UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2021

Commission file number: 001-13337

STONERIDGE INC

(Exact name of registrant as specified in its charter)

Ohio	**34-1598949**
(State or other jurisdiction of incorporation or organization)	*(I.R.S. Employer Identification No.)*
39675 MacKenzie Drive, Suite 400, Novi, Michigan	**48377**
(Address of principal executive offices)	*(Zip Code)*

(248) 489-9300
Registrant's telephone number, including area code

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Shares, without par value	**SRI**	**New York Stock Exchange**

Securities registered pursuant to section 12(g) of the Act: **None**

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. ☐ Yes ☒ No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. ☐ Yes ☒ No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

☒ Yes ☐ No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

☒

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See definition of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☒	Accelerated filer ☐	Non-accelerated filer ☐
Smaller reporting company ☐	Emerging growth company ☐	

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). ☐ Yes ☒ No

As of June 30, 2021, the aggregate market value of the registrant's Common Shares held by non-affiliates of the registrant was approximately $763.2 million. The closing price of the Common Shares on June 30, 2021 as reported on the New York Stock Exchange was $29.50 per share. As of June 30, 2021, the number of Common Shares outstanding was 27,163,551.

The number of Common Shares outstanding as of February 23, 2022 was 27,194,137.

DOCUMENTS INCORPORATED BY REFERENCE

Definitive Proxy Statement for the Annual Meeting of Shareholders to be held on May 17, 2022, into Part III, Items 10, 11, 12, 13 and 14.

INDEX

Forward-Looking Statements

Portions of this report on Form 10-K contain "forward-looking statements" under the Private Securities Litigation Reform Act of 1995. These statements appear in a number of places in this report and may include statements regarding the intent, belief or current expectations of the Company, with respect to, among other things, our (i) future product and facility expansion, (ii) acquisition strategy, (iii) investments and new product development, (iv) growth opportunities related to awarded business and (v) operational expectations. Forward-looking statements may be identified by the words "will," "may," "should," "designed to," "believes," "plans," "projects," "intends," "expects," "estimates," "anticipates," "continue," and similar words and expressions. The forward-looking statements are subject to risks and uncertainties that could cause actual events or results to differ materially from those expressed in or implied by the statements. Important factors that could cause actual results to differ materially from those in the forward-looking statements include, among other factors:

- the ability of our suppliers to supply us with parts and components at competitive prices on a timely basis, including the impact of potential tariffs and trade considerations on their operations and output;
- our ability to achieve cost reductions that offset or exceed customer-mandated selling price reductions;
- the impact of COVID-19, or other future pandemics, on the global economy, and on our customers, suppliers, employees, business and cash flows;
- the reduced purchases, loss or bankruptcy of a major customer or supplier;
- the costs and timing of business realignment, facility closures or similar actions;
- a significant change in automotive, commercial, off-highway or agricultural vehicle production;
- competitive market conditions and resulting effects on sales and pricing;
- our ability to manage foreign currency fluctuations;
- customer acceptance of new products;
- our ability to successfully launch/produce products for awarded business;
- adverse changes in laws, government regulations or market conditions, including tariffs, affecting our products or our customers' products;
- our ability to protect our intellectual property and successfully defend against assertions made against us;
- liabilities arising from warranty claims, product recall or field actions, product liability and legal proceedings to which we are or may become a party, or the impact of product recall or field actions on our customers;
- labor disruptions at our facilities or at any of our significant customers or suppliers;
- business disruptions due to natural disasters or other disasters outside our control;
- fluctuations in the cost and availability of key materials (including semiconductors, printed circuit boards, resin, aluminum, steel and copper) and components and our ability to offset cost increases;
- the amount of our indebtedness and the restrictive covenants contained in the agreements governing our indebtedness, including our revolving Credit Facility;
- capital availability or costs, including changes in interest rates or market perceptions;
- the failure to achieve the successful integration of any acquired company or business;
- risks related to a failure of our information technology systems and networks, and risks associated with current and emerging technology threats and damage from computer viruses, unauthorized access, cyber-attack and other similar disruptions; and
- the items described in Part I, Item IA ("Risk Factors").

The forward-looking statements contained herein represent our estimates only as of the date of this filing and should not be relied upon as representing our estimates as of any subsequent date. While we may elect to update these forward-looking statements at some point in the future, we specifically disclaim any obligation to do so, whether to reflect actual results, changes in assumptions, changes in other factors affecting such forward-looking statements or otherwise.

PART I

Item 1. Business.

Overview

Founded in 1965, Stoneridge, Inc. (the "Company") is a global designer and manufacturer of highly engineered electrical and electronic components, modules and systems for the automotive, commercial, off-highway and agricultural vehicle markets. Our products and systems are critical elements in the management of mechanical and electrical systems to improve overall vehicle performance, convenience and monitoring in areas such as safety and security, intelligence, efficiency and emissions. Our worldwide footprint is primarily comprised of 21 locations in 11 countries and enables us to supply global automotive, commercial, off-highway, agricultural and other vehicle markets.

Our custom-engineered products and systems are used to activate equipment and accessories, monitor and display vehicle performance and control, distribute electrical power and signals and provide vehicle security and convenience. Our product offerings consist of actuators, sensors, switches and connectors, driver information systems, camera-based vision systems, connectivity and compliance products, electronic control units, vehicle tracking devices and monitoring services, vehicle security alarms and convenience accessories, in-vehicle audio and infotainment devices and telematics solutions. We supply the majority of our products, predominantly on a sole-source basis, to many of the world's leading automotive and commercial vehicle original equipment manufacturers ("OEMs") and select non-vehicle OEMs, as well as certain automotive and commercial vehicle Tier 1 suppliers. Our customers are increasingly utilizing electronic technology to comply with more stringent regulations (particularly emissions and safety) and to meet end-user demand for improved vehicle performance and greater convenience. As a result of this trend, per-vehicle electronic content has been increasing. Our technology and our partnership-oriented approach to product design and development enables us to develop next-generation products and systems for this trend.

Beginning with the divestiture of our wiring business in 2014, we accelerated a shift in our product portfolio towards smart products, or those products which contain embedded electronics or logic. While the wiring business was our largest single business, based on revenues and employees, and the business that the Company was founded on, its products were largely commodities that did not provide a technology platform to drive our expected future growth. In addition to the divestiture of the wiring business, we deployed capital in 2017 to make strategic investments including the acquisition of Orlaco, our partner on the development of MirrorEye, our camera-based vision system, and the acquisition of 100 percent of our Stoneridge Brazil business. In 2019, the Company's Control Devices segment sold its non-core switches and connectors business (the "Non-core Products") and in 2020 announced the strategic exit of our PM sensor business to further align with our strategic plan. These activities have acted as a catalyst for the advancement of our smart product portfolio, increasing our smart content from just over 50 percent of our sales in 2014 to almost 75% of our sales in 2021. Our product portfolio shift focuses on the megatrends driving the transportation industry.

In January 2019, the Company committed to a restructuring plan that resulted in the closure of the Canton, Massachusetts facility ("Canton Facility") as of March 31, 2020 and the consolidation of manufacturing operations at that site into other Company locations ("Canton Restructuring"). The costs for the Canton Restructuring included employee severance and termination costs, contract termination costs, professional fees and other related costs such as moving and set-up costs for equipment and costs to restore the engineering function previously located at the Canton Facility. We recognized less than \$0.1 million of expense as a result of these actions during the year ended December 31, 2021 and recognized \$3.0 million and \$12.5 million of expense during the years ended December 31, 2020 and 2019, respectively. During the third quarter of 2020, we leased the Canton facility to a third party. On June 17, 2021, we sold the Canton facility. See Note 7 and Note 2 to the consolidated financial statements for additional details regarding the third-party lease and sale, respectively, of the Canton Facility. The Company does not expect to incur additional costs related to the Canton Restructuring.

On April 1, 2019, the Company entered into an Asset Purchase Agreement and sold product lines and assets related to certain Control Devices Non-core Products. The Non-core Products were manufactured in Juarez, Mexico and Canton, Massachusetts, and include ball switches, ignition switches, rotary switches, courtesy lamps, toggle switches, headlamp switches and other related components. See Note 2 to the consolidated financial statement for additional details regarding the disposal of Non-core Products.

On May 19, 2020, the Company committed to the strategic exit of its Control Devices particulate matter ("PM") sensor product line ("PM Sensor Exit"). The decision to exit the PM sensor product line was made after the consideration of the decline in the market outlook for diesel passenger vehicles, the current and expected profitability of the product line and the Company's strategic focus on aligning resources with the greatest opportunities. The estimated costs for the PM Sensor Exit include employee severance and termination costs, professional fees and other related costs such as potential commercial and supplier settlements. Non-cash charges include impairment of fixed assets and accelerated depreciation associated with PM sensor production. See Note 12 to the consolidated financial statements for additional details regarding the PM Sensor Exit.

On March 8, 2021, the Company entered into an Asset Purchase Agreement and sold the PM sensor product line and assets. The PM sensor product line and assets were located in Lexington, Ohio and Tallinn, Estonia. See Note 2 to the consolidated financial statements for additional details regarding the sale of the PM sensor business.

On November 2, 2021, the Company entered into a Share Purchase Agreement (the "SPA") with Minda Corporation Limited ("Minda"), as the buyer, and Minda Stoneridge Instruments Ltd. ("MSIL"). On December 30, 2021, pursuant to the SPA, the Company closed the sale of MSIL to Minda. See Note 2 to the consolidated financial statements for additional details regarding the sale of MSIL.

We have positioned each of our segments for continued long-term success. Our Control Devices segment is increasingly well positioned with a focus on continued development and commercialization of actuation and electrified powertrain applications that will drive future growth for the segment. Our Electronics segment is expected to drive strong revenue growth through previously awarded new program launches including our first two launches for our MirrorEye® camera-based vision system in the OEM market, as well as our continued investment in current and future technologies. Our Stoneridge Brazil segment continues to integrate into our global Electronics strategy as we leverage our global engineering footprint and prepare for continued expansion of our local OEM presence. Overall, we will continue to focus our resources on the areas of largest opportunity for the Company and drive long-term value creation for our shareholders.

Segments and Products

We conduct our business in three reportable business segments which are the same as our operating segments: Control Devices, Electronics and Stoneridge Brazil.

Control Devices. Our Control Devices segment designs and manufactures products that monitor, measure or activate specific functions within a vehicle. This segment includes product lines such as actuators, sensors, switches and connectors. Actuator products enable OEMs to deploy power functions in a vehicle and can be designed to integrate switching and control functions including our park lock and shift by wire products. Sensor products are employed in major vehicle systems such as the emissions, safety, powertrain, braking, climate control, steering and suspension systems. Switches and connectors transmit signals that activate specific functions. Our switch and connector technology is principally used in two capacities, user-activated and hidden. User-activated switches are used by a vehicle's operator or passengers to manually activate in-vehicle accessories. Hidden switches are not typically visible to vehicle operators or passengers and are engaged to activate or deactivate selected functions as part of normal vehicle operations. We sell these products principally to the automotive market. To a lesser extent, we also sell these products to the commercial vehicle and agricultural markets.

Electronics. Our Electronics segment designs and manufactures driver information systems, camera-based vision systems, connectivity and compliance products and electronic control units. Driver information systems and connectivity and compliance products collect, store and display vehicle information such as speed, pressure, maintenance data, trip information, operator performance, temperature, distance traveled, and driver messages related to vehicle performance. Camera-based vision products provide enhanced vehicle visibility and safety to drivers. Electronic control units regulate, coordinate, monitor and direct the operation of the electrical system within a vehicle. These products are sold principally to the commercial vehicle market through both the OEM and aftermarket channels. In addition, camera-based vision systems are sold to the off-highway and commercial vehicle markets.

Stoneridge Brazil. Our Stoneridge Brazil ("SRB") segment primarily serves the South American market and specializes in the design, manufacture and sale of vehicle tracking devices and monitoring services, vehicle security alarms and convenience accessories, in-vehicle audio and infotainment devices and telematics solutions primarily for the automotive and motorcycle markets. This segment includes product lines such as vehicle monitoring and tracking devices, security alarms, convenience applications such as parking sensors and rearview cameras, audio and infotainment systems and telematics products used for fleet management. These products improve the performance, safety and convenience features of our customers' vehicles. Stoneridge Brazil sells its products through the aftermarket distribution channel, to factory authorized dealer installers, also referred to as original equipment services, direct to OEMs and through mass merchandisers. In addition, monitoring services and tracking devices are sold directly to corporate and individual customers.

Our products and systems are sold to numerous OEM and Tier 1 customers, as well as aftermarket distributors and mass merchandisers, for use on many different vehicle platforms. We supply multiple parts to many of our principal OEM and Tier 1 customers under requirements contracts for a particular vehicle model. These contracts range in duration from one year to the production life of the model, which commonly extends for three to seven years.

The following table sets forth for the periods indicated, the percentage of net sales derived from our principal end markets:

Principal End Markets	**2021**	**2020**	**2019**
Automotive	**41 %**	45 %	41 %
Commercial vehicle	**39**	36	33
Off-highway and other	**12**	12	18
Aftermarket distributors, mass merchandisers and monitoring services	**8**	7	8

For further information related to our reportable segments and financial information about geographic areas, see Note 13 to the consolidated financial statements.

Production Materials

The principal production materials used in the Company's manufacturing process are molded plastic components and resins, copper, steel, precious metals and certain electrical components such as printed circuit boards, semiconductors, microprocessors, memory devices, resistors, capacitors, fuses, relays, infotainment devices and cameras. We purchase production materials pursuant to both annual contract and spot purchasing methods. Such materials are available from multiple sources, but we generally establish collaborative relationships with a qualified supplier for each of our key production materials in order to lower costs and enhance service and quality. As global demand for our production materials increases, we may have difficulties obtaining adequate production materials from our suppliers to satisfy our customers. Refer to the Risk Factors for risks related to the current supply chain disruption related to semiconductors and other production materials. Any extended period of time for which we cannot obtain adequate production material or which we experience an increase in the price of production material would materially affect our results of operations and financial condition.

Patents, Trademarks and Intellectual Property

We maintain and have pending various U.S. and foreign patents, trademarks and other rights to intellectual property relating to the reportable segments of our business, which we believe are appropriate to protect the Company's interests in existing products, new inventions, manufacturing processes and product developments. We do not believe any single patent is material to our business, nor would the expiration or invalidity of any patent have a material adverse effect on our business or ability to compete.

Industry Cyclicality and Seasonality

The markets for products in each of our reportable segments have been cyclical. Because these products are used principally in the production of vehicles for the automotive, commercial, off-highway and agricultural vehicle markets, revenues and therefore results of operations, are significantly dependent on the general state of the economy and other factors, like the impact of environmental regulations on our customers and end market consumers, which affect these markets. A significant decline in automotive, commercial, off-highway and agricultural vehicle production of our principal customers could adversely impact the Company. Our Control Devices and Electronics and segments are moderately seasonal, impacted by mid-year and year-end shutdowns and the ramp-up of new model production at key customers. In addition, the demand for our Stoneridge Brazil segment consumer products is typically higher in the second half of the year.

Customers

We have several customers which account for a significant percentage of our sales. The loss of any significant portion of our sales to these customers, or the loss of a significant customer, would have a material adverse impact on our financial condition and results of operations. We supply numerous different products to each of our principal customers. Contracts with several of our customers provide for supplying their requirements for a particular model, rather than for manufacturing a specific quantity of products. Such contracts range from one year to the life of the model, which is generally three to seven years. These contracts are subject to potential renegotiation from time to time, which may affect product pricing and generally may be terminated by our customers at any time. Therefore, the loss of a contract for a major model or a significant decrease in demand for certain key models or group of related models sold by any of our major customers would have a material adverse impact on the Company. We may enter into contracts to supply products, the introduction of which may then be delayed or cancelled. We also compete to supply products for successor models, and are therefore subject to the risk that the customer will not select the Company to produce products on any such model, which could have a material adverse impact on our financial condition and results of operations.

Due to the competitive nature of the markets we serve, we face pricing pressures from our customers in the ordinary course of business. In response to these pricing pressures we have been able to effectively manage our production costs by the combination of lowering certain costs and limiting the increase of others, the net impact of which has not been material. However, if we are unable to effectively manage production costs in the future to mitigate future pricing pressures, our results of operations would be adversely affected.

Backlog

The Company typically enters into customer agreements at the beginning of a vehicle life cycle with the intent to fulfill customer-purchasing requirements for the entire vehicle production life cycle. The vehicle life cycle usually includes the two to four year pre-production period and production for a term covering the life of such vehicle model or platform, generally between three to seven years, although there is no guarantee that this will occur. Our customers make no firm commitments regarding volume and may terminate these agreements or orders at any time. The Company's estimated sourced future sales may also be impacted by various assumptions, including new program vehicle production levels, customer price reductions, foreign currency exchange rates and program launch timing. The Company's customer agreements may be terminated by customers at any time and, accordingly, estimated sourced future sales information does not represent firm orders or firm commitments. The Company defines backlog as the estimated cumulative awarded sales for the next five years (or "estimated sourced future sales"). The Company's estimated sourced future sales were $3.4 billion as of December 31, 2021, compared to $3.0 billion as of December 31, 2020. Due to the exit of the Control Devices PM sensor products business, related sales were excluded from our estimated sourced future sales as of December 31, 2020.

Competition

The markets for our products in our reportable segments are highly competitive. We compete based on technological innovation, price, quality, performance, service and delivery. We compete for new business both at the beginning of the development of new models and upon the redesign of existing models for OEM customers. New model development generally begins two to five years before the marketing of such models to the public. Once a supplier has been selected to provide parts for a new program, an OEM customer will usually continue to purchase those parts from the selected supplier for the life of the program, although not necessarily for any model redesigns. We compete for aftermarket and mass merchandiser sales based on price, product functionality, quality and service.

Our diversity in products creates a wide range of competitors, which vary depending on both market and geographic location. We compete based on strong customer relations and a fast and flexible organization that develops technically effective solutions at or below target price.

Product Development

Our research and development efforts for our reportable segments are largely product design and development oriented and consist primarily of applying known technologies to customer requests. We work closely with our customers to solve customer requests using innovative approaches. The majority of our development expenses are related to customer-sponsored programs where we are involved in designing custom-engineered solutions for specific applications or for next generation technology. To further our vehicle platform penetration, we have also developed collaborative relationships with the design and engineering departments of key customers. These collaborative efforts have resulted in the development of new and complimentary products and the enhancement of existing products.

While our engineering and product development departments are organized by market, our segments interact and collaborate on new products. The product development operations are complimented by technology groups in Barneveld, Netherlands; Campinas, Brazil; Juarez, Mexico; Lexington, Ohio; Novi, Michigan; Stockholm, Sweden and Suzhou, China.

We have invested, and will continue to invest heavily in technology to develop new products for our customers. Product development costs, other than capitalized software development costs, incurred in connection with the development of new products and manufacturing methods, to the extent not recoverable from the customer, are expensed as incurred.

We will continue to prioritize investment spending toward the design and development of new products over sustaining existing product programs for specific customers, which allows us to sell our products to multiple customers. The typical product development process takes three to seven years to show tangible results. As part of our effort to evaluate our investment spending, we review our current product portfolio and adjust our spending to either accelerate or eliminate our investment in these products based on our position in the market and the potential of the market and product.

Environmental and Other Regulations

Our operations are subject to various federal, state, local and foreign laws and regulations governing, among other things, emissions to air, discharge to water and the generation, handling, storage, transportation, treatment and disposal of waste and other materials. We believe that our business, operations and facilities have been and are being operated in compliance, in all material respects, with applicable environmental and health and safety laws and regulations, many of which provide for substantial fines and criminal sanctions for violations.

Human Capital Management

As of December 31, 2021, Stoneridge employed approximately 5,000 full time and temporary employees in 13 countries, with about 86% located outside of the United States. Although we have no collective bargaining agreements covering U.S. employees, a significant number of employees located in Brazil, China, Estonia, Mexico, Netherlands, Sweden and the United Kingdom either (i) are represented by a union and are covered by a collective bargaining agreement, or (ii) are covered by a works council or other employment arrangements required by law. We work to ensure positive relations with our employees.

We strive to create a work environment that enhances employee engagement, fosters productivity, and is aligned with our values of Integrity, Accountability, Teamwork, Adaptability, Customer Orientation, and Social Responsibility. We know that our success is dependent on our employees' engagement, performance, skills, and development. To that end, we have established talent management programs at Stoneridge, which include but are not limited to the following:

- Periodic global employee engagement surveys and subsequent action planning
- Regular talent reviews for employee development and succession planning
- Feedback and coaching to ensure performance is aligned with our goals and strategic direction
- Delivery of Code of Conduct and global policy training
- New employee orientation with globally consistent and locally flexible messaging
- Frequent global "townhall" meetings and other communications
- Employee wellness programs
- Opportunities for community and charitable involvement *(reduced recently due to COVID-19 pandemic)*
- Employee mentoring program
- Internship programs

When we hire new employees, we focus not just on the skills required for current positions, but the ever-changing complex skills and competencies that will be required as we move forward on our path to being the mobility industry's integrated technology partner. We seek diverse sources for candidates and we offer wages and benefits that are competitive in the markets where employees are located.

We believe a diverse workforce and an inclusive work environment is required for us to achieve our full potential as an organization. We further recognize the importance of having a strong Diversity, Equity & Inclusion ("DEI") strategy. We have recently embarked on an initiative to reassess our DEI strategy, identify gaps between our ideal and current states, and develop goals and actions to realize measurable improvement. We look forward to continuing this important work in 2022.

It is always a top priority, but the COVID-19 global pandemic has brought even greater focus on employee health and safety. We instituted a global Safe Workplace Committee that meets regularly to assess, monitor, and update safety measures as needed related to COVID-19 for each location. At the start of the pandemic, where possible employees began working from home, and extensive safety measures were implemented, including temperature and health screenings, distanced workstations, plexiglass barriers, enhanced cleaning and disinfection protocols, required face coverings, and contact tracing when needed. Over time, the Safe Workplace Committee has adapted our safety protocols as local regulations and changing conditions have warranted. Our safety measures continue to be aligned with the recommendations of US and global health organizations.

The Human Resources function at Stoneridge is an active and visible partner to the business at all levels. Our Chief Human Resources Officer reports directly to the Chief Executive Officer and interacts frequently with the Company's Board of Directors. Our Human Capital focus will continue to be on employee engagement, employee and leadership development, communications, and employee health and safety.

Information About Our Executive Officers

Each executive officer of the Company serves the Board of Directors at its pleasure. The Board of Directors appoints corporate officers annually. The following table sets forth the names, ages, and positions of the executive officers of the Company:

Name	Age	Position
Jonathan B. DeGaynor	55	President, Chief Executive Officer and Director
Matthew R. Horvath	36	Chief Financial Officer and Treasurer
Susan C. Benedict	55	Chief Human Resources Officer and Assistant General Counsel
Laurent P. Borne	47	President of the Electronics Division and Chief Technology Officer
Caetano R. Ferraiolo	54	President of the Stoneridge Brazil Division
Robert J. Hartman Jr.	55	Chief Accounting Officer
Kevin R. Heigel	62	Senior Vice President of Integrated Supply Chain
James Zizelman	61	President of the Control Devices Division

Jonathan B. DeGaynor, President, Chief Executive Officer and Director. Mr. DeGaynor was appointed as President and Chief Executive Officer in March 2015. He has served as a director since May 2015. Prior to joining Stoneridge, Mr. DeGaynor served as the Vice President of Strategic Planning and Innovation of Guardian Industries Corp. ("Guardian"), from October 2014 until March 2015. Mr. DeGaynor served as Vice President of Business Development, Managing Director Asia for SRG Global, Inc., a Guardian company, from 2008 through September 2014. Mr. DeGaynor served as Chief Operating Officer, International for Autocam Corporation from 2005 to 2008. Prior to that, Mr. DeGaynor held positions of increasing responsibility with Delphi Corporation from 1993 to 2005.

Matthew R. Horvath, Chief Financial Officer and Treasurer. Mr. Horvath was appointed Chief Financial Officer and Treasurer in August 2021. He previously served as Stoneridge's Executive Director of Corporate Strategy and Investor Relations, and prior to that as Director of Investor Relations. Prior to joining Stoneridge, Mr. Horvath spent six years at EY, formerly known as Ernst & Young, in the Transaction Advisory practice, primarily focused on business and asset valuation with a focus on the automotive and transportation industry.

Susan C. Benedict, Chief Human Resources Officer and Assistant General Counsel. Ms. Benedict was appointed Chief Human Resources Officer and Assistant General Counsel – Labor and Employment (CHRO) in June 2019. Ms. Benedict previously served as Stoneridge's Director of Legal since November 2017. Prior to Stoneridge, Ms. Benedict served as Senior Counsel for Koch Industries in October 2017 and Corporate Counsel for Guardian Industries from December 2012 to September 2017.

Laurent P. Borne, President of the Electronics Division and Chief Technology Officer. Mr. Borne was appointed as President of the Electronics Division in January 2019. Mr. Borne joined the Company in August 2018 and has been serving as the Company's Chief Technology Officer and will continue to serve in this role. Prior to joining Stoneridge, Mr. Borne served as Vice President of Product Development at Whirlpool Corporation from 2014 until August 2018.

Caetano R. Ferraiolo, President of the PST Electronics Division. Mr. Ferraiolo was appointed to President of the Stoneridge Brazil Electronics Division in June 2017. Mr. Ferraiolo joined the Company in 2015 and previously served as the Chief Operating Officer of Stoneridge Brazil. From 2010 to 2015 he served as Vice President of Operations for Cannondale Sports Group in Brazil. Prior to that, Mr. Ferraiolo served as Director of European Commercial and Development, Autocam Corporation from 2005 to 2010.

Robert J. Hartman Jr., Chief Accounting Officer. Mr. Hartman was appointed as Chief Accounting Officer and to the role of principal accounting officer in July 2016. Prior to that, Mr. Hartman served as Corporate Controller of the Company since 2006 and prior to that as Stoneridge's Director of Internal Audit from 2003.

Kevin R. Heigel, Vice President of Operations. Mr. Heigel was appointed Vice President of Operations in January 2020. Prior to that Mr. Heigel had been employed at ALPHA Performance Group, LLC as its Co-Founder and Managing Director from 2009 until December 2019. Prior to that Mr. Heigel was at served in various roles at Delphi last serving as Managing Director, Delphi Electrical Centers from 2006 to 2009.

James Zizelman, President of the Control Devices Division. Mr. Zizelman was appointed to President of the Control Devices Division in April 2020. Until his employment with the Company, Mr. Zizelman served as the Vice President of Engineering and Program Management for Aptiv from December 2017 to March 2019. Prior to that, Mr. Zizelman was employed at Delphi for more than 20 years, where he was last a Vice President of Engineering from 2016.

Available Information

We make available, free of charge through our website (www.stoneridge.com), our Annual Report on Form 10-K ("Annual Report"), Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, all amendments to those reports, and other filings with the U.S. Securities and Exchange Commission ("SEC"), as soon as reasonably practicable after they are filed with the SEC. Our Corporate Governance Guidelines, Code of Business Conduct and Ethics, Code of Ethics for Senior Financial Officers, Whistleblower Policy and Procedures and the charters of the Board of Director's Audit, Compensation, Nominating and Corporate Governance and Compliance and Ethics Committees are posted on our website as well. Copies of these documents will be available to any shareholder upon request. Requests should be directed in writing to Investor Relations at Stoneridge, Inc., 39675 MacKenzie Drive, Suite 400, Novi, Michigan 48377. The SEC maintains a website (www.sec.gov) that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC, including the Company.

Item 1A. Risk Factors.

Risks Related to the Coronavirus (COVID-19) Pandemic

Pandemics or disease outbreaks, such as COVID-19, have disrupted, and may continue to disrupt our business, which could adversely affect our results of operation and financial condition.

Pandemics or disease outbreaks, such as COVID-19, have disrupted, and may continue to disrupt, the global economy. In late 2019, a novel strain of the coronavirus (COVID-19) was reported to have been detected in Wuhan, China and on March 11, 2020 it was declared by the World Health Organization to be a global pandemic. The COVID-19 pandemic has negatively impacted the global economy, disrupting the financial markets and increasing volatility, and has impeded global supply chains, restricted manufacturing operations and resulted in significantly reduced economic activity and higher unemployment rates. It has disrupted, and may continue to disrupt for an indefinite period of time, the global vehicle industry and customer sales, production volumes and purchases of automotive, commercial, off-highway and agricultural vehicles by end-consumers. International, federal, state and local public health and governmental authorities have taken and may continue to take actions to contain the outbreak and spread of COVID-19 throughout most regions of the world, including travel bans, quarantines, "work-from-home" orders and similar mandates that have caused many businesses to modify normal operations. Beginning in 2020 we took actions to enhance our financial flexibility and minimize the impact on our business, such as the ramping down of certain production facilities in response to customer plant closures and changes in vehicle production schedules, imposing certain travel restrictions, amending our existing Credit Facility twice providing covenant relief through March 2023 and actively managing costs, capital spending and working capital to further strengthen our liquidity. Despite these measures, the ultimate impact to our business continues to remain highly uncertain and we have experienced, and may continue to experience, delays in the production and distribution of our products, supply chain disruptions impacting the availability of production materials and the loss or delay of customers' sales.

Uncertain Economic and Market Conditions

Our business is cyclical and a downturn in the automotive, commercial, off-highway and agricultural vehicle markets as well as overall economic conditions could reduce our sales and profitability.

The demand for products is largely dependent on the domestic and foreign production of automotive, commercial, off-highway and agricultural vehicles. The markets for our products have been cyclical, because new vehicle demand is dependent on, among other things, consumer spending and is tied closely to the overall strength of the economy. Because the majority of our products are used principally in the production of vehicles for the automotive, commercial, off-highway and agricultural vehicle markets, our net sales, and therefore our results of operations, are significantly dependent on the general state of the economy and other factors which affect these markets.

In 2021, approximately 92% of our net sales were derived from automotive, commercial, off-highway and agricultural vehicle markets while approximately 8% were derived from aftermarket distributors, mass merchandisers and monitoring services markets.

Due to the overall global economic conditions in 2021 and 2020, largely as a result of COVID-19 pandemic and resulting supply chain issues, the automotive, commercial, off-highway and agricultural vehicle markets experienced a decline in global customer sales and production volumes. As a result, we have experienced and may continue to experience reductions in orders from our customers in certain regions. An economic downturn or other adverse industry conditions that result in a decline in automotive, commercial, off-highway or agricultural vehicle production, or a material decline in market share by our significant customers, could adversely affect our results of operations and financial condition.

The loss or insolvency of any of our principal customers would adversely affect our future results.

We are dependent on several principal customers for a significant percentage of our net sales. In 2021, our top five customers were Volvo, VW Group, Ford Motor Company, PACCAR and American Axle which comprised 9%, 9%, 8%, 6% and 6% of our net sales, respectively. In 2021, our top ten customers accounted for 55% of our net sales. The loss of any significant portion of our sales to these customers would have a material adverse effect on our results of operations and financial condition. In addition, we have significant receivable balances related to these customers and other major customers that would be at risk in the event of their bankruptcy.

The Company's estimated sourced future sales from awarded programs may not be realized.

The Company typically enters into customer agreements at the beginning of a vehicle life cycle with the intent to fulfill customer-purchasing requirements for the entire vehicle production life cycle. The vehicle life cycle typically included the two to four year pre-production period and production for a term covering the life of such vehicle model or platform, generally between three to seven years, although there is no guarantee that this will occur. The Company's customers make no firm commitments regarding volume and may terminate these agreements or orders at any time. Therefore, these arrangements do not represent firm orders. The Company's estimated sourced future sales from awarded programs, also referred to as backlog, is the estimated remaining cumulative awarded life-of-program sales for up to a five year period. Several factors may change forecasted revenue from awarded programs; namely, new business wins, vehicle production volume changes, customer price reductions, foreign currency exchange rates, component take rates by customers and short cycled or cancelled models or platforms.

We must implement and sustain a competitive technological advantage in producing our products to compete effectively.

Our products are subject to changing technology, which could place us at a competitive disadvantage relative to alternative products introduced by competitors. Our success will depend on our ability to continue to meet customers' changing specifications with respect to technological innovation, price, quality, performance, service and delivery by implementing and sustaining competitive technological advances. Our business may, therefore, require significant recurring additional capital expenditures and investment in product development, manufacturing and management information systems. We cannot assure that we will be able to achieve technological advances or introduce new products that may be necessary to remain competitive. Our inability to continuously improve existing products, to develop new products and to achieve technological advances could have a material adverse effect on our business, financial condition or results of operations.

The discontinuation of, loss of business or lack of commercial success, with respect to a particular vehicle model for which the Company is a significant supplier could reduce the Company's sales and harm its profitability.

Although the Company has purchase orders from many of its customers, these purchase orders generally provide for the supply of a customer's annual requirements for a particular vehicle model and assembly plant, or in some cases, for the supply of a customer's requirements for the life of a particular vehicle model, rather than for the purchase of a specific quantity of products. In addition, it is possible that our customers could elect to manufacture components internally that are currently produced by outside suppliers, such as our Company. The discontinuation of, the loss of business with respect to or a lack of commercial success of a particular vehicle model for which the Company is a significant supplier, could reduce the Company's sales and have a material adverse effect on our business, financial condition or results of operations.

