

**Telephone:**  
**Fax:**  
**VAT Registration No.:**

<b>Name:</b>		<b>Manufacturer:</b>	Land Rover
<b>Address:</b>		<b>Model:</b>	
		<b>Year:</b>	1996
		<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	4/OHV	
	Capacity	cc	2495	
	Compression ratio	:1	19,5	

Injection system				
Notes			Specified value	Measured value
	Injection pump assembly	Make	Bosch	
	Injection pump assembly	Type	VER 509	
	Pump type		Rotary	
	Injection sequence		1-3-4-2	
	Injection nozzle	Make	Bosch	
	Nozzle and holder assembly	Part No.	KBAL 90 P37	
	Nozzle opening pressure - new/used	bar	200-300	

Tuning and emissions				
Notes			Specified value	Measured value
	Plunger travel (pump)	mm ABDC	1,54	
	Crankshaft position	°BTDC	0	
	Adjusting method	Engine/Pump	Special Tool/ Dial gauge	
	Idle speed	rpm	720±20	
	Rated no load speed	rpm	4600+40/-120	
	Oil temperature	°C	70	
	Idle speed - for smoke test	rpm	700-740	
	Governed speed range - for smoke test	rpm	4580-4640	
	Maximum time at governed speed	secs	2,0	
	Test mode	A/B	B	
	Probe type	1/2	1	
	Smoke opacity - EU limit	m-1 (%)	3,00 (73)	
	Smoke opacity - homologation value	m-1 (%)	2,50 (66)	

Starting and charging				
Notes			Specified value	Measured value
	Battery	V/RC(Ah)	12 (90) /160	
	Starter motor	Make	Paris Rhone	
	Starter motor	Type	D9R91	
	Maximum cranking amps	A	243-297	
	Alternator	Make	Lucas	
	Alternator	Type	A127-65	

**Manufacturer:** Land Rover

**Model:** 90/110/130/Defender 2,5D TDI

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**Engine code:** 300 Tdi

**Output:** 83 (113) 4000

7-4-2007

**Tuned for:**

**Year:** 1994-99

V5.373

**/Autodata**

	Alternator output	A/V/rpm	65/14/3000	
	Voltage regulator	Type	21TR	
	Regulated voltage	V	13,6-14,4	
<b>Glow plugs</b>				
<b>Notes</b>			<b>Specified value</b>	<b>Measured value</b>
	Glow plug activation time	secs	8	
	Glow plug - part no.	Beru	783 MJ	
	Glow plug - part no.	Bosch	0 250 201 012	
	Glow plug - part no.	Champion	CH70	
	Glow plug - part no.	Lucas/CAV	HDS303	
<b>Service checks and adjustments</b>				
<b>Notes</b>			<b>Specified value</b>	<b>Measured value</b>
	Valve clearance - INLET	mm	0,20 cold	
	Valve clearance - EXHAUST	mm	0,20 cold	
	Turbo boost pressure	bar/rpm	0,83-1,03/-	
	Oil pressure	bar/rpm	2,4-4,5/2000	
	Radiator cap	bar	1,03	
	Thermostat (primary/secondary) open	°C	88	
<b>Lubricants and capacities</b>				
<b>Notes</b>			<b>Specified value</b>	<b>Measured value</b>
	Engine oil grade - cold climate	SAE	5W/30	
	Engine oil grade - moderate climate	SAE	15W/40	
	Engine oil grade - hot climate	SAE	20W/50	
	Engine oil classification	API/ACEA	CF/B2-96	
	Engine oil grade - alternative - moderate climate	SAE	10W/40	
	Engine oil classification - alternative - moderate climate	API/ACEA	CF/B2-96	
	Engine with filter	litres	6,6	
	Gearbox oil grade	SAE	Dexron II	
	Gearbox 4/5 speed	litres	2,6	
	Differential front/AT	litres	1,7	
	Differential oil grade - rear	SAE	90W	
	Differential rear	litres	2,3	
	Cooling system	litres	11,10	
	Brake fluid	Type	DOT 4	
	Power steering fluid	Type	Dexron II	
	Power steering fluid	litres	2,9	
<b>Tightening torques</b>				
<b>Notes</b>			<b>Specified value</b>	<b>Measured value</b>
10	Cylinder head instructions			
<b>Cylinder head</b>				
		Renew bolts	No	
<b>Other tightening torques</b>				
	Main bearings	Renew bolts/nuts	No	
	Main bearings	Stage 1	66 Nm	
	Main bearings	Stage 2	133 Nm	
	Big end bearings	Renew bolts/nuts	No	
	Big end bearings	Stage 1	29 Nm	
	Big end bearings	Stage 2	59 Nm	
	Oil pump to cylinder block		25 Nm	
	Sump bolts		25 Nm	
	Sump drain bolt		35 Nm	
	Flywheel/driveplate		146 Nm	
	Clutch to flywheel		34 Nm	
	Crankshaft pulley/damper		342 Nm	
	Camshaft sprocket/gear		80 Nm	
	Camshaft/rocker cover		10 Nm	
	Inlet manifold to cylinder head		25 Nm	
	Exhaust manifold to cylinder head		45 Nm	

