

## FILABOT EX2 MOTOR REPLACEMENT PROCEDURE

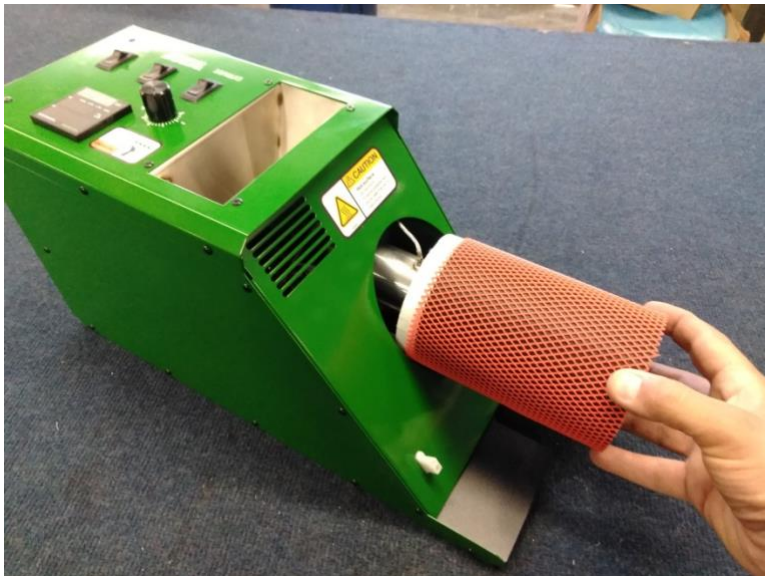
09/05/2018

### Tools Needed

- #2 Phillips Screwdriver
- Small flat screwdriver
- Long flat screwdriver
- Pliers
- Rivet gun
- 3/16 hex wrench
- Drill
- Small drill bit – 1/8in diameter or similar

### Steps

1. Remove the insulation by sliding it off the end of the barrel.



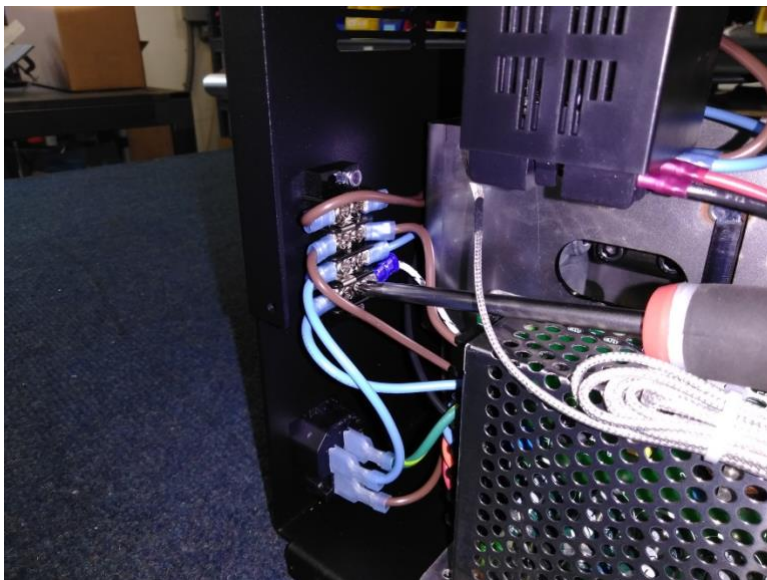
2. Use a small flat screwdriver to gently pry the nylon rivets out. The bottom rivets can be pushed up slightly first from the underside of the machine. Remove the front, back, and side panels. Squeeze the white molex connector clips to remove it from the side panel.



