



KYB

Workshop
Training

KYB

Information

KYB is one of the world's largest suppliers of Original Equipment (OE) shock absorbers to vehicle manufacturers.



89

bases worldwide, including factories in Japan, Spain and the Czech Republic.



1 in 5

cars leaving production lines worldwide are fitted with **KYB** shock absorbers as standard.



1 million

shock absorbers manufactured for OE and aftermarket per week.



KYB is Japan's largest hydraulics manufacturer. **KYB** technology is used by the world famous Bullet Train and many aircraft, including the Boeing 787 Dreamliner.



of **KYB** coil springs are made in purpose built **KYB** factories.

KYB Product

Alongside tyres, suspension components play a critical part in how a vehicle is operated and managed. Across Europe, **KYB** supply the following products:

Shock Absorbers



Keeps tyres in contact with the road, allowing for safe steering and braking. Works to regulate the bounce of a coil spring, pushing it back out to its regular length in a controlled manner.

Coil Springs



Supports the weight of a vehicle and compresses to absorb any bumps or jolts in the road surface. Coil springs also maintain the correct ride height of the vehicle.



[Click here](#) to see how each component works in our 'Inside Suspension Video'



Protection Kits



Stops dust and dirt from damaging the shock absorber seal. Acts as a cushion, protecting the suspension from contact between the metal body of the shock absorber and the bottom of the Mounting Kit when compressed.

Suspension Mounting Kits



Allows the steering wheel to turn the tyres and provides a rubber cushion between the chassis and suspension.

KYB Testing

KYB tests new product at a purpose-built test track in Kashio, Japan. Built in 2011, this \$35 million facility features several tracks designed specifically for the development and testing of suspension and steering components.

KYB product sold in Europe also has to pass a vehicle fitting and driving test. **KYB** Europe has a fitting and test centre in France, which includes vehicle lifts, a full range of garage equipment and the latest 3D geometry check technology.



[Click here](#) to watch a video about our test track.



"Private brands" may be cheaper - but that saving is lost when having to replace a faulty unit.



It is much harder to gain a new customer than to retain the same level of business from a current customer. Why risk losing a repeat customer by fitting product you do not know or trust?



Our quality is easy to explain to your customers. **KYB** have been experts in hydraulics for over 80 years, and are supplier to some of the biggest vehicle manufacturers in the world.

Why Pay More for KYB?



As **KYB** is an OE supplier, you can be sure you're restoring to original or more... never less!



KYB provides the technicians with support to find, fit and sell.



KYB's warranty rate in Europe is approximately 0.2%.

KYB OE vs Aftermarket

KYB makes shock absorbers for both OE and the aftermarket. There is only one difference between the two:

There is a slight difference in the tuning of the valves. This is because **KYB** aftermarket product is fitted to older cars, meaning the new shock absorber will be fitted amongst older steering and suspension parts. The valves on **KYB** aftermarket shock absorbers are finely tuned to compensate for this.

The materials used, quality control procedures and machines used all remain the same as their OE counterparts. **KYB** aftermarket product therefore retains the optimum quality demanded by vehicle manufacturers, but is tuned to meet the needs of the aftermarket customer.

All KYB shock absorbers are subject to rigorous testing to ensure optimum efficiency and safety. This includes:



UP TO **10 MILLION**
COMPRESSION
CYCLES



COMPRESSION
TEST SPEEDS OF
5 METRES
PER SECOND



SIDE LOAD
FORCES APPLIED OF
UP TO **300KG**



UP TO **850 HOURS**
OF CORROSIVE
SALT SPRAY TESTS



STRENGTH
TESTS UP
TO **4,000KG**



FREEZING
TEMPERATURES
DOWN TO **-40°C**



HIGH TEMPERATURES
UP TO **100°C**



Original
Equipment
Manufacturer



Shock Absorbers

Shock Absorbers

Shock absorbers push a vehicle's wheels into contact with the road, allowing for safe steering and braking. A shock absorber regulates the bounce of a coil spring and pushes it back out to its original length keeping the car stable and safely in contact with the road.

Why are they important?

As they are responsible for keeping a vehicle's tyres in contact with the road, shock absorbers are **critical** to road safety. Without adequate traction, it may be that a vehicle cannot stop safely.



With just one shock absorber, the stopping distance at 30mph/50kph can increase by up to two metres. **That could be the difference between stopping safely and hitting a hazard.**

KYB recommends that shock absorbers are replaced every 80,000km.



KYB has a video available to help you explain the importance of replacing worn shock absorbers [Click here to view the video.](#)

Why should they be replaced?

Shock absorbers contain valves, which help to create the required resistance when oil passes through them.

After 80,000km, fluid will have passed through these valves over 75 million times, causing gradual wear and deterioration, meaning more fluid passes through and the shock absorber is less effective.

This gradual deterioration makes it very hard for drivers to identify the moment their shock absorbers need replacing.



