

ODI Action Number: **EA02-022**

Date: **09-06-2002**

Subject: **FORD MOTOR COMPANY  
2000 - 2002 FORD FOCUS**

## **ALLEGED ENGINE STALLING FAILURE**

This file contains consumer letters received by the National Highway Traffic Safety Administration, which complain of the alleged defect that is the subject of this Engineering Analysis. It also contains correspondence between this agency and the manufacturer on the subject. Portions of that correspondence may be withheld where the manufacturer has claimed that they are confidential pursuant to the Freedom of Information Act, 5 U.S.C. § 552(b)(4), which exempts from disclosure confidential commercial and financial information. Additional documents relating to this Engineering Analysis may exist, but have not been included in this public file.

If you have any information or concerns you would like to discuss with NHTSA staff, please call the

**TOLL FREE AUTO SAFETY HOTLINE**

**800-424-9393**

(In the Washington, DC metropolitan area, please call 202-366-0123)

Also, if you wish to discuss the investigation with NHTSA staff, the HOTLINE contact representative will have a technical staff member return your telephone call.



U.S. Department  
of Transportation  
**National Highway  
Traffic Safety  
Administration**

# ODI RESUME

INVESTIGATION: EA02-022  
DATE OPENED: *↳* September 2002  
BASIS: PE02-040  
SUBJECT: Engine Stalling  
PRINCIPAL ENGINEER: Nate Seymour

MANUFACTURER: Ford Motor Company  
MODEL: Focus  
MODEL YEARS: 2000-02  
VEHICLE POPULATION: 573,585 (2000-2001 only)

PROBLEM DESCRIPTION: *Vehicle stalls at any speed due to contamination blocking the intake mesh on the Fuel Delivery Module, located in the fuel tank.*

## FAILURE REPORT SUMMARY

	ODI	MFR	TOTAL
COMPLAINTS:	201	3274	3475
CRASHES:	9	11	18*
TNI CRASHES:	1	3	4
# INJURIES:	1	3	4
FAT CRASHES	0	0	0
# FATALS:	0	0	0

\*Duplicate Crashes Eliminated

ACTION: An Engineering Analysis has been opened.

ENGINEER: *Nate Seymour* DIV CHIEF: *Richard Boyd* OFC DIR: *[Signature]*  
DATE: *9/6/02* DATE: *9/6/02* DATE: *9/6/02*

### SUMMARY:

PE02 040 Ford Focus Stalling is being upgraded to an EA. The data analysis conducted during the PE indicates the Focus will stall at all speeds without notice. Current data indicates that the stalling condition is caused by contamination in the plastic fuel tank, which clogs the Fuel Delivery Module (FDM). Present information does not indicate where this contamination is coming from, although the source is believed to be internal to the fuel tank and fuel filler system.

Ford investigated the issue and introduced an interim fix in June 2001 and then a final fix in December 2001. However, reports indicate that neither the interim, nor the final fix solved the problem. The interim fix involves a coarser mesh on the inlet side of the FDM, which allows larger particles to pass through. The final modification was a production change for MY 2002 vehicles involving a different FDM filtering design and fuel tank, which is not interchangeable with earlier models.

ODI continues to receive complaints on 2000 and 2001 Focus vehicles. Additionally, eleven (11) stalling complaints have been received for 2002 Focus. Therefore, MY 2002 will be included in the upgrade.

*2 JAA  
09/12/02*

INVESTIGATION STATISTICS:

ODI currently has 201 VOQs (MY 2000-2002) that specifically relate to stalling. Ford's initial response included 3274 owner complaints. Of these, there are eighteen (18) individual crash reports. Four (4) crashes included minor injuries.

Ford reported a total of 7,595 warranty claims that meet the data base search criteria agreed upon by ODI. After manually sorting all claims, 7,429 were assigned to the eight categories pertaining to stalling. This yields a 1.3% warranty claim rate.

Part sales for the original FDM total 26,831. This entire amount is attributed to the Focus. The part was withdrawn from sales when the interim was made available. Therefore, this correlates to 4.7% of the total 2000-2001 population.

ODI compared stalling complaints on eight peer vehicles to the Focus. All of the peers had significantly fewer (ODI) reports than the Focus.

