



## TECHNICAL SERVICE BULLETIN

**22-2049**

03 July 2022

### Vehicles Equipped With Electronic Power Assist Steering (EPAS) – Increased Steering Effort, Operation Noise And/or DTC's C1B00/U3000

This bulletin supersedes 21-2361. Reason for update: Incorrect or Missing Parts

This bulletin supersedes 21-2256. Reason for update: Incorrect or Missing Parts

#### Model:

<b>Ford</b>
2015-2021 Everest/Endeavour
2015-2021 Ranger

**Issue:** Some 2015-2021 Ranger and Everest/Endeavour vehicles equipped with EPAS may experience water ingress via punctures in the steering gear boots resulting in increased steering efforts, operational noise and Diagnostic Trouble Codes (DTCs) such as C1B00 or U3000. In many cases it can be difficult to determine where the boot damage has occurred without applying test methods not usually adopted by dealerships. For this reason, it is recommended to follow this TSB Action on all vehicles that require a replacement EPAS steering gear to be fitted.

**Action:** EPAS steering gear replacement is subject to normal warranty approval process and technicians are advised to follow the diagnostic procedures outlined in the Workshop Manual (WSM). For further information, refer to GSB 22-7062. Once it has been determined that the EPAS steering gear requires replacement for any reason, a set of steering gear shields should be installed at the same time as per the Service Procedure below.

#### Parts

Service Part Number	Quantity	Description
JB3C-5F061-BA	1	EPAS Steering Gear Boot Shield - RH
JB3C-5F061-AA	1	EPAS Steering Gear Boot Shield - LH
W707068 S300	6	Scrivet
3504	1	Steering Gear - See Parts Catalog For Application
9YA01 0810 A	1	BOLT, M8 X 1.25
W716936 S442	6	NUT, M12
W716883 S440	2	NUT HEXAGON, M12
EB3C 3C497 CA	2	BOLT
W716530 S440	2	NUT HEXAGON, M14
W520413 S437	2	NUT M8 (4WD Only)
W520215 S440	2	NUT, M14 (4WD Only)
W719178 S440	2	NUT, M20 (4WD Only)
W719234 S439	2	BOLT, M20 X 90MM (4WD Only)
W719177 S439	2	BOLT, M20 X 135MM (Raptor Only)

#### Labor Times

Description	Operation No.	Time
Steering Gear Assembly EPAS - Replace (4WD LHD)	222049A	1.8 Hrs.
Steering Gear Assembly EPAS - Replace (4WD RHD)	222049B	1.5 Hrs.
Steering Gear Assembly EPAS - Replace (2WD LHD/RHD)	222049C	1.4 Hrs.
EPAS Boot Shield – Installation	222049D	0.4 Hrs.
Electronic Steering Diagnosis	222049E	0.2 Hrs.
Toe-in – Correct	222049F	0.2 Hrs.
BCE Module - Reprogram/Reconfigure as built data	222049G	0.3 Hrs.

#### Repair/Claim Coding

Causal Part:	3D070
Condition Code:	01

PDR Table

**NOTE:** When creating the warranty claim in **SERVIS2**, please select manually the parts used for the specific vehicle repair.

PDR Code	Description	Time
TSB222049A	Steering Gear Assembly EPAS - Replace And Fit Boot Shields (4WD LHD)	2.9 Hrs.
TSB222049B	Steering Gear Assembly EPAS - Replace And Fit Boot Shields (4WD RHD)	2.6 Hrs.
TSB222049C	Steering Gear Assembly EPAS - Replace And Fit Boot Shields (2WD LHD/RHD)	2.5 Hrs.
TSB222049D	Steering Gear Assembly EPAS - Replace And Fit Boot Shields (Raptor 4WD LHD)	2.9 Hrs.
TSB222049E	Steering Gear Assembly EPAS - Replace And Fit Boot Shields (Raptor 4WD RHD)	2.6 Hrs.