3. Drill the heads off the 6 rivets on the top panel.



4. Remove one heater cable from the terminal block.



5. Remove the other heater cable from #2 on the solid state relay.



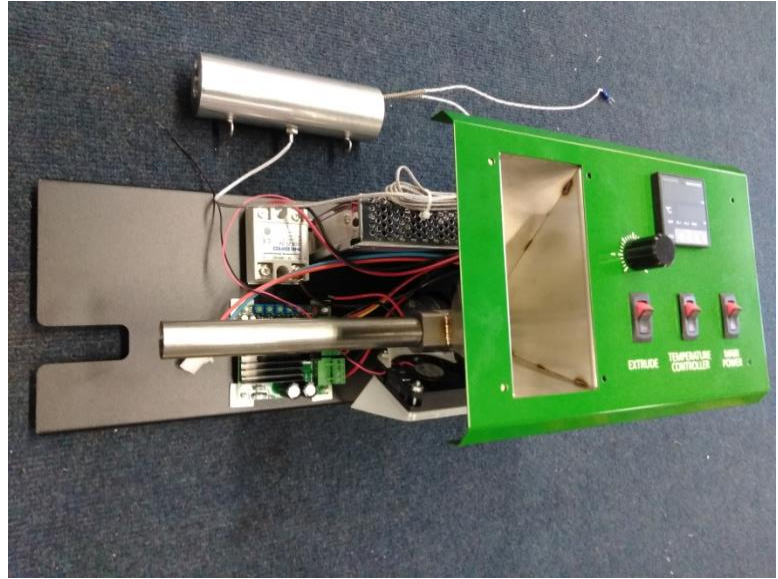
6. Loosen the 2 spade screws on the heater block.



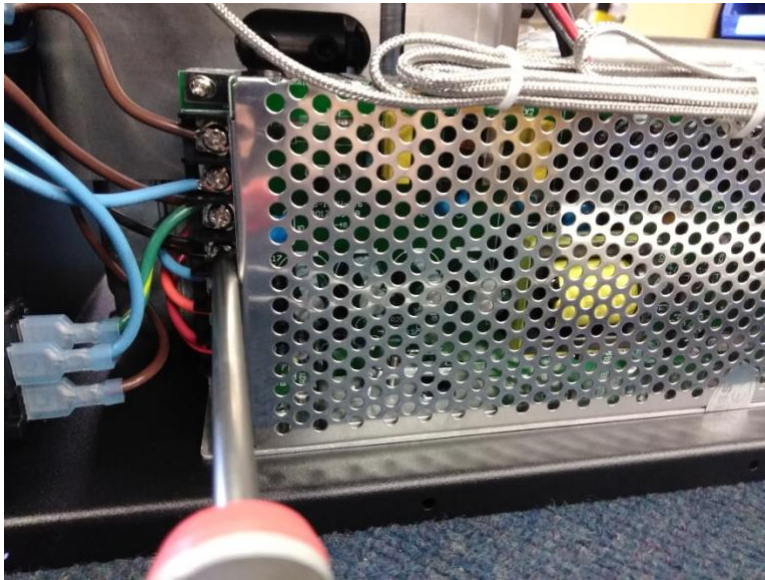
7. Loosen the thermo couple on the heater block.



8. Slide the heater block off the end of the barrel. You may need to pull slack from the wire bundle on top of the power supply. Set the heater block aside.

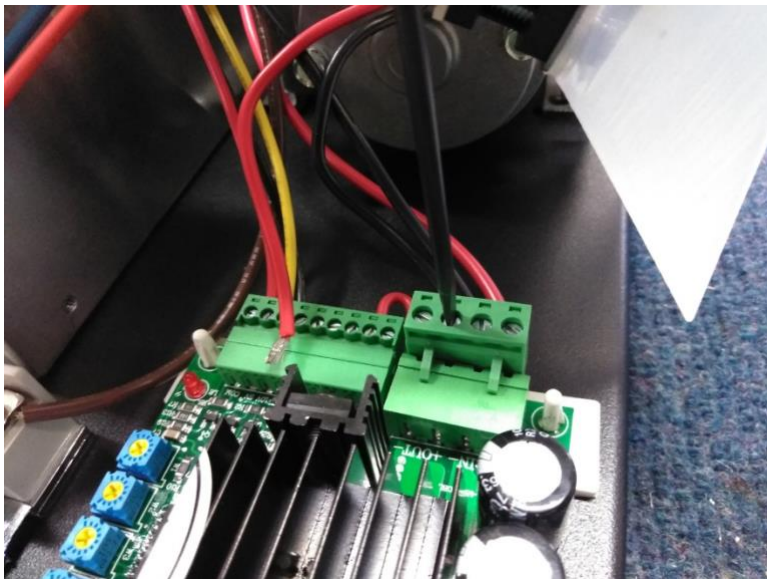
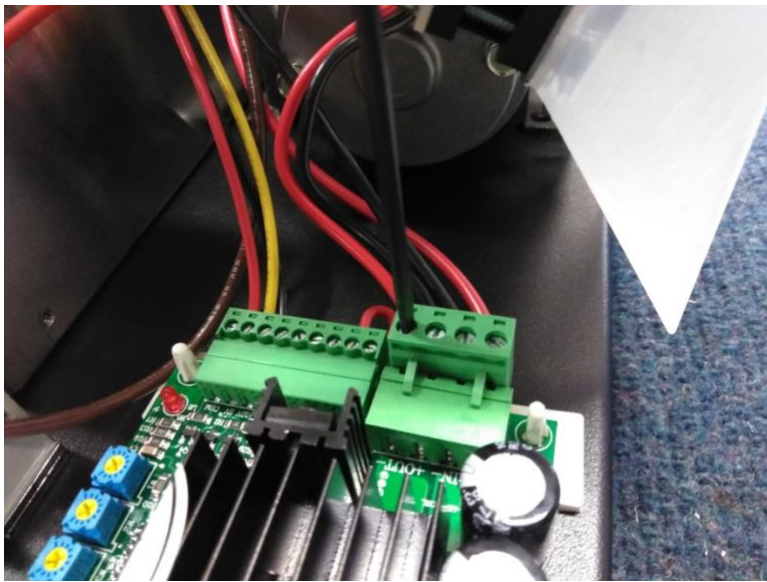


