



M-3000-PB4
2021+MY F-150 Powerboost Rear Lowering Kit

NO PART OF THIS DOCUMENT MAY BE REPRODUCED WITHOUT PRIOR AGREEMENT AND WRITTEN PERMISSION OF
FORD PERFORMANCE PARTS © Ford Motor Company 2020

WARNING

MODIFYING AN ORIGINAL EQUIPPED VEHICLE WILL RESULT IN A VEHICLE HANDLING DIFFERENTLY. ALL TYPES OF SUSPENSION MODIFICATIONS WILL AFFECT REACTION, RIDE, HANDLING AND WEAR AND TEAR RATE OF A VEHICLE AND ITS COMPONENTS. ABRUPT MANEUVERS, SHARP AND SUDDEN TURNS AND WEATHER CONDITIONS WILL INCREASE THE VEHICLE'S SUSCEPTIBILITY FOR LOSS OF CONTROL. DEATH AND SERIOUS INJURY COULD BE THE RESULT IF YOU FAIL TO OPERATE A MODIFIED VEHICLE SAFELY. KNOW AND FOLLOW THE LAWS OF THE STATES.

READ INSTRUCTIONS COMPLETELY THROUGH BEFORE STARTING.

FAILURE TO ADHERE TO THE INSTRUCTIONS WILL VOID ANY GROUND FORCE WARRANTY
IT IS RECOMMENDED THAT INSTALLATION BE DONE BY A QUALIFIED MECHANIC.

REPLACE ALL STOCK PARTS THAT ARE DAMAGED OR WORN.

INTERMIXING OF PARTS IS NOT RECOMMENDED AND WILL VOID THE WARRANTY.

ALWAYS WEAR EYE PROTECTION.

ALWAYS USE PROPERLY RATED SAFETY STANDS WHENEVER A PROCEDURE REQUIRES
YOU TO BE UNDER A VEHICLE. KNOW AND FOLLOW ALL SAFE WORK PRACTICES TO AVOID
SERIOUS INJURY OR DEATH.

CHECK TO SEE THAT ALL PARTS LISTED ARE INCLUDED.

- 1-INSTRUCTION SHEET
- 1-GROUND FORCE WARNING DECAL
- 2-SHACKLES
- 1-TRANSMISSION SPACER
- 4-URETHANE SHACKLE BUSHINGS
- 2-SHACKLE SLEEVES
- 2-GREASE FITTINGS

NO PART OF THIS DOCUMENT MAY BE REPRODUCED WITHOUT PRIOR AGREEMENT AND WRITTEN PERMISSION OF
FORD PERFORMANCE PARTS © Ford Motor Company 2020

NOTE: AMOUNT OF DROP APPROXIMATE DUE TO FACTORY OPTIONS.

MEASURE AND DOCUMENT THE VEHICLE HEIGHT FROM FLOOR TO FENDER LIP.

LF _____ RF _____ LR _____ RR _____

1. BEFORE GETTING UNDER VEHICLE, JACK UP THE REAR OF THE VEHICLE AND PLACE JACK STANDS UNDER THE FRAME RAILS. LOWER THE VEHICLE ONTO THE JACK STANDS AND MAKE SURE THE STANDS ARE SECURELY HOLDING THE VEHICLE. SUPPORT THE REAR AXLE WITH A FLOOR JACK AND SMALL JACK STANDS.

2. REMOVE THE REAR TIRE WHEEL ASSEMBLY.

WARNING: THE LEAF SPRINGS ARE UNDER PRESSURE. EXTREME CARE MUST BE TAKEN WHEN WORKING WITH THE SPRINGS TO AVOID INJURY.

3. MAKE SURE THE REAR AXLE IS SUPPORTED.

4. REMOVE THE STOCK REAR SHOCKS FROM THE LOWER MOUNTS, SAVE HARDWARE.

WARNING: THE LEAF SPRINGS ARE UNDER PRESSURE. EXTREME CARE MUST BE TAKEN WHEN REMOVING AND INSTALLING THE SHACKLES TO AVOID INJURY.

