



# RENAULT All Types

Type

S/Section

XXX

11

*This note cancels and replaces Technical Note No. 2252A*

## 11 BELT TENSION

- Engine : All types
- Gearbox : Basic Manual:All Workshop Repair Manuals

- Presentation of tool **Mot. 1273**; tool for testing belt tension **SEEM C. Tronic 105.6**.
- **Tension values** for timing belts and accessories belts of all types.
- **Tension values** for fitting and operating for all types.

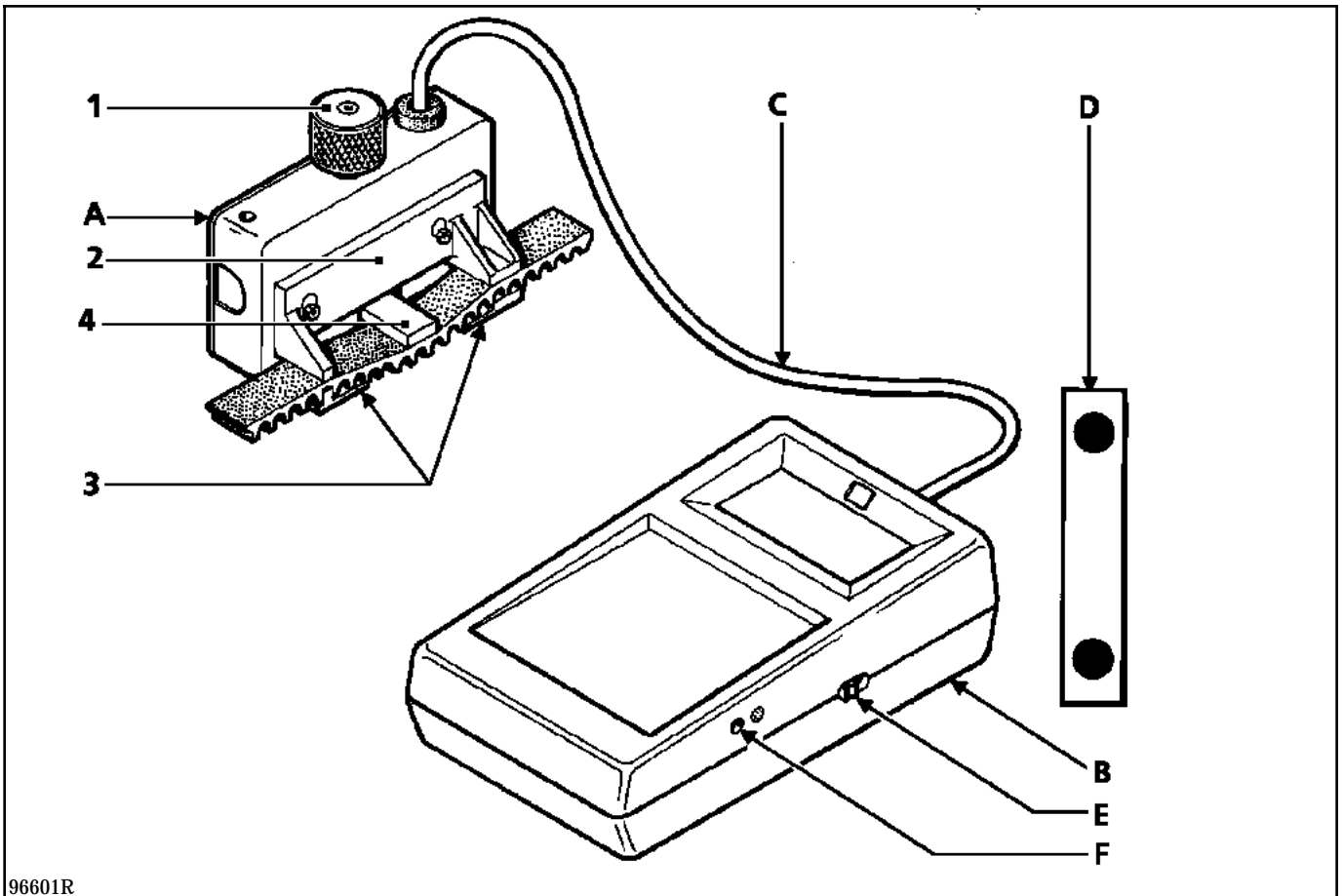
The repair methods given by the manufacturer in this document are based on the technical specifications current when it was prepared.

The methods may be modified as a result of changes by the manufacturer in the production of the various component units and accessories from which his vehicles are constructed".

