



SERVICE BULLETIN

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TIRE DIAGNOSTIC PROCEDURES

APPLIED VEHICLE(S): All Models

SERVICE INFORMATION

This Technical Bulletin contains descriptions of the types of tire damage that are covered by the tire manufacturer's warranties (Limited to Bridgestone, Toyo, Yokohama and Dunlop). For tires not available through Nissan, please direct the customer to the manufacturer's nearest dealer. When a customer returns a tire for inspection and adjustment, refer to the information in this bulletin to help identify causes of tire failures and consequential damage to tires.

To determine warranty status, it is essential to ascertain if tire damage is caused by road hazards, mechanical problems, workmanship or materials. In determining the cause of tire failure, inspect both the exterior and interior of the tire.

Sometimes the cause of tire failure is immediately apparent. In other cases however, only a thorough inspection of the tire will show the cause of failure, and whether the damage should result in replacement under manufacturers warranty. Thorough inspection requires good lighting, a clean dismounted tire and close examination of the tire surface. Finding a point of penetration can sometimes be very difficult and should be done on a tire spreader.

NOTE: For a full description of tire damage not covered by manufacturers warranty, please refer to the Passenger Car & Light Truck Tire Inspection & Adjustment booklet, sent to you with Technical Bulletin WT88-002 (TS88-084).

Damage Description: Sidewall Blister

NISSAN CODE: 7N



FIGURE 1

DEFINITION: A lifting of the rubber layer (i.e., portions of sidewall stock or white sidewall rubber) from the tire's sidewall structure, caused by lack of adhesion between the rubber and structure. This lifting will often 'pocket' air (see Figure 1).

MAJOR INSPECTION POINT(S):

1. Check for proper air pressure.
2. Localized separation, with or without an air pocket, between the sidewall rubber and tire casing.
3. There should be no evidence of chafing, shock, or abrasion on the tire sidewall.
4. There should be no tread penetrations or perforations in the tread area directly adjacent to the blister.

Damage Description: Open Splice in Sidewall

NISSAN CODE: 7M



FIGURE 2

DEFINITION: A localized detachment of the rubber stock between the block and/or white sidewall, caused by a lack/loss of adhesion where the rubber stock is joined (Figure 2). An open splice may be a partial opening or a complete detachment and total perforation to the interior.

MAJOR INSPECTION POINT(S):

1. There should be no evidence of cuts or perforations in the failed area.
2. At the point of failure, interior rubber surfaces will be smooth and will appear joined at an angle.

Damage Description: Sidewall Ply Separation

NISSAN CODE: 7L

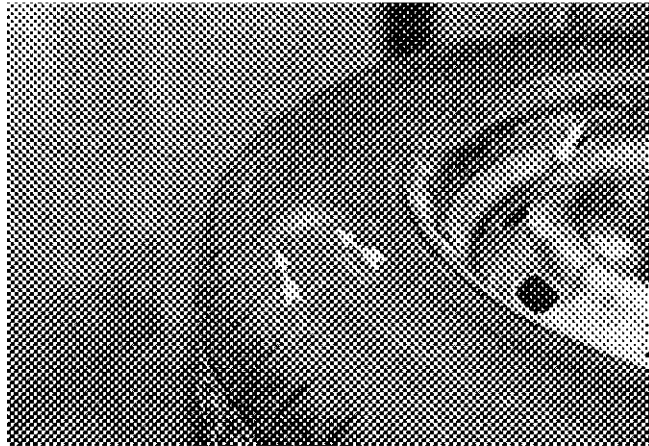


FIGURE 3

DEFINITION: Localized separation of the sidewall ply cord (Figure 3)

MAJOR INSPECTION POINT(S):

1. Check for proper air pressure.
2. Check for an air bubble on the tire sidewall.
3. There should be no signs of scuff marks, abrasions, or chafing on the immediate area (i.e., on the bubble).

