

**PE08029/HYUNDAI-KIA
EF 1999 CROSSMEMBER
UPDATE 01**

Analysis:

- Purpose of this QIR is to provide updated information regarding the crossmember corrosion condition.

- Front suspension crossmember assembly corrosion condition was previously reported on 07/19/05 QIR (QA EF-C-050701 "[B] FRONT SUSPENSION CROSSMEMBER ASSEMBLY CORROSION / RUST PERFORATION DURABILITY ISSUE". HMC's countermeasure response attached below.

Quality Improvement Status - Microsoft Internet Explorer			
Quality Improvement Status			
Close Print			
To	HMA		
Attn	HMA Service Staff		
CC	Randy Craley	Date	2005-07-26
From	NAMSEUNGHWAN/Hyundai Motor Company	QIR Issue Date	2005-07-26
Subject	(QA EF-C-050701) [B] FRONT SUSPENSION CROSSMEMBER ASSEMBLY CORROSION / RUST PERFORATION DURABILITY ISSUE		
Report No.	B28AA2005072603	Model	Sonata(EF)
Status	Improved	TSB No.	
Attachment			
Improvement Status			
Condition	Perforation of front cross member		
Cause	Insufficient paint thickness		
Countermeasure	Added 4 holes to increase thickness of paint inside of cross member, 2 on upper area and 2 on lower area.		
Effective Date	2003-11-20	Vehicle ID Number	

- Inspection of the Crossmember Assembly P/N (62405-38100) revealed the right rear section had corrosion perforation.

- Corroded section of the Crossmember Assembly appears to be below the air conditioning evaporator drain hose.

- Corrosion of the crossmember assembly is more evident at the right rear section of the crossmember assembly which may possibly be related to the air conditioning evaporator water dripping unto it.

- However additional incident vehicles have corrosion to the left rear section of the crossmember and or both left and right rear sections.

- Corrosion condition is not limited to the right rear section of the crossmember assembly as originally reported.

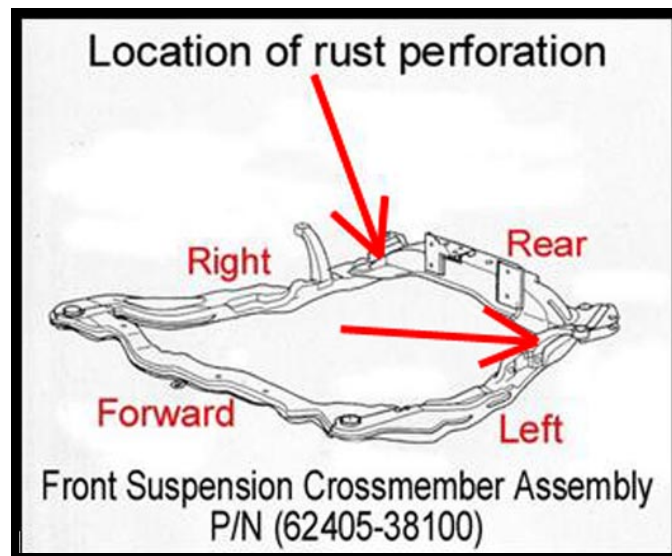
- Crossmember corrosion condition may result in the following customer and or servicing dealer complaints.

1). Vehicle will not pass State Inspection.

2). Technicians complain that when they are removing the lower control arm assembly to perform a ball joint replacement procedure the forward mount attaching bolts are seized to the fixed nut welded inside the crossmember assembly. When removing the 17mm attaching bolts the fixed nut inside the crossmember assembly separates from the assembly and spin freely.

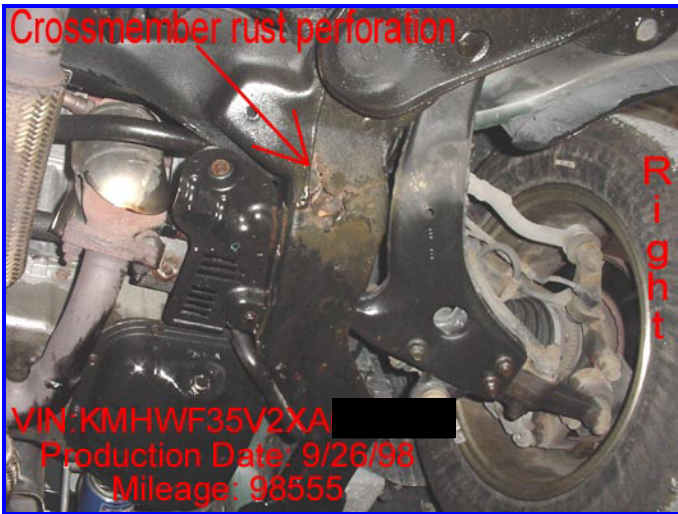
- Central and Eastern regions of the USA represent 90% of the repairs. This is the "snow belt" area which have highly corrosive environments from salt and chloride materials used for snow removal.

- See attached photographs and illustration.



- Attached photographs below of incident vehicle (KMHWF35V2XA [REDACTED]) is registered and licensed in the state of Delaware. Customer is the original owner. Crossmember is corroded at the right rear location.

- Complete inspection of the vehicle did not reveal any signs of having been involved in an accident.



