



PBR Australia Pty Ltd

ACN 006 530 427

helpline: 1300 369 727

email: [pbr\\_enquiries@pbr.com.au](mailto:pbr_enquiries@pbr.com.au)

[www.pbr.com.au](http://www.pbr.com.au)

## Technical Bulletin TBR03

### DISC ROTOR REPLACEMENT

#### Important Notes

The disc rotor is a very critical component in a braking system. Regular wear checks are essential during the vehicle servicing periods recommended by the vehicle manufacturer.

Uneven wear on both sides of the disc rotor indicates incorrect installation of the caliper.

Disc rotor thickness should not be less than the minimum thickness as cast into each.

Replacing only one disc rotor is undesirable, as unbalanced brake performance may cause dangerous vehicle handling characteristics during braking. It is important to replace both disc rotors on the same axle and also to fit new brake pads to give the expected brake performance. Reduction in braking efficiency may occur during excessive or high speed braking until the disc rotor and pads are bedded in. This will take approximately 200-300km.

PBR recommend new bearing races and caps, together with new High Temperature Bearing (HTB) grease and new grease seals to obtain satisfactory operational smoothness and bearing life.

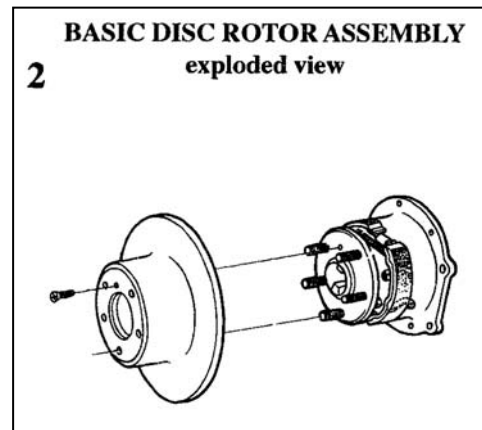
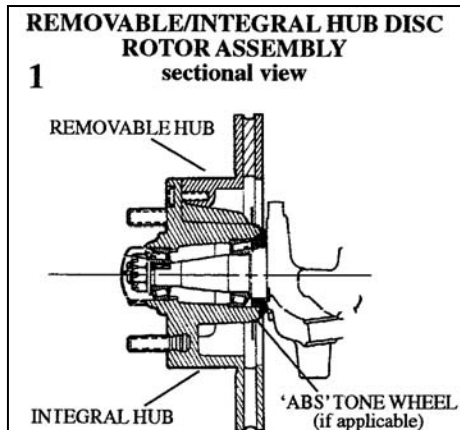
#### Removal of Used Rotor

PBR recommends the use of appropriate safety equipment (safety glasses, gloves, etc.) when performing any brake servicing.

1. Remove wheel nuts and wheel
2. Remove grease cap
3. Remove the split pin, castle nut, washer, inner bearing cap, and bearing race.

**Note:** If the decision is made to reuse the old bearing races and caps, ensure that each is reinstalled in its original position.

4. Remove the two anchor bolts. Pull the caliper away from the disc rotor. There is usually no need to disconnect the brake line but do not allow the full weight of the caliper to be supported by the brake line.
5. Remove the used disc rotor assembly. (refer fig 1 or fig 2 as appropriate)
6. If it is a removable hub type rotor, remove the hub from the disc rotor.



### **ABS Precautions**

On ABS equipped vehicles ensure the rotor supplied has the same number of teeth on the pole ring as the rotor you have removed. Fitting rotors with different numbers of teeth on the pole rings may cause a fault in the ABS system.

If the new rotor has been supplied without the pole ring fitted, the old pole ring must be removed and refitted onto the new rotor. Ensure the pole ring runout is within the manufacturer's specification after refitting the pole ring.

### **Installation of a New Disc Rotor**

The faces of the new rotor have a protective coating applied. Before installation clean; bearing caps, wheel stud thread, all machined surfaces and ABS tone wheel (if applicable). Also ensure the hub is thoroughly clean before installation. This must be removed using an acetone or trichloroethylene based solvent. Using petrol or other type products will leave a residue of oil or wax affecting the braking performance. These cleaning fluids are usually highly flammable and harmful if vapours are inhaled for prolonged periods. Manufacturer's warnings should be strictly adhered to.

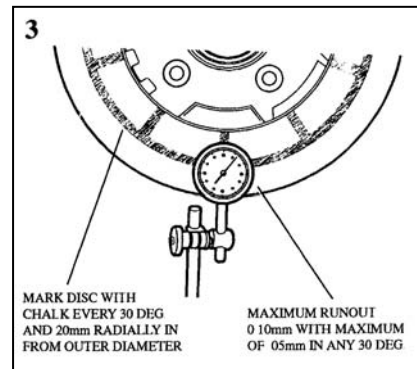
1. Install hub assembly into disc rotor using Loctite or equivalent on bolts if required.
2. Grease inner bearing race and fit to hub. Insert new inner bearing cap. Insert new grease seal.
3. Assemble the disc rotor assembly onto the stub axle.

- If required install greased outer bearing assembly, washer and castle nut respectively. While rotating the rotor, tighten the castle nut to 30Nm to seat the bearings. Loosen the castle nut ½ turn then re-tighten to the vehicle manufacturer's specification.

**Note:** If the castle nut is too tight, rotor drag will be too high and bearings will wear excessively.  
If the castle nut is too loose, rotor will have high runout, bad pedal feel and possibly a knocking noise.

Insert split pin into position and bend back the pin to lock the castle nut.

- Install grease cap if required.
- Runout test must be carried out and should not exceed 0.10mm. If runout exceeds this specification, remove the rotor from the hub rotate it to a different position and reinstall. If used bearings are used, runout specification may not be achievable depending on wear (refer fig 3).



- Replace pads. To make room for the new pads push the pistons down into the cylinder with a screw driver piston pliers or G-Clamp (Taking care to push the piston into the bore squarely, and not to damage the piston or dust boots). Depressing the pistons will cause the level of fluid in the master cylinder reservoir to rise. Anticipate this by siphoning out some fluid using a clean hydrometer or syringe. If the vehicle is fitted with ABS, open the bleeder screw on the caliper and clamp off the brake hose before pushing the piston back.
- Install caliper assembly ensuring anchor bolts are tightened to the correct specification.
- Refit wheels and tighten wheel nuts.
- After fitting the new rotor, the brake pedal will need to be pumped several times to bring the disc pads into contact with the rotor. If the brake pedal is pushed to the floor on a vehicle where the master cylinder has not been overhauled or replaced, the seals may be damaged from the dirt or scale that builds up at the end of the bore. To prevent damage to the master cylinder, only push the brake pedal its normal travel when pumping the pedal after fitting new rotors.
- It may be necessary to bleed the hydraulic system if the pedal is too low or feels spongy.
- Road test the vehicle to ensure correct brake function.