

DRIVELINE/AXLES

Axles (Service Specifications) - Sienna

AXLE AND DIFFERENTIAL

SERVICE DATA

SERVICE DATA

FRONT AXLE HUB

Front axle hub bearing looseness	Maximum looseness: 0.05 mm (0.0020 in.)
Front axle hub runout	Maximum runout: 0.05 mm (0.0020 in.)

REAR AXLE HUB

Rear axle hub bearing looseness	Maximum looseness: 0.05 mm (0.0020 in.)
Rear axle hub runout	Maximum runout: 0.05 mm (0.0020 in.)

REAR DIFFERENTIAL CARRIER OIL SEAL

Oil diaphragm seal installation depth	0.7 to 1.3 mm (0.0276 to 0.0512 in.)
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REAR DIFFERENTIAL SIDE GEAR SHAFT OIL SEAL

Rear differential side gear shaft oil seal installation depth	4.2 to 4.8 mm (0.165 to 0.189 in.)
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REAR DIFFERENTIAL CARRIER ASSEMBLY

Electro magnetic control coupling sub-assembly vertical runout		Maximum runout: 0.04 mm (0.00157 in.)
Electro magnetic control coupling sub-assembly lateral runout.		Maximum runout: 0.063 mm (0.00248 in.)
Drive pinion to ring gear backlash		0.13 to 0.25 mm (0.00512 to 0.00984 in.)
Drive pinion preload (at starting)	New bearing	1.9 to 3.0 N*m (19 to 31 kgf*cm, 17 to 26 in.*lbf)
	Reused bearing	1.6 to 2.5 N*m (16 to 25 kgf*cm, 14 to 22 in.*lbf)
Total preload (at starting)	New bearing	3.2 to 5.8 N*m (32 to 59 kgf*cm, 28 to 51 in.*lbf)
	Reused bearing	2.8 to 5.8 N*m (29 to 59 kgf*cm, 25 to 51 in.*lbf)
Differential ring gear backlash		0.13 to 0.25 mm (0.00512 to 0.00984 in.)
Oil diaphragm seal installation depth		0.7 to 1.3 mm (0.0276 to 0.0512 in.)
Rear differential side gear shaft oil seal installation depth		8.2 to 8.8 mm (0.323 to 0.346 in.)

REAR DIFFERENTIAL SIDE GEAR SHAFT PLATE WASHER

Mark	Thickness mm (in.)	Mark	Thickness mm (in.)
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75	1.74 to 1.76 (0.0685 to 0.0693)	76	1.77 to 1.79 (0.0697 to 0.0705)
77	1.80 to 1.82 (0.0709 to 0.0717)	78	1.83 to 1.85 (0.0720 to 0.0728)
79	1.86 to 1.88 (0.0732 to 0.0740)	80	1.89 to 1.91 (0.0744 to 0.0752)
81	1.92 to 1.94 (0.0756 to 0.0764)	82	1.95 to 1.97 (0.0768 to 0.0776)
83	1.98 to 2.00 (0.0780 to 0.0787)	84	2.01 to 2.03 (0.0791 to 0.0799)
85	2.04 to 2.06 (0.0803 to 0.0811)	86	2.07 to 2.09 (0.0815 to 0.0823)
88	2.10 to 2.12 (0.0827 to 0.0835)	89	2.13 to 2.15 (0.0839 to 0.0847)
90	2.16 to 2.18 (0.0850 to 0.0858)	91	2.19 to 2.21 (0.0862 to 0.0870)
92	2.22 to 2.24 (0.0874 to 0.0882)	93	2.25 to 2.27 (0.0886 to 0.0894)
94	2.28 to 2.30 (0.0898 to 0.0906)	95	2.31 to 2.33 (0.0909 to 0.0917)
96	2.34 to 2.36 (0.0921 to 0.0929)	97	2.37 to 2.39 (0.0933 to 0.0941)
98	2.40 to 2.42	99	2.43 to 2.45