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ESSENTIAL SPECIAL TOOLING	
Mot. 1273	Tool for checking belt tension (SEEM C. Tronic 105.6).



- A : SENSOR  
 B : DISPLAY  
 C : CONNECTION WIRE  
 D : CALIBRATION TESTING BLADE

### Principle

The combined action of the the pressure knob (1), the pressure unit (2) and the external brackets (3) applies a constant deflection to the belt.

The reactive force of the belt is measured by a test sensor (4) which is fitted with stress gauges.

When the gauges are stretched, their electrical resistance varies.

Once this variation has been converted by the equipment, the value in SEEM (US) units is shown on the display.

### Calibrating the equipment

The equipment is set in the factory, but its calibration should be checked every six months.

### Procedure

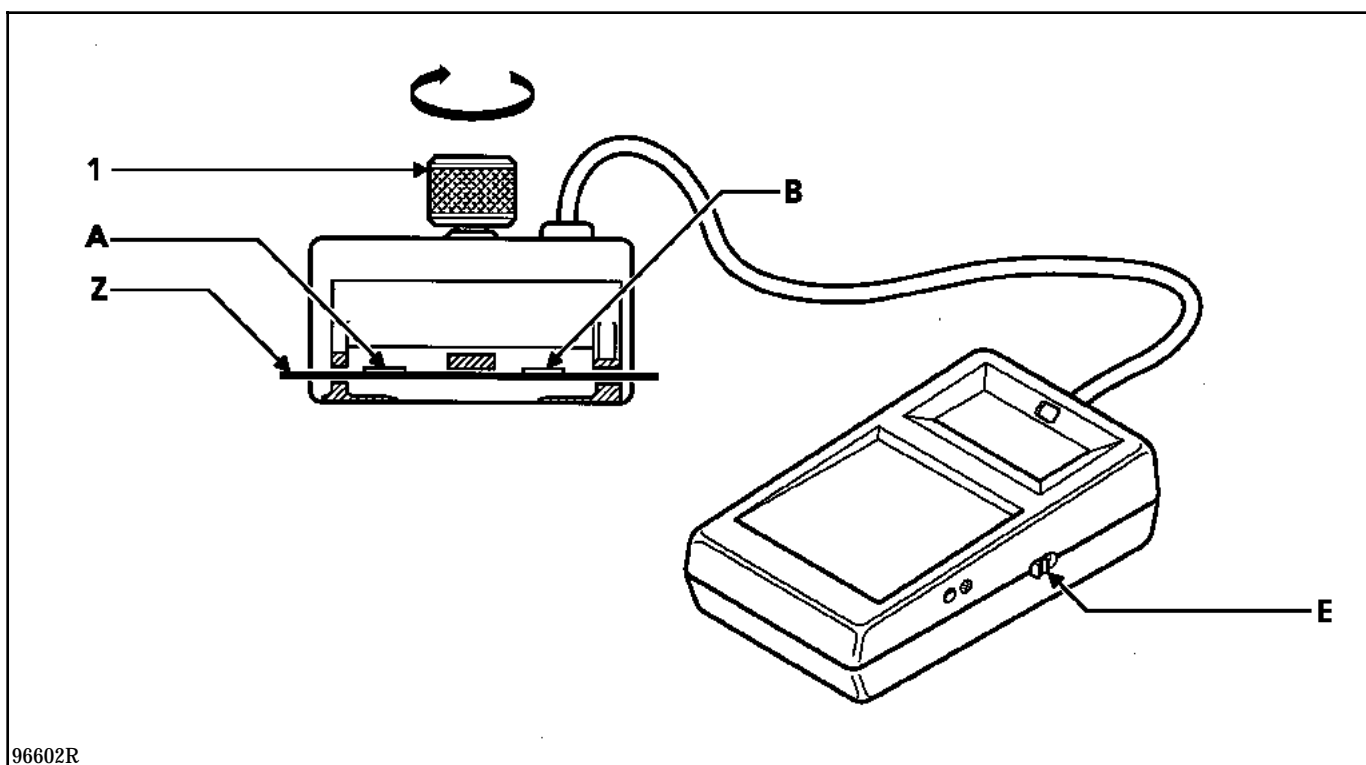
- Setting to zero:
  - Turn the power on (button E) and position the pressure knob(1) **upside down**.
  - If the display shows 0, no adjustments need to be made.
  - If there is no display, check the charge of the 9 Volt battery in the equipment.
  - If any other value than 0 is displayed, adjust screw (F) until 0 is displayed.