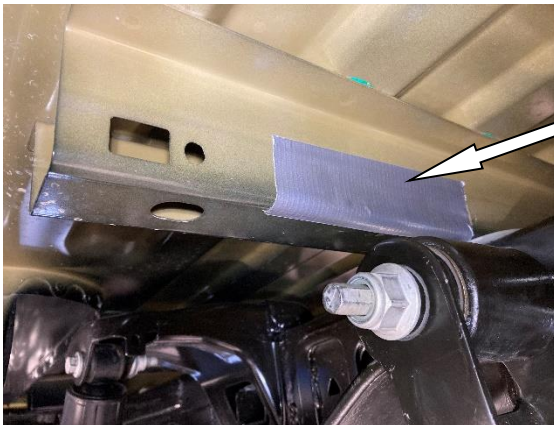
5. REAR SHACKLE REMOVAL. MAKE SURE THE JACK STANDS ARE SECURE UNDER THE VEHICLES FRAME.

A. NOTE THE STOCK SHACKLE HARDWARE LOCATION AND DIRECTION OF THE BOLT HEADS.

B. LOOSEN THE LOWER SHACKLE TO FRAME BOLT.

C. LOOSEN THE UPPER SHACKLE TO SPRING EYE BOLT.

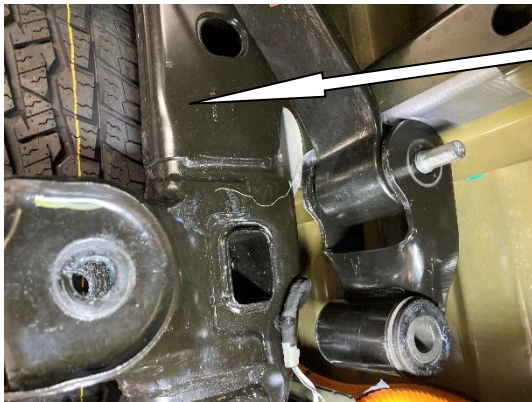
D. APPLY A 6.00 INCH PC OF TAPE TO THE BACK SIDE OF THE BED CROSSMEMBER ABOVE THE STOCK SHACKLE AS SHOW BELOW. THIS WILL HELP PROTECT THE COATING ON THE CROSSMEMBER WHILE REMOVING AND INSTALLING THE SPRING SHACKLE.



**PROTECTIVE TAPE
APPLIED ON THE
REAR OF THE
CROSSMEMBER
ABOVE THE SPRING
SHACKLE**

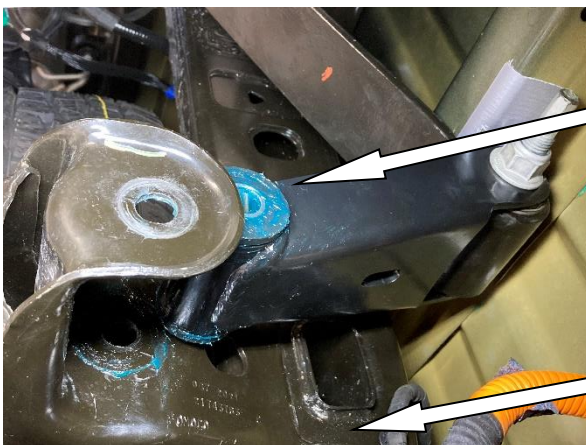
NO PART OF THIS DOCUMENT MAY BE REPRODUCED WITHOUT PRIOR AGREEMENT AND WRITTEN PERMISSION OF
FORD PERFORMANCE PARTS © Ford Motor Company 2020

