

SERVICE MANUAL

Shaker

SK-R180-S LED Digital Rocking shaker



VERSION20161212

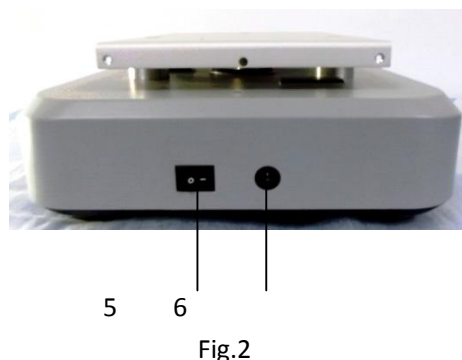
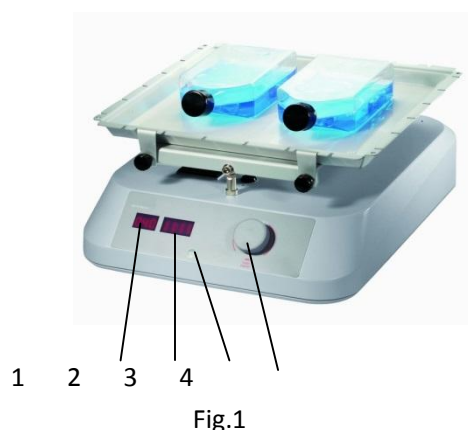
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Chapter 1: Working Principle

1.1 Introduction

Rocking shaker provide perfect solution in wide fields including electrophoresis gel dyeing/dicoloration, sample washing, molecular hybridization, immunoprecipitation, Western blot and cell culture.



ITEM	1	2	3	4	5	6
Function	Speed display	Time display	Mode setting	Speed adjust knob	switch	24VDC input

Fig.1~2 is the schematic diagram of Shaker SK-D1807-S, There are Speed display, Time display, speed control knob on instrument control panel; power switch, on the side of instrument; After properly connect to the power cord and turn on power switch, users set experimental conditions on the control panel by speed control knob and timer knob, and real-time observe parameters setting values and actual values on screen. Speed range is 10~80rpm.

Chapter 2: Removal and Installation of Instrument

When instrument failure occurs, first, you should conduct a failure analysis; if the failure is caused by the damage of instrument hardware, the related component must be repaired or replaced. Here are the relevant contents of the replacement and disassembly of instrument.

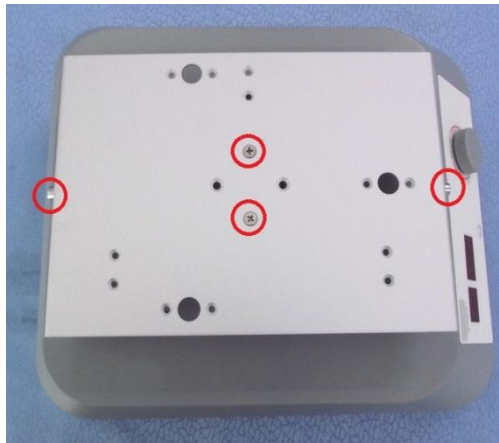
2.1 Removal

Tool: Cross screwdriver



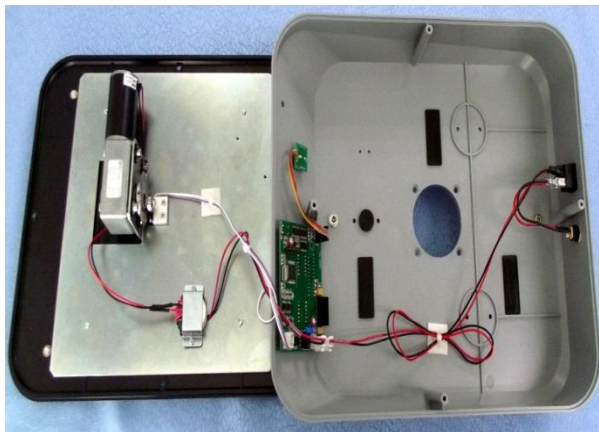
Step 1:

Turn the instrument upside down, remove the four screws marked by red circle and keep them well.