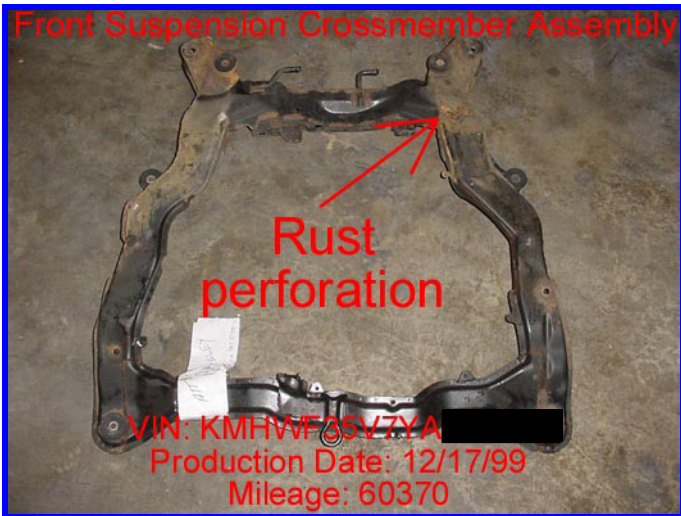
- Additional incident vehicle (VIN: KMHWF35V6YA [redacted]) below, showing corrosion to the right rear section of the crossmember assembly.



KMHWF35V6YA [redacted]



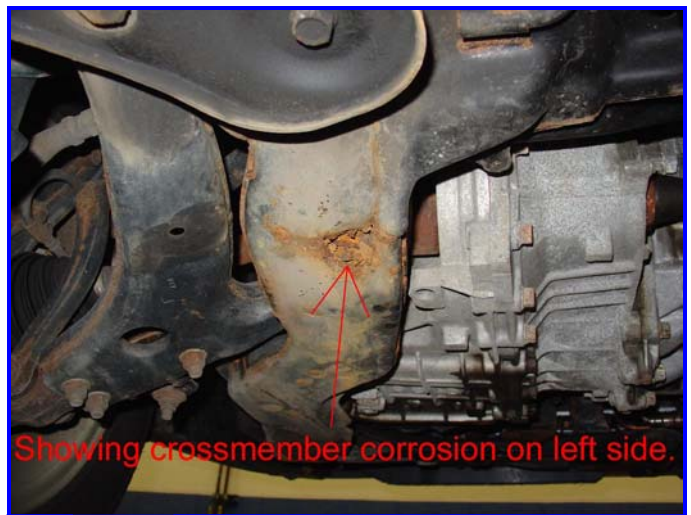
- Additional incident vehicle (VIN: KMHWF35V7YA [redacted]) below shows corrosion location on crossmember assembly.



KMHWF35V7YA237911

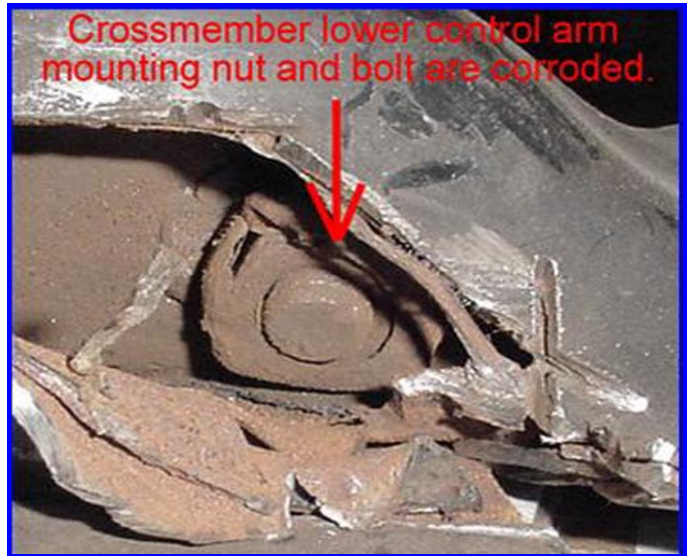


- Additional incident vehicle (VIN: KMHWF35V3XA [REDACTED]) below shows crossmember corrosion on the left rear section.



KMHWF35V3XA [REDACTED]

- Additional incident vehicle (VIN: KMHWF35V0XA [REDACTED]) below shows Crossmember Assembly Lower Control Arm forward mount attaching bolt seized to the fixed weld nut.

