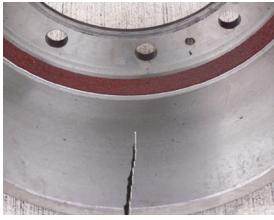


Brake Drums: Troubleshooting

Regular and thorough inspection of a vehicle's braking system is important for maintaining proper operation and should be included in your routine maintenance programme. Below are a number of common issues which may be identified during a vehicle service. These issues are not covered by manufacturer's warranty.



Juratek.com



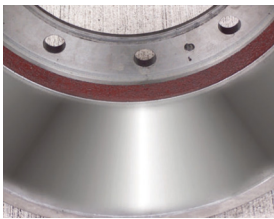
Cracked Drums

A crack which extends through the entire wall of the drum is caused by excessive heating and cooling of the drum during operation. If this occurs, the drum must be replaced immediately. If the problem reoccurs, it may indicate either a brake system fault or driver abuse. Particular attention should be paid to the brake system balance and the brake lining friction ratings as specified by the OE manufacturer.



Grease Stained Drums

This condition is normally associated with a faulty lubrication system or improper greasing of brake cams and can be identified by discolouration of the braking surface. Once the source of contamination has been identified and rectified, components must be thoroughly cleaned and any contaminated linings must be replaced.



Polished Drums

Polished brake drums present a mirror-like finish on the braking surface. This can be remedied by lightly sanding both the drum and lining surface with some medium grit emery cloth. The brake system should also be checked for lightly dragging brakes and the linings checked to ensure the correct material is being used. It is recommended that the braking surface is sanded each time the linings are replaced.



Broken Mounting Ring

This problem occurs when there is interference between the hub and drum mounting surface. This may be due to incorrect seating of the drum during installation, a damaged hub, or a build-up of corrosion on the hub. The hub should be visually checked, and any defects should be rectified by either cleaning the hub or replacing if necessary. The drum must be replaced if cracks are identified in the bolt circle or mounting surface.



Scored Drums

A scored brake drum is indicated by defined grooves in the braking surface of the drum, along with excessive brake lining wear. These grooves are caused either by the brake linings being completely worn out resulting in metal-on-metal contact, or a foreign body getting inside the brake drum area.



Radial Cracking of the Mount Surface

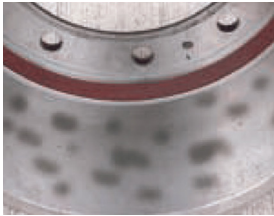
This is caused by interference between the hub and drum mounting surface during installation. This is usually the result of either using the wrong drum for the application, or improper cleaning of the hub piloting surface prior to drum installation. If this issue is present, the drum must be replaced. Before installing a replacement drum, determine the correct drum for the application, inspect the hub piloting surface, and ensure that all dirt and corrosion are properly removed. When installing the replacement drum, ensure the mounting surface is properly and evenly seated against the mounting surface before torquing the wheel nuts during assembly.

BULLETIN #J003



Heat Checks

Heat checking is the appearance of numerous short, fine, hairline cracks on the braking surface of the drum. It is a normal phenomenon for brake drums and occurs as a result of the constant heating and cooling of the braking surface during normal braking operation. Normal heat checks will not impair braking performance and will ordinarily wear away and reform as the result of the normal braking process. However, they may progress into more serious cracks over time, meaning the drum would require replacement.



Martensite Spotted Drums

This issue visually presents itself as hard, slightly raised coloured spots on the drum braking surface with uneven wear. It will also often lead to a pulsating brake pedal combined with excessive noise. This condition indicates that the drum has been subjected to extremely high temperatures which have caused structural changes to the drum material, making them more susceptible to cracking. In this instance, the source of the excessive heat should be identified and resolved, and the brake drum and linings must be replaced.



Blue Drums

Blue drums are the result of exposure to extremely high temperatures which may be caused by continued hard stops, brake system imbalance, or faulty return springs. It is not always necessary to replace the drum in this instance, providing it remains within the tolerances for operation. However, the brake system should be checked for proper balance, the return springs should be inspected to ensure they haven't weakened or broken, and the brake shoe clearance should be checked and adjusted if necessary. If this issue is left unresolved, it can result in cracking or martensite conditions.



Oval Drums

This issue is indicated by a drum diameter which shows variations at different points around the braking surface and brake linings which show more wear on one side than the other. This drum distortion can be caused by excessive heat generated during braking, or the result of improper drum storage. Other possible causes can include improper chucking of the drum during turning, or dropping the drum on a hard surface during routine wheel-end maintenance.



Excessive Wear

Excessive wear occurs along the edges of the lining contact area of the braking surface, or in the area coinciding with the lining rivet holes is usually caused by a build-up of abrasive material from either the presence or absence of dust shield, depending on the vehicle application. If the problem occurs while dust shields are installed, the lower dust shield should be removed to allow any abrasive materials to exit the braking system more readily. If it occurs while dust shields are not utilised, they should be installed to restrict abrasive materials from entering the braking system. Brake drums should also be checked for scoring.

Drum Storage

Drums should always be stacked as shown. This ensures proper weight distribution on the side walls of the drum, helping to avoid damage that can lead to oval drums or premature brake failure.

