

Snubber Valves

All three stand pipe configurations use a snubber valve in the high–pressure oil circuit to limit high–pressure disturbance or feedback from the injector. In Ford® literature, these valves are described as check valves but since they allow high–pressure oil to flow unimpeded in one direction and force the oil to flow through an orifice in the other direction, they're snubbers. As shown in the photo to the right of the valve in a 2005¼–2006¼ rear supply port plug (part of 5C3Z–9A332–A stand pipe/valve assembly), the assembly includes a spring, along with a powder metal snubber plate with three integral tabs to guide the plate in its bore and limit its travel.

Snubber Valve Failure

We've found pieces of broken off snubber valve tabs (attached to a magnet in the photo below) in the high–pressure oil inlet area of 6.0 L Injectors. This resulted in misfire complaints. After finding at least one broken tab, you need to determine if any other tabs are broken and if they are, that they're all accounted for. We suggest you disassemble the valves from both cylinder heads to determine how many tabs are broken off. If all tabs are not found in the injector(s), it is suggested you remove the rail end plugs and flush the rail to locate them.

Note: To replace valves on 2004¼–2006¼ models, you will need to buy the complete stand pipe/valve assembly: 5C3Z9A332A 6E7Z9A332A

Snubber Valve Malfunction

Debris in the snubber valve area can also lead to a driveability complaint. The non–ferrous piece shown in the photo at right (it appears to be a plastic fragment of the frame of the IPR valve screen or the high–pressure oil reservoir filter) was found in the snubber valve assembly of an engine that was being diagnosed for a flutter/vibration complaint on one bank. The position of the debris, wedged between the snubber plate and its bore, had no effect on the flow of the high–pressure oil inlet into the rail but prevented or reduced the snubber effect of the valve when ICP was reduced. Although no codes were present to lead the technician directly to this malfunction, in hindsight, we suspect the IPR duty cycle would show high variation at constant RPM.