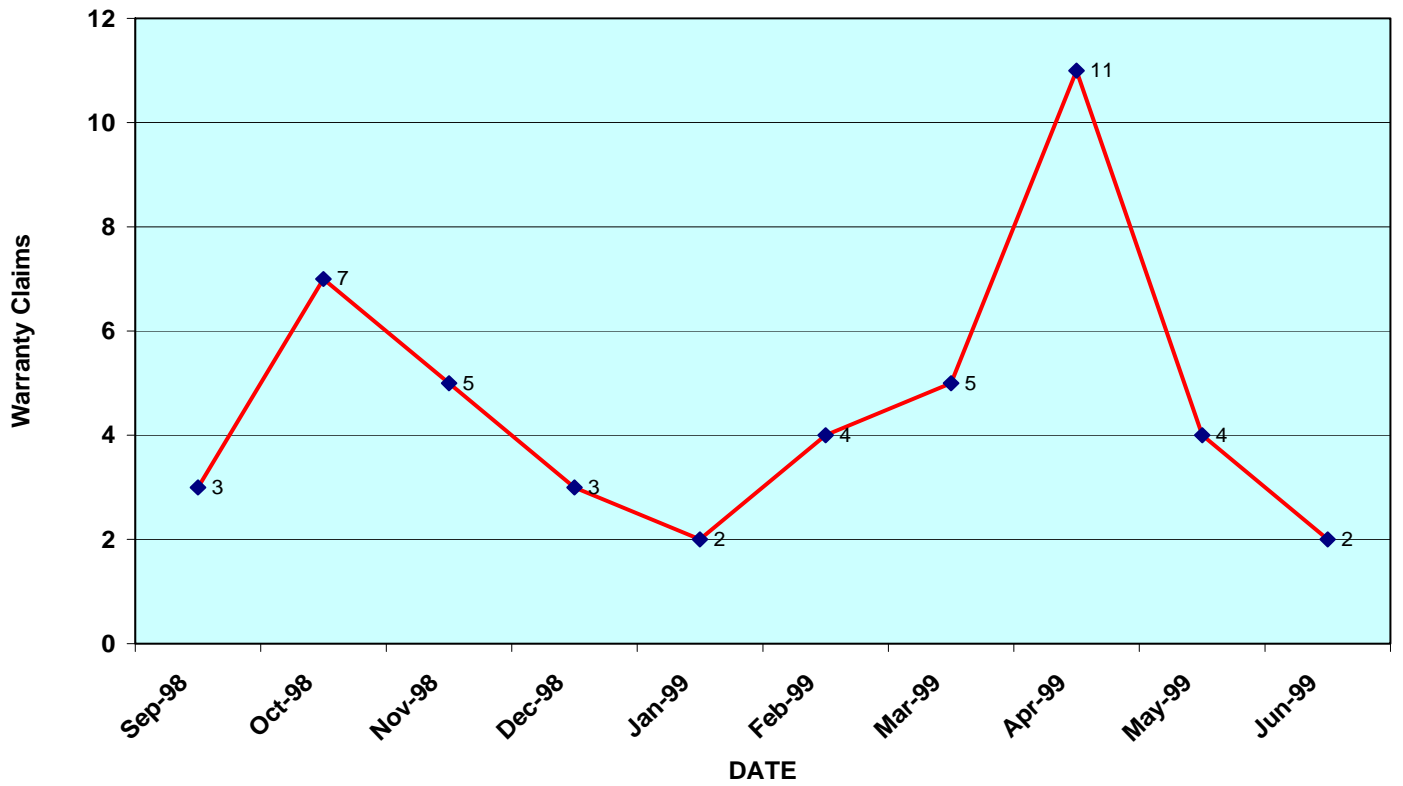


ADDITIONAL VEHICLES WITH SIMILAR CONDITION				
No.	VIN	Production Date	Mileage	Condition
1	KMHWF35V2XA [REDACTED]	9/26/98	98555	Crossmember corrosion, right side.
2	KMHWF35V7YA [REDACTED]	12/17/99	60370	Crossmember corrosion, right side.
3	KMHWF35V6YA [REDACTED]	9/06/99	60364	Crossmember corrosion, right side.
4	KMHWF35V9XA [REDACTED]	4/30/99	53053	Crossmember corrosion, right side.
5	KMHWF35V1YA [REDACTED]	8/24/99	58298	Crossmember corrosion, right side.
6	KMHWF25V5XA [REDACTED]	2/24/99	94982	Crossmember corrosion, right side.
7	KMHWF35V3XA [REDACTED]	3/03/99	53492	Crossmember corrosion, left side.
8	KMHWF35V5XA [REDACTED]	10/12/98	64332	Crossmember corrosion, right side.
9	KMHWF35V1XA [REDACTED]	4/24/99	59699	Crossmember corrosion, right side.
10	KMHWF35VXXA [REDACTED]	10/20/98	109000	Crossmember corrosion, both sides.
11	KMHWF35V1XA [REDACTED]	3/13/99	76350	Crossmember corrosion, both sides.
12	KMHWF35V2XA [REDACTED]	6/02/99	74507	Crossmember corrosion, right side.
13	KMHWF25S1XA [REDACTED]	11/02/98	66145	Crossmember corrosion, right side.
14	KMHWF35V5XA [REDACTED]	10/13/98	106000	Crossmember corrosion, right side.
15	KMHWF35V0XA [REDACTED]	4/21/99	79075	Lower Arm attaching bolt seized to crossmember fixed weld nut.

