

SPECIFICATION CHARTS

VALVE SPECIFICATIONS											
Year	Engine ID/VIN	Engine Displacement Liters (cc)	Seat Angle (deg.)	Face Angle (deg.)	Spring Test Pressure (lbs. @ in.)	Spring Installed Height (in.)	Stem-to-Guide Clearance (in.)		Stem Diameter (in.)		
							Intake	Exhaust	Intake	Exhaust	
1994	U	2.0 (2471)	45	44	180 @ .15	.760	0.000	0.0013	0.3188	0.3211	
	Y	2.0 (2530)	45	45.0	120 @ .10	.760	0.0010	0.0012	0.3149	0.3149	
	F	2.0 (2591)	45	45.0	120 @ .10	.760	0.0010	0.0012	0.3149	0.3149	
	K	2.0 (2602)	44.5	45.0	200 @ .10	.760	0.0010	0.0015	0.3170	0.3170	
1995	U	2.0 (2690)	45	44	180 @ .15	.760	0.000	0.0013	0.3188	0.3211	
	Y	2.0 (2690)	45	45.0	120 @ .10	.750	0.0010	0.0012	0.3149	0.3149	
	F	2.0 (2691)	45	45.0	120 @ .10	.750	0.0010	0.0012	0.3149	0.3149	
	K	2.0 (2692)	44.5	45.0	200 @ .10	.760	0.0010	0.0015	0.3170	0.3170	

Valve Specifications

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CAMSHAFT SPECIFICATIONS											
All measurements given in inches.											
Year	Engine ID/VIN	Engine Displacement Liters (cc)	Journal Diameter					Elevation		Bearing Clearance	Camshaft End Play
			1	2	3	4	5	In.	Ex.		
1993	U	3.0 (2930)	2.0074	2.0074	2.0074	2.0074	NA	0.255	0.255	0.001	0.001
	Y	3.0 (2930)	2.2189	2.2189	2.2189	2.2189	2.100	0.255	0.255	0.001	0.001
	F	3.0 (2919)	2.2189	2.2189	2.2189	2.2189	2.100	0.255	0.255	0.001	0.001
	K	3.0 (2802)	2.2189	2.2189	2.2189	2.2189	2.100	0.255	0.255	0.001	0.001
1994	U	3.0 (2990)	2.0074	2.0074	2.0074	2.0074	2.0074	0.2650	0.2650	0.001	0.001
	Y	3.0 (2990)	2.2189	2.2189	2.2189	2.2189	2.100	0.2650	0.2650	0.001	0.001
	F	3.0 (2910)	2.2189	2.2189	2.2189	2.2189	2.100	0.2650	0.2650	0.001	0.001
	K	3.0 (2802)	2.2189	2.2189	2.2189	2.2189	2.100	0.2650	0.2650	0.001	0.001
1995	U	3.0 (2690)	2.0074	2.0074	2.0074	2.0074	2.0074	0.2650	0.2650	0.001	0.001
	Y	3.0 (2690)	2.2189	2.2189	2.2189	2.2189	2.100	0.2650	0.2650	0.001	0.001
	F	3.0 (2691)	2.2189	2.2189	2.2189	2.2189	2.100	0.2650	0.2650	0.001	0.001
	K	3.0 (2692)	2.2189	2.2189	2.2189	2.2189	2.100	0.2650	0.2650	0.001	0.001