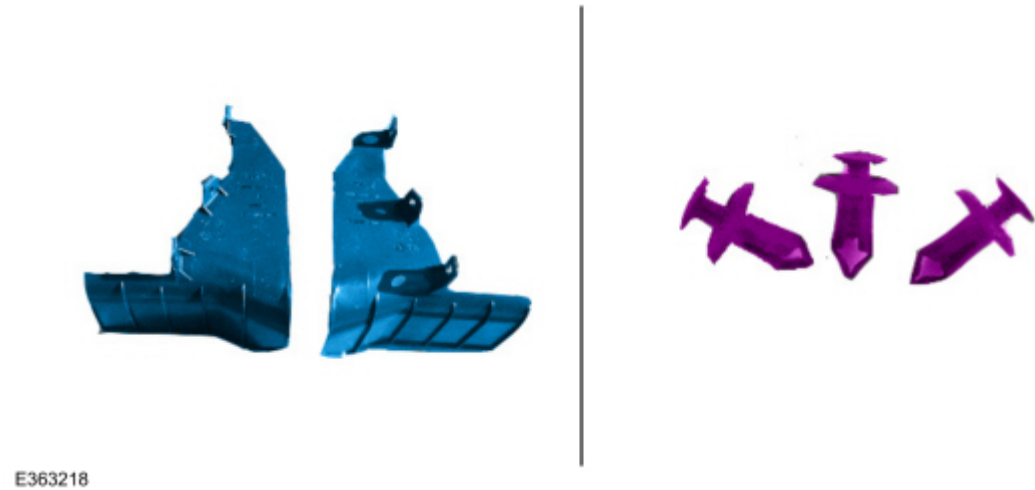
Service Procedure

1. Raise the vehicle. For additional information, refer to Workshop Manual (WSM) Section 100-02.
2. After consulting the diagnosis and testing section of the WSM, has it been determined that the EPAS requires replacement?
  - (1). No - this TSB does not apply, refer to the WSM for normal diagnostics/repair.
  - (2). Yes - proceed to Step 3.

3. Replace the EPAS steering gear. For additional information, refer to WSM Section 211-02.

**NOTE: Leave the front wheels removed from the vehicle.**

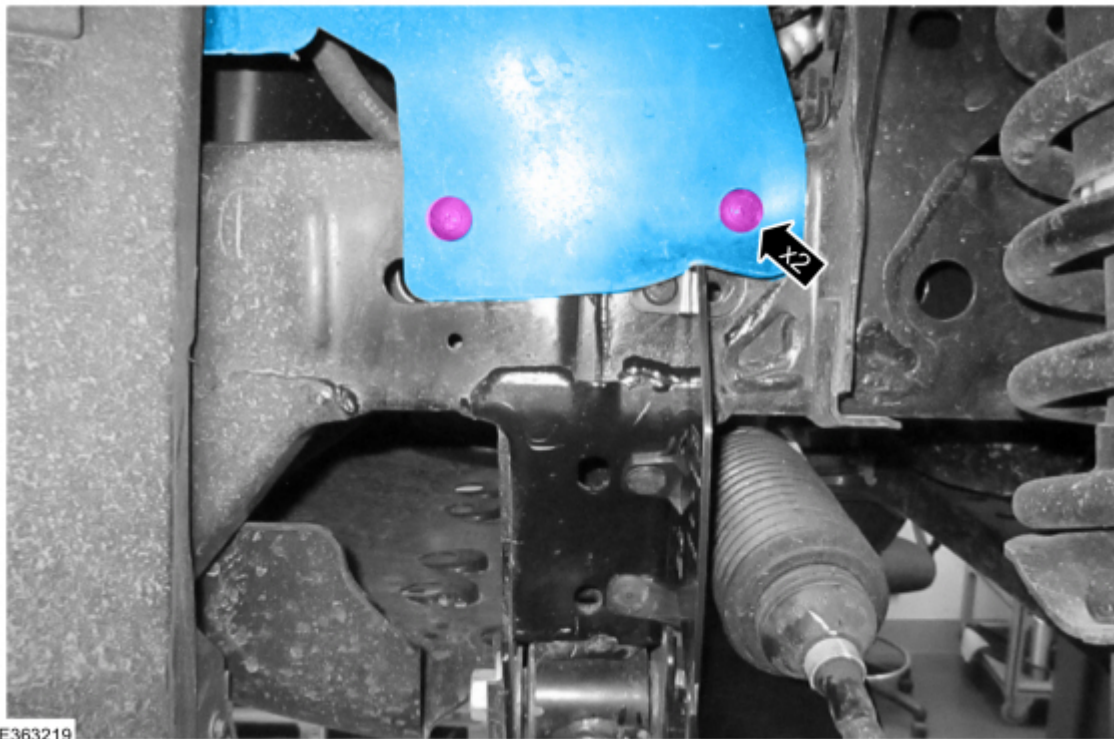
To help prevent future steering gear punctures, follow the Steps below to fit the EPAS steering gear boot shields. (Figure 1)