Step 2:

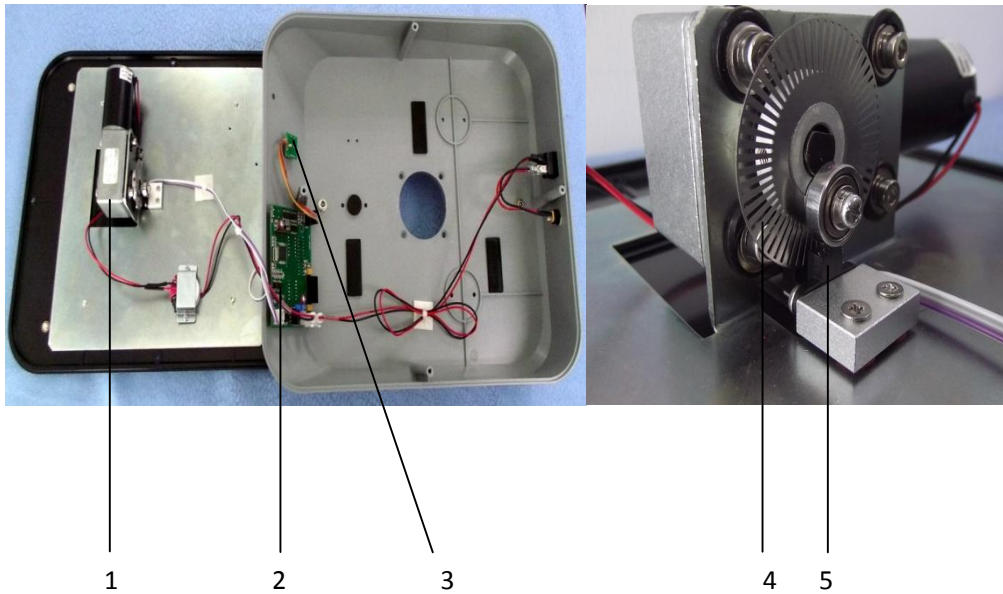
Remove the four screws marked by Red circle and keep them well.



Step3:

Open the top case carefully, the inside of instrument, as shown in left figure.

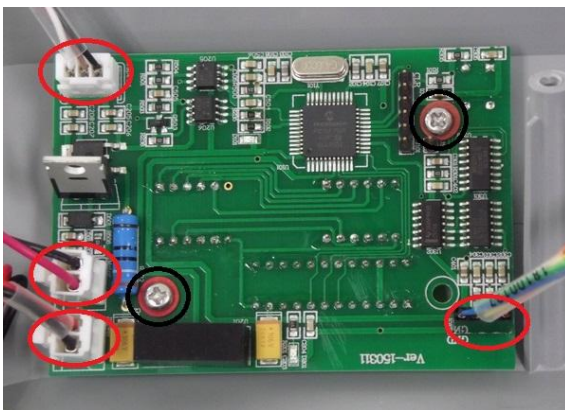
2.2 Main parts illustration



Item.	Designation	Car. No.
1	Motor	18101052
2	LED drive board	18101259
3	Encoder	18100127
4	Code disc	18201323
5	Photoelectric switch	18101202

2.3 Replacement of the drive board

Tool: Cross screwdriver



Step 1:

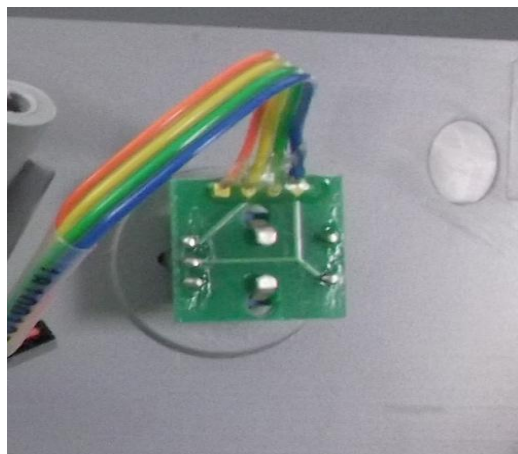
Unplug the connectors marked by red circle, remove the screws marked by black circle and keep them well, then replace a new drive board, assemble it in sequence.

