SUBARU.

NUMBER 06-25-92

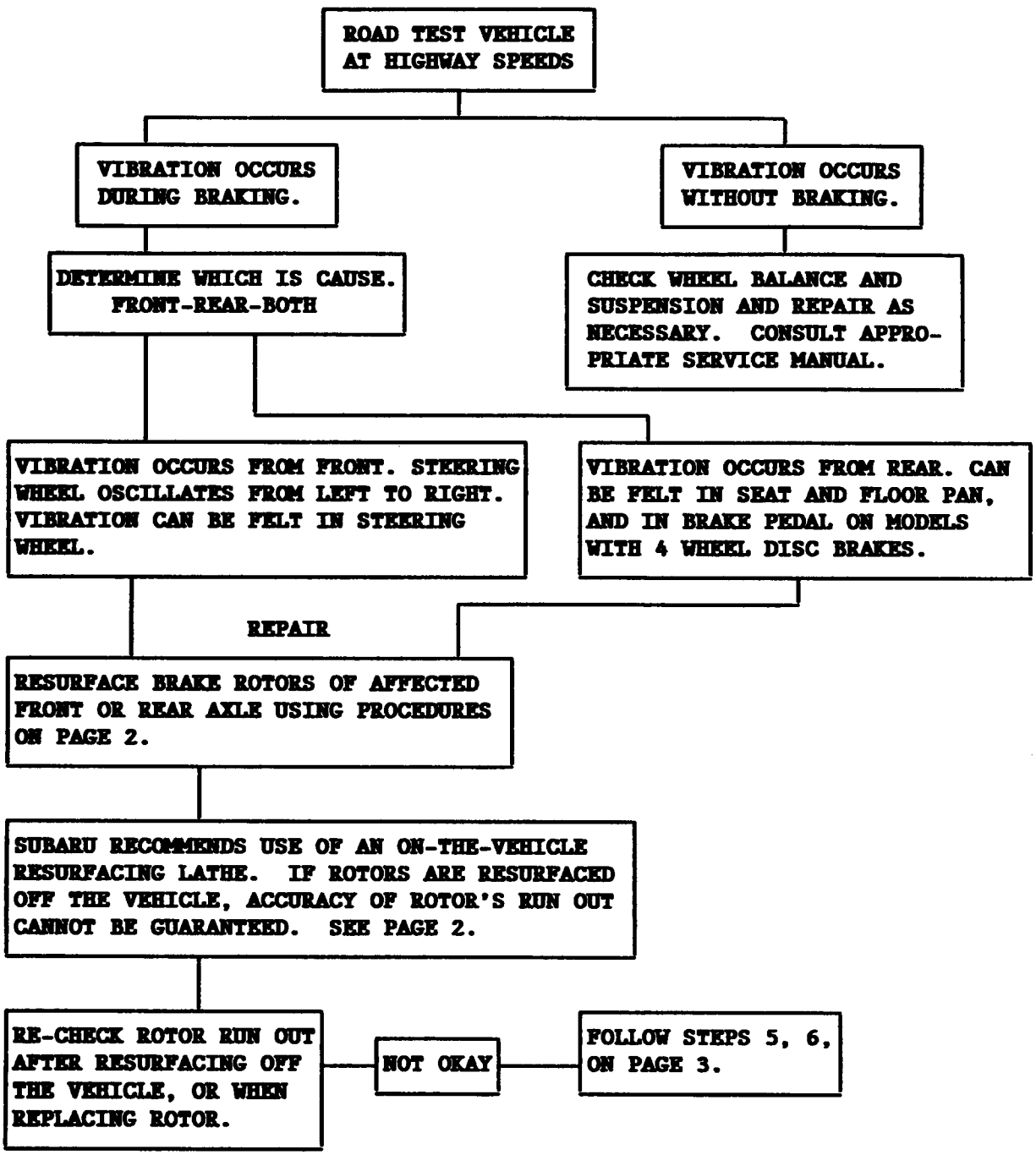
SERVICE BULLETIN

APPLICABILITY ALL SUBARU MODELS **DATE** 09-08-92

SUBJECT: BRAKE VIBRATION DIAGNOSIS AND REPAIR

When encountering a customer complaint of brake vibration on any Subaru vehicles, the following procedures are required to ensure a proper repair.

DIAGNOSIS



BRAKE ROTOR RESURFACING PROCEDURE

Resurfacing rotors with excessive run out is best done **on the vehicle** when possible, using a Twin Arbor Vehicle-Mounted Brake Lathe, such as the Ammco 710 model.

1. **When using an on-the-vehicle resurfacing lathe:**

   a. Measure the thickness of the rotor after resurfacing to confirm if it's within specification. (See specifications on Page 4.)

   b. If the thickness is less than specification, replace the rotor with a new one.

   c. Run out doesn't need to be re-checked after resurfacing the rotor when using the on-the-vehicle resurfacing lathe.

2. **When using an off-the-vehicle resurfacing lathe.(i.e. Ammco Model 4000). (This method is not recommended.)**

   a. Remove rust and foreign material completely from mounting area of rotor using solvent or wire brush.

   b. Secure the rotor on both sides and mount rotor using a centering cone. See Figure 1.