Damage Description: Sidewall Cracking

NISSAN CODE: 7K

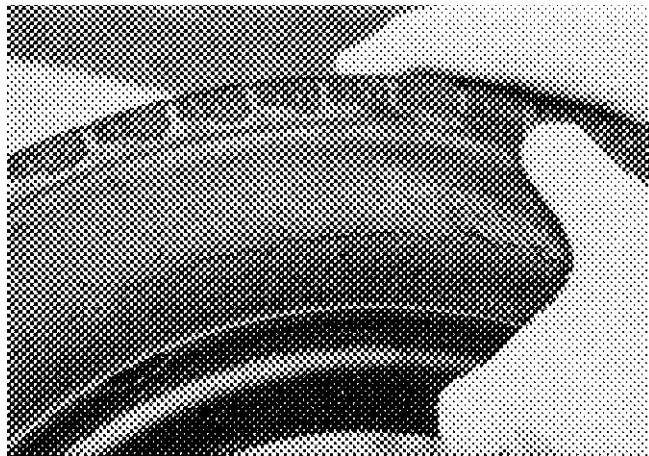


FIGURE 4

DEFINITION: Several fine cracks on the tire sidewall, running in a radial or circumferential direction (Figure 4).

MAJOR INSPECTION POINTS:

1. Check for proper air pressure.
2. Check for several fine cracks on the sidewall, running in a lateral direction. These sidewall cracks are generally less than 1/10 of an inch in width, and do not penetrate to the interior of the tire.

Damage Description: Bead Separation

NISSAN CODE: 7I

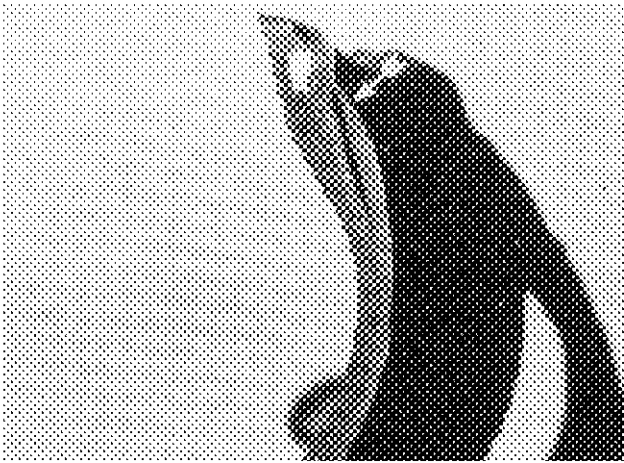


FIGURE 5A

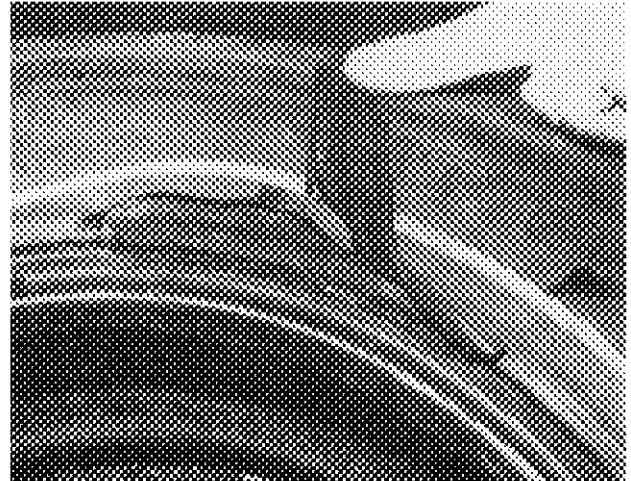


FIGURE 5B

DEFINITION: Separation of the various tire materials (i.e., rubber, cord and wires) at the bead area near the rim line (Figures 5A, 5B).

MAJOR INSPECTION POINT(S):

Check for a bulge and/or jagged cracks visible near the tire rim fitting line.

