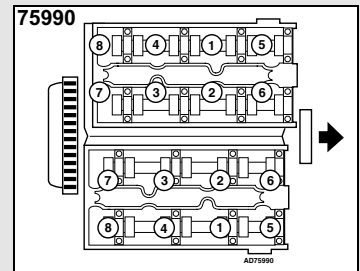
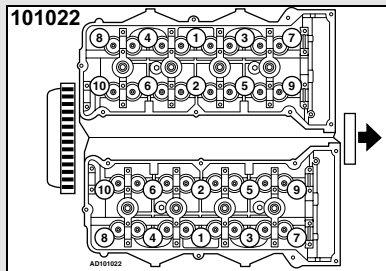


		1	2	3
1	Vehicle Identification	28972	28958	28943
2	Model	Concours	Concours	CTS
3	Body code	4.6L	4.6L	3.2L
4				
5	Year	1996-97	1997-99	2003
6	Engine Code (VIN)	LD8 (VIN = Y)	L37 (VIN = 9)	LA3 (VIN = B)
7	No. of cylinders/Type	8/DOHC	8/DOHC	6/DOHC
8	Capacity cm ³	4572	4572	3179
9	Output hp/rpm	275/5600	300/6000	220/6000
10	Ignition system Description	–	–	Mapped-DI
11	Trigger location	Camshaft, crankshaft	Camshaft, crankshaft	Camshaft, crankshaft
12	Fuel system Make	GM	GM	GM
13	Type	–	–	–
14	Description	Multi-port, sequential	Multi-port, sequential	Multi-port, sequential
15	Air metering Type	MAP sensor	MAP sensor	Mass meter
16	Tuning			
17	Firing order	1-2-7-3-4-5-6-8	1-2-7-3-4-5-6-8	1-2-3-4-5-6
18	Ignition timing BTDC °Engine/rpm	Not adjustable	Not adjustable	Not adjustable
19	o without + with vacuum	–	–	–
20	Idle speed (curb) rpm	Not adjustable	Not adjustable	Not adjustable
21	alternative (curb) rpm	–	–	–
22	Service checks and adjustments			
23	O E Spark plugs Make	AC	AC	Bosch
24	Type	41-929	41-900	FGR8K QEO
25	Electrode gap mm	1.5	1.5	1.3
26	Valve lash - intake mm	Hydraulic	Hydraulic	Hydraulic
27	- exhaust mm	Hydraulic	Hydraulic	Hydraulic
28	Compression pressure bar	–	–	–
29	Oil pressure bar/rpm	2.5/2000	2.5/2000	1.3/2000
30	Lubricants and capacities			
31	Engine oil grade - cold climate SAE	5W/30	5W/30	5W/30
32	- moderate climate SAE	10W/30	10W/30	5W/30
33	- hot climate SAE	10W/30	10W/30	10W/30
34	Engine oil classification API	SH	SH	SJ
35	Engine with filter quarts	7.5	7.5	5.0
36	Gearbox oil grade SAE	–	–	Dexron III/E
37	4/5/6 speed quarts	–	–	3.65
38	Automatic transmission fluid Type	Dexron III	Dexron III	Dexron III
39	drain and refill quarts	6.0 4T80-E=8.0	8.0	9.0
40	Transfer case SAE	–	–	–
41	drain and refill quarts	–	–	–
42	Front differential oil grade SAE	–	–	–
43	drain and refill quarts	–	–	–
44	Rear differential oil grade SAE	–	–	75W/90
45	drain and refill quarts	–	–	1.4
46	Cooling system quarts	12.3	12.5	10.4
47	Brake fluid Type	DOT 3	DOT 3	DOT 3
48	system quantity quarts	–	–	–
49	Power steering fluid Type	GM 1050017	GM 1050017	Dexron III
50	system quantity quarts	0.8	0.8	1.4
51	Brake dimensions			
52	Minimum rotor thickness - solid front	–	–	–
53	- ventilated front	30.7 mm	30.7 mm	30.7 mm
54	Minimum rotor thickness rear	9.5 mm	9.5 mm	24 mm
55	Thickness variation front/rear	–	–	–
56	Rotor runout front/rear	0.06 mm/0.06 mm	0.06 mm/0.06 mm	0.06 mm/0.06 mm
57	Maximum drum diameter rear	–	–	–
58	Minimum pad thickness front/rear	–	–	–
59	Minimum shoe thickness rear	–	–	–

