

4.0L V8 - VINS [K,U]

Selected Block

1990 Lexus LS 400

For Lextreme Powertrain 2020 S. Hacienda Blvd. # D Hacienda Heights California 91745

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ENGINE SPECIFICATIONS

GENERAL ENGINE SPECIFICATION

GENERAL SPECIFICATION TABLE

Application	Specification
Displacement	(1) 153.0 Cu. In. (4.0L)
Displacement	(2) 244 Cu. In. (4.0L)
Bore	3.44" (87.5 mm)
Stroke	3.25" (82.5 mm)
Compression Ratio	10.0:1
Fuel System	PFI
HP @ RPM	250 @ 5600
Torque Ft. Lbs. @ RPM	260 @ 4400

(1) - 1990 Model.

(2) - 1991 Model.

1990 CRANKSHAFT MAIN & CONNECTING ROD BEARINGS

1990 CRANKSHAFT MAIN & CONNECTING ROD BEARINGS TABLE

Application	In. (mm)
Crankshaft	
End Play	
New or Rebuilt	.0008-.0087 (.020-.022)
Service Limit	.0118 (.300)
Runout	.0031 (.080)
Main Bearings	
Journal Diameter	2.6373-2.6378 (66.988-67.000)
Journal Out-of-Round	.0008 (.020)
Journal Taper	.0008 (.020)
Oil Clearance	
New or Rebuilt	.0010-.0018 (.026-.045)
Service Limit	.0022 (.055)
Connecting Rod Bearings	
Journal Diameter	2.0465-2.0472 (51.982-52.000)
Journal Out-of-Round	.0008 (.020)
Journal Taper	.0008 (.020)
Oil Clearance	
New or Rebuilt	.0011-.0021 (.027-.053)
Service Limit	.0026 (.065)

1991 CRANKSHAFT, MAIN & CONNECTING ROD BEARINGS

1991 CRANKSHAFT, MAIN & CONNECTING ROD BEARINGS TABLE

Application	In. (mm)
Crankshaft	
End Play	
New Or Rebuilt	.0008-.0087 (.020-.220)
Service Limit	.0118 (.300)
Runout	.0031 (.080)
Main Bearings	
Journal Diameter	2.6373-2.6378 (66.988-67.000)
Journal Out-Of-Round	.0008 (.020)
Journal Taper	.0008 (.020)
Oil Clearance	
New Or Rebuilt	.0010-.0018 (.026-.045)
Service Limit	.0022 (.055)
Connecting Rod Bearings	
Journal Diameter	
Reference Mark "1"	2.0470-2.0472 (51.994-52.000)
Reference Mark "2"	2.0468-2.0470 (51.988-51.994)
Reference Mark "3"	2.0465-2.0468 (51.982-51.988)
Journal Out-Of-Round	.0008 (.020)
Journal Taper	.0008 (.020)
Oil Clearance	
New Or Rebuilt	.0011-.0021 (.027-.053)
Service Limit	.0026 (.065)

CONNECTING RODS SPECIFICATIONS

CONNECTING RODS TABLE

Application	In. (mm)
Bore Diameter	
Piston Pin Bushing	.8663-.8668 (22.005-22.017)
Big End (Crankpin)	
Reference Mark "1"	2.1654-2.1656 (55.000-55.006)
Reference Mark "2"	2.1656-2.1658 (55.006-55.012)
Reference Mark "3"	2.1658-2.1661 (55.012-55.018)
Reference Mark "4"	2.1661-2.1663 (55.018-55.024)
Maximum Bend (1)	.0020 (.050)
Maximum Twist (1)	.0059 (.150)
Side Play	
New or Rebuilt	(2) .0059-.0130 (.150-.330)
New or Rebuilt	(3) .0063-.0130 (.150-.330)
Service Limit	(2) .0150 (.380)
Service Limit	(3) .0138 (.350)

Rod Bolt Shank Diameter

New or Rebuilt	.....	.2835-.2874	(7.200-7.300)
Service Limit	.....	.2756	(7.000)

- (1) - Per 3.94" (100 mm) of connecting rod center-to-center length.
- (2) - 1990 Model.
- (3) - 1991 Model.

PISTONS, PINS & RINGS SPECIFICATIONS

PISTONS, PINS & RINGS TABLE

Application	In. (mm)
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Pistons

Piston-to-Bore Clearance

New or Rebuilt0008-.0016	(0.20-0.40)
Service Limit0024	(.060)

Diameter

Size Mark "1"	.....	3.4437-3.4441	(87.470-87.480)
Size Mark "2"	.....	3.4441-3.4445	(87.480-87.490)
Size Mark "3"	.....	3.4445-3.4449	(87.490-87.500)

Piston Pin

Diameter	.....	.8860-.8665	(21.997-22.009)
Piston Fit	.....		(1)
Rod Fit	.....		(2)
New Or Rebuilt	.....	(3) .0002-.0004	(.005-.011)
Service Limit	.....	(3) .002	(.05)

Rings

No. 1

End Gap

New or Rebuilt	.....	.0098-.0177	(.250-.450)
Service Limit	.....	.0413	(1.050)
Side Clearance	.....	.0008-.0024	(.020-.060)

No. 2

End Gap

New or Rebuilt	.....	.0138-.0244	(.350-.620)
Service Limit	.....	.0472	(1.200)
Side Clearance	.....	.0006-.0022	(.015-.055)

No. 3 (Oil)

End Gap (Side Rails Only)