Camshaft Specifications

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CRANKSHAFT AND CONNECTING ROD SPECIFICATIONS

All measurements in plain text in inches

Year	Engine ID/VIN	Engine Displacement Liters (cc)	Crankshaft				Connecting Rod		
			Main Brg. Journal Dia.	Main Brg. Oil Clearance	Shatt. Engr. Qty	Thrust on No.	Journal Diameter	Oil Clearance	Side Clearance
1994	Y 3.C (255C)	2.5187	6.0714	0.0068	3	2.1181	0.0040	0.0130	
		2.5197	6.0729	0.0077	3	2.1195	0.0049	0.0139	
	F 3.E (315E)	2.5187	6.0714	0.0068	3	2.1181	0.0040	0.0130	
		2.5197	6.0729	0.0077	3	2.1195	0.0049	0.0139	
	L 3.E (380L)	2.5196	6.0704	0.0074	3	2.1170	0.0040	0.0144	
		2.5198	6.0707	0.0076	3	2.1177	0.0041	0.0147	
	V 3.G (207V)	2.5186	6.0704	0.0074	3	2.1180	0.0040	0.0138	
		2.5188	6.0707	0.0076	3	2.1185	0.0041	0.0145	
1995	Y 3.E (255Y)	2.5187	6.0714	0.0068	3	2.1181	0.0040	0.0130	
		2.5187	6.0729	0.0077	3	2.1195	0.0049	0.0139	
	F 3.E (255F)	2.5187	6.0714	0.0068	3	2.1181	0.0040	0.0130	
		2.5187	6.0729	0.0077	3	2.1195	0.0049	0.0139	
	L 3.E (280L)	2.5184	6.0713	0.0075	3	2.1169	0.0040	0.0147	
		2.5188	6.0714	0.0079	3	2.1171	0.0041	0.0149	
	V 3.J (280V)	2.5183	6.0713	0.0075	3	2.1169	0.0040	0.0147	
		2.5188	6.0714	0.0079	3	2.1171	0.0041	0.0149	
A 3.E (380A)	2.5185	6.0713	0.0076	3	2.1170	0.0040	0.0147		
	2.5187	6.0714	0.0078	3	2.1172	0.0041	0.0149		

Crankshaft and Connecting Rod Specifications

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PISTON AND RING SPECIFICATIONS

All measurements in plain text in inches

Year	Engine ID/VIN	Engine Displacement Liters (cc)	Piston Clearance	Ring Gap			Ring Side Clearance		
				Top Compression	Bottom Compression	Oil Control	Top Compression	Bottom Compression	Oil Control
1993	.. 3.G (207G)	0.0074	0.0104	0.0104	0.0104	0.0074	0.0104	0.0074	0.0104
		0.0072	0.0102	0.0102	0.0102	0.0072	0.0102	0.0072	0.0102
	Y 3.G (255Y)	0.0074	0.0104	0.0104	0.0104	0.0074	0.0104	0.0074	0.0104
		0.0072	0.0102	0.0102	0.0102	0.0072	0.0102	0.0072	0.0102
1994	.. 3.G (207G)	0.0074	0.0104	0.0104	0.0104	0.0074	0.0104	0.0074	0.0104
		0.0072	0.0102	0.0102	0.0102	0.0072	0.0102	0.0072	0.0102
	Y 3.J (280Y)	0.0074	0.0104	0.0104	0.0104	0.0074	0.0104	0.0074	0.0104
		0.0072	0.0102	0.0102	0.0102	0.0072	0.0102	0.0072	0.0102
1995	L 3.J (280L)	0.0074	0.0104	0.0104	0.0104	0.0074	0.0104	0.0074	0.0104
		0.0072	0.0102	0.0102	0.0102	0.0072	0.0102	0.0072	0.0102
	Y 3.J (280Y)	0.0074	0.0104	0.0104	0.0104	0.0074	0.0104	0.0074	0.0104
		0.0072	0.0102	0.0102	0.0102	0.0072	0.0102	0.0072	0.0102
V 3.J (280V)	0.0074	0.0104	0.0104	0.0104	0.0074	0.0104	0.0074	0.0104	
	0.0072	0.0102	0.0102	0.0102	0.0072	0.0102	0.0072	0.0102	

Piston and Ring Specifications

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TORQUE SPECIFICATIONS

All measurements in ft. lbs.