Financial Risks

We have foreign currency translation and transaction risks that may materially adversely affect our operating results, financial condition and liquidity.

The financial position and results of operations of our international subsidiaries are initially recorded in various foreign currencies and then translated into U.S. dollars at the applicable exchange rate for inclusion in our consolidated financial statements. The strengthening of the U.S. dollar against these foreign currencies ordinarily has a negative effect on our reported sales and operating margin (and conversely, the weakening of the U.S. dollar against these foreign currencies has a positive impact). The volatility of currency exchange rates may materially adversely affect our business, financial condition or results of operations.

Our debt obligations could limit our flexibility in managing our business and expose us to risks.

As of December 31, 2021, there was $164.0 million in borrowings outstanding on our Fourth Amended and Restated Credit Agreement, as amended, (the "Credit Facility"). In addition, we are permitted under our Credit Facility to incur additional debt, subject to specified limitations. Our leverage and the terms of our indebtedness may have important consequences including the following:

- we may have difficulty satisfying our obligations with respect to our indebtedness, and if we fail to comply with these requirements, an event of default could result;
- we may be required to dedicate a substantial portion of our cash flow from operations to required payments on indebtedness, thereby reducing the availability of cash flow for working capital, capital expenditures and other general corporate activities;
- covenants relating to our debt may limit our ability to obtain additional financing for working capital, capital expenditures and other general corporate activities;
- covenants relating to our debt may limit our flexibility in planning for, or reacting to, changes in our business and the industry in which we operate; and
- we may be placed at a competitive disadvantage against any less leveraged competitors.

These and other consequences of our leverage and the terms of our indebtedness could have a material adverse effect on our business, financial condition or results of operations.

Covenants in our Credit Facility may limit our ability to pursue our business strategies.

Our Credit Facility limits our ability to, among other things:

- incur additional debt and guarantees;
- pay dividends and repurchase our shares;
- make other restricted payments, including investments;
- create liens;
- sell or otherwise dispose of assets, including capital shares of subsidiaries;
- enter into agreements that restrict dividends from subsidiaries;
- consolidate, merge or sell or otherwise dispose of all or substantially all of our assets; and
- substantially change the nature of our business.

On February 28, 2022, we amended the Credit Facility. As amended the Credit Facility provides for certain financial covenant relief and additional covenant restrictions during the "Specified Period" (the period from February 28, 2022 until the date that the Company delivers a compliance certificate for the quarter ending March 31, 2023 in form and substance satisfactory to the administrative agent). During the Specified Period:

- the maximum net leverage ratio is changed to 4.0x for the year ended December 31, 2021, suspended for the quarters ending March 31, 2022 through September 30, 2022 and cannot exceed 4.75 to 1.00 for the quarter ended December 31, 2022 or 3.50 to 1.00 for the quarter ended March 31, 2023;
- the minimum interest coverage ratio of 3.50 is reduced to 2.50 for the quarter ended March 31, 2022, 2.25 for the quarter ended June 30, 2022 and 3.00 for the quarters ended September 30, 2022 and December 31, 2022;
- an additional condition to drawing on the Credit Facility has been added that restricts borrowings if the Company's total of 100% of domestic and 65% of foreign cash and cash equivalents exceeds $70.0 million;
- there are certain additional restrictions on Restricted Payments (as defined); and
- a Permitted Acquisition (as defined) may not be consummated unless the net leverage ratio is below 3.50x during the Specified Period.

Following the Specified Period, the agreement governing our Credit Facility requires us to maintain a maximum leverage ratio of 3.50 to 1.00, and a minimum interest coverage ratio of 3.50 to 1.00. Our ability to comply with these covenants as well as the negative covenants under the terms of our indebtedness, may be affected by events beyond our control.

A breach of any of the negative covenants under our indebtedness or our inability to comply with the leverage and interest ratio requirements in the Credit Facility could result in an event of default. If an event of default occurs, the lenders under the Credit Facility could elect to declare all outstanding borrowings, together with accrued interest and other fees, to be immediately due and payable and terminate any commitments they have to provide further borrowings, and the Credit Facility lenders could pursue foreclosure and other remedies against us and our assets.

Our annual effective tax rate could be volatile and materially change as a result of changes in the mix of earnings and other factors including changes in the recognition and/or release of valuation allowances against deferred tax assets.

Our overall effective tax rate is computed by dividing our total tax expense (benefit) by our total earnings (loss) before tax. However, tax expense and benefits are not recognized on a global basis, but rather on a jurisdictional or legal entity basis. Losses in certain jurisdictions may not provide a current financial statement tax benefit as a result of the need to maintain a valuation allowance against the associated deferred tax asset. Also, management periodically evaluates the realizability of our deferred tax assets which may result in the recognition and/or release of valuation allowances. As a result, changes in the mix of earnings between jurisdictions and changes in the recognition and/or release of valuation allowances, among other factors, could have a significant effect on our overall effective tax rate.

Risks Related to Products, Pricing and Supply

We are dependent on the availability and price of raw materials and other supplies.

We require substantial amounts of raw materials and other supplies, and substantially all such materials we require are purchased from outside sources. The availability and prices of raw materials and other supplies may be subject to curtailment or change due to, among other things, new laws or regulations, suppliers' allocations to other purchasers and interruptions in production by suppliers, weather emergencies, natural disasters, commercial disputes, acts of terrorism or war, changes in exchange rates and worldwide price levels. If demand for raw materials we require increases, we may have difficulties obtaining adequate raw materials and other supplies from our suppliers to satisfy our customers. Currently, and at times in the past, we have experienced difficulty obtaining adequate supplies of semiconductors and memory chips. In addition, there have been challenges at times in obtaining timely supply of nylon and resins for our Control Devices segment and audio component parts for our Stoneridge Brazil segment. If we cannot obtain adequate raw materials and other supplies, or if we experience an increase in the price of raw materials and other supplies, our business, financial condition or results of operations could be materially adversely affected.

The adverse impacts of the COVID-19 pandemic led to a significant vehicle production slowdown in the first half of 2020, which was followed by increased consumer demand and vehicle production schedules in the second half of 2020. This surge in demand led to a worldwide semiconductor supply shortage at the end of 2020 and throughout 2021, as semiconductor suppliers have been unable to rapidly reallocate production lines to serve the transportation industry. In addition, we have experienced longer lead-times, higher costs and delays in procuring other component parts and raw materials. As a result, we are currently experiencing supply chain disruptions. We are assessing the potential supply chain impacts, which may directly or indirectly impact various suppliers, and correspondingly, OEM production. We are working closely with our suppliers and customers to minimize any potential adverse impacts, and we continue to closely monitor the availability of semiconductor microchips and other component parts and raw materials, customer vehicle production schedules and any other supply chain inefficiencies that may arise, due to this or any other issue. However, any direct or indirect supply chain disruptions may have an adverse impact on our business, financial condition, results of operations or cash flows.

The prices that we can charge our customers are typically predetermined and we bear the risk of costs in excess of our estimates, in addition to the risk of adverse effects resulting from general customer demands for cost reductions and quality improvements.

Our supply agreements with our customers typically require us to provide our products at predetermined prices. In some cases, these prices decline over the course of the contract and may require us to meet certain productivity and cost reduction targets. In addition, our customers may require us to share productivity savings in excess of our cost reduction targets. The costs that we incur in fulfilling these contracts may vary substantially from our initial estimates. Unanticipated cost increases or the inability to meet certain cost reduction targets may occur as a result of several factors, including increases in the costs of labor, components or materials. In some cases, we are permitted to pass on to our customers the cost increases associated with specific materials. However, cost overruns that we cannot pass on to our customers could adversely affect our business, financial condition or results of operations.

OEM customers have exerted and continue to exert considerable pressure on component suppliers to reduce costs, improve quality and provide additional design and engineering capabilities and continue to demand and receive price reductions and measurable increases in quality through their use of competitive selection processes, rating programs and various other arrangements. We may be unable to generate sufficient production cost savings in the future to offset required price reductions. Additionally, OEMs have generally required component suppliers to provide more design engineering input at earlier stages of the product development process, the costs of which have, in some cases, been absorbed by the suppliers. Future price reductions, increased quality standards and additional engineering capabilities required by OEMs may reduce our profitability and have a material adverse effect on our business, financial condition or results of operations.

We have limited or no redundancy for certain of our manufacturing facilities, and therefore damage or disruption to those facilities could interrupt our operations, increase our costs of doing business and impair our ability to deliver our products on a timely basis.

If certain of our existing production facilities become incapable of manufacturing products for any reason, we may be unable to meet production requirements, we may lose revenue and we may not be able to maintain our relationships with our customers. Without operation of certain existing production facilities, we may be limited in our ability to deliver products until we restore the manufacturing capability at the particular facility, find an alternative manufacturing facility or arrange an alternative source of supply. We carry business interruption insurance to cover lost revenue and profits in an amount we consider adequate, however, this insurance does not cover all possible situations and may be insufficient. Also, our business interruption insurance would not compensate us for the loss of opportunity and potential adverse impact on relations with our existing customers resulting from our inability to produce products for them.

We rely on independent dealers and distributors to sell certain products in the aftermarket sales channel and a disruption to this channel would harm our business.

Because we sell certain products such as security accessories and driver information products to independent dealers and distributors, we are subject to many risks, including risks related to their inventory levels and support for our products. If dealers and distributors do not maintain sufficient inventory levels to meet customer demand, our sales could be negatively impacted.

Our dealer network also sells products offered by our competitors. If our competitors offer our dealers more favorable terms, those dealers may de-emphasize or decline to carry our products. In the future, we may not be able to retain or attract a sufficient number of qualified dealers and distributors. Our inability to maintain successful relationships with dealers and distributors, or to expand our distribution channels, could have a material adverse effect on our business, financial condition or results of operations.

Our Global Positioning Systems (“GPS”) products depend upon satellites maintained by the United States Department of Defense. If a significant number of these satellites become inoperable, unavailable or are not replaced, or if the policies of the United States government for the use of the GPS without charge are changed, our business will suffer.

The GPS is a satellite-based navigation and positioning system consisting of a constellation of orbiting satellites. The satellites and their ground control and monitoring stations are maintained and operated by the United States Department of Defense. The Department of Defense does not currently charge users for access to the satellite signals. These satellites and their ground support systems are complex electronic systems subject to electronic and mechanical failures and possible sabotage.

If a significant number of satellites were to become inoperable, unavailable or are not replaced, it would impair the current utility of our GPS products and the growth of market opportunities. In addition, there can be no assurance that the U.S. government will remain committed to the operation and maintenance of GPS satellites over a long period, or that the policies of the U.S. government that provide for the use of the GPS without charge and without accuracy degradation will remain unchanged. Because of the increasing commercial applications of the GPS, other U.S. government agencies may become involved in the administration or the regulation of the use of GPS signals. Any of the foregoing factors could affect the willingness of buyers of our products to select GPS-based products instead of products based on competing technologies, which could adversely affect our operational revenues, financial condition and results of operation.

Geopolitical Uncertainties

We are subject to risks related to our international operations.

Approximately 49% of our net sales in 2021 were derived from sales outside of North America. At December 31, 2021, significant concentrations of net assets outside of North America included $238.2 million in Europe and Other and $32.2 million in South America. Non-current assets outside of North America accounted for approximately 64% of our non-current assets as of December 31, 2021. International sales and operations are subject to significant risks, including, among others:

- political and economic instability;
- restrictive trade policies;
- economic conditions in local markets;
- currency exchange rates and controls;
- labor unrest;
- difficulty in obtaining distribution support and potentially adverse tax consequences; and
- the imposition of product tariffs and the burden of complying with a wide variety of international and U.S. export laws.

We operate our business on a global basis and policy changes affecting international trade could adversely impact the demand for our products and our competitive position.

We manufacture, sell and service products globally and rely upon a global supply chain to deliver the raw materials, components, systems and parts that we need to manufacture and service our products. Changes in government policies on foreign trade and investment can affect the demand for our products and services, cause non-U.S. customers to shift preferences toward domestically manufactured or branded products and impact the competitive position of our products or prevent us from being able to sell products in certain countries. Our business benefits from free trade agreements, such as the United States-Mexico-Canada Agreement and the U.S. trade relationship with China and Brazil and efforts to withdraw from, or substantially modify such agreements or arrangements, in addition to the implementation of more restrictive trade policies, such as more detailed inspections, higher tariffs import or export licensing requirements, exchange controls or new barriers to entry, could adversely impact our production costs, customer demand and our relationships with customers and suppliers. Any of these consequences could have a material adverse effect on our business, financial condition or results of operations.

Strategic Performance Risks

Our inability to effectively manage the timing, quality and costs of new program launches could adversely affect our financial performance.

In connection with the award of new business, we obligate ourselves to deliver new products and services that are subject to our customers' timing, performance and quality standards. Additionally, as a Tier 1 supplier, we must effectively coordinate the activities of numerous suppliers in order for the program launches of our products to be successful. Given the complexity of new program launches, we may experience difficulties managing product quality, timeliness and associated costs. In addition, new program launches require a significant ramp-up of costs; however, our sales related to these new programs generally are dependent upon the timing and success of our customers' introduction of new vehicles. Our inability to effectively manage the timing, quality and costs of these new program launches could adversely affect our business, financial condition or results of operations.

We may not be able to successfully integrate acquisitions into our business or may otherwise be unable to benefit from pursuing acquisitions.

Failure to successfully identify, complete and/or integrate acquisitions could have a material adverse effect on us. A portion of our growth in sales and earnings has been generated from acquisitions and subsequent improvements in the performance of the businesses acquired. We expect to continue a strategy of selectively identifying and acquiring businesses with complementary products. We cannot assure you that any business acquired by us will be successfully integrated with our operations or prove to be profitable. We could incur substantial indebtedness in connection with our acquisition strategy, which could significantly increase our interest expense.

We anticipate that acquisitions could occur in foreign markets in which we do not currently operate. As a result, the process of integrating acquired operations into our existing operations may result in unforeseen operating difficulties and may require significant financial resources that would otherwise be available for the ongoing development or expansion of existing operations. Any failure to successfully integrate such acquisitions could have a material adverse effect on our business, financial condition or results of operations.

Product Liability Risks

Increased or unexpected product warranty claims could adversely affect us.

We typically provide our customers a warranty covering workmanship, and in some cases materials, on products we manufacture. Our warranty generally provides that products will be free from defects and adhere to customer specifications. If a product fails to comply with the warranty, we may be obligated or compelled, at our expense, to correct any defect by repairing or replacing the defective product. Our customers are increasingly seeking to hold suppliers responsible for product warranties, which could negatively impact our exposure to these costs. We maintain warranty reserves in an amount based on historical trends of units sold and costs incurred, combined with our current understanding of the status of existing claims. To estimate the warranty reserves, we must forecast the resolution of existing claims, as well as expected future claims on products previously sold. The costs of claims estimated to be due and payable could differ materially from what we may ultimately be required to pay. An increase in the rate of warranty claims or the occurrence of unexpected warranty claims could have a material adverse effect on our customer relations, our business, financial condition or results of operations.

We may incur material product liability costs.

We may be subject to product liability claims in the event that the failure of any of our products results in personal injury or death and we cannot assure that we will not experience material product liability losses in the future. We cannot assure that our product liability insurance will be adequate for liabilities ultimately incurred or that it will continue to be available on terms acceptable to us. In addition, if any of our products prove to be defective, we may be required to participate in government-imposed or customer OEM-instituted recalls involving such products. A successful claim brought against us that exceeds available insurance coverage or a requirement to participate in any product recall could have a material adverse effect on our business, financial condition or results of operations.

Intellectual Property Risks

If we fail to protect our intellectual property rights or maintain our rights to use licensed intellectual property or are found liable for infringing the rights of others, our business could be adversely affected.

Our intellectual property, including our patents, trademarks, copyrights, trade secrets and license agreements, are important in the operation of our businesses, and we rely on the patent, trademark, copyright and trade secret laws of the United States and other countries, as well as nondisclosure agreements, to protect our intellectual property rights. We may not, however, be able to prevent third parties from infringing, misappropriating or otherwise violating our intellectual property, breaching any nondisclosure agreements with us, or independently developing technology that is similar or superior to ours and not covered by our intellectual property. Any of the foregoing could reduce any competitive advantage we have developed, cause us to lose sales or otherwise harm our business. We cannot assure that any intellectual property will provide us with any competitive advantage or will not be challenged, rejected, cancelled, invalidated or declared unenforceable. In the case of pending patent applications, we may not be successful in securing issued patents, or securing patents that provide us with a competitive advantage for our businesses. In addition, our competitors may design products around our patents that avoid infringement and violation of our intellectual property rights.

We cannot be certain that we have rights to all intellectual property currently used in the conduct of our businesses or that we have complied with the terms of agreements by which we acquire such rights, which could expose us to infringement, misappropriation or other claims alleging violations of third party intellectual property rights. Third parties have asserted and may assert or prosecute infringement claims against us in connection with the services and products that we offer, and we may or may not be able to successfully defend these claims. Litigation, either to enforce our intellectual property rights or to defend against claims regarding intellectual property rights of others, could result in substantial costs and a diversion of our resources. Any such claims and resulting litigation could require us to enter into licensing agreements (if available on acceptable terms or at all), pay damages and cease making or selling certain products and could result in a loss of our intellectual property protection. Moreover, in such a situation, we may need to redesign some of our products to avoid future infringement liability. We also may be required to indemnify customers or other third parties at significant expense in connection with such claims and actions. The Company has seen an increase in customer requests for indemnification in connection with third party patent claims related to connectivity-enabled products. These claims are being made by patent-holders seeking royalties and who may enter into litigation based on patent infringement allegations. The Company has taken actions to mitigate this risk from new programs, however, significant indemnification claims related to these products could have a material adverse effect on our business, financial condition or results of operations.

Information Technology and Cybersecurity Risks

A failure of our information technology (IT) networks and systems, or the inability to successfully implement upgrades to our enterprise resource planning (ERP) systems, could adversely impact our business and operations.

We rely upon information technology networks and systems to process, transmit and store electronic information, and to manage or support a variety of business processes and/or activities. The secure operation of these IT networks and systems and the proper processing and maintenance of this information are critical to our business operations.

Also, we continually expand and update our IT networks and systems in response to the changing needs of our business and periodically upgrade our ERP systems. Should our networks or systems not be implemented successfully, or if the systems do not perform in a satisfactory manner once implementation is complete, our business and operations could be disrupted and our results of operations could be adversely affected, including our ability to report accurate and timely financial results.

We may be subject to risks relating to our information technology systems and cybersecurity.

We rely on information technology systems to process, transmit and store electronic information and manage and operate our business. Despite the implementation of security measures, our IT networks and systems are at risk to damages from computer viruses, unauthorized access, cyber-attack and other similar disruptions. A breach in security could expose us and our customers and suppliers to risks of misuse of confidential information, manipulation and destruction of data, production downtimes and operations disruptions, which in turn could adversely affect our reputation, competitive position, business or results of operations. While we have taken steps to protect the Company from cybersecurity risks and security breaches (including enhancing our firewall, workstation, email security and network monitoring and alerting capabilities, and training employees around phishing, malware and other cybersecurity risks), and we have policies and procedures to prevent or limit the impact of systems failures, interruptions, and security breaches, there can be no assurance that such events will not occur or that they will be adequately addressed if they do. Although we rely on commonly used security and processing systems to provide the security and authentication necessary to effect the secure transmission of data, these precautions may not protect our systems from all potential compromises or breaches of security. We may be required to incur significant costs to protect against damage caused by these disruptions or security breaches in the future.

Privacy and security concerns relating to the Company’s current or future products and services could damage its reputation and deter current and potential users from using them.

We may gain access to sensitive, confidential or personal data or information that is subject to privacy and security laws, regulations and customer-imposed controls. Concerns about our practices with regard to the collection, use, disclosure, or security of personal information or other privacy related matters, even if unfounded, could damage our reputation and adversely affect our business, our financial condition or operating results. Furthermore, regulatory authorities around the world are considering a number of legislative and regulatory proposals concerning cybersecurity and data protection. In addition, the interpretation and application of consumer and data protection laws in the U.S., Europe and elsewhere are often uncertain and in flux. Complying with these various laws could cause the Company to incur substantial costs.

Environmental, Climate and Weather Risks

Compliance with environmental and other governmental regulations could be costly and require us to make significant expenditures.

Our operations are subject to various federal, state, local and foreign laws and regulations governing, among other things:

- the discharge of pollutants into the air and water;
- the generation, handling, storage, transportation, treatment, and disposal of waste and other materials;
- the cleanup of contaminated properties; and
- the health and safety of our employees.

Our business, operations and facilities are subject to environmental and health and safety laws and regulations, many of which provide for substantial fines for violations. The operation of our manufacturing facilities entails risks and we cannot assure you that we will not incur material costs or liabilities in connection with these operations. In addition, potentially significant expenditures could be required in order to comply with evolving environmental, health and safety laws, regulations or requirements that may be adopted or imposed in the future. Changes in environmental, health and safety laws, regulations and requirements or other governmental regulations could increase our cost of doing business or adversely affect the demand for our products.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

At December 31, 2021, the Company owned or leased seven manufacturing facilities, which together contain approximately 0.9 million square feet of manufacturing space. Of these manufacturing facilities, three are used by our Control Devices reportable segment, three are used by our Electronics reportable segment and one is used by our Stoneridge Brazil reportable segment. The following table provides information regarding our facilities:

Location	Owned/ Leased	Use	Square Footage
Control Devices			
Lexington, Ohio	Owned	Manufacturing/Engineering	219,612
Juarez, Mexico (A)	Owned	Manufacturing/Engineering	235,035
Suzhou, China (A)	Leased	Manufacturing/Engineering/Sales Office	145,033
El Paso, Texas (A)	Leased	Warehouse	57,000
Lexington, Ohio	Leased	Warehouse	15,000
Novi, Michigan	Leased	Engineering	6,398
Lexington, Ohio	Leased	Warehouse	2,700
Electronics			
Tallinn, Estonia (B)	Leased	Manufacturing/Engineering	85,911
Orebro, Sweden	Leased	Manufacturing	77,472
Barneveld, Netherlands	Owned	Manufacturing/Engineering	62,700
Stockholm, Sweden	Leased	Engineering/Division Office	41,248
Jasper, Georgia	Leased	Sales Office/Warehouse	12,250
Bayonne, France	Leased	Sales Office/Warehouse	9,655
Dundee, Scotland	Leased	Sales Office/Engineering	4,683
Ottobrunn, Germany	Leased	Sales Office	1,119
Stoneridge Brazil			
Manaus, Brazil	Owned	Manufacturing	102,247
Campinas, Brazil	Owned	Engineering/Division Office	45,467
Buenos Aires, Argentina	Leased	Sales Office	2,906
Serra, Brazil	Leased	Sales Office	344
Corporate and Other			
Novi, Michigan (B)	Leased	Headquarters/Division Office	37,713
Stuttgart, Germany	Leased	Sales Office/Engineering	2,000

(A) This facility is also used in the Electronics reportable segment.
(B) This facility is also used in the Control Devices reportable segment.

Item 3. Legal Proceedings.

From time to time we are subject to various legal actions and claims incidental to our business, including those arising out of breach of contracts, product warranties, product liability, patent infringement, regulatory matters, and employment-related matters. It is our opinion that the outcome of such matters will not have a material adverse impact on our consolidated financial position, results of operations, or cash flows. However, the final amounts required to resolve these matters could differ materially from our recorded estimates. See Note 11 to the consolidated financial statements.

Item 4. Mine Safety Disclosure.

Not Applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

Our shares are listed on the New York Stock Exchange ("NYSE") under the symbol "SRI." As of February 23, 2022, we had 27,194,137 Common Shares, without par value, outstanding which were owned by approximately 170 shareholders of record. This does not include persons whose stock is in nominee or "street name" accounts held by banks, brokers and other nominees.

The following table presents information with respect to repurchases of Common Shares made by us during the three months ended December 31, 2021. There were 354 Common Shares delivered to us by employees as payment for withholding taxes due upon vesting of performance share awards and share unit awards during the year ended December 31, 2021

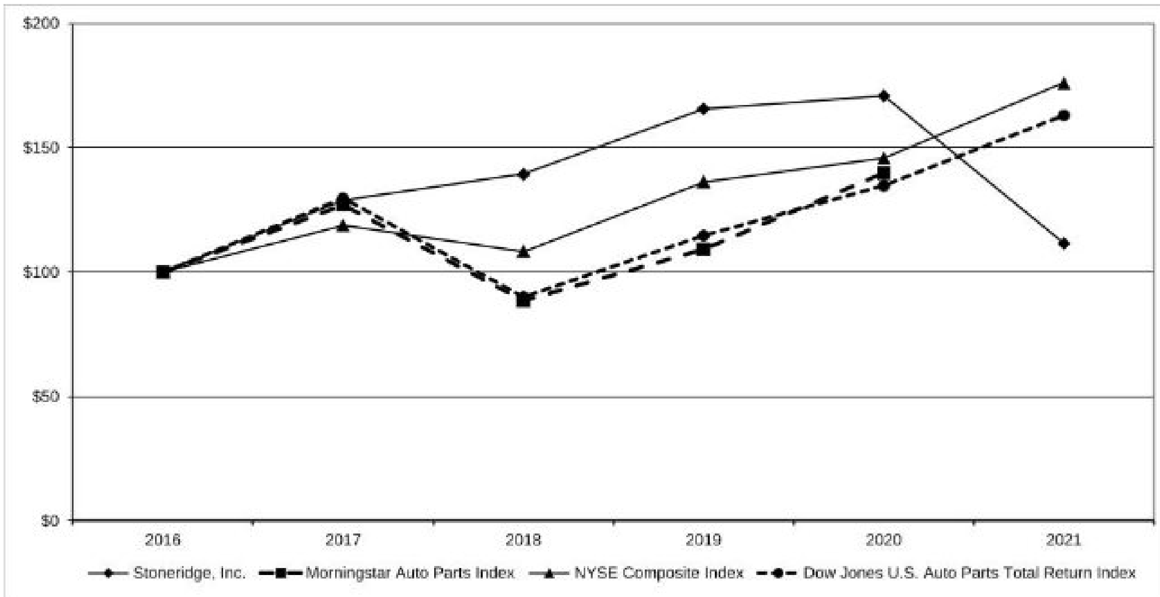
Period	Total number of shares purchased	Average price paid per share	Total number of shares purchased as part of publicly announced plans or programs	Maximum number of shares that may yet be purchased under the plans or programs
10/1/21-10/31/21	-	$ -	N/A	N/A
11/1/21-11/30/21	-	$ -	N/A	N/A
12/1/21-12/31/21	354	$ 19.74	N/A	N/A
Total	354			

Other than the repurchase of Common Shares in March 2020 and the repurchase of Common Shares of 79,434 and 80,427, respectively, to satisfy employee tax withholdings associated with the delivery of Common Shares earned by employees pursuant to equity-base awards under the Company's Long-Term Incentive Plan there were no other repurchases of Common Shares made by us during the years ended December 31, 2021 or 2020. Refer to Note 2 of the consolidated financial statements for additional details regarding Common Share repurchases.

For information on "Related Stockholder Matters" required by Item 201(d) of Regulation S-K, refer to Item 12 of this report.

Performance Graph

Set forth below is a line graph comparing the cumulative total return of a hypothetical investment in our Common Shares with the cumulative total return of hypothetical investments in the Dow Jones U.S. Auto Parts (TR) Index and the NYSE Composite Index. The Dow Jones U.S. Auto Parts (TR) Index replaces the Morningstar Auto Parts Index in this analysis and going forward, as the latter data is no longer accessible. The latter index has been included with data through 2020. The graph is based on the respective market price of each investment as of December 31, 2016, 2017, 2018, 2019, 2020 and 2021 assuming in each case an initial investment of $100 on December 31, 2016, and reinvestment of dividends.



	2016	2017	2018	2019	2020	2021
Stoneridge, Inc.	$ 100	$ 129	$ 139	$ 166	$ 171	**$ 112**
Dow Jones U.S. Auto Parts Total Return Index	$ 100	$ 130	$ 90	$ 115	$ 135	**$ 163**
Morningstar Auto Parts Index	$ 100	$ 127	$ 89	$ 109	$ 140	
NYSE Composite Index	$ 100	$ 96	$ 108	$ 128	$ 117	**$ 147**

Item 6. [Reserved]

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations.

We are a leading global designer and manufacturer of highly engineered electrical and electronic systems, components and modules primarily for the automotive, commercial, off-highway and agricultural vehicle markets.

The following discussion and analysis should be read in conjunction with the consolidated financial statements and notes related thereto and other financial information included elsewhere herein.

Impacts to Global Market Conditions

The coronavirus pandemic ("COVID-19") and the ongoing supply chain disruptions, primarily related to semiconductor shortages, have had a negative impact on the global economy in 2020 and 2021. These conditions have disrupted, and likely will continue to disrupt, the global vehicle industry and customer sales, production volumes and purchases of automotive, commercial, off-highway and agricultural vehicles by end-consumers.

The adverse impacts of the COVID-19 pandemic led to a significant vehicle production slowdown in the first half of 2020, which was followed by increased consumer demand and vehicle production schedules. This surge in demand led to a worldwide semiconductor supply shortage at the end of 2020, and other supply chain related constraints which have continued through 2021. We have experienced longer lead-times, higher costs, delays in procuring other component parts and raw materials and more recently, significant production volume reductions as a result of these shortages. In the second half of 2021, these supply chain disruptions became incrementally more challenging and as a result we are experiencing higher related costs. We are working closely with our suppliers and customers to minimize any potential adverse impacts, and we continue to closely monitor the availability of semiconductor microchips and other component parts and raw materials, customer vehicle production schedules and any other supply chain inefficiencies that may arise, due to this or any other issue. In 2021, the Company recognized $17.6 million of cost recoveries related to spot buys of materials purchased for our customers.

Global vehicle volumes are expected to increase in 2022 due to a combination of higher demand and historically low inventory levels. However, vehicle production volumes will continue to be negatively impacted by the ongoing supply chain disruptions, including semiconductor shortages. The magnitude of the adverse impact on our financial condition, results of operations and cash flows will depend on the evolution of the semiconductor supply shortage, vehicle production schedules and supply chain impacts.

Segments

We are organized by products produced and markets served. Under this structure, our operations have been reported using the following segments:

Control Devices. This segment includes results of operations that manufacture actuators, sensors, switches and connectors.

Electronics. This segment includes results of operations from the production of driver information systems, camera-based vision systems, connectivity and compliance products and electronic control units.

Stoneridge Brazil ("SRB"). This segment includes results of operations that design and manufacture vehicle tracking devices and monitoring services, vehicle security alarms and convenience accessories, in-vehicle audio and infotainment devices and telematics solutions.

Overview

Although 2021 presented a number of challenges, the Company was able to effectively navigate an incredibly volatile operating environment while at the same time continuing to execute on our long-term strategy. The Company continues to work with our customers to preserve gross margin through price increases aligned with current market conditions and is executing on initiatives to reduce supply chain related costs.

The Company had net income of $3.4 million, or $0.12 per diluted share, for the year ended December 31, 2021.

Net income in 2021 increased by $11.4 million, or $0.41 per diluted share, from $(8.0) million, or $(0.29) per diluted share, for the year ended December 31, 2020 primarily due to the gain on sale of the Canton Facility of $30.7 million, or $0.93 per diluted share, and the pre-tax gain on the disposal of the MSIL joint venture of $1.9 million, or $(0.05) per diluted share. This increase was offset by higher D&D costs for new product launches and higher SG&A including a net unfavorable fair value adjustment for SRB earn-out consideration of $5.3 million, or $(0.19) per diluted share.

In 2021, our net sales increased by $122.5 million, or 18.9%, while our operating income increased $23.1 million.

Our Control Devices segment net sales increased by 3.9% primarily as a result of the recovery from the 2020 COVID-19 impacts in our North American and China automotive markets. These increases were partially offset by a decrease in volumes in European automotive volumes due to the exit of PM sensor production and a decrease in volumes in our North American commercial vehicle market. Segment gross margin decreased due to costs associated with supply chain disruptions offset by lower restructuring and realignment costs of $1.7 million and favorable leverage of fixed costs from higher sales levels. Segment operating income increased due to the gain on sale of the Canton Facility of $30.7 million, the gain on disposal of the PM sensor business of $1.1 million and a decrease in restructuring expense of $4.0 million offset by higher costs from supply chain disruptions.

Our Electronics segment net sales increased by 38.9% primarily as a result of the recovery from the 2020 COVID-19 impacts in our North American and European commercial and off-highway vehicle markets as well as favorable customer pricing for recoveries of semiconductor spot buy purchases and favorable foreign currency translation. Segment gross margin decreased primarily due to higher costs associated with supply chain disruptions including spot purchases of electronic components offsetting favorable leverage of fixed costs from higher sales levels. Operating loss increased primarily due to higher costs from supply chain disruptions including spot purchases of electronic components and higher D&D costs offset by higher sales.

