces
(4)	Connecting rod	1 piece
(5)	Earphone	1 piece
(6)	Backstrap	1 piece
(7)	Fuse	2 piece
(8)	Manual	1 copy
(9)	Warranty Card and Certificate of Conformity	1 copy
(10)	External packing box	1 piece
(11)	Earthing wire	1 piece
(12)	Charger	1 set

Note: Arc brush and circular probe are selectable (any length)

Attached Table for Detection Voltage

Anti-corrosion Material	Thickness of Anti-corrosion Coating (mm)	Detection Voltage (KV)	Remarks
Epoxy Coal Tar	0.2 0.4 0.6 0.8	4-5KV or self-defined	Perform according to standard (if provided)
Oil Asphalt	2 3 5.5 7 9	11 15 18 20 24	
Polyethylene Adhesive Tape	Based on: 3249TC=V conversion formula V: voltage; TC: thickness of anti-corrosion coating Perform according to SY4014-92 Acceptance Standard		
Glass Lining	Determine detection voltage according to previous experience. Generally, it is 8KV～20KV.		
Other Anti-corrosion Materials	Detect voltage according to the design of design department or material insulation.		