Symptoms of Worn Shocks

This gradual deterioration is why it is important for technicians to be aware of the signs of worn shock absorbers. If a customer describes any of the following, it may mean their shock absorbers are worn and need replacing:



Vibration in steering wheel



Uneven tyre wear



Veering in side winds



Body Roll



Nose dive



Bottoming Out



Harsh Ride



Bouncing

How to Check for Worn Shocks: Test Drive

Test driving vehicles (especially those over 80,000km / 50,000 miles) is a good way to diagnose suspension issues and will also help in explaining issues to the motorist.

Pick a 3 minute, 1 mile route by your workshop that is quiet, and one that you are able to use repeatedly. Your speed will not need to exceed 30mph and should include the following:



Somewhere with road bumps



Somewhere you can brake quickly



Somewhere you can accelerate



Somewhere you can swerve safely

Once you have established a route, it is important that you look out for any of the following symptoms:



The rear of the vehicle squatting when accelerating.



Nose diving when emergency braking.



Ride harshness when on bumpy road surface/going over bumps.



Noises, steering wheel vibration and any irregularities with steering.



Excessive body roll when changing lane/swerving.



When braking, use the line where the dashboard meets the windscreen for a reference point to see how many times the car bounces after stopping. It shouldn't bounce more than once. The rear view mirror is a good way to check for acceleration squat.



When you get back to the workshop, make sure to eliminate any other factors such as under inflated tyres, weak/broken springs, or any excessive movement in the other suspension components such as the ball joints and bushes.

KYB Shock Absorbers

KYB has over 4,000 shock absorbers available across several ranges, including twintube, monotube, oil or gas. All come with a 2 year warranty. Please ask your KYB distributor for more information.



Coil Springs

Coil springs support the weight of the vehicle, and compress to absorb any bumps or jolts in the road surface. Coil springs also maintain the correct ride height of the vehicle. As such, **they should always be replaced in pairs.**

Why are there more Coil spring breakages?

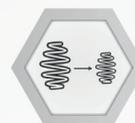
There are a number of reasons as to why there are more coil spring breakages, including:



Speed bumps are common in a lot of European countries, with more being built every year.



The condition of the roads in many European countries are worse than ever.



Vehicles have to meet strict emissions standards and must be as light as possible. As a result, vehicle manufacturers cut weight from other areas of the car. **Coil springs have suffered from these reductions in size and weight, meaning they weaken and break more often.**



Lots of countries are now using salt when roads are icy. If a coil spring has damage to its outer coating (from road debris) and the metal is exposed, salt will corrode and weaken the spring. Water can also get into cracks and corrode the metal - this is worse during the winter when the water can freeze and expand in any cracks or crevices.

Coil Springs



KYB Coil Springs



Constant vs Taper Wire

You may have noticed that for some mini-block (oval shaped) coil springs, KYB offer a choice: a constant wire or taper wire design.



Taper Wire

- ◆ Part numbers begin with RJ.
- ◆ Wire gets thinner towards the end of the spring, so the coils compress neatly inside one another.
- ◆ The larger the bump, the more the spring compresses, hence the “progressive” rating.
- ◆ This design matches the OE spring that will be on the vehicle.



Constant Wire

- ◆ Part numbers begin with RX.
- ◆ The wire is a constant diameter, so the spring will compress uniformly at the same time, hence the “linear” rating.
- ◆ This option provides a competitively priced aftermarket design alternative

Many of our competitors only offer the aftermarket constant wire spring, KYB offers a full range of both constant and tapered wire.

The two behave in completely different ways. For this reason, they should never be mixed on the same axle.

Side Load Springs

Used on many modern cars, side load springs - otherwise known as “banana” springs - look slightly different to mini-block springs, as they are slightly curved. This can often cause confusion when fitting.



Once placed under the full weight of the car, the side load spring will compress straight. After years of being compressed straight, the original spring looks a lot straighter than the replacement.



If the new compressed coil is still bending outwards and looks like it will rub against the wheel arch, then the spring has not been installed in the correct position.



When installing, face the part of the spring that bends outwards towards the inside of the compressor.



KYB Mounting Kits

Mounting kits are a vital component in a vehicles suspension system. They provide a rubber cushion between the chassis and suspension, helping to reduce stress on the suspension by absorbing vibration.

They also include a bearing which allows the steering wheel to turn the suspension column and the wheels. It ensures that the steering wheel returns to its natural straight position if released.



