Timing Belt Tensioning Tool

ES2222281

Schwaben®

Timing Belt Tension Tool

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Proper service and repair procedures are vital to the safe, reliable operation of all motor vehicles as well as the personal safety of those performing the repairs. Standard safety procedures and precautions (including use of safety goggles and proper tools and equipment) should be followed at all times to eliminate the possibility of personal injury or improper service which could damage the vehicle or compromise its safety.

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Product Description

The Schwaben® Timing Belt Tensioning Tool uses a micrometer-style adjustment and spring-loaded tensioner barrel with sliding scale to measure cam belt tension accurately.

How to Use the Belt Tension Tool

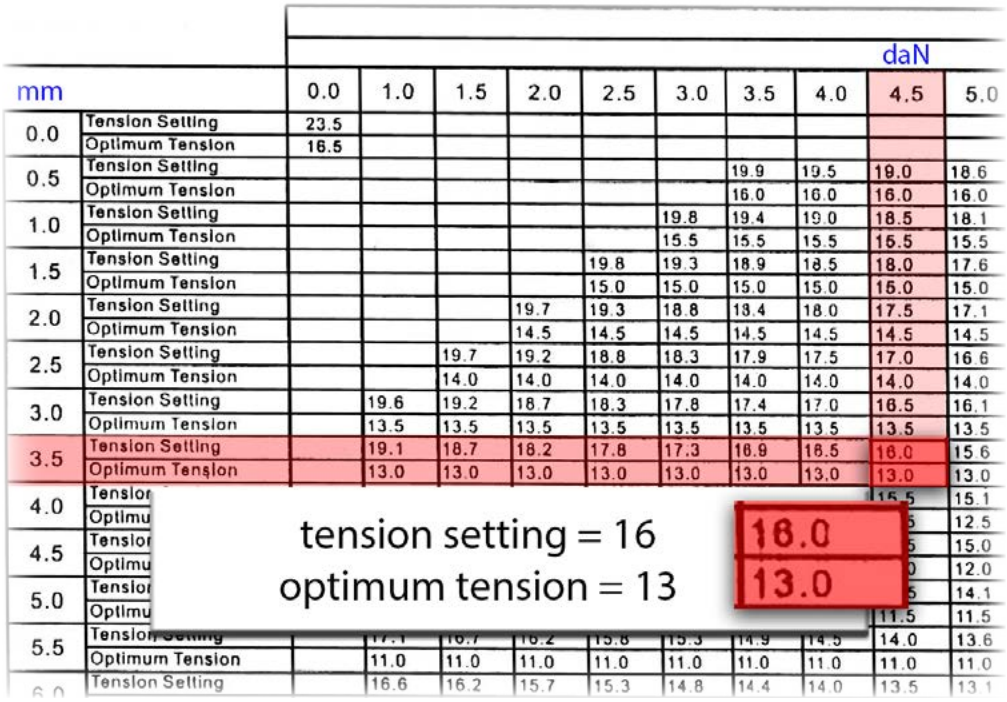
Use these steps to measure timing belt tension:

1) Look up the vehicle manufacturer's recommended belt tightening standard.

This is commonly expressed as the amount of belt deflection that results when a measured force is applied at a specified point on the back of the belt. The chart enclosed with your tool lists deflection in millimeters (mm) and applied force in dekanewtons (daN).

Note: Many OEM belt tightening specs are given in kg. One kg of force equals 0.980665 daN. For example 3.5 daN equals 3.56 kg force. Conversely, 3.5 kg equals 3.43 daN, close enough for use on the chart below.

2) Based on the OEM specification, use the chart to look up the tool *tension setting* and *optimum tension*.



This sample factory belt specification calls for 3.5mm of belt deflection with 4.5daN of force applied to the belt by the tension gauge. The intersection of these values on the chart indicates a tension gauge setting of 16 and an optimum tension value of 13.

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3) Adjust the gauge.

Screw the micrometer-style adjustment barrel on the gauge body in or out as needed to dial in the **tension setting**.

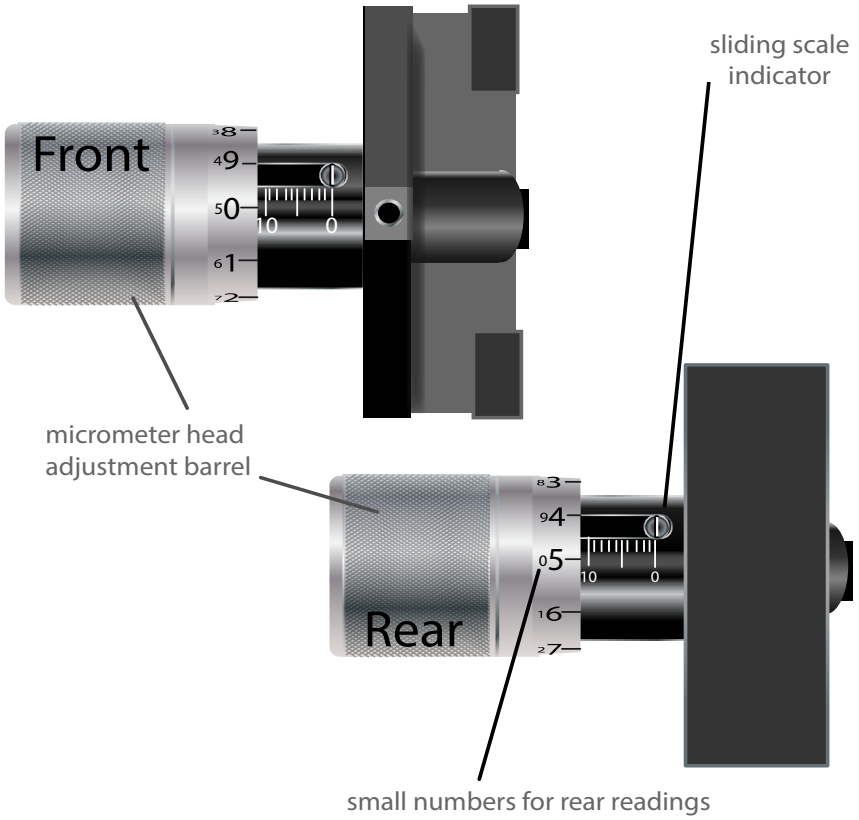
Note: This is no different from using a micrometer.

Note: For convenience, the gauge can be read from the front or back. To make this possible, there are two sliding scales, 180 degrees apart.

The micrometer barrel has both large and small numbers on it, one for the front, one for the back.

Use the **large** barrel numbers when reading the **front** sliding scale; use the **smaller** numbers when reading the gauge from the **rear**.

Our example shows the barrel set at zero, viewing it from the front or rear.



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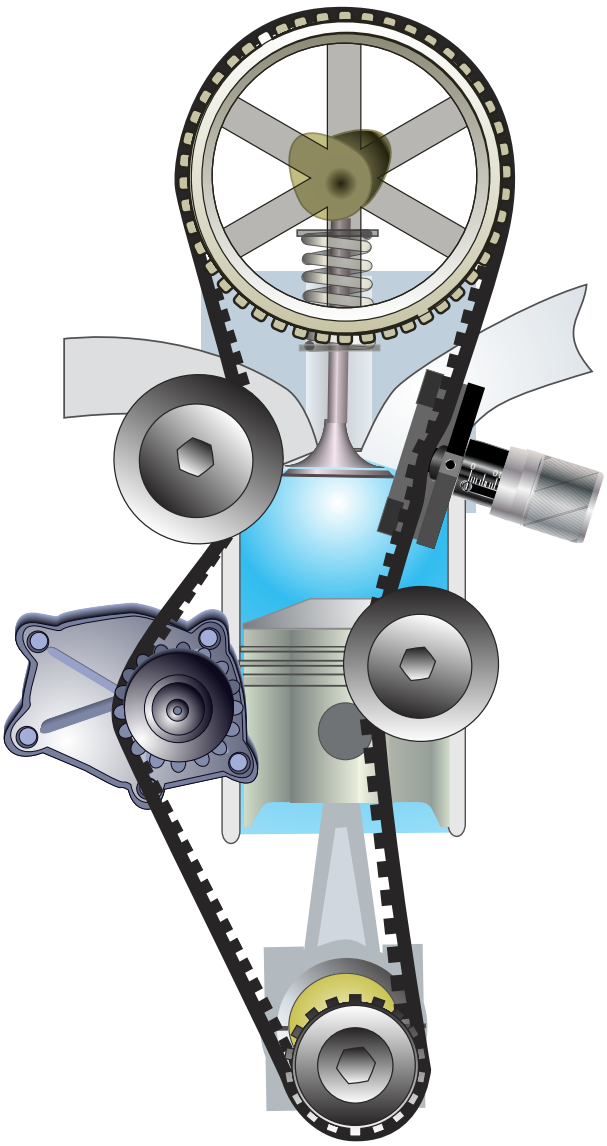
4) With the tension gauge mounted on the belt, read the actual belt deflection on the sliding scale indicator, referred to in the chart as the *optimum tension*.

Note: Please refer to OEM recommendations about where to place the tension gauge on the belt. Many repair manuals include a schematic showing where to place the gauge.



• On engines with a manual adjustment eccentric roller, adjust the gauge to the **tension setting** on the chart, and install it on the belt. Install the belt per factory instructions. Rotate the tensioner to tighten the belt until the gauge shows the correct **optimum setting**; then torque the tensioner lock fastener to specs.

• Double check both belt timing and belt tension; bar the engine over two complete revolutions (720 degrees of crankshaft rotation) in the direction of normal rotation. Doing this equalizes tension across the entire length of the belt.

Return to TDC and verify that all timing marks are aligned. Install the tension gauge again. Readjust belt tension, if necessary.

Note: Before storing the belt tension gauge, back off the adjustment barrel to relieve all spring tension. Storing it for long periods with the spring under tension can affect tool calibration.

See the next page for an explanation of typical gauge readings.

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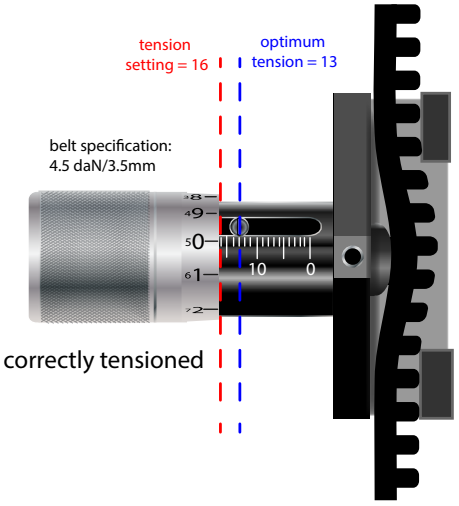
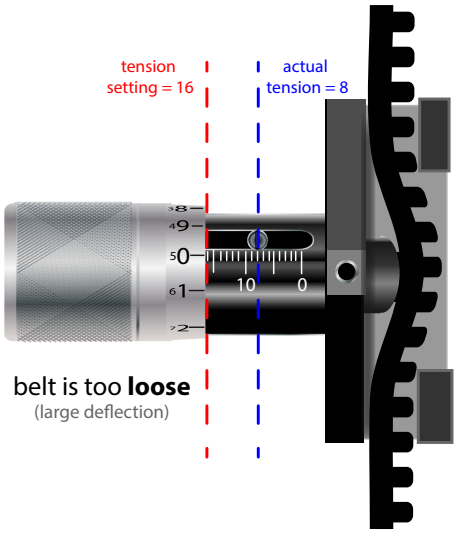
Sample Gauge Readings



Here are three sample readings showing: normal tension; a belt that is too loose, and a belt that is too tight.

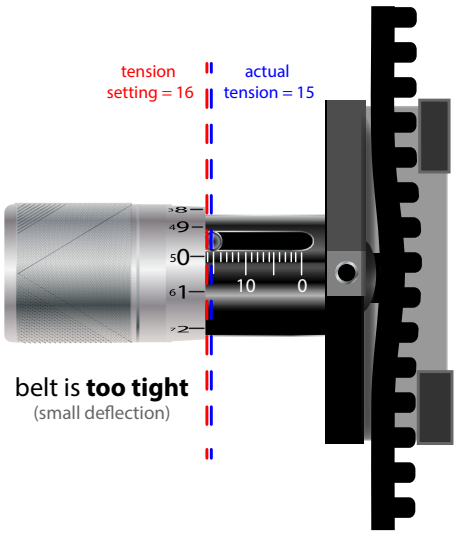
This belt has a factory specified belt deflection of 3.5mm with a force of 4.5 daN applied. The chart tells us that gauge tension setting is 16, with an optimum tension reading of 13 (see page 2).

The sliding scale indicator is at 13, indicating that the belt is tensioned correctly.



Here, the same belt application is adjusted too loosely. A force of 4.5daN deflects the belt too far and our actual tension reading is 8.

An actual reading **lower** than the optimum tension indicates a **loose** belt.



Here, the belt is is too tight. A force of 4.5daN deflects the belt too little.

An actual reading **higher** than the optimum tension indicates that the belt is **too tight**.

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