Damage Description: Tread/Shoulder Separation

NISSAN CODE: 7F

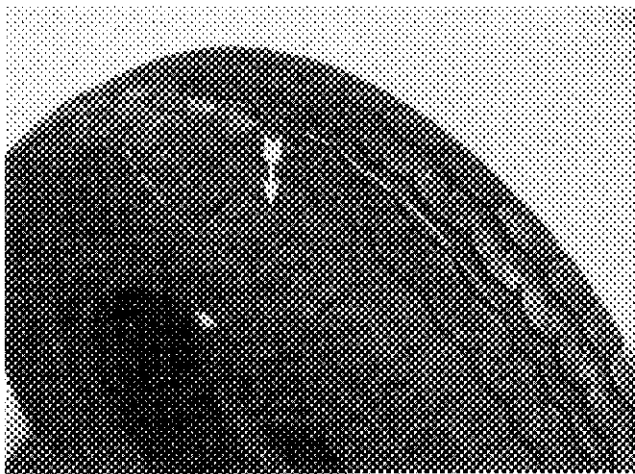


FIGURE 6A

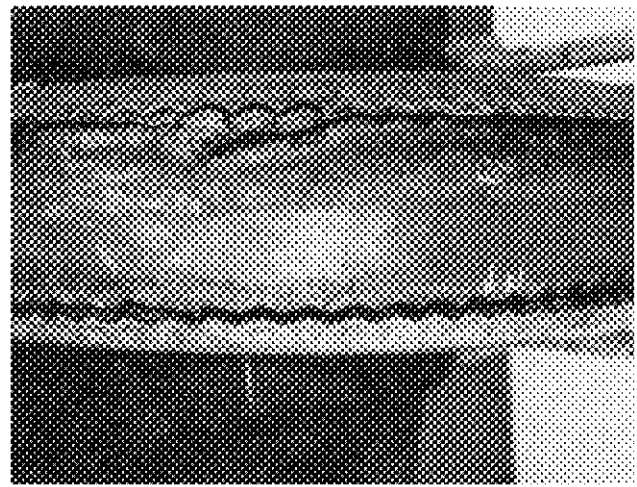


FIGURE 6B

DEFINITION: Partial (Figure 6A) or complete (Figure 6B) separation between the rubber and the tire cord, or between the layers of the tire cord.

MAJOR INSPECTION POINT(S):

Check for a bulge on the tire shoulder, and a longitudinal crack on the bottom of the grooves, possibly accompanied by a break through the rubber surface. Both are usually accompanied by localized wear in the tread above the separation.

Damage Description: Chunks of missing tread

NISSAN CODE: 7D

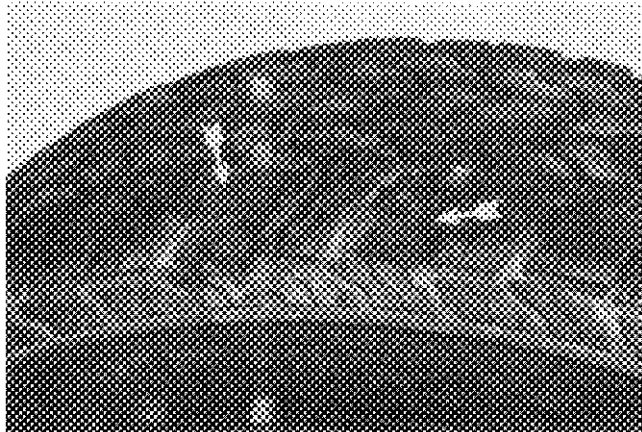


FIGURE 7

DEFINITION: Partial peeling of new tread (Figure 7).

MAJOR INSPECTION POINT(S):

Check for tearing off, partial peeling or chipping of the tire tread. (NOTE: Tread rubber chipping caused by off-road driving is not warrantable.)

Damage Description: Tread Cracking

NISSAN CODE: 7A

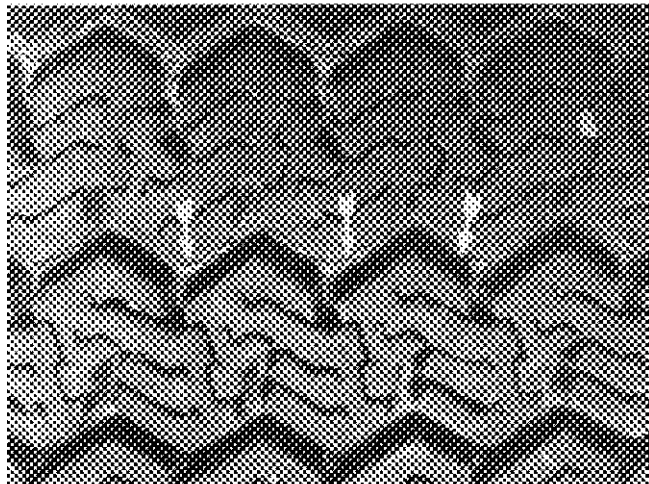


FIGURE 8

DEFINITION: Fine longitudinal cracks appearing on the bottom of the tire grooves which do not penetrate into the cord material of the tire (Figure 8).

