



MARK V SHOPSMITH MOTOR REPLACEMENT

Recommendation

We recommend that you have your motor replaced by a Shopsmith Authorized Service Dealer or our Customer Repair division. Since you have chosen to do this procedure yourself, please read these instructions thoroughly, paying particular attention to the safety section and to all **WARNINGS, CAUTIONS, and NOTES**. Following are instructions on replacing the motor:

Safety

WARNING

- **READ** and **UNDERSTAND** all instructions before beginning the process of removing and replacing the motor.
- **FOLLOW** all instructions listed below to remove and replace your MKV motor.
- **ALWAYS**, wear *Safety Equipment* including safety glasses.

Tools Needed

- Straight slot or #2 Phillips Screwdriver
- Retaining ring pliers
- Bandsaw or Coping saw
- Drill press with 3/4" bit
- 5/32" Allen wrench
- 3/4" x 2-1/2" x 14" Hardwood Board

Making Spring Compression Board

WARNING

The motor sheave spring is assembled under heavy compressive load and if not removed properly could result in personal injury.

1. Drill a 3/4" hole 5-1/2" from one end in the center of the board. Cut a radius on the end of the board closest to the hole.
2. Turn on MKV and set speed control dial to the fast setting. Then turn off and unplug the machine.

Removing the Motor

3. Remove the single motor pan retaining screw directly under the quill.
4. Move the carriage and headstock to the pivot arm (right) end of the way tubes and lock in place.
5. Raise your MKV to the drill press position.
6. Lock the pivot arm in this vertical position.
7. Remove the two screws in the sides of the belt cover. Raise the cover and tape or wire it to the way tube tie bar.
8. Spread the sheaves on the motor shaft with hands and remove the drive belt.
9. Place your retaining ring pliers close by for next operation.
10. Facing the bottom of headstock - place the compression board on the washer at the end of the spring with the radiused end of the board to your left. With both hands fully compress the spring then rotate the board clockwise until it catches under the headstock casting at the way tube.

WARNING

The spring position is held by the wedge action of the board. **DO NOT** let the board shift.

- a. Hold this spring position, being sure that the board does not move from the wedged position against headstock.
11. Remove the retaining ring, then using both hands, rotate the compression board counterclockwise releasing the spring slowly.

WARNING

This spring is held by the compression board under load. Be certain that you slowly back the spring load off using the compression board.

12. You can now remove the washer and spring from the motor.
13. To remove the floating sheave slide the sheave off the motor shaft.

NOTE

When doing this you must be sure that the square key does not slide out with the sheave, this could cause damage to the sheave.

14. Before removing the fan sheave, rotate the motor shaft until the long key aligns with the hole in the bottom of the motor pan, then loosen the set screw behind the fan sheave with a 5/32" Allen wrench through the hole in the bottom of the motor pan.

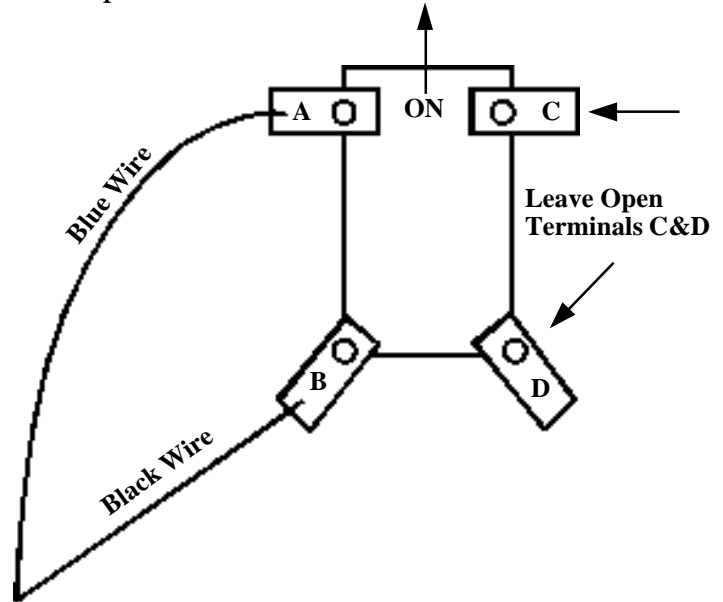
Replacing the Motor

15. Disconnect the motor leads from the switch and remove the wire tie.
16. Set your Mark V table to the 90° setting. Place the table through the bottom side of the carriage assembly until it is below the headstock. Lock in place. Place a piece of cardboard on your table to protect it from damage, the table will support the weight of the motor when removed.
17. Remove the remaining four screws holding the motor pan being sure to support the motor pan.

Replacing the Motor

18. Attach the short WHITE wire coming from the motor to the WHITE wire coming from the power cord.
19. Attach the BLACK wire coming from the power cord to the "B" bottom terminal on the switch.

20. Attach the BLUE wire coming from the motor to the "A" top terminal on the switch.
21. C & D terminals on the switch are left open.



22. Secure all wires, with the plastic tie and clip, inside the headstock to prevent damage from moving parts.

NOTE

If you have an older machine without the proper leads to connect directly, without modification. We strongly recommend that you replace the power cord (Part Number 513970) at this time.

Re-Assembling the Unit

23. Reverse the steps for re-assembly.

NOTE

If you have any additional questions, please call our Customer Service Department toll-free: 800/762-7555; or visit our website www.shopsmith.com