- Checking the calibration:

- Turn the power on (button E).
- Position the spring calibration blade (Z) on the sensor as shown in the diagram (Test values are stamped on the top side, (A) minimum value, (B) maximum value).
- Tighten the pressure knob (1) until three clicks are heard.
- Check that the display shows a value X which is between values (A and B).

**Note:** A few preliminary tests may have to be carried out before the correct value is obtained. If incorrect values are still obtained after several tests, contact your After Sales Head Office.

**Note:** Each set of equipment has its own calibration blade which **may not be interchanged** with a blade from another set of equipment.



1 : Knurled knob (pressure knob)

(A, B) : Calibration blade test values

Z : Calibration blade

SEEM

Contact your After Sales Head Office  
for further information

### CONDITIONS FOR FITTING BELTS

#### - TRAPEZOID BELT

#### Method for tensioning a new belt:

- Engine cold (ambient temperature).
- Fit the new belt.
- Fit the sensor of tool **Mot. 1273**.
- Turn the sensor knob until three clicks are heard.
- Tighten the belt until the display on tool **Mot. 1273** shows the recommended fitting value.
- Lock the tensioner, test and adjust the value.
- Turn the crankshaft **three times**.
- Check that the tension value is **within the fitting tension tolerance otherwise adjust again**.

#### Method for tensioning a belt which has already been used:

- Engine cold (ambient temperature).
- Fit the belt.
- Fit the sensor of tool **Mot. 1273**.
- Turn the sensor knob until three clicks are heard.
- Tighten the belt until the display on tool **Mot. 1273** shows 80 % of the recommended fitting value.
- Lock the tensioner, test and adjust the value.
- Turn the crankshaft **three times**.
- Check that the tension value is **within 80% of the fitting tension tolerance otherwise adjust again to 80% of the fitting tension**.

**Note :** The trapezoid belt is replaced **according to its condition or if noise is being caused**.

The measuring point is obtained by fitting the sensor of tool **Mot. 1273** in place of tool **Elé. 346-04**.

### - RIBBED BELT

#### Tensioning procedure:

- Engine cold (ambient temperature).
- Fit the new belt.
- Fit the sensor of tool **Mot. 1273**.
- Turn the sensor knob until three clicks are heard.
- Tighten the belt until the display on tool **Mot. 1273** shows the recommended fitting value.
- Lock the tensioner, test and adjust the value.
- Turn the crankshaft **three times**.
- Check that the tension value is **within the fitting tension tolerance otherwise adjust again**.

#### Note :

- Never refit a belt that has been used.
- Replace the belt if the tension is **below the minimum operating tension**.
- **Small cuts or cracks** do not mean that the belt should be replaced.
- The measuring point is obtained by fitting the sensor of tool **Mot. 1273** in place of tool **Elé. 346-04**.

### - TIMING BELT

#### Tensioning procedure:

- Engine cold (ambient temperature).
- Fit the new belt.
- Fit the sensor of tool **Mot. 1273**.
- Turn the sensor knob until three clicks are heard.
- Tighten the belt until the display on tool **Mot. 1273** shows the recommended fitting value.
- Lock the tensioner, test and adjust the value.
- Turn the crankshaft **three times**.
- Check that the tension value is **within the fitting tension tolerance otherwise adjust again**.

#### Note :

- Never refit a belt that has been used.
- Replace the belt if the tension is **below the minimum operating tension**.
- The measuring point is obtained by fitting the sensor of tool **Mot. 1273** in place of tool **Elé. 346-04**.

### TIMING BELT

#### Tensioning procedure for engines F7P - F7R

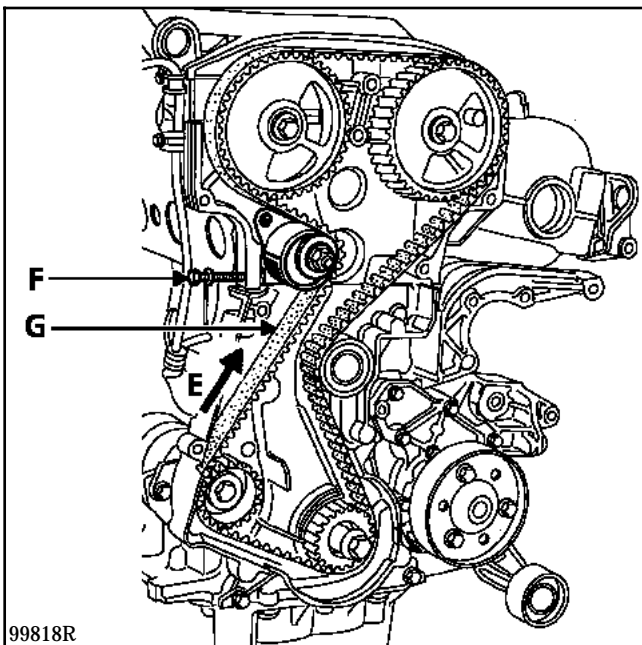
#### TIMING BELT TENSIONING METHOD

Using a screw (F) which is **6 mm** in diameter and **45 mm** in length, tension the belt using the tensioner pulley.