- E. WITH THE REAR AXLE SUPPORTED REMOVE THE LOWER SHACKLE BOLTS, SAVE ALL HARDWARE AS IT WILL BE REUSED. JACK THE AXLE UP UNTIL THE UPPER SHACKLE BOLTS CAN BE REMOVED OVER THE TOP OF THE FRAME RAIL. THE LEAF SPRING REAR EYE WILL SLIDE UP **BEHIND** THE REAR BED CROSS MEMBER AS SHOWN BELOW. MAKE SURE THE VEHICLE IS SECURE ON THE STANDS AS YOU WILL HAVE TO PUT SOME PRESSURE ON THE JACK TO GET THE SHACKLE HIGH ENOUGH TO BE ABLE TO SLIDE THE FACTORY SHACKLE BOLTS OUT OVER THE FRAME RAIL, ROTATE THE BOTTOM OF THE SHACKLE UP TOWARD THE REAR OF VEHICLE AS SHOWN BELOW AND REMOVE THE UPPER SHACKLE BOLT AND REMOVE THE FACTORY SHACKLE FROM THE VEHICLE.



**UPPER SHACKLE
BOLT BEING
REMOVED OVER THE
TOP OF THE FRAME**

- E. REPEAT TO OTHER SIDE OF VEHICLE.
6. **GREASE** THE NEW SHACKLE BUSHINGS (INSIDE, OUT AND THE FACE OF THE BUSHINGS). **GREASE** THE STEEL SLEEVES AND THE INSIDE OF THE LOWER SHACKLE TUBES. INSTALL THE **GREASED** SHACKLE BUSHINGS AND SLEEVES INTO THE **GREASED** LOWER SHACKLE TUBES (HIGH TEMP WHEEL BEARING GREASE WORKS FINE). **NOTE:** IF YOU DO NOT GREASE THESE POINTS **BEFORE** THE SHACKLE IS ASSEMBLED THE BUSHINGS WILL SQUEAK.
7. DROP SHACKLE INSTALLATION.

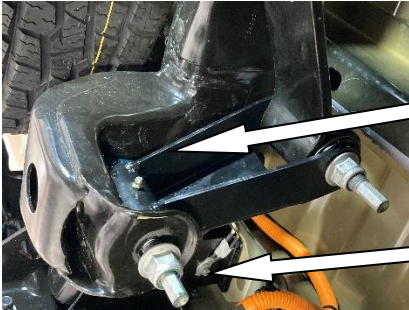


**NEW REAR SHACKLE
BEING INSTALLED.**

**GREASE THE BUSHINGS
AND FRAME TO BUSHING
AREA.**

NO PART OF THIS DOCUMENT MAY BE REPRODUCED WITHOUT PRIOR AGREEMENT AND WRITTEN PERMISSION OF
 FORD PERFORMANCE PARTS © Ford Motor Company 2020

- A. INSTALL THE NEW DROP SHACKLE OVER THE REAR LEAF SPRING EYE WITH THE **OPEN** END OF THE SHACKLE TOWARD THE FRONT.



**OPEN SIDE OF
 NEW SHACKLE
 TOWARD THE
 FRONT OF
 VEHICLE**

GREASE FITTING

- B. INSTALL THE STOCK UPPER BOLT (WITH THE HEAD INBOARD) THROUGH THE NEW SHACKLE AND THE STOCK LEAF SPRING, INSTALL THE STOCK NUT AND JUST SNUG AT THIS TIME.
- C. REPEAT TO THE OTHER SIDE.
8. LOWER THE REAR AXLE SLIGHTLY AND LINE UP BOTH LOWER SHACKLE TO FRAME BOLT HOLES.
- A. INSTALL THE STOCK LOWER SHACKLE BOLT (WITH THE HEAD INBOARD) THROUGH THE FRAME AND SHACKLE.
- B. INSTALL THE STOCK LOWER SHACKLE NUT AND JUST SNUG AT THIS TIME.
- C. REPEAT TO THE OTHER SIDE OF VEHICLE.
9. WITH THE JACK STANDS SECURE UNDER THE VEHICLES FRAME, JACK THE REAR AXLE UP TO RIDE HEIGHT AND TORQUE THE SHACKLE HARDWARE TO SPEC.
10. REINSTALL THE FACTORY SHOCKS IN THE LOWER MOUNTS, INSTALL THE FACTORY HARDWARE AND TORQUE TO SPEC.
11. REINSTALL THE REAR TIRE AND WHEEL ASSEMBLY. TORQUE THE LUG NUTS TO SPEC. CHECK THE CLEARANCE BETWEEN THE REAR AXLE AND ALL REAR COMPONENTS. ADJUST IF NECESSARY.
12. JACK UP THE REAR OF VEHICLE REMOVE SAFETY STANDS AND LOWER VEHICLE.
13. GO BACK AND CHECK THAT ALL INSTALLATION STEPS HAVE BEEN COMPLETED. CHECK THE TORQUE OF ALL NUTS AND BOLTS AFFECTED BY THIS PROCEDURE. RECHECK ALL NUTS AND BOLTS FOR TIGHTNESS AFTER THE FIRST 300 MILES AND AT EVERY ROUTINE SERVICE INSPECTION.
14. MAKE SURE TO INSTALL THE SUPPLIED WARNING DECAL FOLLOWING THE INSTRUCTIONS INCLUDED WITH THE WARNING INFORMATION SHEET.
15. MAKE SURE TO KEEP THESE INSTRUCTIONS WITH THE VEHICLE.