Our Stoneridge Brazil segment net sales increased by 19.1% due to higher volumes for all of our product lines and for our Argentina market channel offset by unfavorable foreign currency translation. Segment gross margin was lower due to adverse sales mix from higher product sales compared to monitoring fees and higher costs associated with supply chain disruptions offset by favorable leverage of fixed costs. Operating income decreased primarily due to a $5.3 million increase in net unfavorable adjustments to the fair value of the Stoneridge Brazil earn-out consideration and the impairment of Brazilian indirect tax credits of $0.7 million offset by higher sales.

In 2021, SG&A expenses were higher compared to 2020 due to a $5.3 million increase in net adjustments to the fair value of the SRB earn-out consideration and higher professional service costs which were offset by lower incentive compensation costs and the 2021 gains on the MSIL joint venture of $1.8 million and the disposal of the PM sensor business of $1.1 million.

D&D costs increased in 2021 mostly due to increased spend in our Electronics segment for higher consulting and prototype costs as well as lower customer reimbursements for ongoing development activities for awarded business programs and development of advanced technologies and systems.

At December 31, 2021 and 2020, we had cash and cash equivalents of $85.5 million and $73.9 million, respectively. The 2021 increase in borrowings under the Credit Facility were to maintain a high level of liquidity to ensure adequate available capital across our global locations due to adverse economic conditions caused by COVID-19. At December 31, 2021 and 2020, we had $164.0 million and $136.0 million, respectively, in borrowings outstanding on the 2019 Credit Facility.

Outlook

The Company believes that focusing on products that address industry megatrends will have a positive impact on both our top-line growth and underlying margins. Beginning in the first quarter of 2020 and continuing through 2021, COVID-19 caused worldwide adverse economic conditions and uncertainty in our served markets. In the first quarter of 2021, we began experiencing supply chain related disruptions because of a worldwide semiconductor shortage, which has resulted in longer lead-times, higher costs and delays in procuring other component parts and raw materials. The Company expects that ongoing material cost challenges, resulting from supply chain disruptions, will put pressure on margins particularly in the first half of 2022.

The North American automotive market is expected to increase to 15.2 million units in 2022 from 13.0 million units in 2021 as the market continues to recover from supply chain disruptions. The Company expects sales volumes in our Control Devices segment to increase from 2021 based on current 2022 production forecasts and market conditions and the ramp-up of certain electrified vehicle program launches, however, global supply chain shortages, primarily the global semiconductor supply shortage could adversely impact our sales volumes and gross margin in 2022.

For 2022, we expect an increase in our Electronics' segment sales compared to 2021 primarily due to the increase in production volume forecasts in our European and North American commercial markets, strong demand in our off-highway markets and new program launches in 2022. We expect increased sales from the launch of our first two MirrorEye camera-based vision systems for OEM applications as well as the continued roll out of MirrorEye in the retrofit markets. Customer pricing increased net sales by $17.6 million in the fourth quarter of 2021, primarily due to customer recoveries related to spot buys of materials purchased for our customers. This spot buy material purchasing activity, which is recognized as revenue and material costs, was passed through 100% to the customer and was driven by electronic component shortages in 2021. The Company expects continued spot buy activity in 2022 but cannot predict the duration or magnitude of continued spot buy activity due to volatile supply chains and component availability.

In 2021, our D&D spend increased to support near term launches of awarded business primarily in our Electronics segment. We expect that our D&D spending will moderate from current levels as we continue to align our global engineering capabilities in order to develop advanced technologies and systems within our portfolio of products.

Our 2021 Stoneridge Brazil segment revenues increased compared to the prior year due to the recovery of the adverse economic conditions caused by COVID-19 in 2020 offset by unfavorable foreign currency translation. In October 2021, the International Monetary Fund forecasted the Brazil gross domestic product to grow 5.2% in 2021 and 1.5% in 2022. We expect our served market channels to remain stable based on current market conditions. Our financial performance in our Stoneridge Brazil segment is also subject to uncertainty from movements in the Brazilian Real and Argentina Peso foreign currencies.

Global transportation vehicle production has been impacted by supply chain disruptions, including semiconductor shortages, in 2021, primarily in our commercial vehicle and automotive end-markets. Based on the current market conditions, we expect continued impact on production in 2022. We expect incremental costs related to supply chain disruptions and production schedule volatility to continue to adversely impact our gross margin in 2022.

In 2021, our effective tax rate increased due to atypical jurisdictional earnings mix as a result of increased supply chain costs and incremental engineering expenses to support future program launches. We expect our effective tax rate to return to previous rates in 2022.

Other Matters

A significant portion of our sales are outside of the United States. These sales are generated by our non-U.S. based operations, and therefore, movements in foreign currency exchange rates can have a significant effect on our results of operations, which are presented in U.S. dollars. A significant portion of our raw materials purchased by our Electronics and Stoneridge Brazil segments are denominated in U.S. dollars, and therefore movements in foreign currency exchange rates can also have a significant effect on our results of operations. The U.S. Dollar strengthened against the euro, Swedish krona, Brazilian real, Argentine peso and Mexican peso in 2021 and the Brazilian real, Argentine peso and Mexican peso in 2020, unfavorably impacting our material costs and reported results.

On November 2, 2021, the Company entered into a Share Purchase Agreement (the "SPA") with Minda Corporation Limited ("Minda"), as the buyer, and MSIL. Pursuant to the SPA the Company agreed to sell to Minda the Company's minority interest in MSIL for approximately $21.5 million equivalent Indian Rupee which was payable in U.S. dollars at closing. On December 30, 2021, pursuant to the SPA, the Company closed the sale of MSIL to Minda for $21.6 million. The Company recognized net proceeds of $21.0 million and a gain, net of direct selling costs, of $1.8 million.

On March 8, 2021, the Company entered into an Asset Purchase Agreement (the “APA”) by and among the Company, the Company’s wholly owned subsidiary, Stoneridge Electronics AS, as the Sellers, and Standard Motor Products, Inc. (“SMP”) and SMP Poland SP Z O.O., as the Buyers. Pursuant to the APA the Company agreed to sell to the Buyers the Company’s assets located in Lexington, Ohio and Tallinn, Estonia related to the manufacturing of particulate matter sensor products and related service part operations (together, the “PM sensor business”). In the past, the Company has sometimes referred to the PM sensor assets as the Company’s soot sensing business. The Buyers did not acquire any of the Company’s locations or employees. The purchase price for the sale of the PM sensor business was $4.0 million (subject to a post-closing inventory adjustment which was a payment to SMP of $1.1 million) plus the assumption of certain liabilities. The purchase price was allocated among PM sensor product lines, Gen 1 and Gen 2 as defined under the APA. The purchase price allocated to Gen 1 fixed assets and inventory and Gen 2 fixed assets was $3.2 million and $0.8 million, respectively. The sale of the Gen 2 assets occurred during November 2021 as the Company’s supply commitments to certain customers were completed in September 2021. The Company and SMP also entered into certain ancillary agreements, including a contract manufacturing agreement, a transitional services agreement, and a supply agreement, pursuant to which the Company will provide and be compensated for certain manufacturing, transitional, administrative and support services to SMP on a short-term basis.

On May 19, 2020, the Company committed to the strategic exit of its Control Devices particulate matter sensor product line (“PM Sensor Exit”). The decision to exit the PM sensor product line was made after the consideration of the decline in the market outlook for diesel passenger vehicles, the current and expected profitability of the product line and the Company’s strategic focus on aligning resources with the greatest opportunities. The estimated costs for the PM Sensor Exit include employee severance and termination costs, contract termination costs, professional fees and other related costs such as potential commercial and supplier settlements. Non-cash charges include impairment of fixed assets and accelerated depreciation associated with PM sensor production. We recognized $2.4 million and $3.4 million of expense as a result of this initiative during the years ended December 31, 2021 and 2020, respectively. The only remaining costs relate to potential commercial settlements and legal fees which we continue to negotiate. The estimated additional cost related to these settlements and fees is up to $4.2 million.

In January 2019, we committed to a restructuring plan that resulted in the closure of our Canton, Massachusetts facility (“Canton Facility”) as of March 31, 2020 and the consolidation of manufacturing operations at that site into other Company locations (“Canton Restructuring”). The cost for the Canton Restructuring included employee severance and termination costs, contract termination costs, professional fees and other related costs such as moving and set-up costs for equipment and costs to restore the engineering function previously located at the Canton Facility. We recognized expense as a result of these actions during the years ended December 31, 2021 and 2020 of $0.0 and $3.0 million, respectively. We do not expect to incur additional costs related to the Canton Restructuring. During the third quarter of 2020, we leased the Canton Facility to a third party. On June 17, 2021, we sold the Canton Facility for net proceeds of $35.2 million and a net gain of $30.7 million.

On April 1, 2019, the Company entered into an Asset Purchase Agreement by and among the Company, the Company’s wholly owned subsidiary, Stoneridge Control Devices, Inc. (“SCD”), and Standard Motor Products, Inc. (“SMP”). On the same day pursuant to the APA, in exchange for $40.0 million (subject to a post-closing inventory adjustment which was a payment to SMP of $1.6 million) and the assumption of certain liabilities, the Company and SCD sold to SMP product lines and assets related to certain non-core switches and connectors (the “Non-core Products”). On April 1, 2019, the Company and SMP also entered into certain ancillary agreements, including a transition services agreement, a contract manufacturing agreement and a supply agreement, pursuant to which the Company provided and was compensated for certain manufacturing, transitional, administrative and support services to SMP on a short-term basis. The products related to the Non-core Products were manufactured in Juarez, Mexico and Canton, Massachusetts, and included ball switches, ignition switches, rotary switches, courtesy lamps, toggle switches, headlamp switches and other related components. On April 1, 2019, the Company’s Control Devices segment recognized net sales and costs of goods sold of $4.2 million and $2.8 million, respectively, for the one-time sale of finished goods inventory and a gain on disposal of $33.9 million for the sale of fixed assets, intellectual property and customer lists associated with the Non-core Products less transaction costs. On June 17, 2020, the Company and SMP terminated the transition services agreement and the contract manufacturing agreement.

In the fourth quarter of 2018, the Company undertook restructuring actions for the Electronics segment affecting the European Aftermarket business and China operations. In the second quarter of 2020, the Company finalized plans to move its European Aftermarket sales activities in Dundee, Scotland to a new location which resulted in incurring contract termination costs as well as employee severance and termination costs. In addition, the Company announced an additional restructuring program to transfer the European production of its Controls product line to China. For the years ended December 31, 2021 and 2020, we recognized expense of $0.3 million and $2.4 million, respectively, as a result of these actions for related costs. The Company does not expect to incur additional restructuring costs related to the Electronics segment.

On October 26, 2018, the Company announced a Board of Directors approved share repurchase program authorizing Stoneridge to repurchase up to $50.0 million of our Common Shares. Thereafter, on May 7, 2019, we announced that the Company had entered into an accelerated share repurchase agreement with Citibank N.A. to repurchase an aggregate of $50.0 million of our Common Shares. Pursuant to the accelerated share repurchase agreement in the second quarter of 2019 we made an upfront payment of $50.0 million and received an initial delivery of 1,349,528 Common Shares which became treasury shares. On February 25, 2020, Citibank N.A. terminated early its commitment pursuant to the accelerated share repurchase agreement and delivered to the Company, 364,604 Common Shares representing the final settlement of the Company's repurchase program which became treasury shares.

On February 24, 2020, the Board of Directors authorized a new repurchase program of $50.0 million for the repurchase of outstanding Common Shares over an 18 month period. The repurchases could be made from time to time in either open market transactions or in privately negotiated transactions. Repurchases could also be made under rule 10b-18, which permit Common Shares to be repurchased through pre-determined criteria. The timing, volume and nature of common share repurchases was at the discretion of management, dependent on market conditions, other priorities of cash investment, applicable securities laws and other factors. This Common Share repurchase program authorization did not obligate the Company to acquire any particular amount of its Common Shares, and could be suspended or discontinued at any time. For the quarter ended March 31, 2020, under the new 2020 repurchase program, the Company repurchased 242,634 Common Shares for $5.0 million, which became treasury shares, in accordance with this repurchase program authorization. In April 2020, the Company announced that it was temporarily suspending the previously announced share repurchase program in response to uncertainty surrounding the duration and magnitude of the impact of COVID-19. The 2020 repurchase program authorization expired during the third quarter of 2021 and no additional shares will be repurchased under this program.

In March 2017, the Supreme Court of Brazil issued a decision concluding that a certain state value added tax should not be included in the calculation of federal gross receipts taxes. The decision reduced Stoneridge Brazil's gross receipts tax prospectively and, potentially, retrospectively. In April 2019, the Company received judicial notification that the Superior Judicial Court of Brazil rendered a favorable decision on Stoneridge Brazil's case granting the Company the right to recover, through offset of federal tax liabilities, amounts collected by the government from June 2010 to February 2017. Based on the Company's determination that these tax credits will be used prior to expiration, we recorded a pre-tax benefit of $6.5 million as a reduction to SG&A expense which is inclusive of related interest income of $2.4 million, net of applicable professional fees of $1.0 million in the second quarter of 2019. The Company received administrative approval in January 2020 and is now offsetting eligible federal taxes with these tax credits. The Brazilian tax authorities have sought clarification before the Supreme Court of Brazil (in a leading case involving another taxpayer) of certain matters that could affect the rights of Brazilian taxpayers regarding these credits. The leading case was decided on May 13, 2021. The Company does not expect any impact to amounts previously recognized as a result of the Supreme Court decision.

We regularly evaluate the performance of our businesses and their cost structures, including personnel, and make necessary changes thereto in order to optimize our results. We also evaluate the required skill sets of our personnel and periodically make strategic changes. As a consequence of these actions, we incur severance related costs which we refer to as business realignment charges. Business realignment costs of $1.4 million and $4.0 million were incurred during the years ended December 31, 2021 and 2020, respectively.

Because of the competitive nature of the markets we serve, we face pricing pressures from our customers in the ordinary course of business. In response to these pricing pressures we have been able to effectively manage our production costs by the combination of lowering certain costs and limiting the increase of others, the net impact of which to date has not been material. However, if we are unable to effectively manage production costs in the future to mitigate future pricing pressures, our results of operations would be adversely affected.

Year Ended December 31, 2021 Compared To Year Ended December 31, 2020

Consolidated statements of operations as a percentage of net sales are presented in the following table (in thousands):

Year ended December 31,	2021		2020		Dollar increase / (decrease)
Net sales	**$ 770,462**	**100.0 %**	$ 648,006	100.0 %	$ 122,456
Costs and expenses:					
Cost of goods sold	**603,604**	**78.3**	493,810	76.2	109,794
Selling, general and administrative	**116,000**	**15.1**	112,474	17.4	3,526
Gain on sale of Canton Facility, net	**(30,718)**	**(4.0)**	-	-	(30,718)
Design and development	**66,165**	**8.6**	49,386	7.6	16,779
Operating income (loss)	**15,411**	**2.0**	(7,664)	(1.2)	23,075
Interest expense, net	**5,189**	**0.7**	6,124	0.9	(935)
Equity in earnings of investee	**(3,658)**	**(0.5)**	(1,536)	(0.2)	(2,122)
Other expense (income), net	**1,444**	**0.3**	(1,528)	(0.2)	2,972
Income (loss) before income taxes	**12,436**	**1.5**	(10,724)	(1.7)	23,160
Provision (benefit) for income taxes	**9,030**	**1.2**	(2,774)	(0.4)	11,804
Net income (loss)	**$ 3,406**	**0.3 %**	$ (7,950)	(1.3)%	$ 11,356

Net Sales. Net sales for our reportable segments, excluding inter-segment sales are summarized in the following table (in thousands):

Year ended December 31,	2021		2020		Dollar increase	Percent increase
Control Devices	**$ 355,775**	**46.1 %**	$ 342,576	52.9 %	$ 13,199	3.9 %
Electronics	**357,910**	**46.5**	257,767	39.7	100,143	38.9 %
Stoneridge Brazil	**56,777**	**7.4**	47,663	7.4	9,114	19.1 %
Total net sales	**$ 770,462**	**100.0 %**	$ 648,006	100.0 %	$ 122,456	18.9 %

Our Control Devices segment net sales increased $13.2 million due to recovery from 2020 COVID-19 impacts in our North American automotive and agricultural vehicle markets of $23.4 million and $2.7 million, respectively, and an increase in our China automotive and commercial vehicle markets of $3.8 million and $0.4 million, respectively, as well as a favorable foreign currency translation of $3.2 million. These increases were partially offset by a decrease in volumes in our European automotive of $16.7 million due to the exit of PM sensor production and a decrease in volumes in our North American commercial vehicle market of $4.3 million.

Our Electronics segment net sales increased $100.1 million due to recovery from 2020 COVID-19 impacts in our North American and European commercial vehicle and European and North American off-highway vehicle markets of $28.7 million, $28.4 million, $14.4 million and $5.3 million, respectively, as well as favorable euro and Swedish krona foreign currency translation of $5.0 million compared to the prior year period. In the fourth quarter, net sales increased by $17.6 million due to customer pricing for recoveries of electronic component spot buy purchases.

Our Stoneridge Brazil segment net sales increased $9.1 million due to higher volumes for all of our product lines and for our Argentina market channel offset by unfavorable foreign currency translation of $3.0 million.

Net sales by geographic location are summarized in the following table (in thousands):

Year ended December 31,	2021		2020		Dollar increase	Percent increase
North America	**$ 386,944**	**50.2 %**	$ 330,528	51.0 %	$ 56,416	17.1 %
South America	**56,777**	**7.4**	47,663	7.4	9,114	19.1 %
Europe and Other	**326,741**	**42.4**	269,815	41.6	56,926	21.1 %
Total net sales	**$ 770,462**	**100.0 %**	$ 648,006	100.0 %	$ 122,456	18.9 %

The increase in North American net sales was attributable to sales volume increases in our North American commercial vehicle, automotive and off-highway markets of $24.5 million, $22.5 million and $6.2 million, respectively and customer pricing for recoveries of semiconductor spot buy purchases of $2.4 million. The increase in net sales in South America was due to higher volumes for all of our Stoneridge Brazil product lines and for our Argentina market channel offset by unfavorable Brazilian real foreign currency translation of $3.0 million. The increase in net sales in Europe and Other was primarily due to increases in our European commercial vehicle and off-highway markets of $28.4 million and $14.4 million, respectively, and increases in our China automotive and agricultural vehicle markets of $3.8 million and $2.2 million, respectively. Europe and Other net sales also increased due to customer pricing for recoveries of semiconductor spot buy purchases of $15.2 million and favorable foreign currency translation of $8.2 million. These increases were partially offset by a decrease in volumes in our European automotive market of $16.7 million due to the exit of PM sensor production.

Cost of Goods Sold and Gross Margin. Cost of goods sold increased compared to 2020 and our gross margin decreased to 21.7% in 2021 compared to 23.8% in 2020. Our material cost as a percentage of net sales increased by 4.2% to 57.0% in 2021 compared to 52.8% in 2020 primarily caused by costs associated with supply chain disruptions including spot purchases of electronic components. In 2021, cost of goods sold increased by $17.6 million, or 2.3% of net sales, due to semiconductor spot buy purchases which was offset by customer recoveries. Overhead as a percentage of net sales decreased by 2.0% to 16.1% for 2021 compared to 18.0% for 2020 primarily due to leverage of fixed costs from higher sales levels offset by higher incremental freight costs.

Our Control Devices segment gross margin decreased due to costs associated with supply chain disruptions offset by lower restructuring and realignment costs of $1.7 million and favorable leverage of fixed costs from higher sales levels.

Our Electronics segment gross margin decreased primarily due to higher costs associated with supply chain disruptions including spot purchases of electronic components offsetting favorable leverage of fixed costs from higher sales levels.

Our Stoneridge Brazil segment gross margin decreased due to adverse sales mix from higher product sales compared to monitoring fees and higher costs associated with supply chain disruptions offset by favorable leverage of fixed costs.

Selling, General and Administrative ("SG&A"). SG&A expenses increased by $3.5 million compared to 2020 due to a $5.3 million increase in net adjustments to the fair value of the SRB earn-out consideration and higher professional service costs which were offset by lower incentive compensation costs and the 2021 gain on disposal of the PM sensor business of $1.1 million and the MSIL joint venture of $1.8 million.

Design and Development ("D&D"). D&D costs increased by $16.8 million mostly due to increased spend in our Electronics segment of $14.4 million comprised of higher consulting and prototype costs as well as lower customer reimbursements offset by higher capitalized software development costs for ongoing development activities for awarded business programs and development of advanced technologies and systems.

Operating Income (Loss). Operating income (loss) is summarized in the following table by reportable segment (in thousands):

Year ended December 31,	**2021**	**2020**	**Dollar increase / (decrease)**	**Percent increase / (decrease)**
Control Devices	**$ 54,933**	$ 22,072	$ 32,861	148.9 %
Electronics	**(12,502)**	(3,672)	(8,830)	(240.5)%
Stoneridge Brazil	**995**	3,766	(2,771)	(73.6)%
Unallocated corporate	**(28,015)**	(29,830)	1,815	6.1 %
Operating income (loss)	**$ 15,411**	$ (7,664)	$ 23,075	301.1 %

Our Control Devices segment operating income increased due to the gain on sale of the Canton Facility of $30.7 million, the gain on disposal of the PM sensor business of $1.1 million and a decrease in restructuring expense of $4.0 million offset by higher costs from supply chain disruptions and higher Sarasota environmental remediation costs.

Our Electronics segment operating loss increased primarily due to higher costs from supply chain disruptions including spot purchases of electronic components net of recoveries and higher D&D costs offset by higher sales.

Our Stoneridge Brazil segment operating income decreased primarily due to a $5.3 million increase in net adjustments to the fair value of the Stoneridge Brazil earn-out consideration and the impairment of Brazilian indirect tax credits of $0.7 million offset by higher sales.

Our unallocated corporate operating loss was lower due to lower incentive compensation benefits as a result of Company performance and the gain on the disposal of the MSIL joint venture offset by higher business realignment costs of $0.8 million and higher professional service costs.

Operating income (loss) by geographic location is summarized in the following table (in thousands):

Year ended December 31,	2021	2020	Dollar increase (decrease)	Percent increase (decrease)
North America	**$ 13,072**	$ (22,179)	$ 35,251	158.9 %
South America	**995**	3,766	(2,771)	(73.6)%
Europe and Other	**1,344**	10,749	(9,405)	(87.5)%
Operating income (loss)	**$ 15,411**	$ (7,664)	$ 23,075	301.1 %

Our North American operating income increased due to the gain on sales of the Canton Facility, the PM sensor business and the MSIL joint venture, higher sales in our automotive and commercial vehicle markets and lower restructuring costs offsetting higher costs from supply chain disruptions. The decrease in operating income in South America was primarily due to an unfavorable change in fair value of earn-out consideration adjustments of $5.3 million offsetting higher sales. Our operating results in Europe and Other decreased primarily due to higher costs from supply chain disruptions including spot purchases of electronic components net of recoveries and higher D&D costs offset by higher sales in our commercial vehicle and off-highway markets as well as a favorable foreign currency translation impact.

Interest Expense, net. Interest expense, net decreased by $0.9 million compared to 2020 due to higher interest income of $1.2 million at Stoneridge Brazil from monetary correction on indirect tax credits. Offsetting this increase was higher interest expense from Credit Facility borrowings.

Equity in Earnings of Investee. Equity earnings for MSIL were $1.8 million and $1.5 million for the years ended December 31, 2021 and 2020, respectively. As discussed in Note 2 to the consolidated financial statements, the Company sold its equity interest in MSIL on December 30, 2021. Equity earnings for Autotech were $1.9 million and $0.1 million for the years ended December 31, 2021 and 2020. The increase in Autotech earnings was due to favorable 2021 fair value adjustments to fund investments.

Other Expense (Income), net. We record certain foreign currency transaction losses (gains) as a component of other income, net on the consolidated statement of operations. Other expense (income), net of $1.4 million, increased by $2.9 million in 2021 compared to other income, net of $1.5 million for 2020 primarily due to 2021 foreign currency losses in our Electronics segment and 2020 foreign currency transaction gains in our Stoneridge Brazil and Electronics segments.

Provision (Benefit) for Income Taxes. In 2021, income tax expense of $9.0 million was attributable to the gain on the sale of the Canton facility, the gain on the sale of the Company's minority interest in MSIL, the mix of earnings among tax jurisdictions as well as tax losses for which no benefit is recognized due to valuation allowances in certain jurisdictions. The effective tax rate of 72.6% is greater than the statutory tax rate primarily due to the impact of tax losses for which no benefit is recognized due to valuation allowances in certain jurisdictions, the tax impact of the sale of the Company's minority interest in MSIL, partially offset by tax incentives.

In 2020, income tax benefit of $(2.8) million was attributable to the mix of earnings and losses among tax jurisdictions as well as tax losses for which no benefit is recognized due to valuation allowances in certain jurisdictions. The effective tax rate of 25.9% is slightly greater than the statutory tax rate primarily due to non-deductible expenses and tax losses for which no benefit is recognized due to valuation allowances in certain jurisdictions offset by the impact of certain incentives.

Year Ended December 31, 2020 Compared To Year Ended December 31, 2019

Consolidated statements of operations as a percentage of net sales are presented in the following table (in thousands):

Year ended December 31,	2020		2019		Dollar increase / (decrease)
Net sales	$ 648,006	100.0 %	$ 834,289	100.0 %	$ (186,283)
Costs and expenses:					
Cost of goods sold	493,810	76.2	620,556	74.4	(126,746)
Selling, general and administrative	112,474	17.4	123,853	14.8	(11,379)
Gain on disposal of non-core products, net	-	-	(33,599)	(4.0)	33,599
Design and development	49,386	7.6	52,198	6.3	(2,812)
Operating (loss) income	(7,664)	(1.2)	71,281	8.5	(78,945)
Interest expense, net	6,124	0.9	4,324	0.5	1,800
Equity in earnings of investee	(1,536)	(0.2)	(1,578)	(0.2)	(42)
Other (income) expense, net	(1,528)	(0.2)	142	-	1,670
(Loss) income before income taxes	(10,724)	(1.7)	68,393	8.2	(79,117)
(Benefit) provision for income taxes	(2,774)	(0.4)	8,102	1.0	(10,876)
Net (loss) income	$ (7,950)	(1.3)%	$ 60,291	7.2 %	$ (68,241)

Net Sales. Net sales for our reportable segments, excluding inter-segment sales are summarized in the following table (in thousands):

Year ended December 31,	2020		2019		Dollar decrease	Percent decrease
Control Devices	$ 342,576	52.9 %	$ 431,560	51.7 %	$ (88,984)	(20.6)%
Electronics	257,767	39.7	335,195	40.2	(77,428)	(23.1)%
Stoneridge Brazil	47,663	7.4	67,534	8.1	(19,871)	(29.4)%
Total net sales	$ 648,006	100.0 %	$ 834,289	100.0 %	$ (186,283)	(22.3)%

Our Control Devices segment net sales decreased primarily as a result of COVID-19 and 2019 sales of $41.6 million under the contract manufacturing agreement pursuant to the 2019 disposal of the Non-core Products. Including the impact of COVID-19, Control Devices experienced decreased sales volume in our North American automotive, North American commercial vehicle, agricultural and other markets of $61.5 million, $17.4 million, $9.6 million and $14.5 million, respectively. These decreases were offset by increased sales volume in our European and China automotive markets of $7.2 million and $6.6 million, respectively.

Our Electronics segment net sales decreased primarily as a result of COVID-19 including a decrease in sales volume in our European, North American and China commercial vehicle markets of $47.2 million, $23.4 million and $1.0 million, respectively. In addition, the Electronics segment net sales decreased due to a decrease in sales volume in our European off-highway vehicle products of $17.1 million. These decreases were offset by a favorable foreign currency translation of $11.4 million.

Our Stoneridge Brazil segment net sales decreased due to unfavorable foreign currency translation of $19.5 million and the effects of COVID-19 causing lower volumes for our aftermarket, mass retail and OES channels mostly in the second quarter of 2020.

Net sales by geographic location are summarized in the following table (in thousands):

Year ended December 31,	2020		2019		Dollar decrease	Percent decrease
North America	$ 330,528	51.0 %	$ 457,633	54.8 %	$ (127,105)	(27.8)%
South America	47,663	7.4	67,534	8.1	(19,871)	(29.4)%
Europe and Other	269,815	41.6	309,122	37.1	(39,307)	(12.7)%
Total net sales	$ 648,006	100.0 %	$ 834,289	100.0 %	$ (186,283)	(22.3)%

The decrease in North American net sales was primarily attributable to the impact of COVID-19 and 2019 sales of Non-core Products under the contract manufacturing agreement of $41.6 million. Including the impact of COVID-19, sales volume has decreased in our North American automotive, commercial vehicle, agricultural and other markets by $60.8 million, $40.8 million, $9.6 million and $14.5 million, respectively. The decrease in net sales in South America was primarily due to unfavorable foreign currency translation of $19.5 million and lower volumes for our aftermarket, mass retail and OES channels mostly in the second quarter of 2020 primarily due to COVID-19. The decrease in net sales in Europe and Other was primarily due to a decrease in our European commercial vehicle and off-highway markets of $47.2 million and $17.1 million, respectively, primarily impacted by COVID-19. Europe and Other sales were favorably impacted due to increased sales volume in our European automotive and China automotive of $6.7 million and $6.6 million, respectively, as well as favorable foreign currency translation of $11.6 million.

Cost of Goods Sold and Gross Margin. Cost of goods sold decreased compared to 2019 and our gross margin decreased to 23.8% in 2020 compared to 25.6% in 2019. Our material cost as a percentage of net sales decreased by 0.3% to 52.8% in 2020 compared to 53.1% in 2019. Overhead as a percentage of net sales increased by 2.1% to 18.0% for 2020 compared to 15.9% for 2019 primarily due to adverse fixed cost leverage on lower sales levels including COVID-19 related incremental operating costs.

Our Control Devices segment gross margin decreased due to lower sales from COVID-19, the impact of the disposal of Non-core Products in the second quarter of 2019, as well as adverse fixed cost leverage on lower sales levels including our Canton facility which ceased production in accordance with our Canton restructuring plan in December 2019 and COVID-19 related incremental operating costs for employee safety protocols.

Our Electronics segment gross margin decreased primarily due to lower sales as a result of the of COVID-19 pandemic and higher overhead costs from the adverse leverage of fixed costs and COVID-19 related incremental operating costs for employee safety protocols.

Our Stoneridge Brazil segment gross margin decreased due to lower sales volumes partially offset by lower material costs due to favorable product mix from a greater percentage of monitoring service fees.

Selling, General and Administrative ("SG&A"). SG&A expenses decreased by $11.4 million compared to 2019 due to a favorable fair value adjustment, net for earn-out consideration of $5.5 million at Stoneridge Brazil, lower incentive compensation costs, professional service fees and travel related expenses offset by the 2019 recovery of Brazilian indirect taxes of $6.5 million and higher 2020 business realignment and restructuring costs of $3.1 million.

Gain on Disposal of Non-core Products, net. The gain on disposal in 2019 relates to the disposal of Control Devices' Non-core Products.

Design and Development ("D&D"). D&D costs decreased by $2.8 million mostly due to lower restructuring and business realignment expenses at Control Devices of $2.3 million and lower spending at Control Devices due to the pace of the restoration of the engineering function previously located at the Canton facility.

Operating (Loss) Income. Operating (loss) income is summarized in the following table by reportable segment (in thousands):

Year ended December 31,	2020	2019	Dollar increase / (decrease)	Percent increase / (decrease)
Control Devices	$ 22,072	$ 73,327	$ (51,255)	(69.9)%
Electronics	(3,672)	25,006	(28,678)	NM
Stoneridge Brazil	3,766	6,539	(2,773)	(42.4)%
Unallocated corporate	(29,830)	(33,591)	3,761	11.2 %
Operating (loss) income	$ (7,664)	$ 71,281	$ (78,945)	NM

Our Control Devices segment operating income decreased due to the 2019 gain on disposal of Non-core Products, lower sales primarily related to COVID-19 as well as lower sales from the disposal of Non-core Products from the second quarter of 2019. Adverse leverage of fixed costs from lower sales volumes and COVID-19 related incremental operating costs offset by lower restructuring costs also affected operating income.

Our Electronics segment operating income decreased primarily due to lower sales as a result of COVID-19 resulting in lower gross margin. Electronics SG&A cost reductions were offset by business realignment and restructuring expenses.

Our Stoneridge Brazil segment operating income decreased primarily from the 2019 recovery of Brazilian indirect taxes of $6.5 million, lower sales volumes and margin offset by a favorable fair value adjustment, net for earn-out consideration of $5.5 million recognized in 2020.

Our unallocated corporate operating loss decreased primarily from lower incentive compensation, professional fees and travel related expenses.

Operating (loss) income by geographic location is summarized in the following table (in thousands):

Year ended December 31,	2020	2019	Dollar decrease	Percent decrease
North America	$ (22,179)	$ 32,694	$ (54,873)	NM
South America	3,766	6,539	(2,773)	(42.4)%
Europe and Other	10,749	32,048	(21,299)	(66.5)%
Operating (loss) income	$ (7,664)	$ 71,281	$ (78,945)	NM

Our North American operating results decreased due to lower sales in our automotive, commercial vehicle, agriculture and off-highway markets, adverse leverage of fixed costs and COVID-19 related incremental operating costs for employee safety protocols. The decrease in operating income in South America was primarily due to the 2019 recovery of indirect Brazilian taxes and lower sales volumes offset by the favorable fair value adjustment, net for earn-out consideration. Our operating results in Europe and Other decreased primarily due to lower sales in our commercial vehicle and off-highway markets, adverse leverage of fixed costs and COIVD-19 related incremental operating costs for employee safety protocols.