Remove tool **Mot. 1054**.

Exert strong pressure to the edge (G).

Fit the sensor of tool **Mot. 1273** onto the slack edge at (G).



Turn the sensor knob until three clicks are heard.

Adjust the tension value on the display of tool **Mot. 1273** by turning the screw (F) until the following value is obtained :

**$32 \pm 3$  US (SEEM units)**

Lock the tensioner pulley nut at **5 daN.m**.

#### CHECKING :

Turn the engine over **three times**.

Refit tool **Mot. 1054** in place.

The marks on the camshaft notched wheels should be aligned with the marks on the camshaft cover.

This operation is to check the correct timing calibration.

Remove tool **Mot. 1054**.

Exert strong pressure to the edge (G).

Fit the sensor of tool **Mot. 1273** onto the slack edge at (G).

Turn the sensor knob until three clicks are heard.

Check that the value shown on the display of tool **Mot. 1273** which should be  **$32 \pm 3$  US (SEEM units)**. If it is not, adjust the value.

**NOTE :** Do not refit a belt that has been used.

### TIMING BELT

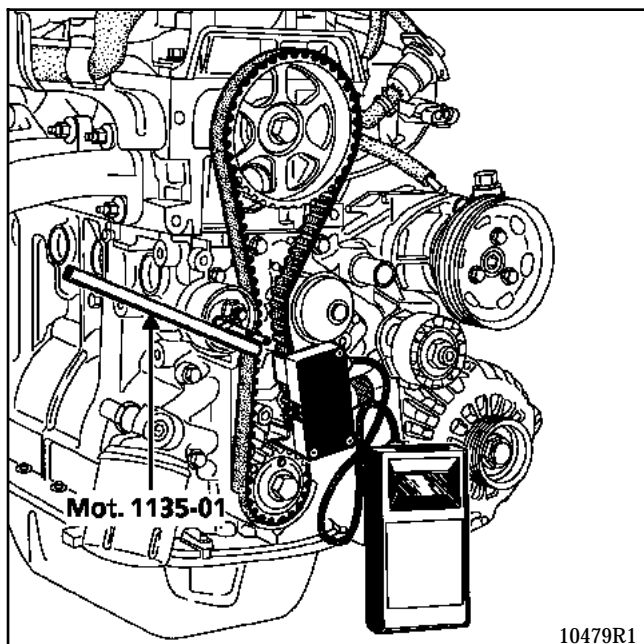
#### Tensioning procedure for D7F engine

#### TIMING BELT TENSIONING METHOD

Remove tool **Mot. 1054**.

Fit the spacer (1) of tool **Mot. 1386** and tighten the crankshaft pulley bolt.

- a) Fit tool **Mot. 1273** and using tool **Mot. 1135-01**, turn the tensioner pulley in an anti-clockwise direction until the value of **20 US** is obtained (turn the sensor knob until 3 clicks are heard).



Tighten the tensioner pulley nut.

Turn the engine over a minimum of **two times** (without ever turning it back).

**Lock the engine at TDC and then remove the tool.**

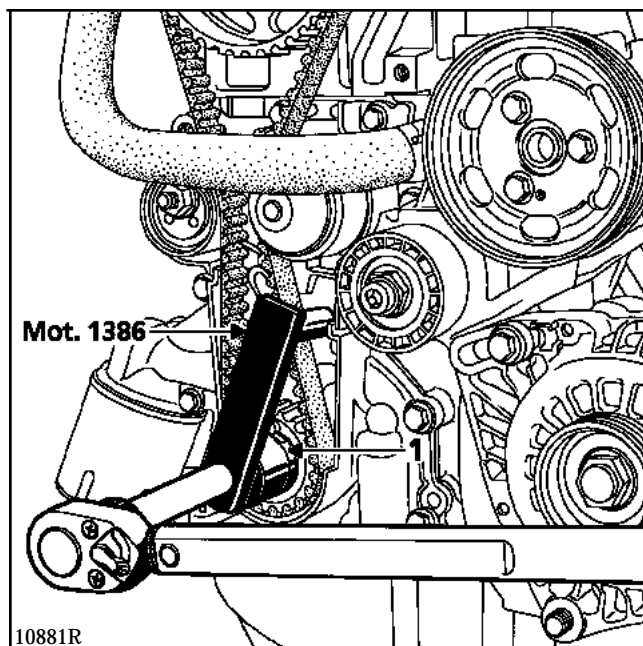
Check that the timing is correctly set at the crankshaft and camshaft end.