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Figure 1

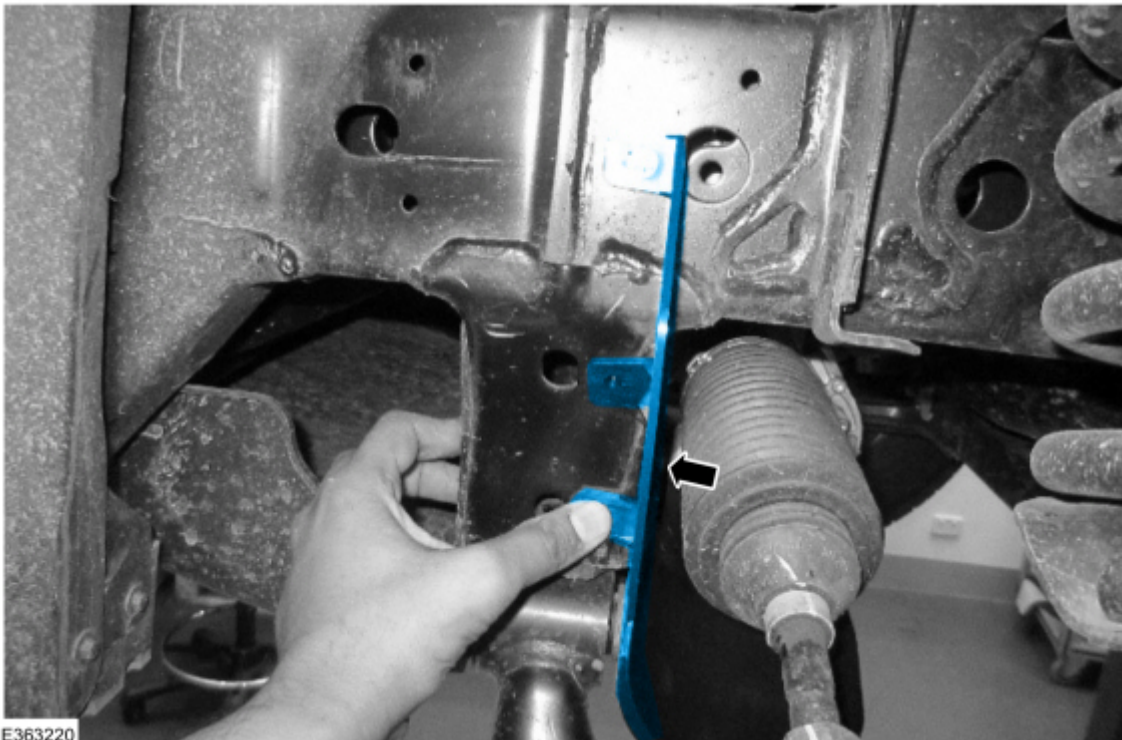
4. Remove the left hand front lower splash shield. (Figure 2)



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Figure 2

5. Three mounting holes are required to secure the steering gear boot shields in place. The shield can be used as a template to mark the locations of the holes. Hold the shield in place as shown (Figure 3), ensuring;
- (1). The rear face (adjacent to the steering gear) is flush with the rear or the dropper on the frame.
  - (2). The three mounting flanges of the shield are sitting flush against the frame (to ensure correct vertical alignment).