Interest Expense, net. Interest expense, net increased by $1.8 million compared to 2019 due to an increase in outstanding debt balances.

Equity in Earnings of Investee. Equity earnings for MSIL were $1.5 million and $1.6 million for the years ended December 31, 2020 and 2019, respectively. The decrease in MSIL earnings was due to lower sales volume from the COVID-19 pandemic.

Other (Income) Expense, net. We record certain foreign currency transaction and forward currency hedge contract (gains) losses as a component of other income, net on the consolidated statement of operations. Other income, net increased by $1.7 million to $1.5 million in 2020 compared to other expense, net of $0.1 million in 2019 primarily due to higher foreign currency transaction gains in our Electronics, Control Devices and Stoneridge Brazil segments.

(Benefit) Provision for Income Taxes. In 2020, income tax benefit of $(2.8) million was attributable to the mix of earnings and losses among tax jurisdictions as well as tax losses for which no benefit is recognized due to valuation allowances in certain jurisdictions. The effective tax rate of 25.9% is slightly greater than the statutory tax rate primarily due to non-deductible expenses and tax losses for which no benefit is recognized due to valuation allowances in certain jurisdictions offset by the impact of certain incentives.

In 2019, income tax expense of $8.1 million was attributable to the mix of earnings amount jurisdictions and the sale of Non-core-Products on April 1, 2019. The effective tax rate of 11.8% is lower than the statutory tax rate primarily due to certain tax incentives offset by non-deductible expenses and tax losses for which no benefit is recognized due to valuation allowances in certain jurisdictions.

Liquidity and Capital Resources

Summary of Cash Flows for the years ended December 31, 2021 and 2020 (in thousands):

Year ended December 31,	**2021**	**2020**	**Dollar increase / (decrease)**
Net cash provided by (used for):			
Operating activities	**$ (36,248)**	$ 28,641	$ (64,889)
Investing activities	**28,041**	(33,885)	61,926
Financing activities	**22,876**	6,513	16,363
Effect of exchange rate changes on cash and cash equivalents	**(3,041)**	3,247	(6,288)
Net change in cash and cash equivalents	**$ 11,628**	$ 4,516	$ 7,112

Cash used for operating activities increased compared to 2020 primarily due to an increase in cash used to fund working capital levels primarily for inventory, which was impacted by supply chain disruptions and production volatilities, offset by higher net income, net of the reconciling adjustment for the gain on the sale of the Canton Facility. Our receivable terms and collections rates have remained consistent between periods presented.

Net cash provided by investing activities increased compared to 2020 due to proceeds from the sale of the Canton Facility, from the disposal of the MSIL joint venture and from the disposal of the PM sensor business as well as lower capital expenditures and capitalized software costs which were offset by higher investments in the Autotech Fund II.

Net cash used for financing activities increased compared to the prior year primarily due to higher Credit Facility net borrowings.

Summary of Cash Flows for the years ended December 31, 2020 and 2019 (in thousands):

Years ended December 31,	**2020**	**2019**	**Dollar increase / (decrease)**
Net cash provided by (used for):			
Operating activities	$ 28,641	$ 24,505	$ 4,136
Investing activities	(33,885)	(6,299)	(27,586)
Financing activities	6,513	(28,258)	34,771
Effect of exchange rate changes on cash and cash equivalents	3,247	(1,637)	4,884
Net change in cash and cash equivalents	$ 4,516	$ (11,689)	$ 16,205

Cash provided by operating activities increased compared to 2019 primarily due to a reduction in cash used to fund working capital levels and the 2019 payment of Orlaco earn-out consideration of $5.1 million offset by lower net income and the payment of dividends to former noncontrolling interest holders of Stoneridge Brazil of $6.0 million. Our receivable terms and collections rates have remained consistent between periods presented.

Net cash used for investing activities increased compared to 2019 due to proceeds from the 2019 sale of Control Devices Non-core Products offset by lower capital expenditures.

Net cash provided by (used for) financing activities increased compared to the prior year primarily due to lower Common Share repurchases of $45.0 million offset by higher Credit Facility borrowings, net of $20.0 million and the 2019 cash payment for Orlaco earn-out consideration.

Summary of Future Cash Flows

The following table summarizes our future cash outflows resulting from financial contracts and commitments, as of December 31, 2021 (in thousands):

	Total	Less than 1 year	2-3 years	4-5 years	After 5 years
Credit Facility	$ 163,957	$ -	$ 163,957	$ -	$ -
Debt	5,248	5,248	-	-	-
Interest payments(A)	9,648	4,020	5,628	-	-
Operating leases	21,992	4,776	8,507	5,382	3,327
Stoneridge Brazil earn-out consideration	7,351	7,351	-	-	-
Total contractual obligations(B)	$ 208,196	$ 21,395	$ 178,092	$ 5,382	$ 3,327

(A) Includes estimated payments under the Company's Credit Facility and other debt obligations using the most current interest rate and principal balance information available at December 31, 2021, extended through the end of the term.

(B) In December 2018, the Company entered into an agreement to make a $10.0 million investment in a fund ("Autotech Fund II") managed by Autotech Ventures ("Autotech"), a venture capital firm focused on ground transportation technology. The Company's $10.0 million investment in the Autotech Fund II will be contributed over the expected ten year life of the fund. The Company has contributed $7.1 million to the Autotech Fund II since December 2018.

Management will continue to focus on efficiently managing its weighted-average cost of capital and believes that cash flows from operations and the availability of funds from our Credit Facility provides sufficient liquidity to meet our future growth and operating needs.

As outlined in Note 5 to our consolidated financial statements, the Credit Facility permits borrowing up to a maximum level of $400.0 million. This variable rate facility provides the flexibility to refinance other outstanding debt or finance acquisitions through June 2024. The Credit Facility contains certain financial covenants that require the Company to maintain less than a maximum leverage ratio and more than a minimum interest coverage ratio. The Credit Facility also contains affirmative and negative covenants and events of default that are customary for credit arrangements of this type including covenants which place restrictions and/or limitations on the Company's ability to borrow money, make capital expenditures and pay dividends. The Credit Facility had an outstanding balance of $164.0 million at December 31, 2021.

Due to the expected impact of the COVID-19 pandemic on the Company's end-markets and the resulting expected financial impacts on the Company, on June 26, 2020, the Company entered into a Waiver and Amendment No. 1 to the Fourth Amended and Restated Credit Agreement ("Amendment No. 1"). Amendment No. 1 provided for certain covenant relief and restrictions during the "Covenant Relief Period" (the period ending on the date that the Company delivers a compliance certificate for the quarter ending June 30, 2021). The Covenant Relief Period ended on August 14, 2021. During the Covenant Relief Period:

- the maximum net leverage ratio was suspended;
- the calculation of the minimum interest coverage ratio excluded second quarter 2020 financial results effective for the quarters ended September 30, 2020 through March 31, 2021;
- the minimum interest coverage ratio of 3.50 was reduced to 2.75 and 3.25 for the quarters ended December 31, 2020 and March 31, 2021, respectively;
- the Company's liquidity could not be less than $150,000;
- the Company's aggregate amount of cash and cash equivalents could not exceed $130,000;
- there were certain restrictions on Restricted Payments (as defined); and
- a Permitted Acquisition (as defined) could not be consummated unless otherwise approved in writing by the required lenders.

Amendment No. 1 increased the leverage based LIBOR pricing grid through the maturity date and also provides for a LIBOR floor of 50 basis points on outstanding borrowings excluding any Specified Hedge Borrowings (as defined) which remain subject to a LIBOR floor of 0 basis points.

On December 17, 2021, the Company entered into Amendment No. 2 to the Fourth Amended and Restated Credit Agreement ("Amendment No. 2"). Amendment No. 2 implemented non-LIBOR interest reference rates for borrowings in euros and British pounds.

Due to the ongoing impacts of the COVID-19 pandemic and supply chain disruptions on the Company's end-markets and the resulting financial impacts on the Company, on February 28, 2022, the Company entered into Amendment No. 3 to the Fourth Amended and Restated Credit Agreement ("Amendment No. 3"). Amendment No. 3 reduces the total revolving credit commitments from $400.0 million to $300.0 million and the maximum permitted amount of swing loans from $40.0 million to $30.0 million. Amendment No. 3 provides for certain financial covenant relief and additional covenant restrictions during the "Specified Period" (the period from February 28, 2022 until the date that the Company delivers a compliance certificate for the quarter ending March 31, 2023 in form and substance satisfactory to the administrative agent). During the Specified Period:

- the maximum net leverage ratio is changed to 4.0x for the year ended December 31, 2021, suspended for the quarters ending March 31, 2022 through September 30, 2022 and cannot exceed 4.75 to 1.00 for the quarter ended December 31, 2022 or 3.50 to 1.00 for the quarter ended March 31, 2023;
- the minimum interest coverage ratio of 3.50 is reduced to 2.50 for the quarter ended March 31, 2022, 2.25 for the quarter ended June 30, 2022 and 3.00 for the quarters ended September 30, 2022 and December 31, 2022;
- an additional condition to drawing on the Credit Facility has been added that restricts borrowings if the Company's total of 100% of domestic and 65% of foreign cash and cash equivalents exceeds $70.0 million;
- there are certain additional restrictions on Restricted Payments (as defined); and
- a Permitted Acquisition (as defined) may not be consummated unless the net leverage ratio is below 3.50x during the Specified Period.

Amendment No. 3 changes the leverage based LIBOR pricing grid through the maturity date and also retains a LIBOR floor of 50 basis points on outstanding borrowings excluding any Specified Hedge Borrowings (as defined) which remain subject to a LIBOR floor of 0 basis points.

Amendment No. 3 also incorporates hardwired mechanics to permit a future replacement of LIBOR as the interest reference rate without lender consent.

As a result of Amendment No. 3, the Company was in compliance with all covenants at December 31, 2021. The Company has not experienced a violation which would limit the Company's ability to borrow under the Credit Facility, as amended and does not expect that the covenants under it will restrict the Company's financing flexibility. However, it is possible that future borrowing flexibility under the Credit Facility may be limited as a result of lower than expected financial performance due to the adverse impact of COVID-19 and supply chain shortages on the Company's markets and general global demand. The Company expects to make additional repayments on the Credit Facility when cash exceeds the amount needed for operations and to remain in compliance with all covenants.

Stoneridge Brazil maintained short-term loans used for working capital purposes during 2021 and 2020. There were no borrowings outstanding on these notes at December 31, 2021.

The Company's wholly owned subsidiary located in Stockholm, Sweden, has an overdraft credit line which allows overdrafts on the subsidiary's bank account up to a daily maximum level of 20.0 million Swedish krona, or $2.2 million and $2.4 million, at December 31, 2021 and December 31, 2020, respectively. At December 31, 2021, there was 19.0 million Swedish krona, or $2.1 million outstanding on this overdraft credit line. At December 31, 2020, there was 13.1 million Swedish krona, or $1.6 million outstanding on this overdraft credit line. During the year ended December 31, 2021, the subsidiary borrowed 352.4 million Swedish krona, or $39.0 million, and repaid 346.5 million Swedish krona, or $38.3 million.

The Company's wholly-owned subsidiary located in Suzhou, China, has two credit lines which allow up to a maximum borrowing level of 50.0 million Chinese yuan, or $7.9 million and $7.7 million at December 31, 2021 and 2020, respectively. At December 31, 2021 and December 31, 2020 there was $3.1 million and $4.5 million, respectively, in borrowings outstanding recorded within current portion of debt. In addition, the Suzhou subsidiary has a bank acceptance draft line of credit which allows up to a maximum borrowing level of 15.0 million Chinese yuan, or $2.4 million and $2.3 million at December 31, 2021 and December 31, 2020, respectively. There was $2.2 million and $0.4 million utilized on the Suzhou bank acceptance draft line of credit at December 31, 2021 and 2020, respectively.

On May 19, 2020, the Company committed to the strategic exit of its Control Devices particulate matter ("PM") sensor product line ("PM Sensor Exit"). The estimated costs for the PM Sensor Exit include employee severance and termination costs, professional fees and other related costs such as potential commercial and supplier settlements. Non-cash charges include impairment of fixed assets and accelerated depreciation associated with PM sensor production. We recognized $2.4 million and $3.4 million of expense as a result of this initiative during 2021 and 2020, respectively. The only remaining costs relate to potential commercial settlements and legal fees which we continue to negotiate. The estimated additional costs related to these settlements and fees is up to $4.2 million.

In January 2019, the Company committed to a restructuring plan that resulted in the closure of its Canton Facility as of March 31, 2020 and the consolidation of manufacturing operations at that site into other Company locations ("Canton Restructuring"). The costs for the Canton Restructuring included employee severance and termination costs, contract termination costs, professional fees and other related costs such as moving and set-up costs for equipment and costs to restore the engineering function previously located at the Canton Facility. We recognized less than $0.1 million and $3.0 million of expense as a result of these actions during the years ended December 31, 2021 and 2020, respectively. During the third quarter of 2020, we leased the Canton facility to a third party. On June 17, 2021, we sold the Canton Facility for net proceeds of $35.2 million and a net gain of $30.7 million.

In the fourth quarter of 2018, the Company undertook restructuring actions for the Electronics segment affecting the European Aftermarket business and China operations. In the second quarter of 2020, the Company finalized plans to move its European Aftermarket sales activities in Dundee, Scotland to a new location which resulted in incurring contract termination costs as well as employee severance and termination costs. In addition, the Company announced a restructuring program to transfer the European production of its Controls product line to China. For the years ended December 31, 2021 and 2020, we recognized expense of $0.3 million and $2.4 million, respectively, as a result of these actions for related costs. We do not expect to incur additional costs related to the Electronics segment restructuring.

On October 26, 2018 the Company announced a Board of Directors approved repurchase program authorizing Stoneridge to repurchase up to $50.0 million of our Common Shares. Thereafter, on May 7, 2019, we announced that the Company had entered into an accelerated share repurchase agreement with Citibank N.A. to repurchase an aggregate of $50.0 million of our Common Shares. Pursuant to the accelerated share repurchase agreement in the second quarter of 2019 we made an upfront payment of $50.0 million and received an initial delivery of 1,349,528 Common Shares which became treasury shares. On February 25, 2020, Citibank N.A. terminated early its commitment pursuant to the accelerated share repurchase agreement and delivered to the Company, 364,604 Common Shares representing the final settlement of the Company's repurchase program which became treasury shares.

On February 24, 2020, the Board of Directors authorized a new repurchase program for $50.0 million of outstanding Common Shares over an 18 month period. The repurchases could be made from time to time in either open market transactions or in privately negotiated transactions. Repurchases could also be made under rule 10b-18, which permit Common Shares to be repurchased through pre-determined criteria. The timing, volume and nature of repurchases of Common Shares was at the discretion of management, dependent on market conditions, other priorities of cash investment, applicable securities laws and other factors. This Common Share repurchase program authorization did not obligate the Company to acquire any particular amount of its Common Shares, and it could be suspended or discontinued at any time. For the quarter ended March 31, 2020, the Company repurchased 242,634 Common Shares for $5.0 million in accordance with this repurchase program authorization. In April 2020, the Company announced that it was temporarily suspending the previously announced share repurchase program in response to uncertainty surrounding the duration and magnitude of the impact of COVID-19. The 2020 repurchase program authorization expired during the third quarter of 2021 and no additional shares will be repurchased under this program.

In January 2020, Stoneridge Brazil paid dividends to former noncontrolling interest holders of Brazilian real ("R$") 24.2 million ($6.0 million) as of December 31, 2019. The dividends payable balance included R$3.7 million ($1.0 million) in monetary correction for the year ended December 31, 2019 based on the Brazilian National Extended Consumer Price inflation index.

In December 2018, the Company entered into an agreement to make a $10.0 million investment in a fund ("Autotech Fund II") managed by Autotech Ventures ("Autotech"), a venture capital firm focused on ground transportation technology. The Company's $10.0 million investment in the Autotech Fund II will be contributed over the expected ten-year life of the fund. As of December 31 2021, the Company's cumulative investment in the Autotech Fund II was $7.1 million. The Company contributed $3.2 million, net and $1.6 million to the Autotech Fund II during the years ended December 31, 2021 and 2020, respectively.

Our future results could also be adversely affected by unfavorable changes in foreign currency exchange rates. We have significant foreign denominated transaction exposure in certain locations, especially in Brazil, Argentina, Mexico, Sweden, Estonia, the Netherlands, United Kingdom and China. We have entered into foreign currency forward contracts to reduce our exposure related to certain foreign currency fluctuations. See Note 10 to the consolidated financial statements for additional details. Our future results could also be unfavorably affected by increased commodity prices as commodity fluctuations impact the cost of our raw material purchases.

At December 31, 2021, we had a cash and cash equivalents balance of approximately $85.5 million, of which 57.0% was held in foreign locations. The Company has approximately $236.0 million of undrawn commitments under the Credit Facility as of December 31, 2021, which results in total undrawn commitments and cash balances of more than $319.8 million. However, despite the February 28, 2022 amendment, it is possible that future borrowing flexibility under our Credit Facility may be limited as a result of our financial performance.

Commitments and Contingencies

See Note 11 to the consolidated financial statements for disclosures of the Company's commitments and contingencies.

Seasonality

Our Control Devices and Electronics segments are moderately seasonal, impacted by mid-year and year-end shutdowns and the ramp-up of new model production at key customers. In addition, the demand for our Stoneridge Brazil segment consumer products is generally higher in the second half of the year.

Inflation and International Presence

By operating internationally, we are affected by foreign currency exchange rates and the economic conditions of certain countries. Furthermore, given the current economic climate and recent fluctuations in certain commodity prices, we believe that an increase in such items could significantly affect our profitability. See Note 10 to the consolidated financial statements for additional details on the Company's commodity price and foreign currency exchange rate risks.

Critical Accounting Policies and Estimates

The preparation of financial statements in conformity with U.S. Generally Accepted Accounting Principles ("GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent liabilities at the date of the consolidated financial statements, and the reported amounts of revenues and expenses during the reporting period.

On an ongoing basis, we evaluate estimates and assumptions used in our consolidated financial statements. We base our estimates on historical experience and on various other factors that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results could differ from these estimates.

Our critical accounting policies, those most important to the financial presentation and those that are the most complex, subjective or require significant judgment, are as follows. For additional information, see Item 8 of Part II, "Financial Statements and Supplementary Data — Note 2 — Summary of Significant Accounting Policies."

Revenue Recognition and Sales Commitments. We recognize revenue when obligations under the terms of a contract with our customer are satisfied; generally this occurs with the transfer of control of our products and services, which is usually when the parts are shipped or delivered to the customer's premises. Revenue is measured as the amount of consideration we expect to receive in exchange for transferring goods or providing services. The transaction price will include estimates of variable consideration to the extent it is probable that a significant reversal of revenue recognized will not occur. Incidental items that are not significant in the context of the contract are recognized as expense. Revenue for OEM and Tier 1 supplier customers and aftermarket products are recognized at the point in time it satisfies a performance obligation by transferring control of a part to the customer. A small portion of our sales are comprised of monitoring services of which the revenue is recognized over the life of the contract. See Note 3 to the consolidated financial statements for additional information on our revenue recognition policies, including recognizing revenue based on satisfying performance obligations.

Warranties. Our warranty liability is established based on our best estimate of the amounts necessary to settle existing and future claims on products sold as of the balance sheet dates. These accruals are based on several factors including past experience, production changes, industry developments and various other considerations. Our estimate is based on historical trends of units sold and claim payment amounts, combined with our current understanding of the status of existing claims and discussions with our customers. The key factors in our estimate are the stated or implied warranty period, the customer source, customer policy decisions regarding warranties and customers seeking to holding the company responsible for their product warranties. Although we believe that our warranty liability is adequate and that the judgment applied is appropriate, such amounts estimated to be due and payable could differ materially from what will actually transpire in the future.

Contingencies. We are subject to legal proceedings and claims, including product liability claims, commercial or contractual disputes, environmental enforcement actions and other claims that arise in the normal course of business. We routinely assess the likelihood of any adverse judgments or outcomes to these matters, as well as ranges of probable losses, by consulting with internal personnel principally involved with such matters and with our outside legal counsel handling such matters.

We have accrued for estimated losses when it is probable that a liability or loss has been incurred and the amount can be reasonably estimated. Contingencies by their nature relate to uncertainties that require the exercise of judgment both in assessing whether or not a liability or loss has been incurred and estimating that amount of probable loss. The liabilities may change in the future due to new developments or changes in circumstances. The inherent uncertainty related to the outcome of these matters can result in amounts materially different from any provisions made with respect to their resolution.

Goodwill. Goodwill is tested for impairment at least annually and whenever events or changes in circumstances indicate that the carrying value may not be recoverable. In conducting our annual impairment assessment testing, we first perform a qualitative assessment of whether it is more likely than not that a reporting unit's fair value is less than its carrying amount. If not, no further goodwill impairment testing is performed. If it is more likely than not that a reporting unit's fair value is less than its carrying amount, or if we elect not to perform a qualitative assessment of a reporting unit, we then compare the fair value of the reporting unit to the related net book value. If the net book value of a reporting unit exceeds its fair value, an impairment loss is measured and recognized.

The Company utilizes an income statement approach to estimate the fair value of a reporting unit and a market valuation approach to further support this analysis. The income approach is based on projected debt-free cash flow which is discounted to the present value using discount factors that consider the timing and risk of cash flows. We believe that this approach is appropriate because it provides a fair value estimate based on the reporting unit's expected long-term operating cash flow performance. This approach also mitigates the impact of cyclical trends that occur in the industry. Fair value is estimated using internally developed forecasts, as well as commercial and discount rate assumptions. The discount rate used is the value-weighted average of our estimated cost of equity and of debt ("cost of capital") derived using both known and estimated customary market metrics. Our weighted average cost of capital is adjusted to reflect a risk factor, if necessary. Other significant assumptions include terminal value growth rates, terminal value margin rates, future capital expenditures and changes in future working capital requirements. While there are inherent uncertainties related to the assumptions used and to management's application of these assumptions to this analysis, we believe that the income statement approach provides a reasonable estimate of the fair value of a reporting unit. The market valuation approach is used to further support our analysis.

The annual impairment test for goodwill for the years ended December 31, 2021, 2020 and 2019 showed no impairment and fair value exceeded book value by more than 100%. A one percent increase in discount rates or a one percent decrease in revenue growth rates would not have resulted in a change in the conclusion regarding impairment.

Income Taxes. Deferred income taxes are provided for temporary differences between the amount of assets and liabilities for financial reporting purposes and the basis of such assets and liabilities as measured by tax laws and regulations. Our deferred tax assets include, among other items, net operating loss carryforwards and tax credits that can be used to offset taxable income in future periods and reduce income taxes payable in those future periods. Our U.S. state and foreign net operating losses expire at various times or have indefinite expiration dates. Our U.S. federal general business credits, if unused, begin to expire in 2025, and the state and foreign tax credits expire at various times.

Accounting standards require that deferred tax assets be reduced by a valuation allowance if, based on all available evidence, it is considered more likely than not that some portion or all of the recorded deferred tax assets will not be realized in future periods. This assessment requires significant judgment, and in making this evaluation, the Company considers available positive and negative evidence, including the potential to carryback net operating losses and credits, the future release of certain taxable temporary differences, actual and forecasted results, and tax planning strategies that are both prudent and feasible. Risk factors include U.S. and foreign economic conditions that affect the automotive and commercial vehicle markets of which the Company has significant operations.

The Company has recognized deferred taxes related to foreign withholding taxes and the expected foreign currency impact upon repatriation from foreign subsidiaries not considered indefinitely reinvested.

The Tax Cuts and Jobs Act of 2017 created a provision known as Global Intangible Low-Taxed Income ("GILTI") that imposes a tax on certain earnings of foreign subsidiaries. The Company has made an accounting policy election to reflect GILTI taxes, if any, as a current period tax expense when incurred.

Recently Adopted Accounting Standards

In December 2019, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2019-12, "Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes." The amendments in this update remove certain exceptions of Topic 740 including: exception to the incremental approach for intraperiod tax allocation when there is a loss from continuing operations and income or gain from other items; exception to the requirement to recognize a deferred tax liability for equity method investments when a foreign subsidiary becomes an equity method investment; exception to the ability not to recognize a deferred tax liability for a foreign subsidiary when a foreign equity method investment becomes a subsidiary; exception to the general methodology for calculating income taxes in an interim period when a year-to-date loss exceeds the anticipated loss for the year. There are also additional areas of guidance in regards to: franchise and other taxes partially based on income and the interim recognition of enactment of tax laws and rate changes. The provisions of this ASU are effective for years beginning after December 15, 2020, with early adoption permitted. The Company adopted this standard prospectively as of January 1, 2020 using the modified retrospective basis. The impact of the adoption was a reduction to deferred tax liabilities and an increase to retained earnings of $13.8 million on the consolidated balance sheet as of December 31, 2020. The adoption of this standard did not have an impact on the Company's consolidated results of operations and cash flows.

Recently Issued Accounting Standards Not Yet Adopted as of December 31, 2021

In March 2020, the FASB issued ASU 2020-04, "Reference Rate Reform (Topic 848) – Facilitation of the Effects of Reference Rate Reform on Financial Reporting." The guidance in ASU 2020-04 provides temporary optional expedient and exceptions to the guidance in U.S. GAAP on contract modifications and hedge accounting to ease the financial reporting burdens related to expected market transition from the London Interbank Offered Rate ("LIBOR") and other interbank offered rates to alternative reference rates, such as the Secured Overnight Financing Rate ("SOFR") (also known as the "reference rate reform"). The guidance allows companies to elect not to apply certain modification accounting requirements to contracts affected by the reference rate reform, if certain criteria are met. The guidance will also allow companies to elect various optional expedients which would allow them to continue to apply hedge accounting for hedging relationships affected by the reference rate reform, if certain criteria are met. The new standard was effective upon issuance and generally can be applied to applicable contract modifications through December 31, 2022. As of December 31, 2021, the Company has not yet had contracts modified due to rate reform.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

Interest Rates

We are exposed to interest rate risk primarily from the effects of changes in interest rates. At December 31, 2021, approximately 96.9% of our outstanding debt was floating-rate and 3.1% was fixed-rate. We estimate that a 1.0% change in the interest costs of our floating-rate debt outstanding as of December 31, 2021 would change interest expense on an annual basis by approximately $1.6 million.

Currency Exchange Rates

In addition to the United States, we have significant operations in Europe, South America, Mexico and China. As a result we are subject to translation risk because of the transactions of our foreign operations are in local currency (particularly the Brazilian real, Chinese renminbi, Mexican peso, euro, Swedish krona and Argentinian peso) and must be translated into U.S. dollars. As currency exchange rates fluctuate, the translation of our consolidated statements of operations into U.S. dollars affects the comparability of revenues, expenses, operating income, net income and earnings per share between years.

We have previously used derivative financial instruments, including foreign currency forward contracts, to mitigate our exposure to fluctuations in foreign currency exchange rates by reducing the effect of such fluctuations on foreign currency denominated intercompany transactions, inventory material purchases and other foreign currency exposures.

As discussed in detail in Note 10 to our consolidated financial statements, we entered into foreign currency forward contracts the purpose of which is to reduce exposure related to the Company's future Mexican peso-denominated purchases.

We estimate that a 10.0% unidirectional change in currency exchange rates relative to the U.S dollar would have changed our income before income taxes for the year ended December 31, 2021 by approximately $0.6 million.

Commodity Price Risk

The competitive marketplace in which we operate may limit our ability to recover increased costs through higher prices. As such, we are subject to market risk with respect to commodity price fluctuations principally related to our purchases of purchase of copper, steel, zinc, resins and certain other commodities through a combination of fixed price agreements, staggered short-term contract maturities and commercial negotiations with our suppliers and customers. In the future, if we believe that the terms of a fixed price agreement become beneficial to us, we will enter into another such instrument. We may also consider pursuing alternative commodities or alternative suppliers to mitigate this risk over a period of time.

Item 8. Financial Statements and Supplementary Data.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS
AND FINANCIAL STATEMENT SCHEDULE

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of Stoneridge, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Stoneridge, Inc. and subsidiaries (the Company) as of December 31, 2021 and 2020, the related consolidated statements of operations, comprehensive income, cash flows and shareholders' equity for each of the three years in the period ended December 31, 2021, and the related notes and financial statement schedule listed in the Index at Item 15 (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2021 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2021, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2021, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 28, 2022 expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing separate opinions on the critical audit matter or on the accounts or disclosures to which it relates.

	Product warranty and recall reserves
Description of the Matter	The Company's reserves for product warranty and recall totaled $9.8 million at December 31, 2021. As described in Note 2 to the consolidated financial statements, the Company's reserve for product warranty and recall is based on several factors, including the historical trends of units sold and payment amounts, combined with the Company’s current understanding of existing warranty and recall claims. The warranty liability requires a forecast of the resolution of existing claims as well as expected future claims on products previously sold. Auditing the Company’s reserve for product warranty and recall is complex due to the measurement uncertainty associated with the estimate, management’s judgment in determining the cost and volume estimates used in the computation as well as volume and costing assumptions in determining the expected future claims on products previously sold.
How We Addressed the Matter in Our Audit	We evaluated the design and tested the operating effectiveness of the Company’s controls over the product warranty and recall process. For example, we tested management review controls over the appropriateness of assumptions management used in the calculation and the completeness of warranty claims. To evaluate the reserve for product warranty and recall, we performed audit procedures that included, among others, testing the completeness and accuracy of the underlying claims data and costs used in the computation of management’s estimate, performing inquiries of the Company’s quality control team, and obtaining a legal confirmation letter to evaluate the status and assessment of certain reserves. We assessed the historical accuracy of management’s product warranty and recall reserves and performed sensitivity analyses of significant assumptions to evaluate the impact to the reserve that would result from changes in the assumptions.

/s/Ernst & Young LLP

We have served as the Company’s auditor since 2002.

Detroit, MI
February 28, 2022

STONERIDGE, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS

December 31, (in thousands)	2021	2020
ASSETS		
Current assets:		
Cash and cash equivalents	**$ 85,547**	$ 73,919
Accounts receivable, less reserves of $1,443 and $817, respectively	**150,388**	136,745
Inventories, net	**138,115**	90,548
Prepaid expenses and other current assets	**36,774**	33,452
Total current assets	**410,824**	334,664
Long-term assets:		
Property, plant and equipment, net	**107,901**	119,324
Intangible assets, net	**49,863**	55,394
Goodwill	**36,387**	39,104
Operating lease right-of-use asset	**18,343**	18,944
Investments and other long-term assets, net	**42,081**	53,978
Total long-term assets	**254,575**	286,744
Total assets	**$ 665,399**	$ 621,408
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Current portion of debt	**$ 5,248**	$ 7,673
Accounts payable	**97,679**	86,103
Accrued expenses and other current liabilities	**70,139**	52,272
Total current liabilities	**173,066**	146,048
Long-term liabilities:		
Revolving credit facility	**163,957**	136,000
Deferred income taxes	**10,706**	12,935
Operating lease long-term liability	**14,912**	15,434
Other long-term liabilities	**6,808**	14,357
Total long-term liabilities	**196,383**	178,726
Shareholders' equity:		
Preferred Shares, without par value, 5,000 shares authorized, none issued	**-**	-
Common Shares, without par value, 60,000 shares authorized, 28,966 and 28,966 shares issued and 27,191 and 27,006 shares outstanding at June 30, 2021 and December 31, 2020, respectively, with no stated value	**-**	-
Additional paid-in capital	**232,490**	234,409
Common Shares held in treasury, 1,775 and 1,960 shares at June 30, 2021 and December 31, 2020, respectively, at cost	**(55,264)**	(60,482)
Retained earnings	**215,748**	212,342
Accumulated other comprehensive loss	**(97,024)**	(89,635)
Total shareholders' equity	**295,950**	296,634
Total liabilities and shareholders' equity	**$ 665,399**	$ 621,408

The accompanying notes are an integral part of these consolidated financial statements.

STONERIDGE, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS

Year ended December 31, (in thousands, except per share data)	2021	2020	2019
Net sales	**$ 770,462**	$ 648,006	$ 834,289
Costs and expenses:			
Cost of goods sold	**603,604**	493,810	620,556
Selling, general and administrative	**116,000**	112,474	123,853
Gain on sale of Canton Facility, net	**(30,718)**	-	-
Gain on disposal of Non-core Product, net	**-**	-	(33,599)
Design and development	**66,165**	49,386	52,198
Operating income (loss)	**15,411**	(7,664)	71,281
Interest expense, net	**5,189**	6,124	4,324
Equity in earnings of investee	**(3,658)**	(1,536)	(1,578)
Other expense (income), net	**1,444**	(1,528)	142
Income (loss) before income taxes	**12,436**	(10,724)	68,393
Provision (benefit) for income taxes	**9,030**	(2,774)	8,102
Net income (loss)	**$ 3,406**	$ (7,950)	$ 60,291
Earnings (loss) per share:			
Basic	**$ 0.13**	$ (0.29)	$ 2.17
Diluted	**$ 0.12**	$ (0.29)	$ 2.13
Weighted-average shares outstanding:			
Basic	**27,114**	27,025	27,792
Diluted	**27,416**	27,025	28,270

The accompanying notes are an integral part of these consolidated financial statements.