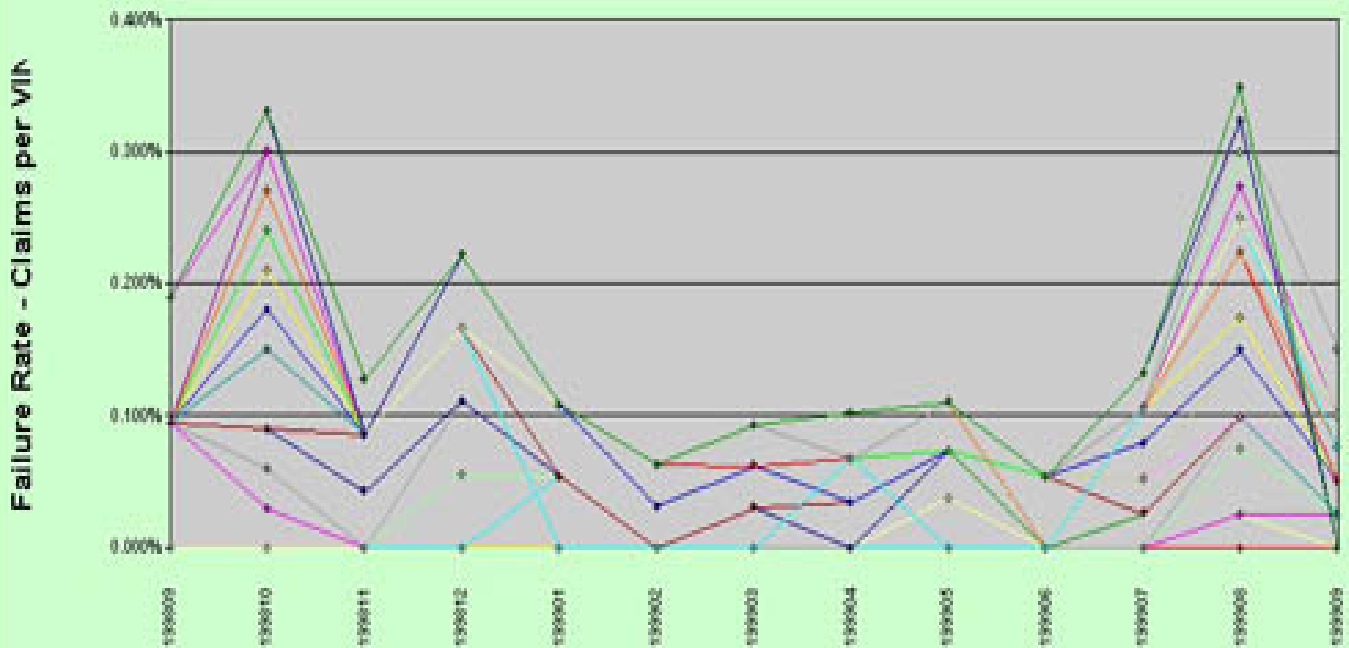
- Current warranty / goodwill data may not accurately quantify condition.

WARRANTY / GOODWILL CLAIM DATA ANALYSIS	
Labor Operation (62410R00) 1999 EF Sonata	
Total Number of Claims	46
With Parts	46
Total Cost	\$ 69,355
Average Cost Per Claim	\$ 1,508
Nature Codes:	%
N29 (Abnormal Noise)	46
N56 (Rust, Corrosion)	11
Cause Codes:	%
C06 (Broken, Split, Torn)	20
C05 (Rusty, Corroded)	41
Mileage Range:	%
0 – 25	0
26 – 6,000	0
6,001 – 12,000	0
12,001 – 18,000	0
18,001 – 24,000	4
24,001 – 30,000	9
30,001 – 36,000	0
36,001 – 48,000	11
48,000 – Over	76
In Service:	%
0 – (PDS)	0
1 – 90	0
91 – 180	0
181 – 270	0
271 – 365	0
366 – 730	0
731 – 1,096	0
1,097 – Over	100

PRODUCTION DATE ANALYSIS



Op Code Waterfall Chart
Production Range - First 12 Months



- Warranty coverage for the Crossmember assembly is 5 years and / or 60,000 miles.
- Crossmember Assembly Part Number Identification by vehicle production date:
 - 62405-38100 for vehicle produced from 9/14/98 - 4/14/99.
 - 62405-38101 for vehicle produced from 4/14/99 - 8/14/00.

Corrective Action:

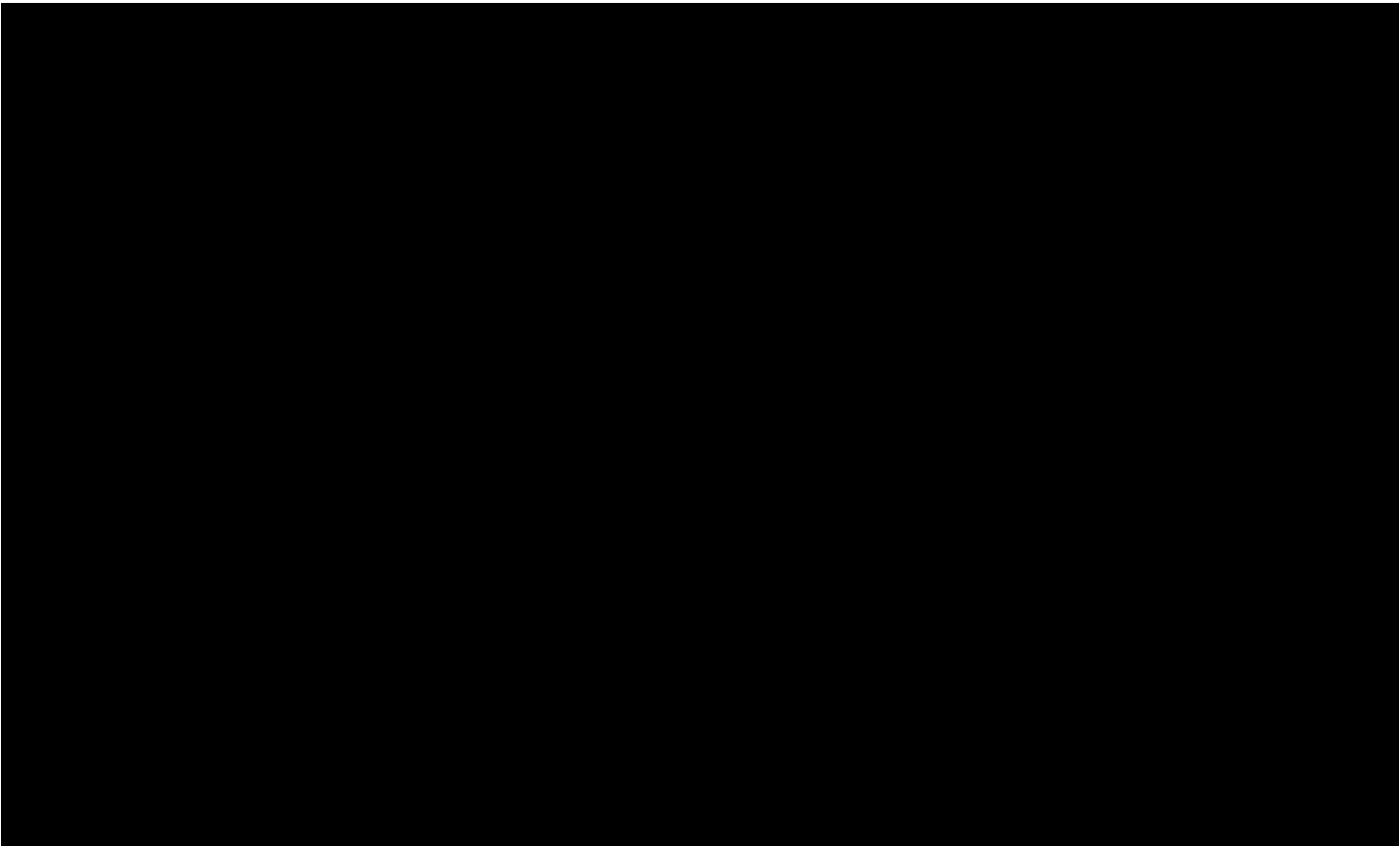
- Replace the Crossmember Assembly P/N (62405-38100)
- Repair cost \$ 1,116.61

Recommendation:

- HMC should investigate the Crossmember corrosion condition and take necessary corrective action.
- HMC countermeasure of increasing the paint thickness inside the crossmember assembly on 11/20/03 production vehicles may not be an effective solution for those vehicles produced after that date.
- Additionally HMA requests HMC to provide an effective countermeasure for vehicles produced prior to the countermeasure date.
- Customers who experience this condition may perceive an image of poor quality, long term durability and technician serviceability.

Attachments:

PE08029/HYUNDAI-KIA
QAEF-C-061202



- Customer ask dealer to inspect the “rusted” crossmember assembly.

Analysis:

Date: 12/14/2006

Report Number :

- Purpose of this QIR is to provide updated information regarding the crossmember corrosion condition.

- Front suspension crossmember assembly corrosion condition was previously reported on 07/19/05 QIR (QA EF-C-050701 "[B] FRONT SUSPENSION CROSSMEMBER ASSEMBLY CORROSION / RUST PERFORATION DURABILITY ISSUE". HMC's countermeasure response attached below.

» Quality Improvement Status

To	HMA		
Attn	HMA Service Staff		
CC	Randy Craley	Date	
From	NAMSEUNGHWAN/Hyundai Motor Company	QIR Issue Date	
Subject	(QA EF-C-050701) [B] FRONT SUSPENSION CROSSMEMBER ASSEMBLY PERFORATION DURABILITY ISSUE		
Report No.	B28AA2005072603	Model	Sonata(EF)
Status	Improved	TSB No.	
Attachment			

► Improvement Status

Condition	Perforation of front cross member		
Cause	Insufficient paint thickness		
Countermeasure	Added 4 holes to increase thickness of paint inside of cross member on lower area.		
Effective Date	2003-11-20	Vehicle ID	

- Inspection of the Crossmember Assembly P/N (62405-38100) revealed the right rear section had corrosion perforation.

- Corroded section of the Crossmember Assembly appears to be below the air conditioning

evaporator drain hose.

- Corrosion of the crossmember assembly is more evident at the right rear section of the crossmember assembly which may possibly be related to the air conditioning evaporator water dripping unto it.

- However additional incident vehicles have corrosion to the left rear section of the crossmember and or both left and right rear sections.

- Corrosion condition is not limited to the right rear section of the crossmember assembly as originally reported.