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Figure 3

6. Mark the three hole centres with a paint pen or similar. (Figure 4)

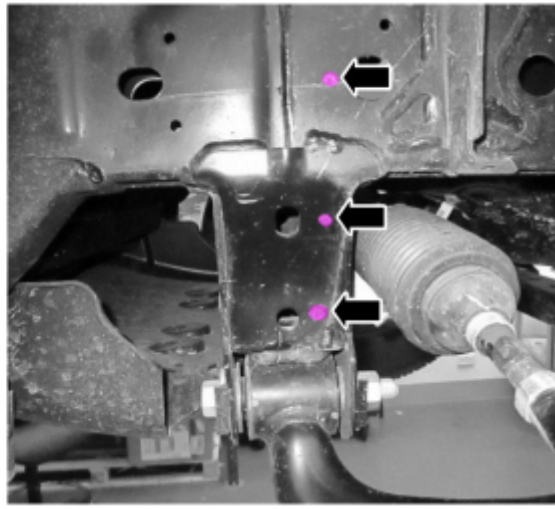
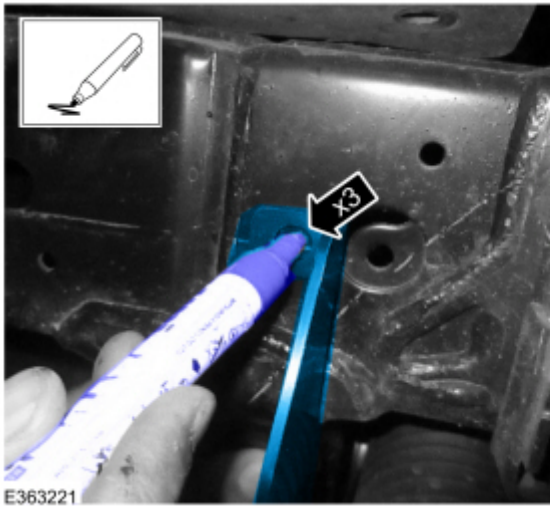


Figure 4

7. Using a centre punch, mark the centre of each paint spot. (Figure 5)

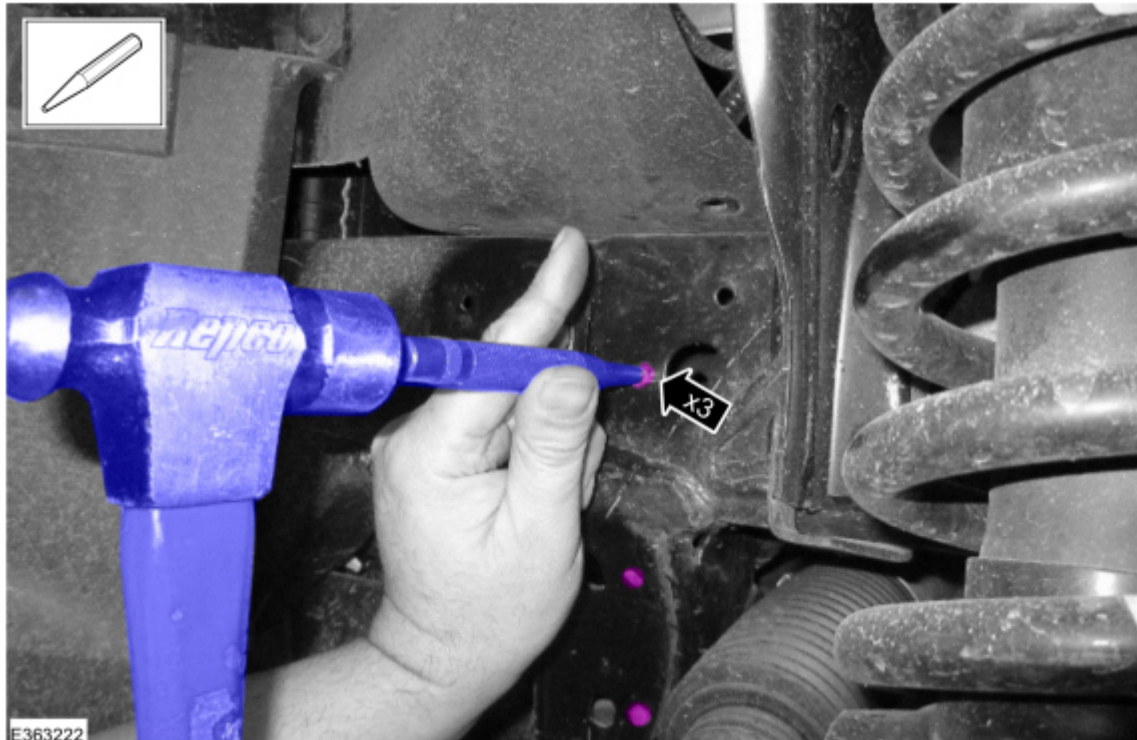


Figure 5

**NOTE:** When drilling the top hole extra care must be taken to avoid dropping swarf inside the frame box section. Failure to do so may result in metal chips rusting inside the frame and forming visible rust trails on the outside of the frame. It is recommended to pack the drill flutes with grease and drill slowly to ensure all swarf is contained. (Figure 6)



