VOLVO CAR
SERVICE AND PARTS BUSINESS

Technical Journal

TITLE:

Road force balancing

REF NO:	ISSUING DEPARTMENT:	CAR MARKET:	
TJ 33867.1.1	Technical Service	United States and Canada	
PARTNER: 3 US 7510 Volvo Car USA		ISSUE DATE: 2018-06-04	STATUS DATE: 2018-07-27
FUNC GROUP: 7721	FUNC DESC: Tire, front; inner tube, front	Page 1 of 6	

"Right first time in Time"

Attachment

File Name	File Size
ST-227-2018-06-19.pdf	0.3647 MB

Vehicle Type

Type	Eng	Eng Desc	Sales	Body	Gear	Steer	Model Year	Plant	Chassis range	Struc Week Range
234							2017-2017		0000001-9999999	201617-999952
235							2017-9999		0000001-9999999	201624-999952
236							2017-9999		0000001-9999999	201646-999952
238							2018-9999		0000001-9999999	201646-999952
246							2018-9999		0000001-9999999	201717-999952
256							2016-9999		0000001-9999999	201505-999952
536							2019-9999		0000001-9999999	201746-999952

CSC Customer Symptom Codes

Code	Description
V2	Steering wheel/Vibration/shimmy/When driving above 45 mph
V1	Tires/Vibration/out of round

VST Operation Number

VST Operation Number	Description
07726-6	Road Force Balancing

DTC Diagnostic Trouble Codes

Rows beginning with * are modified
Note! If using a printed copy of this Technical Journal, first check for the latest online version.

Text

DESCRIPTION:
Tires have changed over the years and are one of the more common problems that we find with automobiles. Radial force variation (RFV) is a condition where excessive run out will create the same symptom as an unbalanced tire

Today tires are much lower profile, the sidewall is much stiffer. This means that minor flaws in the tire and rim can be amplified and transmitted into the car causing excessive vibrations.
Tire balancing should be checked and corrected as needed but is not always the solution.
Road Force balancing detects assembly run out measured under load simulating real world driving conditions and will provide a solution to match mount the tire and rim to minimize loaded run out.

Note: Rims and tires are not going to be perfect and rim, tire matching may be necessary. Road Force Balancing should also be done when mounting new tires.

SERVICE:
If customer complaints of a vibration at highway speeds perform Road Force Balancing/ Matching. Please refer to ST-227 (Attached)

Max allowable road force measurement 90N (20 Lbs.)

VEHICLE REPORT:
Yes, please submit a vehicle report with the Road Force Measurements attached if the service in this TJ did not bring road force to allowable readings. Use concern area “Vehicle Report “ and sub concern area “ Support Needed “. Use function group 7721. Report title should say (Road Force).

Operation 07726-6 can be claimed up to a maximum of 2.5 hours.
If less than 2.5 hours is needed, the claim shall not exceed the actual punch time flagged.
Usage of operation 07726-6 is subject to the general operation time policy, including a separate punch time for each repair.

To view TJ attachment continue to next page. This TJ has one attachment.

VOLVO CAR
SERVICE AND PARTS BUSINESS

Special Tools Bulletin

TITLE:

Road Force Elite Wheel Balancer

NO:	ISSUE DATE: 2018-06-19	CAR MARKET:	Page 1 of 4
227	STATUS DATE: 2018-06-19	United States and Canada	

"Right first time in Time"

As Volvo Sales and Service volumes increase and our vehicles increase in value and complexity, it is important that our service facilities keep pace with customer expectations. In order to meet this challenge it is essential that our Retail Partners have the proper Volvo recommended shop equipment needed to properly diagnose and repair vehicles the first time every time.

This statement comes into focus and currently relevant as it pertains to tire and wheel vibration concerns. Many of the customer concerns relating to tire vibration could be corrected with the use of a high quality Road Force Tire and wheel balancing machine.

RFE Videos:

Title: Why Do We Balance Wheels - Understanding Road Force
http://www.volvotechinfo.com/index.cfm/u/8z5x3g/

Title: Road Force® Elite Diagnostic Wheel Balancer from Hunter Engineering
http://www.volvotechinfo.com/index.cfm/u/3omfx3/

It is essential that all Volvo Retailers have a Road Force Elite Balancer in their Volvo Service Shop.

The Hunter 1-RFE03-VO, 1-RFE13-VO or 1-RFE33-VO.