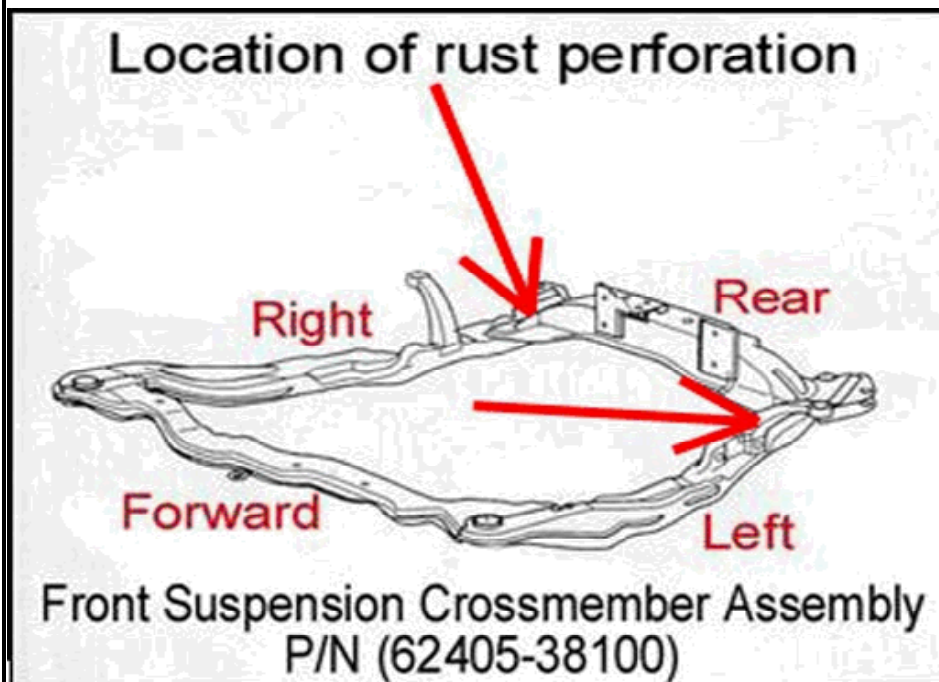
- Crossmember corrosion condition may result in the following customer and or servicing dealer complaints.

1). Vehicle will not pass State Inspection.

2). Technicians complain that when they are removing the lower control arm assembly to perform a ball joint replacement procedure the forward mount attaching bolts are seized to the fixed nut welded inside the crossmember assembly. When removing the 17mm attaching bolts the fixed nut inside the crossmember assembly separates from the assembly and spin freely.

- Central and Eastern regions of the USA represent 90% of the repairs. This is the "snow belt" area which have highly corrosive environments from salt and chloride materials used for snow removal.

- See attached photographs and illustration.



- Attached photographs below of incident vehicle (KMHWF35V2XA [REDACTED]) is registered and licensed in the state of Delaware. Customer is the original owner. Crossmember is corroded at the right rear location.

- Complete inspection of the vehicle did not reveal any signs of having been involved in an accident.



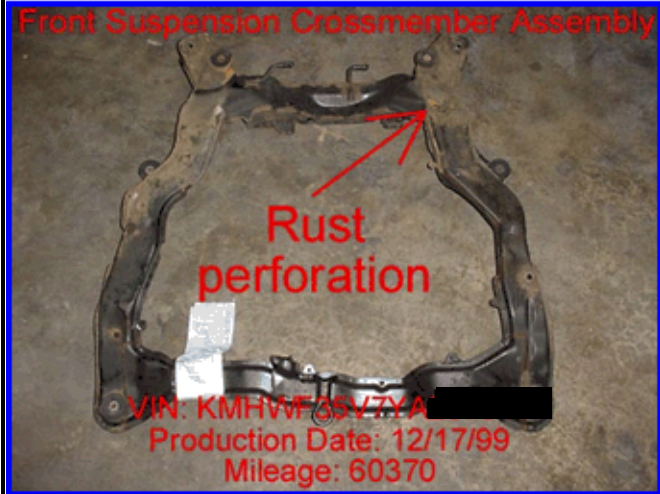
- Additional incident vehicle (VIN: KMHWF35V6YA [REDACTED]) below, showing corrosion to the right rear section of the crossmember assembly.



KMHWF35V6YA



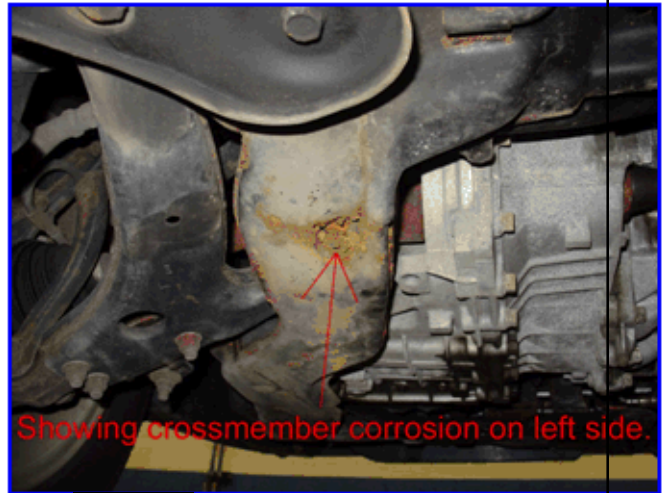
- Additional incident vehicle (VIN: KMHWF35V7YA) below shows corrosion location on crossmember assembly.



KMHWF35V7YA237911



- Additional incident vehicle (VIN: KMHWF35V3XA [REDACTED]) below shows crossmember corrosion on the left rear section.



KMHWF35V3XA

- Additional incident vehicle (VIN: KMHWF35V0XA) below shows Crossmember Assembly Lower Control Arm forward mount attaching bolt seized to the fixed weld nut.



