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TESTIMONY

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ON BEHALF OF
THE ASSOCIATION OF HOME APPLIANCE MANUFACTURERS

BEFORE THE MINNESOTA SENATE
COMMERCE AND CONSUMER PROTECTION COMMITTEE

HEARING
SF 1598
DIGITAL FAIR REPAIR ACT
OPPOSED

FEBRUARY 28, 2023

Chair Klein, Vice-Chair Seeberger, and members of the Committee, thank you for the opportunity to share the view points of the home appliance manufacturing industry regarding the potential impacts of the concept of right to repair, SF 1598.

AHAM represents manufacturers of major, portable and floor care home appliances, and suppliers to the industry. AHAM's membership includes over 150 companies throughout the world. AHAM members employ tens of thousands of people and produce more than 95% of the household appliances that are shipped for sale within the United States. In Minnesota, the home appliance industry is a significant and critical segment of the economy. The total economic impact of the home appliance industry to Minnesota is \$3.6 billion, nearly 13,000 direct and indirect jobs, \$468.5 million in state tax revenue and more than \$1.2 billion in wages. The home appliance industry, through its products and innovation, is essential to consumer lifestyle, health, safety and convenience. Home appliances also are a success story in terms of energy efficiency and environmental protection. The purchase of new appliances often represents the most effective choice a consumer can make to reduce home energy use and costs.

AHAM believes that so-called "Right to Repair" concepts that are part of SF 1598 are overly broad. A basic reading of the definition of "Digital Electronic Equipment" can be interpreted to include the home appliance industry and, therefore, raises serious questions that AHAM strongly urges the Committee to carefully consider.

Home appliance manufacturers know how much consumers rely on their products to make their lives easier and more comfortable. Thus, manufacturers work hard to make appliances that last longer and perform better and to ensure their customers are satisfied not only at the time of purchase, but throughout a product's useful lifetime. Accordingly, manufacturers have a vested interest in ensuring repairs are accessible, reliable, and safe. This includes ensuring that consumers have access to highly educated, trained and certified repair technicians.

Home appliance manufacturers not only ensure that authorized repair providers are properly trained and certified, manufacturers also take necessary precautions so that when a repair provider enters a private home that the home owner as well as the property are safe and secure. The fact that repair providers enter consumers' homes to conduct appliance repairs presents a different set of circumstances regarding the repair of digital electronic equipment.

SF 1598 comes into conflict with important industry doctrines:

- Safety: SF 1598 poses serious product, property and consumer safety concerns.
- Cyber Security: SF 1598 requires manufacturers to make certain technologies available to independent third parties who may not have the proper certification and training thus exposing the home to cyber threats.
- Manufacturer's Warranty: SF 1598 negates a manufacturer's ability to honor factory warranties by allowing independent third parties access to component parts and all diagnostic information.

Safety

Safety is a top priority for AHAM members. The industry designs appliances that are as safe as they are useful and consumers recognize this commitment. Today there are more than 860 million appliances in use largely without incident and 93 percent of consumers believe home appliance manufacturers do a good job in providing safe and quality appliances. Moreover, another 85 percent understand that safety policy is a top priority for the industry. For that reason, repairs that present safety risks are the exception to the general rule that materials needed for home appliance repair can easily be obtained by contacting the manufacturer or visiting the manufacturer's website, depending on the complexity of the repair. The primary reason that SF 1598 is of concern to the home appliance industry is the broad safety concerns presented by the legislation. There are three principal safety concerns that these bills present: product safety, consumer safety and property safety.

Product Safety

SF 1598 requires that manufacturers make all diagnostic and repair documentation available to independent third parties or equipment owners. Today, home appliances contain highly advanced operating systems that use high currents of electricity, gas, flammable substances, high speed motors, and have hermetically sealed systems that can come into contact with water and moisture. Product and consumer safety are top of mind for home appliance manufacturers. Available service and repair options are, therefore, dependent not only on the type of product but also on the qualifications necessary to perform the particular repair.

Manufacturers develop diagnostic tools for certified engineers who have the educational and technical background and training necessary to troubleshoot, diagnose and conduct repairs to the appliance. A right to repair concept would broadly expand the universe of technicians that could access diagnostic tools and information. Also, manufacturer authorized servicers are typically required to perform repairs with manufacturer authorized parts that have been tested and qualified to meet the reliability and safety requirements of the home appliance product. Opening up the repair process to any third party services will loosen the control in this area significantly and could have a considerable impact on the safety and reliability of the product. In addition, manufacturers control the software used for service technicians. Without proper training, significant damage to the appliance and the home can occur if these tools are improperly used.

