

TROUBLE TRACER – LININGS



LINING SURFACE TAPERED

MAIN REASONS

- Brake shoes misaligned with the brake drum
- Distorted brake shoe or brake drum turned on taper

POSSIBLE • The linings may lock on to the drum when braking from high speeds
EFFECTS • Vehicle pull and excessive brake noise may occur

SOLUTION Replace or grind/machine drum. Replace brake shoe anchor pins or parts that locate brake shoes



SCARRED LINING SURFACE

MAIN REASONS • Poor drum condition, e.g. heat crazing

POSSIBLE • Rapid lining wear
EFFECTS • If linings not 100% bedded-in, low brake efficiency can result

SOLUTION Replace linings and avoid overheating brakes



BUILD UP OF DIRT BETWEEN LINING AND BRAKE SHOE

MAIN REASONS

- Shoe radius out of line
- Shoe platform not blast cleaned and painted properly
- Shoe platform not parallel
- Lining riveted incorrectly

POSSIBLE • Cracks in the lining material or crack in drum surface
EFFECTS • Loose linings

• Squeal
 • Improper cleaning causes rust scale to build up and lift the lining from the shoe

SOLUTION Replace linings and ensure shoe is clean and free from contamination before lining fitment



DEEP IRREGULAR CIRCUMFERENTIAL GROOVES

MAIN REASONS

- Large particles loose in the brake
- Very poor drum condition and maintenance

POSSIBLE • Very high lining and drum wear
EFFECTS • Squeal

SOLUTION Avoid contamination. Replace linings and grind or replace drum as appropriate



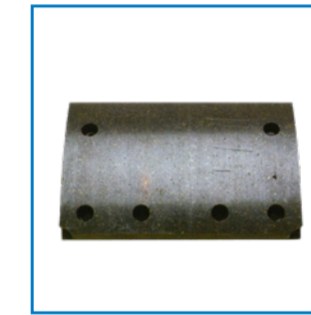
GREASY LINING SURFACE

MAIN REASONS

- Broken or improperly mounted hub oil seals
- Excessive lubrication of the bearings of the braking mechanism

POSSIBLE • Vehicle pull may occur if the problem is only found at one side of the axle
EFFECTS • Low deceleration

SOLUTION Remove grease from the linings, cure oil/grease leaks



SURFACE CRAZING

MAIN REASONS • Caused by excessive brake temperature, i.e. when brake is cold on motorway then having to perform a sudden stop i.e. off a slip road. Rapid temperature input does not allow for heat soak from material into brake system

POSSIBLE • This condition has no effect on the integrity or performance of the lining
EFFECTS • Penetration of the crazing is usually no more than 1mm deep
 • Wear through with normal brake use and has no effect on the lining

SOLUTION Avoid high-speed heavy duty braking from cold



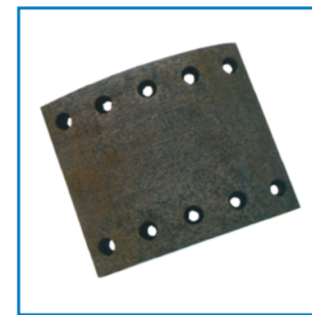
GROOVED LINING SURFACE

MAIN REASONS

- Small loose particles in the brake
- Insufficient drum cleaning at replacement

POSSIBLE • Very high lining and drum wear
EFFECTS • Squeal

SOLUTION Replace linings and avoid brake operation in dusty environment. Grind or replace drum as appropriate



CIRCUMFERENTIAL GROOVES

MAIN REASONS

- Poor drum condition
- Improper preparation with a wire brush, shoe grinder or similar

POSSIBLE • Vehicle pull may occur if there is a different wear pattern on the opposite axle end
EFFECTS • Insufficient deceleration and excessive noise

SOLUTION Replace linings and grind or replace drum as appropriate



POOR BEDDING-IN 1

MAIN REASONS

- Lining radius is larger than actual drum diameter
- Bedding-in period for the lining was too short

POSSIBLE • Vehicle pull and excessive brake noise may occur
EFFECTS • Low deceleration

SOLUTION Replace linings and ensure the correct lining radius to drum diameter is selected, or extend bedding-in period