ODI'S POSITION:

ODI has multiple concerns and therefore has upgraded the preliminary evaluation. Those concerns include, but are not limited to the following:

- a. To date, there are eighteen (18) crashes and four (4) injuries. The life expectancy of the Ford Focus will keep the vehicles on the highway for many years to come, increasing the likelihood of crashes and injuries as stalling events occur in the future.
- b. ODI is receiving complaints on vehicles that have received the interim fix. ODI believes these complaints will increase in the future as the vehicles accumulate mileage.
- c. ODI is receiving complaints on 2002 vehicles, some vehicles of which were produced after the final fix was implemented.



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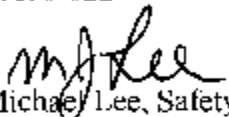
# Memorandum

**National Highway  
Traffic Safety  
Administration**

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Subject: EA00-022

Date: November 6, 2002

From:   
Michael Lee, Safety Defects Engineer  
Office of Defects Investigation

Reply to: NVS-212mjl  
Attn of: EA00-022

To: Public File

On October 24, 2002, General Motors (GM) and Johnson Controls (JC) representatives, and NHTSA staff met to inspect several seat recliner assemblies at the Vehicle Research and Test Center in East Liberty, Ohio, that pertain to the Office of Defects Investigation's Engineering Analysis (EA00-022) of seat back failures in certain model year 1994-95 Saturn S-series vehicles.

The GM representatives were Mike Plotzko and Diane McLean. The JC representatives were William S. Brewer, Kurt Wesphal and Leon Pasternack. The NHTSA staff included Bob Esser and Michael Lee.

Attached is a copy of the VRTC's test data that was requested by and provided to GM and JC.

Also, copies of a videotape of several seat recliner assemblies were made and provided to GM and JC. A copy of the videotape is available for duplication upon request.

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**REQUESTED DATA FOR SATURN SEATBACK RECLINER PROGRAM AT VRTC**

Recliner ID	VIN	Recliner Code	C/C Dim. (mm)	Average Hardness (Rockwell C)		Bench Test-- Max. Moment (in-lb)	In-Vehicle Load Test--Max. Moment (in-lb)
				Sector	Lock		
34DO	1G8ZK5575RZ122800	12403	79.7	44.4	37.8	929	3427
34DI		22493	79.8	43.3	42.1	1674	
49DO	1G8ZH1575RZ195222	232093	80.0	39.8	38.3	841	3931
49DI		232093	80.1	40.1	38.5	1667	
04DO	1G8ZE1591RZ208834	233393	79.7	44.2	41.0	1750	1056
04DI		23343	80.1	43.5	40.1	451	
04PO		13343	80.0	44.0	40.8	316	
04PI		233393	80.0	40.7	37.1	532	
27PO	1G8ZG5596RZ237943	202794	80.0	44.3	40.0	847	1074
27PI		102094	80.2	43.3	39.7	1286	
20DO	1G87H1271SZ206128	231194	79.8	40.9	37.8	Not Tested	3552
20DI		231294	79.7	41.8	39.3	Not Tested	

DO = Driver's Outer  
 DI = Driver's Inner  
 PO = Passenger's Outer  
 PI = Passenger's Inner

Measured Cal. Block Values	C44.1 avg.
Known Cal. Block Value	C43.3 - C44.3

1765

001 1

**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

Mr. James P. Vondale, Director  
Automotive Safety Office  
Environmental And Safety Engineering  
Ford Motor Company  
330 Town Center Drive, Suite 400  
Dearborn, MI 48126-2738

NVS-214ns  
EA02-022

Dear Mr. Vondale:

As you are aware, the National Highway Traffic Safety Administration's (NHTSA) Office of Defects Investigation (ODI) has upgraded its Preliminary Evaluation (PE02-040) concerning alleged stalling on Focus vehicles to an Engineering Analysis (EA02-022). The Engineering Analysis has been expanded to include model year (MY) 2002 vehicles.

With this letter we are requesting additional information. Unless otherwise stated in the text, the following definitions apply to this information request:

- **Subject vehicles:** all 2000-2002 Ford Focus
- **Subject Component:** Fuel Delivery Module (FDM)
- **Ford:** Ford Motor Company, all of its past and present officers and employees, whether assigned to its principal offices or any of its field or other locations, including all of its divisions, subsidiaries (whether or not incorporated) and affiliated enterprises and all of their headquarters, regional, zone and other offices and their employees, and all agents, contractors, consultants, attorneys and law firms and other persons engaged by or under the control of Ford, in or after 1998.
- **Alleged defect:** Any condition involving the subject component, which results in, or could result in, engine stalling or insufficient fuel supply to the engine for the full range of operating conditions.