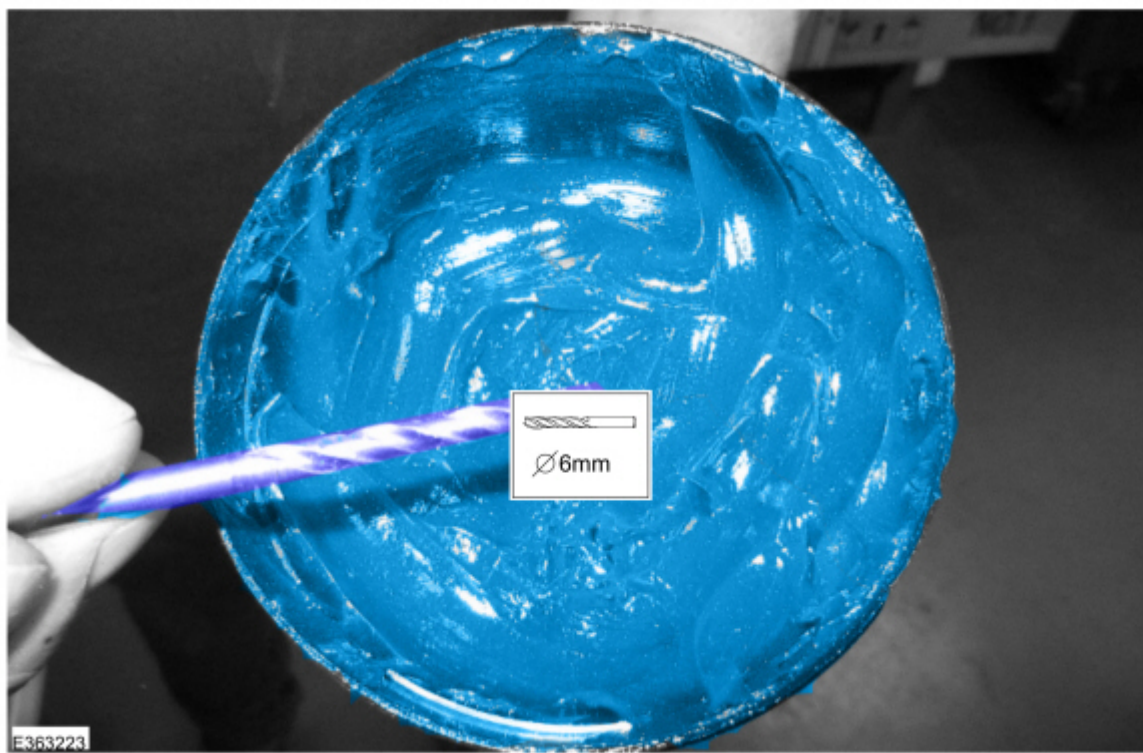


Figure 6

8. Using a 4mm drill bit, drill pilot holes in each of the three locations. Then using a 6mm drill bit, drill the holes to the final size. (Figure 7)