Slacken the tensioner pulley nut and slightly turn the tensioner in an anti-clockwise direction using tool **Mot. 1135-01** until the two holes on the tensioner pulley are in an almost horizontal position.

Retighten the tensioner pulley nut.

- b) Turn the engine over a minimum of **two times** (without ever turning it back).  
**Lock the engine at TDC and then remove the tool.**

Apply a pretension of **10 daN.m** using tool **Mot. 1386** between the crankshaft pulley and the water pump.



Fit tool **Mot. 1273** and read off the **tensioning value** which should be **20 ± 3 US (fitting tension)**. If it is not this value, adjust it by changing the position of the tensioner pulley using tool **Mot. 1135-01** and continue the tensioning procedure from point **b** above.

Torque tighten the tensioner pulley nut to **5 daN.m**.

#### IMPORTANT :

It is **essential** :

- to turn the engine over a minimum of two times each time the position of the tensioner pulley is changed in order to apply a tensioning value,
- to apply a pretension of **10 daN.m** which eliminates any play in the belt.

**NOTE :**

- Do not refit a belt that has been used,
- Replace the belt if the tension is **below the minimum operating value (10 US)**.

## TIMING BELT TENSION

ENGINE TYPES	BELT FUNCTION	FITTING TENSION IN SEEM UNITS	MINIMUM OPERATING TENSION IN SEEM UNITS
E and K (all types)	TIMING	30	26
F8Q / 610-620-706-710-740-742-744-764-766-768-784	TIMING	38	36
F8M / 720-730-736-760	TIMING	41	37
F8Q / 640-644-646-672-676-678-714-718-722-724-730-732-774-776-778	TIMING	28	25
F1N - F2N - F3N - F3P	TIMING	25	22
F3R (all types)	TIMING	29	27
F7P / 704-722	TIMING	32	19
F7R / 700-710	TIMING		
J8S (all types)	TIMING	45	26
852 (all types)			
J7R / 752-756	TIMING	41	31
J5R (all types)	TIMING	39	26
J6R (all types)			
J7R / 732-733-734-735-738-739-740-746-747-750-751-754-755-760-768-790-791			
J7T / 600-624-754-755-756-760-761-762-763-766-767-770-772-773-776-780-782-788-794-795	TIMING	36	24
G8T (all types)	TIMING	Automatic tension	—
S8U / 762-763 or 8144	TIMING	45	28
N7Q (all types)	TIMING	Automatic tension	Check between 36 and 46
D7F (all types)	TIMING	20	10



ENGINE TYPES	BELT FUNCTION	FITTING TENSION IN SEEM UNITS	MINIMUM OPERATING TENSION IN SEEM UNITS
<b>J6R</b> / 758-759-792 / AC			
<b>J6R</b> / 792			
<b>J7R</b> / 746-750-751 / AC / PAS			
<b>J7R</b> / 740-747-752-754-755-756 / AC			
<b>J7R</b> / 768-790-791 / AC	Alternator		
<b>J7R</b> / 750-751 / PAS	Water pump	110 ± 5	70
<b>J7R</b> / 740-752-754-756			
<b>J7T</b> / 794-795			
<b>J7T</b> / 754-755-756 / AC / PAS			
<b>J7T</b> / 772-773-776 / AC			
<b>J7T</b> / 772-773-776 (90 A alternator)			

## Belt tension

### TRAPEZOID ACCESSORIES BELT TENSION

ENGINE TYPES	BELT FUNCTION	FITTING TENSION IN SEEM UNITS	MINIMUM OPERATING TENSION IN SEEM UNITS
<b>J5R</b> / 716-718-726 / with or without PAS <b>J6R</b> / 734-758-759 / with or without PAS <b>J7R</b> / 746-747-750-751-760-768-790-791 <b>J7R</b> / 746-750-751-760 / PAS <b>J7T</b> / 600-746-754-755-756-770 <b>J7T</b> / 780-782-788 <b>J7T</b> / 600-754-755-756-770-780-782-788 / PAS <b>J7T</b> / 772-773-776 (70 A alternator)	Alternator  Water pump	$106 \pm 4$	66
<b>852</b> (all types)	Alternator	$101 \pm 4$	70
<b>J8S</b> (all types)	Water pump		

