

COATS®

The Evolution Of OE Wheel Balancing Standards

Historically, most vehicle OE manufacturers had tolerances of 3/8 oz. of static unbalance and 3/4 oz. of dynamic unbalance per plane. These tolerances were very generous, and frankly, most aftermarket wheel balances delivered superior ride quality vs OE. Fast-forward to today – many vehicle OE manufacturers are tightening up their tolerances and lowering allowable residual unbalance to less than 2/10 oz. per plane.

In fact, some OE manufacturers have developed a fully automated mounting and balancing process that results in wheel assemblies with virtually NO RESIDUAL (leftover) UNBALANCE! This technology is quickly expanding amongst OE tire and wheel assembly plants and might very well become the standard in the future.

Why have vehicle manufacturers gone to such extremes? In order to deliver an acceptable ride quality experience in the face of increasingly aggressive Corporate Average Fuel Economy Standards set forth by the Federal government. These standards have forced manufacturers to produce lighter vehicles with stiffer suspension systems – design changes that produce more vibration-related customer complaints.

The increasing popularity of low rolling resistance tires will also serve to increase vehicles' vibration sensitivity, driving the need for tighter wheel balancing tolerances. Reduced rolling resistance tires are lighter, have thinner treads, larger diameters and higher inflation pressures (some 60 PSI+). These design features inherently direct more vibration to the passenger compartment.

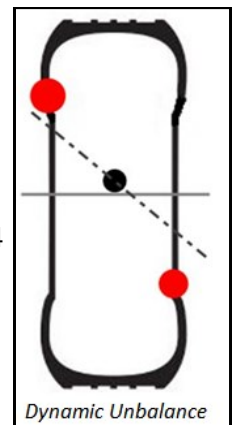
These evolving vehicle and tire designs will only magnify the challenges faced by aftermarket shops and make it harder to deliver the ride quality customers expect. In many cases, legacy balancing technologies will struggle to meet these evolving OE specifications (0.18 oz. /plane).

IMPACT ON AFTERMARKET BALANCING METHODS

Dynamic Balancing Method

With the advent of computer balancers, dynamic balancing became commonplace. Under certain conditions, however, conventional dynamic balancers can leave excessive residual unbalance that oftentimes results in a ride disturbance complaint.

How does that happen? Wheel balancers typically operate with a 1/4 oz. blind. In other words, the balancer will show "0.00" up to and including the scenario where the actual residual is 0.24 oz.'s in either plane. You would see this value by taking the balancer out of "round off" mode. When these residual imbalances are in-phase, they are additive and can result in up to 0.48 oz.'s of residual static unbalance! By most OE standards, approximately 1/2 oz. of static unbalance will generate an unacceptable ride disturbance.



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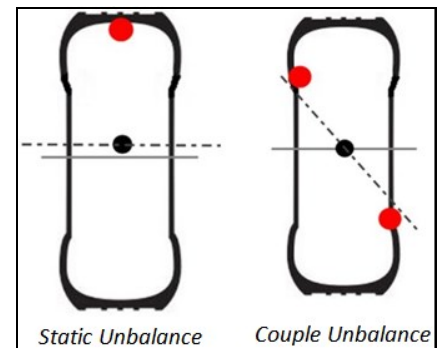
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“Weight Saving” Balancing Method

A “weight-saving” balancer’s main operational goal is to attempt to lower wheel weight consumption. It accomplishes this “savings” by instructing the technician to apply **less corrective weight than necessary to balance the wheel**. Surprised? Here is how “weight-saving” balancers work:

Virtually every motor vehicle wheel suffers from dynamic unbalance – a combination of both static and couple unbalance. A “weight-saving” balancer assesses both static and couple unbalances. The machine then calculates corrective weight amounts and weight placement location(s) that eliminate or reduce STATIC unbalance, but leaves a RESIDUAL (“leftover”) COUPLE unbalance that is *theorized* not to cause a vibration complaint. This method of wheel balancing is only marginally different that static bubble balancing.



This residual couple unbalance can be up to 0.75 oz.’s or more per plane – FAR exceeding the 0.18-ounce of maximum residual allowed by many automakers. In fact, a wheel serviced on a “weight-saving” balancer is in many cases not actually balanced!

Coats® NEW ProBalance Technology™ Balancing Method

The all-new Coats Vero Series™ V200 Wheel Balancer with ProBalance Technology takes wheel balancing to a new level by eliminating the compromises that plague other balancing methods. Powered by Coats’ exclusive Direct Drive system, the V200 delivers a superior balance result, the first time, every time. ProBalance Technology is a unique balancing algorithm and unbalance correction methodology that solves a leading cause of comebacks: residual unbalance.



ProBalance Technology operates efficiently and unobtrusively during every balancing cycle, producing a superior balance result, FAST – **the first time, every time**. Aided by the unparalleled accuracy of its Direct Drive system, Vero’s ProBalance Technology precisely measures both static and couple unbalances. It then calculates the precise corrective weight amounts and placement locations that simultaneously minimize **both** types of unbalance. No compromises. No subjective trade-offs.

Vero’s ProBalance Technology assures that all undesirable unbalance residuals are reduced or eliminated to deliver a performance balance that meets the needs of today’s more vibration-prone vehicles.

**To learn more, call (855) 876-3864 to connect with a dedicated Coats® equipment specialist.
Coats - the leader in aftermarket wheel balancing technology.**

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