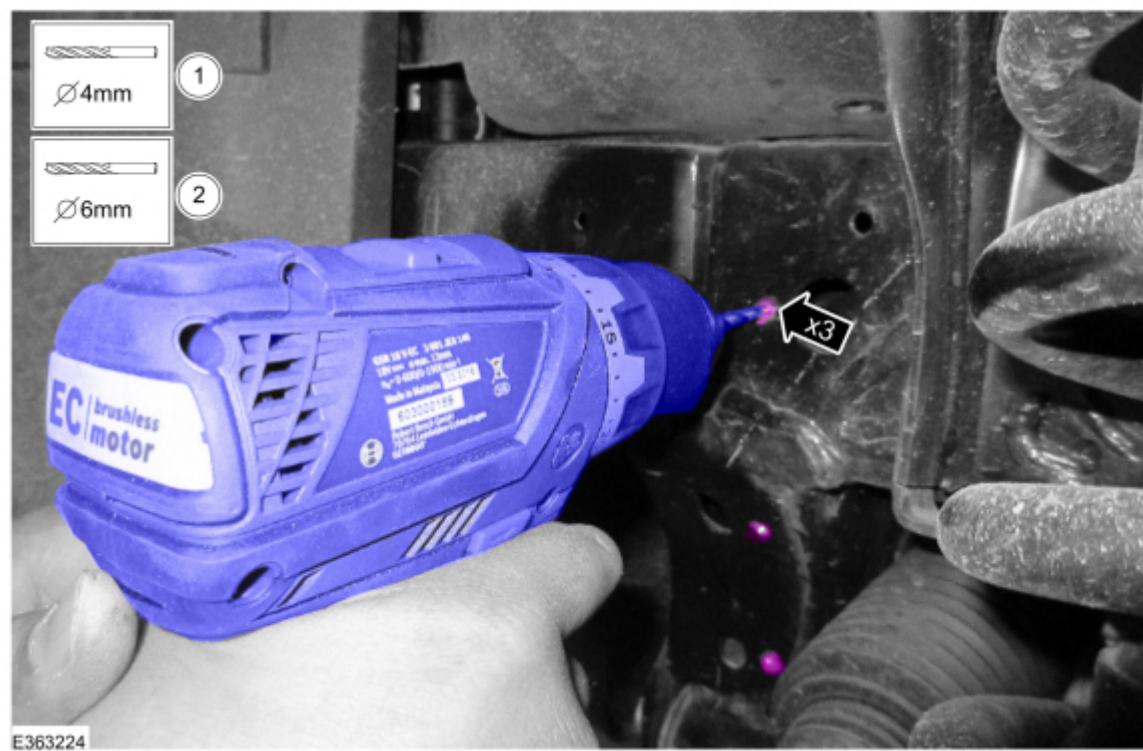


Figure 7

9. Using compressed air, remove all swarf from around the cross member and suspension pivot. (Figure 8)

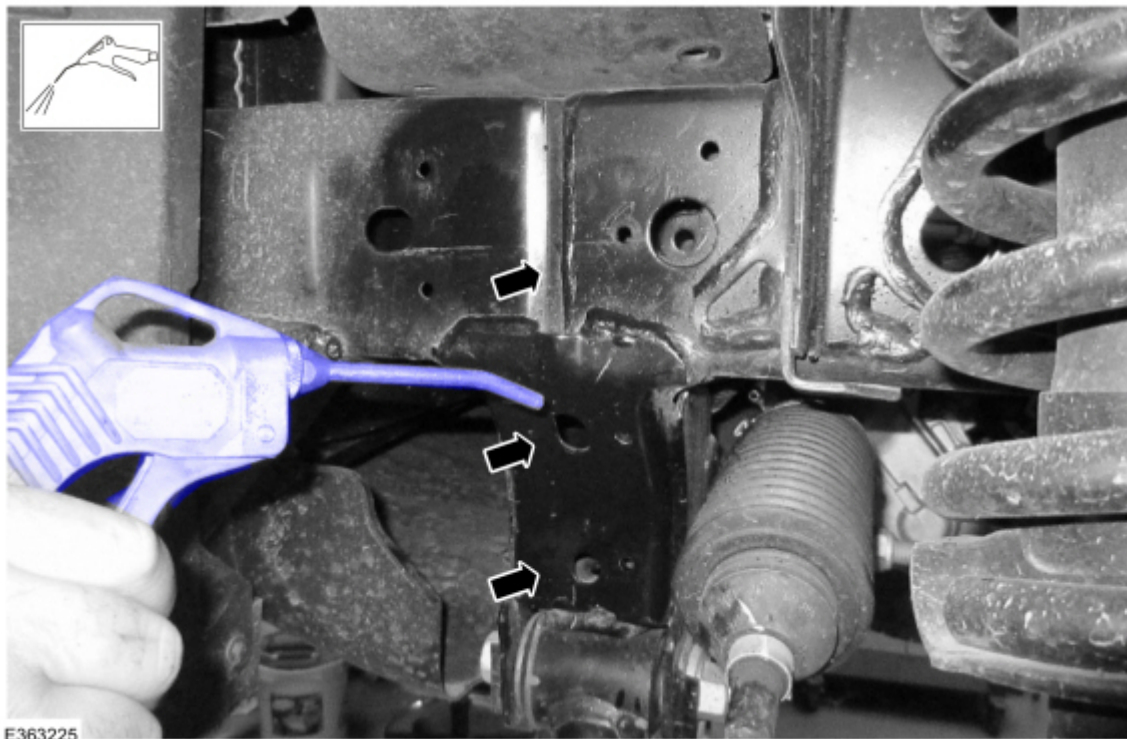


Figure 8

**10.** Clean and de-grease the drilled holes in preparation for painting.

**11.** De-burr and apply anti-corrosion paint to the holes and allow to dry. (Figure 9)

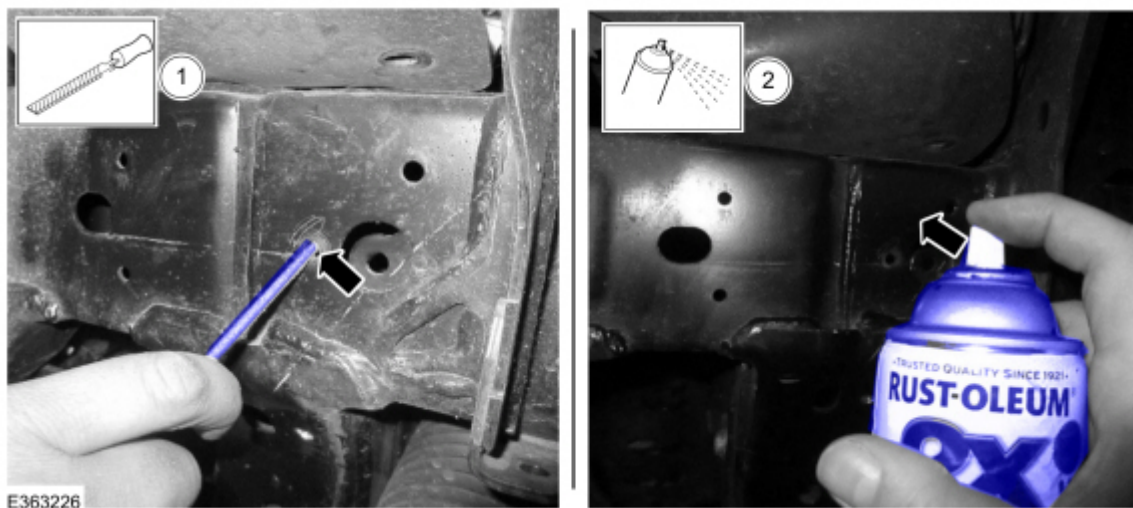