## TRAPEZOID ACCESSORIES BELT TENSION

ENGINE TYPES	BELT FUNCTION	FITTING TENSION IN SEEM UNITS	MINIMUM OPERATING TENSION IN SEEM UNITS
<b>J6R</b> / 734 / PAS <b>J7T</b> / 770 / PAS <b>J7R</b> / 760 / PAS	Power assisted steering	110 ± 5	76
<b>J7T</b> / 760-761-762-766-767 / with or without AC With electrically heated windscreen <b>J7R</b> / 732-733-734-735 / with or without AC With electrically heated windscreen	Power assisted steering	84 ± 6	50
<b>J8S</b> / All types	Power assisted steering	99 ± 4	63
<b>J5R-J6R-J7R-J7T</b> (All types)	Power assisted steering	101 ± 3	74
<b>J7R</b> / 760 / AC <b>J7T</b> / 770 / AC	Air conditioning	100 ± 6	62



## Belt tension

### TRAPEZOID ACCESSORIES BELT TENSION

ENGINE TYPES	BELT FUNCTION	FITTING TENSION IN SEEM UNITS	MINIMUM OPERATING TENSION IN SEEM UNITS
C2L/ 702-703-704-705-714-717-792 / AC / PAS	Alternator	$89 \pm 5$	68
C2J / 781 / AC	Alternator	$87 \pm 6$	50
C1J / 700	Alternator	$89 \pm 6$	56
C1C/ 708	Alternator	$82 \pm 6$	51
C1E / 714-718-719	Water pump	$87 \pm 6$	54
C2L/ 704-714-718-794-796 / PAS C2J/730 / PAS	Alternator	$87 \pm 6$	50
C3G / 700-702-704 except AC	Alternator	$92 \pm 3$	51
C1J / 791	Alternator	$82 \pm 6$	51
C1J / 791 / AC	Alternator	$87 \pm 6$	50
	Water pump	$87 \pm 6$	54
	Air conditioning	$105 \pm 6$	75
C2L/ 794 / PAS	Alternator	$95 \pm 5$	64

## Belt tension

### TRAPEZOID ACCESSORIES BELT TENSION

ENGINE TYPES	BELT FUNCTION	FITTING TENSION IN SEEM UNITS	MINIMUM OPERATING TENSION IN SEEM UNITS
E5F / 710-716 E7J / 601-700-706-707-710-711-716-717-718-719-720-724-726-728-742-745-754-756-773 E7F / 700-704-706-708-730-750 E6J / 700-701-706-712-713-718-734-738	Alternator	$83 \pm 7$	70
E6J / 700-701-706 / AC E7J / 700-706-707-742-745-790-791 / AC	Air conditioning	$90 \pm 5$	72
S8U / 742-748-752- or 8140 S8U / 750-758 or 8140 with or without PAS S9U / 702-704-714 or 8140	Alternator Water pump	$95 \pm 6$	68
Z7U / 700 Z7W / 706-707-712-713-717	Power assisted steering	$103 \pm 5$	66
Z7U / 700-702 / AC Z7W / 700-701-706-707-709-712-713-717 / AC	Power assisted steering	$95 \pm 4$	60
	Air conditioning	$108 \pm 6$	67

# SETTINGS AND ADJUSTMENTS

## Belt tension

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### RIBBED ACCESSORIES BELT TENSION (3 TEETH)

ENGINE TYPES	BELT FUNCTION	FITTING TENSION IN SEEM UNITS	MINIMUM OPERATING TENSION IN SEEM UNITS
E5F / 710-716 / AC E6J / 700-701-706-712-713-718-734-760-761 / AC E7F / 704-708-750 / AC E7J / 601-700-706-707-710-711-717-718-719-720-724-726-728-742-745-754-756-764-773-790-791 / AC E7J / 624-757-764-770-771-790-791 K7M (all types)	Alternator	$84 \pm 6$	52
J7T / 760-761-762-766-767 J7R / 732-733-734-735	Alternator	$86 \pm 6$	43
J7T / 760-761-762-766-767 / with electrically heated windscreen J7R / 732-733-734-735 / with electrically heated windscreen	Alternator	$79 \pm 5$	36
E6J / 700-701- 712-713-734 / PAS E7F / 700-706-708-750 / PAS E7J / 610-700-706-707-710-711-716-717-718-719-720-724-726-728 - 742-745 -754-756-773/ PAS	Power-assisted steering	$84 \pm 4$	47
E7J / 764 / PAS K7M / PAS	Power-assisted steering	$84 \pm 6$	52

# SETTINGS AND ADJUSTMENTS

## Belt tension

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### RIBBED ACCESSORIES BELT TENSION (4 TEETH)