- Current warranty / goodwill data may not accurately quantify condition.

WARRANTY / GOODWILL CLAIM DATA ANALYSIS

Labor Operation (62410R00)
1999 EF Sonata

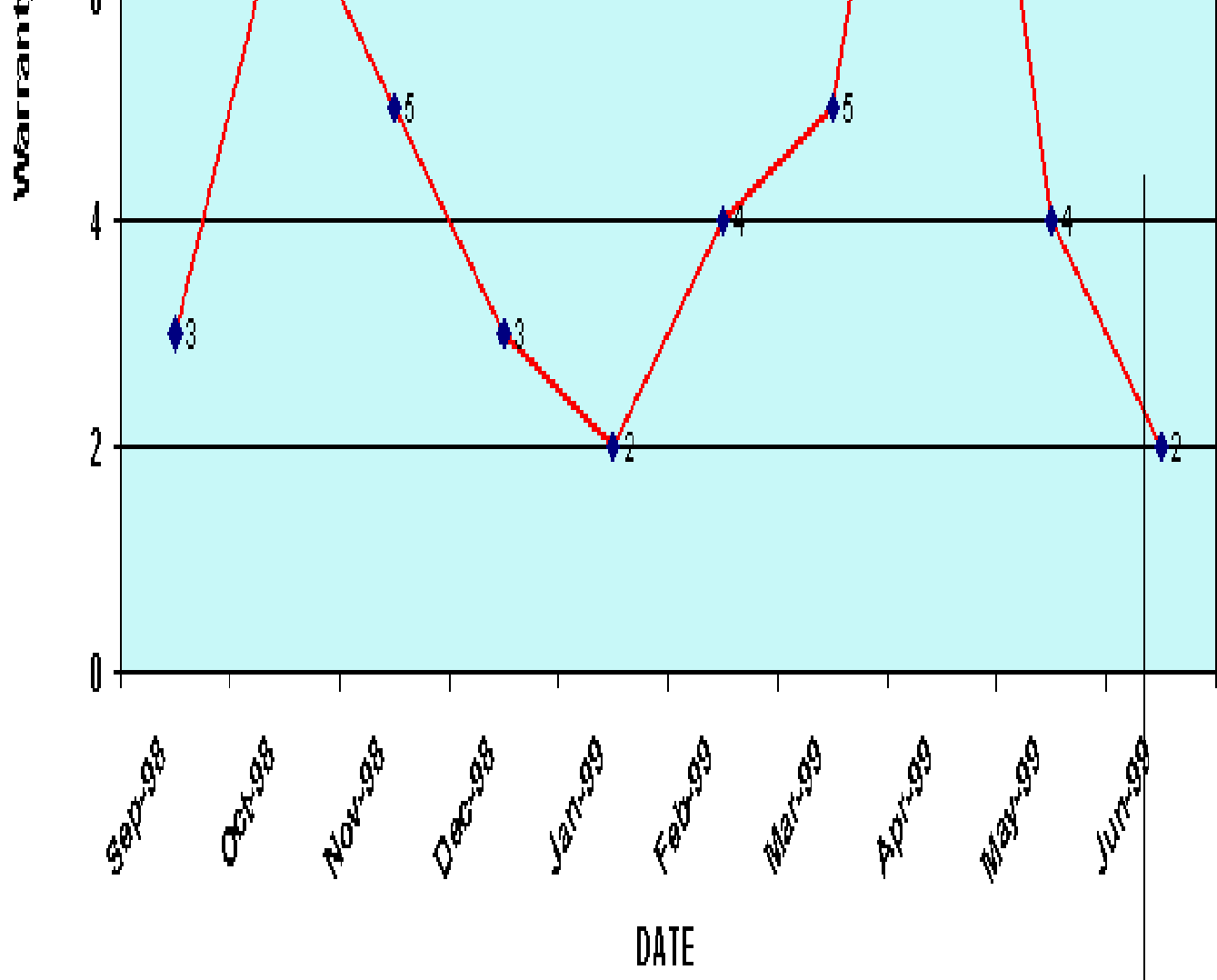
Total Number of Claims	46
With Parts	46
Total Cost	\$ 69,355
Average Cost Per Claim	\$ 1,508
Nature Codes:	%
N29 (Abnormal Noise)	46
N56 (Rust, Corrosion)	11
Cause Codes:	%
C06 (Broken, Split, Torn)	20
C05 (Rusty, Corroded)	41
Mileage Range:	%
0 – 25	0
26 – 6,000	0
6,001 – 12,000	0
12,001 – 18,000	0
18,001 – 24,000	4
24,001 – 30,000	9
30,001 – 36,000	0
36,001 – 48,000	11
48,000 – Over	76
In Service:	%
0 – (PDS)	0
1 – 90	0
91 – 180	0
181 – 270	0
271 – 365	0
366 – 730	0
731 – 1,096	0
1,097 – Over	100