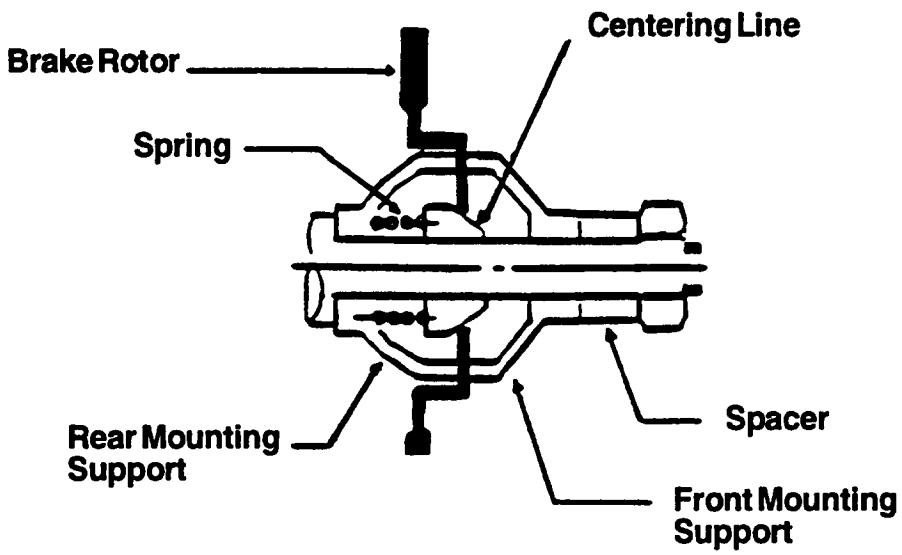


Figure 1

   c. Measure the thickness of the rotor after resurfacing to confirm it is within specification. (See specifications on Page 4.)

   d. Reinstall the brake rotor on the vehicle using all lugs. Install the lugs with their flat side in and tighten slightly, using a socket or wrench, **then re-check run out.** See Page 3.

   e. If rust was evident before resurfacing the rear rotor, replace the brake pads using Part Numbers: **26296AA061 for Legacys with Solid Rotors and 26296AA081 for Legacys with Ventilated Rotors.**

CHECKING PROCEDURE FOR BRAKE ROTOR RUN OUT

1. Measure free play of bearing by pushing and pulling hub in an axial direction.

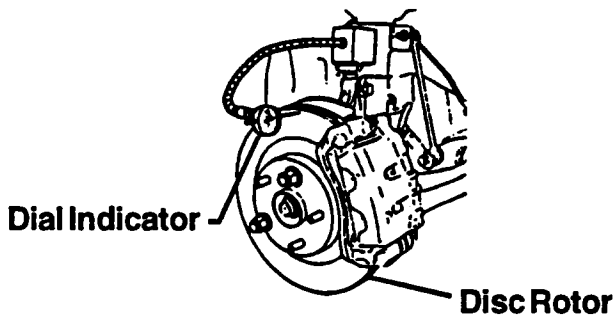
   a. Confirm free play of bearing in an axial direction is 0.05mm or less.

   b. Front wheel bearing free play on all models except Legacy, SVX, and.XT6 is not required to be measured due to the ball bearing design.

2. Mount rotor to the hub securely with all lugs, flat side in and tighten slightly, using a socket or wrench.

3. Clean pad contact surfaces of rotor (especially where measurement will be taken).

4. Attach dial indicator gauge on caliper mount or strut and measure maximum run out of rotor on both sides at a point of 5mm inside from the circumference of rotor by rotating rotor gradually. See Figure 2. Run out is best checked when the rotor is cool. (See specifications on Page 4.)



Make sure that dial indicator is set 5mm (0.20in) inward of rotor outer perimeter.

Figure 2

5. In case the run out of a new or resurfaced rotor is out of specification when re-checking, relocate the rotor to another position on the hub and re-check run out. Repeat the process of relocating the rotor to compensate for minor run out variations between the rotor and hub.

6. If relocating the rotor does not correct run out, check the hub run out for inaccuracy and repair as necessary.

The rotor specifications below should be used to determine if a rotor is to be replaced or resurfaced.

	RUNOUT (MM)		RESURFACING LIMIT (MM)	
MODEL	FRONT	REAR	FRONT	REAR
JUSTY	0.1		15.5	
LOYALE	0.075	*0.1	16	*8.5
XT	0.075	*0.1	16	*8.5
XT-6	0.075	0.075	20	8.5
LEGACY	0.075	0.075	22	8.5
SVX	0.075	0.075	26	8.5

*NOTE: Turbo Models Only

BRAKE SERVICE FACTS

1. Brake rotors can be resurfaced more than once for poor run out or thickness variation if still within the minimum thickness standard after resurfacing.

2. Brake rotor discoloration or visible brake pad imprints on the rotor, do not warrant brake rotor replacement.

3. Resurfacing or replacing rotors is not necessary unless a vibration complaint is confirmed or the rotor is scored because a brake pad was allowed to wear to the backing plate.

4. Never resurface or remove the zinc coating on a new rotor. The zinc coating will be eliminated after the first few stops.

5. Resurfacing rotors is not a recommended repair for brake noise.

6. Brake pads should be reused if not worn to their limit when a brake rotor is replaced or resurfaced for vibration.

7. **A major cause of brake vibration is inaccurate rotor resurfacing due to incorrect rotor lathe mounting and a brake lathe with excessive shaft run out.**

8. When brake pads are worn to the minimum limit and brake pad replacement is necessary, only replace the brake pads. Rotor replacement or resurfacing is not necessary.

9. For any brake repair procedure **always** inspect the brake system for abnormalities. Example: Sticking or binding caliper, tight or binding pads, uneven wear, rust, foreign material, lack of lubrication, etc.