STONERIDGE, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

Year ended December 31, (in thousands)	2021	2020	2019
Net income (loss)	**$ 3,406**	$ (7,950)	$ 60,291
Other comprehensive (loss) income, net of tax:			
Foreign currency translation (1)	**(8,408)**	2,677	(5,428)
Unrealized gain (loss) on derivatives (2)	**1,019**	(840)	(292)
Other comprehensive (loss) income, net of tax	**(7,389)**	1,837	(5,720)
Comprehensive (loss) income	**$ (3,983)**	$ (6,113)	$ 54,571

(1) Net of tax expense of $267 for the year ended December 31, 2021.
(2) Net of tax expense (benefit) of $271, $(223) and $(78) for the years ended December 31, 2021, 2020 and 2019, respectively.

The accompanying notes are an integral part of these consolidated financial statements.

STONERIDGE, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS

Year ended December 31, (in thousands)	2021	2020	2019
OPERATING ACTIVITIES:			
Net income (loss)	**$ 3,406**	$ (7,950)	$ 60,291
Adjustments to reconcile net income to net cash provided by (used for) operating activities:			
Depreciation	**27,823**	27,309	24,904
Amortization, including accretion and write-off of deferred financing costs	**6,648**	5,926	6,579
Deferred income taxes	**(511)**	(7,953)	5,586
Earnings of equity method investee	**(3,658)**	(1,536)	(1,578)
(Gain) loss on sale of fixed assets	**(165)**	185	(98)
Share-based compensation expense	**5,960**	5,888	6,191
Excess tax benefit related to share-based compensation expense	**(563)**	(46)	(1,289)
Gain on sale of Canton Facility, net	**(30,718)**	-	-
Gain on disposal of business and joint venture, net	**(2,942)**	-	-
Gain on disposal of Non-core Products, net	**-**	-	(33,599)
Property, plant and equipment impairment charge	**-**	2,349	-
Change in fair value of earn-out contingent consideration	**2,065**	(3,196)	2,308
Changes in operating assets and liabilities:			
Accounts receivable, net	**(17,019)**	4,164	(1,353)
Inventories, net	**(51,270)**	4,000	(15,653)
Prepaid expenses and other assets	**(5,116)**	1,342	(8,898)
Accounts payable	**16,515**	3,642	(6,980)
Accrued expenses and other liabilities	**13,297**	(5,483)	(11,906)
Net cash (used for) provided by operating activities	**(36,248)**	28,641	24,505
INVESTING ACTIVITIES:			
Capital expenditures, including intangibles	**(27,031)**	(32,462)	(39,467)
Proceeds from sale of fixed assets	**268**	127	382
Proceeds from disposal of business, net	**1,837**	-	34,386
Proceeds from disposal of joint venture, net	**20,999**	-	-
Proceeds from sale of Canton Facility, net	**35,167**	-	-
Investment in venture capital fund, net	**(3,199)**	(1,550)	(1,600)
Net cash provided by (used for) investing activities	**28,041**	(33,885)	(6,299)
FINANCING ACTIVITIES:			
Revolving credit facility borrowings	**91,913**	71,500	112,000
Revolving credit facility payments	**(64,000)**	(61,500)	(82,000)
Proceeds from issuance of debt	**45,753**	41,104	2,208
Repayments of debt	**(48,125)**	(37,823)	(2,953)
Earn-out consideration cash payment	**-**	-	(3,394)
Common Share repurchase program	**-**	(4,995)	(50,000)
Repurchase of Common Shares to satisfy employee tax withholding	**(2,665)**	(1,773)	(4,119)
Net cash provided by (used for) financing activities	**22,876**	6,513	(28,258)
Effect of exchange rate changes on cash and cash equivalents	**(3,041)**	3,247	(1,637)
Net change in cash and cash equivalents	**11,628**	4,516	(11,689)
Cash and cash equivalents at beginning of period	**73,919**	69,403	81,092
Cash and cash equivalents at end of period	**$ 85,547**	$ 73,919	$ 69,403
Supplemental disclosure of cash flow information:			
Cash paid for interest	**$ 6,055**	$ 5,620	$ 4,401
Cash paid for income taxes, net	**$ 11,267**	$ (254)	$ 12,222
Supplemental disclosure of non-cash activities:			
Adoption of ASU 2019-12 (Note 2)	**$ -**	$ 13,750	$ -

The accompanying notes are an integral part of these consolidated financial statements.

STONERIDGE, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

(in thousands)	Number of Common Shares outstanding	Number of treasury shares	Additional paid-in capital	Common Shares held in treasury	Retained earnings	Accumulated other comprehensive loss	Total shareholders' equity
BALANCE , DECEMBER 31, 2018	28,488	478	231,647	(8,880)	146,251	(85,752)	283,266
Net income	—	—	—	—	60,291	—	60,291
Unrealized loss on derivatives, net	—	—	—	—	—	(292)	(292)
Currency translation adjustments	—	—	—	—	—	(5,428)	(5,428)
Issuance of Common Shares	407	(407)	—	—	—	—	—
Repurchased Common Shares for treasury, net	(137)	137	—	(1,893)	—	—	(1,893)
Common Share repurchase program	(1,350)	1,350	(10,000)	(40,000)	—	—	(50,000)
Share-based compensation, net	—	—	3,960	—	—	—	3,960
BALANCE DECEMBER 31, 2019	27,408	1,558	$ 225,607	$ (50,773)	$ 206,542	$ (91,472)	$ 289,904
Net loss	—	—	—	—	(7,950)	—	(7,950)
Unrealized loss on derivatives, net	—	—	—	—	—	(840)	(840)
Currency translation adjustments	—	—	—	—	—	2,677	2,677
Issuance of Common Shares	285	(285)	—	—	—	—	—
Repurchased Common Shares for treasury, net	(80)	80	—	5,286	—	—	5,286
Common Share repurchase program	(607)	607	10,000	(14,995)	—	—	(4,995)
Share-based compensation, net	—	—	(1,198)	—	—	—	(1,198)
Adoption of ASU 2019-12 (Note 2)	—	—	—	—	13,750	—	13,750
BALANCE DECEMBER 31, 2020	27,006	1,960	$ 234,409	$ (60,482)	$ 212,342	$ (89,635)	$ 296,634
Net income	**—**	**—**	**—**	**—**	**3,406**	**—**	**3,406**
Unrealized gain on derivatives, net	**—**	**—**	**—**	**—**	**—**	**1,019**	**1,019**
Currency translation adjustments	**—**	**—**	**—**	**—**	**—**	**(8,408)**	**(8,408)**
Issuance of Common Shares	**265**	**(265)**	**—**	**—**	**—**	**—**	**—**
Repurchased Common Shares for treasury, net	**(80)**	**80**	**—**	**5,218**	**—**	**—**	**5,218**
Share-based compensation, net	**—**	**—**	**(1,919)**	**—**	**—**	**—**	**(1,919)**
BALANCE DECEMBER 31, 2021	**27,191**	**1,775**	**$ 232,490**	**$ (55,264)**	**$ 215,748**	**$ (97,024)**	**$ 295,950**

The accompanying notes are an integral part of these consolidated financial statements.

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

1. Organization and Nature of Business

Stoneridge, Inc. and its subsidiaries are global designers and manufacturers of highly engineered electrical and electronic components, modules and systems for the automotive, commercial, off-highway and agricultural vehicle markets.

2. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying consolidated financial statements include the accounts of Stoneridge, Inc. and its wholly-owned subsidiaries (collectively, the "Company"). Intercompany transactions and balances have been eliminated in consolidation. The Company analyzes its ownership interests in accordance with Accounting Standards Codification ("ASC") "Consolidations (Topic 810)" to determine whether they are a variable interest entity and, if so, whether the Company is the primary beneficiary.

The Company's investment in Minda Stoneridge Instruments Ltd. ("MSIL") for the years ended December 31, 2020 and 2019 has been determined to be an unconsolidated entity, and therefore was accounted for under the equity method of accounting based on the Company's 49% ownership in MSIL. The Company sold its equity interest in MSIL on December 30, 2021.

Accounting Estimates

The preparation of financial statements in conformity with U.S. Generally Accepted Accounting Principles ("GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, including certain self-insured risks and liabilities, disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Because actual results could differ from those estimates, the Company revises its estimates and assumptions as new information becomes available.

Cash and Cash Equivalents

The Company's cash and cash equivalents include actively traded money market funds with short-term investments in marketable securities, primarily U.S. government securities. Cash and cash equivalents are stated at cost, which approximates fair value, due to the highly liquid nature and short-term duration of the underlying securities with original maturities of 90 days or less.

Accounts Receivable and Concentration of Credit Risk

Revenues are principally generated from the automotive, commercial, off-highway and agricultural vehicle markets. The Company's largest customers are Volvo and VW Group, primarily related to the Electronics reportable segment and accounted for the following percentages of consolidated net sales:

	2021	2020	2019
Volvo	**9 %**	8 %	8 %
VW Group	**9 %**	9 %	9 %

Accounts receivable are recorded at the invoice price, net of an estimate of allowance for doubtful accounts and other reserves.

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

Allowance for Doubtful Accounts

The Company evaluates the collectability of accounts receivable based on a combination of factors. In circumstances where the Company is aware of a specific customer's inability to meet its financial obligations, a specific allowance for doubtful accounts is recorded against amounts due to reduce the net recognized receivable to the amount the Company reasonably believes will be collected. Additionally, the Company reviews historical trends for collectability in determining an estimate for its allowance for doubtful accounts. If economic circumstances change substantially, estimates of the recoverability of amounts due to the Company could be reduced by a material amount. The Company does not have collateral requirements with its customers.

Inventories

Inventories are valued at the lower of cost (using either the first-in, first-out ("FIFO") or average cost methods) or net realizable value. The Company evaluates and adjusts as necessary its excess and obsolescence reserve on a quarterly basis. Excess inventories are quantities of items that exceed anticipated sales or usage for a reasonable period. The Company has guidelines for calculating provisions for excess inventories based on the number of months of inventories on hand compared to anticipated sales or usage. Management uses its judgment to forecast sales or usage and to determine what constitutes a reasonable period. Inventory cost includes material, labor and overhead. Inventories consist of the following:

December 31		2021		2020
Raw materials	**$**	**107,034**	$	67,775
Work-in-progress		**9,755**		7,005
Finished goods		**21,326**		15,768
Total inventories, net	**$**	**138,115**	$	90,548

Inventory valued using the FIFO method was $127,939 and $82,308 at December 31, 2021 and 2020, respectively. Inventory valued using the average cost method was $10,176 and $8,240 at December 31, 2021 and 2020, respectively.

Pre-production Costs Related to Long-term Supply Arrangements

Engineering, research and development and other design and development costs for products sold on long-term supply arrangements are expensed as incurred unless the Company has a contractual guarantee for reimbursement from the customer which are capitalized as pre-production costs. Costs for molds, dies and other tools used to make products sold on long-term supply arrangements for which the Company either has title to the assets or has the noncancelable right to use the assets during the term of the supply arrangement are capitalized in property, plant and equipment and amortized to cost of sales over the shorter of the term of the arrangement or over the estimated useful lives of the assets, typically three to seven years. Costs for molds, dies and other tools used to make products sold on long-term supply arrangements for which the Company has a contractual guarantee to a lump sum reimbursement from the customer are capitalized either as a component of prepaid expenses and other current assets or an investment and other long-term assets, net within the consolidated balance sheets. Capitalized pre-production costs were $16,292 and $14,259 at December 31, 2021 and 2020, respectively, and were recorded as a component of prepaid expenses and other current assets on the consolidated balance sheets.

Disposal of Non-Core Products

On April 1, 2019, the Company entered into an Asset Purchase Agreement by and among the Company, the Company's wholly owned subsidiary, Stoneridge Control Devices, Inc. ("SCD"), and Standard Motor Products, Inc. ("SMP"). On the same day pursuant to the Asset Purchase Agreement, in exchange for $40,000 (subject to a post-closing inventory adjustment which was a payment to SMP of $1,573) and the assumption of certain liabilities, the Company and SCD sold to SMP, product lines and assets related to certain non-core switches and connectors (the "Non-core Products"). On April 1, 2019, the Company and SMP also entered into certain ancillary agreements, including a transition services agreement, a contract manufacturing agreement and a supply agreement, pursuant to which the Company provided and was compensated for certain manufacturing, transitional, and administrative and support services to SMP on a short-term basis. The products related to the Non-core Products were manufactured in Juarez, Mexico and Canton, Massachusetts, and include ball switches, ignition switches, rotary switches, courtesy lamps, toggle switches, headlamp switches and other related components.

On April 1, 2019, the Company's Control Devices segment recognized net sales and costs of goods sold ("COGS") of $4,160 and $2,775, respectively, for the one-time sale of Non-core Product finished goods inventory and a gain on disposal of $33,921, net for the sale of fixed assets, intellectual property and customer lists associated with the Non-core Products less transaction costs. The Company recognized transaction costs associated with the disposal of Control Devices' Non-core Products of $322 within selling, general and administrative ("SG&A") expenses for the year ended December 31, 2019.

The Company received $21 and $1,824 for services provided pursuant to the transition services agreement which were recognized as a reduction in SG&A for the years ended December 31, 2020 and 2019, respectively. Pursuant to the contract manufacturing agreement, the Company recognized sales and operating income for the production of Non-core Products of $26,304 and $1,458 for the year ended December 31, 2019, respectively. The Company also received $745 for reimbursement of retention and facility costs from SMP pursuant to the contract manufacturing agreement which was recognized as a reduction to SG&A for the year ended December 31, 2019.

There were no Non-core Product net sales for the years ended December 31, 2021 or 2020. Non-core Products net sales and operating income, including sales to SMP pursuant to the contract manufacturing agreement, were $41,560 and $4,831 for the year ended December 31, 2019, respectively.

Disposal of Particulate Matter Sensor Business

On March 8, 2021, the Company entered into an Asset Purchase Agreement (the "APA") by and among the Company, the Company's wholly owned subsidiary, Stoneridge Electronics AS, as the Sellers, and Standard Motor Products, Inc. ("SMP") and SMP Poland SP Z O.O., as the Buyers. Pursuant to the APA the Company agreed to sell to the Buyers the Company's assets located in Lexington, Ohio and Tallinn, Estonia related to the manufacturing of particulate matter sensor products and related service part operations (together, the "PM sensor business"). In the past, the Company has sometimes referred to the PM sensor assets as the Company's soot sensing business. The Buyers did not acquire any of the Company's locations or employees. The purchase price for the sale of the PM sensor assets was $4,000 (subject to a post-closing inventory adjustment which was a payment to SMP of $1,133) plus the assumption of certain liabilities. The purchase price was allocated among PM sensor product lines, Gen 1 and Gen 2 as defined under the APA. The purchase price allocated to Gen 1 fixed assets and inventory and Gen 2 fixed assets was $3,214 and $786, respectively. The sale of the Gen 2 assets occurred during November 2021, upon completion of the Company's supply commitments to certain customers. The Company and SMP also entered into certain ancillary agreements, including a contract manufacturing agreement, a transitional services agreement, and a supply agreement, pursuant to which the Company will provide and be compensated for certain manufacturing, transitional, administrative and support services to SMP on a short-term basis.

On March 8, 2021 the Company's Control Devices segment recognized net sales and cost of goods sold of $971 and $898, respectively, for the one-time sale of Gen 1 inventory and a gain on disposal of $740 for the sale of Gen 1 fixed assets less transaction costs of $60 within SG&A during the three months ended March 31, 2021.

Pursuant to the contract manufacturing agreement, the Company produced and sold PM sensor Gen 1 finished goods inventory to SMP for net sales of $8,042 in the year ended December 31, 2021. In addition, the Company received $783 for services provided pursuant to the transition services agreement which were recognized as a reduction in SG&A for the year ended December 31, 2021.

PM sensor Gen 1 net sales, including sales of $8,042 to SMP pursuant to the contract manufacturing agreement and the sale of Gen 1 inventory components of $2,283 and operating income were $12,592 and $1,415, respectively, for the year ended December 31, 2021. PM sensor Gen 1 net sales and operating income were $8,814 and $1,090, respectively, for the year ended December 31, 2020. PM sensor Gen 1 net sales and operating loss were $10,951 and $438, respectively, for the year ended December 31, 2019.

The Company completed the PM sensor Gen 2 product supply commitments and ended production on September 23, 2021. In November 2021, the Company's Control Devices segment recognized proceeds of $786 and a gain on disposal of $408 for the sale of the Gen 2 fixed assets within SG&A, for the year ended December 31, 2021.

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

Sale of Canton Facility

On May 7, 2021, the Company entered into a Real Estate Purchase and Sale Agreement (the "Agreement") with Sun Life Assurance Company of Canada, a Canadian corporation (the "Buyer"), to sell the Canton Facility for $38,200 (subject to adjustment pursuant to the Agreement).

On June 17, 2021, pursuant to the Agreement, as amended after May 7, 2021, the Company closed the sale of the Canton Facility to the Buyer for an adjusted purchase price of $37,900. The Company recognized in the Control Devices segment, net proceeds of $35,167 and a gain, net of direct selling costs, of $30,718.

Sale of MSIL

On November 2, 2021, the Company entered into a Share Purchase Agreement (the "SPA") with Minda Corporation Limited ("Minda"), as the buyer, and MSIL. Pursuant to the SPA the Company agreed to sell to Minda the Company's minority interest in MSIL for approximately $21,500 equivalent Indian Rupee which was payable in U.S. dollars at closing.

On December 30, 2021, pursuant to the SPA, the Company closed the sale of MSIL to Minda for $21,587. The Company recognized net proceeds of $20,999 and a gain, net of transaction costs, of $1,794.

Property, Plant and Equipment

Property, plant and equipment are recorded at cost and consist of the following:

December 31	2021	2020
Land and land improvements	**$ 3,064**	$ 4,447
Buildings and improvements	**28,842**	39,784
Machinery and equipment	**249,365**	253,563
Office furniture and fixtures	**8,701**	9,993
Tooling	**41,391**	40,967
Information technology	**30,454**	28,491
Vehicles	**741**	654
Leasehold improvements	**5,592**	5,198
Construction in progress	**12,584**	19,744
Total property, plant, and equipment	**380,734**	402,841
Less: accumulated depreciation	**(272,833)**	(283,517)
Property, plant and equipment, net	**$ 107,901**	$ 119,324

Depreciation is provided using the straight-line method over the estimated useful lives of the assets. Depreciation expense for the years ended December 31, 2021, 2020 and 2019 was $27,823, $27,309 and $24,904, respectively. Depreciable lives within each property classification are as follows:

Buildings and improvements	10-40 years
Machinery and equipment	3-10 years
Office furniture and fixtures	3-10 years
Tooling	2-7 years
Information technology	3-7 years
Vehicles	3-7 years
Leasehold improvements	shorter of lease term or 3-10 years

Maintenance and repair expenditures that are not considered improvements and do not extend the useful life of the property, plant and equipment are charged to expense as incurred. Expenditures for improvements and major renewals are capitalized. When assets are retired or otherwise disposed of, the related cost and accumulated depreciation are removed from the accounts, and any gain or loss on the disposition is recorded in the consolidated statements of operations as a component of SG&A expenses.

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

Impairment of Long-Lived or Finite-Lived Assets

The Company reviews the carrying value of its long-lived assets and finite-lived intangible assets for impairment when events or circumstances indicate that their carrying value may not be recoverable. Factors the Company considers important that could trigger testing of the related asset groups for an impairment include current period operating or cash flow losses combined with a history of operating or cash flow losses, a projection or forecast that demonstrates continuing losses, significant adverse changes in the business climate within a particular business or current expectations that a long-lived asset will be sold or otherwise disposed of significantly before the end of its estimated useful life. To test for impairment, the estimated undiscounted cash flows expected to be generated from the use and disposal of the asset or asset group is compared to its carrying value. An asset group is established by identifying the lowest level of cash flows generated by the group of assets that are largely independent of cash flows of other assets. If cash flows cannot be separately and independently identified for a single asset, we will determine whether an impairment has occurred for the group of assets for which we can identify projected cash flows. If these undiscounted cash flows are less than their respective carrying values, an impairment charge would be recognized to the extent that the carrying values exceed estimated fair values. The estimation of undiscounted cash flows and fair value requires us to make assumptions regarding future operating results over the life of the asset or the life of the primary asset in the asset group. The results of the impairment testing are dependent on these estimates which require judgment. The occurrence of certain events, including changes in economic and competitive conditions, could impact cash flows eventually realized and management’s ability to accurately assess whether an asset is impaired.

On May 19, 2020, the Company committed to the strategic exit of its Control Devices particulate matter (“PM”) sensor product line. As a result of the strategic exit of the PM sensor product line the Company determined an impairment indicator existed and performed a recoverability test of the related long-lived assets. The Company identified that there were two asset groups comprised of PM sensor fixed assets at the Company’s Lexington, Ohio and Tallinn, Estonia facilities. As a result of the recoverability test performed, the Company determined that the undiscounted cash flows did not exceed the carrying value of the PM sensor fixed assets at the Company’s Tallinn, Estonia facility. As such, an impairment loss of $2,326 was recorded based on the difference between the fair value and the carrying value of the assets. The Company used the income approach to determine the fair value of the PM sensor fixed assets at the Tallinn, Estonia facility. During the year ended December 31, 2020, the impairment loss of $2,326 was recorded on the Company’s consolidated statement of operations within SG&A expense.

Goodwill and Other Intangible Assets

Goodwill

The total purchase price associated with acquisitions is allocated to the acquisition date fair values of identifiable assets acquired and liabilities assumed with the excess purchase price assigned to goodwill.

Goodwill was $36,387 and $39,104 at December 31, 2021 and 2020, respectively, all of which relates to the Electronics segment. Goodwill is not amortized, but instead is tested for impairment at least annually, or earlier when events and circumstances indicate that it is more likely than not that such assets have been impaired, by applying a fair value-based test. In conducting our annual impairment assessment testing, we first perform a qualitative assessment of whether it is more likely than not that a reporting unit’s fair value is less than its carrying amount. If not, no further goodwill impairment testing is performed. If it is more likely than not that a reporting unit’s fair value is less than its carrying amount, or if we elect not to perform a qualitative assessment of a reporting unit, we then compare the fair value of the reporting unit to the related net book value. If the net book value of a reporting unit exceeds its fair value, an impairment loss is measured and recognized.

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

The Company utilizes an income statement approach to estimate the fair value of a reporting unit and a market valuation approach to further support this analysis. The income approach is based on projected debt-free cash flow which is discounted to the present value using discount factors that consider the timing and risk of cash flows. We believe that this approach is appropriate because it provides a fair value estimate based on the reporting unit's expected long-term operating cash flow performance. This approach also mitigates the impact of cyclical trends that occur in the industry. Fair value is estimated using internally developed forecasts, as well as commercial and discount rate assumptions. The discount rate used is the value-weighted average of our estimated cost of equity and of debt ("cost of capital") derived using both known and estimated customary market metrics. Our weighted average cost of capital is adjusted to reflect a risk factor, if necessary. Other significant assumptions include terminal value growth rates, terminal value margin rates, future capital expenditures and changes in future working capital requirements. While there are inherent uncertainties related to the assumptions used and to management's application of these assumptions to this analysis, we believe that the income statement approach provides a reasonable estimate of the fair value of a reporting unit. The market valuation approach is used to further support our analysis. There was no impairment of goodwill for the years ended December 31, 2021, 2020 or 2019.

Goodwill and changes in the carrying amount of goodwill for the Electronics segment for the years ended December 31, 2021 and 2020 were as follows:

	2021	2020
Balance at January 1	**$ 39,104**	$ 35,874
Currency translation	**(2,717)**	3,230
Balance at December 31	**$ 36,387**	$ 39,104

The Company's cumulative goodwill impairment loss since inception was $300,083 at December 31, 2021 and 2020, which includes Stoneridge Brazil's goodwill impairment in 2014 and goodwill impairment recorded by the Company's Control Devices segment in 2008 and 2004.

Other Intangible Assets

Other intangible assets, net at December 31, 2021 and 2020 consisted of the following:

As of December 31, 2021	**Acquisition cost**	**Accumulated amortization**	**Net**
Customer lists	**$ 45,000**	**$ (20,240)**	**$ 24,760**
Tradenames	**16,016**	**(6,655)**	**9,361**
Technology	**12,855**	**(8,922)**	**3,933**
Capitalized software development	**12,433**	**(624)**	**11,809**
Total	**$ 86,304**	**$ (36,441)**	**$ 49,863**

As of December 31, 2020	**Acquisition cost**	**Accumulated amortization**	**Net**
Customer lists	$ 48,339	$ (18,530)	$ 29,809
Tradenames	17,201	(6,290)	10,911
Technology	13,799	(8,079)	5,720
Capitalized software development	8,954	-	8,954
Total	$ 88,293	$ (32,899)	$ 55,394

Other intangible assets, net at December 31, 2021 for customer lists, tradenames, technology and capitalized software development include $19,480, $4,084, $1,590 and $8,635, respectively, related to the Electronics segment. Customer lists, tradenames and technology of $5,280, $5,277 and $2,258, respectively, related to the Stoneridge Brazil segment at December 31, 2021. Capitalized software development and technology of $3,174 and $85, respectively, related to the Control Devices segment at December 31, 2021.

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

The Company designs and develops software that will be embedded into certain products and sold to customers. Software development costs are capitalized after the software product development reaches technological feasibility and until the software product becomes available for general release to customers. These intangible assets are amortized using the straight-line method over estimated useful lives generally ranging from three to seven years.

The Company recognized $5,387, $5,399 and $5,955 of amortization expense related to intangible assets in 2021, 2020 and 2019, respectively. Amortization expense is included as a component of Overhead and SG&A on the consolidated statements of operations. Annual amortization expense for intangible assets is estimated to be approximately $7,000 for the year 2022 and approximately $6,200 for the years 2023 through 2026. The weighted-average remaining amortization period is approximately 8 years.

There were no intangible impairment charges for the years ended December 31, 2021, 2020 or 2019.

Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities consist of the following:

As of December 31	2021	2020
Compensation related liabilities	**$ 18,716**	$ 21,852
Product warranty and recall obligations	**6,752**	9,044
Other (A)	**44,671**	21,376
Total accrued expenses and other current liabilities	**$ 70,139**	$ 52,272

(A) “Other” is comprised of miscellaneous accruals, none of which individually contributed a significant portion of the total.

Income Taxes

The Company accounts for income taxes using the liability method. Deferred income taxes reflect the tax consequences on future years of differences between the tax basis of assets and liabilities and their financial reporting amounts. Future tax benefits are recognized to the extent that realization of such benefits is more likely than not to occur. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in the period that includes the enactment date.

Deferred tax assets are recognized to the extent that these assets are more likely than not to be realized (See Note 6). In making such a determination, the Company considers all available positive and negative evidence, including future release of existing taxable temporary differences, projected future taxable income, tax planning strategies, and results of recent operations. Release of some or all of a valuation allowance would result in the recognition of certain deferred tax assets and a decrease to income tax expense for the period the release is recorded.

The Company’s policy is to provide for uncertain tax positions and the related interest and penalties based upon management’s assessment of whether a tax benefit is more likely than not to be sustained upon examination by tax authorities. To the extent the Company prevails in matters for which a liability for an unrecognized tax benefit is established or is required to pay amounts in excess of the liability, the Company’s effective tax rate in a given financial statement period may be affected.

The Tax Cuts and Jobs Act of 2017 (“Tax Legislation”) created a provision known as Global Intangible Low-Taxed Income (“GILTI”) that imposes a tax on certain earnings of foreign subsidiaries. The Company has made an accounting policy election to reflect GILTI taxes, if any, as a current period tax expense when incurred.

Currency Translation

The financial statements of foreign subsidiaries, where the local currency is the functional currency, are translated into U.S. dollars using exchange rates in effect at the period end for assets and liabilities and average exchange rates during each reporting period for the results of operations. Adjustments resulting from translation of financial statements are reflected as a component of accumulated other comprehensive loss in the Company’s consolidated balance sheets.

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

Foreign currency transactions are remeasured into the functional currency using translation rates in effect at the time of the transaction with the resulting adjustments included on the consolidated statements of operations within other expense (income), net. These foreign currency transaction losses (gains), including the impact of hedging activities, were $2,037, $(997) and $372 for the years ended December 31, 2021, 2020 and 2019, respectively.

Revenue Recognition and Sales Commitments

The Company recognizes revenue when obligations under the terms of a contract with our customer are satisfied; generally this occurs with the transfer of control of our products and services, which is usually when the parts are shipped or delivered to the customer's premises. The Company recognizes monitoring service revenues over time, as the services are provided to customers. Revenue is measured as the amount of consideration we expect to receive in exchange for transferring goods or providing services. The transaction price will include estimates of variable consideration to the extent it is probable that a significant reversal of revenue recognized will not occur. Incidental items that are not significant in the context of the contract are recognized as expense. The Company collects certain taxes and fees on behalf of government agencies and remits such collections on a periodic basis. The taxes are collected from customers but are not included in net sales. Estimated returns are based on historical authorized returns. The Company often enters into agreements with its customers at the beginning of a given vehicle's expected production life. Once such agreements are entered into, it is the Company's obligation to fulfill the customers' purchasing requirements for the entire production life of the vehicle. These agreements are subject to potential renegotiation from time to time, which may affect product pricing. See Note 3 for additional disclosure.

Shipping and Handling Costs

Shipping and handling costs are included in COGS on the consolidated statements of operations.

Product Warranty and Recall Reserves

Amounts accrued for product warranty and recall claims are established based on the Company's best estimate of the amounts necessary to settle existing and future claims on products sold as of the balance sheet dates. These accruals are based on several factors including past experience, production changes, industry developments and various other considerations. Our estimate is based on historical trends of units sold and claim payment amounts, combined with our current understanding of the status of existing claims and discussions with our customers. The key factors in our estimate are the stated or implied warranty period, the customer source, customer policy decisions regarding warranties and customers seeking to holding the Company responsible for their product warranties. The Company can provide no assurances that it will not experience material claims or that it will not incur significant costs to defend or settle such claims beyond the amounts accrued. The current portion of the product warranty and recall reserve is included as a component of accrued expenses and other current liabilities on the consolidated balance sheets. Product warranty and recall includes $3,094 and $3,647 of a long-term liability at December 31, 2021 and 2020, respectively, which is included as a component of other long-term liabilities on the consolidated balance sheets.

The following provides a reconciliation of changes in the product warranty and recall reserve:

Year ended December 31,	2021	2020
Product warranty and recall at beginning of period	**$ 12,691**	$ 10,796
Accruals for warranties established during period	**7,037**	5,898
Aggregate changes in pre-existing liabilities due to claim developments	**201**	1,794
Settlements made during the period	**(9,647)**	(6,297)
Foreign currency translation	**(436)**	500
Product warranty and recall at end of period	**$ 9,846**	$ 12,691

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

Design and Development Costs

Expenses associated with the development of new products, and changes to existing products, other than capitalized software development costs, are charged to expense as incurred, and are included in the Company's consolidated statements of operations as a separate component of costs and expenses. These product development costs amounted to $66,165, $49,386 and $52,198 for the years ended December 31, 2021, 2020 and 2019, respectively, or 8.8%, 7.6% and 6.3% of net sales for these respective periods.

Research and Development Activities

The Company enters into research and development contracts with certain customers, which generally provide for reimbursement of costs. The Company incurred and was reimbursed for contracted research and development costs of $15,849, $19,302 and $15,096 for the years ended December 31, 2021, 2020 and 2019, respectively.

Share-Based Compensation

At December 31, 2021, the Company had two types of share-based compensation plans: (1) 2016 Long-Term Incentive Plan for employees and (2) the 2018 Amended and Restated Directors' Restricted Shares Plan, for non-employee directors. See Note 8 for additional details on share-based compensation plans.

Total compensation expense recognized as a component of SG&A expense on the consolidated statements of operations for share-based compensation arrangements was $5,960, $5,888 and $6,191 for the years ended December 31, 2021, 2020 and 2019, respectively. There was no share-based compensation expense capitalized in inventory during 2021, 2020 or 2019. Share-based compensation expense is calculated using estimated volatility and forfeitures based on historical data, future expectations and the expected term of the share-based compensation awards.

Financial Instruments and Derivative Financial Instruments

Financial instruments, including derivative financial instruments, held by the Company include cash and cash equivalents, accounts receivable, accounts payable, long-term debt, net investment hedge, interest rate swap agreement and foreign currency forward contracts. The carrying value of cash and cash equivalents, accounts receivable and accounts payable is considered to be representative of fair value because of the short maturity of these instruments. See Note 10 for fair value disclosures of the Company's financial instruments.

Common Shares Held in Treasury

The Company accounts for Common Shares held in treasury under the cost method (applied on a FIFO basis) and includes such shares as a reduction of total shareholders' equity.