9. If your machine has a fan, remove the black and red fan cables from the power supply.





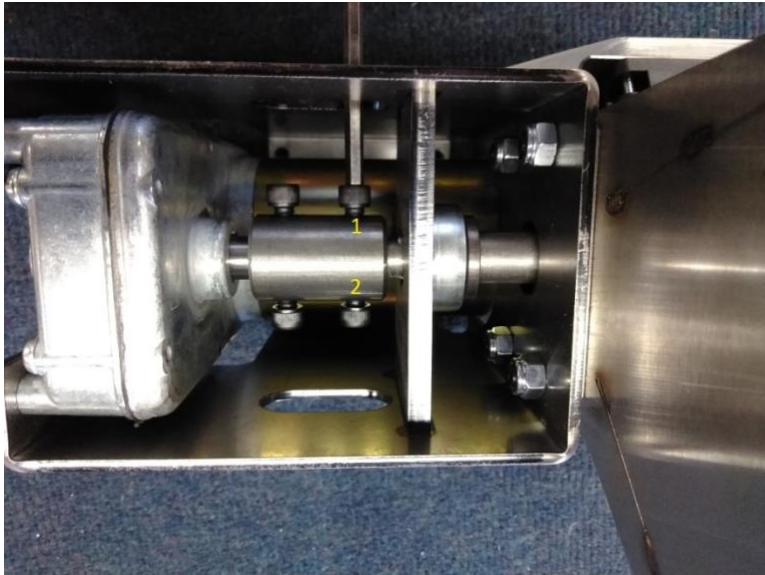
10. Remove the black and red motor cables from the drive motor speed board.



11. Tip the machine on its back and remove the 4 screws holding the motor while holding the screw barrel.



12. Loosen the 2 motor coupler screws securing the auger. You may need to rotate the motor shaft to align the screws with the slots of the motor frame.



13. Gently pry the auger away from the motor using a flat screw driver.



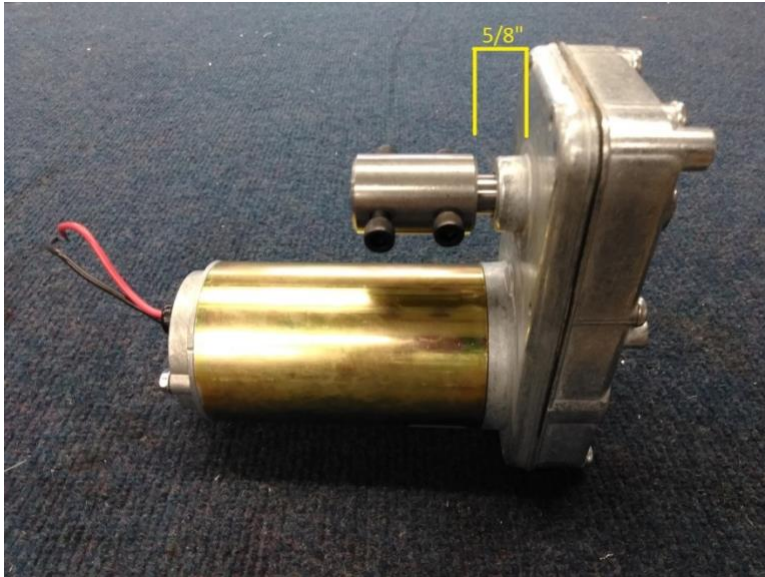
14. Remove the 4 screws holding the motor to the motor frame.



