**Windshield Wiper Motor Rebuild**

***Bold Italic names are found on the diagram for reference***

1. Clean/bead blast outer casing and exterior parts.
2. Disassemble wiper motor, needle nose or other pliers work well with the special screw heads. Take careful note of how it is assembled and if possible photograph the unit and reversing mechanism. Remove all slab head screws, then remove the reversing mechanism ***cover*** (with Trico logo). Carefully remove top round “flywheel,” being sure not to lose the small ***rocker spring*** attached to it or break the ***rocker home*** piece.
3. Clean internal surfaces and parts using adhesive remover or paint thinner.
4. If possible, bathe in ultrasonic cleaner for internal cleaning. This step helps to remove sand or grit leftover from the initial blasting.
5. Swab passages and blow out with compressed air to ensure they are clear.
6. Resurface inside body cylinder and cap recess as necessary using 600 or higher grit sandpaper.
7. True the cylinder top surface, ensuring it sits flush on a flat surface.
8. Check for bowing of cylinder casing.
9. Clean or rebuild ***paddle*** assembly including ***exhaust valve gasket*** (parking seal) if necessary; frequently the paddle is in good enough shape to not need this.
	1. If paddle assembly needs rebuilding, use blue scraper tool to carefully clean gasket remnants from brass paddle plates
	2. Involves “forming” the seals (see below) to seat the paddle properly
10. Smooth rim of parking cup on lid
11. Lubricate all paddle edges with silicone grease included and reinstall into the cylinder.
12. Fit lid gaskets onto lid. On re-assembly, install and snug the four center slab head screws in a cross-pattern, as you would a wheel, then install the rest of the screws around the edge alternately.
13. Clean and check reversing mechanism parts
14. Replace ***felt silencer*** in reversing mechanism
15. Clean and resurface reversing mechanism slide valve as necessary and be sure it sits flush against the body. Remove any excess gasket material as needed.
16. Lightly lubricate the ***slide valve*** surface
17. Reinstall reversing mechanism, with the hook of the reversing mechanism ***retainer*** facing up. Hook the ***rocker spring*** around the retainer bottom (hooking it in the smaller gap) and the base of the ***rocker home*** part (flat edge).

NOTE: the reversing mechanism ***valve rocker*** is attached to a “flywheel” on Lincoln models.

1. Hook the rounded edge of the ***rocker home*** part around the hook of the reversing mechanism “flywheel” and slide the flywheel onto the paddle shaft.
2. Replace the reversing mechanism Trico branded cover with gasket.
3. For 40-41 motors, reinstall the switch slide, ensuring that the washer is on the top screw of the slide.
4. Replace felt air filter
5. At this point, the wiper motor should be fully assembled. With the motor on its side, place the motor arm in a vice and work the motor body unit back and forth to ensure smooth function of the paddle and listen to hear the click of the reversing mechanism. If you have a vacuum pump, test the motor using the pump. It should move back and forth smoothly. If there is vibration or “chatter” lubricate the area around the paddle shaft with motor oil and allow the motor to run and work in the oil. The speed of the wiper motor can be throttled by partially closing the lever. When the lever is fully closed, your motor should park itself, returning the arm to its initial position. If the motor does not park, you will have to self-park the wipers by properly timing the off lever.

**Paddle Rebuild Instructions (if needed)**

1. Drill out the 4 rivets. Note the spacers between the plates
2. Remove the old seal material from the inner and outer plates and thin brass gaskets. Be careful not to damage the brass gaskets. Note their orientation and layers as well as how the seal material is formed. Smooth out any folds in the brass plates with the plastic tool.
3. Clean the inner and outer stainless plates
4. Clean the shaft
5. Using the plastic scraper, you can clean the residue off the brass gaskets on a firm surface. Use paint thinner or adhesive cleaner to help disolve
6. Use the new rivets to help line up the assembly and “build” up the layers with the shaft in place and oriented correctly placing the new seal material in its proper layer. For the ***exhaust valve gasket***, place that on the longer rivet and position on the spacer accordingly.
7. Once you have the layers properly aligned and fitted you can seat the rivets with a punch to secure the assembly.
8. The edges of the seal need to be folded towards the center line of the “sandwich”. Run your fingers around the edges multiple times to get the seal to being to take shape folding towards the center line.
9. Forming and fitting the seal is the hardest part of the rebuild. Oringially, Trico used a “Forming Tray” that would form the seals overnight so they took the proper shape.
10. When you insert the paddle into the cylinder body, use the plastic tool to ensure the edges remain folded towards the center line as you push it in. You can insert the paddle at an angle to get one side aligned correctly as you work the paddle in using the plastic tool to push the seal edges inward. If the seal folds ourtward, remove and try again.
11. When you replace the cover, its important the upper portion of the paddle is also formed towards the center line of the sandwich so it seats properly upon re-assembly.
12. Use some silicone lube to lube the edges and sides of the cylinder as well as upper lid recess.
13. Take your time and if at first you don’t succeed, try again.

For illustration only, diagram is not specific to Lincoln wiper motors