Because appliances operate using electricity, gas, water, filtered air, flammable substances, and high-speed motors, they undergo vigorous safety testing to ensure they meet applicable safety standards. Furthermore, appliances are designed to be in compliance with electrical, building, and plumbing codes as well as clean air and radiation emitting device regulations. It is critical that repairs do not jeopardize compliance with applicable safety and other standards, codes, and regulations.

Most appliance products are required by National Electric Code as well as other applicable building/mechanical codes to be listed or certified under applicable North American Safety Standards (such as Underwriter Laboratories or UL standard). These safety standards ensure a

product and all of its components will operate in a safe and reliable manner. Right to Repair evades many of the safety provisions that Underwriters Laboratory (UL) and others test against.

For example:

Underwriters Laboratory North American Dryer Safety Standard (UL2158/CSA 22.2 no. 158)

This UL safety standard has safety requirements such as motor overload protection, door/lid opening or temperature limiting. These requirements were put in place to mitigate risks of electrical shock, injury or fire. Manufacturers often design the electronic controls which are embedded into either hardware or software and often both work together systematically to ensure the system operates safely and meets the UL requirements. To ensure the safety critical functionalities are reliable, both the hardware and software of these controls are certified to applicable safety standards (i.e. UL60730 or UL60335 or specific requirements of the product safety standard). These standards have rigorous requirements to test and validate the required safeguards. The standards are stringent to the point that any design or manufacturing changes to these components by a manufacturer often requires recertification by a Nationally Recognized Testing Laboratory (NRTL) to the applicable standard in order to ensure that the required safety functionality has not been compromised.

Underwriters Laboratory (UL) North American Washer Safety Standard (UL2157/CSA 22.2 no 169)

High efficiency (HE) washers employ electronic lid switches to ensure that no one can access the rotating basket while it is spinning very fast. These switches are often controlled by the Electronic control, which monitors the lid switch signal and employs a braking mechanism to stop the basket from spinning if a user opens the lid. The same components are also utilized for other functional and safety requirements. Diagnosing and repairing a similar HE washing machine requires an in-depth understanding of the full system which authorized servicers are given as part of their training. An untrained servicer may employ a repair using a non-OEM part or incorrect connections can compromise the whole system that may result in a potential safety issue and/or performance degradation.

Notably, many certifications are required by state / province regulations, as well as applicable Federal laws. Accordingly, any professional servicer must meet these requirements. Thus, they do not present a barrier to becoming authorized. Manufacturers simply ensure their affiliated servicers meet the applicable requirements, giving consumers further peace of mind that their repairs will be conducted safely and correctly. Below is a summary of typical required certifications:

Certification	Description
EPA Section 608 Technician Certification	Section 608 of the Clean Air Act requires certification for technicians who maintain, service, repair, or dispose of equipment that could release ozone-depleting refrigerants into the atmosphere

North American Technician Excellence Certification (NATE)	Certification for handling heating, ventilation, air conditioning and refrigeration (HVACR) technicians
National Appliance Service Technician Certification (NASTec) (International Society of Certified Electronics Technicians (ISTEC))	NASTeC is a voluntary national certification program for technicians who service major home appliances.
Red Seal Program (Canada)	The Red Seal, when affixed to a provincial or territorial trade certificate, indicates that a tradesperson has demonstrated the knowledge required for the national standard in that trade

Today, modern appliances contain sophisticated and technologically advanced electronics and internal controls that are uniquely designed and programmed for specific products. These electronics and internal controls contain safety features (both software and hardware) that are relied upon for the safe operation of the appliance. Manufacturers often invest substantial resources to ensure diagnostic tools are impervious to failure and tampering by the manufacturers own agents, the manufacturer will employ software and Information Technology tools specific to its agents to guarantee the service. The same cannot be ensured once these tools are opened up to unaffiliated third party servicers. It could be detrimental to the inherent safety of the appliance if access were to be granted in the public domain where defeating any of these features (either intentionally or inadvertently) could happen during diagnostics and repair, which could then create potential safety hazards to the consumer. The repercussions not only jeopardize the life of the product but may also leave the consumer worse off than before either with a new malfunction or a product rendered unsafe due to a repair conducted improperly or with the wrong parts.

For example, the home appliances industry is constantly innovating and advancing our products in order to deliver optimum solutions to consumers, which are energy efficient and continually better for the environment. Newer refrigerant gases that are non-ozone depleting and have very low global warming potential are an example. Comprehensive training is required in order for a technician to handle and conduct repairs on systems that contain different types of refrigerant. Mixing refrigerant types can be problematic and dangerous. An older product designed to operate with R134a gas refrigerant does not have the appropriately designed relays and electrical mechanical components for the newer R600a refrigerant. R600a gas is a flammable refrigerant gas that has positive attributes to reduce climate change and has started to be added to new refrigeration products in the U.S. market. It is critical that technicians are properly trained to identify which product utilizes which gas and how the gas is properly handled to ensure the utmost safety.