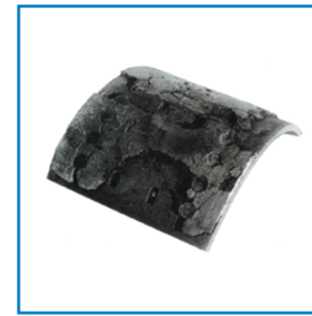
CRACKS AROUND RIVET HOLES

MAIN REASONS

- Too heavy riveting force
- Wrong shape of rivet heads
- Brake shoe radius does not conform to lining radius
- Brake shoe platform is not clean or even

POSSIBLE • Lining and drum breakage
EFFECTS • Brake over-heating
 • Noise

SOLUTION Replace linings, and avoid excessive pressure during riveting operations



LARGE FRACTURES IN LINING SURFACE

MAIN REASONS

- Faults in brake mechanism
- Sticking brake shoes (weak return springs)
- Excessive use of brakes at high speed
- Overloaded vehicle
- Too large air chambers

POSSIBLE • High lining wear
EFFECTS • Vehicle pull and excessive brake noise
 • Disintegration of lining
 • Low deceleration

SOLUTION Replace linings, avoid overworking brakes and ensure brake components are correct and are in good condition



POOR BEDDING-IN 2

MAIN REASONS

- Drum diameter is larger than lining radius
- Bedding-in period for the lining was too short
- Drum wear

POSSIBLE • If the wear pattern differs across the axle, vehicle pull can result; also excessive brake noise
EFFECTS • Low deceleration

SOLUTION Replace linings and ensure the correct lining radius to drum diameter is selected, or extend bedding-in period



STEPS IN THE LINING SURFACE

MAIN REASONS

- There may be a step in the brake drum surface
- General drum wear

POSSIBLE • Rapid lining wear
EFFECTS • If the wear pattern differs across the axle, vehicle pull and excessive noise can result

SOLUTION Grind/Machine drum surface or renew (a drum grind may incur oversize lining fitment)



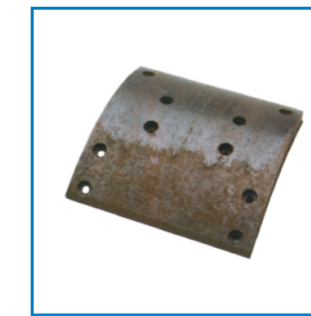
BURNT LINING SURFACE

MAIN REASONS

- Faults in brake mechanism
- Sticking brake shoes (weak return springs)
- Excessive use of brakes from high speed
- Wrong brake cylinders/air chambers or levers
- Overloaded vehicle
- Incorrect brake proportioning between tractor/trailer units

POSSIBLE • High lining wear
EFFECTS • Vehicle pull and excessive brake noise
 • Deceleration too low

SOLUTION Replace linings, avoid overworking brakes and ensure brake components are correct and are in good condition



POOR BEDDING-IN 3

MAIN REASONS

- Bedding-in period for the lining was too short
- Drum wear

POSSIBLE • Either low or very high deceleration, with high deceleration the linings may lock on to the drum
EFFECTS • If the wear pattern differs across the axle, vehicle pull and excessive noise can result

SOLUTION Replace linings and ensure the correct lining radius to drum diameter is selected, or extend bedding-in period

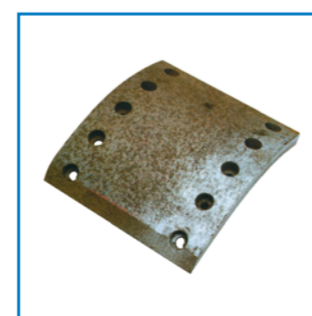


UNEVEN LINING SURFACE

MAIN REASONS • Wrongly adjusted or worn axle bearings

POSSIBLE • Very high lining and drum wear
EFFECTS • Squeal

SOLUTION Replace linings, replace wheel bearing and replace or grind drum as appropriate



DIRT ON THE LINING SURFACE

MAIN REASONS

- Dirt particles in the brake
- Poor brake maintenance (insufficient cleaning)

POSSIBLE • High lining and drum wear
EFFECTS • Poor deceleration
 • Vehicle pull and excessive brake noise may occur

SOLUTION If heavy contamination, replace linings and ensure contamination-free relining operation

