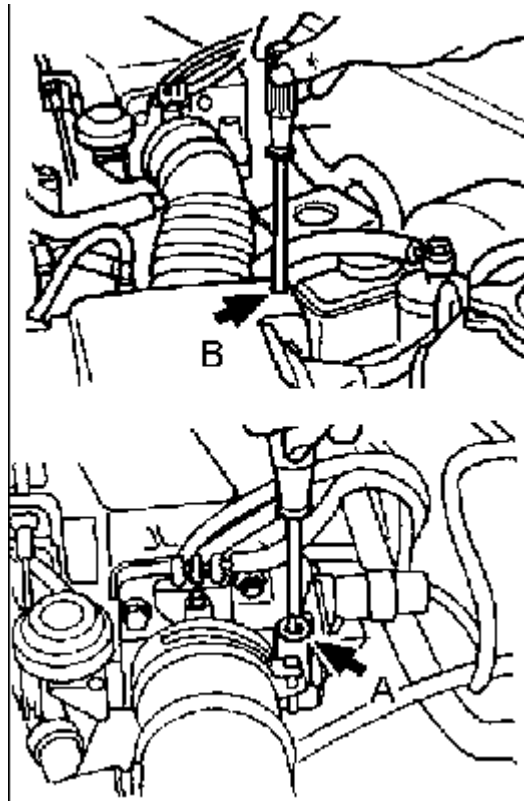


## Adjustment Data

### MAZDA - 626 - 2.2i - F2

#### Engine (general)

Item	Values	Units
Engine code	F2	
Capacity	2184	(cc)
Idle speed	750 ± 25	(rpm)
Valve clearance		
Hydraulic		
Compression pressure		
Normal	11.4	(bar)
Minimum	8.0	(bar)
Oil pressure	2.95 - 3.95	(bar / rpm)
Fuel system (make & type)	Denso EGI	
Adjustment screws (A = idle speed B = CO)	A	



Firing order	1-3-4-2	
Timing stroboscopic (before TDC)	6 ± 1/750	(° / rpm)
Start	0 ± 2/110	(° / mmHg)
End	18 - 22/275	(° / mmHg)
Centrifugal advance		
Start	0 ± 2/1200	(° / rpm)
End	16 - 20/4500	(° / rpm)
Ignition-coil resistance, primary	0.72 - 0.88	(ohms)
Ignition-coil resistance, secondary	10200 - 15200	(ohms)
Spark plugs (make & type)	NGK/ZFR6F-11	

Spark-plug gap	1.0 - 1.1	(mm)
Fuel-pump pressure	4.5 - 6.0	(bar)
Injection pressure / system pressure	2.4 - 2.8	(bar)
CO exhaust gas	< 0.5	(%)
CO <sub>2</sub>	13 - 16	(%)
HC	300	(ppm)
O <sub>2</sub>	0.5 - 2.0	(%)
Lambda	0.97 - 1.03	
Lambda change (Delta Lambda)	0.03	
Oil temperature during test	60	(°C)
Fast-idle speed	2500-2800	(rpm)
CO at fast-idle speed	< 0.3	(%)
Closed-loop test at: (rpm)	700 - 800	(rpm)

### Cooling system

Item	Values	Units
Cap pressure	0.75 - 1.05	(bar)
Thermostat opens at	86 - 90	(°C)
Fan on at	97	(°C)

### Electrical

Item	Values	Units
Battery	60	(Ah)
Alternator	70	(A)

### Brakes

Item	Values	Units
Disc thickness, front, min.	22.0	(mm)
Drum diameter, rear, max.	201.5	(mm)

### Steering and wheel alignment

Item	Values	Units
Toe-in, front	0' ± 18'	(°)
Camber, front	17' ± 45'	(°)
Castor, front	1° 13' ± 45'	(°)
K.P.I., front	12° 47'	(°)
Toe-in, rear	0 ± 18'	(°)
Camber, rear	-30' ± 45'	(°)

### Wheels and tyres

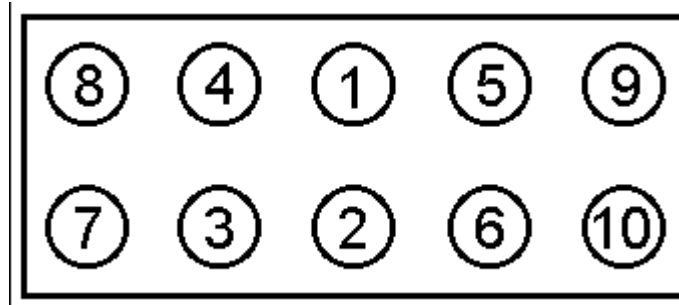
Item	Values	Units
Tyre size	195/60R15	
Front tyre pressure	2.2	(bar)
Rear tyre pressure	1.8	(bar)

### Capacities

Item	Values	Units
Engine sump, incl. filter	4.6	(l)
Manual transmission		
Gearbox refill	3.35	(l)
Cooling system	7.5	(l)

### Torque settings

Item	Values	Units
Cylinder head		



Stage 1	20 - 26	(Nm)
Stage 2	50 - 56	(Nm)
Stage 3	80 - 86	(Nm)
Front hub	235 - 319	(Nm)
Rear hub	98 - 117	(Nm)
Wheel nuts	88 - 118	(Nm)
Spark plugs	15 - 23	(Nm)

## Capacities

### MAZDA - 626 - 2.2i - F2

Item	Values	Units
Engine sump, incl. filter	4.6	(l)
Manual transmission		
Gearbox refill	3.35	(l)
Cooling system	7.5	(l)

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## Accessing trouble codes

- Ensure ignition switched OFF.
- Bridge data link connector (DLC) (green) terminal and earth **Fig. 1** [1].
- Connect LED test lamp between terminals 1 and 2 **Fig. 1** [2].