15. Lift the motor frame off from the motor.

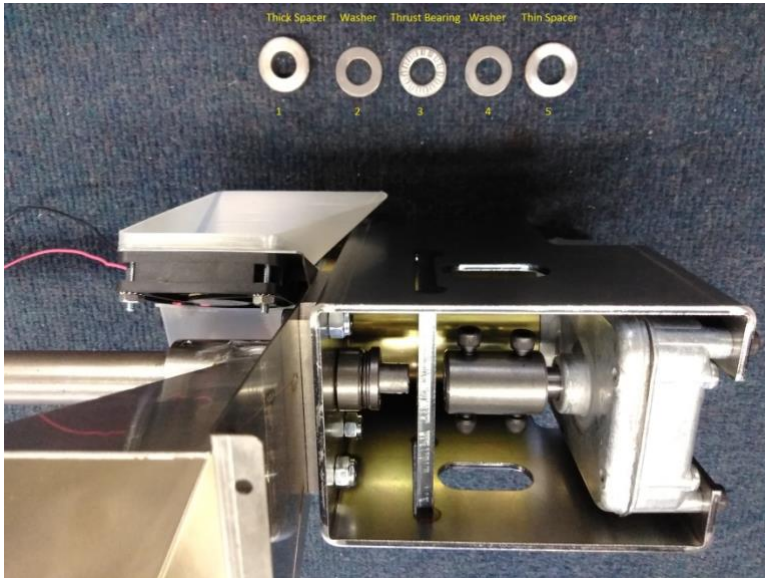


16. Remove motor coupler from old motor by loosening 2 remaining screws and pulling off end shaft. Secure motor coupler to new motor by tightening the 2 screws. Position the motor coupler so the end of the coupler nearest the motor is  $5/8$ " away from the gearbox.



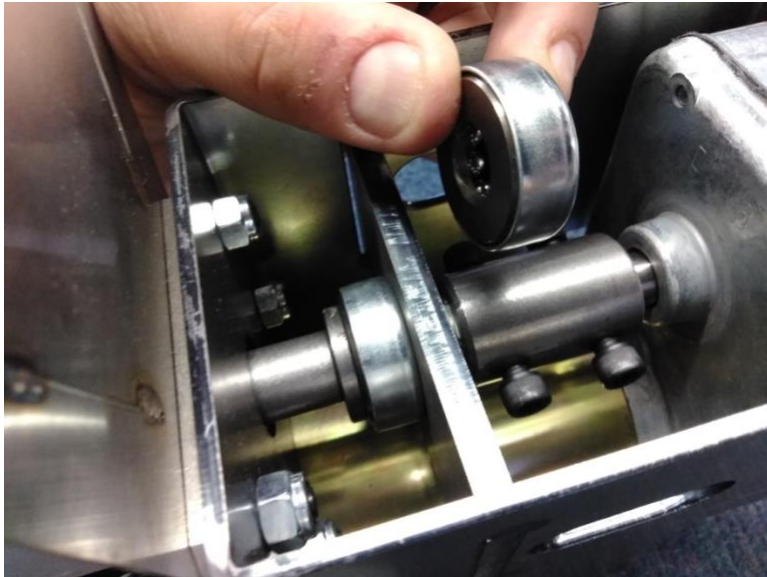
17. Drop motor frame over motor and secure with 4 screws. (See previous picture from step 14)