	(0.0945 to 0.0953)		(0.0957 to 0.0965)
0	2.46 to 2.48 (0.0969 to 0.0976)	1	2.49 to 2.51 (0.0980 to 0.0988)
2	2.52 to 2.54 (0.0992 to 0.1000)	3	2.55 to 2.57 (0.1004 to 0.1012)
4	2.58 to 2.60 (0.1016 to 0.1024)	5	2.61 to 2.63 (0.1028 to 0.1035)
6	2.64 to 2.66 (0.1039 to 0.1047)	7	2.67 to 2.69 (0.1051 to 0.1059)
8	2.70 to 2.72 (0.1063 to 0.1071)	9	2.73 to 2.75 (0.1075 to 0.1083)
10	2.76 to 2.78 (0.1087 to 0.1095)	11	2.79 to 2.81 (0.1098 to 0.1106)
12	2.82 to 2.84 (0.1110 to 0.1118)	13	2.85 to 2.87 (0.1122 to 0.1130)
14	2.88 to 2.90 (0.1134 to 0.1142)	-	-

REAR DIFFERENTIAL DRIVE PINION PLATE WASHER

Mark	Thickness mm (in.)	Mark	Thickness mm (in.)
41	1.695 to 1.705 (0.0667 to 0.0671)	42	1.705 to 1.715 (0.0671 to 0.0675)
43	1.715 to 1.725 (0.0675 to 0.0679)	44	1.725 to 1.735 (0.0679 to 0.0683)

45	1.735 to 1.745 (0.0683 to 0.0687)	46	1.745 to 1.755 (0.0687 to 0.0691)
47	1.755 to 1.765 (0.0691 to 0.0695)	48	1.765 to 1.775 (0.0695 to 0.0699)
49	1.775 to 1.785 (0.0699 to 0.0703)	50	1.785 to 1.795 (0.0703 to 0.0707)
51	1.795 to 1.805 (0.0707 to 0.0711)	52	1.805 to 1.815 (0.0711 to 0.0715)
53	1.815 to 1.825 (0.0715 to 0.0719)	54	1.825 to 1.835 (0.0719 to 0.0722)
55	1.835 to 1.845 (0.0722 to 0.0726)	56	1.845 to 1.855 (0.0726 to 0.0730)
57	1.855 to 1.865 (0.0730 to 0.0734)	58	1.865 to 1.875 (0.0734 to 0.0738)
59	1.875 to 1.885 (0.0738 to 0.0742)	60	1.885 to 1.895 (0.0742 to 0.0746)
61	1.895 to 1.905 (0.0746 to 0.0750)	62	1.905 to 1.915 (0.0750 to 0.0754)
63	1.915 to 1.925 (0.0754 to 0.0758)	64	1.925 to 1.935 (0.0758 to 0.0762)
65	1.935 to 1.945 (0.0762 to 0.0766)	70	1.945 to 1.955 (0.0766 to 0.0770)
71	1.955 to 1.965	72	1.965 to 1.975

	(0.0770 to 0.0774)		(0.0774 to 0.0778)
73	1.975 to 1.985 (0.0778 to 0.0781)	74	1.985 to 1.995 (0.0781 to 0.0785)
75	1.995 to 2.005 (0.0785 to 0.0789)	76	2.005 to 2.015 (0.0789 to 0.0793)
77	2.015 to 2.025 (0.0793 to 0.0797)	78	2.025 to 2.035 (0.0797 to 0.0801)
79	2.035 to 2.045 (0.0801 to 0.0805)	80	2.045 to 2.055 (0.0805 to 0.0809)
81	2.055 to 2.065 (0.0809 to 0.0813)	82	2.065 to 2.075 (0.0813 to 0.0817)
83	2.075 to 2.085 (0.0817 to 0.0821)	84	2.085 to 2.095 (0.0821 to 0.0825)
85	2.095 to 2.105 (0.0825 to 0.0829)	86	2.105 to 2.115 (0.0829 to 0.0833)
87	2.115 to 2.125 (0.0833 to 0.0837)	88	2.125 to 2.135 (0.0837 to 0.0841)
89	2.135 to 2.145 (0.0841 to 0.0844)	90	2.145 to 2.155 (0.0844 to 0.0848)
91	2.155 to 2.165 (0.0848 to 0.0852)	92	2.165 to 2.175 (0.0852 to 0.0856)
93	2.175 to 2.185 (0.0856 to 0.0860)	94	2.185 to 2.195 (0.0860 to 0.0864)