Road Force balancers can be purchased from the Volvo Shop Equipment program. At a minimum, the base unit 1-RFE03-VO should be a required piece of equipment for every Volvo Retailer.

http://volvodealersolutions.com/

Orders placed through the Volvo Dealer Equipment program can be charged against the Retailer Parts Statement (U.S. Dealers only).

Service Personnel: Read and initial	SERVICE MANAGER	PARTS MANAGER	WORKSHOP FOREMAN	SERVICE TECHNICIANS									

Volvo Hunter Balancer

Volvo Dealer Equipment, in partnership with Bosch Automotive Service Solutions and Hunter Engineering, is happy to provide you with the following options on a required Road Force balancer package essential in providing a quality service experience to the Volvo customer.

1) REF03 Road Force Balancer w Printer
2) RFE13 Road Force Balancer w Printer and Wheel Lift
3) RFE33 Road Force Balancer w Printer, Wheel Lift and SpeedClamp
4) Optional Universal Flange Plate

Balancer 1-RFE03-VO	**Description / Specifications**
	Road Force Elite with TDC Laser System, and Ink Jet Printer with storage
Technical	
Tire diameter	40”
Tire width	20”
Weight approx.	794 lbs
Rim diameter	10-30 inch
Rim width	1.5-20.5 inch
Power supply	196-253V, 10 amp, 50/60 Hz, 1 ph (Power cable includes: NEMA 20 amp plug, L6-20P) V/Hz/A
Dimensions (L x W x H)	L x 65 x 70
Balancing speed	300 rpm

Balancer 1-RFE13-VO	Description / Specifications
	Road Force Elite *with Wheel Lift System,* TDC Laser System, and Ink Jet Printer with storage
Technical	
Tire diameter	40 inch
Tire width	20 inch
Weight approx.	794 lbs
Rim diameter	10-30 inch
Rim width	1.5-20.5 inch
Power supply	196-253V, 10 amp, 50/60 Hz, 1 ph (Power cable includes: NEMA 20 amp plug, L6-20P)
Dimensions (L x W x H)	L x 65 x 70 inch
Balancing speed	300 rpm

Balancer 1-RFE33-VO	Description / Specifications
	Road Force Elite *with Wheel Lift System and SpeedClamp System.* TDC Laser System, and Ink Jet Printer with storage
Technical	
Tire diameter	40 inch
Tire width	20 inch
Weight approx.	794 lbs
Rim diameter	10-30 inch
Rim width	1.5-20.5 inch
Power supply	196-253V, 10 amp, 50/60 Hz, 1 ph (Power cable includes: NEMA 20 amp plug, L6-20P)
Dimensions (L x W x H)	L x 65 x 70 inch
Balancing speed	300 rpm

Universal Flange Plate Kit	Description / Specifications
1-20-1839-1VO	**20-1839-1 – Adjustable flange plate & stud kit** The preferred recommendation when choosing a flange plate kit for maximum application coverage. Single-plate sliding bolt circle design with interchangeable pins provides quick setup and universal fitment. The kit adapts to 3-, 4-, 5-, 6-, 7- and 8-lug bolt circles with infinite adjustability. Fits future vehicle bolt circles that have yet to be released. The maximum bolt circle diameter is 6.70 in. (170 mm) and minimum diameter is 3.85 in. (98 mm). The kit contains much fewer pieces and is more economical than multiple flange plate kits. All pins use compressible studs allowing more accurate centering when clamping on uneven wheel lug seat surfaces. This mounting method is the most accurate of all choices. Kit includes: **A. 175-355-1** Adjustable flange plate with locking knob **B. 106-145-2** Conical end pin sleeve (5), 3/4 in. diameter, 2.50 in. long **C. 106-144-2** Spherical end pin sleeve (5), 7/8 in. diameter, 2.00 in. long **D. 106-143-2** Conical end pin sleeve (7), 1 in. diameter, 2.00 in. long [Shown with 135-378-1 pin assemblies (7)], 1.00 in. long **E. 20-1881-1** Pin storage rack. [Not shown.] **Optional Pin End Kits** **20-2110-1** Pin end kit - Long 3/4 in. O.D., set of five pins (106-150-2) used with adjustable flange plate (not included in 20-1839-1). Depending on wheel offset and width, these pins may only be compatible when used with the GSP/DSP9200 series wheel balancers. 3.25 in. long. **20-2111-1** Pin end kit - spherical end, set of five pins (106-149-2) used with adjustable flange plate (not included in 20-1839-1). Depending on wheel offset and width, these pins may only be compatible when used with the GSP/DSP9200 series wheel balancers. 3.25 in. long.