

WINDSHIELD WASHER REPAIR

(Two Articles)

1963-1974 Corvette Washer Pump Valve Repair

<http://www.corvettemagazine.com/tech-articles/1963-1974-corvette-washer-pump-valve-repair/>

Have you ever pressed your windshield washer button, heard the washer pump engage but the washers didn't work? You check to make sure the reservoir is full, the lines are all connected and not broken and the nozzles are clear but still no washer fluid is pumped through the nozzles. The problem is usually the washer pump nozzle valve. This is the valve that is attached to the washer pump. This valve receives the water from the reservoir and then the pump forces the water out through the nozzle valves. The rubber diaphragms in the valve usually dry up causing the valve assembly not to operate. As with any project, you will need the right Corvette parts and Zip [Corvette Parts](#), 8067 Fast Lane, Mechanicsville, VA 23111, 800-962-9632, will be able to supply all of your needs. You can usually repair this problem inside of 2 hours and for approximately \$13 or less. This valve package fits 1963-1974 Corvettes plus some of the earlier and later Corvettes. Follow along as we repair our Corvette's washer valve on our project 64 Corvette and see just how simple it is to make your washers work like new again.



Step 1: Here is our Corvette wiper motor with all of the items included with the WW-206 Washer Pump Valve Kit. We removed our wiper motor from the car so that we could show the repair more clearly. You do not have to remove the wiper motor for this repair. Consult your Corvette shop manual to see how to remove your particular wiper motor washer assembly.



Step 2: Remove your washer pump assembly. Now is a good time to check the washer pump gears and also clean and lube them.



Step 3: Remove the washer pump nozzle valve assembly.



Step 4: After you have removed the nozzle assembly, check the washer pump diaphragm. If it is cracked or torn, you will have to replace it before you go on.



Step 5: Here you can see the old nozzle valve assembly on the left and the new one on the right. The one difference is that one is light colored and the new one is black. Zip's new reproduction washer pump valves are white plastic and will ensure your Corvette maintains its original appearance.



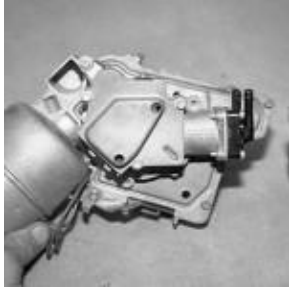
Step 6: Choose the nozzle assembly that is the same diameter, and direction as your original. Two different ones are included with each valve package to accommodate the two different hose sizes.



Step 7: Install the O-rings on the valve assembly. Then match the nozzle up to the valve assembly.



Step 8: Install the new washer pump valve assembly and nozzle onto the washer pump. Then install the pump back onto the motor.



Step 9: Here it is assembled with the new valve package. Notice the difference between the old and new nozzles. As you can see, it will not make any difference in the installation. When you are ready to try your washer, it is a good idea to prime the valve and pump assembly first. Do this by forcing water through the reservoir hose into the reservoir side of the new valve assembly. This way your Corvette's washer pump will not be trying to pump the diaphragm while it is dry.

Windshield Washer Repair

NCRS Technical Archives:

<http://www.ncrs.org/forums/showthread.php?70439-C2-Windshield-Washer-Issue&highlight=year+windshield+washer>

- The windshield washer on my '65 convertible doesn't work, but my windshield wipers are working fine. I push the small button in the center of the wiper switch, but nothing happens. When I push the button, I don't even hear the motor attempt to move the water.
- Take the hose off the water bottle and with a mouth full of blow into the line, water should come out the nozzles, then try the pump with the hose hooked back up. You may get lucky and it just needs priming. If you not hearing it click it's probably the pump.
- The washer pump gets its motive force from the windshield wiper transmission. When the washer button is pushed, a solenoid is energized, which causes a pawl to engage the wiper transmission output gear. The washer pump assembly goes along for the ride for a set number of wiper gear revolutions, until the mechanism forces the pawl to disengage.

If you can hear the pump diaphragm pulsating steadily, then follow the advice above. Once the center button is pressed, the pump will engage and you'll hear it cycling for about 10 seconds, or, about 7-10 full revolutions of the wiper transmission. If priming and checking for cracked hoses, checking the distribution block cover seals for leaks, and checking the poppet valves for blockages doesn't help, then you have a ruptured pump diaphragm.

If you do not hear the pump cycling, but you DO hear a single "click" when the washer button is depressed, then the engagement pawl or return spring in the transmission is damaged or jammed.

If you do not hear a "click" when the washer button is depressed, check for an "open" in the pump ground circuit. Another likely culprit is an "open" in the pump engagement solenoid windings.

- I went through the testing that you all had suggested (priming with a mouth full of water was fun), and it appears that I need a new pump bellows rebuild kit. The motors definitely works, and it appears that the pump is working too, but it's not pumping the water. When I tried to prime the nozzles, only one would squirt water.
- I had mine apart last weekend to troubleshoot it. I checked the Eckler's catalog as to your first question, and I think you only need the internal rebuild kit if you think your bellows is bad. The cheaper valve kit seems to just include the o-rings, white plastic nozzle unit and screws. If your nozzle unit is not damaged, you should not need that kit. Now, I did not try to simply unscrew the inlet/outlet valve assembly in place. I followed the procedure outlined in the corvette shop manual, and removed the pump assembly from the wiper motor assembly first. This was not difficult once I had proper tools. I had to remove the upper shielding and pull off my distributor cap and lay them aside to clear the work area. I studied the ground connection at the lower left hand screw for a few minutes to understand how that is attached.

I lubricated the moving parts in the washer pump assembly, and ran it around for a few cycles by hand. I reassembled everything in only a few minutes, (as I now understood how simple it fits together). I tried to operate the washers using the just the button and still got nothing. However, when I turned on the wipers, and then hit the button, spray!

- Press the washer button while the wipers were going. If nothing there, then I suggest removing the washer pump assembly whole, and then dig into the nozzle unit. I found that even with the washer assembly on the workbench, it was difficult to remove the bellows. It felt like it did not want to come out, so I did not force it out. It was supple and flexible so I left it in. I surmise yours is good too. And even if bad, you will have a heck of a time pulling it out while reaching into that dark recess your wiper motor set in. It would not be hard to get the nozzle piece off and that gives you access to the three little gaskets, but the bellows stays stuck in the washer assembly.
- To visualize how the system works, you need a copy of the 1963 Corvette Shop Manual (the WSW motor & pump were essentially the same, so coverage isn't great in the 64 and 65 Supplement books).

The pump is driven by the rotation of the WSW motor. There's drive pin on the bottom of the washer that engages with a hole in the drive gear of the wiper motor. It's easy for a novice to install the pump onto the motor without aligning these resulting in no washer pump action!

When you push the switch to call for washer fluid, you fire a solenoid in the washer pump that releases the pump's ratchet arm onto the pump's drive prowl. That causes the pump's piston arm to move back and forth to execute the pumping task.

All the descriptive text aside...if you remove the plastic cover from the washer pump and watch what happens when you trigger the washer switch, you'll be able to see the system working (or trying to work)...