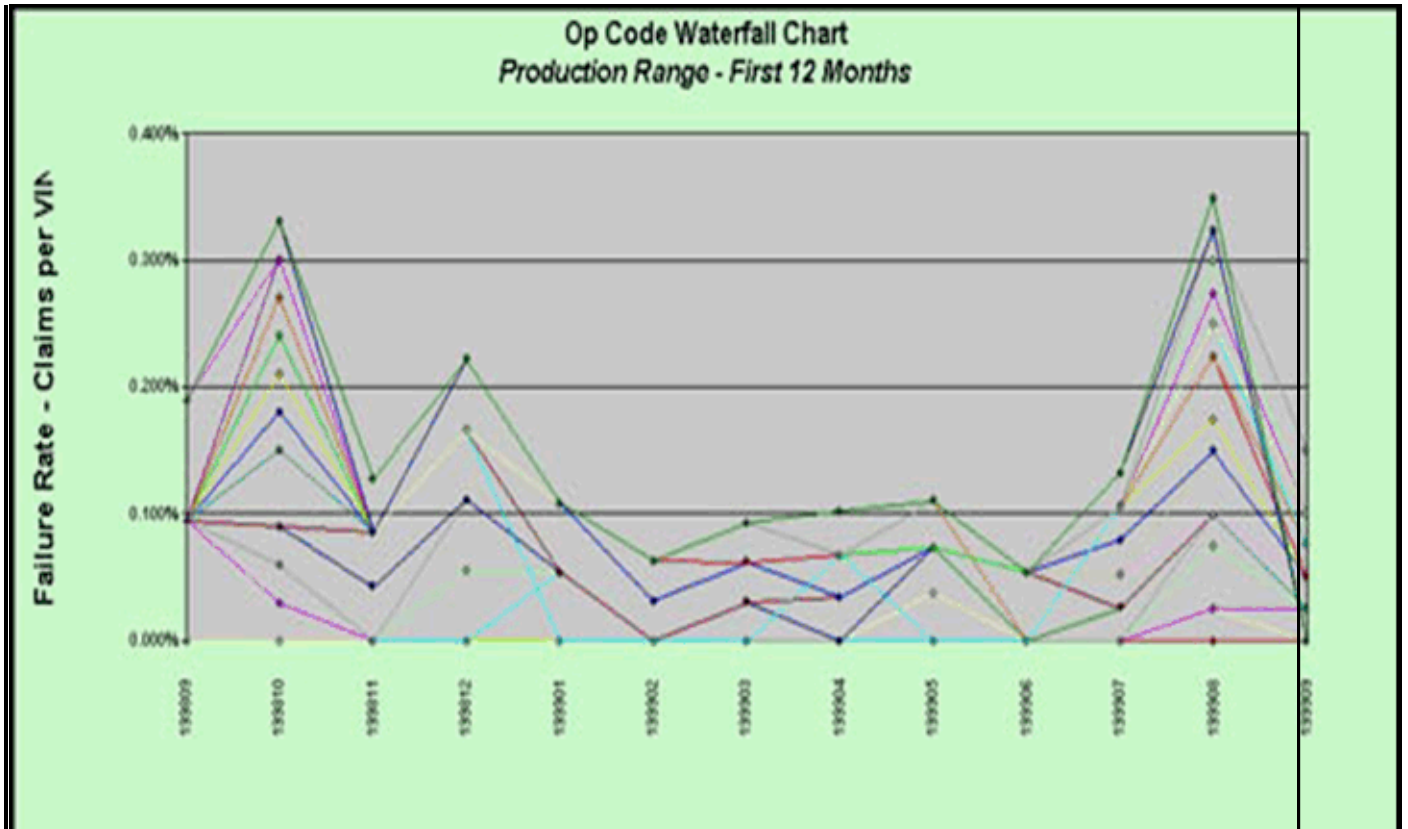
- Warranty coverage for the Crossmember assembly is 5 years and / or 60,000 miles.

- Crossmember Assembly Part Number Identification by vehicle production date:

62405-38100 for vehicle produced from 9/14/98 - 4/14/99.

62405-38101 for vehicle produced from 4/14/99 - 8/14/00.





Corrective Action:

Date: 12/14/2006

Report Number :

- Replace the Crossmember Assembly P/N (62405-38100)
- Repair cost \$ 1,116.61

Comments and Recommendations:

Date: 12/14/2006











Report Number :

- HMC should investigate the Crossmember corrosion condition and take necessary corrective action.
- HMC countermeasure of increasing the paint thickness inside the crossmember assembly on 11/20/03 production vehicles may not be an effective solution for those vehicles produced after that date.
- Additionally HMA requests HMC to provide an effective countermeasure for vehicles produced prior to the countermeasure date.
- Customers who experience this condition may perceive an image of poor quality, long term durability and technician serviceability.

Attachments:

Date: 12/14/2006

Report Number :

-  EF 1999 CROSSMEMBER CORROSION UPDATE 01.doc
-  EF 1999 Crossmember Corrosion HMC CM 05.jpg
-  1999 EF Crossmember.xls
-  EF 1999 Crossmember Corrosion HMC CM 06.jpg
-  EF 1999 Crossmember Corrosion HMC CM 01.jpg
-  EF 1999 Crossmember Corrosion HMC CM 03.jpg
-  EF 1999 Crossmember Corrosion HMC CM 02.jpg
-  EF 1999 Crossmember Corrosion HMC CM 04.jpg
-  EF 1999 Crossmember weld nut 01.jpg
-  EF 1999 Crossmember weld nut 02.jpg