

BALL JOINT AND STEERING SYSTEM COMPONENTS



THE BALL JOINT CONSISTS OF THE FOLLOWING COMPONENTS:

- 1 Ball
- 2 Rubber ring
- 3 Gaiter
- 4 Clip
- 5 Gaiter sleeve

THE STEERING SYSTEM CONSISTS OF THE FOLLOWING COMPONENTS:

The following components have ball joints at both ends – with four ball joints in total:

- Drag link – links the steering drop arm with the steering knuckle.
- Track rod – links the left and right hand side steering knuckles via track rod arms.



ALL ABOUT BALL JOINTS



RENAULT TRUCKS DELIVER

PRODUCT
COMMERCIAL KNOWLEDGE

PRACTICAL ADVICE

MAXIMISE THE SALE

Don't just sell the ball joint – look for further opportunities to maximise the sale:

- Complete drag link – if seized.
- Right hand & left hand ball joints – sell the pair

RENAULT FITTED-PART

- One year warranty.
- Fitted by Renault Trucks trained technicians.

RENAULT TRUCKS 24/7

- Professional roadside assistance 24 hrs a day, 7 days a week, 365 days a year.
- Dedicated to getting customers' trucks back on the road with minimum delay



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Renault Trucks SAS with a capital of 50 000 000 € - 954 506 077 RCS Lyon Crédit photos : © Renault Trucks - 01/2017



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FACT

You can add a corrosion resistant circlip and make a huge difference to your safety.

The steering system of a truck comprises a serie of related, safety-critical components and every component has to be of the up-most standard. As a ball joint holds the various links in the system together, this is one chain where there must be no weakest link! Not all ball joints are the same and your safety is optimised through ball joints which are correctly matched to other parts of the steering system and are preloaded for optimum steering alignment.

THE DIAMOND DISTINCTION

1 | The Renault Trucks dimensions

Renault Trucks ball joints are correctly dimensioned and tested together with their related components to ensure maximum safety. Renault Trucks manufactures a product that has been tested individually and as part of the total system.

2 | The Renault Trucks circlip

Renault Trucks ball joints have a **corrosion resistant circlip**, which keeps the rubber boot-and therefore the essential grease-in place, so ensuring consistency and longevity of performance.

Renault Trucks ball joints are preloaded for optimum steering alignment; therefore, your **safety** is optimised along with a **long-life performance**.

RISKS OF FITTING NON GENUINE



Ball joints are a **safety-critical items** - they hold the various links in the front suspension together. Using an inferior ball joint can seriously jeopardise the functionality of an operator's trucks steering system. If a non-genuine ball joint is used, there is a considerable risk that it will adversely affect the steering and spoil the important coordination between wheels, steering and track rods.



TWO PARTS MAY LOOK ALIKE BUT...

There will always be non-genuine suppliers wanting to sell ball joints to Renault Trucks operators. The quality of these non-genuine makes naturally varies as much as their prices.

However, even if a well-known non-genuine Renault Trucks make is chosen - it is by no means certain that the ball joint is tailored and to the specification of a Renault Trucks steering system in the same way as a GENUINE Renault Trucks part.

DIMENSIONED AND TESTED

This is essential for correct, consistent quality. The ball joint is a key component in the Renault Trucks steering system, and most importantly, **it is dimensioned and tested together with other GENUINE Renault Trucks components in the steering system.** The ball spindle taper is set up and specially designed to fit the mating component in the steering system.

FEWER COMPONENTS

Replacing the pressure plate and the spring with a special rubber ring decreases the number of parts in the ball joint. Construction and assembly is simplified.

LESS AXIAL ELASTICITY - MORE DIRECT STEERING

Axial elasticity is reduced since the ring does not allow the degree of compression of the spring. Reduced axial elasticity in the ball joint will also increase the lifetime of the ball joint. When elasticity in the ball joint is reduced, accuracy increases. A more precise steering response contributes to the dynamic safety of the vehicle.

INTERNAL GAITER SLEEVE AND GAITER MULTIPLE SEALING GROOVES

Ensures the gaiter is fully supported and prevents the gaiter from collapsing. Multiple sealing grooves on the top of the gaiter ensures a positive location on the steering arm and thus weather protection - even when the ball joint is at full deflection.

3 | The Renault Trucks movement

Try and move a new Renault Trucks ball joint by hand and you'll find it takes a great effort. Do the same with a non-genuine and come to your own conclusions. The Renault Trucks ball joint is set up to provide maximum steering responsiveness and consistent, long-life performance.

Renault Trucks's ball joints are **designed to withstand long and heavy use**. A minor malfunction can throw the front wheel angles out of alignment and cause uneven tyre wear. A major failure may endanger the life of the driver, passengers and other road users.

FEATURES

Advanced gaiter and retainer ring design.

Internal synthetic rubber ring instead of a conical spring

Pre-loaded ball gives minimal elasticity.

Rolled and phosphated threads.

Unique dimensioned and tested together with the other GENUINE Renault Trucks parts in the steering system.

BENEFITS

Wear resistant, longer lifetime, more cost effective, keeps the grease in place.

Noise prevention, minimised installation space.

Permits optimum steering alignment and gives less tyre wear.

Correct strength and endurance.

Increased safety for driver and passenger.