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- **Sludge:** A reddish/brown paste or goo-like substance which forms in the fuel tank and collects on the FDM filter thereby preventing or limiting fuel flow.
- **Document:** "Document(s)" is used in the broadest sense of the word and shall mean all original written, printed, typed, recorded, or graphic matter whatsoever, however produced or reproduced, of every kind, nature, and description, and all nonidentical copies of both sides thereof, including, but not limited to, papers, letters, memoranda, correspondence, communications, electronic mail (e-mail) messages (existing in hard copy and/or in electronic storage), faxes, mailgrams, telegrams, cables, telex messages, notes, annotations, working papers, drafts, minutes, records, audio and video recordings, data, databases, other information bases, summaries, charts, tables, graphics, other visual displays, photographs, statements, interviews, opinions, reports, newspaper articles, studies, analyses, evaluations, interpretations, contracts, agreements, jottings, agendas, bulletins, notices, announcements, instructions, blueprints, drawings, as-builts, changes, manuals, publications, work schedules, journals, statistical data, desk, portable and computer calendars, appointment books, diaries, travel reports, lists, tabulations, computer printouts, data processing program libraries, data processing inputs and outputs, microfilms, microfiches, statements for services, resolutions, financial statements, governmental records, business records, personnel records, work orders, pleadings, discovery in any form, affidavits, motions, responses to discovery, all transcripts, administrative filings and all mechanical, magnetic, photographic and electronic records or recordings of any kind, including any storage media associated with computers, including, but not limited to, information on hard drives, floppy disks, backup tapes, and zip drives, electronic communications, including but not limited to, the Internet and shall include any drafts or revisions pertaining to any of the foregoing, all other things similar to any of the foregoing, however denominated by you, any other data compilations from which information can be obtained, translated if necessary, into a usable form and any other documents. For purposes of this request, any document, which contains any note, comment, addition, deletion, insertion, annotation, or otherwise comprises a nonidentical copy of another document shall be treated as a separate document subject to production. In all cases where original and any non-identical copies are not available, "document(s)" also means any identical copies of the original and all non-identical copies thereof. Any document, record, graph, chart, film or photograph originally produced in color must be provided in color. Furnish all documents whether verified by the manufacturer or not. If a document is not in the English language, provide both the original document and an English translation of the document.

In order for my staff to evaluate the alleged defect, certain information is required. Pursuant to 49 U.S.C. § 30166, please provide numbered responses to the following questions. The submitted information is to include all documents responsive to each question that appears below. Please repeat the applicable question verbatim above each of your responses. For each response, identify the source of the information and indicate the last date the information was gathered. Insofar as Ford has previously provided a document to ODI, Ford may produce it again or identify the document submission to ODI in which it was included and the precise location in that submission where the document is located. Previously submitted complaints and field reports do not need to be provided. When documents are produced, the documents shall be produced in an identified, organized manner

that corresponds with the Information Request letter (including the subparts). When documents are produced and the documents would not, standing alone, be self-explanatory, the production of documents shall be supplemented and accompanied by explanation.

If Ford cannot respond to any specific item, please state the reason why it is unable to do so. If Ford claims that any information or material responsive to any of the following items need not be divulged to the NHTSA because it is privileged or the work product of an attorney, state the nature of that information or material and identify any document in which it is found by date, subject or title, name and position of the person from, and the person to, whom it was sent, and the name and position of any other recipient. You must also describe the basis for the claim, and explain why you believe it applies.

1. By calendar month, state the total number of MY 2002 Focus vehicles sold in the United States.
2. By subject vehicle and model year, state the number and provide copies of all the following, from all sources, of which Ford is aware and which relate, or could relate to the alleged defect in the subject vehicles.
  - a. owner/fleet complaints;
  - b. field reports;
  - c. crash/incident claims;
  - d. subrogation claims;
  - e. lawsuits; and
  - f. third-party arbitration proceedings (where Ford is a party to the arbitration)

For each alphabetical category listed above, please state how many of the claims, complaints and/or lawsuits or arbitration proceedings included in your total figure concerned subject vehicles equipped with, at the time the claim, complaint and/or lawsuit or arbitration was initiated, the: (a) original or first FDM installed on the subject vehicles ("original FDM"); (b) the interim FDM installed on the subject vehicles on or around June, 2001 ("interim FDM"); and (c) the final (or current) FDM installed on the subject vehicles beginning on or around December, 2001 ("final FDM").