MAJOR INSPECTION POINT(S):

Check all the vehicle tires. If there are only one or two 'cracks' in the tire groove, or if the 'crack' continues up the side of the groove wall, the cause of the 'crack' was a cut inflicted by a road hazard, and is not warrantable.

Damage Description: Ply Separation

NISSAN CODE: 7B

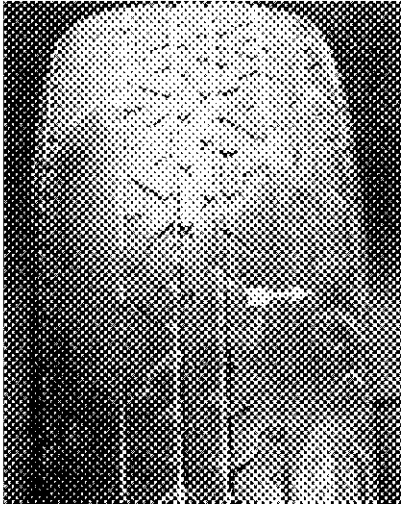


FIGURE 9A

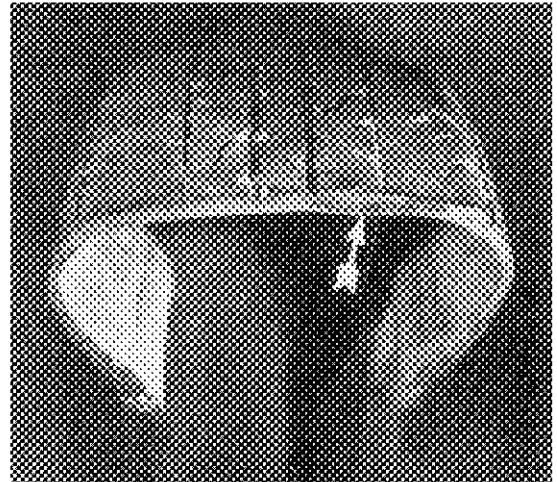


FIGURE 9B

DEFINITION: Separation between the tread rubber and tire cord materials (Figure 9A), or between the tire cord ply layers (Figure 9B).

MAJOR INSPECTION POINT(S):

Check for tread separation at the tire shoulder area and the corresponding location inside the tire. There should be no evidence of accidental injury by sharp, perforating objects (e.g., screws, nails).

Damage Description: Open Splice

NISSAN CODE: 7C



FIGURE 10

DEFINITION: An open area of the tire tread where the tread rubbers overlap (Figure 10).

MAJOR INSPECTION POINT(S):

Check the edge of the splice opening; it will have a beveled appearance. The cracks do not penetrate through the tire cord, and the possibility of air leakage does not exist.

Damage Description: Out of Round

NISSAN CODE: 7P

DEFINITION:

Excessive vehicle vibration caused by an out-of-round condition of the tire with the rim.

