

**Toyota Motor Engineering &  
Manufacturing North America, Inc.**

Vehicle Safety & Compliance  
Liaison Office  
Mail Stop: W4-2D  
6565 Headquarters Drive  
Plano, TX 75024

September 20, 2018

## DEFECT INFORMATION REPORT (EQUIPMENT)

1. Component Controlling Corporation:

Toyota Motor North America, Inc. [“TMNA”]  
6565 Headquarters Drive, Plano, TX 75024

Component Manufacturer:

Stop Tech  
1805 South Wilmington Avenue  
Compton, CA 90220  
Phone: 310 933-1100

Country of Origin: USA

2. Identification of Affected Equipment:

The items of equipment involved are the Toyota Racing Development (TRD) Brake Kits designed as an optional accessory for 2008-2015 model year Toyota Scion xB vehicles and 2011-2016 Toyota Scion tC vehicles.

Component Name	Part Number	Dates of Manufacture
TRD Brake Kit	PTR09-52080	April 24, 2008 through April 20, 2016
	PTR09-21111	

NOTE: (1) No other Toyota vehicles utilize the TRD Brake Kit designed for Scion xB and Scion tC vehicles mentioned above.

3. Total Number of Equipment Potentially Involved:

4. Percentage of Vehicles Estimated to Actually Contain the Defect:

Unknown. Toyota is aware of 544 vehicles that have had TRD Brake kits installed which may be affected by the condition in this recall. Whether the issue in each case will lead to a partial brake hose rupture in the TRD Brake kit hose, creating an unreasonable risk to safety, depends on the vehicle's operating conditions.

5. Description of Problem:

The subject TRD Brake Kit is designed as optional equipment for the front wheels of certain Scion xB and Scion tC vehicles. This TRD Brake Kit consists of stainless steel braided brake hoses, brake rotors, and brake calipers. Due to the mounting design and routing of the brake hoses, a brake hose could experience bending fatigue during normal vehicle operation. Over time, this could potentially result in fracturing of the stainless steel braids on a brake hose, leading to a brake hose rupture. If this were to occur while driving, reduced braking performance could occur, resulting in increased stopping distance and increasing the risk of a crash.

6. Chronology of Principal Events:

March 2018

On March 15, 2018, a U.S. dealer notified Toyota that a Scion tC vehicle allegedly experienced a loss of braking while driving. The allegation stated that the brake pedal traveled to the floor and brake fluid was leaking from the front wheel area of the vehicle. The dealer technician performed an inspection and found the brake fluid reservoir was below the minimum level. After further investigation by the dealer, the cause of the low brake fluid was narrowed to a damaged TRD Brake kit stainless steel braided brake hose, but the reason for the damage was not known. Parts were recovered and sent to the supplier for evaluation. Based on the failure condition described by the customer, Toyota took the precaution of issuing a stop sale on all TRD brake kits and hoses, pending a further investigation.

Toyota recovered an in-use (no reported failures) TRD brake kit hose from a Scion tC vehicle for analysis. Toyota conducted an evaluation of the brake hose, the mounting brackets on the brake hose, and the routing of the brake hose to determine if there were any abnormalities. Toyota was unable to identify any abnormalities. A steering evaluation was also conducted to understand if different steering conditions could cause damage to the brake hose. Evaluations of the in-use Scion tC brake hose did not uncover a possible cause of the brake hose damage that was observed in the dealer reported Scion tC, where the vehicle allegedly experienced a loss of braking while driving. Toyota continued to investigate the possible cause of the brake hose failure.

April 2018-May 2018

Based on their evaluation of the recovered part from the dealer reported Scion tC (which allegedly experienced a loss of braking while driving), the supplier reported that the brake hose experienced mechanical fatigue due to bending and twisting of the hose that resulted in cracks developing on the stainless steel braided brake hose. The possible cause of the cracks and whether that cause could exist in other vehicles in the field was unknown. Further investigation continued into the potential cause of the cracks in the stainless steel brake hose.