**NOTE: Connect LED test lamp positive connection to DLC terminal 2.**

- Switch ignition ON.
- Check that LED illuminates for 3 seconds.
- Count LED flashes. Note trouble codes. Compare with trouble code table.
- Long flashes indicate the LH digit.
- Short flashes indicate the RH digit.

**NOTE: If no faults are recorded: LED test lamp will illuminate for 3 seconds and then extinguish.**

- The ECM fault memory can also be checked using suitable diagnostic equipment connected to the data link connector (DLC) **Fig. 1** .

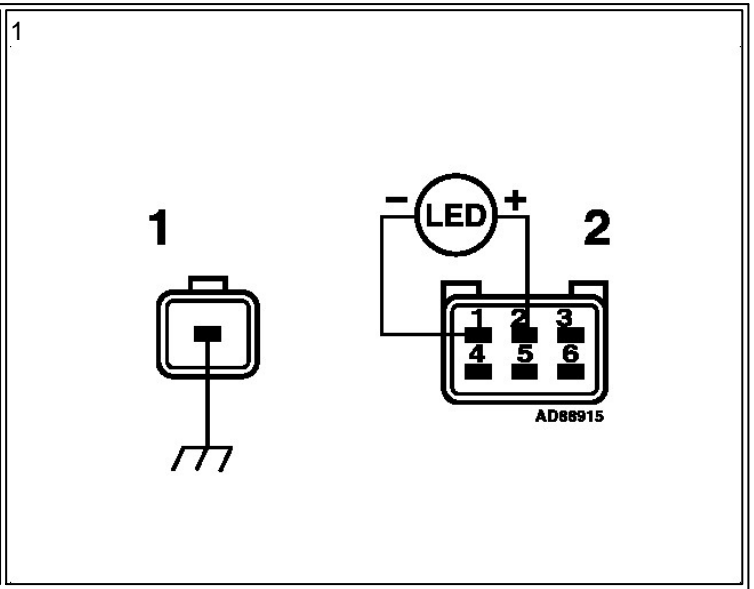
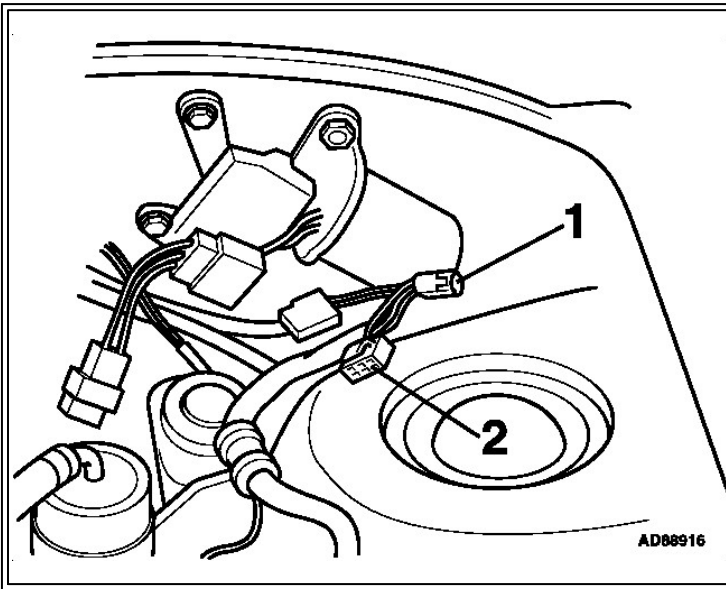
## Erasing trouble codes

- Ensure ignition switched OFF.
- Disconnect battery earth lead.
- Depress brake pedal for 3 seconds.
- Reconnect battery earth lead.
- Repeat checking procedure to ensure no data remains in ECM fault memory.

**WARNING: Disconnecting the battery may erase memory from electronic units (e.g. radio, clock).**

## Trouble code identification

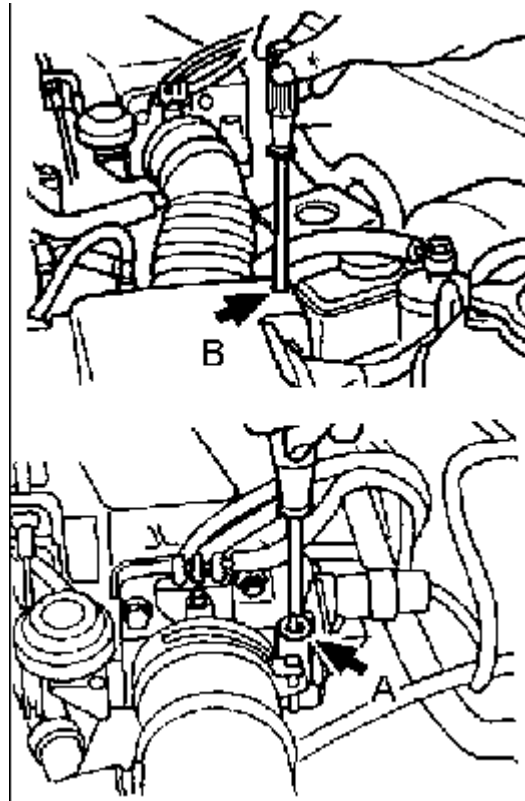
Trouble code	Fault location
01	Ignition pulse
08	Volume air flow (VAF) sensor
09	Engine coolant temperature (ECT) sensor
10	Intake air temperature (IAT) sensor
12	Throttle position (TP) sensor
14	Barometric pressure (BARO) sensor
15	Oxygen sensor (O2S)
16	Exhaust gas recirculation (EGR) valve position sensor
17	Oxygen sensor (O2S)
25	Fuel pressure regulator control solenoid
26	Evaporative emission (EVAP) canister purge valve
28	Exhaust gas recirculation (EGR) solenoid - vacuum
34	Idle air control (IAC) valve - C
35	Idle air control (IAC) valve - B



