

Telephone:  
Fax:  
VAT Registration No.:

<b>Name:</b>		<b>Manufacturer:</b>	Fiat
<b>Address:</b>		<b>Model:</b>	Bravo 2.0
		<b>Year:</b>	1995-1998
		<b>Registration:</b>	
<b>Tel - Private:</b>		<b>Mileage:</b>	
<b>Tel - Business:</b>		<b>Job number:</b>	

Vehicle identification				
Notes			Specified value	Measured value
	No. of cylinders	Type	5/DOHC	
	Capacity (Fiscal)	cc	1998	
	Compression ratio	:1	10	
	Suitable for unleaded petrol		Yes	
	Minimum octane rating	RON	95	
	Ignition system	Make	Bosch	
	Ignition system	Type	Motronic M2.10.4	
	Ignition system	Description	Map-DI	
	Trigger location		Cam/ Crankshaft	
	Fuel system	Make	Bosch	
	Fuel System	Type	Motronic M2.10.4	
	Fuel System	Description	MFI-s	
	Air metering	Type	Mass	
	Combined ignition and fuel ECM		Yes	
	Diagnostic socket		Yes	

Ignition system				
Notes			Specified value	Measured value
	Ignition coil	Make	Bosch	
	Ignition coil	Type	0 221 504 006	
	Ignition coil supply voltage	+ with ballast V	12,0	
	Primary resistance	Ohm	0,40	
	Secondary resistance	Ohm	8500	
	Firing order		1-2-4-5-3	
	Distributor (ECM)	Make	(Bosch)	
	Distributor (ECM)	No.	(0 261 203 994)	

Tuning and emissions				
Notes			Specified value	Measured value
	Ignition timing - basic BTDC	°Engine/rpm	Not adjustable	
	Ignition advance checks	°Engine/rpm	ECM Controlled	
	Idle speed	rpm	750±50 Not adjustable	
	Oil temperature for CO test	°C	60	
	CO level at idle speed - tailpipe	Vol. % CO	0,35 Max Not adjustable	
	CO level at idle speed - sample pipe	Vol. % CO	0,4-1,0 Not adjustable	

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	CO level at idle speed	ppm	50	
	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	2500-2900	
	CO content at increased idle speed	Vol. %	0,3	
	Lambda at increased idle	λ	0,98-1,02	
<b>Spark plugs</b>				
<b>Notes</b>			<b>Specified value</b>	<b>Measured value</b>
	Spark plugs	Original equipment	Champion	
	Spark plug	Type	RC8BYC	
	Electrode gap	mm	0,8	
	Spark plugs	Make	Autolite	
	Spark plug	Type	APP3922	
	Electrode gap	mm	0,9	
	Spark plugs	Make	Beru	
	Spark plug	Type	14FR-7LDU	
	Electrode gap	mm	0,8	
	Spark plugs	Make	Champion	
	Spark plug	Type	RC8BYC	
	Spark plugs	Make	NGK	
	Spark plug	Type	BKR6EKC	
	Electrode gap	mm	0,9	
<b>Fuel system</b>				
<b>Notes</b>			<b>Specified value</b>	<b>Measured value</b>
	Fuel pump delivery pressure	bar	6,0-7,5	
	System pressure without vacuum	bar	3,0	
	Engine coolant temperature (ECT) sensor	Ohm/°C	310-320/80	
	RPM/TDC sensor	Ohm	774-946	
	Injector	Ohm	16,2	
	Oxygen sensor heater	Ohm	4-5	
<b>Service checks and adjustments</b>				
<b>Notes</b>			<b>Specified value</b>	<b>Measured value</b>
	Valve clearance -INLET	mm	Hydraulic	
	Valve clearance -EXHAUST	mm	Hydraulic	
	Oil pressure	bar/rpm	4,0/4000	
	Radiator cap	bar	0,98	
	Thermostat opens	°C	81-85	
<b>Lubricants and capacities</b>				
<b>Notes</b>			<b>Specified value</b>	<b>Measured value</b>
	Engine oil grade - cold climate	SAE	Synth.	
	Engine oil grade - moderate climate	SAE	10W/40 Synth.	
	Engine oil grade - hot climate	SAE	Synth.	
	Engine oil classification	API/ACEA	SJ/A3-96	
	Engine oil grade - alternative - moderate climate	SAE	10W/60 Synth.	
	Engine oil classification - alternative - moderate climate	API/ACEA	SH/A3-96	
	Engine with filter	litres	5,0	
	Gearbox oil grade	SAE	75W/90 Semi-Synth.	
	Gearbox 4/5 speed	litres	2,0	
	Cooling system	litres	7,4 AC=7,3	
	Brake fluid	Type	DOT 4	
	Brake fluid	litres	0,4	
	Power steering fluid	Type	Dexron II	
	Power steering fluid	litres	1,0	
<b>Tightening torques</b>				
<b>Notes</b>			<b>Specified value</b>	<b>Measured value</b>