ENGINE TYPES	BELT FUNCTION	FITTING TENSION IN SEEM UNITS	MINIMUM OPERATING TENSION IN SEEM UNITS
J6R / 758-759-792 / AC J7T / 754-755-756-772-773-776-794-795 / AC / PAS J7R / 746-750-751 / AC / PAS J7R / 747-752-756-768-790-791 / AC J7R / 740-755-756 / AC	Air conditioning	85 ± 5	60
J7R / 732-733-734-735 / AC J7T / 760-761-762-766-767 / AC	Alternator Air conditioning	110 ± 6	58
J8S / 704-740-742-784-786 / AC / PAS	Air conditioning	85 ± 5	60
J8S / 760	Alternator	98 ± 7	58
J8S / 760 / AC	Power-assisted steering	99 ± 6	50
J8S / 760 / with electrically heated windscreen	Alternator	99 ± 7	50
C3G / 700-702-704 / AC	Alternator / Air conditioning	92 ± 6	53
S8U / 762-763	Alternator	106 ± 6	78
Z7X / 721-722-723-753	Water pump / Power-assisted steering	102 ± 7	57
Z7X / 760-765	Alternator	91 ± 5	50



# SETTINGS AND ADJUSTMENTS

## Belt tension

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### RIBBED ACCESSORIES BELT TENSION (4 TEETH) (cont)

ENGINE TYPES	BELT FUNCTION	FITTING TENSION IN SEEM UNITS	MINIMUM OPERATING TENSION IN SEEM UNITS
E5F / 710-716 / AC E6J / 712-718 / AC E7F / 704-708-750 / AC E7J / 601-710-711-718-719-754 / AC	Air conditioning	$103 \pm 4$	77
E6J / 700-701-706 / AC / PAS E7J / 700-707-742-745-790-791 / AC / PAS	Air conditioning / Power-assisted steering	$106 \pm 5$	59
E6J / 712-713-718-734-760-761 / AC / PAS E7J / 601-710-711-717-718-719-720-724-726-728-754-756-757-770-771-773 / AC / PAS	Air conditioning / Power-assisted steering	$110 \pm 7$	75
E6J / 734 / AC E7J / 720-724-726-728-773 / AC	Air conditioning	$102 \pm 6$	55
D7F all types	Alternator	$102 \pm 7$	53

# SETTINGS AND ADJUSTMENTS

## Belt tension

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### RIBBED ACCESSORIES BELT TENSION (5 TEETH)

ENGINE TYPES	BELT FUNCTION	FITTING TENSION IN SEEM UNITS	MINIMUM OPERATING TENSION IN SEEM UNITS
C3G / 700 - 702 / AC	Air conditioning	$112 \pm 3$	75
F2N / 798	Alternator	$94 \pm 5$	60
F8M / 720-730-736-760	Alternator	$109 \pm 7$	72
S8U / 750-756 or 8140	Power-assisted steering	$106 \pm 6$	63
S8U / 762-763 or 8144	Air conditioning	$112 \pm 6$	53
S8U / 762-763 or 8144	Water pump	$108 \pm 6$	51
Z7U / 700-702 / AC Z7W / 700-701-706-707-709-712-713-717 / AC	Alternator	$117 \pm 2$	71
Z7X / 760-765	Power-assisted steering	$98 \pm 4$	56
Z7X / 760-765	Water pump	$94 \pm 5$	40
Z7X / 760-765	Water pump / Air conditioning	$102 \pm 6$	57
E7J / 764 / AC / PAS	Power-assisted steering / Air conditioning	$110 \pm 7$	75
D7F / PAS (all types)	Power-assisted steering	$96 \pm 5$	43

# SETTINGS AND ADJUSTMENTS

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### RIBBED ACCESSORIES BELT TENSION (6 TEETH)

ENGINE TYPES	BELT FUNCTION	FITTING TENSION IN SEEM UNITS	MINIMUM OPERATING TENSION IN SEEM UNITS
C1J / 768-780 / AC C2J / 798 / AC	Alternator/ Air conditioning	131 ± 4	92
F3P / 710-712-714-758 / PAS F3P / 754-755 / PAS	Alternator  Water pump/Power-assisted steering	94 ± 5	60
F2N / 720-721-726-727-754-758-786 / AC / PAS F3N / 722-742-743-746 F3N / 723 / AC F3P / 704-706-708-760 / AC / PAS F3P / 682-684-700-705-707-764-765 / AC	Alternator  Air conditioning/ Power-assisted steering	106 ± 6	71
F2N / 786-798 / AC	Alternator/Air conditioning	112 ± 8	59
F2N / 720-721-726-754-758-786 / PAS F3N / 740-741 / PAS F3N / 722-742-743-746 / PAS F3N / 723 F3P / 704-706-708-760 / PAS F3P / 682-700-705-707-760-764-765	Alternator / Power-assisted steering	98 ± 6	73
F1N / 722-724 F2N / 720-721-726-727-754-758-786-798 F3N / 722-726-740-741-742-743-746 F3P / 704-706-708-710-712-714-758-760	Alternator  Water pump	83 ± 6	57

