



TECHNICAL SERVICE BULLETIN

Passenger and Light/Medium Commercial

Bulletin Number **98R/04**
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Circulate to	Service Manager	Parts Manager	Foreman	Receptionist	Technicians

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Subject/Concern: BA FALCON POWER STEERING SHUDDER

Models: I6 & I6Turbo BA Series Falcon

Summary

Cause: Fluid Pulsations in the power steering system may cause shudder in some vehicles

Action: Conduct diagnostics and bleed system. For Persistent Power Steering Shudder fit new high-pressure hose and bleed system.

Warranty Status: Reimbursable within the provisions of the Warranty and Policy Manual.

Parts Required

Description	Part Number	Quantity
Revised Level Power Steering Hose (240 Steering gear) NOTE:- 240 gear is standard in all I6 and I6 Turbo vehicles with factory fitted 17" and 18" wheels. (BA3504B)	BA3A212F	1
Revised Level Power Steering Hose (230 Steering gear) NOTE:- 230 gear is standard in all I6 vehicles with factory fitted 16" wheels. (BA3504A)	BA3A212G	1

Service Procedure

Concern Description:

Some BA Falcon vehicles may exhibit pulsations/shudder in the power steering system, primarily felt through the steering column whilst parking and/or during low speed maneuvers. Although this pulsations/shudder can result in a customer concern, it is not detrimental to the safety or operation of the motor vehicle.

On a customer complaint basis only, this TSB needs to be followed to eliminate shudder from these vehicles.

Dealers should note the following:

1. A power steering system that has been interrupted (opened) will exhibit **temporary** power steering shudder due to aeration of the power steering fluid.
2. Cycling the power steering system with the engine off may cause the system to exhibit **temporary** power steering shudder due to aeration of the power steering fluid. (eg. During service).
3. Undoing the reservoir cap when the vehicle is hot or warm may cause the system to exhibit **temporary** power steering shudder due to a loss of pressure in the reservoir thus causing the aeration of the power steering fluid. (eg. During service).

Once air is in the system it may take up to **3 - 5 days of normal city driving** for the system to rectify itself. The extended period is primarily due to the systems capability to purge air from the system via the self-bleed process.

Note:- MOST cases of steering shudder are **Temporary**, usually a result of a service action affecting the steering system. Leaving the **vehicle overnight or for up to three days** will alleviate all cases of **Temporary** steering shudder (**Advise customer to take the vehicle, use normally, and monitor for up to 5 days for the steering shudder to subside**). Dealers **MUST** note that the new level service parts as outlined in this TSB **DO NOT** apply to cases of temporary Steering Shudder.

Service Action

Should a vehicle be presented with a case of BA Power Steering Shudder, technicians are asked to carry out the following procedures.

Inspection and Bleed Procedure (Operation Number TSB098R04)

Step 1

Check the complete power steering system for leaks. Repair and/or replace as required. (ref [TSB 77/04](#))

Step 2

Bleed the power steering system as per the bleed procedure below.



Warning. Keep steering wheel and wheels in a straight-ahead position. Do not rotate steering wheel during the bleed procedure.

1. Engine off.
2. For this bleed procedure to be most effective the Engine **should be** completely cold.
3. Remove Tension from Front-end accessory drive Belt (FEAD Belt). Ref Workshop manual Sect. 211-02



Warning. Ensure keys are removed from the ignition during this procedure.

4. Remove FEAD Belt from Power Steering Pump Pulley by sliding the belt off the side of the pulley.
5. Manually cycle pump (This allows sufficient time for air bubbles to surface) until no visible signs of air bubbles are present. (Approx 2 minutes)
6. Re-fit FEAD Belt to Power Steering pump pulley, and retention. Ref Workshop manual Sect. 211-02
7. Start Engine and then immediately switch engine off.



Warning. Do not use the accelerator, as this will cause further aeration in the system

8. Wait for 30 seconds
9. Repeat steps 7 & 8 a further 3 times.

Step 3

Drive vehicle 5.0 km/h or less in a series of approximately 6 – 7 figure eights on a normal bitumen type surface.

Note:- It is optimal for dealers to conduct figure eights, however if a dealer is not able to complete figure eights due to restrictions a secondary strategy is to cycle the steering system lock-to-lock while stationary with Engine running on a normal bitumen type surface approximately 20 times.

Step 4

Re-check vehicle for steering shudder.

Step 5

If steering shudder is still present after carrying out steps 2 & 3. The vehicle should be returned to the customer and left over night to self-bleed.

Advise customer to take the vehicle, use normally, and monitor for up to 5 days for the steering shudder to subside

Persistent Power Steering Shudder (Operation Number 3713B)

Step 1

If the customer returns with a persistent complaint of Power Steering Shudder after 5 or more days, and the vehicle has previously had the above bleed procedure completed the vehicle can be diagnosed as a ***persistent steering shudder*** case. At this point, the power steering hose will require replacement with a new service level power steering hose (BA3A212F or BA3A212G) as per Workshop manual sect:- 211-02.

PLEASE NOTE: THE NEW SERVICE LEVEL POWER STEERING HOSE CAN ONLY BE USED ON VEHICLES DIAGNOSED WITH PERSISTENT STEERING SHUDDER.

WARRANTY NOTE: Dealers must first claim bleed procedure (Operation Number: TSB098R04) under causal part number PSHUDDER2. If a vehicle is diagnosed as having a persistent case of power steering shudder, then the new level power steering hose should be claimed as a repeat repair (Operation Number: 3713B) under PSHUDDER2. If this procedure is not followed, warranty claims may be denied.

Step 2

Once the power steering hose has been replaced with the new power steering hose (BA3A212F or BA3A212G) as specified above, steps 2 thru to 4 of the Inspection and Bleed procedure should be repeated.

Step 3

Some level of steering shudder may be noticeable after the Power Steering hose is changed. Return vehicle to customer advising that the steering shudder may take up to 5 days of normal city driving to subside. This is primarily caused by residual air trapped within the steering system. The extended period is due to the systems capability to purge air from the power steering system via the self-bleed process.

Operation Number/Standard Repair Time

Operation Description	Operation Number	Time
Inspection and Bleed Procedure	TSB098R04	0.4
Hose Assembly R&R – including time to bleed system	3713B	0.7

Repair/Claim Coding

Warranty Claim	Causal Part	Condition
Enter 04098R in box "X" of warranty claim to reference this TSB.	PSHUDDER2	67

If Ford dealership workshop personnel have any questions regarding this TSB, then the designated Master Technician/Foreman/Senior Technician should contact the Dealer Technical Service Hotline.