Earnings (Loss) Per Share

Basic earnings (loss) per share was computed by dividing net income (loss) by the weighted-average number of Common Shares outstanding for each respective period. Diluted earnings per share was calculated by dividing net income (loss) by the weighted-average of all potentially dilutive Common Shares that were outstanding during the periods presented. However, for all periods in which the Company recognized a net loss, the Company did not recognize the effect of the potential dilutive securities as their inclusion would be anti-dilutive. Potential dilutive shares of 372,937 for the year ended December 31, 2020 were excluded from diluted loss per share because the effect would have been anti-dilutive.

Actual weighted-average Common Shares outstanding used in calculating basic and diluted net income per share were as follows:

Year ended December 31,	2021	2020	2019
Basic weighted-average Common Shares outstanding	**27,114,359**	27,024,571	27,791,799
Effect of dilutive shares	**301,175**	-	478,296
Diluted weighted-average Common Shares outstanding	**27,415,534**	27,024,571	28,270,095

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

There were 580,116, 752,784 and 566,337 performance-based right to receive Common Shares outstanding at December 31, 2021, 2020 and 2019. These performance-based restricted and right to receive Common Shares are included in the computation of diluted earnings per share based on the number of Common Shares that would be issuable if the end of the year were the end of the contingency period.

Deferred Financing Costs, net

Deferred financing costs are amortized over the life of the related financial instrument using the straight-line method, which approximates the effective interest method. Deferred financing cost amortization and debt discount accretion, for the years ended December 31, 2021, 2020 and 2019 was $643, $506 and $624, respectively, and is included as a component of interest expense, net in the consolidated statements of operations. In 2019, the Company capitalized $1,366 of deferred financing costs as a result of entering into the 2019 Credit Facility. In connection with the 2019 Credit Facility, the Company wrote off a portion of the previously recorded deferred financing costs of $275 in interest expense, net during the year ended December 31, 2019. In 2020, the Company capitalized an additional $1,079 of deferred financing costs as a result of entering into Amendment No. 1 to the 2019 Credit Facility. See Note 5 to the consolidated financial statements for additional details regarding the 2019 Credit Facility and related deferred financing costs. The Company has elected to continue to present deferred financing costs within long-term assets in the Company's consolidated balance sheets. Deferred financing costs, net, were $1,563 and $2,187, as of December 31, 2021 and 2020, respectively.

Equity and Changes in Accumulated Other Comprehensive Loss by Component

Common Share Repurchase

On October 26, 2018, the Company's Board of Directors authorized the Company to repurchase up to $50,000 of Common Shares. Thereafter, on May 7, 2019, the Company entered into a Master Confirmation (the "Master Confirmation") and a Supplemental Confirmation, together with the Master Confirmation, the Accelerated Share Repurchase Agreement ("ASR Agreement"), with Citibank N.A. (the "Bank") to purchase Company Common Shares for a payment of $50,000 (the "Prepayment Amount"). Under the terms of the ASR Agreement, on May 7, 2019, the Company paid the Prepayment Amount to the Bank and received on May 8, 2019 an initial delivery of 1,349,528 Company Common Shares, which was approximately 80% of the total number of Company Common Shares expected to be repurchased under the ASR Agreement based on the closing price of the Company's Common Shares on May 7, 2019. These Common Shares became treasury shares and were recorded as a $40,000 reduction to shareholder's equity. The remaining $10,000 of the Prepayment Amount was recorded as a reduction to shareholders' equity as an unsettled forward contract indexed to our Common Shares. The Company excluded the potential share impact of the remaining shares from the computation of diluted earnings per share as these Common Shares are anti-dilutive for year ended December 31, 2019.

On February 25, 2020, the Bank notified the Company that it terminated early its commitment pursuant the ASR Agreement and would deliver 364,604 Common Shares on February 27, 2020 based on the volume weighted average price of our Common Shares during the term set forth in the ASR Agreement. The Bank's notice of early termination and the subsequent delivery of Common Shares represents the final settlement of the Company's share repurchase program pursuant to the accelerated share repurchase agreement. These Common Shares became treasury shares and were recorded as a $10,000 reduction to shareholders' equity as Common Shares held in treasury with the offset of $10,000 to additional paid-in capital.

On February 24, 2020, the Company's Board of Directors authorized a new repurchase program of $50,000 for the repurchase of the Company's outstanding Common Shares over the next 18 months. The repurchases could be made from time to time in either open market transactions or in privately negotiated transactions. Repurchases could also be made under Rule 10b-18 plans, which permit Common Shares to be repurchased through pre-determined criteria.

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

On March 3, 2020, under the new repurchase program the Company entered into a 10b-18 Agreement Letter (the “10b-18 Agreement”), with the Bank to purchase Company Common Shares, under purchasing conditions of Rule 10b-18 promulgated under the Securities Exchange Act of 1934, as amended (“Rule 10b-18”), for up to $5,000. Under the terms of the 10b-18 Agreement, commencing March 3, 2020 and ending March 6, 2020, the Company received delivery of a total of 242,634 Company Common Shares for the amount of $4,995. These Common Shares became treasury shares and were recorded as a $4,995 reduction to shareholders’ equity as Common Shares held in treasury. In April 2020, the Company announced that it was temporarily suspending the share repurchase program in response to uncertainty surrounding the duration and magnitude of the impact of COVID-19. The 2020 repurchase program authorization expired during the third quarter of 2021 and no additional shares will be repurchased under this program.

Accumulated Other Comprehensive Loss

Changes in accumulated other comprehensive loss for the years ended December 31, 2021 and 2020 were as follows:

	Foreign currency translation	Unrealized gain (loss) on derivatives	Total
Balance at January 1, 2021	**$ (88,795)**	**$ (840)**	**$ (89,635)**
Other comprehensive (loss) income before reclassifications	**(8,408)**	**859**	**(7,549)**
Amounts reclassified from accumulated other comprehensive loss	**-**	**160**	**160**
Net other comprehensive (loss) income, net of tax	**(8,408)**	**1,019**	**(7,389)**
Balance at December 31, 2021	**$ (97,203)**	**$ 179**	**$ (97,024)**
Balance at January 1, 2020	$ (91,472)	$ -	$ (91,472)
Other comprehensive income (loss) before reclassifications	2,677	(2,366)	311
Amounts reclassified from accumulated other comprehensive loss	-	1,526	1,526
Net other comprehensive income (loss), net of tax	2,677	(840)	1,837
Balance at December 31, 2020	$ (88,795)	$ (840)	$ (89,635)

Reclassifications

Certain prior period amounts have been reclassified to conform to their 2021 presentation in the consolidated financial statements.

Recently Adopted Accounting Standards

In December 2019, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update (“ASU”) 2019-12, “Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes.” The amendments in this update remove certain exceptions of Topic 740 including: exception to the incremental approach for intraperiod tax allocation when there is a loss from continuing operations and income or gain from other items; exception to the requirement to recognize a deferred tax liability for equity method investments when a foreign subsidiary becomes an equity method investment; exception to the ability not to recognize a deferred tax liability for a foreign subsidiary when a foreign equity method investment becomes a subsidiary; exception to the general methodology for calculating income taxes in an interim period when a year-to-date loss exceeds the anticipated loss for the year. There are also additional areas of guidance in regards to: franchise and other taxes partially based on income and the interim recognition of enactment of tax laws and rate changes. provisions of this ASU are effective for years beginning after December 15, 2020, with early adoption permitted. The Company adopted this standard prospectively as of January 1, 2020 using the modified retrospective basis. The impact of the adoption was a reduction to deferred tax liabilities and an increase to retained earnings of $13,750 on the consolidated balance sheet as of December 31, 2020. The adoption of this standard did not have an impact on the Company’s consolidated results of operations and cash flows.

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

Recently Issued Accounting Standards Not Yet Adopted as of December 31, 2021

In March 2020, the FASB issued ASU 2020-04, “Reference Rate Reform (Topic 848) – Facilitation of the Effects of Reference Rate Reform on Financial Reporting.” The guidance in ASU 2020-04 provides temporary optional expedient and exceptions to the guidance in U.S. GAAP on contract modifications and hedge accounting to ease the financial reporting burdens related to expected market transition from the London Interbank Offered Rate (“LIBOR”) and other interbank offered rates to alternative reference rates, such as the Secured Overnight Financing Rate (“SOFR”) (also known as the “reference rate reform”). The guidance allows companies to elect not to apply certain modification accounting requirements to contracts affected by the reference rate reform, if certain criteria are met. The guidance will also allow companies to elect various optional expedients which would allow them to continue to apply hedge accounting for hedging relationships affected by the reference rate reform, if certain criteria are met. The new standard was effective upon issuance and generally can be applied to applicable contract modifications through December 31, 2022. As of December 31, 2021, the Company has not yet had contracts modified due to rate reform.

3. Revenue

Revenue is recognized when obligations under the terms of a contract with our customer are satisfied; generally this occurs with the transfer of control of our products and services, which is usually when the parts are shipped or delivered to the customer’s premises. Revenue is measured as the amount of consideration we expect to receive in exchange for transferring goods or providing services. The transaction price will include estimates of variable consideration to the extent it is probable that a significant reversal of revenue recognized will not occur. Incidental items that are not significant in the context of the contract are recognized as expense. The expected costs associated with our base warranties continue to be recognized as expense when the products are sold. Customer returns only occur if products do not meet the specifications of the contract and are not connected to any repurchase obligations of the Company.

The Company does not have any financing components or significant payment terms as payment occurs shortly after the point of sale. Taxes assessed by a governmental authority that are both imposed on and concurrent with a specific revenue-producing transaction that are collected by the Company from a customer are excluded from revenue. Amounts billed to customers related to shipping and handling costs are included in net sales in the consolidated statements of operations. Shipping and handling costs associated with outbound freight after control over a product is transferred to the customer are accounted for as a fulfillment cost and are included in cost of sales.

Revenue by Reportable Segment

Control Devices. Our Control Devices segment designs and manufactures products that monitor, measure or activate specific functions within a vehicle. This segment includes product lines such as actuators, sensors, switches and connectors. We sell these products principally to the automotive market in the North American, European, and Asia Pacific regions. To a lesser extent, we also sell these products to the commercial vehicle and agricultural markets in the North American, European and Asia Pacific regions. Our customers included in these markets primarily consist of original equipment manufacturers (“OEM”) and companies supplying components directly to the OEMs (“Tier 1 supplier”).

Electronics. Our Electronics segment designs and manufactures driver information systems, camera-based vision systems, connectivity and compliance products and electronic control units. These products are sold principally to the commercial vehicle market primarily through our OEM and aftermarket channels in the European, North American and Asia Pacific regions. The camera-based vision systems and related products are sold principally to the commercial vehicle and off-highway vehicle markets in the European and North American regions.

Stoneridge Brazil. Our Stoneridge Brazil segment (“SRB”) primarily serves the South American region and specializes in the design, manufacture and sale of vehicle tracking devices and monitoring services, vehicle security alarms and convenience accessories, in-vehicle audio and infotainment devices and telematics solutions. Stoneridge Brazil sells its products through the aftermarket distribution channel, to factory authorized dealer installers, also referred to as original equipment services, directly to OEMs and through mass merchandisers. In addition, monitoring services and tracking devices are sold directly to corporate customers and individual consumers.

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

The following tables disaggregate our revenue by reportable segment and geographical location[(1)] for the periods ended December 31, 2021, 2020 and 2019:

	Control Devices			Electronics			Stoneridge Brazil			Consolidated		
Year ended December 31,	**2021**	**2020**	**2019**	**2021**	**2020**	**2019**	**2021**	**2020**	**2019**	**2021**	**2020**	**2019**
Net Sales:												
North America	**$ 282,525**	$ 261,967	$ 365,010	**$ 104,419**	$ 68,561	$ 92,623	**$ -**	$ -	$ -	**$ 386,944**	$ 330,528	$ 457,633
South America	**-**	-	-	**-**	-	-	**56,777**	47,663	67,534	**56,777**	47,663	67,534
Europe	**12,681**	29,679	22,467	**248,468**	184,579	236,994	**-**	-	-	**261,149**	214,258	259,461
Asia Pacific	**60,569**	50,930	44,083	**5,023**	4,627	5,578	**-**	-	-	**65,592**	55,557	49,661
Total net sales	**$ 355,775**	$ 342,576	$ 431,560	**$ 357,910**	$ 257,767	$ 335,195	**$ 56,777**	$ 47,663	$ 67,534	**$ 770,462**	$ 648,006	$ 834,289

(1) Company sales based on geographic location are where the sale originates not where the customer is located.

Performance Obligations

For OEM and Tier 1 supplier customers, the Company typically enters into contracts to provide serial production parts that consist of a set of documents including, but not limited to, an award letter, master purchase agreement and master terms and conditions. For each production product, the Company enters into separate purchase orders that contain the product specifications and an agreed-upon price. The performance obligation does not exist until a customer release is received for a specific number of parts. The majority of the parts sold to OEM and Tier 1 supplier customers are customized to the specific customer, with the exception of camera-based vision systems (“CMS”) that are common across all customers (CMS for OEMs are customized but sales are not yet material). The transaction price is equal to the contracted price per part and there is no expectation of material variable consideration in the transaction price. For most customer contracts, the Company does not have an enforceable right to payment at any time prior to when the parts are shipped or delivered to the customer; therefore, the Company recognizes revenue at the point in time it satisfies a performance obligation by transferring control of a part to the customer. Certain customer contracts contain an enforceable right to payment if the customer terminates the contract for convenience and therefore are recognized over time using the cost to complete input method.

Our aftermarket products are focused on meeting the demand for repair and replacement parts, compliance parts and accessories and are sold primarily to aftermarket distributors and mass retailers in our South American, European and North American markets. Aftermarket products have one type of performance obligation which is the delivery of aftermarket parts and spare parts. For aftermarket customers, the Company typically has standard terms and conditions for all customers. In addition, aftermarket products have alternative use as they can be sold to multiple customers. Revenue for aftermarket part production contracts is recognized at a point in time when the control of the parts transfer to the customer which is based on the shipping terms. Aftermarket contracts may include variable consideration related to discounts and rebates which is included in the transaction price upon recognizing the product revenue.

A small portion of the Company’s sales are comprised of monitoring services that include both monitoring devices and fees to individual, corporate, fleet and cargo customers in our Stoneridge Brazil segment. These monitoring service contracts are generally not capable of being distinct and are accounted for as a single performance obligation. We recognize revenue for our monitoring products and services contracts over the life of the contract. There is no variable consideration associated with these contracts. The Company has the right to consideration from a customer in the amount that corresponds directly with the value to the customer of the Company’s performance to date. Therefore, the Company recognizes revenue over time using the practical expedient ASC 606-10-55-18 in the amount the Company has a “right to invoice” rather than selecting an output or input method.

Contract Balances

The Company had no material contract assets, contract liabilities or capitalized contract acquisition costs as of December 31, 2021 or 2020.

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

4. Investments

Minda Stoneridge Instruments Ltd.

The Company had a 49% equity interest in MSIL, a company based in India that manufactures electronics, instrumentation equipment and sensors primarily for the motorcycle, commercial vehicle and automotive markets. As discussed in Note 2, the Company sold its equity interest in MSIL on December 30, 2021. The investment was accounted for under the equity method of accounting. The Company's investment in MSIL, recorded as a component of investments and other long-term assets, net on the consolidated balance sheets, was $13,547 as of December 31, 2020. Equity in earnings of MSIL included in the consolidated statements of operations were $1,776, $1,477 and $1,578 for the years ended December 31, 2021, 2020 and 2019, respectively.

PST Eletrônica Ltda.

The Company had a 74% controlling interest in Stoneridge Brazil from December 31, 2011 through May 15, 2017. On May 16, 2017, the Company acquired the remaining 26% noncontrolling interest in Stoneridge Brazil. As part of the acquisition agreement, the Company will be required to pay additional earn-out consideration based on Stoneridge Brazil's financial performance in 2021. The final earn-out consideration of $7,351 will be paid in the second quarter of 2022. See Note 10 for the fair value and foreign currency adjustments of the earn-out consideration for the current and prior periods.

Stoneridge Brazil had dividends payable to former noncontrolling interest holders of Brazilian real ("R$") 24,154 ($6,010) as of December 31, 2019. These dividends were paid in January 2020.

Other Investments

In December 2018, the Company entered into an agreement to make a $10,000 investment in a fund ("Autotech Fund II") managed by Autotech Ventures ("Autotech"), a venture capital firm focused on ground transportation technology which is accounted for under the equity method of accounting. The Company's $10,000 investment in the Autotech Fund II will be contributed over the expected ten year life of the fund. The Company contributed $3,450 to and received $251 in distributions from the Autotech Fund II during the year ended December 31, 2021. The Company contributed $1,550 to the Autotech Fund II during the year ended December 31, 2020. The Company has a 6.3% interest in Autotech Fund II. The Company recognized earnings of $1,882 and $59 during the years ended December 31, 2021 and 2020, respectively. The Autotech Fund II investment recorded in investments and other long-term assets, net in the consolidated balance sheet was $8,517 and $3,436 as of December 31, 2021 and 2020, respectively.

5. Debt

	December 31, 2021	December 31, 2020	Interest rates at December 31, 2021	Maturity
Revolving Credit Facility				
Credit Facility	**$ 163,957**	$ 136,000	**2.40%**	**June 2024**
Debt				
Stoneridge Brazil short-term obligations	**-**	1,561		
Sweden short-term credit line	**2,099**	1,591	**2.60%**	**January 2022**
Suzhou short-term credit line	**3,149**	4,521	**4.00% - 4.30%**	**May 2022 - October 2022**
Total debt	**5,248**	7,673		
Less: current portion	**(5,248)**	(7,673)		
Total long-term debt, net	**$ -**	$ -		

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

Revolving Credit Facility

On June 5, 2019, the Company entered into the Fourth Amended and Restated Credit Agreement (the "Credit Facility"). The Credit Facility provides for a $400,000 senior secured revolving credit facility and it replaced and superseded the Third Amended and Restated Credit Agreement that provided for a $300,000 revolving credit facility. The Credit Facility has an accordion feature which allows the Company to increase the availability by up to $150,000 upon the satisfaction of certain conditions and includes a letter of credit subfacility, swing line subfacility and multicurrency subfacility. The Credit Facility has a termination date of June 5, 2024. Borrowings under the Credit Facility bear interest at either the Base Rate or the LIBOR rate, at the Company's option, plus the applicable margin as set forth in the Credit Facility. The Credit Facility contains certain financial covenants that require the Company to maintain less than a maximum leverage ratio and more than a minimum interest coverage ratio.

The Credit Facility contains customary affirmative covenants and representations. The Credit Facility also contains customary negative covenants, which, among other things, are subject to certain exceptions, including restrictions on (i) indebtedness, (ii) liens, (iii) liquidations, mergers, consolidations and acquisitions, (iv) disposition of assets or subsidiaries, (v) affiliate transactions, (vi) creation or ownership of certain subsidiaries, partnerships and joint ventures, (vii) continuation of or change in business, (viii) restricted payments, (ix) prepayment of subordinated and junior lien indebtedness, (x) restrictions in agreements on dividends, intercompany loans and granting liens on the collateral, (xi) loans and investments, (xii) sale and leaseback transactions, (xiii) changes in organizational documents and fiscal year and (xiv) transactions with respect to bonding subsidiaries. The Credit Facility contains customary events of default, subject to customary thresholds and exceptions, including, among other things, (i) non-payment of principal and non-payment of interest and fees, (ii) a material inaccuracy of a representation or warranty at the time made, (iii) a failure to comply with any covenant, subject to customary grace periods in the case of certain affirmative covenants, (iv) cross default of other debt, final judgments and other adverse orders in excess of $30,000, (v) any loan document shall cease to be a legal, valid and binding agreement, (vi) certain uninsured losses or proceedings against assets with a value in excess of $30,000, (vii) ERISA events, (viii) a change of control, or (ix) bankruptcy or insolvency proceedings.

Due to the expected impact of the COVID-19 pandemic on the Company's end-markets and the resulting expected financial impacts to the Company, on June 26, 2020, the Company entered into a Waiver and Amendment No. 1 to the Fourth Amended and Restated Credit Agreement ("Amendment No. 1"). Amendment No. 1 provided for certain covenant relief and restrictions during the "Covenant Relief Period" (the period ending on the date that the Company delivers a compliance certificate for the quarter ending June 30, 2021 in form and substance satisfactory to the administrative agent). The Covenant Relief Period ended on August 14, 2021. During the Covenant Relief Period:

- the maximum net leverage ratio was suspended;
- the calculation of the minimum interest coverage ratio excluded second quarter 2020 financial results effective for the quarters ended September 30, 2020 through March 31, 2021;
- the minimum interest coverage ratio of 3.50 was reduced to 2.75 and 3.25 for the quarters ended December 31, 2020 and March 31, 2021, respectively;
- the Company's liquidity could not be less than $150,000;
- the Company's aggregate amount of cash and cash equivalents could not exceed $130,000;
- there were certain restrictions on Restricted Payments (as defined); and
- a Permitted Acquisition (as defined) could not be consummated unless otherwise approved in writing by the required lenders.

Amendment No. 1 changed the leverage based LIBOR pricing grid through the maturity date of the Credit Facility and also provides for a LIBOR floor of 50 basis points on outstanding borrowings excluding any Specified Hedge Borrowings (as defined) which remain subject to a LIBOR floor of 0 basis points. As of December 31, 2021, Specified Hedge Borrowings were $50,000.

The Company capitalized an additional $1,086 of deferred financing costs as a result of entering into Amendment No. 1.

On December 17, 2021, the Company entered into Amendment No. 2 to the Fourth Amended and Restated Credit Agreement ("Amendment No. 2"). Amendment No. 2 implemented non-LIBOR interest reference rates for borrowings in euros and British pounds.

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

Due to the ongoing impacts of the COVID-19 pandemic and supply chain disruptions on the Company's end-markets and the resulting financial impacts on the Company, on February 28, 2022, the Company entered into Amendment No. 3 to the Fourth Amended and Restated Credit Agreement ("Amendment No. 3"). Amendment No. 3 reduces the total revolving credit commitments from $400.0 million to $300.0 million and the maximum permitted amount of swing loans from $40.0 million to $30.0 million. Amendment No. 3 provides for certain financial covenant relief and additional covenant restrictions during the "Specified Period" (the period from February 28, 2022 until the date that the Company delivers a compliance certificate for the quarter ending March 31, 2023 in form and substance satisfactory to the administrative agent). During the Specified Period:

- the maximum net leverage ratio is changed to 4.0x for the year ended December 31, 2021, suspended for the quarters ending March 31, 2022 through September 30, 2022 and cannot exceed 4.75 to 1.00 for the quarter ended December 31, 2022 or 3.50 to 1.00 for the quarter ended March 31, 2023;
- the minimum interest coverage ratio of 3.50 is reduced to 2.50 for the quarter ended March 31, 2022, 2.25 for the quarter ended June 30, 2022 and 3.00 for the quarters ended September 30, 2022 and December 31, 2022;
- an additional condition to drawing on the Credit Facility has been added that restricts borrowings if the Company's total of 100% of domestic and 65% of foreign cash and cash equivalents exceeds $70.0 million;
- there are certain additional restrictions on Restricted Payments (as defined); and
- a Permitted Acquisition (as defined) may not be consummated unless the net leverage ratio is below 3.50x during the Specified Period.

Amendment No. 3 changes the leverage based LIBOR pricing grid through the maturity date and also retains a LIBOR floor of 50 basis points on outstanding borrowings excluding any Specified Hedge Borrowings (as defined) which remain subject to a LIBOR floor of 0 basis points.

Amendment No. 3 also incorporates hardwired mechanics to permit a future replacement of LIBOR as the interest reference rate without lender consent.

Borrowings outstanding on the Credit Facility, were $163,957 and $136,000 at December 31, 2021 and 2020, respectively.

The Company was in compliance with all credit facility covenants at December 31, 2021, as a result of Amendment No. 3, and at December 31, 2020.

The Company also had outstanding letters of credit of $1,698 and $1,720 at December 31, 2021 and 2020, respectively.

Debt

Stoneridge Brazil maintained short-term notes used for working capital purposes during 2021 and 2020 which had fixed or variable interest rates. There were no borrowings outstanding on these notes at December 31, 2021.

The Company's wholly-owned subsidiary located in Sweden, has an overdraft credit line which allows overdrafts on the subsidiary's bank account up to a daily maximum level of 20,000 Swedish krona, or $2,213 and $2,435 at December 31, 2021 and 2020, respectively. At December 31, 2021 there was 18,973 Swedish krona, or $2,099, outstanding on this overdraft credit line. At December 31, 2020, there was 13,072 Swedish krona, or $1,591, outstanding on this overdraft credit line. During the year ended December 31, 2021, the subsidiary borrowed 352,368 Swedish krona, or $38,982, and repaid 346,467 Swedish krona, or $38,329.

The Company's wholly-owned subsidiary located in Suzhou, China, has two credit lines (the "Suzhou credit line") which allow up to a maximum borrowing level of 50,000 Chinese yuan, or $7,871 and $7,663 at December 31, 2021 and 2020, respectively. At December 31, 2021 and 2020 there was $3,149 and $4,521, respectively, in borrowings outstanding on the Suzhou credit line with weighted-average interest rates of 4.15% and 4.32%, respectively. The Suzhou credit line is included on the consolidated balance sheet within current portion of debt. In addition, the Suzhou subsidiary has a bank acceptance draft line of credit which facilitates the extension of trade payable payment terms by 180 days. This bank acceptance draft line of credit allows up to a maximum borrowing level of 15,000 Chinese yuan, or $2,361 and $2,299, at December 31, 2021 and 2020, respectively. There was $2,182 and $414 utilized on the Suzhou bank acceptance draft line of credit at December 31, 2021 and 2020, respectively.

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

At December 31, 2021, the future maturities of the Credit Facility and debt were as follows:

Year ended December 31,	
2022	$ 5,248
2023	-
2024	163,957
2025	-
2026	-
Total	$ 169,205

6. Income Taxes

The income tax expense (benefit) included in the accompanying consolidated statement of operations represents federal, state and foreign income taxes. The components of income (loss) before income taxes and the (benefit) provision for income taxes consist of the following:

Year ended December 31,	2021	2020	2019
Income before income taxes:			
Domestic	$ 11,596	$ (25,403)	$ 30,464
Foreign	840	14,679	37,929
Total income before income taxes	$ 12,436	$ (10,724)	$ 68,393
Provision for income taxes:			
Current:			
Federal	$ -	$ (3)	$ (4,384)
State and foreign	9,542	5,182	6,900
Total current expense	$ 9,542	$ 5,179	$ 2,516
Deferred:			
Federal	$ 714	$ (8,512)	$ 6,780
State and foreign	(1,226)	559	(1,194)
Total deferred benefit	(512)	(7,953)	5,586
Total income tax expense	$ 9,030	$ (2,774)	$ 8,102

A summary of the differences between the statutory federal income tax rate of 21.0% and the consolidated provision for income taxes is shown below.

Year ended December 31,	2021	2020	2019
Statutory U.S. federal income tax provision (benefit)	$ 2,612	$ (2,252)	$ 14,363
State income taxes, net of federal tax benefit	942	(647)	152
Tax credits and incentives	(3,316)	(2,791)	(6,297)
Foreign tax rate differential	730	90	1,347
Impact of change in enacted tax law	227	1,108	993
Change in valuation allowance	5,070	2,174	(138)
U.S. tax on foreign earnings	(347)	(519)	(3,373)
Tax impact of unconsolidated subsidiaries	1,828	(323)	(331)
Unremitted earnings on foreign subsidiaries	835	86	-
Compensation and benefits	358	362	(469)
Other	91	(62)	1,855
Provision (benefit) for income taxes	$ 9,030	$ (2,774)	$ 8,102

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

Significant components of the Company's deferred tax assets and liabilities were as follows:

As of December 31,	2021	2020
Deferred tax assets:		
Inventories	$ 1,692	$ 1,858
Employee compensation and benefits	2,420	2,306
Accrued liabilities and reserves	4,486	3,649
Property, plant and equipment	751	943
Tax loss carryforwards	13,479	12,307
Tax credit carryforwards	24,173	22,949
Lease liability	3,712	4,199
Other	647	897
Gross deferred tax assets	51,360	49,108
Less: Valuation allowance	(14,516)	(10,237)
Deferred tax assets less valuation allowance	36,844	38,871
Deferred tax liabilities:		
Property, plant and equipment	(1,235)	(2,400)
Intangible assets	(11,767)	(13,630)
Right-of-use-assets	(3,493)	(4,076)
Other	(5,021)	(4,793)
Gross deferred tax liabilities	(21,516)	(24,899)
Net deferred tax assets	$ 15,328	$ 13,972

The balance sheet classification of our net deferred tax asset is shown below:

Year ended December 31,	2021	2020
Long-term deferred tax assets	$ 26,034	$ 26,907
Long-term deferred tax liabilities	(10,706)	(12,935)
Net deferred tax assets	$ 15,328	$ 13,972

The Company has recognized deferred taxes related to foreign withholding taxes and the expected foreign currency impact upon repatriation from foreign subsidiaries not considered indefinitely reinvested. At December 31, 2021, the aggregate undistributed earnings of our foreign subsidiaries amounted to $43,530.

Based on the Company's review of both positive and negative evidence regarding the realizability of deferred tax assets at December 31, 2021, a valuation allowance is recorded against certain deferred tax assets based upon the conclusion that it was more likely than not they would not be realized.

The Company has net operating loss carry forwards of $76,986 and $53,761 for state and foreign tax jurisdictions, respectively. The state net operating losses expire from 2030-2041 or have indefinite lives and the foreign net operating losses expire from 2022-2026 or have indefinite lives. The Company has general business and foreign tax credit carry forwards of $22,087, $963 and $1,122 for U.S. federal, state and foreign jurisdictions, respectively. The U.S. federal general business credits, if unused, begin to expire in 2025, and the state and foreign tax credits expire at various times.

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

The following is a reconciliation of the Company's total gross unrecognized tax benefits:

	2021	2020	2019
Balance as of January 1	**$ 3,449**	$ 3,449	$ 3,481
Tax positions related to the current year:			
Additions	**-**	-	-
Tax positions related to the prior years:			
Reductions	**-**	-	(32)
Expirations of statutes of limitation	**(558)**	-	-
Balance as of December 31	**$ 2,891**	$ 3,449	$ 3,449

At December 31, 2021, the Company has classified $2,891 as a reduction to non-current deferred income tax assets. If the Company's tax positions are sustained by the taxing authorities in favor of the Company, the amount that would affect the Company's effective tax rate is approximately $2,891 and $3,449 at December 31, 2021 and 2020, respectively.

The Company classifies interest expense and, if applicable, penalties which could be assessed related to unrecognized tax benefits as a component of income tax expense. For the years ended December 31, 2021, 2020 and 2019, the Company recognized approximately $0, $0 and $(5) of gross interest and penalties, respectively.

The Company conducts business globally and, as a result, files income tax returns in the U.S. federal jurisdiction and various state and foreign jurisdictions. In the normal course of business, the Company is subject to examination by taxing authorities throughout the world. The following table summarizes the open tax years for each jurisdiction:

Jurisdiction	Open Tax Years
U.S. Federal	2017-2021
Argentina	2016-2021
Brazil	2014-2021
China	2018-2021
France	2018-2021
Germany	2017-2021
Italy	2016-2021
Mexico	2016-2022
Netherlands	2017-2021
Spain	2017-2021
Sweden	2016-2021
United Kingdom	2020-2021

7. Leases

Lessee

The Company has various cancelable and noncancelable leased assets within all segments, which include certain properties, vehicles and equipment of which are all classified as operating leases. Payments for these leases are generally fixed; however, several of our leases are composed of variable lease payments including index-based payments or inflation-based payments based on a Consumer Price Index ("CPI") or other escalators. Our lease agreements do not contain any material residual value guarantees or material restrictive covenants.

Under Leases (Topic 842), the Company determines an arrangement is a lease when we have the right to control the use of identified property, plant or equipment for a period of time in exchange for consideration. Other than the leases that we have already identified, we are not aware of any material leases that have not yet commenced. For leases that have a calculated lease term of 12 months or less and do not include an option to purchase the underlying asset which we are reasonably certain to exercise, the Company has made the policy election to not apply the recognition requirements in Leases (Topic 842). For these short-term leases, the Company recognizes the lease payments in profit or loss on a straight-line basis over the lease term and variable lease payments in the period in which the obligation for those payments is incurred.

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

For the leases identified, right of use ("ROU") assets and lease liabilities are recognized at commencement date based on the present value of lease payments over the lease term. As most of our leases do not provide an implicit rate, the Company used the calculated incremental borrowing rate based on the information available at the implementation date, and going forward at the commencement date, in determining the present value of lease payments. The Company will use the implicit rate when readily determinable. The ROU asset includes the carrying amount of the lease liability, plus (minus) any prepaid (accrued) lease payments, less the unamortized balance of lease incentives received. The Company's lease terms may include options to extend or terminate the lease and such options are included in the lease term when it is reasonably certain that the Company will exercise that option. Lease expense for lease payments is recognized on a straight-line basis over the lease term. Lease expenses are recognized within COGS, SG&A and D&D costs in the consolidated statements of operations. The Company has made the policy election to account for lease and non-lease components as a single lease component for all of its leases.

