

Technical Assistance: 801 Fluid Contamination – Master Cylinders.

As part of our quality control, we investigate all master cylinders returned. Of these, 9 out of 10 have been on the vehicle for only a few weeks. They worked perfectly on installation; but after a week or two the master cylinder starts to develop problems. Common problems are a spongy or long pedal travel and/or brakes locking on after driving.

Contamination is usually introduced at installation.

With a standard DOT3/DOT4 system, even a drop of mineral oil will cause the contamination, the cause of swollen seals. It is imperative to only use new brake fluid from a sealed container. When a master cylinder is supplied without a reservoir, it is essential that the old reservoir is cleaned thoroughly. As most reservoirs have baffles inside them, the only sure way to clean is with hot soapy water then rinse out thoroughly with clean hot water and then air blow dry. Do not use paraffin (mineral) or engine degreaser!

Who should stand the cost of the replacement?

It is to be understood that contamination is not a manufacturing fault. The cause of the fault is not with the manufacturer or the supplier!

Long pedal travel and/or spongy pedal.

The valve seals are precision components, designed to allow the transfer of fluid from the reservoir into the hydraulic system as required. (eg, when brake pads wear, more fluid is required in the caliper to take up that wear). If the valve seals swell, they stop working. This leads to a spongy pedal and excess travel. In the case of severe contamination, the seals swell so much that they restrict the movements of the pistons and understandably cause both long pedal travel and brake bind.



Note

See: Brake Bind (Tech Note 301).