Year	Engine ID/VIN	Engine Displacement Liters (cc)	Cylinder Head Bolts	Main Bearing Bolts	Rod Bearing Bolts	Crankshaft Dampers Bolts	Flywheel Bolts	Manifold Intake	Manifold Exhaust	Spark Plugs	Lug Nuts

Torque Specifications

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TORQUE SPECIFICATIONS						
Component		US	Metric			
Cylinder Head	2.6L 1700 ccmpet	32-58 ft. lbs. 70-75 ft. lbs.	72-80 Nm 96-102 Nm			
	3.0L 1700 ccmpet	37 ft. lbs. 64 ft. lbs.	50 Nm 86 Nm			
	3.0L 3.2L 3.5-0 (in two blocks)	58-51 ft. lbs. 62-61 ft. lbs.	45-69 Nm 84-83 Nm			
	3.0L	1805-21 (in two blocks)	37 ft. lbs. 45 ft. lbs. 62 ft. lbs. 65 ft. lbs.	50 Nm 60 Nm 79 Nm 88 Nm		
		1805 (in two blocks)	15 ft. lbs. 26 ft. lbs.	20 Nm 35 Nm		
			37 ft. lbs.	50 Nm		
		Cylinder/Oilpan Temperature (ECT) Sensor	12-17 ft. lbs.	15-23 Nm		
	Exhaust Manifold	2.6L 1700 ccmpet	6-7 ft. lbs. 20-23 ft. lbs.	7-10 Nm 27-31 Nm		
		3.0L	16-22 ft. lbs.	22-30 Nm		
		3.0L 3.2L 3.5-0	Left Side Right Side	20-26 ft. lbs. 15-24 ft. lbs.	25-32 Nm 20-32 Nm	
3.0L			16-22 ft. lbs.	22-30 Nm		
Intake Manifold		2.6L	15-22 ft. lbs.	20-30 Nm		
		3.0L	1805-21 (in two blocks) 1805-26 (in two blocks)	11 ft. lbs. 21 ft. lbs.	15 Nm 28 Nm	
		3.0L	1805-26 (in two blocks)	15-20 ft. lbs. 19-24 ft. lbs.	20-30 Nm 26-32 Nm	
			3.0L 3.2L 3.5-0	11-17 ft. lbs.	15-23 Nm	
		3.0L	1825-31 (in two blocks)	9 ft. lbs. 15 ft. lbs. 24 ft. lbs.	11 Nm 20 Nm 32 Nm	
			1825-31 (in two blocks)	8 ft. lbs. 12 ft. lbs.	11 Nm 16 Nm	
	1824-36 (in two blocks)			12 ft. lbs. 15 ft. lbs.	16 Nm 20 Nm	
	Crank Sensor		21-29 ft. lbs.	28-39 Nm		
	Oil Pan		2.6L	Oil Pan-to-Block Fan-Fan-to-Block	30-33 ft. lbs. 8-9 ft. lbs.	41-45 Nm 8-11 Nm
			3.0L (on the other side of the register)	3.0L	9 ft. lbs. 11-17 ft. lbs.	11 Nm 15-23 Nm
3.2L		7-8 ft. lbs.		8-12 Nm		
3.0L 3.5-0		2.6L	16-22 ft. lbs. 26 ft. lbs.	22-30 Nm 48 Nm		

Torque Specifications

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TORQUE SPECIFICATIONS				
Component		US	Metric	
Oil Pan	3.0L 3.2L 3.5-0	11-17 ft. lbs.	15-23 Nm	
	3.0L	4 Large Bolts All Other Bolts	14-20 ft. lbs. 8-9 ft. lbs.	20-32 Nm 8-11 Nm
Exhaust Manifold Cover	2.6L	8-9 ft. lbs.	8-12 Nm	
	3.0L	1805-20 1805-26	5 ft. lbs. 5-10 ft. lbs.	10 Nm 7-14 Nm
		3.0L 3.2L 3.5-0	7-12 ft. lbs.	10-16 Nm
	3.0L	50-100 inch lbs.	6-12 Nm	
Power Arms	2.6L 1700 ccmpet	6-8 ft. lbs. 70-75 ft. lbs.	8-11 Nm 27-30 Nm	
	3.0L 1700 ccmpet	5-11 ft. lbs. 10-28 ft. lbs.	7-15 Nm 25-30 Nm	
	3.0L 1700 ccmpet	41 inch lbs. 19-25 ft. lbs.	5 Nm 25-36 Nm	
		3.0L	19-25 ft. lbs.	25-36 Nm
Serpentine	3.0L	19-25 ft. lbs.	25-36 Nm	
	Thermostat	2.6L	12-13 ft. lbs.	15-16 Nm
		3.0L	5-10 ft. lbs.	7-14 Nm
		3.0L 3.2L 3.5-0	5-7 ft. lbs.	7-11 Nm
3.0L		16-22 ft. lbs.	22-30 Nm	
Water Pump	2.6L	16-22 ft. lbs.	22-30 Nm	
	3.0L	Bolts 4, 5, 6, 7, 8, 9, 10 Fasteners 11, 12, 13, 14, 15	16-22 ft. lbs. 71-107 inch lbs.	22-30 Nm 9-12 Nm
		3.0L 3.2L 3.5-0	18-17 ft. lbs.	25-23 Nm
	3.0L	16 ft. lbs.	21 Nm	

