

# FAULT FINDING

## 3.2

# BRAKING

TTC Brake Discs are sourced from leading manufacturers, who produce to recognised international standards.

Brake Discs should always be fitted in matched pairs with new friction material. The requirement to replace only one brake disc is an indication of a braking balance problem which will not be solved by just replacing the brake disc.

Wear			
<b>Appearance</b> * Worn braking surface.	<b>Cause</b> * Normal operating conditions.	<b>Action</b> * Check minimum thickness stamped on the outside of the disc. * Replace both discs if signs of uneven wear.	

Heat Craze			
<b>Appearance</b> * Fine, thin heat cracks.	<b>Cause</b> * Normal heating and cooling of the disc during service.	<b>Action</b> * If they develop deeper than 1.5mm - regrind. * Replace disc.	

Cracking			
<b>Appearance</b> * Deep surface cracks.	<b>Cause</b> * Excessive heat.	<b>Action</b> * Replace discs. * Check caliper operation. * Check balance between wheels, axle and trailer.	


  

Hard Spots			
<b>Appearance</b> * Raised colour areas in the braking surface.	<b>Cause</b> * Occurs as a result of normal heating and cooling during service.	<b>Action</b> * Remove by skimming if tolerance allows. * If it persists replace disc.	


TTC Brake Drums are sourced from leading manufacturers, who produce to recognised international standards.

This Brake Drum Fault Finding guide is for guidance only as nothing can replace regular servicing, good workshop practice and correct handling.

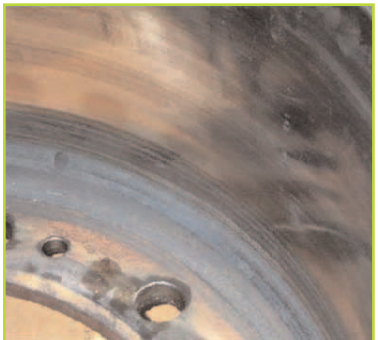
## Scored Brake Drums

Scored Brake Drums			
Appearance	Cause	Action	
<p>* Clearly defined grooves on the braking surface.</p>	<p>* Worn out linings causing metal to metal contact with the drum. * Excessively hard linings.</p>	<p>* Replace drum and linings.</p>	

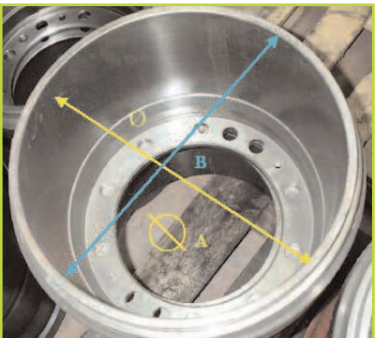
## Broken Mounting Ring

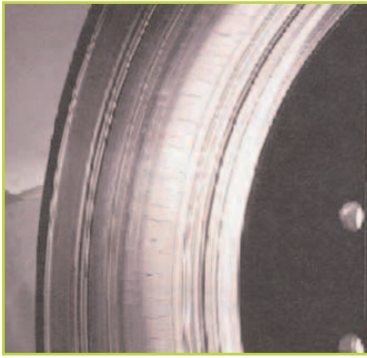
Broken Mounting Ring			
Appearance	Cause	Action	
<p>* Drum separated from the mounting ring.</p>	<p>* Too much pressure from braking system. * Overloaded axle. * Poor mechanical strength due to casting not being manufactured to international standards. * Excessive overheating and rapid cooling.</p>	<p>* Replace drum.</p>	

## Overheating

Overheating			
Appearance	Cause	Action	
<p>* Blue/Yellow discoloration seen as bluing effect.</p>	<p>* Drum has been subjected to massive heat build up. * Component failure, incorrect shoe adjustment. * Excessively hard linings. * Brake shoes in constant contact with drum.</p>	<p>* Replace drum and linings. Ensure brakes are correctly adjusted.</p>	

## Ovality

Ovality			
Appearance	Cause	Action	
<p>* Uneven wear on the drum surfaces. * Diameter A and B are different when measured at 90°. * Can be detected by the driver on application of the foot brake, vibration or juddering.</p>	<p>* Drum could have been dropped onto a hard surface. * Impact on the outer rim of the drum. * Drum not held correctly when being skimmed.</p>	<p>* Replace drum.</p>	