		1	2	3
60	Tightening torques	28972	28958	28943
61	Cylinder head Renew bolts	Yes	Yes	Yes
62	Maximum bolt length	—	—	—
63	Torque	22 ft. lbs.	22 ft. lbs.	18 ft. lbs.
64	Torque	60°	60°	90°
65	Loosen	↓	↓	↓
66	Individually loosen	↓	↓	↓
67	Torque	60°	60°	90°
68	Run engine	↓	↓	↓
69	Wait	↓	↓	↓
70	Individually loosen	↓	↓	↓
71	Torque	60°	60°	90°
72	Run engine	↓	↓	↓
73	Wait	↓	↓	↓
74	Individually loosen	↓	↓	↓
75	Torque	M6=10 ft. lbs.	M6=10 ft. lbs.	15°
76	Torque	—	—	—
77	Tightening sequence - see illustrations below	101022	101022	75990
78	Main bearings Renew bolts/nuts	[49]	[49]	Yes
79	Stage 1	—	—	37 ft. lbs.
80	Stage 2	—	—	60°+15°
81	Big end bearings Renew bolts/nuts	Yes	[103]	Yes
82	Stage 1	18 ft. lbs.	—	26 ft. lbs.
83	Stage 2	110°	—	45°+15°
84	Oil pump to cylinder block	9 ft. lbs.	7 ft. lbs.+35°	15 ft. lbs.
85	Oil pan bolts	10 ft. lbs.	7 ft. lbs.	11-15 ft. lbs.
86	Oil pan drain bolt	15 ft. lbs.	15 ft. lbs.	9 ft. lbs.
87	Drive plate	11 ft. lbs.+50°	11 ft. lbs.+50°	[87]
88	Torque converter	44 ft. lbs.	35 ft. lbs.	46 ft. lbs.
89	Flywheel	11 ft. lbs.+50°	11 ft. lbs.+50°	[87]
90	Clutch cover to flywheel	—	—	21 ft. lbs.
91	Crankshaft pulley/damper	44 ft. lbs.+120°	37 ft. lbs.+120°	[86]
92	Camshaft sprocket/gear	90 ft. lbs.	90 ft. lbs.	[85]
93	Camshaft carrier/cap	9 ft. lbs.	9 ft. lbs.	6 ft. lbs.
94	Camshaft/valve cover	7 ft. lbs.	7 ft. lbs.	6 ft. lbs.
95	Intake manifold to cylinder head	6 ft. lbs.+120°	7 ft. lbs.	15 ft. lbs.
96	Exhaust manifold to cylinder head	18 ft. lbs.	18 ft. lbs.	15 ft. lbs.
97	Spark plugs	—	—	—
98	Crankshaft position sensor	7 ft. lbs.	7 ft. lbs.	6 ft. lbs.
99	Oxygen sensor (Lambda)	30 ft. lbs.	30 ft. lbs.	30 ft. lbs.
100	Knock sensor	15 ft. lbs.	15 ft. lbs.	15 ft. lbs.
101	Front hub	110 ft. lbs. [2]	110 ft. lbs. [2]	118 ft. lbs. [2]
102	Rear hub	52 ft. lbs.	52 ft. lbs.	92 ft. lbs.
103	Steering track rod end	33 ft. lbs.	33 ft. lbs.	35 ft. lbs.
104	Brake caliper to carrier	front —	33 ft. lbs.	136 ft. lbs.
105	Brake caliper carrier to hub	front 38 ft. lbs.	137 ft. lbs.	46 ft. lbs.
106	Brake caliper to carrier	rear 20 ft. lbs.	20 ft. lbs.	88 ft. lbs.
107	Brake caliper carrier to hub	rear 80 ft. lbs.	80 ft. lbs.	44 ft. lbs.
108	ABS sensor	front/rear —	—	—
109	Road wheels	100 ft. lbs.	100 ft. lbs.	100 ft. lbs.

ft. lbs. = foot pounds
 ins. lbs. = inch pounds
 ° = angular torque
 ↓ = proceed to next stage
 Nm conversion, see last page



		1	2	3
1	Vehicle Identification	28960	28955	28956
