

## 便携式磁粉探伤仪系列

### A portable magnetic particle detector series

#### 使用说明书

#### Operation instruction

This operation instruction is useful for the different-type magnetic particle detector, such as electromagnetic yoke, U-shaped, Multi-function fillet weld, Ac/dc rotating, multi-function magnetic powder electromagnetic yoke.

#### 1. General

The working principle of the the portable magnetic particle detector is using the magnetic yoke to magnetize various kinds of the ferromagnetic material workpiece. The detector is used different industries, such as Oil field, Shipping, Internal Combustion Engine &Parts, Coal, Machining,standard parts, Fuel injection equipment, Aircraft, Car parts, Bridge, Boiler, Pressure vessel, Railway etc.The detector is used to inspect the surface and near-surface flaw caused by forging, quenching, welding, fatigue etc. The detector is used to inspect different types workpiece, such as connecting rod, bent axle, bearing, high-strength bolt, forging, pipe, valve, vane, gear, roller, welding etc.The detector electric current is adjustable.The detector is used by external magnetic force.

The detector is advanced, reliable, controlled by the integrated circuit. The magnitude of workpiece magnetic field strength is adjusted by adjusting the magnitude of the magnetic yoke coil electric current controlled by the circuit thyristor conduction angle. The detector is small volume, light-weight, probe equipped with movable joints, outputting safe voltage, more suitable for the scene of no permission high pressure.



EM-1000B  
磁粉探伤仪



EM-2000B  
磁粉探伤仪



EM-3000B  
磁粉探伤仪



EM-5000B  
磁粉探伤仪

EM-1000B EM-2000B EM-3000B EM-5000B  
The magnetic particle detector



XDY-III A型  
多用磁粉探伤仪

XDEY-III型  
电磁轭磁粉探伤仪

XMTY-II型  
马蹄型磁粉探伤仪

XCEY-III型  
旋转磁场磁粉探伤仪

A

D

E

O

Type XDYY-III A

The multi-function magnetic particle detector

Type XDEY-III

The Magnetizing Yoke magnetic particle detector

Type XMTY- II

U-shaped magnetic particle detector

Type XCEY-III

The rotational magnetic field magnetic particle detector

## 2. Technical parameters

型号 分类	XJZY-II A 交直流磁探仪	XJHY-III 多功能角焊缝磁探仪	XMTY-II 马蹄形磁探仪	XDEY-III 电磁轭探伤仪	XCEY-III 旋转磁粉探伤仪	XCEY-III 多用磁粉探伤仪
提升力	交流 ≥ 5kg 直流 ≥ 18.1kg	A型 ≥ 5kg D型 ≥ 5kg	≥ 5kg	≥ 5kg	≥ 12kg	A型 ≥ 5kg D型 ≥ 5kg
极 距	65~230mm可调	A 50~165mm可调 D 65~230mm可调	50~165mm可调	65~230mm可调	110mm不可调	
主机重量	4.2kg					
电 源	~220V ± 10% 50HZ					
工作电流	0~8A可调					
外形尺寸	190 × 110 × 145mm (长 × 宽 × 高)					

Type	XJZY- II A	XJHY-III	XMTY- II	XDEY-III	XCEY-III	XDYY-III A
Classification	AC-DC magnetic particle detector	multi-function fillet welding magnetic particle detector	U-shaped magnetic particle detector	Magnetizing Yoke magnetic particle detector	Rotational magnetic field magnetic particle detector	multi-function magnetic particle detector
Lifting porce	AC $\geq$ 5Kg DC $\geq$ 18.1Kg	Type A $\geq$ 5Kg Type D $\geq$ 5Kg	$\geq$ 5Kg	$\geq$ 5Kg	$\geq$ 5Kg	Type A $\geq$ 5Kg Type D $\geq$ 5Kg
Pole distance	65~230mm adjustable	A 50~165mm adjustable D 65~230mm adjustable	50~165mm adjustable	65~230mm adjustable	110mm non-adjustable	
main engine weight	4.2Kg					
power source	~220V $\pm$ 10% 50Hz					
Work current	0~8A adjustable					
Size	190 $\times$ 110 $\times$ 145mm (length $\times$ width $\times$ height)					

