



XJ range

DATE 10/05

XJ100-11

SERVICE

TECHNICAL BULLETIN

Vibration/Shimmy –
Tire Radial Force Variation –
Optimizing Wheels And Tires

MODEL 2004 MY-ON
XJ range
VIN G00001-ON

Issue:

This technical bulletin can assist with resolving customer complaints of vibration/shimmy. Vibration/shimmy can be caused by Radial Force Variation (RFV) in the wheel/tire assemblies and the position of the affected wheels on the vehicle.

Action:

Note: Access to a Hunter 9700/9712 wheel-balancing machine is required to perform the steps in this technical bulletin.

In case of a customer complaint of vibration/shimmy on vehicles, follow the optimization procedures below using a Hunter 9700/9712 balancing machine.

TYPES OF OPTIMIZATION PROCEDURES

Tire to Wheel Match Mounting

Tire is positioned on the wheel so that the 'low point' of the tire is matched to the 'high point' of the wheel. This procedure is also referred to as 'match mounting'.

The Hunter balancing machine performs this procedure.

Tire/Wheel Assembly to Hub

Tire/wheel assembly is mounted to the vehicle's hub in a manner that allows the Radial Force 'high point' of the assembly to be neutralized by taking up the inherent clearance in the wheel to hub mating surface (Illustration 1). The Hunter balancing machine identifies high point of the wheel/tire assembly.

NOTE: THE INFORMATION IN TECHNICAL BULLETINS IS INTENDED FOR USE BY TRAINED, PROFESSIONAL TECHNICIANS WITH THE KNOWLEDGE, TOOLS, AND EQUIPMENT TO DO THE JOB PROPERLY AND SAFELY. IT INFORMS THESE TECHNICIANS OF CONDITIONS THAT MAY OCCUR ON SOME VEHICLES, OR PROVIDES INFORMATION THAT COULD ASSIST IN PROPER VEHICLE SERVICE. THE PROCEDURES SHOULD NOT BE PERFORMED BY "DO-IT-YOURSELFERS." DO NOT ASSUME THAT A CONDITION DESCRIBED AFFECTS YOUR CAR. CONTACT A JAGUAR DEALER TO DETERMINE WHETHER THE BULLETIN APPLIES TO YOUR VEHICLE.



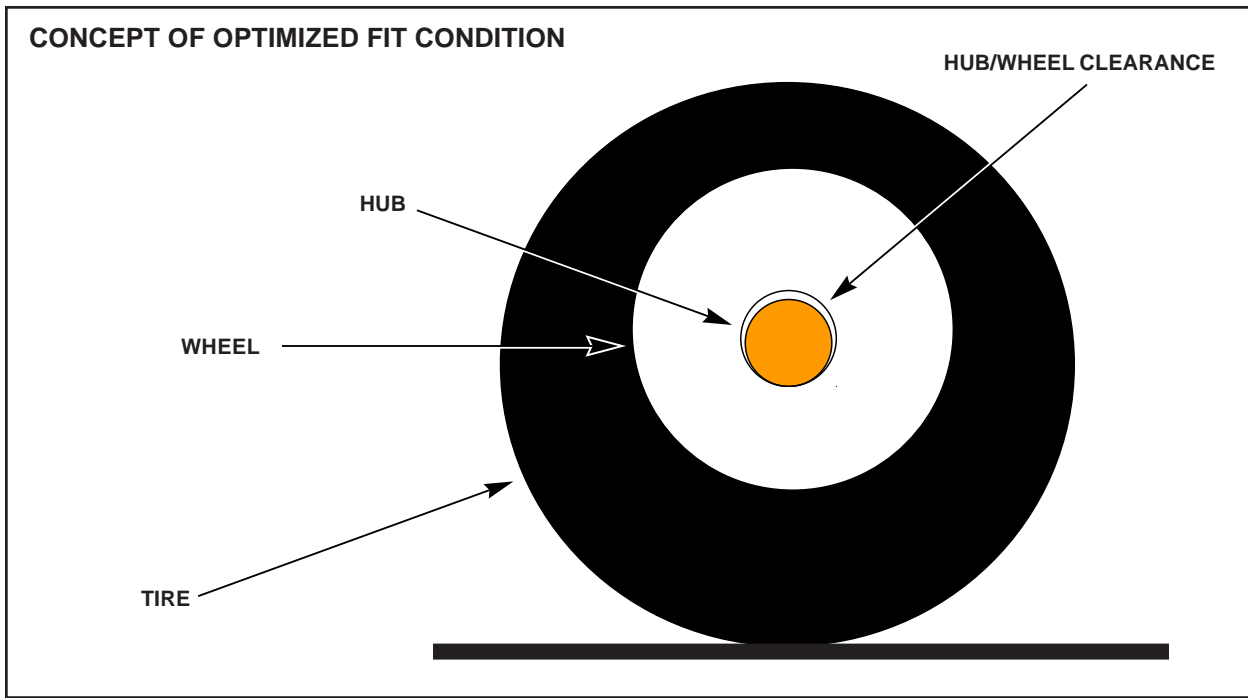
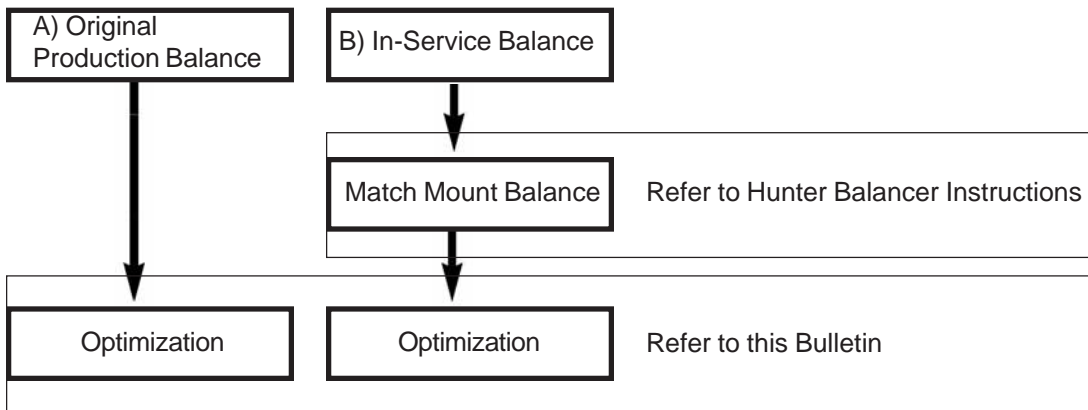