	Injector/clamp		25 Nm	
	Injector pipe unions		29 Nm	
	Injection pump flange		25 Nm	
	Injection pump mounting		25 Nm	
	Glow plugs		20 Nm	
	Steering track rod end		40 Nm	
	Brake caliper carrier to hub	Front	100 Nm	
	Brake caliper carrier to hub	Rear	100 Nm	
	ABS sensor	Front	18 Nm	
	ABS sensor	Rear	18 Nm	
	Road wheels		108 Nm	
<b>Brake disc and drum dimensions</b>				
<b>Notes</b>			<b>Specified value</b>	<b>Measured value</b>
	Minimum disc thickness - solid	Front	12 mm	
	Minimum disc thickness - ventilated	Front	22 mm	
	Maximum drum diameter	Rear	255,5 mm	
	Minimum pad thickness	Front	3 mm	
	Minimum shoe thickness	Rear	2 mm	
	Handbrake travel	No. of notches	3-4	
<b>Air conditioning</b>				
<b>Notes</b>			<b>Specified value</b>	<b>Measured value</b>
11	Air conditioning refrigerant	Type	R12	
40	Air conditioning refrigerant quantity	grams	1190-1250	
13	Air conditioning oil	Type	Suniso 4GS	
39	Air conditioning oil quantity	cm <sup>3</sup>	313	

#### Autodata Note 10

- 1) 40 Nm
- 2) 60°
- 3) 60°
- 4) M12x140 mm = + 20°

#### Autodata Note 11

06.94→ = R134a

#### Autodata Note 40

06.94-98 = 1090 grams  
1999→ = 700-800 grams

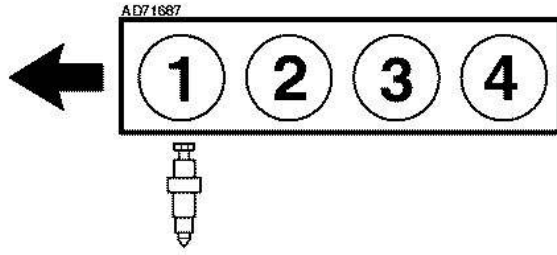
#### Autodata Note 13

R134a = Dens Oil 8

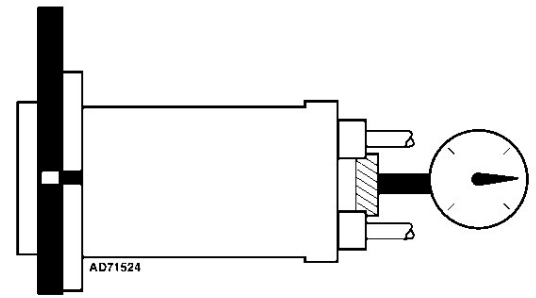
#### Autodata Note 39

Refer to underbonnet label.

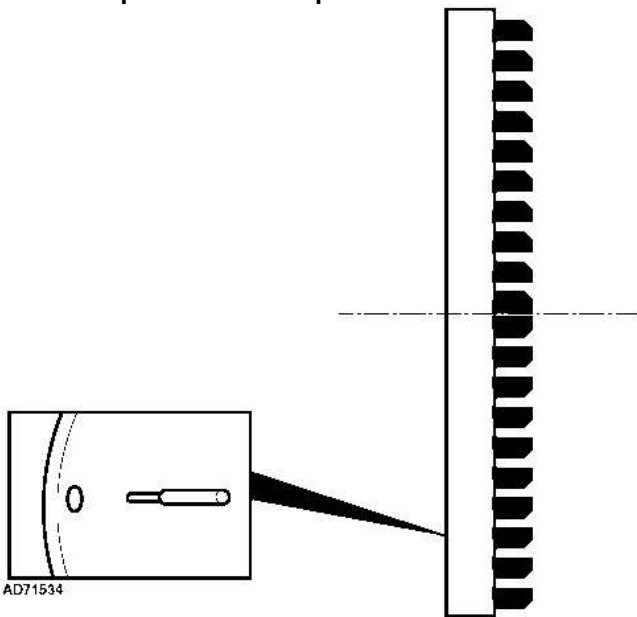
### Cylinder layout



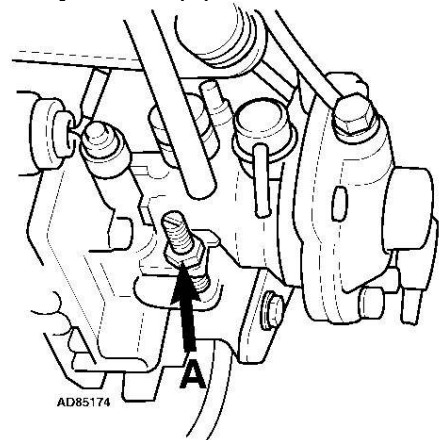
### Injection pump timing



### Crankshaft position/Piston position



### Idle speed adjustment (A)



### Tightening sequence

