

81-85 12A Shutter Valve (Coasting Valve)

The 81-85 12A RX-7's have a valve that opens on deceleration (by vacuum and a solenoid and the Throttle Position Sensor) ([Buy it here](#)) to lean the mixture out for emissions. They LOVE to go bad ! We have heard of MANY unnecessary carb rebuilds due to this valve being bad.

The symptoms are a rough idle, and a "weird" noise on decel and/or idle. Various descriptions of the noise are: honking, whooshing, vacuum cleaner sound, etc.

They are not that hard to replace, which is why we created this "How-To" page. There are other ways the valve can be bad that are much harder to describe, but when tracing a rough idle, vacuum leak type of poor running, but the compression and ignition systems are good - check this valve.



TESTING: With the engine running at an idle, there should be NO air being sucked through the air filter hole as shown in the picture. Just put your finger over the hole to see if there is any vacuum. If it is pulling air the valve is probably no good.



The valve you are heading for is buried down in this mess!



The new valve looks like this. The images below show where it bolts onto the manifold. On the lower right image, note how the linkage of the valve hooks onto the manifold butterfly shaft. This linkage can also break, which means you had to do the valve anyway. Note: When you get to where you can see the end of the butterfly shaft, check the wear on the pin that the valve linkage slips over - if it is worn too much (or sometimes even broken off), then you need to replace the intake

manifold (with a better used one) or replace the butterfly shaft.



The two carb base nuts on the fender side are removed with a normal 12mm wrench. Note the afterburn valve has been unbolted from the carb.



These two 12mm wrenches, or ones very similar, are by far the best way to get to the two engine side carb base nuts. We have not found any easy way to get to those two nuts without these - sorry.



The wrench with the shorter base length is used on the forward nut, and the one with the longer base on the rear nut.



Here we are fishing out the dropped nuts with a long magnet - you will do this a lot. The magnet is also used to re-install the nuts, so be sure you have one.



When the four carb base nuts are off (and retrieved with the magnet), and the afterburn valve is unbolted from the carb, the carb can be lifted up and held with a short 2x4 under it.



The two bolts holding the valve to the manifold are now accessible. We prefer using a 1/4" ratchet with a deep 10mm socket because there is limited room. If the gasket is in VERY good shape, you can risk not replacing it, otherwise scrape it off. If replacing it, then glue the new gasket to the valve with Gasacinch, or something similar.



This is a view from the other side, with the carb held up by the 2x4. Note that none of the vacuum hoses needed to be removed. Caution: be careful with the oil metering pump lines - they are usually VERY brittle.



After the new valve is installed on the manifold, and the carb set back down on the manifold - you get to try to put the inside base nuts back on !! We use a bendable magnet to hold the nut on top of the stud, then rotate the nut onto the threads with either your finger, or a long screwdriver. There are other ways to do this, but we have found this to work best.

Be sure to hook up all the hoses to the valve and the air filter canister when you are putting everything back together.

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