## Environmental Data

### MAZDA - 626 - 2.2i - F2

Item	Values	Units
Engine code	F2	
Idle speed	750 ± 25	(rpm)
Fuel system (make & type)	Denso EGI	
Adjustment screws (A = idle speed B = CO)	A	



Timing stroboscopic (before TDC)	6 ± 1/750	(° / rpm)
Start	0 ± 2/110	(° / mmHg)
End	18 - 22/275	(° / mmHg)
Centrifugal advance		
Start	0 ± 2/1200	(° / rpm)
End	16 - 20/4500	(° / rpm)
Fuel-pump pressure	4.5 - 6.0	(bar)
Injection pressure / system pressure	2.4 - 2.8	(bar)
CO exhaust gas	< 0.5	(%)
CO2	13 - 16	(%)
HC	300	(ppm)
O2	0.5 - 2.0	(%)
Lambda	0.97 - 1.03	
Lambda change (Delta Lambda)	0.03	
Oil temperature during test	60	(°C)
Fast-idle speed	2500-2800	(rpm)
CO at fast-idle speed	< 0.3	(%)
Closed-loop test at: (rpm)	700 - 800	(rpm)

Notes			Specified value	Measured value
<b>Vehicle identification</b>				
	No. of cylinders	Type	4/OHC	
	Capacity (Fiscal)	cc	2184 (2169)	
	Compression ratio	:1	8,6	
	Suitable for unleaded petrol		Yes	
	Minimum octane rating	RON	91	
	Ignition system	Type	HEI	
	Ignition system	Description	Trans-i	
	Trigger location		Distributor	
	Fuel system	Make	Mazda	
	Fuel System	Type	EGI	
	Fuel System	Description	MFI-i	
	Air metering	Type	Flow	
	Combined ignition and fuel ECM		No	
	Diagnostic socket		Yes	
<b>Ignition system</b>				
	Ignition coil	Make	Hanshin	
	Ignition coil supply voltage	+ with ballast V	11,0	
	Primary resistance	Ohm	0,72-0,88	
	Secondary resistance	Ohm	10200-15200	
	Firing order		1-3-4-2	
	Distributor (ECM)	Make	Mitsubishi	
<b>Tuning and emissions</b>				
5	Tuning conditions			
	Ignition timing	o = without + = with vacuum	o	
	Ignition timing - basic BTDC	°Engine/rpm	6±1/750	
	Ignition advance		Without vacuum and basic timing	
	Ignition advance checks	°Engine/rpm	0-2/1200	
	Ignition advance checks	°Engine/rpm	10-16/2400	
	Ignition advance checks	°Engine/rpm	16-20/4500	
	Vacuum check	+ = advance o = retard	+/o	
	Vacuum range	°Engine	18-22/3-8	
	Vacuum starts	mbar	147/147	
	Vacuum ends	mbar	366/266	
	Idle speed	rpm	750±25	
	Oil temperature for CO test	°C	60	
	CO level at idle speed - tailpipe (Cat)	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	2500-2800	
	CO content at increased idle speed	Vol. %	0,3	
	Lambda at increased idle	λ	0,97-1,03	
<b>Spark plugs</b>				
	Spark plugs	Original equipment	NGK	
	Spark plug	Type	ZFR6F-11	
	Electrode gap	mm	1,1	
	Spark plugs	Make	Autolite	
	Spark plug	Type	APP64	
	Electrode gap	mm	0,8	
	Spark plugs	Make	Bosch	
	Spark plug	Type	FR7LCX	
	Electrode gap	mm	1,1	
	Spark plugs	Make	Champion	
	Spark plug	Type	RC9YC4	



	Electrode gap	mm	1,1	
	Spark plugs	Make	NGK	
	Spark plug	Type	ZFR6F-11	
	Electrode gap	mm	1,1	
<b>Fuel system</b>				
	System pressure without vacuum	bar	2,35-2,75	
	Engine coolant temperature (ECT) sensor	Ohm/°C	280-350/80	
	Injector	Ohm	12-16	
	Idle speed control valve	Ohm	6,3-9,9	
<b>Service checks and adjustments</b>				
	Valve clearance -INLET	mm	Hydraulic	
	Valve clearance -EXHAUST	mm	Hydraulic	
	Compression pressure	bar	7,8-11,2	
	Oil pressure	bar/rpm	2,9-3,9/3000	
	Radiator cap	bar	0,74-1,03	
	Thermostat opens	°C	87-90	
	Drive belt tension - alternator/PAS/AC	mm	7-9	
<b>Lubricants and capacities</b>				
	Engine oil grade - cold climate	SAE	5W/30	
	Engine oil grade - moderate climate	SAE	10W/30	
	Engine oil grade - hot climate	SAE	20W/40	
	Engine oil classification	API/ACEA	SJ/A2-96	
	Engine oil grade - alternative - moderate climate	SAE	10W/40	
	Engine oil classification - alternative - moderate climate	API/ACEA	SJ/A2-96	
	Engine with filter	litres	4,1	
	Gearbox oil grade	SAE	75W/90	
	Gearbox 4/5 speed	litres	3,35	
	Automatic transmission fluid	Type	Dexron II	
	Cooling system	litres	7,5	
	Brake fluid	Type	DOT 3/4	
	Power steering fluid	Type	Dexron II	
	Power steering fluid	litres	1,0	
<b>Tightening torques</b>				
	Cylinder head instructions			
<b>Cylinder head</b>				
		Renew bolts	No	
	Stage 1	Tighten	20-26 Nm	
	Stage 2	Tighten	50-56 Nm	
	Stage 3	Tighten	80-86 Nm	
<b>Other tightening torques</b>				
	Main bearings	Renew bolts/nuts	No	
	Main bearings	Stage 1	41 Nm	
	Main bearings	Stage 2	82-88 Nm	
	Big end bearings	Renew bolts/nuts	No	
	Big end bearings	Stage 1	33 Nm	
	Big end bearings	Stage 2	65-69 Nm	
62	Oil pump to cylinder block			
	Sump bolts		10 Nm	
	Sump drain bolt		30-40 Nm	
	Flywheel/driveplate		100 Nm/100 Nm	
	Clutch to flywheel		18-26 Nm	
	Crankshaft pulley/damper		157-167 Nm	
	Camshaft sprocket/gear		47-65 Nm	
	Camshaft carrier/cap		18-26 Nm	
	Camshaft/rocker cover		6-8 Nm	
	Inlet manifold to cylinder head		20-30 Nm	
	Exhaust manifold to cylinder head		20-30 Nm	

