Welding Supplement

Sheet P/N: 091-0589 Rev. A

CopperHead® Disassembly

CAUTION

DISCONNECT UNIT FROM ALL POWER SOURCES.

ELECTRIC SHOCK CAN KILL.

1. Disconnect weldhead from power supply.
2. Remove coolant from weldhead by blowing air at 20 psi max in one water line.
3. Lay the weldhead on a workbench with the handle serial plate facing up.

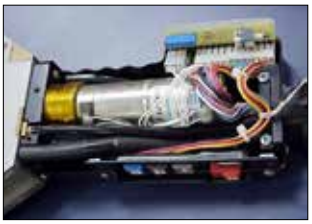

Figure A

4. Remove the screws and the top handle cover. (Figure A)

Figure B

5. Remove the two screws from the water-return/grounding bar. Some coolant fluid that is in the grounding bar and the side-plate may leak out.
6. Remove the grounding bar. (Figure B)

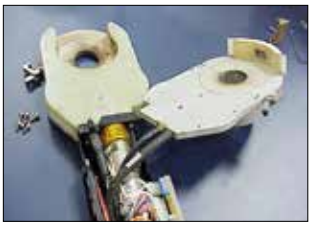

Figure C

Figure D

7. Remove both side plate assemblies by removing the mounting screws. (Figures C and D)

Figure E

8. Remove heat shrink and then screw from the brush plate. (Figure E)
9. Remove gas line from barb connector. (Figure E)

Figure F

10. Unplug motor connector from circuit board. Remove cable assembly. (Figure F)

Figure G

11. Remove the upper right motor mount screw. (Figure G)

Figure H

12. Separate cover from base assemblies with knife. (Figure H)

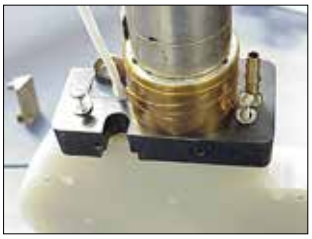

Figure I

13. Remove remaining motor mount screws. (Figure I)

Figure J

14. Remove motor mount assembly from the base. (Figure J)

Figure K

15. Remove sealant silicone with sharp tool. (Figure K)

Figure L

16. Remove the brush plate. (Figure L)

Figure M

17. Rotate rotor to position shown. (Figure M)

Figure N

18. Remove the rotor. (Figure N)

Figure O

19. Loosen the screw that holds the clamp on the reed switch. Mark the relative position of the switch for reference in reassembly. (Figure O)

Figure P

20. Remove contact pin from connector with sharp tool. (Figure P)

Figure Q

21. Squeeze pin slightly to pass through orifice in weldhead base to remove contact pin from the base. (Figure Q)

Figure R

22. Remove the reed switch by sliding it out of the clamp. (Figure R)

Figure S

23. Inspect all gears for wear and obstructions. The bevel-slip gear, the main gear and the miter gear (on the motor coupler shaft) are most susceptible to wear and/or damage. (Figure S)

Figure T

24. Inspect the gear-motor output shaft for alignment. Inspect the coupler shaft for integrity and inspect each gear bushing for gouging and burrs. (Figure T)

25. Clean the weldhead with a denatured alcohol dampened swab.
26. DO NOT IMMERSE any parts in any solvent.
27. Wipe the surfaces only as required to remove accumulated dirt and foreign particles.

CopperHead Reassembly

NOTE:

Reassembly of weldhead base and shims is explained in kit instructions 091-0587. Follow directions for reassembly before continuing with this supplement.

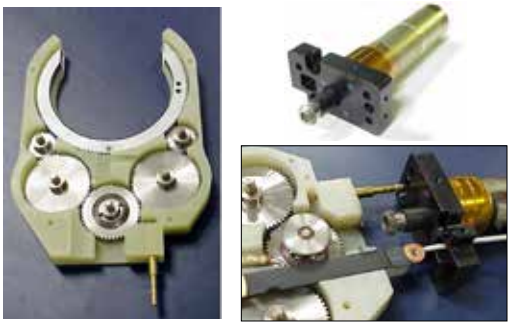

Figure A

1. Install gears into base and onto motor coupler shaft. (Figure A)

Figure B

2. Squeeze pin slightly to pass through orifice in weldhead base. (Figure B)

Figure C

3. Insert contact pin into connector with sharp tool. (Figure C)

Figure D

4. Reinstall the reed switch; sliding it into the clamp and tightening the clamp screw. (Figure D)

Figure E

5. Position the top end of the reed switch over the small round magnet pressed into the rotor. The top of the reed switch should not overlap more than ½ of the magnet diameter and should not be positioned entirely below the magnet. (Figure E)