Rubber Cushion



Bearing

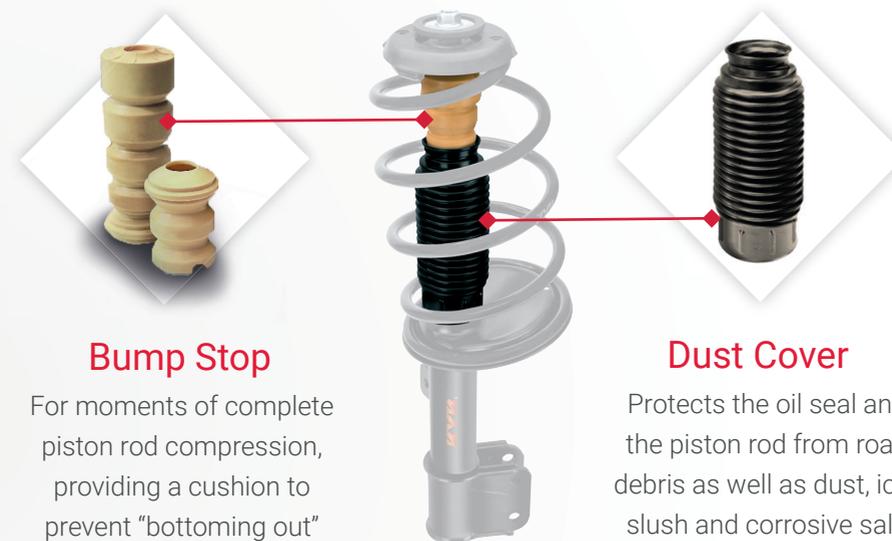
Mounting kits work just as hard as shock absorbers. To ensure smooth steering and passenger comfort, mounting kits should be replaced at the same time as shocks and springs.

KYB offers a full range of mounting kits - this means the mount, bearing and all nuts, screws and other accompanying items are included. The part number for these always begin with "SM". Take care when comparing these to a competitor, as many of them will not offer the full kit.

KYB now also offers a limited range of part kits for when a full one isn't necessary. These part numbers always begin with "MB" and just contain the bearing.

KYB Protection Kits

Protection kits comprise of a bump stop and a dust cover.



Bump Stop

For moments of complete piston rod compression, providing a cushion to prevent "bottoming out"

Dust Cover

Protects the oil seal and the piston rod from road debris as well as dust, ice/slush and corrosive salt.

All **KYB** protection kits are supplied in pairs. They should always be replaced when the shock absorber is replaced, in order to protect and prolong its life.



Sales Tip: When selling shock absorbers, ask "how long do you want to keep your car?" as protection kits will extend the life of their new shock absorbers for relatively little cost.

KYB Suspension Solutions

KYB have a number of support tools available, specifically designed to make fitting suspension components easier and quicker.



Fitting Videos

With over 5 million views, **KYB** has created fitting videos for vehicles that are known to be difficult when fitting suspension.



Virtual Reality

KYB has several virtual reality videos, designed to teach the user the dangers of driving with worn suspension.



QR Codes

Some **KYB** shock absorbers have a label with a spanner and QR Code on them - scanning it will give access to part specific fitting instructions and videos.



360° Images

KYB has the widest range of 360° images in the European aftermarket. These can help ensure the correct part is selected the first time, saving time in the workshop and reducing returns.



[Click here](#) to visit the **KYB** Support Zone for more information

KYB Suspension Solutions App

KYB has developed an App, available to download from the App Store or Google Play, to aid technicians with the fitting of suspension components and to assist informing customers of the dangers of driving with worn suspension. All communication sent from the App can be customised with your logo. Each feature is designed to assist at every stage of the job:

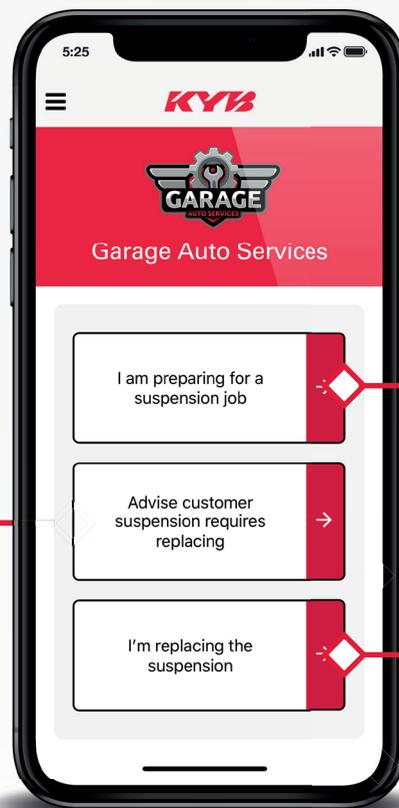
1 Before the job

If a customer needs their suspension replacing, click "advise customer suspension requires replacing".

- ◆ Enter customer's details
- ◆ Select faulty parts and the symptoms.
- ◆ Add an image of the faulty part (optional)
- ◆ Preview the text message and send - these are free and shown to be from the workshop.

The text contains a report. This report, fully branded as the garage, will:

- ◆ Contain all the information inputted by the technician.
- ◆ Show the benefits of replacing suspension
- ◆ A "Call" button - if clicked, they are able to call the workshop directly.



2

During the job

Click "I am preparing for a suspension job".

Enter a registration number, vehicle make or VIN number. This will give you access to:



Fitting Videos



Fitting Guides



Part Numbers

There will also be an estimate for the time needed to complete the job, allowing you to quote reliably.

3

After the job

Click "I'm replacing the suspension".

- ◆ Enter customer's details
- ◆ Select faulty parts and the symptoms.
- ◆ Add a **before** and **after** image (optional)
- ◆ Preview the text message and send - these are free and shown to be from the workshop.



For a more indepth training experience, **KYB** is offering online training to workshops.

To request your training with a member of the **KYB** technical team, please **click here**.

kyb-europe.com



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