GENERAL INFORMATION

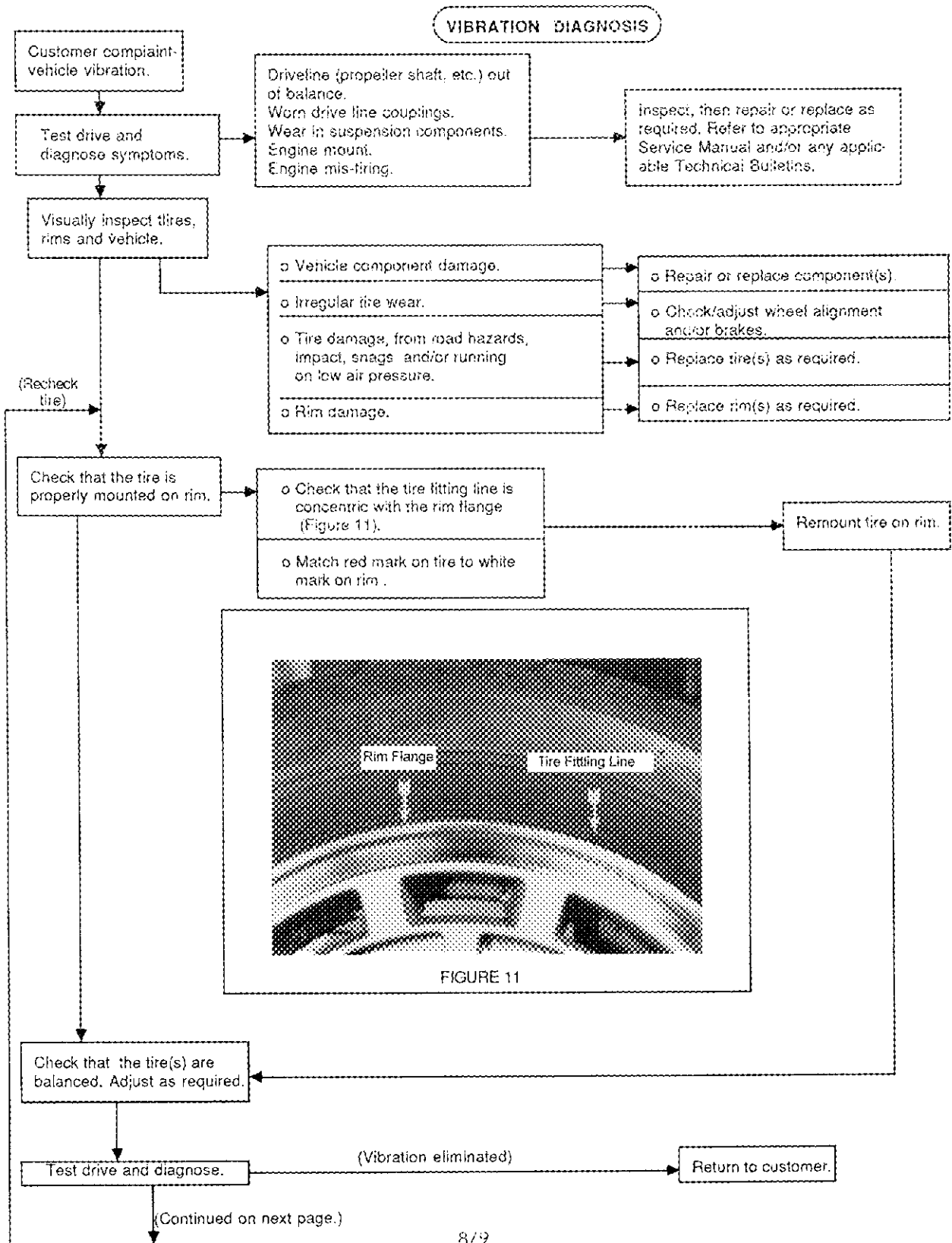
Vehicle vibration caused by an out-of-round condition will generally appear within the first 100-200 miles of driving. If it appears later, the vibration is probably caused by some other condition. Please note that more than 90% of vehicle vibration problems are caused by conditions other than out-of-round tires.

Out-of-roundness can only be measured as a radial force variation and most tire dealers do not have the equipment necessary to make this measurement. Because of this, the most effective way to inspect for this condition is to use a specific diagnostic procedure to rule out or confirm other causes for the vibration. The following pages of this Technical Bulletin contain a procedure that can be used to confirm/eliminate tire out-of-round as a cause of vehicle vibration. Listed below are the lateral and radial runout specifications for the 1989 Nissan models to assist you when performing the procedure.

Please note that exact out-of-round specifications are hard to define. Because of this, when submitting a warranty claim for a gross out-of-round condition, the claim should be supported with actual measurement figures.

