Your Ultimate Source for OEM Repair Manuals

FactoryManuals.net is a great resource for anyone who wants to save money on repairs by doing their own work. The manuals provide detailed instructions and diagrams that make it easy to understand how to fix a vehicle.

2004 FORD Focus 3 Doors OEM Service and Repair Workshop Manual

Go to manual page

Click here to learn about symbols, color coding, and icons used in this manual.

4. Reposition the wheel to align the valve stem with the machine arm at the 6 o'clock position, and mount the top bead of the tire.

5. **NOTE**

   Use only the Digital Tire Pressure Gauge any time tire pressures are measured to be sure that accurate values are obtained.

   Inflate the tire to the pressure specified on the VC (vehicle certification) label located on the driver door or door pillar.

NOTE

Proceed to the next step if the tire beads do not seat at the specified inflation pressure.

6. **WARNING**

   If there is a need to exceed the maximum pressure indicated on the sidewall of the tire in order to seat the beads, follow all steps listed below. Failure to follow these steps may result in serious personal injury.

   NOTICE

   The following steps should only be carried out if the tire beads cannot be seated by inflating the tire up to the maximum inflation pressure listed on the tire sidewall.

   1. Relubricate the tire bead and wheel bead seat area.
   2. Install a remote valve and pressure gauge.
   3. Wear eye and ear protection and stand at a minimum of 3.65 m (12 ft) away from the wheel and tire assembly.
   4. Inflate the tire using the remote valve and tire gauge until the beads have seated or until the pressure gauge is 138 kPa (20 psi) more than maximum inflation pressure on tire sidewall. If beads have not seated, deflate the tire and proceed to the next step.
   5. Place the wheel and tire assembly in an OSHA-approved tire safety cage.

Wheel to Hub Runout Minimization

204-04A Wheels and Tires	***2022 F-150***
General Procedures	***Procedure revision date: 03/20/2012***

Wheel to Hub Runout Minimization

Check

NOTE

Wheel-to-hub optimization is important. Clearance between the wheel and hub can be used to offset or neutralize the Road Force® or run-out of the wheel and tire assembly. For every 0.001 inch of wheel-to-hub clearance, the Road Force® can be affected between 1 and 3 pounds depending on the tire stiffness.

1. **NOTE**

   The example below illustrates how the clearance between the wheel and the hub can be used to offset the high spot of radial run-out or Road Force®. Following the procedure will make sure of the best optimization.

   Position the wheel and tire assembly on the vehicle so that the high spot location of radial run-out or Road Force® is at the 6 o'clock position and install the wheel nuts by hand until snug.

Wheel to Tire Runout Minimization

204-04A Wheels and Tires	***2022 F-150***
General Procedures	***Procedure revision date: 03/22/2022***

Wheel to Tire Runout Minimization

Check

NOTICE

Non-Hunter brand balancers will not include the Ford-approved procedure for match-mounting in their software.

NOTICE

Other balancing procedures that exist on non-Hunter brand equipment are not Ford approved and should not be used.

NOTE

Road Force® values in illustrations are shown in pounds.

NOTE

Match mounting is a technique used to reduce radial runout or road force on wheel and tire assemblies. Excessive runout is a source of ride quality complaints and match mounting can be used to minimize the runout. Match mounting can be accomplished by changing the position of the tire on the wheel.

Road Force® Balancer Evolution

HUNTER Engineering Company	Gen1	Gen2	Gen3	Gen4	Gen5
Model numbers	GSP9702	GSP9712	GSP9722	RFT	RFE
Introduction date	March 9, 1998	May 15, 2001	April 12, 2007	March 16, 2012	April 27, 2016
Identifying features	6 in. roller	9.5 in. roller	LCD monitor	Touch Screen	No dataset arms
Monitor controls	3 knobs	1 knob	1 knob	No knobs	No knobs
Monitor type	Color CRT	Color CRT	Color LCD	Touch Screen	Touch Screen
Printer	Dot matrix	Dot matrix	Color inkjet	Color inkjet	Color inkjet

E362396

Click here to learn about symbols, color coding, and icons used in this manual.