Figure 9

**12.** Install the steering gear boot shield with the 3 scrivenets. (Figure 10)



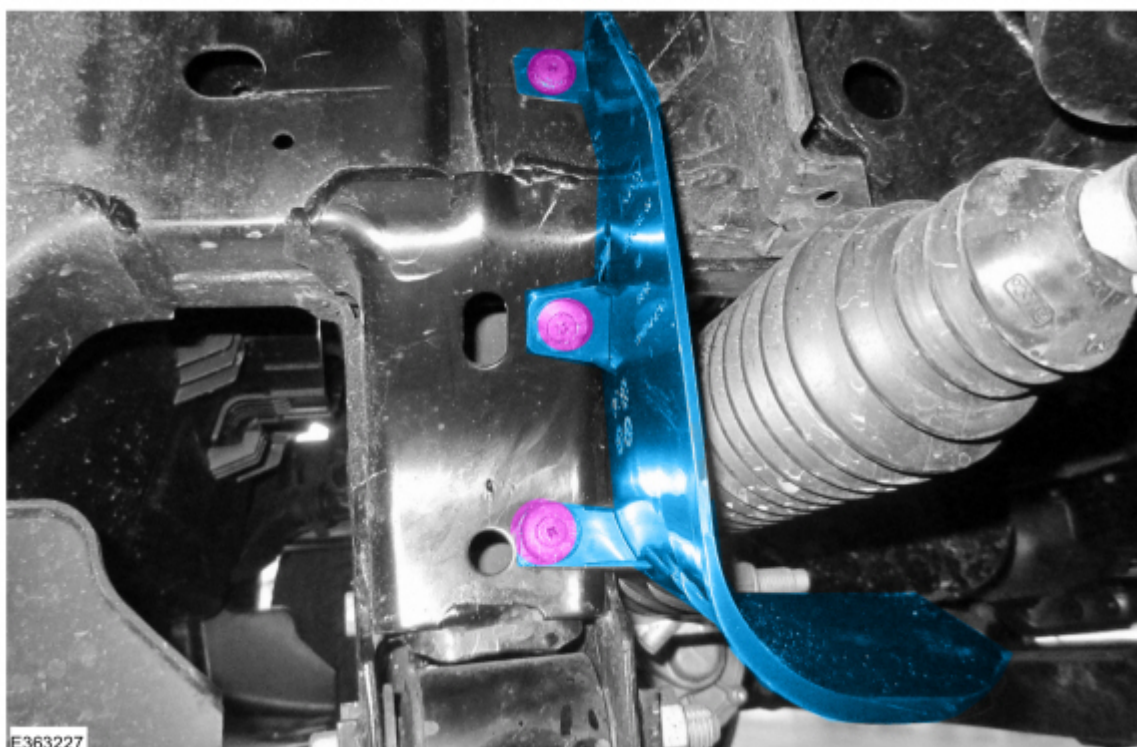


Figure 10

**13.** Install the left hand front splash shield. (Figure 11)

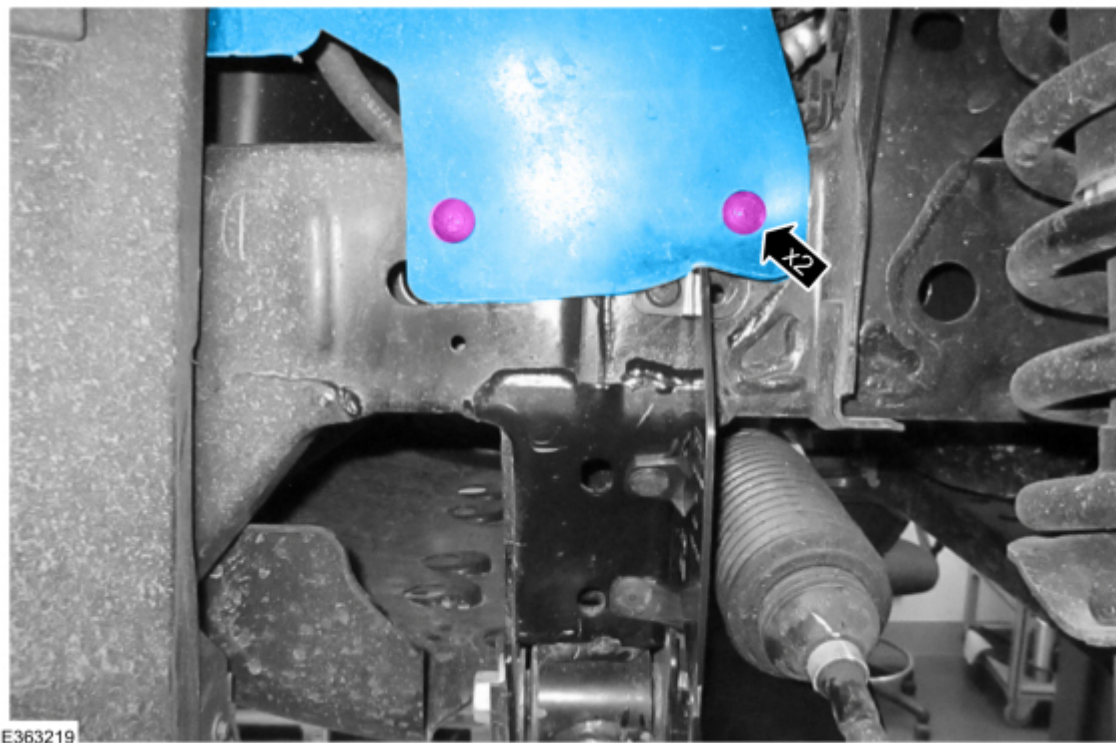


Figure 11

**14.** Perform Steps 4 to 13 on the right hand side.

**15.** Install the front wheels. For additional information, refer to WSM Section 204-04.

**16.** Download the Power Steering Control Module (PSCM) configuration from the scan tool to the new PSCM. For additional information, refer to WSM Section 418-01.

**17.** Check and if necessary, adjust the front toe. For additional information, refer to WSM Section 204-00.