The components of lease expense are as follows:

Year ended December 31,	2021	2020
Operating lease cost	$ **5,581**	$ 5,330
Short-term lease cost	**843**	665
Variable lease cost	**553**	614
Total lease cost	$ **6,977**	$ 6,609

Balance sheet information related to leases is as follows:

As of December 31,	2021	2020
Assets:		
Operating lease right-of-use assets	$ **18,343**	$ 18,944
Liabilities:		
Operating lease current liability, included in other current liabilities	$ **4,203**	$ 4,271
Operating lease long-term liability	**14,912**	15,434
Total leased liabilities	$ **19,115**	$ 19,705

Maturities of operating lease liabilities are as follows:

As of December 31,	2021
2022	$ **4,776**
2023	**4,462**
2024	**4,045**
2025	**3,302**
2026	**2,080**
Thereafter	**3,327**
Total future minimum lease payments	$ **21,992**
Less: imputed interest	**(2,877)**
Total lease liabilities	$ **19,115**

Weighted-average remaining lease term and discount rate for operating leases is as follows:

As of December 31,	2021	2020
Weighted-average remaining lease term (in years)	**5.44**	6.33
Weighted-average discount rate	**5.56 %**	5.77 %

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

Other information:

Year ended December 31,		2021		2020
Operating cash flows:				
Cash paid related to operating lease obligations	**$**	**5,092**	$	5,550
Non-cash activity:				
Right-of-use assets obtained in exchange for operating lease obligations	**$**	**4,596**	$	822

Lessor

The Company, as lessor, entered into a lease with a third-party lessee effective July 1, 2020, of its Canton, Massachusetts facility. In conjunction with the Canton restructuring plan outlined in Note 12, the Company ceased operations at this facility in March 2020. As discussed in Note 2, the Company sold the Canton facility and assigned the lease to the buyer on June 17, 2021. The Company recognized lease income on a straight-line basis over the lease term until the time of the sale. The Company recognized, in its Control Devices segment, operating and variable lease income from leases in our consolidated statements of operations of $602 and $199, respectively, for the year ended December 31, 2021 and $674 and $199, respectively for the year ended December 31, 2020.

8. Share-Based Compensation Plans

In May 2016, the Company's shareholders approved the 2016 Long-Term Incentive Plan (the "2016 Plan") and reserved 1,800,000 Common Shares (of which the maximum number of Common Shares which may be issued). In May 2020, the Company's shareholders approved an amendment to the 2016 Plan to increase by 1,100,000 the number of Common Shares authorized for issuance. The amendment to the 2016 Plan brought the total Common Shares available for issuance to 2,900,000. Under the 2016 Plan, as of December 31, 2021, the Company has granted 2,261,121 share units, of which 911,616 were time-based with cliff vesting using the straight-line method and 1,349,505 were performance-based. There are 1,292,840 shares available to be granted under the 2016 Plan at December 31, 2021.

In 2021, 2020 and 2019, pursuant to the 2016 Plan, the Company granted time-based share units and performance-based performance shares. The time-based share units cliff vest three years after the date of grant. The performance-based performance shares vest and are no longer subject to forfeiture upon the recipient remaining an employee of the Company for three years from the date of grant and, for a portion of the annual awards, upon the Company attaining certain targets of performance measured against a peer group's three year performance in terms of total shareholder return and, for the remaining portion of the annual awards, upon achieving certain earnings per share targets and return on invested capital targets established by the Company during the performance period of the award.

The allocation of performance shares granted between total shareholder return, earnings per share and return on invested capital were as follows for the years ended December 31:

	2021	2020	2019
Total shareholder return	**45 %**	45 %	45 %
Earnings per share	**36 %**	36 %	36 %
Return on invested capital	**18 %**	18 %	18 %

In April 2005, the Company adopted the Directors' Restricted Shares Plan (the "Director Share Plan") and reserved 500,000 Common Shares for issuance under the Director Share Plan. In May 2013, shareholders approved an amendment to the Director Share Plan to increase the number of shares for issuance by 200,000 to 700,000. In May 2018, the Company's shareholders approved the 2018 Amended and Restated Director's Restricted Shares Plan (the "2018 Director Share Plan") to increase the number of shares for issuance by 150,000 to 850,000. Under the 2018 Director Share Plan, the Company has cumulatively issued 744,811 restricted Common Shares. As such, there are 105,189 restricted Common Shares available to be issued on December 31, 2021. Shares issued annually under the 2018 Director Share Plan are no longer subject to forfeiture one year after the date of grant.

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

Share Units and Performance Shares

The fair value of the non-vested time-based share unit awards was calculated using the market value of the Common Shares on the date of issuance. The weighted-average grant-date fair value of time-based share units granted during the years ended December 31, 2021, 2020 and 2019 was $35.13, $17.78, and $30.01, respectively.

The fair value of the non-vested performance-based performance share awards with a performance condition requiring the Company to obtain certain earnings per share and return on invested capital targets were estimated using the market value of the shares on the date of grant. The fair value of non-vested performance-based performance share awards with a market condition requiring the Company to obtain a total shareholder return target relative to a group of peer companies was estimated using a Monte Carlo valuation model taking into consideration the probability of achievement using multiple simulations. The awards that use earnings per share and return on invested capital as the performance target are expensed beginning when it is probable that the Company will meet the underlying performance condition.

A summary of the status of the Company's non-vested share units and performance shares as of December 31, 2021 and the changes during the year then ended, are presented below:

	Time-based awards		Performance-based awards	
	Share units	Weighted-average grant date fair value	Performance shares	Weighted-average grant date fair value
Non-vested as of December 31, 2020	502,728	$ 21.89	752,783	$ 24.32
Granted	**202,599**	**$ 35.13**	**215,936**	**$ 43.34**
Vested	**(159,755)**	**$ 22.52**	**(126,242)**	**$ 29.61**
Forfeited or cancelled	**(95,241)**	**$ 26.96**	**(263,492)**	**$ 28.35**
Non-vested as of December 31, 2021	**450,331**	**$ 26.55**	**578,985**	**$ 28.42**

A summary of the status of the Company's non-vested share units and performance shares as of December 31, 2020 and the changes during the year then ended, are presented below:

	Time-based awards		Performance-based awards	
	Share units	Weighted-average grant date fair value	Performance shares	Weighted-average grant date fair value
Non-vested as of December 31, 2019	361,834	$ 25.84	566,336	$ 28.97
Granted	306,161	$ 17.78	409,686	$ 17.10
Vested	(128,144)	$ 22.13	(145,569)	$ 22.08
Forfeited or cancelled	(37,123)	$ 25.37	(77,670)	$ 24.37
Non-vested as of December 31, 2020	502,728	$ 21.89	752,783	$ 24.32

As of December 31, 2021 total unrecognized compensation cost related to non-vested time-based share units granted was $4,486. That cost is expected to be recognized over a weighted-average period of 1.12 years.

For the years ended December 31, 2021, 2020 and 2019, the total fair value of awards vested was $9,637, $5,288 and $12,376, respectively.

As of December 31, 2021, there was no unrecognized compensation cost related to non-vested performance shares granted that are probable to vest. As noted above, the Company has issued and outstanding performance-based share units that use different performance targets (total shareholder return, earnings per share and return on invested capital).

The excess tax benefit realized from the vesting of share units and performance shares of the share-based payment arrangements was $563, $46 and $1,289 for the years ended December 31, 2021, 2020 and 2019, respectively.

9. Employee Benefit Plans

The Company has certain defined contribution profit sharing and 401(k) plans covering substantially all of its employees in the United States and Europe. The Company provides matching contributions to the Company's 401(k) plan. Company contributions are generally discretionary. For the years ended December 31, 2021, 2020 and 2019, expenses related to these plans amounted to $5,082, $3,812 and $4,260, respectively.

10. Financial Instruments and Fair Value Measurements

Financial Instruments

A financial instrument is cash or a contract that imposes an obligation to deliver or conveys a right to receive cash or another financial instrument. The carrying values of cash and cash equivalents, accounts receivable and accounts payable are considered to be representative of fair value because of the short maturity of these instruments. The fair value of debt approximates the carrying value of debt, due to the variable interest rate on the Credit Facility and the maturity of the remaining outstanding debt.

Derivative Instruments and Hedging Activities

On December 31, 2021, the Company had open Mexican peso-denominated foreign currency forward contracts and net investment hedges of our euro-denominated subsidiary. The Company used foreign currency forward contracts solely for hedging and not for speculative purposes during 2021 and 2020. Management believes that its use of these instruments to reduce risk is in the Company's best interest. The counterparties to these financial instruments are financial institutions with investment grade credit ratings.

Foreign Currency Exchange Rate Risk

The Company conducts business internationally and, therefore, is exposed to foreign currency exchange rate risk. The Company uses derivative financial instruments as cash flow hedges and net investment hedges to manage its exposure to fluctuations in foreign currency exchange rates by reducing the effect of such fluctuations on foreign currency denominated intercompany transactions, inventory purchases and other foreign currency exposures.

Net Investment Hedges

During 2021 the Company entered into two cross-currency swaps, designated as net investment hedges, with notional values of $25,000 each and maturities in August 2026 and August 2028. These swaps hedge a portion of the net investment in a certain euro-denominated subsidiary.

The Company has elected to assess hedge effectiveness under the spot method. Accordingly, periodic changes in the fair value of the derivative instruments attributable to factors other than spot exchange rate variability are excluded from the measurement of hedge ineffectiveness and reported directly in earnings each reporting period. The change in fair value of these derivative instruments is recorded in cumulative translation adjustment, which is a component of accumulated other comprehensive loss in the consolidated balance sheets. When the related currency translation adjustment is required to be reclassified, usually upon the sale or liquidation of the investment, the gain or loss included in accumulated other comprehensive loss is recorded in earnings and reflected in other expense (income), net in the consolidated statements of operations. Upon settlement, cash flows attributable to derivatives designated as net investment hedges will be classified as investing activities in the consolidated statements of cash flows.

Cash Flow Hedges

The Company entered into foreign currency forward contracts to hedge the euro and Mexican peso currencies during 2020 and the Mexican peso currency during 2021. These forward contracts were executed to hedge forecasted transactions and have been accounted for as cash flow hedges. As such, gains and losses on derivatives qualifying as cash flow hedges are recorded in accumulated other comprehensive income, to the extent that hedges are effective, until the underlying transactions are recognized in earnings. Unrealized amounts in accumulated other comprehensive income will fluctuate based on changes in the fair value of hedge derivative contracts at each reporting period. The cash flow hedges were highly effective. The effectiveness of the transactions has been and will be measured on an ongoing basis using regression analysis and forecasted future purchases of the currency.

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

In certain instances, the foreign currency forward contracts may not qualify for hedge accounting or are not designated as hedges and, therefore, are marked-to-market with gains and losses recognized in the Company's consolidated statements of operations as a component of other expense (income), net. At December 31, 2021, all of the Company's foreign currency forward contracts were designated as cash flow hedges.

The Company's foreign currency forward contracts offset a portion of the gains and losses on the underlying foreign currency denominated transactions as follows:

U.S. dollar-denominated Foreign Currency Forward Contracts – Cash Flow Hedges

The Company entered into U.S. dollar-denominated currency contracts on behalf of one of its European Electronics subsidiaries, whose functional currency is the euro, and expired ratably on a monthly basis during 2020. There were no such contracts at December 31, 2021 or 2020.

Mexican peso-denominated Foreign Currency Forward Contracts – Cash Flow Hedges

The Company holds Mexican peso-denominated foreign currency forward contracts with a notional amount at December 31, 2021 of $23,923 which expire ratably on a monthly basis from January 2022 to December 2022. The notional amount at December 31, 2020 related to Mexican peso-denominated foreign currency forward contracts was $1,242.

The Company evaluated the effectiveness of the Mexican peso-denominated foreign currency forward contracts held as of December 31, 2021 and the year then ended, and concluded that the hedges were effective.

Interest Rate Risk

Interest Rate Risk – Cash Flow Hedge

On February 18, 2020, the Company entered into a floating-to-fixed interest rate swap agreement (the "Swap") with a notional amount of $50,000 to hedge its exposure to interest payment fluctuations on a portion of its Credit Facility borrowings. The Swap was designated as a cash flow hedge of the variable interest rate obligation under the Company's Credit Facility that has a current balance of $163,957 at December 31, 2021. Accordingly, the change in fair value of the Swap is recognized in accumulated other comprehensive loss. The Swap agreement requires monthly settlements on the same days that the Credit Facility interest payments are due and has a maturity date of March 10, 2023, which is prior to the Credit Facility maturity date of June 4, 2024. Under the Swap terms, the Company pays a fixed interest rate and receives a floating interest rate based on the one-month LIBOR, with a floor. The critical terms of the Swap are aligned with the terms of the Credit Facility, resulting in no hedge ineffectiveness. The difference between amounts to be received and paid under the Swap is recognized as a component of interest expense, net on the consolidated statements of operations. The swap settlements increased interest expense by $651 and $433 for the years ended December 31, 2021 and 2020, respectively.

The notional amounts and fair values of derivative instruments in the consolidated balance sheets were as follows:

	Notional amounts (A)		Prepaid expenses and other current assets		Accrued expenses and other current liabilities	
As of December 31,	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**
Derivatives designated as hedging instruments:						
Cash flow hedges:						
Forward currency contracts	**$ 23,923**	$ 1,242	**$ 730**	$ 255	**$ -**	$ -
Interest rate swap	**$ 50,000**	$ 50,000	**$ -**	$ -	**$ 503**	$ 1,318
Net investment hedges:						
Cross-currency swaps	**$ 50,000**	$ -	**$ 1,450**	$ -	**$ -**	$ -

(A) Notional amounts represent the gross contract of the derivatives outstanding in U.S. dollars.

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

Gross amounts recorded for the cash flow hedges in other comprehensive (loss) income and in net income (loss) for the years ended December 31 were as follows:

	Gain (loss) recorded in other comprehensive income (loss)			Gain (loss) reclassified from other comprehensive income (loss) into net income (loss) (A)		
	2021	**2020**	**2019**	**2021**	**2020**	**2019**
Derivatives designated as cash flow hedges:						
Forward currency contracts	**$ 923**	$ (1,244)	$ 450	**$ 448**	$ (1,499)	$ 820
Interest rate swap	**$ 164**	$ (1,751)	$ -	**$ (651)**	$ (433)	$ -
Derivatives designated as net investment hedges:						
Cross-currency swaps	**$ 1,270**	$ -	-	**$ -**	$ -	$ -

(A) Gains (losses) reclassified from comprehensive loss into net income (loss) recognized in COGS in the Company's consolidated statements of operations for the years ended December 31, 2021, 2020 and 2019 were $341, $(1,146) and $695, respectively. Gains (losses) reclassified from other comprehensive loss into net income (loss) recognized in D&D in the Company's consolidated statements of operations were $0, $(29) and $125 for the years ended December 31, 2021, 2020 and 2019, respectively. Gains (losses) reclassified from other comprehensive loss into net income (loss) recognized in SG&A in the Company's consolidated statements of operations were $107, $(324) and $0 for the years ended December 31, 2021, 2020 and 2019, respectively. Losses reclassified from other comprehensive loss into net income (loss) recognized in interest expense, net in the Company's consolidated statements of operations were $(651) and $(433) for the years ended December 31, 2021, and 2020, respectively.

For the year ended December 31, 2021, the total net gains on the foreign currency contract cash flow hedges of $730 are expected to be included in COGS, SG&A and D&D within the next 12 months. Of the total net loss on the interest rate swap cash flow hedge, $468 of losses are expected to be included in interest expense, net within the next 12 months and $35 of losses are expected to be included in interest expense, net in subsequent periods.

Cash flows from derivatives used to manage foreign exchange and interest rate risks are classified as operating activities within the consolidated statements of cash flows.

The Company has measured the ineffectiveness of the forward currency contracts and any amounts recognized in the consolidated financial statements were immaterial for the years ended December 31, 2021, 2020 and 2019.

Fair Value Measurements

Certain assets and liabilities held by the Company are measured at fair value on a recurring basis and are categorized using the three levels of the fair value hierarchy based on the reliability of the inputs used. Fair values estimated using Level 1 inputs consist of quoted prices in active markets for identical assets or liabilities that the Company has the ability to access at the measurement date. Fair values estimated using Level 2 inputs, other than quoted prices, are observable for the asset or liability, either directly or indirectly and include among other things, quoted prices for similar assets or liabilities in markets that are active or inactive as well as inputs other than quoted prices that are observable. For forward currency and cross-currency contracts, inputs include forward foreign currency exchange rates. For the interest rate swap, inputs include LIBOR. Fair values estimated using Level 3 inputs consist of significant unobservable inputs.

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

The following table presents our assets and liabilities that are measured at fair value on a recurring basis and are categorized using the three levels of the fair value hierarchy based on the reliability of inputs used.

December 31,	2021				2020
		Fair values estimated using			
	Fair value	Level 1 inputs	Level 2 inputs	Level 3 inputs	Fair value
Financial assets carried at fair value:					
Forward currency contract	$ 730	$ -	$ 730	$ -	$ 255
Cross-currency swaps	1,450	-	1,450	-	-
Total financial assets carried at fair value	$ 2,180	$ -	$ 2,180	$ -	$ 255
Financial liabilities carried at fair value:					
Interest rate swap	503	-	503	-	1,318
Earn-out consideration	7,351	-	-	7,351	5,813
Total financial liabilities carried at fair value	$ 7,854	$ -	$ 503	$ 7,351	$ 7,131

The following table sets forth a summary of the change in fair value of the Company's Level 3 financial liabilities related to earn-out consideration that are measured at fair value on a recurring basis.

	Stoneridge Brazil	
	2021	2020
Balance at January 1	$ 5,813	$ 12,011
Change in fair value	2,065	(3,196)
Foreign currency adjustments	(527)	(3,002)
Balance at December 31	$ 7,351	$ 5,813

The Company will be required to pay the Stoneridge Brazil earn-out consideration based on Stoneridge Brazil's financial performance in 2021. The fair value of the Stoneridge Brazil earn-out consideration is based on earnings before interest, depreciation and amortization ("EBITDA") in 2021 and was based on discounted cash flows utilizing forecasted EBITDA in 2020 using the key inputs of forecasted sales and expected operating income reduced by the market required rate of return. The earn-out consideration obligation related to Stoneridge Brazil is recorded within accrued expenses and other current liabilities in the consolidated balance sheets as of December 31, 2021 and other long-term liabilities in the consolidated balance sheets as of December 31, 2020.

The change in fair value of the earn-out consideration for Stoneridge Brazil was due to updated financial performance projections and favorable foreign currency translation offset by the reduced time from the current period end to the payment date. The change in fair value of the Stoneridge Brazil earn-out consideration was recorded in SG&A expense and the foreign currency impact was included in other expense (income), net in the consolidated statements of operations.

In March 2019, the Company paid earn-out consideration of $8,474 related to the January 2017 acquisition of Orlaco. The payment was recorded in the consolidated statement of cash flows within operating and financing activities in the amounts of $5,080 and $3,394, respectively, for the year ended December 31, 2019. The Orlaco earn-out consideration expense was recognized in the years ended December 31, 2017 and 2018.

There were no transfers in or out of Level 3 from other levels in the fair value hierarchy for the year ended December 31, 2021.

No non-recurring fair value adjustments were required for nonfinancial assets for the years ended December 31, 2021 and 2020.

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

Impairment of Long-Lived Assets or Finite-Lived Assets

The Company reviews the carrying value of its long-lived assets and finite-lived intangible assets for impairment when events or circumstances indicate that their carrying value may not be recoverable. Factors the Company considers important that could trigger testing of the related asset groups for an impairment include current period operating or cash flow losses combined with a history of operating or cash flow losses, a projection or forecast that demonstrates continuing losses, significant adverse changes in the business climate within a particular business or current expectations that a long-lived asset will be sold or otherwise disposed of significantly before the end of its estimated useful life. To test for impairment, the estimated undiscounted cash flows expected to be generated from the use and disposal of the asset or asset group is compared to its carrying value. An asset group is established by identifying the lowest level of cash flows generated by the group of assets that are largely independent of cash flows of other assets. If cash flows cannot be separately and independently identified for a single asset, we will determine whether an impairment has occurred for the group of assets for which we can identify projected cash flows. If these undiscounted cash flows are less than their respective carrying values, an impairment charge would be recognized to the extent that the carrying values exceed estimated fair values. The estimation of undiscounted cash flows and fair value requires us to make assumptions regarding future operating results over the life of the asset or the life of the primary asset in the asset group. The results of the impairment testing are dependent on these estimates which require judgment. The occurrence of certain events, including changes in economic and competitive conditions, could impact cash flows eventually realized and management’s ability to accurately assess whether an asset is impaired.

On May 19, 2020, the Company committed to the strategic exit of its Control Devices particulate matter (“PM”) sensor product line. As a result of the strategic exit of the PM sensor product line the Company determined an impairment indicator existed and performed a recoverability test of the related long-lived assets. The Company identified that there were two asset groups comprised of PM sensor fixed assets at the Company’s Lexington, Ohio and Tallinn, Estonia facilities. As a result of the recoverability test performed, the Company determined that the undiscounted cash flows did not exceed the carrying value of the PM sensor fixed assets at the Company’s Tallinn, Estonia facility. As such, an impairment loss of $2,326 was recorded based on the difference between the fair value and the carrying value of the assets. The Company used the income approach to determine the fair value of the PM sensor fixed assets at the Tallinn, Estonia facility. During the year ended December 31, 2020, the impairment loss of $2,326 was recorded on the Company’s consolidated statement of operations within SG&A expense. The inputs utilized in the analyses are classified as Level 3 inputs within the fair value hierarchy as defined in ASC 820, "Fair Value Measurement."

11. Commitments and Contingencies

From time to time we are subject to various legal actions and claims incidental to our business, including those arising out of breach of contracts, product warranties, product liability, patent infringement, regulatory matters and employment-related matters. The Company establishes accruals for matters which it believes that losses are probable and can be reasonably estimated. Although it is not possible to predict with certainty the outcome of these matters, the Company is of the opinion that the ultimate resolution of these matters will not have a material adverse effect on its consolidated results of operations or financial position.

As a result of environmental studies performed at the Company’s former facility located in Sarasota, Florida, the Company became aware of soil and groundwater contamination at this site. The Company engaged an environmental engineering consultant to assess the level of contamination and to develop a remediation and monitoring plan for the site. Soil remediation at the site was completed during the year ended December 31, 2010. A remedial action plan was approved by the Florida Department of Environmental Protection and ground water remediation began in the fourth quarter of 2015. During the years ended December 31, 2021 and 2020 environmental remediation costs incurred were $391 and $128, respectively, and were immaterial for the year ended December 31, 2019. At December 31, 2021 and 2020, the Company had accrued an undiscounted liability of $216 and $180 respectively, related to future remediation costs which were recorded as a component of accrued expenses and other current liabilities on the consolidated balance sheets while the remaining amount as of December 31, 2021 was recorded as a component of other long-term liabilities. Costs associated with the recorded liability will be incurred to complete the groundwater remediation and monitoring. The recorded liability is based on assumptions in the remedial action plan as well as estimates for future remediation activities. Although the Company sold the Sarasota facility and related property in December 2011, the liability to remediate the site contamination remains the responsibility of the Company. Due to the ongoing site remediation, the Company is currently required to maintain a $1,489 letter of credit for the benefit of the buyer.

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

The Company's Stoneridge Brazil subsidiary has civil, labor and other tax contingencies (excluding income tax) for which the likelihood of loss is deemed to be reasonably possible, but not probable, by the Company's legal advisors in Brazil. As a result, no provision has been recorded with respect to these contingencies, which amounted to R$46,530 ($8,338) and R$43,736 ($8,416) at December 31, 2021 and 2020, respectively. An unfavorable outcome on these contingencies could result in significant cost to the Company and adversely affect its results of operations.

On August 12, 2020, the Brazilian Administrative Counsel for Economic Defense ("CADE") issued a ruling against Stoneridge Brazil for abuse of dominance and market foreclosure through its prior use of exclusivity provisions in agreements with its distributors. The CADE tribunal imposed a R$7,995 ($1,598) fine which is included in the reasonably possible contingencies noted above. The Company is challenging this ruling in Brazilian federal court to reverse this decision by the CADE tribunal.

Brazilian Indirect Tax

In 2019, the Company received judicial notification that the Superior Judicial Court of Brazil rendered a favorable decision on Stoneridge Brazil's case granting the Company the right to recover, through offset of federal tax liabilities, amounts collected by the government from June 2010 to February 2017. As a result, the Company recorded a pre-tax benefit of $6,473 in the year ended December 31, 2019.

The Brazilian tax authorities have sought clarification before the Supreme Court of Brazil (in a leading case involving another taxpayer) of certain matters that could affect the rights of Brazilian taxpayers regarding these credits. The leading case was decided on May 13, 2021. The Company does not expect any impact to amounts previously recognized as a result of the Supreme Court decision.

12. Restructuring and Business Realignment

On May 19, 2020, the Company committed to the strategic exit of its Control Devices particulate matter ("PM") sensor product line. The decision to exit the PM sensor product line was made after consideration of the decline in the market outlook for diesel passenger vehicles, the current and expected profitability of the product line and the Company's strategic focus on aligning resources with the greatest opportunities. In conjunction with the strategic exit of the PM sensor product line, the Company entered into an asset purchase agreement related to the sale of the PM sensor product line during the first quarter of 2021. Refer to Note 2 of the consolidated financial statements for additional details regarding this sale.

As a result of the PM sensor restructuring actions, the Company recognized expense of $2,360 and $3,428 for the years ended December 31, 2021 and 2020, respectively, for non-cash fixed asset charges, including impairment and accelerated depreciation of PM sensor related fixed assets, employee severance and termination costs and other related costs including supplier settlements. For the year ended December 31, 2021 restructuring related costs of $1,510, $642 and $208 were recognized in COGS, SG&A and D&D, respectively. For the year ended December 31, 2020 restructuring related costs of $817 and $2,611 were recognized in COGS and SG&A, respectively. The only remaining costs relate to potential commercial settlements and legal fees which we continue to negotiate. The estimated additional costs related to these settlements and fees is up to $4,200.

The expenses for the exit of the PM sensor line that relate to the Control Devices reportable segment include the following:

	Accrual as of January 1, 2021	2021 Charge to Expense	Utilization Cash	Utilization Non-Cash	Accrual as of December 31, 2021
Fixed asset impairment and accelerated depreciation	$ -	$ 188	$ -	$ (188)	$ -
Employee termination benefits	-	139	(104)	-	35
Other related costs	-	2,033	(2,033)	-	-
Total	$ -	$ 2,360	$ (2,137)	$ (188)	$ 35

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

	Accrual as of January 1, 2020	2020 Charge to Expense	Utilization Cash	Utilization Non-Cash	Accrual as of December 31, 2020
Fixed asset impairment and accelerated depreciation	$ -	$ 3,326	$ -	$ (3,326)	$ -
Other related costs	-	102	(102)	-	-
Total	$ -	$ 3,428	$ (102)	$ (3,326)	$ -

On January 10, 2019, the Company committed to a restructuring plan that resulted in the closure of the Canton, Massachusetts facility ("Canton Facility") on March 31, 2020 and the consolidation of manufacturing operations at that site into other Company locations ("Canton Restructuring"). Company management informed employees at the Canton Facility of this restructuring decision on January 11, 2019. The costs for the Canton Restructuring included employee severance and termination costs, contract terminations costs, professional fees and other related costs such as moving and set-up costs for equipment and costs to restore the engineering function previously located at the Canton facility.

As a result of the Canton Restructuring actions, the Company recognized expense of $13, $2,978 and $12,530 for the years ended December 31, 2021, 2020 and 2019, respectively, for employee severance and termination costs and other restructuring related costs. For the year ended December 31, 2021 other restructuring related costs of $13 were recognized in D&D in the consolidated statement of operations. For the year ended December 31, 2020 severance and other restructuring related costs of $1,659, $551 and $768 were recognized in COGS, SG&A and D&D, respectively, in the consolidated statement of operations. For the year ended December 31, 2019 severance and other related restructuring costs of $7,625, $1,526 and $3,379 were recognized in COGS, SG&A and D&D, respectively, in the consolidated statement of operations. We do not expect to incur additional costs related to the Canton Restructuring. Refer to Note 7 and Note 2 to the consolidated financial statements for additional details regarding the third-party lease and sale, respectively, of the Canton Facility.

The expenses for the Canton Restructuring that relate to the Control Devices reportable segment include the following:

	Accrual as of January 1, 2021	2021 Charge to Expense	Utilization Cash	Utilization Non-Cash	Accrual as of December 31, 2021
Employee termination benefits	$ 165	$ -	$ (72)	$ -	$ 93
Other related costs	-	13	(13)	-	-
Total	$ 165	$ 13	$ (85)	$ -	$ 93

	Accrual as of January 1, 2020	2020 Charge to Expense	Utilization Cash	Utilization Non-Cash	Accrual as of December 31, 2020
Employee termination benefits	$ 2,636	$ 1,119	$ (3,590)	$ -	$ 165
Other related costs	-	1,859	(1,859)	-	-
Total	$ 2,636	$ 2,978	$ (5,449)	$ -	$ 165

	Accrual as of January 1, 2019	2019 Charge to Expense	Utilization Cash	Utilization Non-Cash	Accrual as of December 31, 2019
Employee termination benefits	$ -	$ 8,088	$ (5,452)	$ -	$ 2,636
Other related costs	-	4,442	(4,442)	-	-
Total	$ -	$ 12,530	$ (9,894)	$ -	$ 2,636

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

In the fourth quarter of 2018, the Company undertook restructuring actions for the Electronics segment affecting the European Aftermarket business and China operations. In the second quarter of 2020, the Company finalized plans to move its European Aftermarket sales activities in Dundee, Scotland to a new location which resulted in incurring contract termination costs as well as employee severance and termination costs. In addition, the Company announced a restructuring program to transfer the European production of its controls product line to China. As a result of these actions, the Company recognized expense of $290, $2,400 and $603 respectively, for the years ended December 31, 2021, 2020 and 2019 for employee severance and termination costs, non-cash fixed asset charges for accelerated depreciation of fixed assets, contract termination costs and other related costs. Electronics segment restructuring costs recognized in COGS, SG&A, and D&D in the consolidated statement of operations for the year ended December 31, 2021 were $37, $210 and $43, respectively. Electronics segment restructuring costs recognized in COGS, SG&A and D&D in the consolidated statement of operations for the year ended December 31, 2020 were $147, $1,774 and $479, respectively. Electronics segment restructuring costs were recorded in SG&A in the consolidated statements of operations for the year ended December 31, 2019. We do not expect to incur additional costs related to these Electronics segment restructuring actions.

The expenses for the restructuring activities that relate to the Electronics reportable segment include the following:

	Accrual as of January 1, 2021	2021 Charge to Expense	Utilization Cash	Utilization Non-Cash	Accrual as of December 31, 2021
Employee termination benefits	**$ 227**	**$ 50**	**$ (277)**	**$ -**	**$ -**
Other related costs	**-**	**240**	**(240)**	-	**-**
Total	**$ 227**	**$ 290**	**$ (517)**	**$ -**	**$ -**

	Accrual as of January 1, 2020	2020 Charge to Expense	Utilization Cash	Utilization Non-Cash	Accrual as of December 31, 2020
Employee termination benefits	$ 52	$ 1,034	$ (859)	$ -	$ 227
Contract termination costs	-	452	(452)	-	-
Other related costs	-	914	(914)	-	-
Total	$ 52	$ 2,400	$ (2,225)	$ -	$ 227

	Accrual as of January 1, 2019	2019 Charge to Expense	Utilization Cash	Utilization Non-Cash	Accrual as of December 31, 2019
Employee termination benefits	$ 520	$ (18)	$ (453)	$ 3	$ 52
Accelerated depreciation	-	289	-	(289)	-
Contract termination costs	17	9	(26)	-	-
Other related costs	119	323	(442)	-	-
Total	$ 656	$ 603	$ (921)	$ (286)	$ 52

In addition to the specific restructuring activities, the Company regularly evaluates the performance of its businesses and cost structures, including personnel, and makes necessary changes thereto in order to optimize its results. The Company also evaluates the required skill sets of its personnel and periodically makes strategic changes. As a consequence of these actions, the Company incurs severance related costs which are referred to as business realignment charges.

Business realignment charges by reportable segment were as follows:

Year ended December 31,	**2021**	**2020**	**2019**
Control Devices (A)	**$ 192**	$ 1,752	$ 682
Electronics (B)	**3**	1,690	99
Stoneridge Brazil (C)	**59**	234	-
Unallocated Corporate (D)	**1,138**	361	1,048
Total business realignment charges	**$ 1,392**	$ 4,037	$ 1,829

(A) Severance costs for the year ended December 31, 2021 related to SG&A were $192. Severance costs for the year ended December 31, 2020 related to COGS, D&D and SG&A were $724, $283 and $745, respectively. Severance costs for the year ended December 31, 2019 related to SG&A were $682.

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

(B) Severance costs (benefit) for the year ended December 31, 2021 related to COGS, SG&A and D&D were $1, $(7) and $9, respectively. Severance costs for the year ended December 31, 2020 related to COGS, D&D and SG&A were $383, $402 and $905, respectively. Severance costs for the year ended December 31, 2019 related to SG&A were $99.