CORRECT SURFACE TREATMENT

The ball joint is toughened, the spindle contact surfaces are induction hardened both to give correct strength. The lower part of the casing inside is phosphatised to avoid wear.

PRE-LOADED BALL JOINT COMPONENTS

The ball joint has minimal end float, which means that it works perfectly at all angles.

CORROSION RESISTANT CIRCLIP

Keeps the special grease in place at all angles - and increased service life.

BELLOWS AND SEAL

Made from a special grade of rubber which withstands dirt, water, road salt, grease and oil - wear resistant, increased service life.

SEALED FOR LIFE

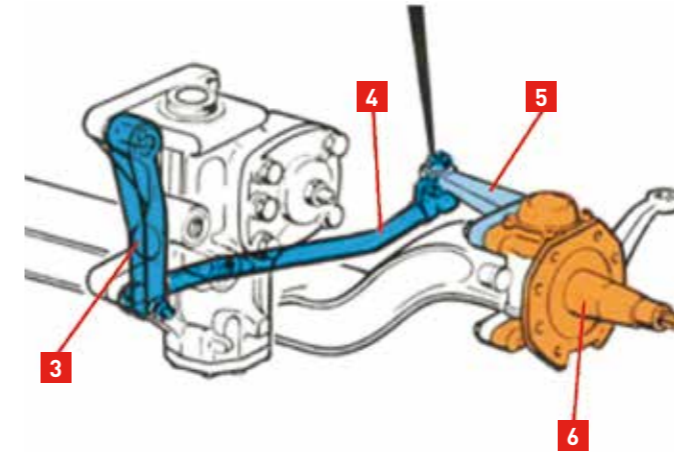
Maintenance free with the **inclusion of special grease to prevent internal wear** thus ensuring long service life.

WHY GENUINE RENAULT TRUCKS BALL JOINTS?

- Better steering alignment.
- Minimal installation space.
- Noise prevention.
- Advanced sealing performance.
- Minimised ball joint weight.

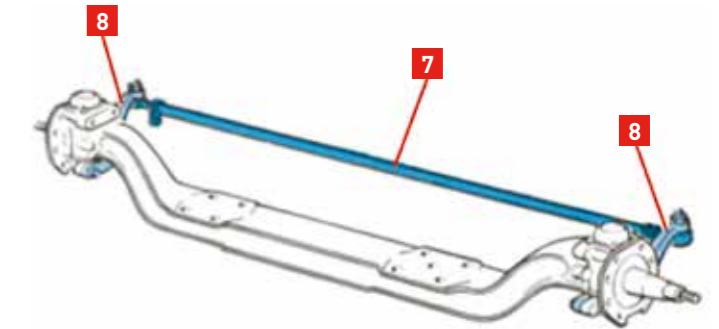
THE STEERING SYSTEM HOW IT WORKS

- A pivotal part of the steering system is the ball joint. The ball joints connect the various steering components within the steering system.
- The steering wheel movement is transmitted from the drop arm **3**, with the aid of the drag link **4**, via the upper steering arm **5** to the steering knuckle **6**. The drag link is equipped with ball joints, at both ends.



- The track rod **7** connects the steering knuckles **6**, with the aid of the track rod arms **8**, making the two wheels turn in unison when the driver turns the steering wheel.

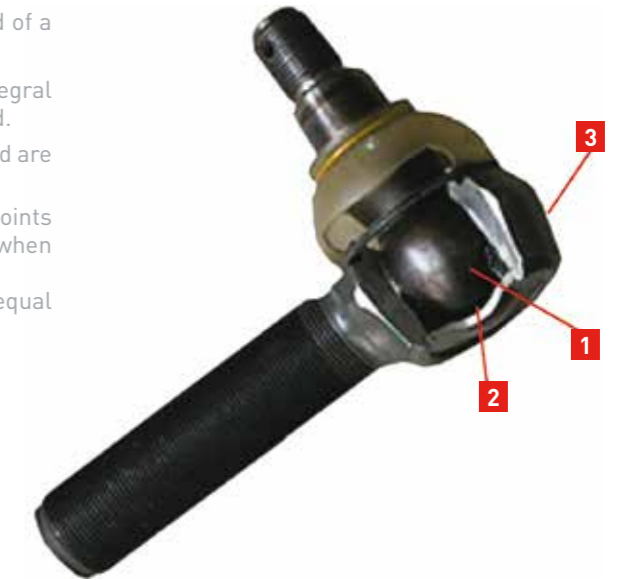
To enable the adjustment of the wheel positions in relation to each other, the track rod **7** is fitted to the steering arms **5** with adjustable threaded ball joints to enable correct alignment of the front wheels (called tracking).



BALL JOINT

- A ball joint consists of a steel ball **1**⁽¹⁾ which, with the aid of a rubber ring **2**⁽¹⁾, is fitted in a steel socket **3**⁽¹⁾.
- These items are encased in a housing which is either integral with, or screwed onto, the steering's drag link or track rod.
- The ball joints are threaded into the drag link/track rod and are locked into position with the aid of a clamp.

By turning the track rod the distance between the ball joints can be shortened or extended, something very important when aligning the front wheels (tracking). The drag link is adjustable in the same fashion to achieve equal steering in both directions.



YOUR SAFETY IS OPTIMISED THROUGH RENAULT TRUCKS BALL JOINTS

(1) See section "The ball joint Components"