Spark plugs		15-23 Nm	
Front hub		235-319 Nm	
Rear hub		98-117 Nm	
Steering track rod end		29-44 Nm	
Brake caliper to carrier	Front	36 Nm	
Brake caliper carrier to hub	Front	88 Nm	
Brake caliper to carrier	Rear	20 Nm	
Brake caliper carrier to hub	Rear	57 Nm	
ABS sensor	Front	20 Nm	
ABS sensor	Rear	20 Nm	
Road wheels		88-118 Nm	

### Starting and charging

Battery	V/RC(Ah)	12/90 (60)	
Starter motor	Make	Mitsubishi	
Starter motor	Type	1,4 kW	
Maximum cranking amps	A	162-198	
Alternator/Regulator	Make	Mitsubishi	
Alternator output at engine speed	A/V/rpm	70/14,5/3000	
Regulated voltage	V	14,1-14,7	

### Brake disc and drum dimensions

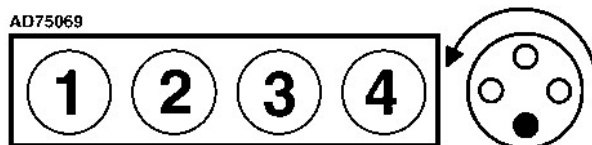
44	Minimum disc thickness - ventilated	Front	18 mm	
	Minimum disc thickness	Rear	8 mm	
	Disc runout	Front	0,10 mm	
	Disc runout	Rear	0,10 mm	
	Maximum drum diameter	Rear	230,1 mm	
	Minimum pad thickness	Front	2 mm	
	Minimum pad thickness	Rear	1 mm	
	Minimum shoe thickness	Rear	1 mm	
	Handbrake travel	No. of notches	5-7	

### Air conditioning

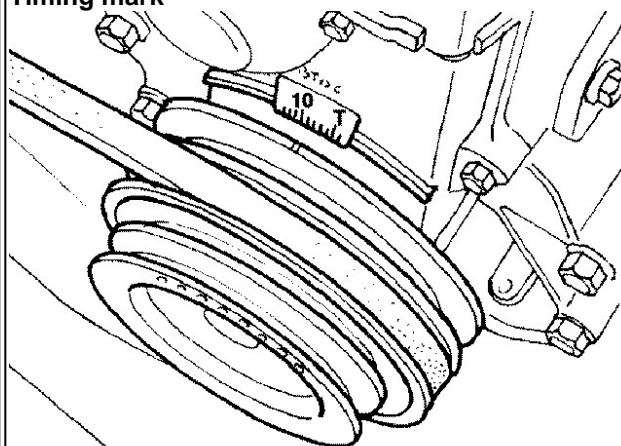
Air conditioning refrigerant	Type	R12	
Air conditioning refrigerant quantity	grams	800	
Air conditioning oil	Type	FREOL DS-83P	
Air conditioning oil quantity	cmi	150	

