



Steering gearbox, power steering pumps, steering protection filter

Mechanical steering systems

Even today, mechanical steering systems are still built into vehicles and based on the old original concept for steering vehicles.



Mechanical and hydraulic steering gearbox, singly or as kit with axial joint and side/tie rod ends

Power steering systems

Power steering systems have become almost a standard feature of modern vehicles, they are only after all a further development of mechanical steering.



Power steering pumps, hydraulic pumps

During the duration of production, car manufacturers often use up to five different steering systems for one vehicle model. For customers this means that the requirement for skilled, professional advice is ever increasing.



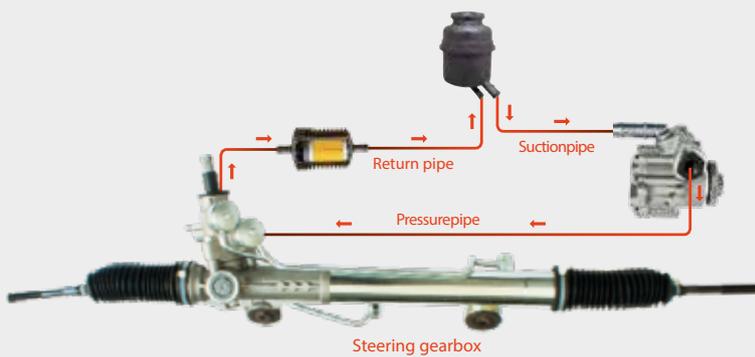
Steering protection filter

When replacing a hydraulic steering gearbox or the hydraulic pump, the entire system must always be rinsed out and degassed. If repairs are carried out on the power steering system, utmost care must be taken because faulty work can lead to serious accidents. Also pay extreme attention to cleanliness as even the slightest contamination can damage or cause the steering assistance to fail.

MAPCO has steering protection filters in its product range that prevent contamination of the steering system. After installing a new steering system or hydraulic pump, these fine-particle filters prevent a renewed contamination of the hydraulic oil, increasing the service life of the components, consequently, saving material and labour costs for the vehicle owner.

In the MAPCO steering protection filter (article numbers 29990 and 29991) a high performance magnet retains almost 100 percent of all magnetic particles. All the non-magnetic suspended particles are caught in a membrane filter paper. The housing is completely sealed and resists stone chipping and road salts.

Installation diagram



MAPCO recommends that such a filter is always installed when this type of component has not previously been used or replacement of the filter after approximately every 40,000 kilometres.



Flushing

- Switch off the ignition and disconnect the battery minus pole before flushing the steering system.

The steering pump must be degassed before installing the new steering box.

- To do this fill the pump at the connection to the supply pipe and spin the hub until hydraulic oil comes out of the delivery side of the pump.

- Now remove the return pipe from the compensating tank and place the open end into a collection tank. Collect the hydraulic oil that runs out and take it later to a collection point for old oil.

Close the compensation tank at the open return passage and take out the fine-particle filter, out as far as possible. The compensation tank must be cleaned before a new fine filter is used.

- Then via the compensation tank fill with fresh hydraulic oil.
- Now reconnect the battery's minus pole, however starting of the motor must be prevented according to the vehicle manufacturer's instructions when turning the ignition key. Then allow the motor to turn over using the starter RPM and refill with at least one litre of hydraulic oil. Now the return hose can be reconnected.

Degassing

- The compensation tank must be filled up to the ,max' marking with fresh hydraulic oil. Then lift up the vehicle so that the front axle (steering axle) is unloaded.
- Now turn the steering wheel twice to the left and right as far as the stop in each case. Then pour new oil in up to the ,max' marking. The motor can now be started. When doing so make sure that the oil tank is always filled up with oil so that no air is sucked in.

- Now turn the steering wheel slowly 10 - 15 times from limit stop to limit stop. Repeat the process until no more air bubbles escape at the compensation tank.

- Again add fresh hydraulic oil up to the ,max' marking, close tank and check that the complete steering system is tightly sealed.

- The motor can be switched off, the oil level must now rise. The degassing process must be repeated if the oil level has risen more than 5 mm (observe the vehicle manufacturer's specifications). It is essential to undertake a test drive and check the level of hydraulic oil. If necessary add more oil.

MAPCO can recondition old steering gearboxes according to customer requirements

- Steering gearboxes are considered as wearing parts in the motor vehicle sector that can be remanufactured and therefore when buying a new component can be taken back. This also applies to MAPCO, you can find the relevant take-back guidelines at: www.mapco.com.
- MAPCO can also prepare your steering gearbox, if a new product is temporarily unavailable and you don't want to wait. Within seven days your old steering gearbox will be as good as new.
- A visual inspection is carried out before remanufacture in order to ensure that the component meets MAPCO's take-back criteria. Then the steering gearbox is taken apart and the old wearing parts are disposed of in a proper and environmentally safe way. Afterwards, an overall cleaning is carried out using a hot wash unit and jet procedure. Assembly of the steering takes place with the highest care and only using new wearing parts (sealing rings, shaft seal rings, bushings, ball bearings). Then the reconditioned steering gearbox must pass a test to confirm it is functioning properly.





Wide selection of products, constantly available from stock and brought quickly to the customer

Products of MAPCO® Autotechnik have been sold in the millions. As a manufacturer of high quality spare parts MAPCO® offers more than 20.000 items for brands from Alfa Romeo to Volvo. MAPCO® owns multiple central warehouses in Germany and a variety of warehouses all over the country and throughout Europe called Regional Centers. That is why MAPCO® parts are always nearby and quickly and reliably available to our customers.

MAPCO® products cover a considerable range of mechanical and electronic replacement parts that is divided into five columns:

- Steering/Suspension parts
- Brakes
- Drive Train/Bearings
- Engine environment/Filters
- Electric/Accessories

TecDoc award for MAPCO® Autotechnik

The data quality of MAPCO® is outstanding as well. Hence MAPCO® is a „TecDoc Certified Data Supplier“. Especially our customers from dealerships to workshops benefit from a clear data structure that makes the identification of parts such an easy task.



Contact

MAPCO Autotechnik GmbH
Zentrale
Moosweg 1
14822 Borkheide · GERMANY

T: +49 33845/6 00 30
F: +49 33845/4 10 32
E-Mail: info@mapco.de
www.mapco.com

MAPCO Autotechnik UK Limited
Unit 8, By-Pass Park Estate
Sherburn-in-Elmet
LS25 6EP Leeds

T: +44 1977/30 14 61
F: +44 1977/68 20 76
E-Mail: info@mapco-automotive.co.uk
www.mapco-automotive.co.uk

MAPCO Autotechnik GmbH
France
23, rue d'Arsonval
F-69680 Chassieu

T: +33 4 37 25 85 97
F: +33 4 72 90 13 73
E-Mail: info.france@mapco.eu
www.mapco-france.com

MAPCO Autotechnik GmbH
Polígono Industrial Alcalá X,
calle 2 nave 10
41500 Alcalá de Guadaira
Sevilla, Spain

T: +34 6 87 70 82 07
E-Mail: pedidos@mapco.es
www.mapco.es

MAPCO Autotechnik GmbH
Deposito Italia
Via G. Palatucci 5
47122 Forlì (FC)

T: +39 0543 1 75 31 26
F: +39 0543 1 75 31 26
E-Mail: info@mapco-italia.it
www.mapco-italia.it