# SETTINGS AND ADJUSTMENTS

## Belt tension

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### RIBBED ACCESSORIES BELT TENSION (6 TEETH) (cont)

ENGINE TYPES	BELT FUNCTION	FITTING TENSION IN SEEM UNITS	MINIMUM OPERATING TENSION IN SEEM UNITS
F7P / 704-722 F7R / 700	Alternator / Power-assisted steering	95 ± 5	57
F7R / 710	Alternator / Power-assisted steering	109 ± 7	62
	Alternator / Power-assisted steering / Air conditioning	Automatic tension	-
F7P / 704 / AC / PAS	Alternator / Air conditioning	91 ± 5	58
F3P / 710-712-714-755-758 / AC	Alternator / Air conditioning	104 ± 7	55
F3P / 670-678-720-724 / PAS F3R / 722-723-728-729-750-751 / PAS	Alternator / Power-assisted steering  Water pump	107 ± 3	62
F3P / 670-678-720-724 / AC / PAS F3R / 722-723-728-729-750-751 752 / AC / PAS	Alternator - Air conditioning / Power-assisted steering  Water pump	109 ± 3	62
F8M / 730	Alternator	118 ± 6	83
F8M / 730 / PAS	Alternator / Power-assisted steering	104 ± 6	71
F8Q / 706-742-764 / AC / PAS	Alternator - Air conditioning / Power-assisted steering	112 ± 4	67

# SETTINGS AND ADJUSTMENTS

## Belt tension

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### RIBBED ACCESSORIES BELT TENSION (6 TEETH) (cont)

ENGINE TYPES	BELT FUNCTION	FITTING TENSION IN SEEM UNITS	MINIMUM OPERATING TENSION IN SEEM UNITS
F8Q / 706 / AC / PAS Belt Part No : 77 00 272 741	Alternator - Air conditioning / Power-assisted steering	116 ± 7	67
F8Q / 610-740-744-768 / AC	Alternator / Air conditioning	101 ± 5	67
F8Q / 610-710-740-742-744-764-766-768 / PAS	Alternator / Power-assisted steering	99 ± 5	68
F8Q / 620-706-710-740-742-744-764-766	Alternator	97 ± 3	67
F8Q / 646-672-676-678-714-718-730-732 / PAS	Alternator / Power-assisted steering	106 ± 4	74
F8Q / 640-644-646-672-676-678-714-718-722-724-730-732-774-776-778	Alternator	106 ± 4	74
J8S / 760 / AC	Water pump / Air conditioning	123 ± 9	76
Z7X / 721-722-723-753	Alternator / Air conditioning	119 ± 8	68
Z7X / 722-723-753	Alternator	98 ± 6	53
G8T / 706-790	Alternator - Air conditioning / Power-assisted steering	114 ± 5	69
G8T / 716-740-752-760-792-794 / PAS	Alternator / Power-assisted steering	Automatic tension	

# SETTINGS AND ADJUSTMENTS

## Belt tension

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**RIBBED ACCESSORIES BELT TENSION (6 TEETH) (cont)**

ENGINE TYPES	BELT FUNCTION	FITTING TENSION IN SEEM UNITS	MINIMUM OPERATING TENSION IN SEEM UNITS
G8T / 716-740-752-760-792-794 / AC / PAS	Alternator- Air conditioning / Power-assisted steering	Automatic tension	-
N7Q (all types)	Alternator- Air conditioning / Power-assisted steering	Automatic tension	Check between 49 and 76
	Alternator / Power-assisted steering		
F8Q / 620-784	Alternator / Power-assisted steering	111 ± 8	67
	Alternator / Power-assisted steering / Air conditioning	Automatic tension	-

### NOTCHED ACCESSORIES BELT TENSION

ENGINE TYPES	BELT FUNCTION	FITTING TENSION IN SEEM UNITS	MINIMUM OPERATING TENSION IN SEEM UNITS
G8T / 706-790 with or without PAS	Vacuum pump	39	27
	Vacuum pump Power-assisted steering		