NO PART OF THIS DOCUMENT MAY BE REPRODUCED WITHOUT PRIOR AGREEMENT AND WRITTEN PERMISSION OF
FORD PERFORMANCE PARTS © Ford Motor Company 2020

16. READJUST THE HEADLIGHTS TO THE PROPER SETTINGS.

17. ROAD TEST THE VEHICLE.

18. If any additional driveline shake or shimmy is detected follow the next steps to install the transmission spacer that should correct the pinion angles to solve the problem. IF **NO NEW SHAKE** is found, do not install the spacer at this time.

19. . **TRANSMISSION SPACER INSTALLATION**

A. LOCATE AND REMOVE THE TWO FACTORY REAR TRANSMISSION MOUNTING NUTS (THE NUTS THAT ARE UNDER THE TRANSMISSION CROSSMEMBER) .

B. JACK THE TRANSMISSION UP APPROX. 5/16" AND SLIDE THE SPACER OVER THE STUDS BETWEEN THE TOP OF THE CROSSMEMBER AND THE BOTTOM OF TRANSMISSION MOUNT AND INSTALL THE STOCK NUTS JUST SNUG.

C. . CENTER THE TRANSMISSION SIDE TO SIDE, LOWER THE JACK AND TORQUE THE TRANSMISSION MOUNT NUTS TO SPEC OF 85Ft/lbs (115Nm)



TRANSMISSION MOUNT

**SUPPLIED TRANSMISSION
SPACER BEING INSTALLED
BETWEEN THE TOP OF THE
CROSS MEMBER AND THE
BOTTOM OF THE TRANS.
MOUNT.**

CROSSMEMBER

NO PART OF THIS DOCUMENT MAY BE REPRODUCED WITHOUT PRIOR AGREEMENT AND WRITTEN PERMISSION OF
FORD PERFORMANCE PARTS © Ford Motor Company 2020



**MAKE SURE TO
GREASE BOTH
SHACKLES DURING
EVERY SERVICE
SCHEDULE.**

WARNING: AGAIN CHECK TIRE AND WHEEL CLEARANCE BEFORE MOVING VEHICLE.
ALSO CHECK CLEARANCE IF INSTALLING NEW TIRES AND/OR WHEELS.

NOTE: INSTALLATION OF WHEELS WITH BACKSPACING OTHER THAN STOCK
MAY CHANGE THE VEHICLE HEIGHT AND ALSO EFFECT THE FRONT END
ALIGNMENT.

NO PART OF THIS DOCUMENT MAY BE REPRODUCED WITHOUT PRIOR AGREEMENT AND WRITTEN PERMISSION OF
FORD PERFORMANCE PARTS © Ford Motor Company 2020

Procedure for Headlamp Re-aiming.

Headlamp Adjustment

1 All headlamp types

NOTE: Refer to the Owner's Literature for the headlamp adjustment screw location.