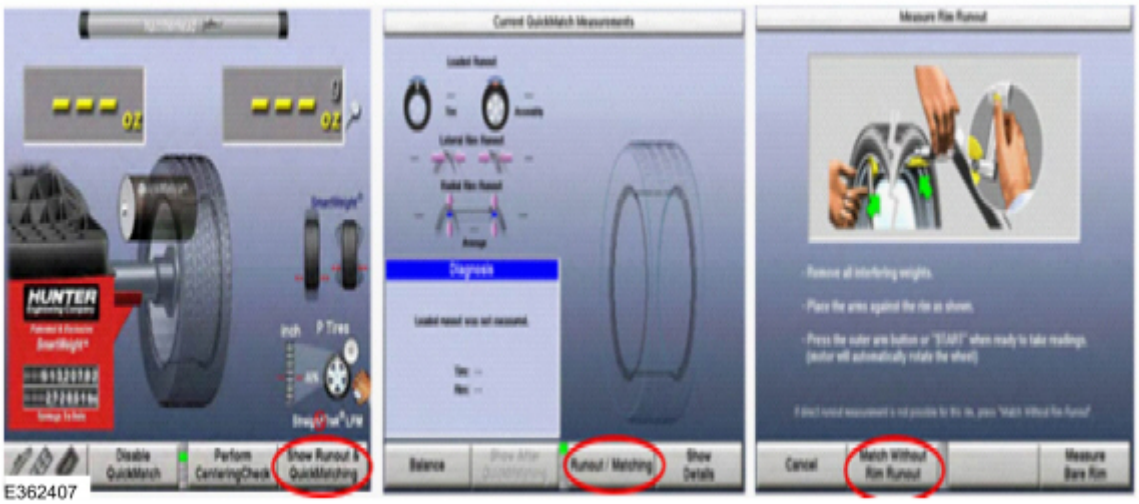
5. GEN I and GEN II

- Gen I and Gen II balancer models do not include software that follows the Ford Workshop Manual methodology.
- The match-mounting procedures in the software of these models should not be used. Instead, only the Wheel to Tire Runout Minimization Procedure found above, should be used.
- Use these machines only to gather the necessary Road Force® measurements. Do not follow the prompts that appear for match-mounting.

Click here to learn about symbols, color coding, and icons used in this manual.

7. GEN IV and GEN V

- Gen IV and GEN V balancer models include a procedure for “180 Matching” on the balancer display. This is the only Hunter procedure that matches the Wheel to Tire Runout Minimization Procedure.
- A second balancing procedure (it may be the default) likely exists on your equipment. Do not use that procedure. If you cannot default your machine to the 180 Matching Procedure, then it will need to be selected each time.
- The 180 Matching Procedure can be launched by selecting the following buttons: Road Force® - Procedures - 180 Matching.



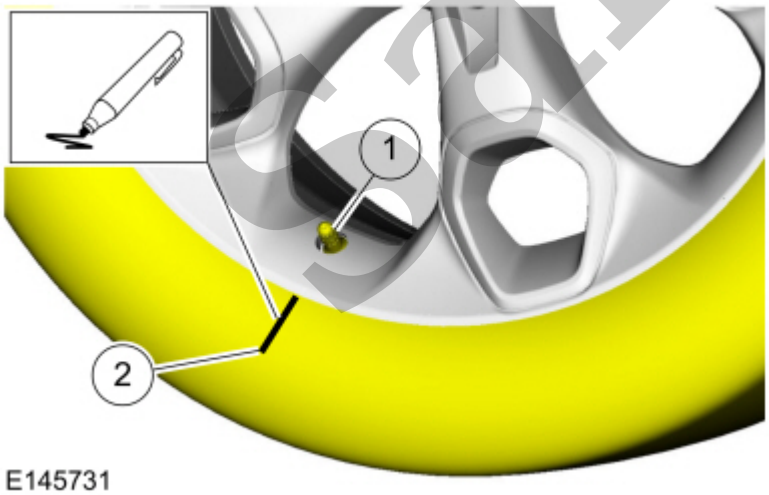
E362407

Click here to learn about symbols, color coding, and icons used in this manual.

9. **NOTE**

   Position the wheel and tire assembly on a tire machine and put a reference mark on the tire sidewall at the valve stem position.