New or Rebuilt	.....	.0059-.0224	(.150-.570)
Service Limit	.....	.0433	(1.100)

- (1) - Push fit @ 140° F (60° C)
- (2) - Push fit.
- (3) - 1991 model

4.0L V8 - VINS [K,U]

CYLINDER BLOCK SPECIFICATIONS

CYLINDER BLOCK TABLE

Application	In. (mm)
Cylinder Bore Diameter	
Reference Mark "1"	3.4449-3.4453 (87.500-87.510)
Reference Mark "2"	3.4453-3.4457 (87.510-87.520)
Reference Mark "3"	3.4457-3.4461 (87.520-87.530)
Service Limit	3.4539 (87.730)
Maximum Deck Warpage .....	.0028 (.070)

VALVES & VALVE SPRINGS SPECIFICATIONS

VALVES & VALVE SPRINGS TABLE

Application	Specification
Intake Valves	
Face Angle	44.5°
Minimum Margin	
New or Rebuilt .....	.039" (1.00 mm)
Service Limit .....	.020" (.50 mm)
Minimum Refinish Length	3.7185" (94.450 mm)
Stem Diameter .....	.2350-.2356" (5.970-5.985 mm)
Valve Tip Maximum Refinish	(1)
Exhaust Valves	
Face Angle	44.5°
Minimum Margin	
New or Rebuilt .....	.039" (1.00 mm)
Service Limit .....	.020" (.50 mm)
Minimum Refinish Length	3.7953" (96.400 mm)
Stem Diameter .....	.2348-.2354" (5.965-5.980 mm)
Valve Tip Maximum Refinish	(1)
Valve Springs	
Free Length	1.717" (43.6 mm)
Installed Height	1.295" (32.90 mm)
Out-of-Square .....	.080" (2.00 mm)
Pressure	
	Lbs. @ In. (Kg @ mm)
Valve Closed	41.9-46.3 @ 1.295 (19.0-21.0 @ 32.90)

(1) - DO NOT exceed minimum valve stem length 1990 Lexus LS 400 For Lextreme Powertra
4.0L V8 - VINS [K, U] Selected Block (p. 4)

CYLINDER HEAD SPECIFICATIONS

CYLINDER HEAD TABLE

Application	Specification
Maximum Warpage .....	.004" (.10 mm)
Valve Seats	
Intake Valve	
Seat Angle	45°
Seat Width .....	.040-.055" (1.00-1.40 mm)
Maximum Seat Runout	(1) None
Seat Bore Diameter	Not Available
Exhaust Valve	
Seat Angle	45°
Seat Width .....	.040-.055" (1.00-1.40 mm)
Maximum Seat Runout	(1) None
Seat Bore Diameter	Not Available
Valve Guides	
Intake Valve	
Valve Guide Cylinder Head Bore I.D.	
Standard Size .....	.4331-.4341" (11.000-11.027 mm)
Oversize .....	.4350-.4361" (11.050-11.077 mm)
Valve Guide I.D. ....	.2366-.2374" (6.010-6.030 mm)
Valve Guide Installed Height	Install to Circlip
Stem-to-Guide Oil Clearance	
New or Rebuilt .....	.0010-.0024" (.025-.060 mm)
Service Limit .....	.0031" (.080 mm)
Exhaust Valve	
Valve Guide Cylinder Head Bore I.D.	
Standard Size .....	.4331-.4341" (11.000-11.027 mm)
Oversize .....	.4350-.4361" (11.050-11.077 mm)
Valve Guide I.D. ....	.2366-.2374" (6.010-6.030 mm)
Valve Guide Installed Height	Install to Circlip
Stem-to-Guide Oil Clearance	
New or Rebuilt .....	.0012-.0026" (.030-.065 mm)
Service Limit .....	.0039" (.100 mm)

(1) - Valve seat must be concentric. If not, reface seat.

CAMSHAFT SPECIFICATIONS

CAMSHAFT TABLE

Application	4.0L I4 - VINS [K,U] Selected Bloc
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End Play
 New or Rebuilt0016-.0035 (.040-.090)
 Service Limit0047 (.120)

Journal Diameter
 Exhaust Cam Thrust
 Bearing9433-.9439 (23.959-23.975)
 All Others 1.0612-1.0618 (26.954-26.970)
 Journal Runout0031 (.080)

Lobe Height
 Intake
 New or Rebuilt 1.6421-1.6461 (41.710-41.810)
 Service Limit 1.6362 (41.560)
 Exhaust
 New or Rebuilt 1.6500-1.6539 (41.910-41.010)
 Service Limit 1.6441 (41.76)

Oil Clearance
 New or Rebuilt
 Exhaust Cam Thrust
 Bearing0010-.0024 (.025-.061)
 All Other Bearings0012-.0026 (.030-.067)
 Service Limit0039 (.100)

Camshaft Gear Backlash
 New or Rebuilt0008-.0079 (.020-.200)
 Service Limit0118 (.300)

Camshaft Gear Spring
 End Gap712-.740 (18.20-18.80)

VALVE LIFTERS SPECIFICATIONS

VALVE LIFTERS TABLE

 Application In. (mm)
 Bore Diameter 1.2205-1.2211 (31.000-31.016)
 Lifter Diameter 1.2191-1.2195 (30.966-30.976)
 Oil Clearance
 New or Rebuilt0009-.0020 (.024-.050)
 Service Limit0028 (.070)

END OF ARTICLE

4.0L V8 - VINS [K,U]: