Measuring and fitting tools
for professional belt replacement
Driving is enjoyable - if your safety is assured. That's the job of mechanics in the aftermarket business: They maintain and fit products which not only protect the vehicle's engine from damage but also - and above all - ensure the safety of the driver. A highly responsible job, which has to be carried out with absolute precision. Those wishing to master its challenges in hectic everyday workshop operations need reliable support materials and equipment.
Clarity instead of blah, blah, blah:

The product guarantee from ContiTech.

Workshop professionals don’t need empty promises. They need quality they can rely on. That’s why we offer registered partners a 5-year guarantee on all Power Transmission Group products for the automotive aftermarket. With no ifs or buts. www.contitech.de/5
Fitting and maintaining belts to perfection.

Measuring and fitting tools

Power transmission belts are decisive for operating safety. They determine the interplay between the individual components of the belt drive – and accordingly the performance and useful life of the engine. Fitting them correctly is a highly precise operation.

This challenge can be mastered securely and reliably with ContiTech Power Transmission Group products: Replacing belts, checking tension and alignment - in every operation connected with belts ContiTech supports you with the right technical equipment. Our measuring devices and fitting tools are user-friendly and suitable for all standard vehicle types. They are versatile, robust and easy to operate.
The right tension:
Belt Tension Tester
BTT Hz

In the case of timing belts and multi-V-belts incorrect tension is the most frequent cause of breakdown. The latest method for testing belt tension is frequency measuring.

The ideal solution for this purpose is the Belt Tension Tester BTT Hz. If you pluck the belt - like the string of a guitar - the microphone system records the vibrations. In response the BTT Hz displays the frequency of the vibrations in hertz. This value can then be compared with the data in the accompanying manual - enabling the tension to be checked and adjusted if necessary. The device only provides a value if all the measurement settings are correct, thus actively preventing measuring errors.

With its two microphones the BTT Hz is not sensitive to ambient noise and accordingly provides especially precise results. A further advantage: The BTT Hz is compatible with all OE brands.

Contents
> Belt Tension Tester BTT Hz
> User guide in eight languages
> 9V battery
> CE declaration of conformity
> Quick start guide
> Data manual with setting values

Technical data
> Measurement range: 30 to 520 Hz +/-1Hz<100Hz; +/-1%> 100 Hz
> Dimensions (LxWxH): 400x300x110mm (case), 100x180x30 (device)
> Weight: device 1780 g (overall weight), 240 g (device)

Benefits
> Fast and simple testing of timing belts and multi V-belts
> Acoustic measurement in hertz
> Self-test function
> Double Microphone Technology (DMT) ensures insensitivity to ambient noise
> An acoustic signal indicates successful measurement
> Measuring head made of robust ABS plastic
> The setting values are vehicle-related, which means that the device is also suitable for the belts of other manufacturers
> 5-year guarantee: www.contitech.de/

The way it’s done
> Belt tension should always be tested when the engine is switched off.
> Hold the measuring head transversely across the top of the belt in such a way that one of the two microphones is positioned over the belt and the other one is focused past it. When a successful measurement has been obtained the device emits an acoustic signal.
> For all standard vehicle types the accompanying data manual indicates the point on the belt where the measurement has to be made.
Makes a Big Impression:
Belt Tension Tester Mini (BTT Mini)

Contents
- Measuring device, charging cable, (USB/micro USB), O-rings
- Equipment dimensions: 44.7 x 15.2 mm
- Weight: 7.5 g

Benefits
- Quick and easy to check the belt tension
- Can be used for all conventional timing belt sizes
- Attractive price-performance ratio
- Reliable thanks to a high measuring accuracy of +/- 1.5 fC
- Easy to read values on an LCD display
- Background noises do not affect the measurement
- Battery can be recharged at any USB port
- Measured values can be easily converted via smartphone: contitech.de/calc
- 5-year guarantee: www.contitech.de/5

With the Belt Tension Tester BTT Mini, auto repair shops can check the belt tension of all conventional timing belts quickly and easily. The tension is measured in fC (ContiTech unit of frequency) at the touch of a button. This is shown on an LCD display and can be converted using a smartphone. Background noises do not affect the measurement. The device weighs only 7.5 g and can be recharged at any USB port. The corresponding charging cable and the appropriate O-rings are included with the equipment.
Changing timing belts in Audi, Seat, Škoda & VW cars:

TOOL BOX V01

Audi, Seat, Škoda and Volkswagen cars have special features which are relevant to the workshop. For example, with some engines the multi V-belt is adjusted by the alternator. This means that a specific tensioning wrench is required for the alternator.

For this purpose ContiTech has developed its TOOL BOX V01, which contains all the necessary locking aids, tensioning and retaining tools for the replacement and maintenance of belts.

Benefits
- Top quality tools for professional use
- Made of strong, premium-quality steel
- Exclusive combination – only available from ContiTech
- Made of strong, premium-quality steel
- Top quality tools for professional use
- www.contitech.de/5

Contents
- Counterholder for tensioning pulleys
- Multilingual manual with tool corresponsions, original part numbers and vehicle applications
- Locking tools and retaining pins for crankshafts / camshafts
- 5-year guarantee

Parts list / Area of application

<table>
<thead>
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**French for pros:**

**TOOL BOX V02**

for Renault

Renault engines are reliable – and therefore in widespread use. In the workshop, however, they have their quirks. When changing the multi V-belt with the belt tensioner also to be changed. When changing the multi V-belt with shop, however, they have their quirks. Renault engines are reliable – and

**Contents**

- Locking tools and locking pins for crankshafts and camshafts
- Counterhold for camshafts
- Multilingual manual with tool designations, original part nos. and vehicle applications

**Benefits**

- All tools for all common Renault engines quickly hand
- Germanmade tools - manufactured from tough, high-grade steel
- Exclusive sets - only available from ContiTech
- Organized storage in a robust case
- 5-year guarantee: www.contitech.de/

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**Individual parts list/applications**

<table>
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<tr>
<th>Item Designation</th>
<th>Application</th>
<th>Suitable, for example, OE tool no.</th>
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*The way it's done*

- The table at right shows the individual tools and their application.
- Do not use the locking pin to counterhold.
- Fitting instructions and many other tips and tricks for day-to-day workshop operations are available free of charge at www.contitech.de/pic

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**Instructions and Information:** We hereby accept no liability for any of the vehicle-specific details cited. Only the vehicle manufacturer's specifications shall apply for all work on the vehicle. Work on engines may only be carried out by trained professionals, with due account being taken of the vehicle manufacturer's information, instructions and safety specifications.
Vive la perfection: TOOL BOX V03 for Citroën and Peugeot

If you intend servicing a Citroën or Peugeot engine, special requirements have to be met, particularly with regard to the timing gear. There are also a lot of freewheels. That means that the crankshaft and camshaft can only be locked and released using special tools. TOOL BOX V03 offers everything you need for a fast, safe repair to ensure that the engine runs exactly in accordance with the manufacturer’s specifications after the repair. Long live perfection!

Contents

> Locking tools and locking pins for crankshafts and camshafts
> Counterheld for camshafts
> Multilingual manual with tool designsations, original part nos. and vehicle applications
> Puller for crankshaft sprocket

Benefits

> All tools for all common Citroën and Peugeot engines quickly to hand
> German-made tools – manufactured from tough, high-grade steel
> Exclusive sets – only available from ContiTech
> Organized storage in a robust case
> 5-year guarantee: www.contitech.de/5

Individual parts list/applications

<table>
<thead>
<tr>
<th>Item</th>
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The way it’s done

> The table at right shows the individual tools and their application.
> Fitting instructions and many other tips and tricks for day-to-day workshop operations are available free of charge at www.contitech.de/pc
Cars from Ford and Opel have a reputation for solid quality. To ensure this lasts throughout the car's lifetime, details are important when changing the timing belt – for example, precise locking of the high pressure fuel injection pump. You need special tools when performing this operation with Ford and Opel vehicles. All of these are contained in TOOL BOX V04.

Benefits

- All tools for all common Ford and Opel engines quickly to hand
- German-made tools – manufactured from ContiTech
- 5-year guarantee:
  - German tools – manufactured from ContiTech

The way it’s done

Tools and applications

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› The table at right shows the individual tools and their application.

› Lock camshaft sprockets using the tool.

› Fitting instructions and many other tips and tricks for day-to-day workshop operations are available free of charge at www.contitech.de/pic
Maintaining and changing overrunning alternator pulleys:

TOOL BOX OAP

Overrunning alternator pulleys (OAP) reduce vibrations in the accessory drive, thus extending the operating life of the belts and accessory drives and minimizing running noise.

For alternators vehicle manufacturers use overrunning alternator pulleys and overrunning alternator decouplers (OAD), which reduce vibrations even more. The overrunning alternator pulley is a further development of the rigid belt pulley on the alternator. Thanks to its overrunning clutch it dampens the vibrations which are generated by cyclic irregularities in the crankshaft during belt operations. It also enables the engine speed to be reduced rapidly in the event of sudden load changes. An alternative design is the overrunning alternator decoupler, which also offers a damping function.

However, to make sure that these operate correctly they have to be fitted with total precision. The TOOL BOX OAP contains two combination wrenches with socket heads as counterholders and cap nuts. These offer excellent leverage with minimal exertion of force for the fitting and dismantling of OAPs andOADs.

Prepared for anything: With TOOL BOX OAP the ‘One for all’ principle applies. The reason: The socket heads have functional dimensions and are suitable for all standard alternators.

Contents

- 12-part toolset
  - two combined alternator wrenches
  - six socket heads as counterholders for the belt pulley shaft
- four cap nuts for releasing and tightening the central nuts

Benefits

- One for all. Fits all standard overrun pulleys
- Parts can be combined in different ways
- Top quality tools for professional use
- Tooling ‘Made in Germany’
- Made of strong, premium-quality steel
- Accessibly laid out in a robust case
- An alternative to original tools
- 5-year guarantee. www.contitech.de/5

The way it’s done

- Normal belt pulley or overrunning alternator pulley?
  Overrunning alternator pulleys and overrunning alternator decouplers can be identified by their cover caps. Belt pulleys have no cover caps.

- Overrunning alternator pulleys and overrunning alternator decouplers must only be operated with cover caps.

- Tip. Defective OAPs can be identified by the flapping belt or blocked overrunning pulley.

- Tip. OAPs are often fitted very tightly at the factory. Inferior quality tools can easily break during dismantling operations, which is why premium-quality tools are essential for this purpose.
Everything aligned: LASER TOOL

With a multi V-belt drive imprecisely aligned belt pulleys can be identified by typical noises. But neither the eyes nor the ears can locate where the offset or angular misalignment is affecting the serpentine drive. The LASER TOOL locates these alignment errors.

By multiple measurements in various directions and focusing on a number of drive pulleys even the slightest misalignment can be diagnosed with precision. Regardless of whether plastic or metal is involved. The alignment gauge does not require a conventional magnetic bracket, and can therefore do just as good a job on plastic as on metal.

Contents
- Laser tool with bracket for attachment on the belt pulley
- Laser glasses
- Alignment gauge and calibration tool
- User guide
- Battery

Benefits
- Reliable identification of alignment errors
- Easy to use
- Bracket without magnet - suitable for plastic pulleys
- Also suitable for pulleys which are difficult to access
- 5-year guarantee: www.contitech.de/5

The way it’s done

> You position the laser on the ribs of one belt pulley and direct the laser beam at the opposing pulley.

> The LASER TOOL is classified as a non-hazardous Class IIIa laser. The enclosed glasses are not safety goggles but are intended to enhance the brightness of the laser.

Video guide to the use of the LASER TOOL:
Fitting elastic belts:

UNI TOOL ELAST

Elastic belts have a special tensile member and are only used in certain kinds of engine. As a result a special tool is required for this purpose, because in many vehicles this is the only way to fit an elastic belt without damage.

The UNI TOOL ELAST is a universal tool for elastic multi V-belts and enables the fitting of a wide range of these belts. ContiTech offers TOOL kits with disposable tools for vehicles to which this tool is not suited.

The UNI TOOL ELAST consists of a special tool for pre-tensioning the belt and fitting it onto the belt pulleys. The special feature is that thanks to its design it fits almost any belt pulley, even those without indentation, and some double pulleys.

The screw which is supplied ensures that the tool can’t slip off, and it guides the UNI TOOL ELAST in fitting the belt. The strap which is also supplied enables the belt to be removed simply, fast and above all without damage.

Benefits
> Low-cost alternative to expensive special tools
> Enables elastic belts to be removed without damage
> Easy to use
> Covers a large range of vehicles - also for use on flat pulleys without indentation

Contents
> Universal fitting tool
> Drive screw
> Strap for removing the belt without damage
> User guide

The way it’s done
> The ContiTech ELAST TOOL F01 is also available for changing the elastic multi V-belt in some Ford and Volvo models.
Changing the elastic multi V-belt in Ford and Volvo cars: ELAST TOOL F01

Difficult, but not impossible: In some Ford and Volvo engines elastic multi V-belts cannot be fitted using universal tools – the belt slides off the water pump’s flangeless pulley in the process. ELAST TOOL F01 offers workshops the right special tool for the job.

They can use this to replace the alternator belt without problems in the Ford Focus, C-Max, Mondeo 1.4/1.6 l and Volvo S40, C30 and V50 1.6 l gasoline engines.

The second, shorter belt – for the air-conditioning compressor or the servo pump, depending on the car – can be changed using the fitting tool from the relevant Multi V-Belt + Tool Kit or the UNI TOOL ELAST universal tool.

Contents
> Fitting tool for fitting on the water pump pulley
> Hoop guard for the crankshaft pulley
> User guide

Benefits
> Prevents damage to the belt or belt pulley
> Installation in accordance with manufacturer’s specification
> 5-year guarantee: www.contitech.de/5

The way it’s done
> Matching tool for fitting the alternator belt:
  - Complete package Elast Multi V-Belt + Tool or
  - UNI TOOL ELAST

Download detailed fitting instructions:

SPECIAL

Download detailed fitting instructions:
Precise measuring:
Length gauge

Measuring belt length quickly and precisely. With the ContiTech length gauge, both V-belts and multi V-belts can be measured. The gauge is suitable for all standard belt profiles.

Here’s how it’s done: Insert the belt, apply tension and read the exact value from the lower scale.

Suitable for AVP10, AVX10, AVP13, AVX13 V-belt profiles and multi V-belts with a PK profile.

Measurement range: 360-2520 mm

Benefits
- Easy to use
- Easy reading of measurement
- Reliable measurement values
- For V-belts and multi V-belts

On request Belt Wear Tester in original size

Identifying wear:
Belt Wear Tester

In the past, tiny cracks on the belt showed that it had to be replaced. Today, wear and tear is no longer indicated by cracks in the rubber but by ribs which become increasingly thin. However, these can’t normally be identified with the naked eye.

The Belt Wear Tester, on the other hand, enables you to detect wear and tear on multi V-belts quickly and reliably. Simply draw the Belt Wear Tester along the grooves of the motionless belt. If its teeth run smoothly along the grooves then everything is okay. If the teeth get caught, don’t run smoothly or if there is too much play on the Belt Wear Tester, the structure of the belt is defective. The cause could be faulty or misaligned belt pulleys, or simply old age. Whatever the cause, the belt has to be replaced.

The way it’s done

- Elastic multi V-belts can shrink if they are stored for a long time. When they are fitted, the amount by which they have shrunk is automatically offset. For this reason there is basically no point in measuring elastic belts.

Benefits
- Easy to use
- Easy reading of measurement
- Reliable measurement values
- For V-belts and multi V-belts

5-year guarantee
www.contitech.de/5

Benefits
- Easy to use
- Easy reading of measurement
- Reliable measurement values
- For V-belts and multi V-belts

On request Belt Wear Tester in original size

Video guide on using the Belt Wear Tester:

The way it’s done

- The Belt Wear Tester must only be used when the engine is switched off or the belt has been removed.
- Practical: The small hole enables the Belt Wear Tester to be fitted to any keyring, or attached to a key ring where it is clearly visible in the workshop to everybody.
The way it’s done

Practical tips

Changing power transmission belts is an everyday part of workshop operations, but there are a number of things to keep in mind. We’ve summarized the main points.

Timing drive

- Tensioning and idler pulleys are also subject to wear and tear and should be replaced when the belt is changed.
- Instructions for installation should always be followed.
- Make sure the right type of profile is used.
- In the case of engines in which the timing belt also drives the water pump, the pump should also be replaced when the timing belt is changed.
- The timing belt should only be changed when the engine has cooled.
- Timing belts, tensioning/idler pulleys and water pumps are sensitive precision parts. Never use force – if it doesn’t fit, it doesn’t fit.
- Screws should always be tightened with the correct torque.
- Do not use any sprays or chemicals to reduce belt noise.

- Only turn the engine with the timing belt fitted.
- Use Belt Tension Tester BTT Hz for testing tension.
- Never change the relative position of the crankshaft to the camshaft.
- Before switching on the engine check the operation of the timing belt for:
  - misalignment
  - offset
  - tilting
- Even ‘automatic’ tensioning pulleys are often only semi-automatic, which means that manual setting of the tension is required during installation.

- Timing belts should never be kinked! If the sensitive fiberglass tensile member in the interior breaks, the belt can tear while the engine is running.

Accessory drive

- Accessory power transmission belts, overrunning alternator pulleys and torsional vibration dampers are subject to wear and tear. They should be checked with every belt change and replaced if necessary.
- Instructions for fitting should always be followed.
- If the V-belt makes a squealing noise the alignment of the pulleys should be checked and the belt changed if necessary.
- When rotating parts are fitted, the direction and location of all pulleys should be taken into account.
- Do not use any sprays or chemicals to reduce belt noise.
- Never replace a normal multi V-belt by an elastic multi V-belt – and vice versa! Check belt wear on multi V-belts with the Belt Wear Tester.
- Elastic multi V-belts can be re-used if they have been removed without damage.
- Elastic multi V-belts are self-tensioning – no belt tensioner is required.

- Elastic belts are fitted under load.
- ContiTech offers a number of solutions for the fitting of elastic multi V-belts:
  - Complete package: Multi V-Belt Elast + Tool or
  - various universal and special tools.
- Use Belt Tension Tester BTT Hz for testing tension.
- Overrunning alternator pulleys and overrunning alternator decouplers must only be operated with cover caps.
- In the event of noises or damage during belt operations the overrunning alternator pulley should always be checked.
- If there is visible damage to the rubber track, the torsional vibration damper/torsional vibration damper isolator always has to be replaced at the same time.

Warning: It is possible for the damage to the torsional vibration damper to appear only on the back.

- Check alignment of belt pulleys using the LASER TOOL.

Aid for the wall:
Workshop poster

Recognizing frequent defects and reliably identifying their causes. For a quick overview of typical defects and replacement intervals ContiTech provides practical workshop posters on timing belts, multi V-belts and torsional vibration dampers.