Torque Specifications

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ENGINE REBUILDING SPECIFICATIONS				
Component		US	Metric	
Bore & Stroke	2.5L	3.71 x 3.90 in.	93.9 x 97.8 mm	
	3.0L	3.83 x 3.91 in.	97.3 x 99.0 mm	
	3.0L SHC	3.83 x 3.91 in.	97.3 x 99.0 mm	
	3.0L SHC	3.83 x 3.91 in.	97.3 x 99.0 mm	
	3.5L	3.8 x 3.99 in.	96.5 x 101.0 mm	
General and Key	2.5L			
General Journal to Bearing Clearance	2.5L	0.0015-0.0025 in.	0.038-0.063 mm	
	3.0L	0.0015-0.0025 in.	0.038-0.063 mm	
	3.0L SHC	0.0015-0.0025 in.	0.038-0.063 mm	
	3.5L	0.0015-0.0025 in.	0.038-0.063 mm	
General Journal to Diameter	2.5L	2.000-2.0001 in.	50.800-50.803 mm	
	3.0L	2.0074-2.0084 in.	50.935-51.013 mm	
	3.0L SHC	1.9723-1.9733 in.	49.983-50.075 mm	
	3.5L	2.0063-2.0073 in.	50.927-50.963 mm	
General Lower Oil	2.5L	make	0.219 in.	5.57 mm
		Exhaust	0.230 in.	5.84 mm
	3.0L	make	0.280 in.	7.12 mm
		Exhaust	0.290 in.	7.38 mm
	3.0L SHC	make	0.2625-0.2800 in.	6.67-7.12 mm
		Exhaust	0.2675-0.2800 in.	6.79-7.12 mm
	3.5L SHC	make	0.3125 in.	7.93 mm
		Exhaust	0.3125 in.	7.93 mm
	3.5L	make	0.3125 in.	7.93 mm
		Exhaust	0.2940-0.2960 in.	7.46-7.57 mm
	Connecting Rod Oil Clearance	2.5L	0.0005-0.0014 in.	0.013-0.035 mm
		3.0L	0.0010-0.0014 in.	0.025-0.035 mm
3.0L SHC		0.0005-0.0022 in.	0.013-0.056 mm	
3.5L		0.0010-0.0014 in.	0.025-0.035 mm	
Connecting Rod to Crankshaft Groove	2.5L	0.0085-0.0100 in.	0.216-0.254 mm	
	3.0L	0.0085-0.0100 in.	0.216-0.254 mm	
	3.0L S-O	0.0085-0.0120 in.	0.216-0.303 mm	
	3.0L S-O	0.0085-0.0120 in.	0.216-0.303 mm	
	3.0L S-O	0.0085-0.0120 in.	0.216-0.303 mm	
	3.5L	0.0085-0.0120 in.	0.216-0.303 mm	