3. State the number of warranty claims, including extended warranty claims, and requests for "good will," field, or zone adjustments received by Ford from start of subject vehicle production to present that relate to the alleged defect in the subject vehicles, by model, model year, calendar month, and problem claim code, if any. Each problem claim code must be identified. Please then state how many of the warranty claims, requests for "good will," and/or adjustments you included in your total figure for each subject vehicle model year, concerned subject vehicles equipped with, at the time the claim, request and/or adjustment was initiated, the: (a) original FDM; (b) the interim FDM; and (c) the final FDM.

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4. Is it Ford's opinion that SAE J726 Fine Dust provides an adequate representation of the sludge found in the subject vehicle's fuel tank? Please explain the reason(s) for your opinion.
5. Provide copies of any durability testing conducted by, or on behalf of Ford, the fuel tank supplier or manufactures and/or the FDM supplier or manufacturer that relate, or could in anyway be construed as relating, to the durability of the tank and/or the FDM in the subject vehicles.
6. State the original projected life expectancy for the original, interim and final FDM installed in the subject vehicles and identify who (e.g., Ford, FDM manufacture, etc) made those projections.
7. Identify the manufacturer(s) and supplier(s) of the fuel tank and FDM used in the subject vehicles for each model year.
8. Provide copies of all communications and all documents exchanged between Ford and the fuel tank and/or FDM manufacturers that relate, or in anyway could be construed as relating, to the alleged defect in the subject vehicles.
9. Provide copies of any and all testes, studies, simulations, evaluations, assessments, analyses, investigations, inquiries, surveys or other similar actions conducted by or on behalf of Ford and/or of which Ford is aware, that relate, or in anyway could be construed as relating, to the alleged defect in the subject vehicles.
10. Provide copies of any and all tests, studies, simulations, evaluations, assessments, analyses, investigations, inquiries, surveys or other similar actions conducted by or on behalf of Ford and/or of which Ford is aware, that relate, or in anyway could be construed as relating, to the sludge and/or any other contamination discovered in the fuel tanks and/or FDMs, of the subject vehicles. This request includes a request for copies of any report, study or survey, which discusses the cause, or potential cause, of the sludge and/or contamination.
11. Identify the specific vehicle fuel system components that contain or contribute to the sludge and/or contamination found in the subject vehicles' fuel tanks and/or FDMs. Please also identify all elements found in the sludge and/or contamination and identify all fuel system components that Ford believes contribute, or could contribute to those elements and the reason(s) why.
12. Provide a concise description of the sludge. The description should include but not be limited to element and compound composition, viscosity, specific weight, and particle size.
13. Concisely state Ford's opinion where the sludge is coming from and the reasons for that opinion.
14. State whether the FDM (original, interim or final version) installed on the subject vehicles is used in any other Ford vehicle. If so, provide a list of all the vehicles, by model and model year that use the FDM.

15. By type of FDM (original, interim, final) state the number of FDMs that have been sold by Ford to date.
16. By type of FDM (original, interim, final) state that FDM's component name, service part number, supplier (name and address) and state the date the FDM became available to dealers.
17. Was the original FDM purged from production, dealer, or supplier inventory? If so, state the date(s) that purge(s) was completed.
18. State whether the final (or current production) FDM will function properly if installed in the MY 2000 – 2002 subject vehicles.
19. State whether the final (or current production) fuel tank will function properly if installed in the MY 2000- 2002 subject vehicles.
20. For model years 2000 to present, provide a list of all other Ford vehicles using a plastic or other non-steel fuel tank.
21. For each Ford vehicle you identified in response to Question 20, please provide the information requested in Questions 2 and 3.
22. For each Ford vehicle you identified in response to Question 20, please state whether sludge or a similar contamination you identified as existing in the Ford Focus has been observed in that vehicle.
23. Please explain why a 65micron disk filter was used in the original FDM (98AP-9H307-EA) and why a 95micron filter was used in the interim FDM (1M5U-9H307-AA), and provide copies of any documents, including any test, study, simulation, evaluation, assessment, analysis, investigation, inquiry, survey or other similar action, that in anyway explain or demonstrate why those choices were made.
24. State what the filtering capabilities of the inline fuel filter are in the subject vehicles.
25. Provide copies of any and all documents pertaining to the changes made in the fuel tank and FDM used in the 2002 model year Ford Focus built after December 5, 2001. Please include, material composition specifications, dimensions, and manufacturing and assembly procedures.
26. Provide copies of any and all tests, studies, simulations, evaluations, assessments, analyses, investigations, inquiries, surveys or other similar actions conducted by or on behalf of Ford and/or of which Ford is aware, that relate, or in anyway could be construed as relating, to the loss of power steering in the subject vehicle. This request includes a request for any testing which documents, investigates, analyzes and/or discusses any increase in steering force necessary to be applied to overcome the loss of power steering.