18. Ensure the stack up of the bearings on the auger is correct for your machine before securing to motor coupler.



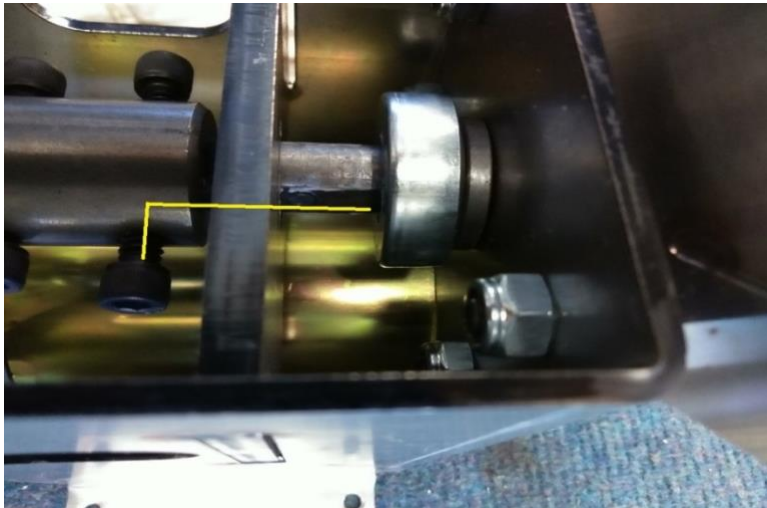
Needle Thrust Bearing



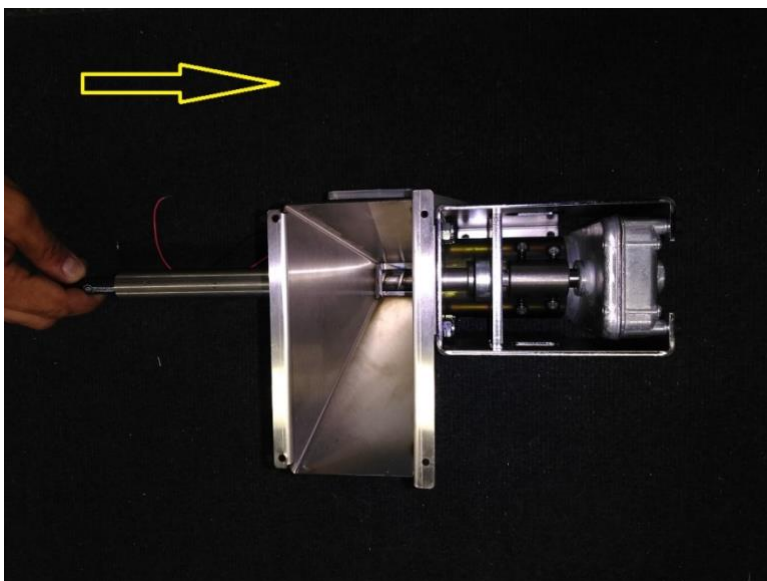


Ball Thrust Bearing

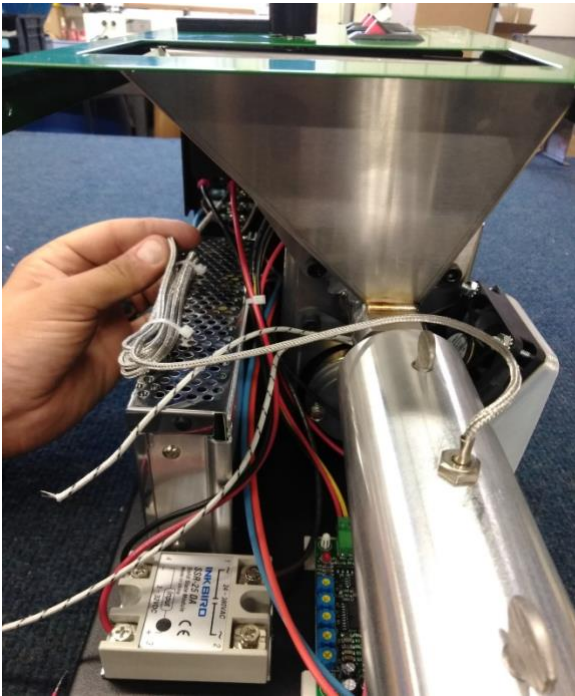
19. Align the flat of the motor shaft with the screw of the motor coupler.