### Cylinder layout

AD75069

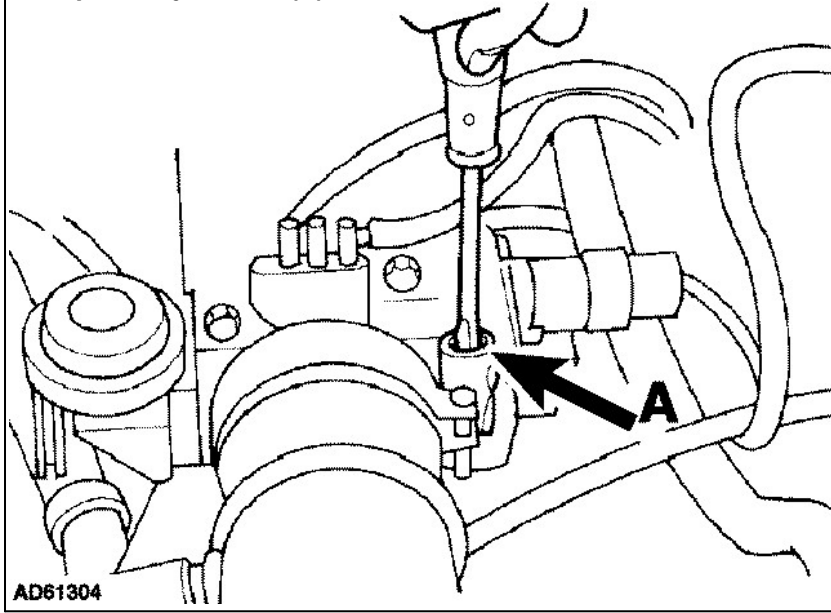


### Timing mark

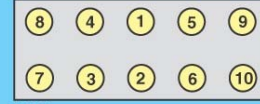


AD58730

### Idle speed adjustment (A)



### Tightening sequence



## MAZDA - 626 - 2.2i - F2

**Engine**

Motor oil API SG	Below 0 °C	SAE 5W-30
Motor oil API SG	Above -25 °C	SAE 10W-30

**Cooling system**

Coolant	All temperatures
---------	------------------

**Manual transmission**

Gear oil API GL-4	All temperatures	SAE 75W-90
Gear oil API GL-5	All temperatures	SAE 75W-90
Gear oil API GL-4	Above 5 °C	SAE 80W-90
Gear oil API GL-5	Above 5 °C	SAE 80W-90

