

Chronology of Defect

May, 2012 Mazda received first field report "Left side lower arm ball joint came off"

July, 2012 As the result of the investigation of the lower arm collected from the field, Mazda estimated that rust was formed to the ball joint, looseness occurred, and that continuous use in that condition led to the wear and separation of the ball joint. However the root cause was not identified.

October, 2012 Separation and looseness of the ball joint, the seal cut of the boots cover, and the crack of the boots cover were detected in the collected parts of similar failures which occurred after that.

December, 2012 As the result of the teardown report result of the ball joints which were collected in October, 2012, Mazda confirmed that the lip seal area was worn and that the rust formed inside the ball joint.

January, 2013 Mazda started an investigation for the crack of the boots cover and the seal performance test of the lip of the boots cover under the severe environment to rust.

February, 2013 As a result of seal performance test of the seal lip under the severe environment to corrosion, Mazda confirmed that the water invades into the boots cover and there were the abrasion of the lip and the rust of the stud bolt. Therefore, Mazda started study of the mass production countermeasure for robustness improvement under the severe environment to rust.

June, 2013 Mazda decided to change the shape of the top surface of the boots cover and add the suspension plate to the undersurface of the knuckle as mass production countermeasure for robustness improvement under the severe environment to the rust.

January, 2014 Mass production countermeasure was implemented.

Also, as the result of the forecast of the looseness progress using the field parts, it was recognized that vehicles could run for approximately two years even after unusual noise occurred. Therefore, Mazda considered that the separation of the ball joint did not occur suddenly during driving and that there was enough recognition by the unusual noise to notice the failure. In addition, the looseness was an item of schedule maintenance and Mazda judged the occurrence of the failure was suppressed, and therefore, Mazda decided to continue monitoring the field.

June, 2015 NHTSA opened a preliminary Evaluation investigation (PE15-022) based on 16 VOQs into the failure that front suspension lower ball joint separates while driving, resulting in a loss of vehicle control.

Mazda recognized that the failure might occur without customer's noticing unusual noise because some VOQs showed that a ball joint fell out suddenly.