6. Reed Switch Adjustment:

   Adjusting the reed switch position may be necessary to properly align the rotor within the weldhead. When the weldhead is in the “home” position, the rotor should be centered on its race. In order to align the rotor, the motor block needs to be connected to the base housing and both the reed switch and the motor will need to be electrically connected to the small circuit board within the handle of the weldhead. Also, the weldhead electrical cable needs to be connected to an MK Products power supply, so the head can “jog” and “home.” ***The machine should be used in “Test Mode” during this process, for safety reasons.*** Start by securing the reed switch with the clamp. Tighten the clamp enough so the switch does not move freely. With the weldhead connected, “jog” the rotor a short distance, then press “home” When the rotor stops at “home”, look at each end of the rotor. If the rotor is positioned properly, there will be the same amount of the white race material extending from each end of the rotor. If there is more race material at one end than the other, you can make ***small*** adjustments to the position of the reed switch to correct this. Press and release “jog” and then “home” to check if the process should be repeated.

Figure F

   Some trial and error may be required to achieve the desired results.

   When the reed switch is in its desired location, secure the clamp screw tightly, making sure the reed switch does not move. Use a small amount of GE RTV 108 Silicone Adhesive MK #823-0042 to secure the clamp in place and prevent the clamp screw from backing out. Disconnect the motor and reed switch from the weldhead circuit board, and proceed with reassembly. (Figure F)

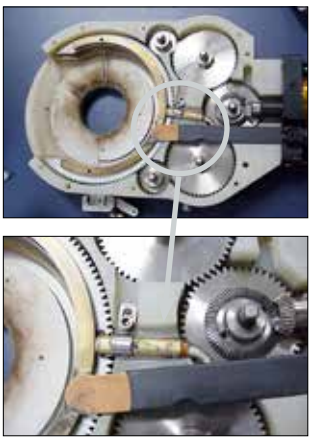

Figure G

7. Align the brush plate over the rotor and check that the brass tube of the reed switch is not touching the brush plate. (Figure G)

Figure H

8. Align the weldhead cover housing with the base. Check the alignment of the pins in the cover with the holes in the brush plate. With the base and cover closed together and with no obstructions, replace the screws. (Figure H)

Figure I

9. Seal the gap hole with GE RTV 108 Silicone Adhesive MK #823-0042. (Figure I)

Figure J

10. Fill square hole with GE RTV 108 Silicone Adhesive MK #823-0042. (Figure J)

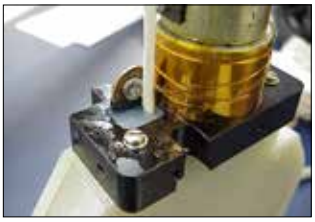

Figure K

11. Clean and let set for 24 hours. (Figure K)

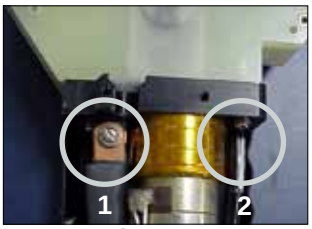

Figure L

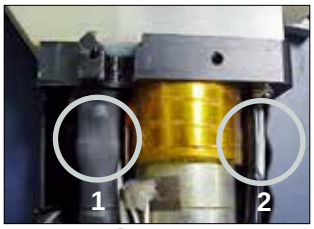

Figure M

12. Install gas line. (Figure L)

13. Install heat shrink prior to connecting brush plate with screw. Cover brush plate screw connector with approximately 2-inches of heat shrink tube MK#739-0008. (Figure M).

1. Heat Shrink
2. Gas Line

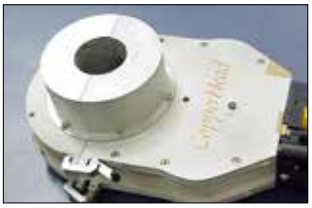

Figure N

14. Install side plate (both sides). (Figure N)

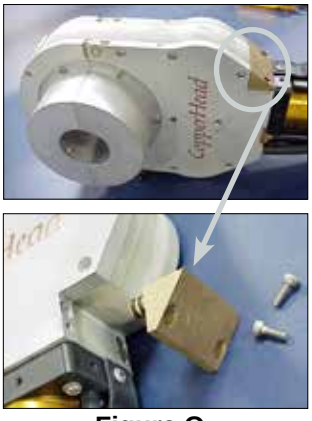

Figure O

15. Locate the water-return/grounding bar and inspect the four o-rings. Replace o-rings if necessary. Otherwise coat the o-rings with an o-ring lubricant and replace them between the two aluminum side plates.

16. Install grounding bar with screws. (Figure O)

Figure P

17. Re-connect motor assembly to the circuit board. (Figure P)

Figure Q

18. Install handle cover. (Figure Q)

19. Perform a Weldhead Calibration to ensure proper operation. See weldhead calibration instructions (CobraTig Owner's Manual 091-0541 and ACL Owner's Manual 091-0568). If the weldhead does not calibrate contact MK Customer Service at (949) 863-1234 or sales@mkproducts.com.

20. Assembly complete.