NOTE: Consult your state vehicle inspection manual for recommended tolerance ranges for visual aiming.

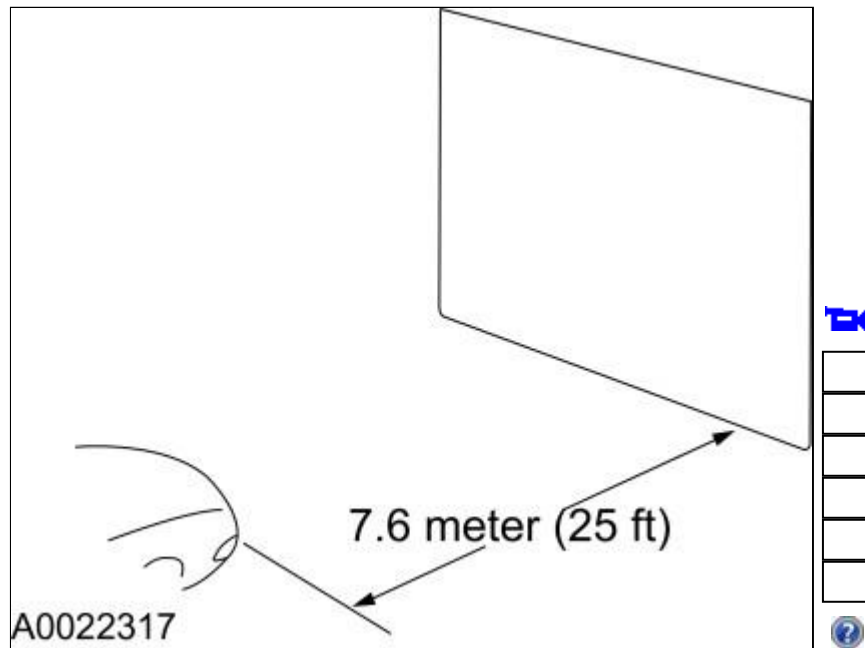
NOTE: Horizontal aim is not adjustable.

NOTE: Record initial vehicle headlamp aim in relation to Optical Center for headlamp aim adjustments

2. Identify the headlamp type. Vehicles are equipped with Visually Optically Aligned Left (VOL) or Visually Optically Aligned Right (VOR) headlamps. These are molded in small letters on the headlamp outer lens as: VOL and SAE or VOR and SAE.
3. **NOTE:** Before starting headlamp adjustment, entry conditions must be met.
 - Vehicle must be on level ground.
 - Tires must be correctly inflated.
 - Vehicle must be normally loaded (the vehicles normal weight of driver, passengers and cargo)
 - Headlamps must be clean.
 - Headlamps must operate correctly.
 - Headlamps switch in the HEADLAMPS position.
 - The LH steering column multifunction switch in the LOW BEAMS position. Air suspension switch must be on (if equipped).
4. **NOTE:** The vertical wall or screen must be large enough to see a majority of the beam pattern.

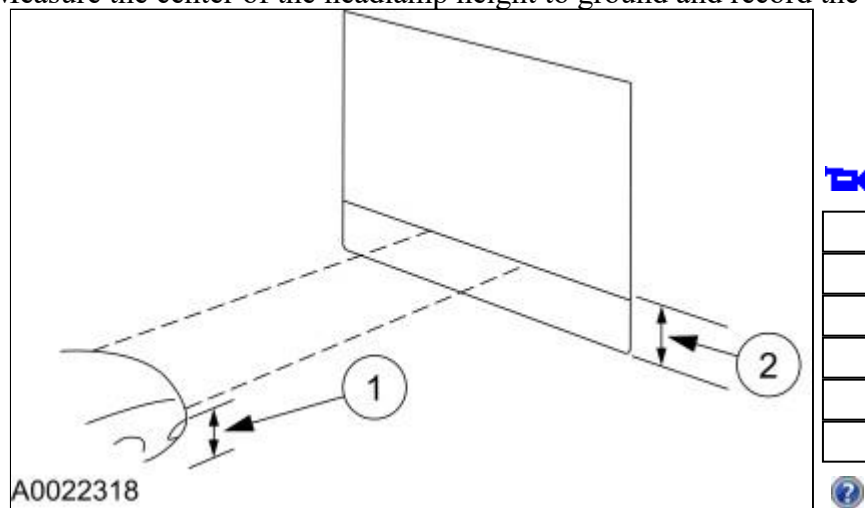
Park the vehicle on a level surface approximately 7.6 m (25 ft) from the vertical wall or screen directly in front of it.