1989 MODELS	RIM LATERAL AND RADIAL RUNOUT* (inches [mm])			
	ALUMINUM WHEELS		STEEL WHEELS	
	Lateral runout	radial runout	Lateral runout	radial runout
Sentra	0.012(0.3)	0.012(0.3)	0.031(0.8)	0.020(0.5)
Pulsar	0.012(0.3)	0.012(0.3)	0.031(0.8)	0.020(0.5)
Truck/ Pathfinder	0.012(0.3)	0.012(0.3)	0.031(0.8)	0.020(0.5) [4WD] 0.031(0.8) [2WD]
Stanza	0.020(0.5)	0.020(0.5)	0.020(0.5)	0.020(0.5)
300ZX	0.020(0.5)	0.020(0.5)	0.039(1.0)	0.039(1.0)
Maxima	0.012(0.3)	0.012(0.3)	0.031(0.8)	0.020(0.5)
240SX	0.012(0.3)	0.012(0.3)	0.031(0.8)	0.020(0.5)

*Always refer to the appropriate model Service Manual when checking lateral/radial runout.



(Continued from previous page.)

Check rim lateral and radial runout on a balance machine (Figures 12A & 12B). If excessive, replace rim. Refer to the appropriate model Service Manual for correct specifications.

Phase match tire to rim (Figure 13).

Good - END.

If tire runout is excessive, replace tire and re-check.

(Return to page 8/9)

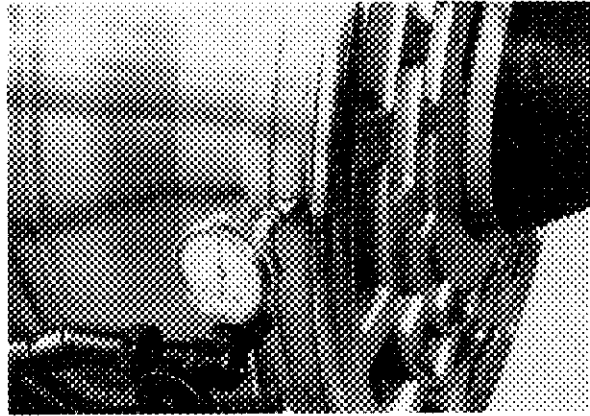


FIGURE 12A: Checking rim radial runout

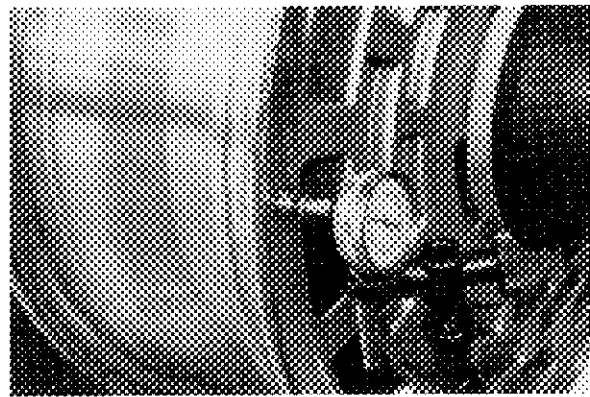


FIGURE 12B: Checking rim lateral runout.

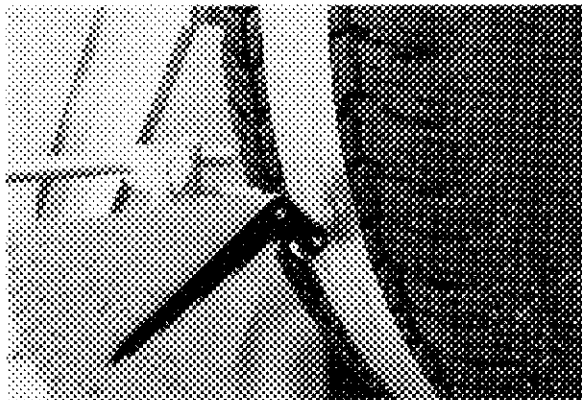


FIGURE 13: Checking tire radial runout / phase matching tire to rim.