

TIPS & TRICKS

Hoses diagnostics

Bubbles



The presence of bubbles in the reinforcement of hydraulic brake hoses can occur due to a phenomenon known as "cavitation."

Cavitation happens when the pressure within the hydraulic system drops below the vapor pressure of the fluid. As a result, tiny vapor bubbles form within the fluid, including within the reinforcement layers of the brake hoses.

This cavitation can be caused by several factors, such as sudden pressure changes, high fluid velocities, or restrictions in the hydraulic system. When these bubbles collapse or explode, they create shock waves that can lead to damage within the reinforcement layers of the brake hoses.

It is important to address and prevent bubble formation in the reinforcement of hydraulic brake hoses as it can compromise the structural integrity of the hoses, reduce braking efficiency, and potentially lead to brake failure. Regular inspection, maintenance, and ensuring proper hydraulic system design are crucial in mitigating the risk of bubble formation and maintaining the safety and performance of the braking system.



Crack formation

Some common causes of crack formation in hydraulic brake hoses include:



1. Age and wear: Over time, hydraulic brake hoses can experience degradation and wear due to exposure to heat, chemicals, and mechanical stress. This can lead to the development of cracks in the hose material.

2. Flexing and bending: Hydraulic brake hoses are subjected to repeated flexing and bending during normal vehicle operation. This continuous movement can cause fatigue in the hose material, eventually leading to crack formation.



3. Improper installation: Incorrect installation techniques, such as improper tightening or routing of the hoses, can create stress points that contribute to crack formation over time.

4. External damage: External factors such as impact, abrasion, or contact with sharp objects can cause physical damage to the brake hoses, resulting in cracks.



5. Environmental factors: Exposure to extreme temperatures, chemicals, or harsh environmental conditions can weaken the hose material and make it more prone to cracking.

To prevent crack formation in hydraulic brake hoses, regular inspection and maintenance are essential. It is crucial to monitor the condition of the hoses, looking for signs of cracking, fraying, or bulging.



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Leakage

A leak in the reinforcement can compromise the integrity and performance of the braking system. Here are some possible causes and actions to take:



1. Physical damage: The reinforcement of the brake hose may have experienced physical damage, such as cuts, punctures, or abrasions, which have caused a leak. In this case, the damaged hose should be replaced promptly to ensure the safety of the braking system.

2. Corrosion: Corrosion can weaken the reinforcement of the brake hose, leading to leaks. This is particularly common in areas where the brake system is exposed to moisture or corrosive substances. If corrosion is identified, the affected hose should be replaced, and measures should be taken to prevent further corrosion.

3. Incorrect installation: Improper installation techniques, such as over-tightening or using incompatible fittings, can cause damage to the reinforcement and result in leaks. Reinstallation of the brake hose following the correct procedures and using appropriate fittings may be necessary.

When a leak in the reinforcement of a hydraulic brake hose is detected, it is crucial to address the issue promptly to prevent brake fluid loss, loss of braking power, or potential brake failure.



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External abrasion

Abrasion can weaken the hose material and potentially lead to leaks or other forms of damage. Here's some important information regarding external abrasion and how to address it:

Causes of External Abrasion



External abrasion can be caused by various factors, such as contact with sharp edges, rubbing against other components or surfaces, or improper routing of the brake hose. It is important to identify the source of abrasion to effectively mitigate the issue.

Inspection and maintenance

Regular visual inspection of the brake hoses is crucial to detect any signs of abrasion. Look for areas where the outer surface of the hose appears worn, frayed, or damaged. Pay close attention to sections where the hose comes into contact with other components, such as suspension parts, body panels, or metal edges.

Ensure that the brake hoses are correctly routed and secured to minimize contact with potential abrasive surfaces. Use appropriate clips, brackets, or protective sleeves to provide additional protection and prevent direct contact between the hose and any abrasive objects.

If significant abrasion is observed on the outer surface of the brake hose, it is recommended to replace the affected hose. Abrasion compromises the structural integrity of the hose and increases the risk of leaks or failure.



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