

# 013363 RRDE-3A motor set for repair

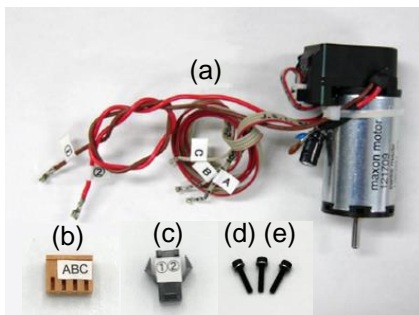


Fig.1 Contents

This product is compatible with RRDE-3, RRDE-3A, and RRDE-3A Ver.1.2.

Following tools are required for replacement.

Phillips screwdriver(#1), Hexagon wrench(0.89 mm, 1.5 mm, 4 mm), nippers  
For tools other than nippers, 013646 RRDE-3A maintenance tool kit can be used.

## Contents

- |  |       |
|--|-------|
| (a) Replacement motor                        | 1 pc  |
| (b) 4-Pin female connector for encoder cable | 1 pc  |
| (c) 2-Pin female connector for motor cable   | 1 pc  |
| (d) Hexagon socket screws                    | 3 pcs |
| (e) Spring washers                           | 3 pcs |

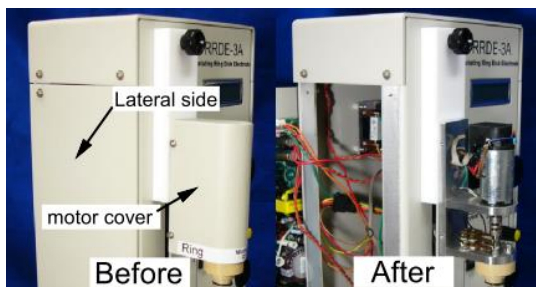


Fig.2 Remove the cover

## ◆Disassembly

- 1-1 Turn off the RRDE-3A power switch and unplug the power cable.  
Remove four screws on the motor cover and four screws on the side cover with a Phillips screwdriver(#1), and remove the cover(Fig.2).

CAUTION: Be careful not to break the cables when removing the cover.

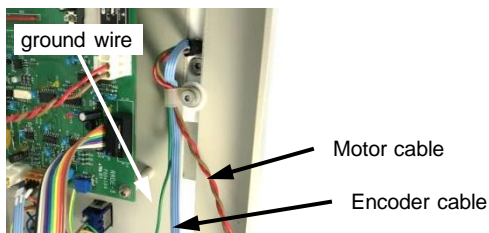


Fig.3 Check the cables

## ◆Disassembly

- 2-1 Check the three cables coming out of the motor unit(Fig.3).

Motor cable(2 twisted cables), encoder cable(flat cable), ground wire(single cable)

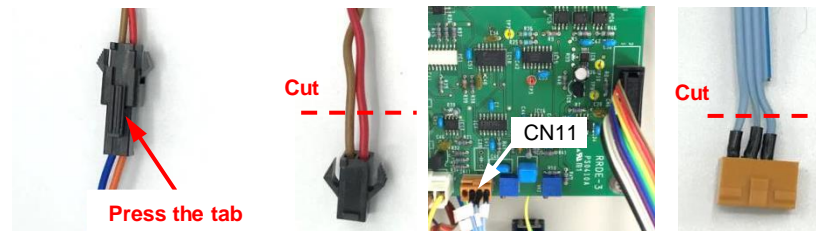


Fig.4 End of motor cable

Fig.5 End of encoder cable

## ◆Disassembly

- 3-1 Disconnect the 2-pin female connector of motor cable from the male connector while pressing connector tab(Fig.4).  
3-2 Disconnect the 4-pin female connector of encoder cable from the position indicated(CN11) on the board(Fig.5).  
3-3 Cut off the female connector of each cable with nippers(Fig.4,5).



Fig.6 Remove the silver carbon brush



Fig.7 After removing the silver carbon brush



Fig.8 Loosen the coupling screws

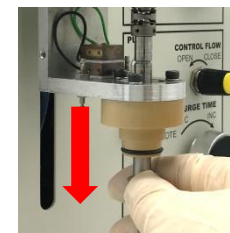


Fig.9 Pull out the shaft assembly

## ◆Disassembly

- 4-1 Remove tiny screws connecting the four silver carbon brush with a screwdriver(#0)(Fig.6, 7).  
**Be careful not to lose tiny screws.**  
4-2 Loosen two screws on the lower side of the coupling with hexagon wrench (0.89 mm), while holding the shaft assembly with another hand(Fig.8).  
4-3 Pull out the shaft assembly gently(Fig.9).