**Automatic transmission**

ATF Dexron II	All temperatures
ATF M-III	All temperatures

**Transfer box**

Gear oil API GL-5	Above -20 °C	SAE 90
Gear oil API GL-5	Below -20 °C	SAE 80W

**Differential, rear (4x4)**

Gear oil API GL-5	Above -20 °C	SAE 90
Gear oil API GL-5	Below -20 °C	SAE 80W

**Power steering**

ATF Dexron II	All temperatures
ATF M-III	All temperatures

**Brakes system**

Brake fluid DOT 3	All temperatures
-------------------	------------------

## Timing

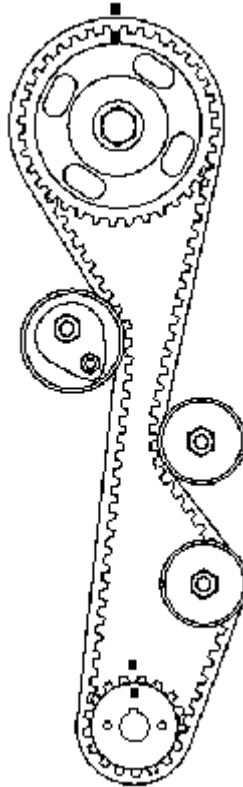
### MAZDA - 626 - 2.2i - F2

#### General

##### Item

##### Note

Always check the timing marks before timing belt removal



Before disconnecting the battery cable, check the audio system security code

#### Removal

##### Item

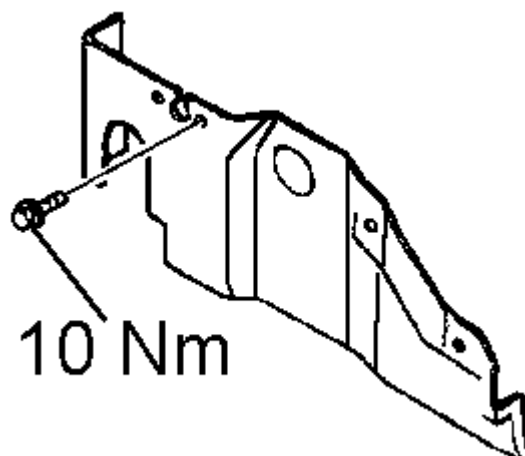
##### Note

Disconnect the battery

Disconnect the spark-plug leads

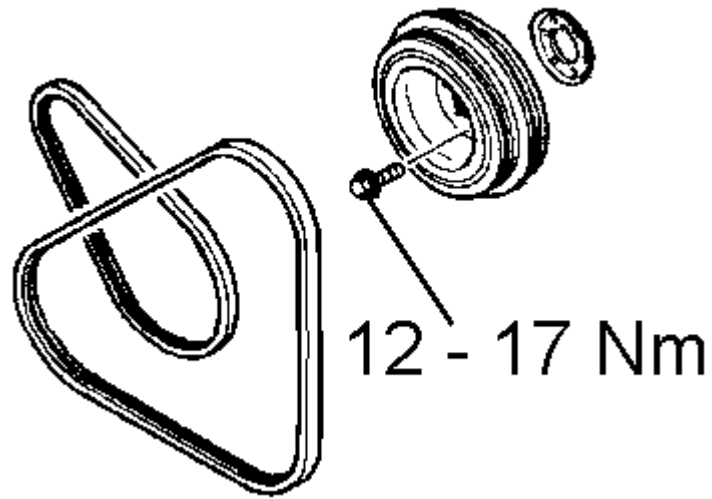
Remove the spark plugs

Remove the lower cover

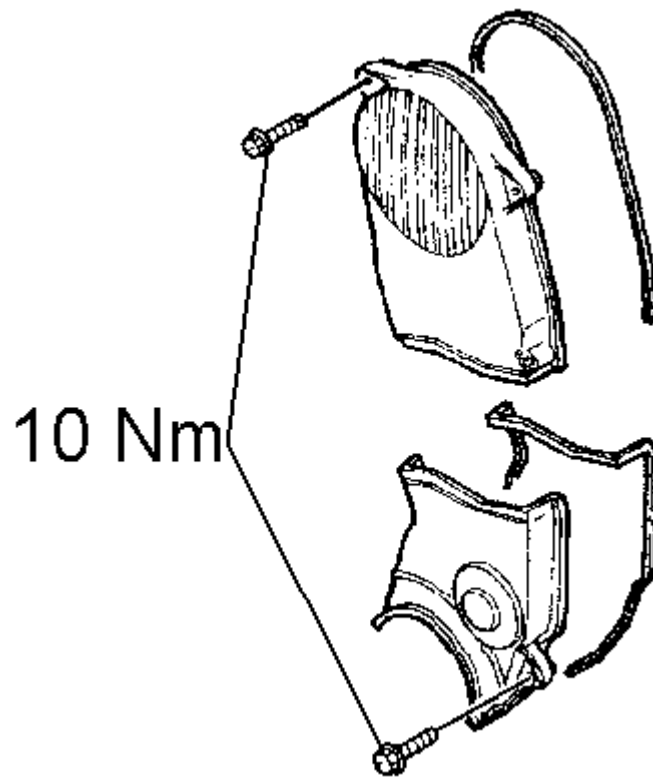


Remove the ancillary drive belt

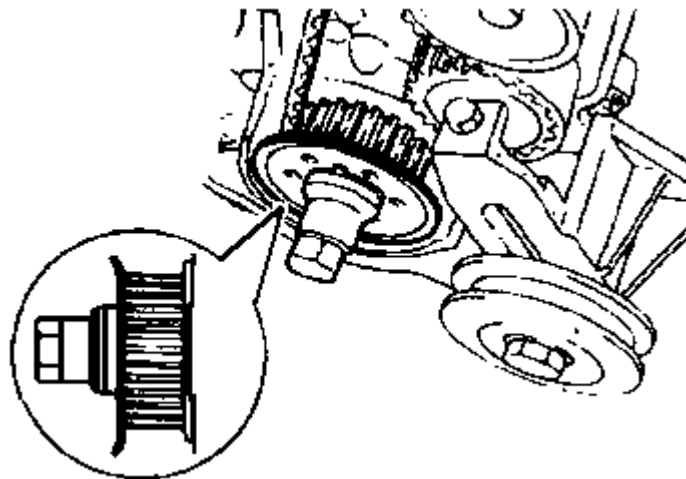
Remove the crankshaft pulley



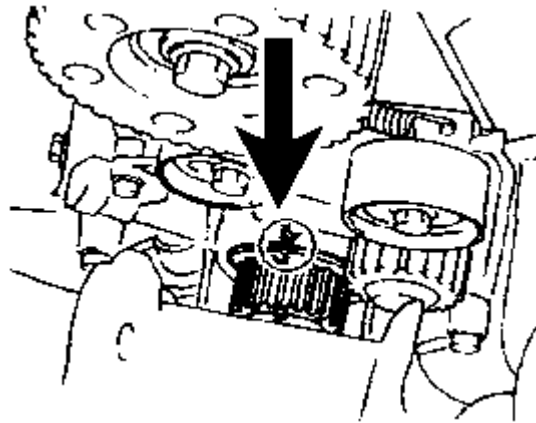
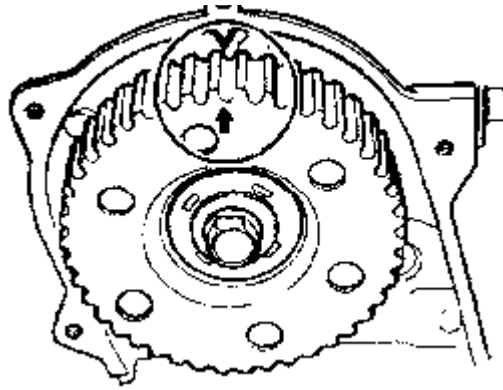
Remove the timing-belt covers