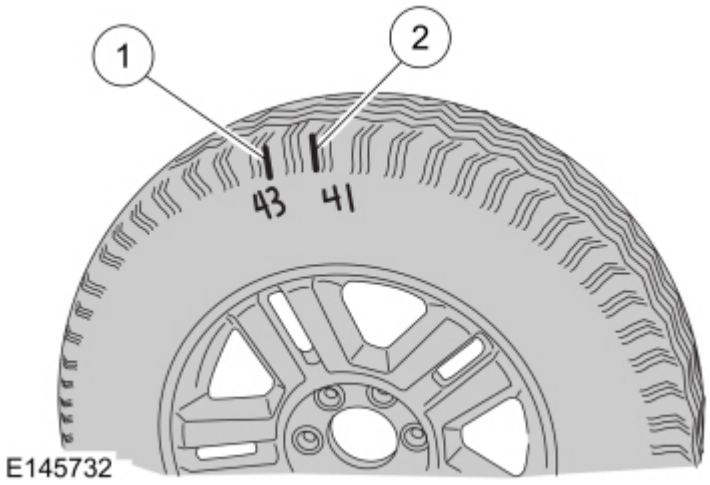
   1. Valve stem
   2. Reference mark



E145731

Click here to learn about symbols, color coding, and icons used in this manual.

10. **NOTICE**



Click here to learn about symbols, color coding, and icons used in this manual.

16. To be SURE that the tire is causing the high runout, it is necessary to have 2 runout or Road Force® measurements that are not within specification and the high spots must be in approximately the same location on the tire's sidewall. If the tire is the cause, install a new tire, balance the assembly and install on the vehicle using the Wheel-to-Hub Optimization procedure. If the second high spot is not within 101.6 mm (4 in) of the first high spot, proceed to the next step.

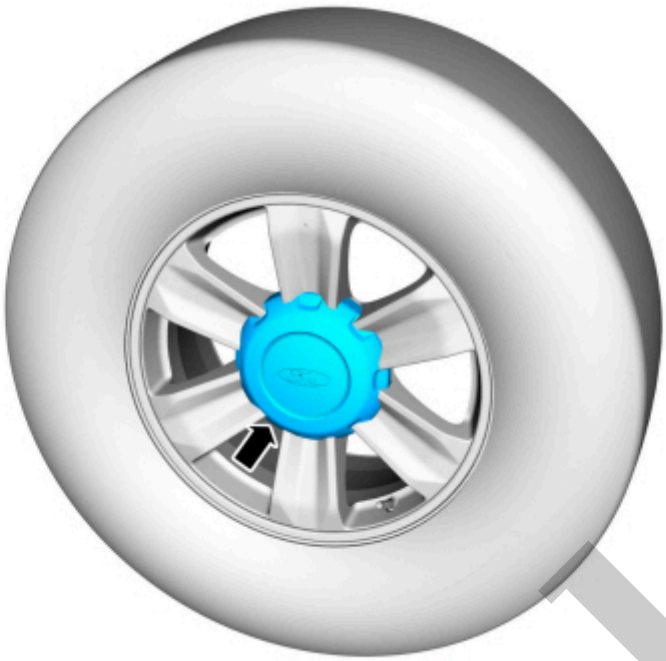
17. If the second high spot is still above specification and is within 101.6 mm (4 in) of being opposite the first high spot on the wheel, the root cause is probably the wheel (the high spot followed the wheel). Dismount the tire from the wheel, mount the wheel on a balancer and check the wheel runout. If the wheel runout exceeds 1.14 mm (0.0449 in), install a new wheel, balance the assembly and install on the vehicle using the Wheel-to-Hub Optimization procedure.

    Refer to: Wheel to Hub Runout Minimization(204-04A Wheels and Tires, General Procedures).

18. 1. First high spot on the tire

    2. Second high spot on the tire

21. Separate the tire beads from the wheel and rotate the tire 90 degrees (one-fourth turn) in the direction of the arrow.



E190249

Click here to learn about symbols, color coding, and icons used in this manual.

3. **NOTICE**

   Do not use heat to loosen a seized wheel nut or damage to the wheel and wheel bearing can occur.

   NOTICE

   If equipped with full wheel cover with exposed wheel nuts, the wheel nuts must be removed prior to removing the wheel cover or damage to the wheel cover will occur.

   NOTE

   Use metric hexagonal socket.