Heat Craze		
<p><b>Appearance</b></p> <ul style="list-style-type: none"> <li>* Short fine line cracks on braking surface of drum.</li> </ul> <p>(In the early stages the crack may not affect the braking performance but should be inspected at regular intervals).</p>	<p><b>Cause</b></p> <ul style="list-style-type: none"> <li>* Overheating of the brake lining surface.</li> <li>* Constant heating and cooling of the drum beyond design tolerances.</li> <li>* Incorrect drum fitted for application, i.e. normal truck drum fitted on PSV application.</li> <li>* Incorrect linings.</li> </ul>	<p><b>Action</b></p> <ul style="list-style-type: none"> <li>* Carry out regular inspections, looking for cracks developing into more serious cracks. if it happens, replace the drum.</li> </ul>



Glazed or Polished Drum		
<p><b>Appearance</b></p> <ul style="list-style-type: none"> <li>* Mirror-like appearance of the braking surface.</li> <li>* reduction in brake performance.</li> </ul>	<p><b>Cause</b></p> <ul style="list-style-type: none"> <li>* Linings becoming too hard for application.</li> <li>* Constant use of vehicle in an unladen condition.</li> </ul>	<p><b>Action</b></p> <ul style="list-style-type: none"> <li>* Sand brake drum surface and lining with emery cloth.</li> <li>* Ensure correct friction material is being used for application.</li> </ul>



Cracked Drum		
<p><b>Appearance</b></p> <ul style="list-style-type: none"> <li>* Large crack across braking surface.</li> </ul>	<p><b>Cause</b></p> <ul style="list-style-type: none"> <li>* Rapid and excessive overheating and cooling (Thermal shock).</li> <li>* Drum not made, cast or machined to recognised international standards.</li> <li>* Incorrect brake adjustment.</li> </ul>	<p><b>Action</b></p> <ul style="list-style-type: none"> <li>* Check braking system for faults.</li> <li>* Check friction specification</li> <li>* Replace drum.</li> </ul>



Grease or Oil Stained Drum		
<p><b>Appearance</b></p> <ul style="list-style-type: none"> <li>* Grease or oil stains on braking surface.</li> <li>* In extreme cases driver may notice brake judder on application of brakes.</li> </ul>	<p><b>Cause</b></p> <ul style="list-style-type: none"> <li>* Defective hub oil seals.</li> <li>* Defective lubrication system.</li> <li>* Excessive use of grease gun.</li> </ul>	<p><b>Action</b></p> <ul style="list-style-type: none"> <li>* Clean all components.</li> <li>* Replace linings.</li> <li>* Replace hub/ oil seals.</li> <li>* Check lubrication system.</li> </ul>



Correct

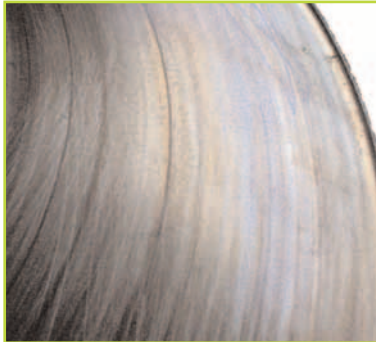


Incorrect

Storage		
<ul style="list-style-type: none"> <li>* Storing drums on their side may result in ovality problems.</li> <li>* Stacking drums inside one another could result in ovality and out of shape drums.</li> </ul>		



Grooved Discs		
<b>Appearance</b> * Scoring around the circumference of the disc.	<b>Cause</b> * Wear pattern on the disc.	<b>Action</b> * If the depth does not exceed 0.5mm - regrind. * Replace discs. * Check pads.



Blue Colouring		
<b>Appearance</b> * Blue colouring on the disc surface.	<b>Cause</b> * High operating temperature. * Hard braking. * Braking imbalance.	<b>Action</b> * Check braking system balance * Check disc for thickness * Check caliper adjustment



Friction Transfer		
<b>Appearance</b> * Indicated by a layer of friction on the disc brake surface.	<b>Cause</b> * Very high temperature * Excessive braking * Brake imbalance	<b>Action</b> * Check caliper clearance and operation. * Check brake balance.



Corrosion		
<b>Appearance</b> * Rusting on the ABS sensors on the back of the disc.	<b>Cause</b> * Failure of the anti-corrosive coating on the ABS	<b>Action</b> * Remove rust on the teeth with wire brush. * Re-coat with anti-corrosive paint. * Replace disc.