20. Use the handle of a small screw driver to push the auger into the motor coupler.



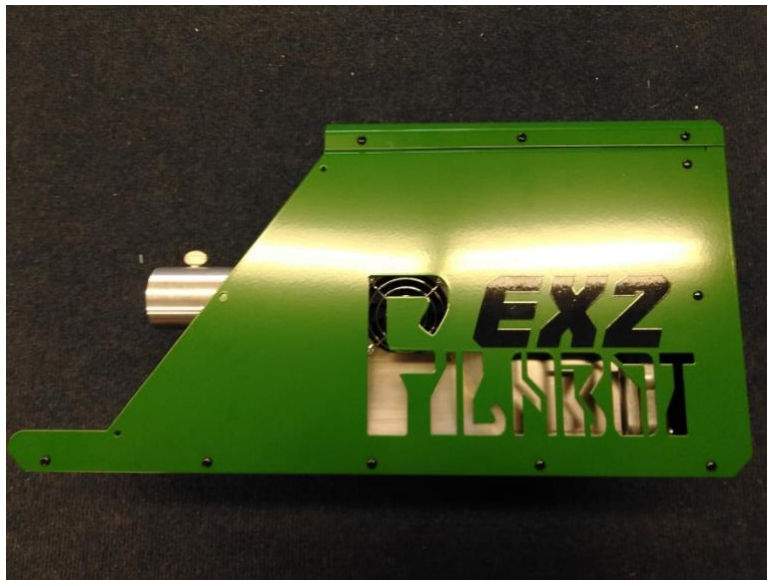
21. Tighten the 2 motor coupler screws onto the auger while maintaining pressure on the auger in the direction of the motor. (See previous picture from step 12).
22. Hold the motor assembly by the barrel while securing it to the base plate of the machine using 4 screws. Be careful not to pinch any cables underneath the motor frame. (See previous picture from step 11).
23. Place top panel back on top of motor assembly.
24. Reconnect the red and black motor cables to the drive motor speed board. In order for the motor to spin the correct direction, the red cable gets connected to the “-” and the black cable gets connected to “+”. (See previous pictures from step 10)
25. Reconnect the red and black fan cables to the power supply. Black goes to “COM” and red goes to “+V”. (See previous picture from step 9)
26. Slide heater block back over the barrel, **flush** with the end of the barrel while keeping the thermo couple directly on top. Pull the thermo couple wire back into the bundle to remove excess slack. Thermo couple cable should loop back past the rear spade screw so the insulation can slide over it.



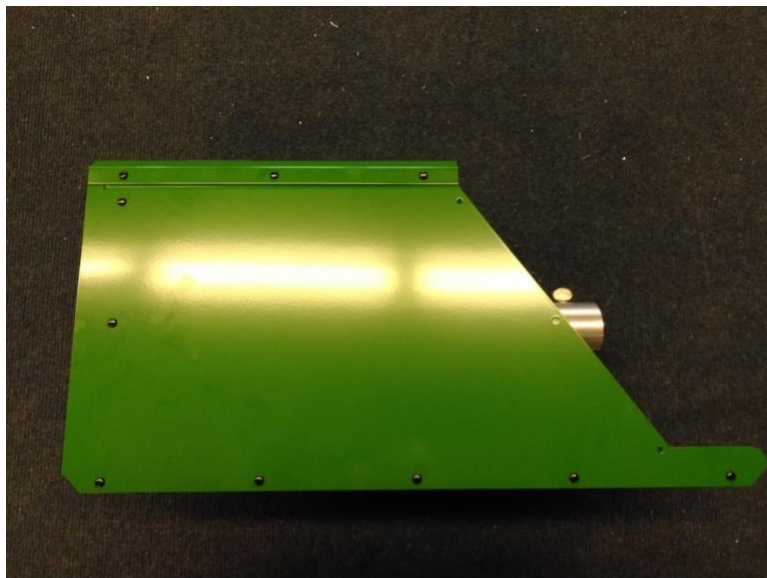
27. Retighten the 2 spade screws so they are parallel with heater block and the insulation can slide over them. Be careful not to overtighten as they can break; just tight enough so the heater block won't move and the spade screws are properly aligned.
28. Retighten the thermo couple just snug. Overtightening can cause damage.
29. Reconnect one heater cable to the terminal block. (See previous picture from step 4)
30. Reconnect one heater cable to #2 on the solid state relay. (See previous picture from step 5)
31. Rivet the top panel in place.



32. Install remaining panels. Snap the molex connector of the accessory port into the side panel.



Front Panel



Rear Panel



Side Panel

33. Slide the insulation over the heater block. (See previous picture from step 1).