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Cylinder head instructions			
<b>Cylinder head</b>			
		Renew bolts	No
	Stage 1	Tighten	20 Nm
	Stage 2	Tighten	40 Nm
	Stage 3	Tighten	90°
	Stage 4	Tighten	90°
	Stage 5	Tighten	90°
<b>Other tightening torques</b>			
	Main bearings	Renew bolts/nuts	No
	Main bearings	Stage 1	20 Nm
	Main bearings	Stage 2	100°
	Big end bearings	Renew bolts/nuts	No
57	Big end bearings	Stage 1	
	Oil pump to cylinder block		9 Nm
	Sump bolts		15 Nm
	Sump drain bolt		20 Nm
	Flywheel/driveplate		160 Nm
	Crankshaft pulley/damper		360 Nm
	Camshaft sprocket/gear		120 Nm
	Camshaft carrier/cap		15 Nm
	Camshaft/rocker cover		9 Nm
	Inlet manifold to cylinder head		25 Nm
	Exhaust manifold to cylinder head		25 Nm
	Spark plugs		25 Nm
	Oxygen sensor (Lambda)		50-60 Nm
	Knock sensor (KS)		25 Nm
46	Front hub		
	Rear hub		280 Nm
	Steering track rod end		70 Nm
	Brake disc to hub	Front	12 Nm
	Brake disc to hub	Rear	12 Nm
	ABS sensor	Front	10 Nm
	ABS sensor	Rear	10 Nm
	Road wheels		86 Nm
<b>Starting and charging</b>			
<b>Notes</b>			
	Battery	V/RC(Ah)	12/90 (60)
	Maximum cranking amps	A	162-198
	Alternator output at engine speed	A/V/rpm	85/14/3000
<b>Brake disc and drum dimensions</b>			
<b>Notes</b>			
	Minimum disc thickness - ventilated	Front	20,2 mm
	Minimum disc thickness	Rear	9,2 mm
	Disc runout	Front	0,15 mm
	Disc runout	Rear	0,15 mm
	Minimum pad thickness	Front	1,5 mm
	Minimum pad thickness	Rear	1,5 mm
	Handbrake travel	No. of notches	3
<b>Air conditioning</b>			
<b>Notes</b>			
	Air conditioning refrigerant	Type	R134a
	Air conditioning refrigerant quantity	grams	625±25
58	Air conditioning oil	Type	Dens Oil 9
59	Air conditioning oil quantity	cmi	160±20

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#### Autodata Note 37

Big end bearings

M8 = 20 Nm + 60°

M9 = 25 Nm + 60°.

#### Autodata Note 46

Front hub

Use new nut.

M22 = 70 Nm + 55°

M24 = 70 Nm + 62°.

#### Autodata Note 58

Oil type

Harrison V5 compressor = UCON RL488

Scroll SCS 08 compressor = Dens Oil 8.

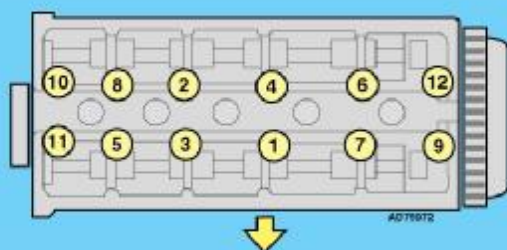
#### Autodata Note 59

Oil quantity

Harrison V5 compressor = 236 cmi.

Scroll SCS 08 compressor = 60-100 cmi.

#### Tightening sequence



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