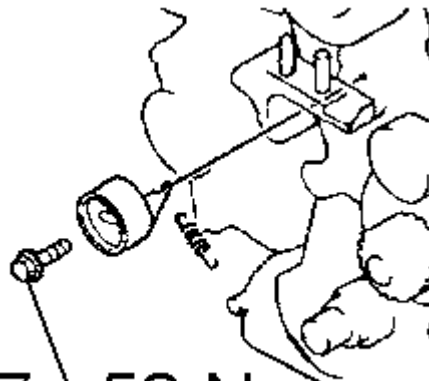
Remove the guide plates



Align the timing marks



Loosen the tensioner



37 - 52 Nm

Push the tensioner pulley away from the timing belt

Tighten the tensioner

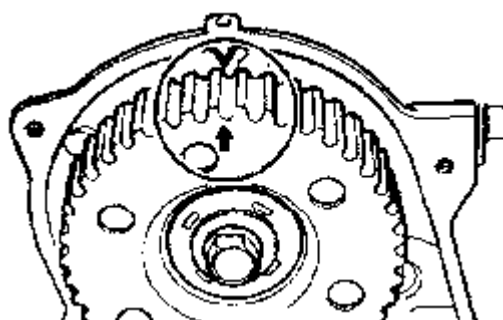
Remove the timing belt

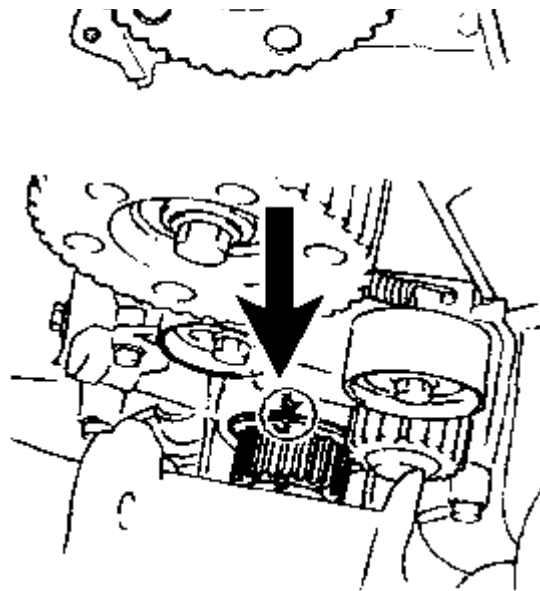
### Installation

Item

Check the timing marks

Note





Fit the timing belt

Turn the engine 2 rotations by hand

Check the timing marks

Loosen the tensioner

Tighten the tensioner

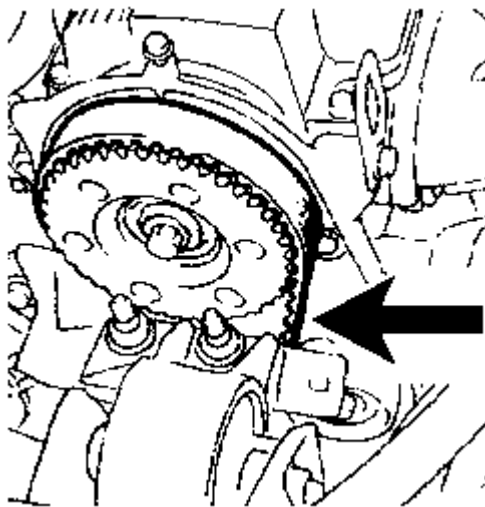
37 - 52 Nm

Turn the engine 2 rotations by hand

Check the timing marks again

Measure the timing belt deflection

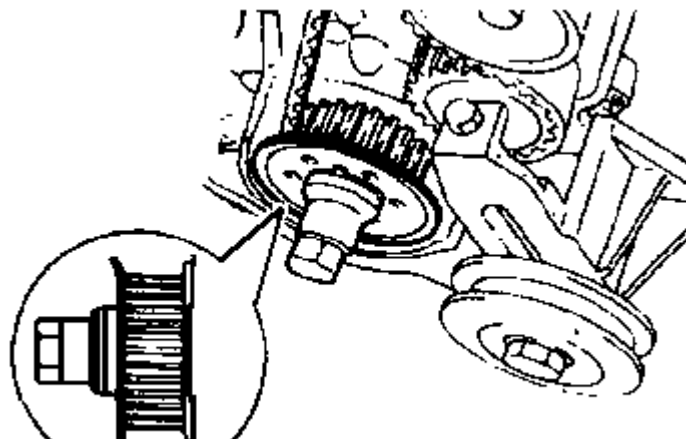
98 N



The tension is set at a deflection of:

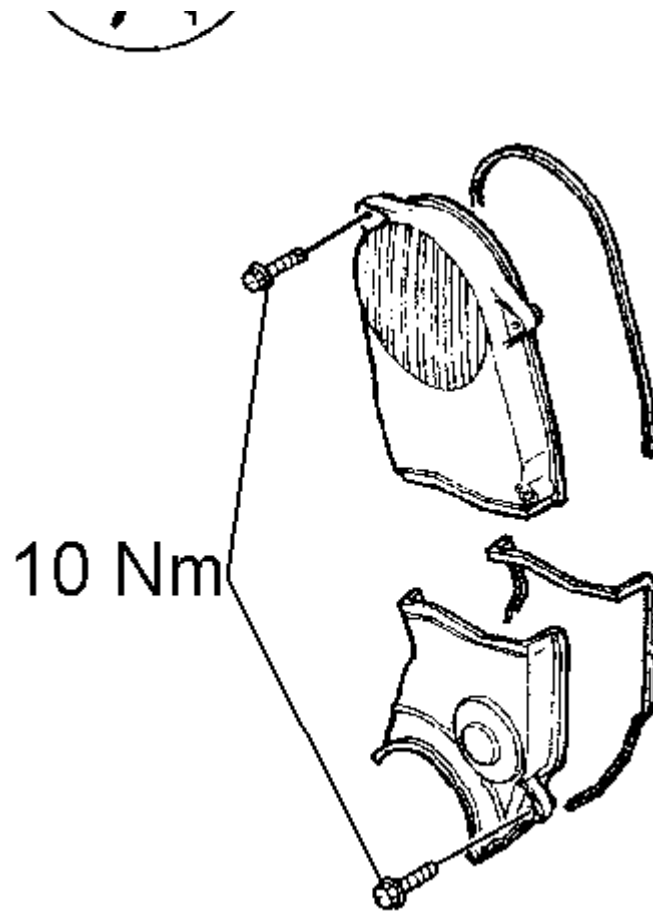
8 - 9 mm

Refit the timing belt guide plates

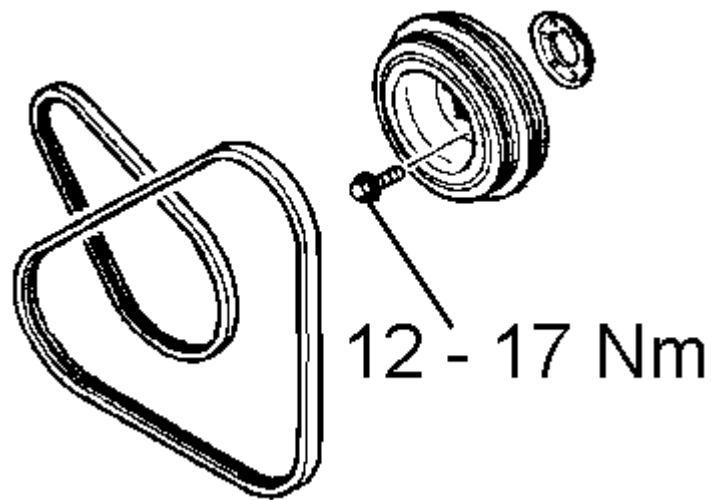




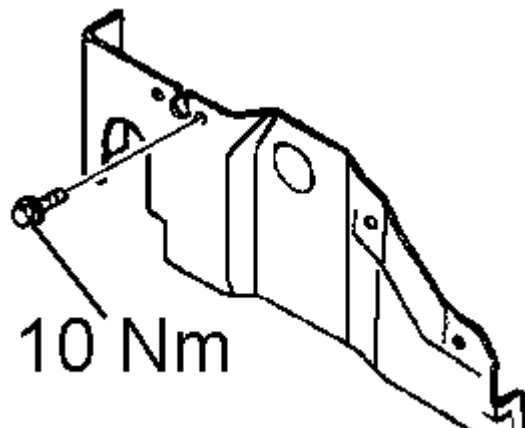
Refit the timing belt covers



Refit the crankshaft pulley



Fit the ancillary drive belt  
Refit the engine lower covers





- Refit the spark plugs
- Refit the spark plug leads
- Reconnect the battery earth cable

**Torque settings**

<b>Item</b>	<b>Note</b>
Tensioner	37 - 52 Nm
Crankshaft pulley:	12 - 17 Nm
Spark plugs:	15 - 23 Nm

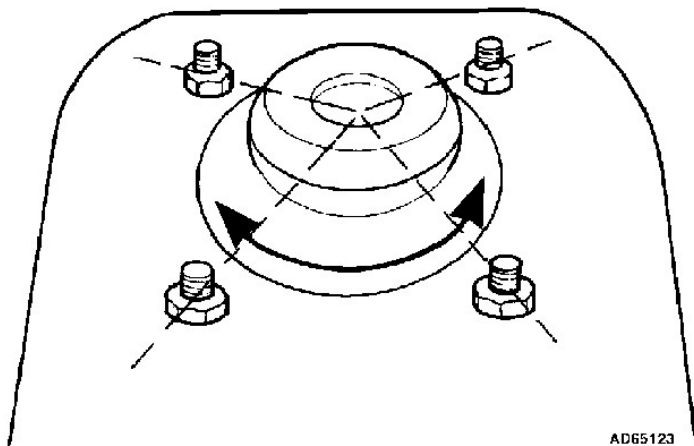
**Special tools**

<b>Item</b>	<b>Note</b>
Special tools are not required	

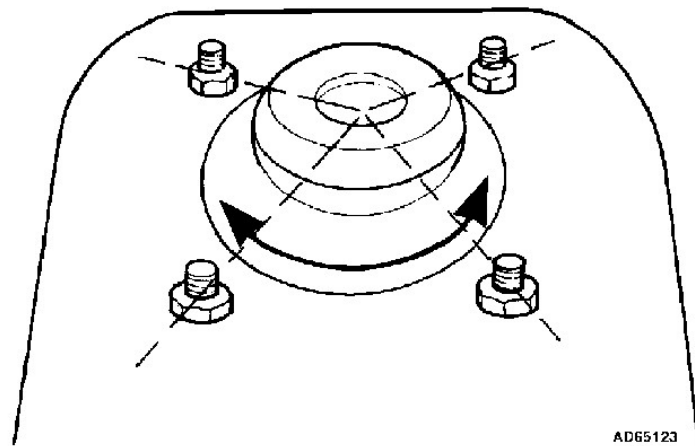
Setting data - Four wheels

Notes			Specified value	Measured value
Load positioning			unladen	
Fuel tank - percentage full		%	100	
Toe-in (N = negative, toe-out)		mm	0±2	
Toe-in		deg	0°±18'	
Toe-in		deg-1/100	0±0,30	
Camber		deg	0°17'±45'	
Camber		deg-1/100	0,28±0,75	
Tolerance left/right		deg	0°30'	
Tolerance left/right		deg-1/100	0,50	
Camber adjustment			\$ADJ	
Castor		deg	1°13'±45'	
Castor		deg-1/100	1,22±0,75	
Tolerance left/right		deg	0°40'	
Tolerance left/right		deg-1/100	0,67	
Castor adjustment			\$ADJ	
KPI (SAI)		deg	12°47'	
KPI (SAI)		deg-1/100	12,78	
Included angle		deg	13°4'	
Included angle		deg-1/100	13,07	
Lock angles - max. inner		deg	36°26'	
Lock angles - max. inner		deg-1/100	36,43	
Lock angles - max. outer		deg	30°59'	
Lock angles - max. outer		deg-1/100	30,98	
Rear toe-in		mm	0±2	
Rear toe-in		deg	0°±18'	
Rear toe-in		deg-1/100	0±0,30	
Rear toe-in adjustment			\$ADJ	
Rear camber		deg	0°30'N±45'	
Rear camber		deg-1/100	0,50N±0,75	
Rear camber adjustment			Not adjustable	

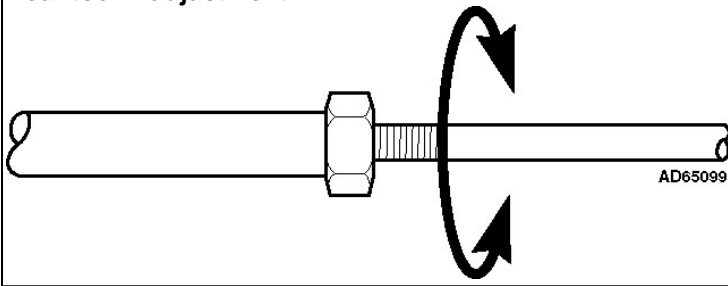
Camber adjustment



Castor adjustment



Rear toe-in adjustment



AD65099