Engine Rebuilding Specifications

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ENGINE REBUILDING SPECIFICATIONS		
Component	LB	Metric
Connecting Rod Journals Diameter		
2.5L	2.1279-2.1280 in	53.794-53.840 mm
3.0L		
3.0L-87	2.1240 in	53.840 mm
3.0L-93	2.1263-2.1268 in	53.898-54.022 mm
3.0L-3.2L-84D	2.0463-2.0472 in	51.876-51.939 mm
3.8L	2.2192-2.2211 in	55.951-55.751 mm
Crankshaft Endplay		
2.5L	0.0043-0.0061 in	0.110-0.202 mm
3.0L	0.0043-0.0061 in	0.110-0.202 mm
3.0L-87-84D	0.0015-0.0067 in	0.038-0.202 mm
3.8L	0.0043-0.0061 in	0.110-0.202 mm
Cylinder Bore Diameter		
2.5L	3.8793-3.8800 in	98.468-98.549 mm
3.0L	3.824 in	97.220 mm
3.0L-84D	3.8485-3.8501 in	97.694-97.775 mm
3.2L-81D	3.8823-3.8828 in	98.594-98.569 mm
3.8L	3.813 in	96.774 mm
Cylinder Bore Max. Taper		
2.5L	0.0004 in	0.010 mm
3.0L	0.0004 in	0.010 mm
3.0L-87-84D	0.0003 in	0.008 mm
3.8L	0.0004 in	0.010 mm
Cylinder Bore Out of Round (Max.)		
2.5L	0.0004 in	0.010 mm
3.0L	0.0004 in	0.010 mm
3.0L-87-84D	0.0003 in	0.008 mm
3.8L	0.0004 in	0.010 mm
Main Bearing Journal Diameter		
2.5L	2.2789-2.2790 in	57.432-57.425 mm
3.0L	2.2190-2.2198 in	56.853-56.963 mm
3.0L-87-84D	2.2187-2.2197 in	56.875-56.973 mm
3.8L	2.2192-2.2194 in	56.952-56.940 mm
Main Bearing Clearance		
2.5L	0.0003-0.0016 in	0.008-0.038 mm
3.0L	0.0004-0.0014 in	0.010-0.035 mm
3.0L-87-84D	0.0004-0.0009 in	0.009-0.023 mm
3.8L	0.0004-0.0014 in	0.010-0.035 mm
Main Bearing Journal Finest Fit (Max.)		
2.5L	0.0002 in	0.005 mm
3.0L	0.0002 in	0.005 mm
3.0L-87-84D	0.0001 in	0.003 mm
3.8L	0.0002 in	0.005 mm
Main Bearing Journal Taper (Max.)		
2.5L	0.0003 in	0.008 mm
3.0L	0.0003 in	0.010 mm
3.0L-87-84D	0.0003 in	0.008 mm
3.8L	0.0003 in	0.008 mm
Piston-to-Bore Fit-In-Crosshairs		
2.5L	0.0013-0.0022 in	0.033-0.056 mm