ILLUSTRATION 1



Note: Tires are **factory match-mounted** on the wheels by Jaguar Cars at point of initial assembly and balancing. It is important to retain this mounting on vehicles where it is known that the original factory balance is still intact.

WORKSHOP PROCEDURE

Note: Obtain the S96 Tire Optimization Form and first fill out the “original tire information” section.

1. Bring tires to proper cold air pressures and take the car on a 15-20 mile (highway) road test to ensure that all flat spots are removed and sufficient tire heating has taken place. **Tire heating is extremely vital to the process, it must not be overlooked.**

2. Ensure the vehicle is lifted off the ground as soon it returns, to minimize temporary flat spots.
3. **A) For vehicles with original factory balance intact** - while still warm, remove each wheel. Measure Radial Force variation, do not disturb factory wheel weights. Proceed to step 4.
B) For vehicles with non-factory balance or with a new tire being mounted - while still warm, remove each wheel. Balance the wheel on the Hunter 9700/9712 and measure the Radial Force variation. Perform wheel to tire match mounting here if balancing machine indicates necessity.
4. Record the value of the Radial Force variation (lbs.) on the inside of each tire with crayon, and mark 'high point' spot (as indicated by Hunter 9700/9712) on the tire with a hash mark on the sidewall. It is recommended that a permanent paint mark be applied on the inside sidewall as well. This will eliminate the need to identify the "high" spot again if a future repair requires removing the wheel. The Tire Optimization Form (S 96) must be completed and attached to the hard copy of the repair order along with the Radial Force Variation print outs from the tire balancer.

Note: On vehicles with directional tires or different size front and rear tires, the wheel and tire assemblies can only be optimized at their original location on the vehicle. Proceed to step 6.

5. Reinstall wheels as follows:
 - lowest value of Radial Force variation on left front of vehicle,
 - second lowest value of Radial Force variation on right front of vehicle,
 - third lowest value of Radial Force variation on left rear of vehicle, and
 - greatest value of Radial Force variation on right rear of vehicle.However, do not fully tighten wheel nuts. Snug them in by hand to the point where there is no play or wobble between the road wheel and mounting surface.
6. Rotate each wheel so that the previously marked high point is at the bottom (6 o'clock position) and will contact the floor when the vehicle is lowered (for rear wheels, have transmission in neutral and have an assistant hold one wheel stationary while the other is rotated to bring the high point to the 6 o'clock position).
7. Lower the car partially to the floor, so that light to moderate load is placed on each of the wheels.
8. Torque the lug nuts of each wheel to **125 Nm (92.5 lb. ft.)**.
9. Road test the vehicle.