To evaluate whether there were any conditions that could lead to mechanical fatigue that are unique to the Scion tC TRD brake hoses, Toyota initiated a cross-model inspection of brake hoses. Toyota examined the bend radius, brake hose routing condition, and mounting bracket tension points in different models to determine the conditions under which the stainless steel brake hose damage might occur. As a part of the cross-model inspection, Toyota also began testing the effects repeated steering and suspension motion could have on stainless steel brake hoses.

Subsequently, a Canadian market dealer initiated an order of a TRD brake hose. The dealer indicated they received a Scion xB vehicle that was towed in after allegedly experiencing loss of braking while driving. The dealer performed an inspection and confirmed there was a brake fluid leak. Additionally, the inspection revealed that the stainless steel brake hose had ruptured. Simultaneously, while the dealer was inspecting the Scion xB, a Scion tC vehicle was received and had allegedly experienced brake failure. The dealer inspected the vehicle and confirmed a brake fluid leak. Toyota recovered the parts from the Scion xB and Scion tC and sent them to the supplier for evaluation.

#### May 2018 - September 2018

The results of the evaluation from the Canadian market Scion xB and Scion tC determined that the brake hose from the TRD optional brake kits had also developed cracks due to fatigue, the same condition observed in the U.S. market Scion tC vehicle. Toyota also received a communication that a dealer in the U.S. market was initiating an order for a TRD brake hose for a Scion xB vehicle in which the brake pedal allegedly went to the floor while maneuvering through a parking lot. Toyota inspected the vehicle and found a brake fluid leak and a damaged brake hose.

Based on the results of the cross-model inspection, Toyota observed that Scion xB and Scion tC brake hoses could be pulled tighter in a specific area due to the double mounting brackets on the brake hose and the unique routing of the brake hose, which results in a smaller bending radius of the brake hose. This condition causes the brake hose to experience greater bending forces, causing the stainless steel braided brake hose to crack over time with repeated steering and suspension motion in a lock to lock position. Other models evaluated during the cross-model inspection did not reveal the brake hoses being pulled tighter in the same way as they were in the Scion xB and Scion tC vehicles. Based on our observations of the cross-model inspection and the additional field data, Toyota concluded that, due to the specific mounting design and routing of the brake hose in the Scion xB and Scion tC vehicles, the brake hose could experience bending fatigue during normal vehicle operation. Over time, this could potentially result in fracturing of the stainless steel braids of the brake hose, leading to a brake hose rupture. If this were to occur while

driving, reduced braking performance could occur, resulting in increased stopping distance and increasing the risk of a crash.

September 14, 2018

Based on the results of the above investigation, Toyota decided to conduct a voluntary safety recall campaign.

As of September 12, 2018, based on a diligent review of records, Toyota's best engineering judgment is that there are 2 Toyota Field Technical Reports and 2 warranty claims that have been received from U.S. sources that relate to this condition and which were considered in the decision to submit this report.

7. Description of Corrective Repair Action:

All known owners of the Scion xB and Scion tC vehicles, upon which an involved optional TRD Brake Kit could have been installed, will be notified by first class mail. They will be provided instructions to identify whether their vehicle is equipped with an affected TRD Brake Kit, or they can take their vehicle to a Toyota dealer to complete this check. If an affected TRD Brake Kit has been installed, Toyota dealers will replace it with a standard equipment brake kit for that vehicle model.

Reimbursement Plan for pre-notification remedies

The owner letter will instruct vehicle owners who have paid to have this condition remedied prior to this campaign to seek reimbursement pursuant to Toyota's General Reimbursement Plan.

8. Recall Schedule:

Notifications to owners will begin by mid-November, 2018. A copy of the draft owner notification letter will be submitted as soon as available.

9. Distributor/Dealer Notification Schedule:

Notifications to distributors/dealers will be sent on September 20, 2018. Copies of dealer communications will be submitted as they are issued.

10. Manufacturer's Campaign Number:

J0U