Engine Rebuilding Specifications

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ENGINE REBUILDING SPECIFICATIONS			US	Metric
 Piston to Skirt or Line Clearance (cont.)				
SK			0.0114-0.0129 in	0.0290-0.0328 mm
SKL&P, SHC			0.0129-0.0170 in	0.0328-0.0430 mm
SKL			0.0114-0.0132 in	0.0290-0.0338 mm
 Piston Pin Diameter				
SK			0.9174-0.9177 in	23.20-23.21 mm
SKL			0.9184-0.9174 in	23.22-23.20 mm
SKL SHC			0.8257-0.8271 in	20.96-20.99 mm
SKL SHC			0.8250-0.8255 in	20.94-20.95 mm
SKL			0.9122-0.9125 in	23.17-23.18 mm
 Piston to Skirt Line Clearance				
SKL			0.0032-0.0036 in	0.0081-0.0091 mm
SKL			0.0032-0.0036 in	0.0081-0.0091 mm
SKL&P, SHC			-0.0015-0.0004 in	-0.0038-0.0010 mm
SKL			0.0032-0.0035 in	0.0081-0.0089 mm
 Piston Top Ring Groove				
SKL	Top	0.0184-0.0191 in	0.468-0.487 mm	
	Bottom	0.018-0.019 in	0.457-0.481 mm	
	Oil	0.0154-0.0161 in	0.391-0.409 mm	
SKL	Top	0.0194-0.0201 in	0.493-0.509 mm	
	Bottom	0.0194-0.0201 in	0.493-0.509 mm	
	Oil	0.0154-0.0161 in	0.391-0.409 mm	
SKL SHC	Top	0.0194-0.0197 in	0.493-0.501 mm	
	Bottom	0.0194-0.0197 in	0.493-0.501 mm	
	Oil	0.0154-0.0161 in	0.391-0.409 mm	
SKL SHC	Top	0.0194-0.0197 in	0.493-0.501 mm	
	Bottom	0.0194-0.0197 in	0.493-0.501 mm	
	Oil	0.0154-0.0161 in	0.391-0.409 mm	
SKL	Top	0.014-0.0141 in	0.354-0.358 mm	
	Bottom	0.014-0.0141 in	0.354-0.358 mm	
	Oil	0.011-0.0111 in	0.279-0.282 mm	
 Piston Ring Fit - Clearance				
SKL	Top	0.00294-0.00401 in	0.00748-0.01018 mm	
	Bottom	0.0029-0.00401 in	0.00738-0.01018 mm	
SKL	Top	0.0029-0.00401 in	0.00738-0.01018 mm	
	Bottom	0.0029-0.00401 in	0.00738-0.01018 mm	
SKL SHC	Top	0.0025-0.0024 in	0.00635-0.0061 mm	
	Bottom	0.0025-0.0024 in	0.00635-0.0061 mm	
	Oil	0.0024-0.0025 in	0.0061-0.00635 mm	
SKL SHC	Top	0.0025-0.0024 in	0.00635-0.0061 mm	
	Bottom	0.0025-0.0024 in	0.00635-0.0061 mm	

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ENGINE REBUILDING SPECIFICATIONS			
Component		US	Metric
Valve Pin-to-Seat Clearance (in/1)			
25	Both	0.0024-0.0050 in	0.0508-0.1270 mm
30	Both	0.0019-0.0039 in	0.0483-0.0985 mm
30	Intake	0.0016-0.0039 in	0.0406-0.0985 mm
Valve Stem Angles			
25			45 degrees
30			44 degrees
30	Intake		45.5 degrees
30	Both		44.2 degrees
Valve Face Angles			
25			46 degrees
30			45 degrees
30	Intake		45 degrees
30	Both		44.2 degrees
Valve Seat Runout			
25		0.0019 in	0.0381 mm
30		0.0010 in	0.0254 mm
30		0.0030 in	0.0762 mm
Valve Spring Pressure (lbs/in)			
25		89 lbs. @ 1.18 in.	52 kg @ 29.7 mm
30		89 lbs. @ 1.11 in.	52 kg @ 28.2 mm
	1995-97	100 lbs. @ 1.16 in.	52 kg @ 29.5 mm
	1995-95	71 lbs. @ 1.19 in.	38 kg @ 30.2 mm
30	Intake	120 lbs. @ 1.16 in.	59 kg @ 29.3 mm
Valve Spring Free Length			
25		1.76 in	44.77 mm
30		1.84 in	46.94 mm
30	Intake	1.76 in	44.40 mm
30	Both	1.87 in	47.64 mm
Valve Spring Installed Height			
25		1.49 in	37.87 mm
30		1.56 in	39.63 mm
30		1.57 in	39.87 mm
Valve Plunge Stroke (Inches)			
25			
	Intake	0.0018 in	0.0457 mm
	Exhaust	0.0028 in	0.0711 mm
30			
	Intake	0.0014-0.0028 in	0.0356-0.0711 mm
	Exhaust	0.0016-0.0030 in	0.0406-0.0762 mm
30	Intake	0.0010-0.0020 in	0.0254-0.0508 mm
	Exhaust	0.0012-0.0025 in	0.0304-0.0635 mm
30			
	Intake	0.0010-0.0020 in	0.0254-0.0508 mm
	Exhaust	0.0016-0.0030 in	0.0406-0.0762 mm

Engine Rebuilding Specifications

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