NO PART OF THIS DOCUMENT MAY BE REPRODUCED WITHOUT PRIOR AGREEMENT AND WRITTEN PERMISSION OF
FORD PERFORMANCE PARTS © Ford Motor Company 2020



5. **NOTE:** The optical center of the low beam optical is normally marked on the lens (circle, crosshair or other mark) or is the center of the low beam reflector, optical shield or the low beam projector inner lens.

Measure the center of the headlamp height to ground and record the measurement.



NO PART OF THIS DOCUMENT MAY BE REPRODUCED WITHOUT PRIOR AGREEMENT AND WRITTEN PERMISSION OF
 FORD PERFORMANCE PARTS © Ford Motor Company 2020

6. **NOTE:** Use a 2.4 m (8 ft) section of masking tape for the horizontal reference line.

- For vehicles with headlamp optical center heights (1) below 95 cm (37.5 inches), place the horizontal reference line (2) equal to the headlamp optical center height.
- For vehicles with headlamp optical center heights (1) between 95 cm - 105 cm (37.5 - 41.5 inches), place the horizontal reference line (2) at the headlamp optical center height minus 1.3 cm (0.5 inch).
- For vehicles with headlamp optical center heights (1) above 105 cm (41.5 inches), place the horizontal reference line (2) at the headlamp optical center height minus 2.5 cm (1.0 inch).

7. **NOTE:** Carry out this procedure in a dark environment to effectively see the headlamp beam pattern.

Turn the low beam headlamps on to illuminate the wall or screen and open the hood.

8. **NOTE:** The cut off of the beam pattern is the horizontal line of the beam pattern where there is **MAXIMUM** change between light and dark.

On the wall or screen, locate the cut off of the beam pattern.

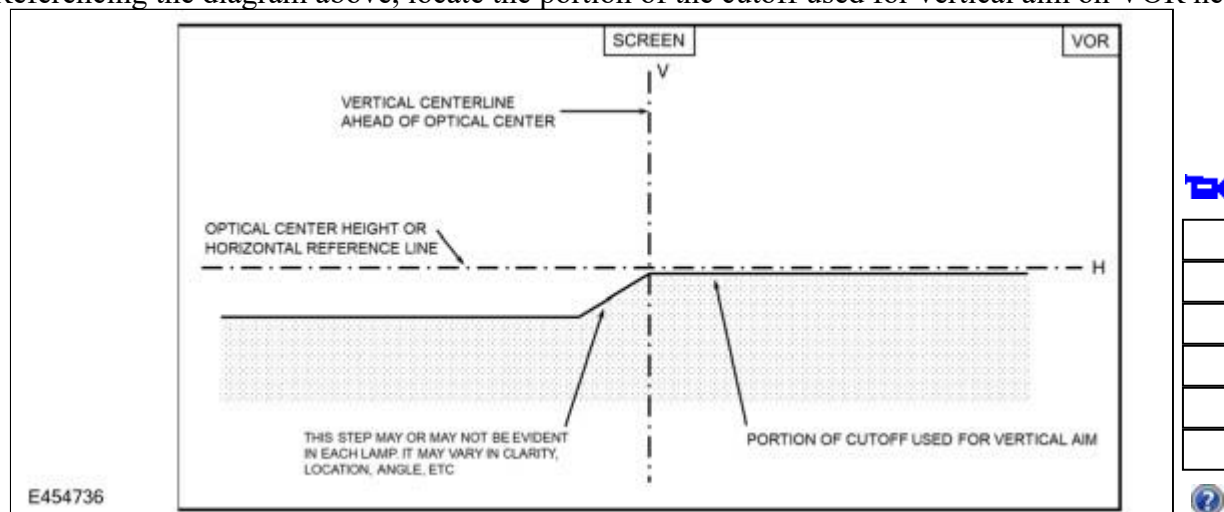
2 VOR-type headlamps

NOTE: Procedure applies to headlamps with VOR molded on lens.

