FERODO®

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 EFFECTS
- The linings may lock on to the drum when braking from high speeds
- 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

STEPS IN THE LINING SURFACE

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

POSSIBLE EFFECTS
- Rapid lining wear
- 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)

CIRCUM-FERENTIAL GROOVES

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

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

SOLUTION Replace linings and grind or replace drum as appropriate

DIRT ON THE LINING SURFACE

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

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

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

POOR BEDDING-IN 1

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

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

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

DEEP IRREGULAR CIRCUM-FERENTIAL GROOVES

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

POSSIBLE EFFECTS
- Very high lining and drum wear
- Squeal

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

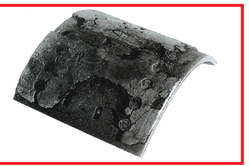
UNEVEN LINING SURFACE

MAIN REASONS
- Wrongly adjusted or worn axle bearings

POSSIBLE EFFECTS
- Very high lining and drum wear
- Squeal

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

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 EFFECTS
- High lining wear
- 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

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 EFFECTS
- Cracks in the lining material or crack in drum surface
- 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

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

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

GROOVED LINING SURFACE

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

POSSIBLE EFFECTS
- Very high lining and drum wear
- Squeal

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

SCARRED LINING SURFACE

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

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

SOLUTION Replace linings and avoid overheating brakes

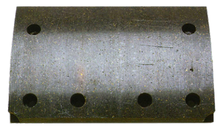
BURNT LINING SURFACE

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 EFFECTS
- High lining wear
- 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

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 EFFECTS
- This condition has no effect on the integrity or performance of the lining
- 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

POOR BEDDING-IN 3

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

POSSIBLE EFFECTS
- Either low or very high deceleration, with high deceleration the linings may lock on to the drum
- 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

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

SOLUTION Replace linings, and avoid excessive pressure during riveting operations

GREASY LINING SURFACE

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

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

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

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