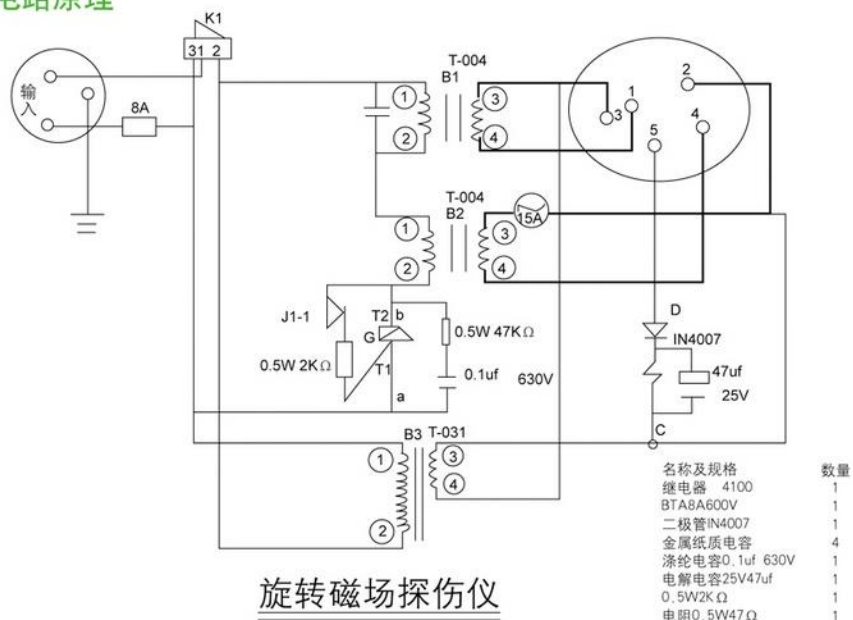
15V DC voltage is provided by the power source circuit. The pulse synchronization circuit synchronize the pulse signal with the grid and provide synchronous pulse to the phase-shift circuit. By the current automatic adjusting circuit, provide phase-shift circuit to the phase-shift signal and change the magnitude of the magnetizing current by W. The function of the pulse function circuit to complete is using the phase-shift circuit pulse to further amplify trigger SCR in order to make the main circuit to complete the magnetizing workpiece.

The detector is controlled by the SCR. The magnitude of the lifting power is adjusted by adjusting the probe coil current. The detector is output low voltage. The probe is adjustable and adjusted

according to the different conditions.

### 3. Circuitry

#### 三、电路原理



Rotational magnetic field magnetic particle detector

Name & size	quantity
relay 4100	1
BT8A600V	1
diodeIN4007	1
Metallized Paper Capacitor	4
Dacron Capacitor 0.1uf 630V	1
Electrolytic capacitor25V47uf	1
0.5W2K Ω	1
Resistance0.5W47 Ω	1



7. Use the type A standard test piece to test sensitivity in order to confirm the magnitude of the magnetic current.

## 五、一般故障与维修

1、电源进线好，指示灯不亮

(1)电源熔丝断；

(2)指示灯接触不良或损坏；

2、按下探头开关，无充磁、  
电流调整不起作用

(1)触发电路坏；

(2)可控硅坏；

(3)主变压器短路或断路；

(4)输出电缆断。

5. General failure and maintenance

1. The power source cable is good, but the light is off.

(1)The power source fuse is broken.

(2)The light is poor contact or bad.

2.Press the probe switch, but no magnetize.Adjust the current, but no work.

(1). The trigger circuit is bad.

(2).The SCR is bad.

(3).The main transformer is short circuit or open circuit.

(4).The output cable is broken.

## 6. Attention

1. When using the detector, avoid no-load work in order to prevent the detector producing unnecessary hotting and damage.
2. The probe end and the inspected workpiece shall keep good contact in order to reach the best inspecting effect.
3. Meet the detector using voltage when using the detector.
4. The detector can work continuously. If the probe coil hotting seriously is found, stop to use immediately to inspect the fault cause in case the detector damages.
5. When the detector stopped to use, cut off the power source switch on the panel and switch panel.

## 7. Product suit

### 七、产品成套性

型号 分类	XJZY-II 交直流磁探仪	XJHY-III 多功能角焊缝	XMTY-II 马蹄形磁探仪	XDEY-III 电磁轭探伤仪	XCEY-III 旋转磁粉探伤仪	XCEY-III 多用磁粉探伤仪
主机	壹台	壹台	壹台	壹台	壹台	壹台
探头:马蹄(A)	/	壹只	壹只	/	/	壹只
旋转(E)	/	/	/	/	壹只	壹只
磁轭(D)	壹只	壹只	/	壹只	/	壹只
O型探头	壹只	壹只	/	/	/	壹只
探头活动关节	壹付	壹付	壹付	壹付	/	壹付
输入电源线3米	壹根	壹根	壹根	壹根	壹根	壹根
输出电缆线5米	壹根	壹根	壹根	壹根	壹根	壹根
8 A 熔丝	贰根	贰根	贰根	贰根	贰根	贰根
使用说明书	壹份	壹份	壹份	壹份	壹份	壹份
合格证	壹份	壹份	壹份	壹份	壹份	壹份
保修卡	壹份	壹份	壹份	壹份	壹份	壹份



Type	XJZY- II A	XJHY-III	XMTY- II	XDEY-III	XCEY-III	XDYYY-III A
Classification	AC-DC magnetic particle detector	multi-function fillet welding magnetic particle detector	U-shaped magnetic particle detector	Magnetizing Yoke magnetic particle detector	Rotational magnetic field magnetic particle detector	multi-function magnetic particle detector
main engine	1	1	1	1	1	1
Probe:U-shaped(A)	/	1	1	/	/	1
Probe:Rotational(E)	/	/	/	/	/	1
Probe:Yoke(D)	1	1	/	1	/	1
Probe:Type O	1	1	/	/	/	1
Probe movable joint	1	1	1	1	1	1
input cable 3m	1	1	1	1	1	1
output cable 5m	1	1	1	1	1	1
8A fuse	2	2	2	2	2	2
operation instruction	1	1	1	1	1	1
certification	1	1	1	1	1	1
Maintenance card	1	1	1	1	1	1