2	Model	DeVille	DeVille	DeVille
3	Body code	4.6L	4.6L	4.6L
4				
5	Year	1997-99	2000-03	2000-03
6	Engine Code (VIN)	L37 (VIN = 9)	LD8 (VIN = Y)	L37 (VIN = 9)
7	No. of cylinders/Type	8/DOHC	8/DOHC	8/DOHC
8	Capacity cm ³	4572	4572	4572
9	Output hp/rpm	300/6000	275/5600	300/6000
10	Ignition system Description	Mapped-DIS	Mapped-DI	Mapped-DI
11	Trigger location	Camshaft, crankshaft	Camshaft, crankshaft	Camshaft, crankshaft
12	Fuel system Make	GM	GM	GM
13	Type	–	–	–
14	Description	Multi-port, sequential	Multi-port, sequential	Multi-port, sequential
15	Air metering Type	MAP sensor	MAP sensor	MAP sensor
16	Tuning			
17	Firing order	1-2-7-3-4-5-6-8	1-2-7-3-4-5-6-8	1-2-7-3-4-5-6-8
18	Ignition timing BTDC °Engine/rpm	Not adjustable	Not adjustable	Not adjustable
19	o without + with vacuum	–	–	–
20	Idle speed (curb) rpm	Not adjustable	Not adjustable	Not adjustable
21	alternative (curb) rpm	–	–	–
22	Service checks and adjustments			
23	O E Spark plugs Make	AC	AC	AC
24	Type	41-900	41-900	41-900
25	Electrode gap mm	1.5	1.5	1.5
26	Valve lash - intake mm	Hydraulic	Hydraulic	Hydraulic
27	- exhaust mm	Hydraulic	Hydraulic	Hydraulic
28	Compression pressure bar	–	–	–
29	Oil pressure bar/rpm	2.5/2000	2.5/2000	2.5/2000
30	Lubricants and capacities			
31	Engine oil grade - cold climate SAE	5W/30	5W/30	5W/30
32	- moderate climate SAE	10W/30	10W/30	10W/30
33	- hot climate SAE	10W/30	10W/30	10W/30
34	Engine oil classification API	SH	SH	SH
35	Engine with filter quarts	7.5	7.5	7.5
36	Gearbox oil grade SAE	–	–	–
37	4/5/6 speed quarts	–	–	–
38	Automatic transmission fluid Type	Dexron III	Dexron III	Dexron III
39	drain and refill quarts	8.0	8.0	8.0
40	Transfer case SAE	–	–	–
41	drain and refill quarts	–	–	–
42	Front differential oil grade SAE	–	–	–
43	drain and refill quarts	–	–	–
44	Rear differential oil grade SAE	–	–	–
45	drain and refill quarts	–	–	–
46	Cooling system quarts	12.5	12.5	12.5
47	Brake fluid Type	DOT 3	DOT 3	DOT 3
48	system quantity quarts	–	–	–
49	Power steering fluid Type	GM 1050017	GM 1050017	GM 1050017
50	system quantity quarts	0.8	0.8	0.8
51	Brake dimensions			
52	Minimum rotor thickness - solid front	–	–	–
53	- ventilated front	30.7 mm	30.7 mm	30.7 mm
54	Minimum rotor thickness rear	9.5 mm	9.5 mm	9.5 mm
55	Thickness variation front/rear	–	–	–
56	Rotor runout front/rear	0.06 mm/0.06 mm	0.06 mm/0.06 mm	0.06 mm/0.06 mm
57	Maximum drum diameter rear	–	–	–
58	Minimum pad thickness front/rear	–	–	–
59	Minimum shoe thickness rear	–	–	–

