

Notes		Specified value	Measured value
Vehicle identification			
No. of cylinders	Type	4/OHC	
Capacity (Fiscal)	cc	1998	
Compression ratio	:1	8,5	
Suitable for unleaded petrol		Yes	
Minimum octane rating	RON	95	
Ignition system	Make	Bosch	
Ignition system	Type	Motronic MP3,2	
Ignition system	Description	Map-DIS	
Trigger location		Crankshaft	
Fuel system	Make	Bosch	
Fuel System	Type	Motronic MP3.2	
Fuel System	Description	MFI-i	
Air metering	Type	MAP	
Combined ignition and fuel ECM		Yes	
Diagnostic socket		Yes	
Ignition system			
Ignition coil	Make	Bosch	
Ignition coil supply voltage	+ with ballast V	11,0	
Firing order		1-3-4-2	
Tuning and emissions			
Ignition timing - basic BTDC	°Engine/rpm	Not adjustable	
Ignition advance checks	°Engine/rpm	ECM Controlled	
Idle speed	rpm	900±50 Not adjustable	
Oil temperature for CO test	°C	70	
CO level at idle speed - tailpipe	Vol. % CO	0,5 Max Not adjustable	
HC level at idle speed	ppm	100	
CO2 level at idle speed	Vol. % CO2	14,5-16	
O2 level at idle speed	Vol. % O2	0,1-0,5	
Increased idle speed for CO test	rpm	2200-3000	
CO content at increased idle speed	Vol. %	0,3	
Lambda at increased idle	λ	0,97-1,03	
Spark plugs			
Spark plugs	Original equipment	Eyquem	
Spark plug	Type	RFC58LS2E	
Electrode gap	mm	0,8-1,0	
Spark plugs	Make	Bosch	
Spark plug	Type	FR6LDC	
Electrode gap	mm	0,9	
Spark plugs	Make	Champion	
Spark plug	Type	RC8DMC	
Spark plugs	Make	NGK	
Spark plug	Type	BKR6EZ	
Electrode gap	mm	0,9	
Fuel system			
System pressure	bar	2,8-3,2	

	Engine coolant temperature (ECT) sensor	Ohm/°C	292-326/80	
	Crankshaft position (CKP) sensor/engine speed (RPM) sensor	Ohm	200-500	
	Injector	Ohm	16	
	Idle air control (IAC) valve/idle speed control (ISC) actuator	Ohm	45	
Service checks and adjustments				
	Valve clearance -INLET	mm	0,20 cold	
	Valve clearance -EXHAUST	mm	0,40 cold	
	Oil pressure	bar/rpm	5,7/2000	
	Radiator cap	bar	1,4	
	Thermostat opens	°C	89	
Lubricants and capacities				
	Engine oil grade - cold climate	SAE	5W/40 Semi-synthetic	
	Engine oil grade - moderate climate	SAE	15W/40 Semi-synthetic	
	Engine oil grade - hot climate	SAE	20W/40 Semi-synthetic	
	Engine oil classification	API/ACEA	SJ/A3-96	
	Engine oil grade - alternative - moderate climate	SAE	10W/40 Semi-synthetic	
	Engine oil classification - alternative - moderate climate	API/ACEA	SJ/A3-96	
69	Engine with filter(s)	litres	4,75	
	Manual gearbox oil grade	SAE	75W/90	
	Manual gearbox 4/5 speed	litres	2,0	
	Brake fluid	Type	DOT 4	
	Brake fluid	litres	0,5	
	Power steering fluid	Type	Dexron II	
	Power steering fluid	litres	1,3	
Tightening torques				
	Cylinder head instructions			
Cylinder head				
		Maximum bolt length	124,5 mm	
	Stage 1	Tighten	35 Nm	
	Stage 2	Tighten	70 Nm	
	Stage 3	Tighten	160°	
Other tightening torques				
	Main bearings	Renew bolts/nuts	No	
51	Main bearings	Stage 1		
	Big end bearings	Renew bolts/nuts	No	
	Big end bearings	Stage 1	20 Nm	
	Big end bearings	Stage 2	70°	
	Oil pump to cylinder block		15 Nm	
	Sump drain bolt		30 Nm	
	Flywheel/driveplate		50 Nm	
	Clutch to flywheel		20 Nm	
	Crankshaft pulley/damper centre bolt		130 Nm	
	Camshaft sprocket/gear		35 Nm	
	Camshaft carrier/cap		15 Nm	
	Camshaft/rocker cover		10 Nm	
	Inlet manifold to cylinder head		20 Nm	
	Exhaust manifold to cylinder head		35 Nm	
	Front hub		325 Nm	
	Rear hub		275 Nm	
	Steering wheel		35 Nm	
	Steering rack/box mounting		80 Nm	
	Steering track rod end		35 Nm	
	Brake disc to hub	Front	10 Nm	
	Brake caliper to carrier	Front	30 Nm	
	Brake caliper carrier to hub	Front	120 Nm	
	Brake disc to hub	Rear	10 mm	
	Back plate to hub	Rear	50 mm	

	ABS sensor	Front	10 Nm	
	ABS sensor	Rear	10 Nm	
	Road wheels		90 Nm	
Starting and charging				
	Battery	V/RC(Ah)	12/85 (60)	
	Maximum cranking amps	A	149-182	
	Alternator output at engine speed	A/V/rpm	65/13,5/3000	
Brake disc and drum dimensions				
	Minimum disc thickness - ventilated	Front	24 mm	
	Minimum disc thickness	Rear	8 mm	
	Disc thickness variation	Front	0,010 mm	
	Disc thickness variation	Rear	0,010 mm	
	Disc runout	Front	0,05 mm	
	Disc runout	Rear	0,05 mm	
	Minimum pad thickness	Front	2 mm	
	Minimum pad thickness	Rear	2 mm	
	Parking brake travel	No. of notches	6-7	
Air conditioning				
	Air conditioning refrigerant	Type	R134a	
78	Air conditioning refrigerant quantity	grams		
79	Air conditioning oil	Type		
79	Air conditioning oil quantity	cm ³		

Autodata Note 69

Engine with filter

Aluminium sump = 4,25 litres.

Autodata Note 51

Main bearings

Horizontal bolts = 25 Nm

Vertical bolts = 70 Nm.

Autodata Note 78

Refrigerant quantity

1995-99 Delphi compressor = 750 grams

1995-99 Sanden compressor = 780-820 grams

1999→ = 1,6/1,8/2,0 XU engine = 775 grams.

Autodata Note 79

Oil type/oil viscosity

1995-99 Delphi compressor = Planet ELF PAF 488/ISO 150

1995-99 Sanden compressor = SP10/ISO 46

1999→ 1,6/1,8/2,0 XU engine = SP10/ISO 46

Oil quantity

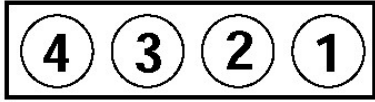
1995-99 Delphi compressor = 250-280 cm³

1995-99 Sanden compressor = 120-150 cm³

1999→ 1,6/1,8/2,0 XU engine = 120-150 cm³.

Cylinder layout

AD75570



Tightening sequence