Authorized servicers can be directly trained and tools provided to 1) allow technicians to understand the systems included on every model and 2) repair those products appropriately. The same concerns hold true for the manipulation of LPG and natural gas in cooking products, dryers

and water lines and the appropriate manipulation of 110V and 220V electrical connections. If not properly installed, leaks and overheating can occur.

Property Safety

Appliance repairs when not performed correctly can be the cause of property damage, e.g., flooding and fires. Insurance claims as well as increases in homeowner’s insurance premiums could result if independent third parties improperly perform in-home repairs. Additionally, in the event of significant property damage and/or personal injury, the manufacturer could face legal claims.

Manufacturers, in general, have process and procedures in place that track repairs completed through their servicer network. This allows the manufacturer to create traceability of repairs for their customers/consumers and is one of the critical factors if fire or another sort of property damage were to occur. Opening up this domain to third-party servicers, inhibits the ability for manufacturers to track any repairs made to home appliance products and has the potential to create issues in determining liability if the source of the repairs cannot be readily identified. Traceability is also important because improper repair or servicing can be a cause of appliance fires. Finally, this assists insurance companies and other entities if the incident requires investigation.

Consumer Safety

The nature of appliance repairs requires repair technicians to enter the homes of consumers. In-home safety and security is of paramount importance to appliance manufacturers and we assume the same holds true for independent service technicians. Manufacturers who certify technicians may require extensive background checks as well as drug screening, and as previously mentioned technical and safety training. AHAM members identified two areas in which a repair business must be in good standing to earn affiliation, both equally critical. These include (1) business requirements, and (2) business capacity to support the affiliated brands. These requirements are detailed further in the below tables.

Business Requirements			
Manufacturer / brand certification course State / provincial / federal certifications for all technicians	Proof of insurance (liability, workers compensation), Better Business Bureau accredited	Annual user / service agreement for certification	Business License Tax ID Personnel background checks Business credit check

Cyber Security

In an increasingly connected world, the threat of cyber-attacks has extended into the home through connected technology. In fact, connected devices are in nearly every home, and the total number of those devices is expected to reach 26 billion. Home appliances touting “smart features” are already in the market. AHAM’s member companies are leading the way in bringing connected appliances to customers around the world and are committed to addressing those concerns so that consumers are able to access the full, life-enhancing potential of connected appliances while

minimizing potential cyber threats. Without the proper training, independent third party service providers could unknowingly expose consumers to cyber threats while conducting un-secured repairs to these products.

SF 1598 disregards security implications brought to light by requiring the release of firmware and other software systems within home appliances. A servicer or consumer without proper training and instruction to access technical protection measures and attempting to access appliances' firmware can lead to unknowingly or knowingly rendering the appliance unresponsive to certain operations, including most importantly, critical operations that prevent damage to the appliance or the area in the home where that appliance is located as well as leaving consumer data profiles and data transfers unsecured, making personal information and appliance operation commands vulnerable to outside sources, specifically malware and/or hackers.

Right to Repair concepts have ignored these very real threats and will likely make home appliances more vulnerable to cyber-threats and corruption. For example, security key pairings have to be embedded in the firmware. If a manufacturer is required to provide the firmware to third parties, the manufacturer is providing the keys to the operating system, once the keys become public it completely breaks the firmware security chain and the home appliance is not fully secure. This also applies to remote and wireless interaction. Connected appliances in some circumstances require Wi-Fi connectivity to the consumer's personal in-home network. Manufacturer authorized technicians when performing repairs or instructing consumers on the use of such products could gain access to those private networks. Manufacturer authorized technicians are under contract, for whom the authorized service providers may have traceability. Opening that access up to independent third parties may give unauthorized personnel access to consumer's private Wi-Fi network and create opportunity for further risk exposure.

Manufacturer's Warranty

Of course consumers are free to choose their service provider and replacement parts. But manufacturers may disclaim warranty coverage for defects or damage caused by the use of unauthorized parts or service. That means that if a repair goes wrong, the cost of future repairs that might have been covered under the warranty could now be the consumer's responsibility. As such, there is the potential to harm consumers rather than providing benefits.

Conclusion

Thank you for the opportunity to present this written statement to the hearing record. Right to Repair concepts raise serious safety, cyber-security and contractual concerns for the home appliance manufacturing industry. AHAM strongly urges that this Committee reconsider whether or not legislation is in the best interests of Minnesota consumers.