		1	2	3
60	Tightening torques	28960	28955	28956
61	Cylinder head Renew bolts	Yes	Yes	Yes
62	Maximum bolt length	—	—	—
63	Torque	22 ft. lbs.	22 ft. lbs.	22 ft. lbs.
64	Torque	60°	60°	60°
65	Loosen	↓	↓	↓
66	Individually loosen	↓	↓	↓
67	Torque	60°	60°	60°
68	Run engine	↓	↓	↓
69	Wait	↓	↓	↓
70	Individually loosen	↓	↓	↓
71	Torque	60°	60°	60°
72	Run engine	↓	↓	↓
73	Wait	↓	↓	↓
74	Individually loosen	↓	↓	↓
75	Torque	M6=10 ft. lbs.	M6=10 ft. lbs.	M6=10 ft. lbs.
76	Torque	—	—	—
77	Tightening sequence - see illustrations below	101022	101022	101022
78	Main bearings Renew bolts/nuts	[49]	[49]	[49]
79	Stage 1	—	—	—
80	Stage 2	—	—	—
81	Big end bearings Renew bolts/nuts	[103]	[103]	[103]
82	Stage 1	—	—	—
83	Stage 2	—	—	—
84	Oil pump to cylinder block	7 ft. lbs.+35°	7 ft. lbs.+35°	7 ft. lbs.+35°
85	Oil pan bolts	7 ft. lbs.	7 ft. lbs.	7 ft. lbs.
86	Oil pan drain bolt	15 ft. lbs.	15 ft. lbs.	15 ft. lbs.
87	Drive plate	11 ft. lbs.+50°	11 ft. lbs.+50°	11 ft. lbs.+50°
88	Torque converter	35 ft. lbs.	35 ft. lbs.	35 ft. lbs.
89	Flywheel	11 ft. lbs.+50°	11 ft. lbs.+50°	11 ft. lbs.+50°
90	Clutch cover to flywheel	—	—	—
91	Crankshaft pulley/damper	37 ft. lbs.+120°	37 ft. lbs.+120°	37 ft. lbs.+120°
92	Camshaft sprocket/gear	90 ft. lbs.	90 ft. lbs.	90 ft. lbs.
93	Camshaft carrier/cap	9 ft. lbs.	9 ft. lbs.	9 ft. lbs.
94	Camshaft/valve cover	7 ft. lbs.	7 ft. lbs.	7 ft. lbs.
95	Intake manifold to cylinder head	7 ft. lbs.	7 ft. lbs.	7 ft. lbs.
96	Exhaust manifold to cylinder head	18 ft. lbs.	18 ft. lbs.	18 ft. lbs.
97	Spark plugs	—	—	—
98	Crankshaft position sensor	7 ft. lbs.	7 ft. lbs.	7 ft. lbs.
99	Oxygen sensor (Lambda)	30 ft. lbs.	30 ft. lbs.	30 ft. lbs.
100	Knock sensor	15 ft. lbs.	15 ft. lbs.	15 ft. lbs.
101	Front hub	110 ft. lbs. [2]	110 ft. lbs. [2]	110 ft. lbs. [2]
102	Rear hub	52 ft. lbs.	52 ft. lbs.	52 ft. lbs.
103	Steering track rod end	33 ft. lbs.	33 ft. lbs.	33 ft. lbs.
104	Brake caliper to carrier front	33 ft. lbs.	33 ft. lbs.	33 ft. lbs.
105	Brake caliper carrier to hub front	137 ft. lbs.	137 ft. lbs.	137 ft. lbs.
106	Brake caliper to carrier rear	20 ft. lbs.	20 ft. lbs.	20 ft. lbs.
107	Brake caliper carrier to hub rear	80 ft. lbs.	80 ft. lbs.	80 ft. lbs.
108	ABS sensor front/rear	—	—	—
109	Road wheels	100 ft. lbs.	100 ft. lbs.	100 ft. lbs.

ft. lbs. = foot pounds
 ins. lbs. = inch pounds
 ° = angular torque
 ↓ = proceed to next stage
 Nm conversion, see last page