Fig.10 Remove the coupling



Fig.11 Remove the motor

## ◆Disassembly

- 5-1 Loosen two upper screws on the coupling with a hexagon wrench(0.89 mm), and remove the coupling(Fig.10).  
5-2 Remove three hexagon socket screws fixing the motor to the frame with a hexagon wrench(1.5 mm). At this time, also remove the spring washers(Fig.11).



Fig.12 Protective tube

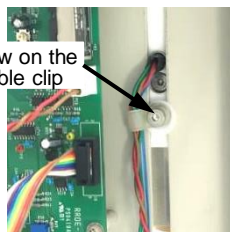


Fig.13 Screw on the cable clip

#### ◆Disassembly

- 6-1 Remove the motor, and carefully pull motor cable and encoder cable out of the hole in motor unit. There is a black protective tube inside the hole. Do not pull out the tube(Fig.12).
- 6-2 If the cable cannot be pulled out, loosen the screw on the cable clip with a hexagon wrench(4 mm) (Fig.13).

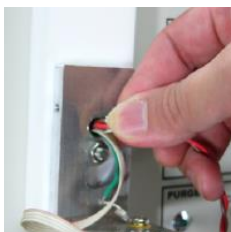


Fig.14 Insert the cables



Fig.15 Slack off the cable

#### ◆Assembly

- 7-1 Insert the replacement motor cable and encoder cable into the hole of motor unit(Fig.14).
- CAUTION: Slack off the cable as shown in Fig.15.
- 7-2 If you loosened the cable clip screw in 6-2, retighten it.



Fig.16 Good example



Fig.17 Bad example



Fig.18 Set the replacement motor

#### ◆Assembly

- 8-1 Set the replacement motor(a) straight on the motor unit frame.



Fig.19 Fix replacement motor

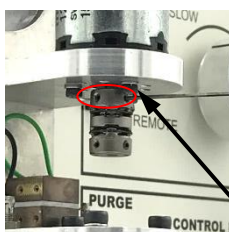


Fig.20 Fix the coupling

#### ◆Assembly

- 9-1 Fix replacement motor(a) and frame with the hexagon socket screws(d) and spring washers(e)(Fig.19).
- 9-2 Fix the motor and coupling with the screws leaving 1 mm between coupling and frame(Fig.20).

Leave 1 mm



Fig.21 Stick the shaft assembly

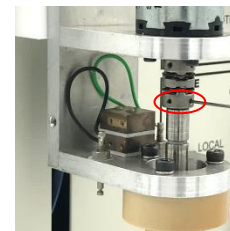


Fig.22 Fix the shaft assembly



Fig.23 Fix the silver carbon brush

#### ◆Assembly

- 10-1 Stick the shaft assembly into the hole of the bearing assembly(Fig.21).

Fix the shaft assembly and coupling with the screws(Fig.22).

- 10-2 Fix the silver carbon brush unit with tiny screws(Fig.23). **Be careful not to lose tiny screws.**



Fig.24 3-pin female connector



Fig.25 Connect the connector

#### ◆Assembly

- 11-1 Insert the pins at the end of the motor cable into the 2-pin female connector(c) according to the numbers(Fig.24). Insert the pins until you hear a click. Pull the cable lightly and make sure it does not come off.

- 11-2 Connect the female connector to the male connector as shown in Fig.25. Make sure that the connector does not come off.

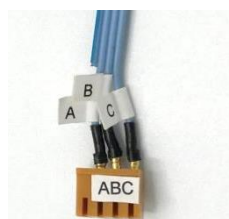


Fig.26 4-pin female connector



Fig.27 Connect to the board

#### ◆Assembly

- 12-1 Insert the pins at the end of the encoder cable into the 4-pin female connector(b) according to the letters A, B and C(Fig.26). Insert the pins until you hear a click. Pull the cable lightly and make sure it does not come off.

- 12-2 Connect the female connector to the position indicated(CN11) on the board as shown in Fig.27. Make sure that the connector does not come off.



Fig.28 Fix the cover

#### ◆Assembly

- 13-1 Fix the lateral side cover and the motor cover with screws(Fig.28).

- 13-2 Connect the power cable and turn on the power switch.

Rotate the motor at 3000 rpm and 8000 rpm to check if it works properly.

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