MOUNTING EQUIPMENT FOR ALL WHEEL BALANCERS:

For optimum results, Jaguar Cars requires that tire/wheel assemblies are mounted to the Hunter 9700/9712 using the rear cone and flange plate adaptor method (Illustration 2). The 5-lug flange plate adaptor (part no. 175-264-1) can be ordered from Rotunda 1-800-ROTUNDA (768-8632). This flange plate must be used in conjunction with the proper rear mounting cone. This mounting method provides precise balance with the highest rate of repeatability.

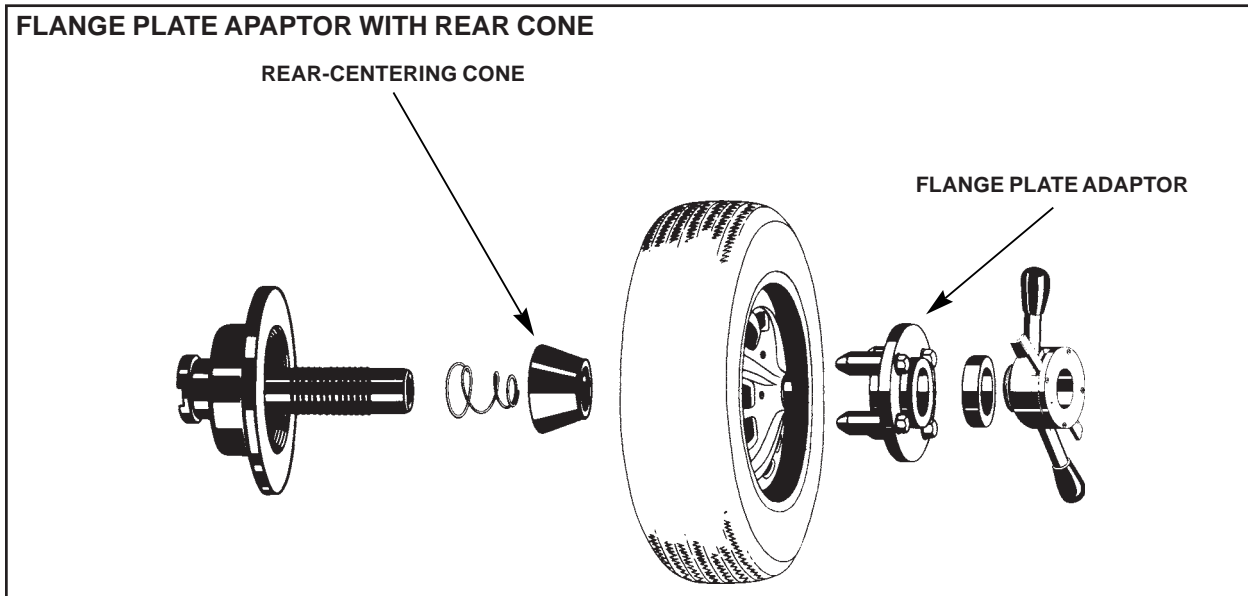


ILLUSTRATION 2

Global Technical Reference (GTR) Workshop Manual Information:

Dealer access: <https://hub.franchise.jaguar.com>

Internet access: <http://www.jaguartechno.com>

SPX-OTC JAGUAR SPECIAL TOOLS FROM SPX OTC

Call 1-800-533-5338

Fax 1-800-578-7375

Parts Information:

<u>DESCRIPTION</u>	<u>PART NUMBER</u>
Adhesive wheel weight - 60 g strip with removable 5 and 10 gram sections	XR8 9312

Warranty Information:

Description	SRO	Time	Causal Part Number
Wheel and tire optimization using Hunter 9700 Balancer	74.91.09	1.6 hrs.	XR8 17325

Note: Repair procedures are under constant review, and therefore repair times are subject to change. The times quoted here must be taken as guidance only. Always refer to DDW to obtain the latest repair time.

WARRANTY POLICY STATEMENT

Jaguar Cars will pay for the replacement of a tire(s) for a steering vibration/shimmy complaint on a vehicle with less than 6 months, or 6,000 miles, whichever occurs first, provided the following conditions are met:

- The retailer has demonstrated consistent compliance in maintaining 60 PSI storage pressure on all new vehicles in inventory up to time of sale. Failure to demonstrate compliance with this requirement will exclude the retailer from eligibility for tire reimbursement under this policy.
- The diagnostic procedures outlined in this bulletin were followed using the required equipment, but the concern could not be resolved.
- A Tire Optimization Form, S96, must be completed and attached to the hard copy of the repair order along with the RFV print outs from the tire balancer.
- Replacement of the tire was authorized by your After Sales Market Manager prior to the work being completed. A signed W22 Authorization Request Form must be attached to the hard copy of the RO and stored in the vehicle file.
- The replacement tire(s) was purchased through Jaguar Tire Program.
- Displaced tires must be retained for inspection and scrapping by your After Sales Market Manager.