2.4 Replacement of the Potentiometer

Tool: Hexagon socket wrench



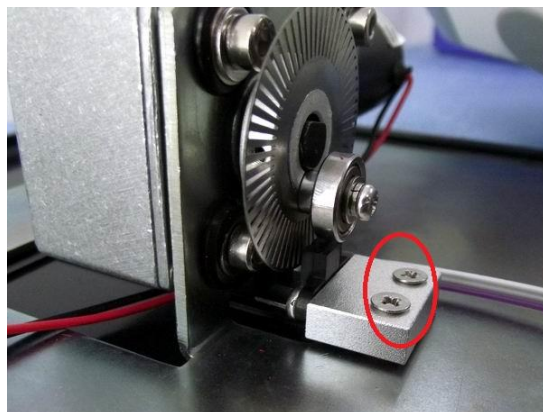
As shown in figure, take the knob, remove the screw and keep it well.



Unplug the connector, then replace the potentiometer, assembled in sequence.

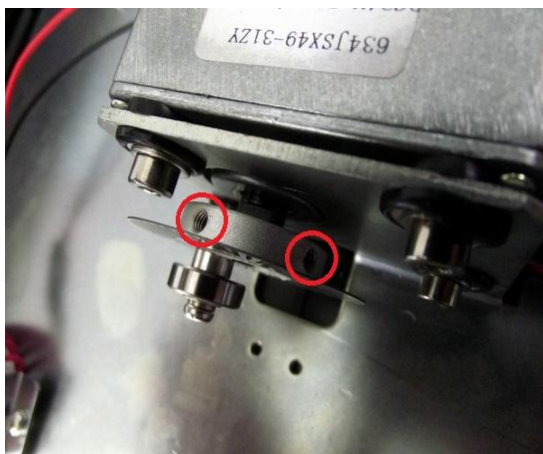
2.5 Replacement of the Motor

Tool: cross screwdriver, hex wrench



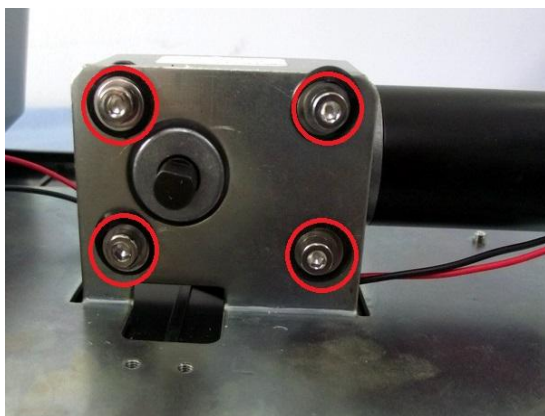
Step 1:

Remove the screws marked by red circle and keep them well, take the optoelectronic switch.



Step 2:

Loosen the two jackscrews by hex key, remove the eccentric block.



Step3:

Remove the screws marked by red circle and keep them well, then replace the motor, assembled in sequence.

Chapter 3: Trouble shooting

FAULT CODE	PROBLEM	CAUSE	SOLUTION
E01	No operation response (LED off)	No power supply	Check and connect the power supply, then power on again
		The power switch put off	Put on the power switch
		Connection is failure	As shown in the chapter 2.1, open the instrument and check all the connection, re-connect.
E02	The shaker won't shaking	no setting target speed	Set a target speed, and the Stir speed indicator is on.
		The drive board is failure	Replace the drive board, please reference chapter 2.3
		The motor is failure	Replace motor
E04	The shaking speed stuck	the drive board is failure	Replace the drive board