95	2.195 to 2.205 (0.0864 to 0.0868)	-	-
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TORQUE SPECIFICATIONS

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FRONT AXLE HUB BOLT

Part Tightened	N*m	kgf*cm	ft.*lbf
Front disc brake caliper assembly x Front axle assembly	104	1061	77
Front wheels	103	1050	76

FRONT AXLE HUB

Part Tightened	N*m	kgf*cm	ft.*lbf
Front axle assembly x Front shock absorber	250	2549	184
Front lower suspension arm x Front lower ball joint assembly	92	938	68
Front speed sensor x Steering knuckle	8.3	85	73 in.*lbf
Front wheels	103	1050	76

STEERING KNUCKLE

Part Tightened	N*m	kgf*cm	ft.*lbf
Front disc brake dust cover x Steering knuckle	8.3	85	73 in.*lbf

REAR AXLE HUB BOLT

Part Tightened	N*m	kgf*cm	ft.*lbf
Rear wheels	103	1050	76

REAR AXLE HUB

Part Tightened		N*m	kgf*cm	ft.*lbf
Rear axle hub and bearing assembly x Rear axle carrier sub-assembly		90	918	66
Rear speed sensor x Rear axle carrier sub-assembly	for AWD	8.0	82	71 in.*lbf
Rear speed sensor x Rear trailing arm assembly	for AWD	8.0	82	71 in.*lbf
Rear disc brake caliper assembly x Rear axle carrier sub-assembly		78	799	58
Rear wheels		103	1050	76

DIFFERENTIAL OIL

Part Tightened	N*m	kgf*cm	ft.*lbf
Rear differential drain plug x Rear	39	398	29

differential carrier assembly			
Rear differential filler plug x Rear differential carrier assembly	39	398	29

REAR DIFFERENTIAL CARRIER OIL SEAL

Part Tightened	N*m	kgf*cm	ft.*lbf
Electro magnetic control coupling sub-assembly x Rear differential carrier assembly	42	430	31

REAR DIFFERENTIAL SIDE GEAR SHAFT OIL SEAL

Part Tightened	N*m	kgf*cm	ft.*lbf
Rear drive shaft assembly x Differential side gear shaft	56	571	41
Rear Wheel	103	1050	76

REAR DIFFERENTIAL CARRIER ASSEMBLY

Part Tightened	N*m	kgf*cm	ft.*lbf
Differential ring gear x Differential case	99	1010	73
Rear drive pinion nut	321 (292) or less	3273 (2976) or less	237 (215) or less

Differential side bearing retainer x Rear differential case sub-assembly	42	430	31
Rear differential breather plug oil deflector x Differential side bearing retainer	6.5	66	18 in.*lbf
Electro magnetic control coupling sub-assembly x Rear differential carrier assembly	42	430	31
Rear differential filler plug (inspection plug) x Rear differential carrier assembly	49	500	36
Stud bolt x Electro magnetic control coupling sub-assembly	9.8	100	87 in.*lbf
Connector clamp bracket x Electro			

magnetic control coupling sub-assembly	15	150	11
Rear differential support assembly x Rear differential carrier assembly	123	1249	90
Rear differential No. 1 support x Rear differential carrier assembly	123	1249	90
Rear differential dynamic damper x Rear differential No. 1 support	20	204	15
Rear differential No. 1 support x Frame	95	969	70
Rear differential support assembly x Frame	106	1081	78
Rear Wheel	103	1050	76

() : For use with SST