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27. Provide copies of any and all test, study, simulation, evaluation, assessment, analysis, investigation, inquiry, survey or other similar action conducted by or on behalf of Ford and/or of which Ford is aware, that relate, or in anyway could be construed as relating, to the effect an engine stall has on the subjects vehicle's power braking system. This request includes a request for any testing which documents, investigates, analyzes and/or discusses the additional brake pedal force necessary to be applied when, and if the brake booster becomes exhausted.
28. Please provide samples and a complete, detailed description of the three FDM's used in the subject vehicles. This description should include, but not be limited to: physical dimensions, filter dimensions and specifications, material composition, and adhesives and other fastening methods used to assemble the FDM.
29. State the date Ford ceased collecting information for use in responding to this Information Request. If there is more than one date for each information request listed here provide the date Ford ceased collecting information responsive to that request.

This letter is being sent to your company pursuant to 49 U.S.C. § 30166, which authorizes NHTSA to conduct any investigation that may be necessary to enforce Chapter 301 of Title 49. Your failure to respond promptly and fully to this letter could subject Ford to civil penalties pursuant to 49 U.S.C. § 30165 or lead to an action for injunctive relief pursuant to 49 U.S.C. § 30163.

Your response to this letter, in duplicate, must be submitted to this office by **November 26, 2002**. Please include in your response the identification codes referenced on page one of this letter. If you find that you are unable to provide all of the information requested within the time allotted, you must request an extension from Mr. Richard Boyc at (202) 366 4933 no later than five business days before the response due date. If you are unable to provide all of the information requested by the original deadline, you must submit a partial response by the original deadline with whatever information you then have available, even if you have received an extension.

If you consider any portion of your response to be confidential information, 49 CFR Part 512, "Confidential Business Information," requires that you submit two copies of those document(s) containing allegedly confidential information (except only one copy of blueprints) and one copy of the documents from which information claimed to be confidential has been deleted, to the Office of Chief Counsel, National Highway Traffic Safety Administration, Room 5219, 400 Seventh Street, SW, Washington, D.C. 20590. In addition, Ford must provide supporting information for the request for confidential treatment in accordance with part 512.4(b) and (c) and include the name, address, and telephone number of a representative to receive a response from the Chief Counsel.

If you have any technical questions concerning this matter, please call Nate Seymour of my staff at (202) 366-6965.

Sincerely,

**Original Signed By**

Kathleen C. Demeter, Director  
Office of Defects Investigation  
Enforcement



**From:** Richard Boyd  
**To:** [REDACTED]  
**Date:** 11/26/02 2:44PM  
**Subject:** Re: EA02-022

Ray - this confirms and approves your request for an extension to ODI's information request from November 26, 2002 to December 6, 2002 on the Ford Focus investigation (EA02-022.)

>>> [REDACTED] 11/26/02 02:11PM >>>  
Dick,

This is to confirm my telephone discussion on November 26, 2002 with Nate Seymour in which I requested an extension of time to respond to the subject inquiry. We have gathered and the information necessary to respond and have completed a preliminary analysis. We have now asked the engineering activity to undertake a review of a substantial portion of the materials to assure a complete and accurate analysis is presented to the agency. The review and analysis will be complete and we will submit our response on December 6, 2002. Thank you for your consideration.

Ray

R. A. Nevi  
Manager  
Production Vehicle Safety and Compliance  
Automotive Safety Office  
Phone [REDACTED] Fax [REDACTED]  
email [REDACTED]

**CC:** Seymour, Nate