NOTE: When aligning one headlamp, make sure the other headlamp is covered.

9. **NOTE:** The cutoff is the horizontal portion of the beam where the **MAXIMUM** change between light and dark can be found.

Referencing the diagram above, locate the portion of the cutoff used for vertical aim on VOR headlamps.



10. Adjust the headlamp as necessary using the headlamp adjusting screw to align this portion of the cut to the horizontal reference line as shown in the diagram.

NO PART OF THIS DOCUMENT MAY BE REPRODUCED WITHOUT PRIOR AGREEMENT AND WRITTEN PERMISSION OF
 FORD PERFORMANCE PARTS © Ford Motor Company 2020

11. Repeat the previous step for the remaining headlamp.
12. When both sides are complete, make sure that both beams appear parallel to each other. **VOL-type headlamps**

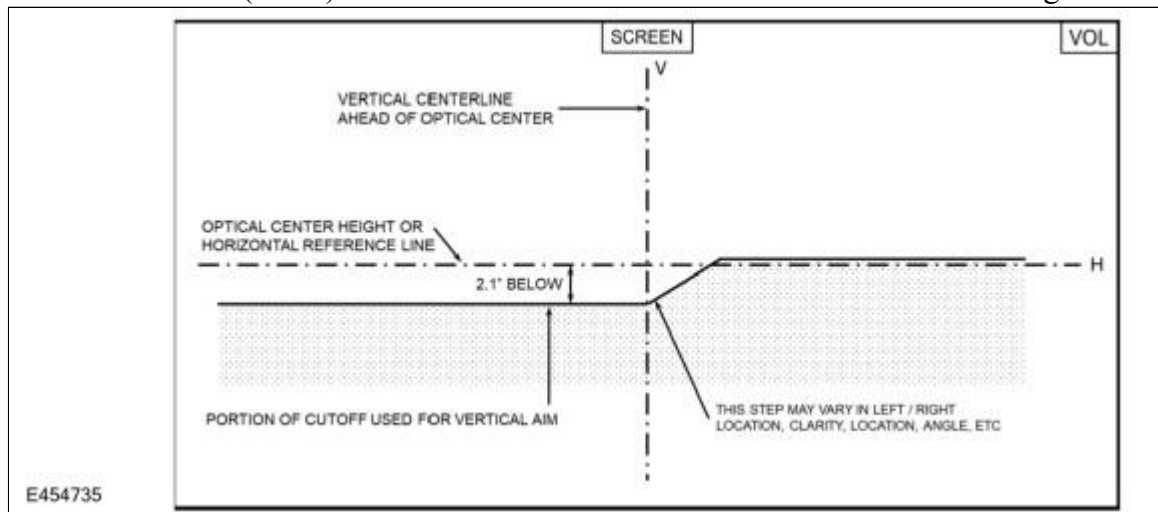
NOTE: Procedure applies to both left and right headlamps with VOL molded on lens.

NOTE: When aligning one headlamp, make sure the other headlamp is covered.

13. **NOTE:** The cutoff is the horizontal portion of the beam where the **MAXIMUM** change between light and dark can be found.

Referencing the diagram above, locate the portion of the cutoff used for vertical aim on VOL headlamps.

14. Adjust the headlamp as necessary using the headlamp adjusting screw to align this section so that it is positioned at 5 CM (2.1 in) below the horizontal reference line as shown in the diagram.



15. Repeat the previous step for the remaining headlamp.
16. When both sides are complete, make sure that both beams appear parallel to each other.

© Copyright 2025, Ford Motor Company.