

## RECALL CAMPAIGN 20E071

### CHRONOLOGY OF EVENTS LEADING TO DEFECT DETERMINATION

Dometic Corporation has built and sold a series of recreational vehicle “cooking stoves” since May of 2018, identified as “S31, R1731 and R2131 Series” “cooking stoves”. This product has been slowly introduced into the RV market in place of older platforms that Dometic manufactured in Greenbrier Tennessee. The S31, R1731 and R2131 series products are partially manufactured in China by Seven Universe Industrial Company Ltd.

Seven Universe manufactured the manifold and saddle valve sub-assembly in China before sending it to the United States for final stove assembly in Dometic’s Greenbrier, Tennessee factory. In the design and development of the S31, R1731 and R2131 series “cooking stoves”, samples were submitted to Canadian Standards Association and tested to the industry safety standard for cooking appliances for recreational vehicles, ANSI Z21.57 for Safety Certification. All tests for the design passed ALL of the safety criteria of this standard, and CSA Certification was granted prior to these models ever going into production. The product is marked with the CSA Certification logo.

The S31, R1731 and R2131 series “cooking stoves” went into production and started coming off of the production line in Greenbrier in May of 2018. Production lines at both Seven Universe in Ningbo, China and Dometic Greenbrier, Tennessee conducted gas leak tests according to the terms and production testing requirements of the CSA Certification. Therefore, the two factories involved in the manufacture of these “cooking stoves” were conducting gas leak tests on the product before they shipped.

On April 8<sup>th</sup>, 2020 Dometic received a call from an OEM who was concerned about a “gas smell” that was reported on the R2131 series “cooking stove.” As a result, Dometic requested that the product be returned for examination and testing. There were repeated attempts between April 8<sup>th</sup> and June 17<sup>th</sup> to obtain the sample for review without those attempts being successful. When the field unit was finally received, there was no indication of a leak in the accompanying paperwork and the unit was too severely damaged from poor packaging and shipment back to Dometic, making assessment or evaluation impossible.

On June 17<sup>th</sup> Dometic became aware that the same user-customer had had a replacement installed but complained to NHTSA about the “gas smell”. At this point Dometic had still not been able to evaluate any R1731 or R2131 field unit for the “gas smell”. Dometic held a meeting and decided to launch an investigation that would evaluate stock in inventory, check the processes in the factories, and identify if an identifiable gas leak could be found or if there were related field issues. At the same time Dometic contacted the OEM to see if they had other leaks and if samples could be obtained that would aid in the identification of units that leaked gas at the burners. Follow up meetings were scheduled with the OEM so that updates could be reviewed.

Throughout June and most of July, Dometic assessed the factory processes and identified that both factories were not only doing the prescribed CSA production line tests but were also conducting an extra leak test at each location. Dometic also went through all warehouse inventory and conducted pressurized gas leak tests at random in each warehouse, on large quantities of inventory. There were no leaks detected in any Dometic inventory. All results were reported to the single OEM who had identified “gas smell” complaints.

At the same time, Dometic pulled multiple units from stock and tried to replicate the “gas smell” phenomena. In all of the analysis, Dometic found that the only way to get “gas smell” leaks was to overtighten the securement bolt connecting the saddle valve to the manifold, either crushing the manifold or splitting the o-ring seal between the saddle valve and the manifold. In discussions with the OEM about these results they identified 4 “gas smell” complaints, however no incidents of ignition or fire. As a result, Dometic agreed to obtain a third party to conduct vibration testing on the R2131 “cooking stove” to a transit standard and review the results.

Over the July 4<sup>th</sup> Holiday, Dometic was able to locate the OEM customer who had filed the complaint of “gas smell” with NHTSA. This customer had a replacement sent to him that had not been installed. Dometic sent a representative there and exchanged the R2131 “Cooking Stove”. In the process we learned, and the customer admitted to personally adjusting the “cooking stove” valves on a number of occasions. The exchange was made, a new R2131 was installed and the Dometic representative applied Loc-tite to the saddle valve securement bolts to prevent the user from personally adjusting the securement bolts. Once the install was completed, the customer complained of the “gas smell” but the Dometic representative followed up

by conducting both the pressurized soapy spray test, the pressurized gas decay test on the entire “cooking stove” with NO INDICATION OF A LEAK. The Customer was satisfied with the repair; there were no further complaints registered with Dometic from that customer.

On July 9<sup>th</sup> due to the results of the field install and exchange with the noted end-use customer, as well as the information gained on process review and inventory testing, Dometic administered the introduction of loc-tite into production to prevent unauthorized installer and customer adjusting of the saddle valve to manifold connection.

On August 12<sup>th</sup> Dometic received the results from the third party vibration testing. In this test a control unit was sent from stock with no alterations. In addition, two other sample units were sent that were modified with different approaches using loc-tite. None of the units failed the J1455 transit test. The results were clear that even the rough environment of the J1455 transit test was not causing the saddle valve securement bolts to come loose. This supported Dometic’s previous assessment that Dometic R1731 and R2131 “cooking stoves” were experiencing unauthorized field adjustments. Dometic’s OEM customer agreed, and the investigation was closed. Dometic understands from the OEM involved that this was reported to NHTSA in a final communication from the OEM.

On September 9<sup>th</sup> Dometic received a complaint from a leasing company that 6 units that were in their fleet were reported to have experiences of the “gas smell” phenomena. Shortly thereafter two different OEM’s indicated that they were experiencing multiple “gas smell” complaints, and one of those OEM’s indicated that they had also experienced an ignition which, although contained in the “cooking stove” enclosure, distorted the piezo igniter and one of the burner control knobs.

Dometic once again launched an investigation of the complaints and discussed this with the leasing company, and the two OEM’s. The issues were reviewed in multiple discussions between September 9<sup>th</sup> and 17<sup>th</sup>.

On September 17<sup>th</sup> Dometic held a Safety Committee meeting and made the determination that although the earlier data collected identified a clear interaction of unauthorized product adjustment in the field, and a very low probability of a safety related defect, Dometic would file a Defect Notification Report per 573.6. In the same meeting attendees identified that the S31 Series Cooking Stove had the same components from Seven Universe. Claims records were brought forward that clearly indicated that no warranty gas leak claims had been filed from beginning of production in 2018 to date on the S31 series “Cooking Stoves”. However, since the components were identical and no one could define a difference in production processes, the decision was made to include the population of the S31 Series in the Defect Notification. Therefore, Dometic provided the Defect Notification to NHTSA, September 24<sup>th</sup>, 2020, within the 5 days required by 573.6 from the time of product defect realization.