

VIN 1G1YJ2DE5C5108874

odometer: 16,334-mi.

engine build date: 2/21/12

vehicle build date: 3/6/12

vehicle sale date: 4/20/12

"Wiggle test" valve stem-to-guide clearance measurements with dial indicator, done with heads on engine per 2012 Service Manual, pg 9-882. Driver side head SN C0341406, passenger side head SN 0350919. Performed by owner on 5/25/14.

Raw measurements taken 1.44-in. above top of guide, on thrust vector, with rockers, locks, retainers, springs and stem seals removed.

1I	.0092	2E	.0045
1E	.005	2I	.010
3I	.010	4E	.0047
3E	.0045	4I	.011
5I	.0095	6E	.004
5E	.0045	6I	.011
7I	.011	8E	.0045
7E	.005	8I	.007

Stem-to-guide clearances derived with trigonometry using 1.0-in. as side opposite

1I	.0038**	2E	.0018
1E	.0020	2I	.0041**
3I	.0041**	4E	.0019
3E	.0018	4I	.0045**
5I	.0039**	6E	.0016
5E	.0018	6I	.0045**
7I	.0045**	8E	.0018
7E	.0020	8I	.0029*

* greater than production tolerance: .001-.0024 intake, or .001-.0026 exhaust

** equal to or greater than .0037-in Service maximum

"Wiggle test" valve stem-to-guide clearance measurements with dial indicator, done with heads removed and partially disassembled. Driver side head SN C0341406, passenger side head SN 0350919. Performed by Mark DeGroff's Cylinder Head Service and Machine Shop, Northridge CA, on 7/1/14.

Raw measurements taken 1.44-in. above top of guide, on thrust vector with locks, retainers, springs and stem seals removed.

1I .007	2E .0035
1E .0035	2I .008
3I .005	4E .0045
3E .0035	4I .008
5I .007	6E .0035
5E .004	6I .0095
7I .009	8E .0035
7E .0035	8I .0065

Stem-to-guide clearances derived with trigonometry using 1.0-in. as side opposite

1I .0029*	2E .0014
1E .0014	2I .0033*
3I .0020	4E .0018
3E .0014	4I .0033*
5I .0029*	6E .0014
5E .0016	6I .0039**
7I .0037**	8E .0014
7E .0014	8I .0027*

* greater than production tolerance: .001-.0024, intake, or .001-.0026 exhaust

** equal to or greater than .0037-in Service maximum

Valve stem-to-guide clearance measurements taken directly by Sunnen P-310 valve guide bore gage zeroed at valve stem diameter, done with heads removed and disassembled. Driver side head SN C0341406, passenger side head SN 0350919. Performed by Mark DeGroff's Cylinder Head Service Northridge CA, on 7/1/14.

		thrust vector	non-thrust vector		thrust vector	non-thrust vector
Bottom	1I	.0025*	.0018	2E	.0019	.0018
Middle		.0019	.0019		.0017	.0018
Top		.0028*	.0015		.0014	.0015
Bottom	1E	.0022	.0019	2I	.0024	.0024
Middle		.0016	.0017		.002	.002
Top		.0015	.0015		.0034*	.0023
Bottom	3I	.0022	.0017	4E	.0026	.0017
Middle		.0018	.0017		.0018	.0018
Top		.0025*	.0015		.0014	.0014
Bottom	3E	.0022	.0017	4I	.0027*	.0018
Middle		.0016	.0017		.0021	.002
Top		.0015	.0016		.0039**	.002
Bottom	5I	.0026*	.0018	6E	.0018	.0018
Middle		.0018	.0018		.0017	.0019
Top		.003*	.0018		.0014	.0015
Bottom	5E	.0025	.0018	6I	.0026*	.002
Middle		.0018	.0018		.002	.002
Top		.0016	.0016		.0036*	.0021
Bottom	7I	.0027*	.0019	8E	.0017	.0018
Middle		.0017	.0017		.0017	.0017
Top		.0036*	.0018		.0013	.0014
Bottom	7E	.002	.0018	8I	.002	.0019
Middle		.0017	.0016		.0019	.0019
Top		.0015	.0016		.0025*	.0019

* greater than production tolerance, .001-.0024, intake, or .001-.0026 exhaust

** equal to or greater than .0037-in service maximum

Valve stem-to-guide clearance measurements, taken directly by Sunnen P-310 valve guide bore gage zeroed at valve stem diameter, at middle of guide only. Performed on new bare head SN D0712215 (to be driver side) and new bare head SN D1350135 (to be passenger side) by Mark DeGroff's Cylinder Head Service and Machine Shop, Northridge CA, on 7/21/14.

1I	.002	2E	.0019
1E	.0015*	2I	.0022
3I	.002	4E	.0018
3E	.002	4I	.0024
5I	.0019	6E	.0019
5E	.002	6I	.0025***
7I	.0019	8E	.0019
7E	.002	8I	.002**

*valve stem oversize by .0005

**valve stem oversize by .0003

***greater than production tolerance: .001-.0024 intake, or .001-.0026 exhaust

Valve seat runout measurements taken directly with a Goodson VSG-375 valve seat runout gauge. Performed on used bare head SN C0350919 (passenger side) by Mark DeGroff's Cylinder Head Service Northridge CA, on 7/1/14.

2I .002**
2E .0005
4I .001
4E .001
6I .003**
6E .0015
8I .0035**
8E .0015

** equal to or greater than .002-in Service maximum

Valve seat runout measurements taken directly with a Goodson VSG-375 valve seat runout gauge. Performed on new bare head SN D0712215 (to be driver side) and new bare head SN DD502320 (to be passenger side) by Mark DeGroff's Cylinder Head Service and Machine Shop, Northridge CA, on 7/21/14.

1I .003**	2E .001
1E .0015	2I .003**
3I .005**	4E .0005
3E .002	4I .004**
5I .004**	6E .001
5E .002	6I .005**
7I .003**	8E .001
7E .001	8I .0035**

** greater than .002-in Service maximum