South Tyneside College , +441914273677
St Georges Avenue , South Shields , NE34 6ET

Technical specifications

Volvo C30
D4204T/2

Vehicle identification

No. of cylinders	Type	4/DOHC
Capacity	cc	1998
Compression ratio	:1	18,0
Fuel system	Make	Siemens
Fuel system	Type	SID 803

Injection system

Injection system

Air metering	Type	Mass
Fuel/injection pump assembly	Make	Siemens
Pump type		Common rail
Fuel main pump delivery pressure	bar	2000 Max
Injection sequence		1-3-4-2

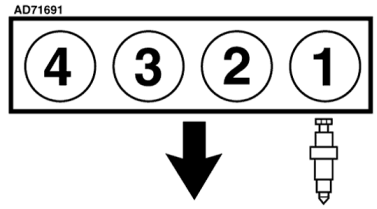

Fig71691

Tuning and emissions

Tuning and emissions

Idle speed	rpm	800
Rated no load speed	rpm	4800-5100

Oil temperature	°C	80
Idle speed - for smoke test	rpm	800-900
Governed speed range - for smoke test	rpm	4800-5100
Maximum time at governed speed	secs	1,5
Test mode	A/B	B
Probe type	1/2	1
Conditioning	Accelerations/rpm	6/4800-5100
Smoke opacity - homologation value	m-1 (%)	3,00 (78)

Starting and charging

Starting and charging

Battery	V/RC(Ah)	12

Service checks and adjustments

Service checks and adjustments

Valve clearance - INLET	mm	Hydraulic
Valve clearance - EXHAUST	mm	Hydraulic
Oil pressure	bar/rpm	4,0/4000
Radiator cap	bar	1,40-1,60
Thermostat (primary/secondary) open	°C	83

Lubricants and capacities

Engine oil options

Ambient temperature range		All temperatures
Engine oil grade	SAE	5W-30 Synthetic
Engine oil classification	API/ACEA	/B5
Engine with filter(s)	litres	4,8

- Oil level should be at two thirds between MIN and MAX marks on dipstick.
- Engine oil level reduced to allow for increase in oil level caused by diesel particulate filter (DPF) regeneration.

Other lubricants and capacities

Manual transmission oil grade	SAE	75W Synthetic
Manual transmission oil classification		WSD-M2C200-D2
Manual transmission	litres	1,7
Auto shift manual (ASM) transmission oil grade	SAE	1161838 Synthetic
Auto shift manual (ASM) transmission (drain & refill)	litres	5,5

Drain and refill

- Start engine and allow to idle.
- Connect diagnostic equipment to check transmission fluid temperature.
- Ensure transmission fluid temperature is 35-45°C.
- Select each gear for a minimum of 20 seconds, then return selector lever to 'P'. Switch ignition OFF.
- Remove filler plug.
- Remove drain plugs and allow transmission fluid to drain for approximately 3 minutes.
- Refit drain plugs.
- Renew transmission oil filter. Top up oil filter housing with 0,1 litre of transmission fluid.
- Fill transmission with specified amount.
- Refit filler plug.

Checking fluid level

- Start engine and allow to idle.
- Connect diagnostic equipment to check transmission fluid temperature.
- Ensure transmission fluid temperature is 35-45°C.
- Select each gear for a minimum of 20 seconds, then return selector lever to 'P'. Switch ignition OFF.
- Remove filler plug.
- Remove level plug. Allow stream of transmission fluid to reduce to a drip. Top up in amounts of 0,5 litre until transmission fluid flows from level hole. Allow stream of transmission fluid to reduce to a drip.
- Refit level and filler plugs.

Coolant	Type	Ethylene glycol
Coolant	Colour	Blue
Cooling system - total capacity	litres	9,5
Brake fluid	Type	DOT 4+
Brake fluid	litres	0,6
Power steering fluid	Type	WSS-M2C204-A2
Power steering fluid	litres	0,8-0,9
Diesel particulate filter (DPF) additive	Make	Volvo
Diesel particulate filter (DPF) additive	Type	1161752
Diesel particulate filter (DPF) additive	litres	1,8