Order from:
http://apps.contitech-online.com/mediaservice
Change sticker: ‘Smart Sticker’

Knowing at a glance when the timing belt was replaced – the change sticker is not only practical but important. However, it can get hot in the engine compartment, not to mention damp and dirty. This often affects the lettering, and an unreadable sticker is of very little use.

For this reason the ContiTech change sticker consists of premium-quality foil which gives the lettering long-term protection. The improved change sticker is included with all ContiTech Timing Belts and Timing Belt Kits.

Replacement intervals

Replacement intervals are prescribed by the vehicle manufacturer and are mandatory. They must not be extended. If no replacement interval has been prescribed by the vehicle manufacturer, ContiTech recommends changing the belt at the latest after 120,000 km or after 7 years, whichever occurs first.

Storage

All belts and accessories should be stored until use in their original packaging. The storage location should be dry, free from dust, cool (15 to 25°C) and without direct sunlight. They should not be stored near highly flammable, aggressive media such as acids or ozone-generating facilities. Avoid contact with all liquids. Maximum storage period: 5 years from date of production (see packaging).

Know How Things Work

Watch and Work service videos

Practical and easy to understand. Watch and Work service videos by ContiTech. In just a few minutes, trainer Stefan Meyer explains the most important tips and tricks for professionals when installing belts. Every episode focuses on a different engine. Stefan also regularly examines the principles of the everyday activities performed in auto repair shops.

The videos are normally produced in German and English and the content is also translated into other languages. Watch and Work is available on YouTube at www.contitech.de/Aam-yl-en and our Facebook page www.contitech.de/Aam-fb or the ContiTech homepage www.contitech.de/Aam-video. They can also be found on PIC.
Finding instead of searching:
Our PIC offers free fitting information and more

Need data, instructions or other information on a particular article? Use our Product Information Center (PIC). Here you’ll find useful supplementary information on all belts and kits.

Available round the clock, always up-to-date and free of charge. At [www.contitech.de/pic](http://www.contitech.de/pic) you will receive technical data such as parts lists, images, fitting advice and detailed fitting instructions. You can search the data by product name and select what you require.

Our PIC is also available for your smartphone or tablet: simply scan the QR code on the product packaging and the relevant page of the PIC will open up.

Technical data/
parts list
> Components of the product
> Automotive application

Fitting instructions
> Download fitting instructions
> Technical instructions
> "Watch and Work" videos

Vehicles
> Automotive applications for the specific article

Fitting information
> Technical information
> FAQs and instructions

General information
> General information on replacement intervals
> Problem and diagnosis cases
Knowing what gets the job done: Professional training sessions

ContiTech supports workshops not just with products but also with the necessary expertise. Our training focuses both on theory and on practice. Regardless of whether you just wish to refresh your know-how or want hands-on experience – our experts are ready to provide all the help you need.

**Product and sales training**
- **Topics:** Continental corporation, product, sales support
- **For:** internal sales and sales force of partners

**Warranty**
- **Topics:** warranty, guarantee, goodwill
- **For:** warranty employees of sales partners

**Technical training I (theory)**
- **Topic:** drive belt expertise
- **For:** senior automotive mechanics, mechanics and apprentices

**Technical training II (practical training)**
- **Topics:** changing timing belts on various engines, drive belt expertise
- **For:** senior automotive mechanics, mechanics and apprentices

**Mechanics club**
- **For:** all senior automotive mechanics, mechanics and apprentices, who have successfully completed technical training I and II

**Train the trainer: Trainer basics I (theory)**
- **For:** disseminators, technical instructors, trainers and vocational teachers

**Train the trainer: Trainer basics II (practical)**
- **For:** disseminators, technical instructors, apprentices and vocational teachers, who have successfully passed trainer basics I

**Trainer club**
- **For:** disseminators, technical instructors, apprentices and vocational teachers, who have successfully passed trainer basics I and II
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Facebook:
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FAQ Corner:

Technical queries

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