## Design FMEA (QS9000)

<table>
<thead>
<tr>
<th>FMEA Reg. No: FM001234</th>
<th>Part No: 01.03/Body Closures</th>
<th>Model Year(s)/Vehicle(s): 199x/Lion 4dr/Wagon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function: Application of wax</td>
<td>Drawing No: RE_654711_Rev4</td>
<td>FMEA Status: OK</td>
</tr>
<tr>
<td>Key Date: 3/1/2001</td>
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</tbody>
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**Design FMEA (QS9000)**

FM001234   01.03/Body Closures   199x/Lion 4dr/Wagon

(1) Front Door   Subsystem - 01.30/Body Closures
FMEA Reg. No: FM001234  
Part No: 01.03/Body Closures  
Model Year(s)/Vehicle(s): 199x/Lion 4dr/Wagon

Function: Application of wax  
Drawing No: RE_654711_Rev4  
FMEA Status: OK

Customer: Intern  
Created by: Body Engineering  
Created: 11/13/2000

CoreTeam: T-Fender-Car Product Dev., Childers-Manu, J. Ford- Assy Ops  
Rev. No./Sign: Rev2 / A. Tate - X6412- Body Engr  
Rev. Date: 12/9/2000

Key Date: 3/1/2001

Criteria for estimation

<table>
<thead>
<tr>
<th>RPN</th>
<th>S</th>
<th>P0</th>
<th>Pd</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10</td>
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</table>

Severity (S)

1. None, No effect on product
2. Very Minor, Fit n’ Finish / Squeak n’ Rattle items does not conform.
3. Minor, Fit n’ Finish / Squeak n’ Rattle items does not conform.
4. Very Low, Fit n’ Finish / Squeak n’ Rattle items does not conform.
5. Low, but Comfort/Convenience item(s) operable at reduced level.
6. Moderate, Vehicle/item operable, but Comfort item(s) inoperable.
7. High, Vehicle/item operable, but at reduced level of performance
8. Very High, Vehicle/item inoperable, with loss of primary function.
9. Hazardous-with warning, failure mode affects safe vehicle operation
10. Hazardous-without warning, risk for human injuries

Occurrence (Po)

1. Remote: Failure is unlikely, < 1:1,500,000
2. Low: Relatively few failures, 1:150,000
3. Low: Relatively few failures, 1:15,000
4. Moderate: Occasional failures, 1:2,000
5. Moderate: Occasional failures, 1:400
6. Moderate: Occasional failures, 1:80
7. High: Repeated failures, 1:20
8. High: Repeated failures, 1:8
9. Very high: Failure is almost inevitable, 1:3
10. Very high: Failure is almost inevitable, > 1:2

Detection (Pd)

1. Almost Certain that the Design Control will detect cause/failure.
2. Very High chance the Design Control will detect cause/failure.
3. High chance the Design Control will detect cause/failure.
4. Moderately High chance the Design Control will detect cause/failure.
5. Moderate chance the Design Control will detect cause/failure.
6. Low chance the Design Control will detect cause/failure.
7. Very Low chance the Design Control will detect cause/failure.
8. Remote chance the Design Control will detect cause/failure.
10. Absolutely Uncertainty, Design Control won’t detect cause/failure.

Classification

CC Critical Characteristic, Safety or Government Regulations (Ford)
D Diamond, Require SPC (Chrysler)
FF Fit/Function, Affect Customer Satisfaction (GM)
SC Safety/Compliance, Safety or Government Regulations (GM)
Si Significant Characteristic, Affect Customer Satisfaction (Ford)
P Pentagon, Verification is Mandatory, Critical Characteristics (Chrysler)
CP Critical Parameter
RP Risk for human injuries
S Shield, Safety Character, (Chrysler)
### Part: 01.03/Body Closures
### Model Year(s)/Vehicle(s): 199x/Lion 4dr/Wagon

#### Design FMEA (QS9000)

<table>
<thead>
<tr>
<th>Item / Function</th>
<th>Failure mode</th>
<th>Effect(s) of failure</th>
<th>S</th>
<th>Cl</th>
<th>Cause(s) of failure</th>
<th>Po</th>
<th>Current Control</th>
<th>Pd</th>
<th>RPN</th>
<th>Recom. Actions</th>
<th>Responsible &amp; Completion</th>
<th>Action(s) taken &amp; Completed</th>
<th>Key Date</th>
</tr>
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</table>
| **Front Door** | Subsystem - 01.30/Body Closures | Corroded interior lower door panels | Deteriorated life of door leading to:  
- Ingress to and egress from vehicle  
- Occupant protection from weather, noise and side impact  
- Support anchorage for door hardware including mirror, hinges latch and window regulator  
- Provide proper surface for appearance items  
- Paint and soft trim | 7 | FF Si | Upper edge of protective wax application specified for inner door panels is too low  
Insufficient wax thickness specified | 6 | Vehicle general durability test vah. T-118, T-109, T-301 | 7 | 294 | Add laboratory accelerated corrosion testing | A Tate-Body Engrg 11/14/2000 | Based on test results (Test No. 1481) upper edge spec raised 125mm 11/11/2000  
Test results (Test No. 1481) show specified thickness is adequate. DOE shows 25% variation in specified thickness is acceptable 11/30/2000 | 7 2 2 28 |
| | | | | | Inappropriate wax formulation specified | 2 | Physical and Chem Lab test: Report No. 1265 | 2 | 28 | | | 7 2 2 28 |
| | | | | | Entrapped air prevents wax from entering corner/edge access | 5 | Design aid investigation with non-functioning spray head | 8 | 280 | Add team evaluation using production spray equipment and specified wax | Body Engrg Assy Ops 11/15/2000 | | 7 1 3 21 |
| | | | | | Wax application plugs door drain holes | 3 | Laboratory test using "worst case" wax application and hole size | 1 | 21 | | | | |
| | | | | | Insufficient room between panels for spray head access | 4 | Drawing evaluation of spray head access | 4 | 112 | Add team evaluation using design aid buck and spray head | Body Engrg Assy Ops 11/30/2000 | Evaluation showed adequate access 11/13/2000 | 7 1 1 7 |