

پتروفرهان گستر جنوب

📍 Tehran, Tehransar

Magnetic Yoke Flaw Detector



Operation Manual

JIMTEC

I Overview

Y series magnetic yoke flaw detector is mainly used to magnetize the workpiece made of ferromagnetic materials with an electromagnetic yoke. It can realize magnetization of various parts and is applicable to inspect surface and near-surface defects caused by forging, quenching, welding and fatigue for petroleum, chemical, metallurgy, aerospace, shipbuilding, railway, electric power, coal, machinery, standardize parts, aircraft manufacturing, automobile parts, boiler and pressure vessel these industry products. In addition, also it can realize magnetic particle inspection on geometric complex workpieces including chain rod, crankshaft, bearing, high-strength bolt, spring, forgings, petrochemical pipe fittings, valves, blades, gear, roller, chain and welding seams.

In view of function, Y series magnetic yoke flaw detector can be in dual-use of AC (Alternating Current) and DC (Direct Current). For AC power supply, it adopts AC~220V power supply direct input, while DC magnetization power supply is a kind of rechargeable battery, which is applicable to detection of DC magnetization where there is no power supply in outdoor fields or being selected according to process requirements. Generally, the the continuous working time of DC magnetized power supply can be up to 6 hours. Due to its characteristics including easy to operate, simple for using, light and portable, this instrument is widely used.

II Technical Parameters

Model Type		Y-1	Y-2
Power supply		/	220V50Hz 12V
Charging power supply		220V 50Hz	220V 50Hz
Battery used		/	4.4AH
Operating current		AC2.8A	AC2.8A DC2.3A
Charging period		/	3 hours
Battery life		/	More than 6 hours
Duty cycle		50%	50%
Magnetic electrode distance		0~220mm	0~220mm
Lifting power	A C	>7.1kg	>7.1kg
	D C	/	>22.2kg
Weight	Yoke	2.3kg	2.3kg
	Magnetic power	/	0.6kg

III Basic Configuration

Type \ Model	Y-1	Y-2
Magnetic Yoke Flaw Detector	1 set	1 set
Power source	1	1
DC excitation supply	/	1
DC power pack	/	1
DC power output cable	/	1
DC power charger	/	1
Operation manual	1	1
Certificate of conformity	1	1
Warranty card	1 copy	1 copy
Packing list	1 copy	1 copy
Instrument container	1	1

IV Operation procedures and matters need attention

Before using this instrument, pls read this manual carefully, understand the structure and technical performance of the instrument, and check whether the connection is correct or not before connecting to the power supply. Besides, check whether this instrument is in good condition before initial use or long-time reuse.

4.1 Operation procedures for AC magnetization detection

- 4.1.1 Connect one end of the probe cable to 220V AC power supply (or DC magnetized power supply), and the other end to the electromagnetic yoke to ensure reliable connection of the plug.
- 4.1.2 Make good contact between two magnetic pole angles of the electromagnetic yoke and inspected workpiece, spray the magnetic suspension (black oil magnetic suspension, black liquid magnetic suspension, or fluorescent magnetic suspension, be equipped with ultraviolet light lamp), then press the switch of electromagnetic yoke. At this time, the electromagnetic yoke realizes the magnetization of workpiece. If release the switch, the magnetization will be stopped.
- 4.1.3 When not in use, unplug the yoke cable and cover the dust lid. (Under DC flaw detection mode, pull out the connection wire at one end of DC magnetized power supply)
- 4.1.4 Work cycle of this electromagnetic yoke: work continuously for long time: recommended magnetizing time $\leq 3s$, interval time $\geq 5s$.
- 4.1.5 After yoke pole angle in good contact with the inspected workpiece, and then press down the magnetizing switch, best magnetization effect can be realized.
- 4.1.6 Switch should be released timely before yoke pole angle leaving the workpiece, so as to avoid overheating and instrument damage caused by improper operation. Although this instrument has a good no-load overcurrent protection circuit, it should avoid no-load work to reduce unnecessary temperature rise.

4.2 Operation procedures for DC magnetization detection



4.2.1 Connect one end of the yoke power cable to DC magnetized power supply, LCD can be lighted up, then connect the other end to the electromagnetic yoke to ensure reliable connection of the plug.

4.2.2 After LCD lighted up, remaining power capacity can be displayed. When the remaining capacity is close to 15%, the power supply can be charged accordingly, or lifting force can be tested. But if the lifting force is lower than 18.1kg, it should be charged in time.

4.2.3 After the electromagnetic yoke connected successfully with DC magnetized power supply, magnetic particle detection can be realized for workpiece. Using method pls refer to (4.1.2 ~ 4.1.6).

Matters need attention

1) Although this instrument can be worked continuously, pls stop using it if found any over-heating until causes were checked out.

2) This instrument and all accessories should be used or stored in a clean, dry and corrosion-free environment.

3) Because there is high pressure inside the instrument, so pls do not dismantle the machine by yourself, and pls return to the factory for repair if necessary.

4) Before using, apply some lubricating oil to the movable joint pin part.


V Charging method and low battery judgment

After connecting the charger (adapter) with the battery, insert the charger (adapter) plug into the 220V socket, red light on the charger turns on, charging can be ended when the red light turning green, generally the charging time is about 3 hours.

When using the battery box for power-up, if the battery capacity indicates only 10%, boosting charge should be carried out, and the charging time should be about 3 hours

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