Tightening torques

Tightening torques

Cylinder head instructions

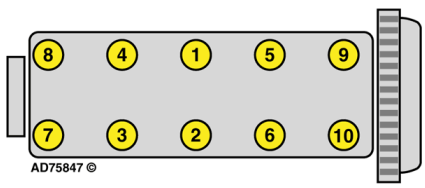

Fig75847

Cylinder head

	Renew bolts	Yes

	Tighten	20 Nm
	Tighten	40 Nm
	Tighten	60 Nm
	Tighten	220°

Other engine tightening torques

Main bearings	Renew bolts/nuts	Yes
Main bearings	Stage 1	25 Nm
Main bearings	Stage 2	60°
Big end bearings	Renew bolts/nuts	Yes
Big end bearings	Stage 1	20 Nm
Big end bearings	Stage 2	70°
Oil pump to cylinder block		16 Nm
Sump bolts		16 Nm
Sump drain bolt		34 Nm
Flywheel/driveplate		48 Nm

- Use new nuts/bolts.

Clutch pressure plate	29 Nm
Crankshaft pulley/damper centre bolt	70 Nm+60°

- Use new nuts/bolts.

Camshaft sprocket/gear	20 Nm+60°

- Use new nuts/bolts.

Camshaft carrier/cap	1)5 Nm 2)10 Nm
Camshaft/rocker cover	1)5 Nm 2)10 Nm
Inlet manifold to cylinder head	1)5 Nm 2)10 Nm
Exhaust manifold to cylinder head	30 Nm

- Use new nuts/bolts.

Water pump	17 nm
Injector/clamp	4 Nm+45°

- Use new nuts/bolts.

Injector pipe unions	30 Nm

- Replace high-pressure pipes when unions are slackened.

Fuel/injection pump mounting	22 Nm
Glow plugs	5 Nm
Crankshaft position (CKP) sensor/engine speed (RPM) sensor	10 Nm

Camshaft position (CMP) sensor	2 Nm
Engine oil pressure switch	35 Nm
Oil filter	26 Nm

Chassis tightening torques

Front hub		35 Nm+90°
• Use new nuts/bolts.		
Rear hub - wheel bearing housing bolts		65 Nm
• Use new nuts/bolts.		
Steering wheel		65 Nm
• Use new nuts/bolts.		
Steering track rod end		50 Nm
Brake disc to hub	Front	10 Nm
Brake caliper to carrier	Front	30 Nm
Brake caliper/carrier to hub	Front	120 Nm
• Use new nuts/bolts.		
Brake caliper to carrier	Rear	35 Nm
Brake caliper/carrier to hub	Rear	70 Nm
• Use new nuts/bolts.		

Road wheels

Lightly coat mating surfaces between wheel centre hole and hub. Use paste (Volvo part No. 1161397).

Alloy wheels with rotating washer on nut and steel wheels fig1184389.A:

1. 20 Nm
2. 110 Nm

Alloy wheels without rotating washer on nut fig1184389.B:

1. 20 Nm
2. 130 Nm

Locking wheel bolt = 110 Nm

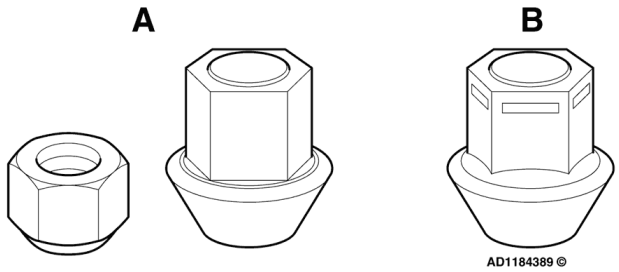

fig1184389

Brake disc and drum dimensions

Brake disc and drum dimensions

Minimum disc thickness for replacement - ventilated	Front	23 mm

- During brake pad replacement = 23,8 mm

Minimum disc thickness for replacement	Rear	9 mm

- During brake pad replacement = 9,8 mm

Disc thickness variation	Front	0,008 mm
Disc thickness variation	Rear	0,008 mm
Disc runout	Front	0,08 mm
Disc runout	Rear	0,04 mm
Minimum pad thickness	Front	3 mm
Minimum pad thickness	Rear	3 mm

Air conditioning

Air conditioning

No. of AC service connectors	2

- Charge via low-pressure service connector.

Air conditioning restrictor type		Fixed orifice tube
Compressor clutch/magnetic coupling		Yes
Compressor variable displacement solenoid		No
Air conditioning refrigerant	Type	R134a
Air conditioning refrigerant quantity	grams	530±16
Air conditioning oil group		PAG
Air conditioning oil	Type	1161627
Air conditioning oil quantity	cm^3	200

Air conditioning oil viscosity	ISO 46