(C) Severance costs for the year ended December 31, 2021 related to COGS and SG&A were $7 and $52, respectively. Severance costs for the year ended December 31, 2020 related to COGS and SG&A were $124 and $110, respectively.

(D) Severance costs for the years ended December 31, 2021, 2020 and 2019 related to SG&A were $1,138, $361 and $1,048, respectively.

Business realignment charges classified by statement of operations line item were as follows:

Year ended December 31,	**2021**	**2020**	**2019**
Cost of goods sold	**$ 8**	$ 1,231	$ -
Selling, general and administrative	**1,375**	2,121	1,829
Design and development	**9**	685	-
Total business realignment charges	**$ 1,392**	$ 4,037	$ 1,829

13. Segment Reporting

Operating segments are defined as components of an enterprise that are evaluated regularly by the Company’s chief operating decision maker in deciding how to allocate resources and in assessing performance. The Company’s chief operating decision maker is the chief executive officer.

The Company has three reportable segments, Control Devices, Electronics and Stoneridge Brazil, which also represent its operating segments. The Control Devices reportable segment produces actuators, sensors, switches and connectors. The Electronics reportable segment produces driver information systems, camera-based vision systems, connectivity and compliance products and electronic control units. The Stoneridge Brazil reportable segment designs and manufactures vehicle tracking devices and monitoring services, vehicle security alarms and convenience accessories, in-vehicle audio and infotainment devices and telematics solutions.

The accounting policies of the Company’s reportable segments are the same as those described in Note 2. The Company’s management evaluates the performance of its reportable segments based primarily on revenues from external customers, capital expenditures and operating income. Inter-segment sales are accounted for on terms similar to those to third parties and are eliminated upon consolidation.

The financial information presented below is for our three reportable operating segments and includes adjustments for unallocated corporate costs and intercompany eliminations, where applicable. Such costs and eliminations do not meet the requirements for being classified as an operating segment. Corporate costs include various support functions, such as accounting/finance, executive administration, human resources, information technology and legal.

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

December 31,	2021	2020	2019
Net Sales:			
Control Devices	$ 355,775	$ 342,576	$ 431,560
Inter-segment sales	3,502	5,475	6,438
Control Devices net sales	359,276	348,051	437,998
Electronics	357,910	257,767	335,195
Inter-segment sales	26,192	24,027	33,735
Electronics net sales	384,103	281,794	368,930
Stoneridge Brazil	56,777	47,663	67,534
Inter-segment sales	-	-	6
Stoneridge Brazil net sales	56,777	47,663	67,540
Eliminations	(29,694)	(29,502)	(40,179)
Total net sales	$ 770,462	$ 648,006	$ 834,289
Operating Income (Loss):			
Control Devices	$ 54,933	$ 22,072	$ 73,327
Electronics	(12,502)	(3,672)	25,006
Stoneridge Brazil	995	3,766	6,539
Unallocated Corporate [A]	(28,015)	(29,830)	(33,591)
Total operating income (loss)	$ 15,411	$ (7,664)	$ 71,281
Depreciation and Amortization:			
Control Devices	$ 15,351	$ 15,377	$ 13,397
Electronics	12,487	10,501	9,872
Stoneridge Brazil	3,856	4,766	6,338
Unallocated Corporate	2,134	2,086	1,252
Total depreciation and amortization [B]	$ 33,828	$ 32,730	$ 30,859
Interest Expense (Income), net:			
Control Devices	$ 132	$ 173	$ 172
Electronics	462	320	162
Stoneridge Brazil	(1,353)	(4)	167
Unallocated Corporate	5,948	5,635	3,823
Total interest expense, net	$ 5,189	$ 6,124	$ 4,324
Capital Expenditures:			
Control Devices	$ 9,154	$ 11,760	$ 12,646
Electronics	9,735	11,617	15,476
Stoneridge Brazil	2,918	2,839	5,003
Unallocated Corporate [C]	1,142	1,444	2,699
Total capital expenditures	$ 22,949	$ 27,660	$ 35,824

December 31,	2021	2020
Total Assets:		
Control Devices	$ 181,968	$ 194,433
Electronics	338,080	303,914
Stoneridge Brazil	59,100	61,350
Corporate [C]	438,175	390,851
Eliminations	(351,924)	(329,140)
Total assets	$ 665,399	$ 621,408

STONERIDGE, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

The following table presents net sales and long-term assets for the geographic areas in which the Company operates:

December 31,	2021	2020	2019
Net Sales:			
North America	**$ 386,944**	$ 330,528	$ 457,633
South America	**56,777**	47,663	67,534
Europe and Other	**326,741**	269,815	309,122
Total net sales	**$ 770,462**	$ 648,006	$ 834,289

December 31,	2021	2020
Long-term Assets:		
North America	**$ 91,039**	$ 110,330
South America	**30,272**	33,785
Europe and Other	**133,264**	142,629
Total long-term assets	**$ 254,575**	$ 286,744

(A) Unallocated Corporate expenses include, among other items, accounting/finance, human resources, information technology and legal costs as well as share-based compensation.

(B) These amounts represent depreciation and amortization on property, plant and equipment and certain intangible assets.

(C) Assets located at Corporate consist primarily of cash, intercompany receivables, fixed and leased assets for the headquarter building, information technology assets, equity investments and investments in subsidiaries.

14. Subsequent Events

Credit Facility Amendment

On February 28, 2022, the Company entered into Amendment No. 3 to the Credit Facility. Refer to Note 5 of the consolidated financial statements for details regarding this amendment.

SCHEDULE II - VALUATION AND QUALIFYING ACCOUNTS

The following schedule provides the activity for accounts receivable reserves and valuation allowance for deferred tax assets for the years ended December 31, 2021, 2020 and 2019 (in thousands):

	Balance at beginning of period	Charged to costs and expenses	Write-offs	Balance at end of period
Accounts receivable reserves:				
Year ended December 31, 2021	**$ 817**	**$ 1,030**	**$ (404)**	**$ 1,443**
Year ended December 31, 2020	1,289	1,130	(1,602)	817
Year ended December 31, 2019	1,243	1,126	(1,080)	1,289

	Balance at beginning of period	Net additions charged to income (expense)	Exchange rate fluctuations and other items	Balance at end of period
Valuation allowance for deferred tax assets:				
Year ended December 31, 2021	**$ 10,237**	**$ 4,768**	**$ (489)**	**$ 14,516**
Year ended December 31, 2020	8,586	2,174	(523)	10,237
Year ended December 31, 2019	8,962	(138)	(238)	8,586

Item 9. Changes In and Disagreements With Accountants On Accounting and Financial Disclosure.

There have been no disagreements between the management of the Company and its Independent Registered Public Accounting Firm on any matter of accounting principles or practices of financial statement disclosures, or auditing scope or procedure.

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

As of December 31, 2021, an evaluation was performed under the supervision and with the participation of the Company's management, including the principal executive officer ("PEO") and principal financial officer ("PFO"), of the effectiveness of the design and operation of the Company's disclosure controls and procedures as defined in Rule 13a-15(e) and Rule 15d-15(e) of the Securities Exchange Act of 1934, as amended. Based on that evaluation, the Company's PEO and PFO, concluded that the Company's disclosure controls and procedures were effective as of December 31, 2021.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a-15(f) and 15d-15(f). In evaluating the Company's internal control over financial reporting, management has adopted the framework in *Internal Control-Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework). Under the supervision and with the participation of our management, including the PEO and PFO, we conducted an evaluation of the effectiveness of our internal control over financial reporting, as of December 31, 2021. Based on our evaluation under the framework in *Internal Control-Integrated Framework* (2013 Framework), our management has concluded that our internal control over financial reporting was effective as of December 31, 2021.

Because of inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Ernst & Young LLP, an independent registered public accounting firm, as auditor of the Company's financial statements, has issued an attestation report on the Company's internal control over financial reporting as of December 31, 2021. Ernst & Young's report is included herein.

Changes in Internal Control Over Financial Reporting

There were no changes to our internal controls over financial reporting during the quarter ended December 31, 2021 that has materially or is reasonably likely to materially affect internal control over financial reporting.

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of Stoneridge, Inc.

Opinion on Internal Control over Financial Reporting

We have audited Stoneridge, Inc. and subsidiaries' internal control over financial reporting as of December 31, 2021, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Stoneridge, Inc. and subsidiaries (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2021, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2021 and 2020, the related consolidated statements of operations, comprehensive income, cash flows and shareholders' equity for each of the three years in the period ended December 31, 2021, and the related notes and financial statement schedule of the Company and our report dated February 28, 2022 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young LLP

Detroit, Michigan
February 28, 2022

Item 9B. Other Information.

Credit Facility Amendment

Due to the ongoing impacts of the COVID-19 pandemic and supply chain disruptions on the Company's end-markets and the resulting financial impacts on the Company, on February 28, 2022, the Company entered into Amendment No. 3 to the Fourth Amended and Restated Credit Agreement by and among the Company and certain of its subsidiaries as Borrowers, certain of its subsidiaries as Guarantors, PNC Bank, National Association, as Administrative Agent, and the financial parties thereto (the, "Lenders") ("Amendment No. 3"). Amendment No. 3 reduces the total revolving credit commitments from $400.0 million to $300.0 million and the maximum permitted amount of swing loans from $40.0 million to $30.0 million. Amendment No. 3 provides for certain financial covenant relief and additional covenant restrictions during the "Specified Period" (the period from February 28, 2022 until the date that the Company delivers a compliance certificate for the quarter ending March 31, 2023 in form and substance satisfactory to the administrative agent). During the Specified Period:

- the maximum net leverage ratio is changed to 4.0x for the year ended December 31, 2021, suspended for the quarters ending March 31, 2022 through September 30, 2022 and cannot exceed 4.75 to 1.00 for the quarter ended December 31, 2022 or 3.50 to 1.00 for the quarter ended March 31, 2023;
- the minimum interest coverage ratio of 3.50 is reduced to 2.50 for the quarter ended March 31, 2022, 2.25 for the quarter ended June 30, 2022 and 3.00 for the quarters ended September 30, 2022 and December 31, 2022;
- an additional condition to drawing on the Credit Facility has been added that restricts borrowings if the Company's total of 100% of domestic and 65% of foreign cash and cash equivalents exceeds $70.0 million;
- there are certain additional restrictions on Restricted Payments (as defined); and
- a Permitted Acquisition (as defined) may not be consummated unless the net leverage ratio is below 3.50x during the Specified Period.

Amendment No. 3 changes the leverage based LIBOR pricing grid through the maturity date and also retains a LIBOR floor of 50 basis points on outstanding borrowings excluding any Specified Hedge Borrowings (as defined) which remain subject to a LIBOR floor of 0 basis points.

Amendment No. 3 also incorporates hardwired mechanics to permit a future replacement of LIBOR as the interest reference rate without lender consent.

The description of Amendment No. 3 to the Credit Agreement does not purport to be complete and is qualified in its entirety to the full text of Amendment No. 3 to the Credit Agreement which is filed as Exhibit 10.23 to this Form 10-K and incorporated herein by reference.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections.

Not Applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by this Item 10 regarding our directors is incorporated by reference to the information under the sections and subsections entitled, "Proposal One: Election of Directors," "Section 16(a) Beneficial Ownership Reporting Compliance" and "Corporate Governance" contained in the Company's Proxy Statement in connection with its Annual Meeting of Shareholders to be held on May 17, 2022. The information required by this Item 10 regarding our executive officers appears as a Supplementary Item following Item 1 under Part I, hereof.

Item 11. Executive Compensation.

The information required by this Item 11 is incorporated by reference to the information under the sections and subsections "Compensation Committee," "Compensation Committee Interlocks and Insider Participation," "Compensation Committee Report" and "Executive Compensation" contained in the Company's Proxy Statement in connection with its Annual Meeting of Shareholders to be held on May 17, 2022.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The information required by this Item 12 (other than the information required by Item 201(d) of Regulation S-K which is set forth below) is incorporated by reference to the information under the heading "Security Ownership of Certain Beneficial Owners and Management" contained in the Company's Proxy Statement in connection with its Annual Meeting of Shareholders to be held on May 17, 2022.

In May 2010, we adopted an Amended Directors' Restricted Share Plan and an Amended and Restated Long-Term Incentive Plan, as amended. In May 2013, we adopted an Amended Directors' Restricted Shares Plan and an Amended and Restated Long-Term Incentive Plan, as amended, to increase the number of shares available for issuance under the plans. In May 2016, we adopted the 2016 Long-Term Incentive Plan. In May 2018, we adopted the 2018 Amended and Restated Director's Restricted Shares Plan. Our shareholders approved each plan.

Equity compensation plan information as of December 31, 2021 is as follows:

	Number of securities remaining available for future issuance under equity compensation plans (A)
Equity compensation plans approved by shareholders	1,398,029
Equity compensation plans not approved by shareholders	-

(A) Excludes 1,002,973 share units issued to key employees pursuant to the Company's 2016 Long-Term Incentive Plan.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information required by this Item 13 is incorporated by reference to the information under the subsections "Transactions with Related Persons", "Review and Approval of Transactions with Related Persons" and "Director Independence" contained in the Company's Proxy Statement in connection with its Annual Meeting of Shareholders to be held on May 17, 2022.

Item 14. Principal Accounting Fees and Services.

The information required by this Item 14 is incorporated by reference to the information under the subsections "Service Fees Paid to Independent Registered Accounting Firm" and "Pre-Approval Policies and Procedures" contained in the Company's Proxy Statement in connection with its Annual Meeting of Shareholders to be held on May 17, 2022.

PART IV

Item 15. Exhibits, Financial Statement Schedule.

(a) The following documents are filed as part of this Form 10-K.

Exhibit Number	Exhibit
3.1	Second Amended and Restated Articles of Incorporation of the Company (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 1999).
3.2	Amended and Restated Code of Regulations of the Company (incorporated by reference to Exhibit 3.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2007).
4.1	Common Share Certificate (incorporated by reference to Exhibit 4.1 to the Company's Annual Report on Form 10-K for the year ended December 31, 1997).
4.2	Description of Stoneridge, Inc. Common Shares registered under Section 12 of the Securities Exchange Act of 1934, as amended (incorporated by reference to Exhibit 4.2 to the Company's Annual Report on Form 10-K for the year ended December 31, 2019).
10.1	Stoneridge, Inc. Deferred Compensation Plan (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on June 2, 2017)*.
10.2	First Amendment to the Stoneridge, Inc. Deferred Compensation Plan (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed on October 26, 2018)*.
10.3	Stoneridge, Inc. Long-Term Cash Incentive Plan (incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2009)*.
10.4	Stoneridge, Inc. 2016 Long-Term Incentive Plan (incorporated by reference to Exhibit 99.2 to the Company's Current Report on Form 8-K filed on May 12, 2016)*.
10.5	First Amendment to the Stoneridge, Inc. 2016 Long-Term Incentive Plan (incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed on May 20, 2020)*.
10.6	Form of Stoneridge, Inc. Long-Term Incentive Plan 2021 Performance Shares Grant Agreement (incorporated by reference to Exhibit 10.5 to the Company's Quarterly Report on 10-Q for the quarter ended March 31, 2021)*.
10.7	Form of Stoneridge, Inc. Long-Term Incentive Plan 2021 Restricted Share Units Agreement (incorporated by reference to Exhibit 10.6 to the Company's Quarterly Report on 10-Q for the quarter ended March 31, 2021)*.
10.8	Stoneridge, Inc. Annual Incentive Plan (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on May 12, 2021)*.
10.9	Stoneridge, Inc. 2018 Amended and Restated Directors' Restricted Shares Plan (incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed on May 16, 2018)*.
10.10	Form of Stoneridge, Inc. Directors' Restricted Shares Plan 2021 Grant Agreement (incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2021)*.
10.11	Amended and Restated Officers' and Key Employees' Severance Plan of Stoneridge, Inc. (incorporated by reference to Exhibit 10.6 to the Company's Annual Report on Form 10-K for the year ended December 31, 2020)*.
10.12	Form of Change in Control Agreement (incorporated by reference to Exhibit 10.13 to the Company's Annual Report on Form 10-K for the year ended December 31, 2020)*.
10.13	Employment Agreement, dated March 16, 2015, between the Company and Jonathan B. DeGaynor (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on March 19, 2015)*.

Exhibit Number	Exhibit
10.14	Amendment No. 1, dated February 23, 2021, to Employment Agreement, dated March 16, 2015 between the Company and Jonathan B. DeGaynor (incorporated by reference to Exhibit 10.15 to the Company's Annual Report on Form 10-K for the year ended December 31, 2020)*.
10.15	Indemnification Agreement between the Company and Jonathan B. DeGaynor (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on March 19, 2015).
10.16	Employment Agreement, dated January 3, 2020, by and between the Company and Kevin Heigel (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2020)*.
10.17	Employment Agreement, dated January 29, 2021, by and between the Company and James Zizelman (incorporated by reference to Exhibit 10.22 to the Company's Annual Report on Form 10-K for the year ended December 31, 2020)*.
10.18	Separation Agreement and Release by and between Stoneridge, Inc. and Thomas M. Dono, Jr., August 6, 2021 (incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed on August 11, 2021)*.
10.19	Separation Agreement and Release by and between Stoneridge, Inc. and Robert R. Krakowiak, August 31, 2021 (incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed on September 1, 2021)*.
10.20	Fourth Amended and Restated Credit Agreement (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on June 7, 2019).
10.21	Waiver and Amendment No. 1 to the Fourth Amended and Restated Credit Agreement (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on July 1, 2020)*.
10.22	Amendment No. 2 to the Fourth Amended and Restated Credit Agreement, filed herewith.
10.23	Amendment No. 3 to the Fourth Amended and Restated Credit Agreement, filed herewith.
10.24	Real Estate Purchase and Sale Agreement, entered into on May 7, 2021, by and between Stoneridge, Inc., and Sun Life Assurance Company of Canada (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on May 12, 2021).
10.25	First Amendment to Real Estate Purchase and Sale Agreement, entered into on May 20, 2021, by and between Stoneridge, Inc., and Sun Life Assurance Company of Canada (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K/A filed on May 24, 2021).
10.26	Second Amendment to Real Estate Purchase and Sale Agreement, entered into on May 27, 2021, by and between Stoneridge, Inc., and Sun Life Assurance Company of Canada (incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q filed on August 4, 2021).
10.27	Third Amendment to Real Estate Purchase and Sale Agreement, entered into on June 10, 2021, by and between Stoneridge, Inc., and Sun Life Assurance Company of Canada (incorporated by reference to Exhibit 10.5 to the Company's Quarterly Report on Form 10-Q filed on August 4, 2021).
10.28	Share Purchase Agreement, dated November 2, 2021 by and among Stoneridge, Inc., Minda Corporation Limited and Minda Stoneridge Instruments Limited (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on November 2, 2021).
21.1	Principal Subsidiaries and Affiliates of the Company, filed herewith.
23.1	Consent of Independent Registered Public Accounting Firm, filed herewith.

Exhibit Number	Exhibit
31.1	Chief Executive Officer certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002, filed herewith.
31.2	Chief Financial Officer certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002, filed herewith.
32.1	Chief Executive Officer certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, filed herewith.
32.2	Chief Financial Officer certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, filed herewith.
101.INS	XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File – the cover page XBRL tags are embedded within the Inline XBRL document

* - Reflects management contract or compensatory plan or arrangement required to be filed as an exhibit pursuant to Item 15(b) of this Annual Report on Form 10-K.

(b) The exhibits listed are filed as part of or incorporated by reference into this report.

(c) Additional Financial Statement Schedules. None.

Item 16. Form 10-K Summary.

None.

SIGNATURES

Pursuant to the requirements of the Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

STONERIDGE, INC.

Date: February 28, 2022	/s/ MATTHEW R. HORVATH Matthew R. Horvath *Chief Financial Officer and Treasurer* (Principal Financial Officer)

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Date: February 28, 2022	/s/ JONATHAN B. DEGAYNOR Jonathan B. DeGaynor *President, Chief Executive Officer and Director* (Principal Executive Officer)
Date: February 28, 2022	/s/ MATTHEW R. HORVATH Matthew R. Horvath *Chief Financial Officer and Treasurer* (Principal Financial Officer)
Date: February 28, 2022	/s/ ROBERT J. HARTMAN JR. Robert J. Hartman Jr. *Chief Accounting Officer* (Principal Accounting Officer)
Date: February 28, 2022	/s/ WILLIAM M. LASKY William M. Lasky *Chairman of the Board of Directors*
Date: February 28, 2022	/s/ JEFFREY P. DRAIME Jeffrey P. Draime *Director*
Date: February 28, 2022	/s/ DOUGLAS C. JACOBS Douglas C. Jacobs *Director*
Date: February 28, 2022	/s/ IRA C. KAPLAN Ira C. Kaplan *Director*
Date: February 28, 2022	/s/ KIM KORTH Kim Korth *Director*
Date: February 28, 2022	/s/ GEORGE S. MAYES, JR. George S. Mayes, Jr. *Director*
Date: February 28, 2022	/s/ PAUL J. SCHLATHER Paul J. Schlather *Director*
Date: February 28, 2022	/s/ FRANK S. SKLARSKY Frank S. Sklarsky

Exhibit 10.22

EXECUTION VERSION

AMENDMENT NO. 2 TO CREDIT AGREEMENT

THIS AMENDMENT NO. 2 TO CREDIT AGREEMENT (this "Amendment") is dated as of December 17, 2021 (the "Effective Date") (subject to Paragraph 7 below) and is made by and among STONERIDGE, INC., an Ohio corporation (the "Parent"), STONERIDGE ELECTRONICS, INC., a Texas corporation ("Electronics"), STONERIDGE CONTROL DEVICES, INC., a Massachusetts corporation ("Controls"), STONERIDGE B.V., a private company with limited liability (*besloten vennootschap met beperkte aansprakelijkheid*) under the laws of the Netherlands, registered with the Dutch Chamber of Commerce under file number 67928471 ("Stoneridge Netherlands", and together with the Parent, Electronics and Controls, the "Borrowers"), STONERIDGE AFTERMARKET, INC., an Ohio corporation ("Aftermarket"), ORLACO INC., a Delaware corporation ("Orlaco"), SRI HOLDINGS US LLC, a Delaware limited liability company ("SRI Holdings US") and SRI DELAWARE HOLDINGS, LLC, a Delaware limited liability company ("SRI Holdings" and, together with Aftermarket, Orlaco and SRI Holdings US, the "Guarantors"), and PNC BANK, NATIONAL ASSOCIATION, in its capacity as the Administrative Agent (in such capacity, the "Administrative Agent") under the Agreement (as hereinafter defined).

RECITALS

WHEREAS, the Borrowers, the Guarantors, the Lenders and the Administrative Agent are parties to that certain Fourth Amended and Restated Credit Agreement, dated as of June 5, 2019 (as amended, supplemented, modified or restated prior to the date hereof, the "Existing Agreement", and as amended hereby and as may be further amended, supplemented, modified or restated from time to time, the "Agreement");

WHEREAS, certain loans and/or other extensions of credit under the Existing Agreement ("Loans") denominated in Euros and British Pounds (each, an "Impacted Currency" and collectively, the "Impacted Currencies") incur or are permitted to incur interest, fees, commissions or other amounts based on the London Interbank Offered Rate administered by the ICE Benchmark Administration ("LIBOR") in accordance with the terms and conditions of the Existing Agreement;

WHEREAS, applicable parties under the Existing Agreement have determined that loans made, continued or converted under the Existing Agreement denominated in Impacted Currencies on or after the Effective Date that would otherwise bear interest based on LIBOR (including, without limitation, any such rate provided on a changed methodology (or "synthetic") basis), shall be replaced with a successor rate for all purposes under the Agreement and under any other Loan Document, subject to the terms and conditions set forth in this Amendment; and

WHEREAS, the parties hereto are not related within the meaning of Section 267(b) or 707(b)(1) of the Internal Revenue Code of 1986 and have determined, based on bona fide, arm's length negotiations between the parties, that the fair market value of the Agreement before giving effect to this Amendment is substantially equivalent to its fair market value after giving effect hereto.

NOW, THEREFORE, in consideration of their mutual covenants and agreements hereinafter set forth and intending to be legally bound hereby, the parties hereto covenant and agree as follows:

1. Incorporation of Recitals. The foregoing recitals are incorporated herein by reference as if fully set forth herein.

2. Certain Definitions. Capitalized terms used herein but not otherwise defined herein (including on Appendix A attached hereto) shall have the meanings assigned to such terms in the Existing Agreement.

3. Amendments. Notwithstanding any provision of the Existing Agreement or any Loan Document to the contrary, the parties hereto hereby agree that the terms set forth on Appendix A shall apply solely to Loans made, continued or converted in Impacted Currencies from and after the Effective Date. For the avoidance of doubt, to the extent provisions in the Existing Agreement apply to Loans made in Impacted Currencies and such provisions are not specifically addressed by Appendix A, such provisions in the Existing Agreement shall continue to apply to Loans made in Impacted Currencies from and after the Effective Date. In the event of a conflict between the terms of this Amendment and the terms of the Existing Agreement or any other Loan Document, the terms of this Amendment shall control with respect to Loans denominated in Impacted Currencies. For the avoidance of doubt, the provisions of this Amendment will supersede and govern any provisions of the Existing Agreement relating to the unavailability of or inability to ascertain rates or benchmark replacements as they apply to the Impacted Currencies on and after the Effective Date, and the execution and delivery of this Amendment by the Borrowers and the Guarantors shall be deemed to satisfy and discharge any and all requirements under the Existing Agreement for notices to be furnished to the Borrowers or Guarantors in connection with the replacement of any benchmark applicable to Loans denominated in Impacted Currencies, as contemplated by this Amendment.

4. Representations and Warranties. Each Borrower and each Guarantor hereby represents and warrants that: (a) no Potential Default or Event of Default exists or will exist immediately after giving effect to the transactions contemplated hereby, (b) all representations and warranties of such party contained in the Existing Agreement, in this Amendment and in the other Loan Documents are true and correct in all material respects (without duplication of any materiality qualifiers), (c) the execution, delivery and performance of this Amendment by such party have been duly authorized by all necessary corporate or other organizational action, and (d) this Amendment has been duly executed and delivered by such party.

5. Limitation; Effect of Amendment. No provision of the Existing Agreement or any other Loan Document is amended or waived in any way other than as provided herein. Except as set forth expressly herein, all terms of the Existing Agreement and the other Loan Documents shall be and remain in full force and effect and are hereby ratified and confirmed, and shall constitute the legal, valid, binding, and enforceable obligations of the parties thereto. As of the date hereof, each reference in the Existing Agreement to “this Agreement,” “hereunder,” “hereof,” “herein,” or words of like import, and each reference in the other Loan Documents to the Existing Agreement (including, without limitation, by means of words like “thereunder,” “thereof”, “therein” and

words of like import), shall mean and be a reference to the Existing Agreement as amended by this Amendment. This Amendment constitutes a Loan Document.

6. No Novation or Mutual Departure. Each Borrower and each Guarantor expressly acknowledges and agrees that there has not been, and this Amendment does not constitute or establish, a novation with respect to the Existing Agreement or any of the Loan Documents, or a mutual departure from the strict terms, provisions, and conditions thereof other than with respect to the amendments in Section 3 of this Amendment.

7. Counterparts; Effectiveness.

(a) This Amendment may be executed in counterparts (and by different parties hereto in different counterparts), each of which shall constitute an original, but all of which when taken together shall constitute a single contract. The Effective Date of this Amendment, as set forth above, shall be completed by the Administrative Agent as of the date when this Amendment shall have been executed by the Administrative Agent and when the Administrative Agent shall have received counterparts of this Amendment, properly executed by each Borrower and each Guarantor; provided that the Administrative Agent has not received, prior to 5:00 p.m. (New York City time) on the tenth (10^{th}) Business Day after providing this Amendment to the Lenders, written notice of objection to this Amendment from Lenders comprising the Required Lenders.

(b) The words "execution," "signed," "signature," and words of like import in this Amendment shall be deemed to include electronic signatures or the keeping of records in electronic form, each of which shall be of the same legal effect, validity or enforceability as a manually executed signature or the use of a paper-based recordkeeping system, as the case may be, to the extent and as provided for in any applicable Law, including the Federal Electronic Signatures in Global and National Commerce Act, the New York State Electronic Signatures and Records Act, or any other similar state Laws based on the Uniform Electronic Transactions Act. The parties hereto agree that this Amendment may, at the Administrative Agent's option, be in the form of an electronic record and may be signed or executed using electronic signatures. For the avoidance of doubt, the authorization under this paragraph may include, without limitation, use or acceptance by the Administrative Agent of a manually signed paper signature page which has been converted into electronic form (such as scanned into PDF format) for transmission, delivery and/or retention.

8. Section Headings. Section headings used in this Amendment are for convenience of reference only and shall not govern the interpretation of any of the provisions of this Amendment.

9. Severability. The provisions of this Amendment are intended to be severable. If any provision of this Amendment shall be held invalid or unenforceable in whole or in part in any jurisdiction, such provision shall, as to such jurisdiction, be ineffective to the extent of such invalidity or unenforceability without in any manner affecting the validity or enforceability thereof in any other jurisdiction or the remaining provisions hereof in any jurisdiction.

10. Fees and Costs. Borrowers will pay on demand all out-of-pocket fees, costs, and expenses of Administrative Agent, including but not limited to the fees and expenses of outside counsel, in connection with the preparation, execution, and delivery of this Amendment.

11. Governing Law, Etc. The terms of the Existing Agreement relating to governing law, submission to jurisdiction, waiver of venue and waiver of jury trial are incorporated herein by reference, *mutatis mutandis,* and the parties hereto agree to such terms.

12. Construction. Reference to this Amendment means this Amendment, together with Appendix A attached hereto.

[*Signature Pages Follow*]

IN WITNESS WHEREOF, the parties hereto, by their officers thereunto duly authorized, have executed this Amendment as of the day and year first above written.

ATTEST:

STONERIDGE, INC.,
as a Borrower

STONERIDGE CONTROL DEVICES, INC.,
as a Borrower

STONERIDGE AFTERMARKET, INC.,
as a Guarantor

ORLACO INC.,
as a Guarantor

SRI DELAWARE HOLDINGS, LLC,
as a Guarantor

SRI HOLDINGS US LLC,
as a Guarantor
By: Stoneridge, Inc., its sole member

By: /s/ Jonathan B. DeGaynor
Name: Jonathan B. DeGaynor
Title: President

STONERIDGE ELECTRONICS, INC.,
as a Borrower

By: /s/ Matthew R. Horvath
Name: Matthew R. Horvath
Title: Vice President & Treasurer

STONERIDGE B.V., as a Borrower

By: /s/ Jonathan B. DeGaynor
Name: Jonathan B. DeGaynor
Title: Attorney-in-fact

PNC BANK, NATIONAL ASSOCIATION, individually and as Administrative Agent

By: /s/ Scott Neiderheide
Name: Scott Neiderheide
Title: Senior Vice President

[Signature Page to Amendment No. 2]

Appendix A

1. Section References. Unless otherwise specified, section references contained in this Appendix A shall be deemed to refer to sections of this Appendix A.

2. Definitions. The following terms shall have the following meanings for purposes of this Amendment, including this Appendix A and the provisions contained herein:

"Affected Currency" means each of Euros and British Pounds.

"Applicable Margin" means, with respect to Loans denominated in an Affected Currency, the corresponding percentages per annum as specified below based on the Leverage Ratio then in effect:

Level	Leverage Ratio	Revolving Credit Term RFR or Daily Simple RFR Spread
I	Less than 1.25 to 1.00	1.25%
II	Greater than or equal to 1.25 to 1.00 but less than 2.00 to 1.00	1.45%
II	Greater than or equal to 2.00 to 1.00 but less than 2.75 to 1.00	1.70%
IV	Greater than or equal to 2.75 to 1.00	1.90%

For the avoidance of doubt, the provisions in the Existing Agreement relating to the calculation of the Applicable Margin remain unchanged except to the extent of the modifications provided above.

"Available Tenor" means, as of any date of determination and with respect to the then-current Benchmark for any Affected Currency, as applicable, (x) if the then-current Benchmark for such Affected Currency is a term rate, any tenor for such Benchmark that is or may be used for determining the length of an Interest Period or (y) otherwise, any payment period for interest calculated with reference to such Benchmark for such Affected Currency, as applicable, pursuant to this Agreement as of such date. For the avoidance of doubt, the Available Tenor for the Daily Simple RFR is one month.

"Benchmark" means, initially, with respect to any Obligations, interest, fees, commissions, or other amounts denominated in, or calculated with respect to Affected Currencies, the Daily Simple RFR or Term RFR applicable for such Affected Currency, and includes any replacement for such Benchmark implemented in accordance with the provisions of the Agreement.

"Benchmark Replacement" means, with respect to any Affected Currency for any Available Tenor for the applicable Benchmark Replacement Date: the sum of (A) the alternate benchmark rate that has been selected by the Administrative Agent and the Borrowers as the replacement for the then-current Benchmark for the applicable Available Tenor giving due consideration to any evolving or then-prevailing market convention, including any applicable recommendations made by the Relevant Governmental Body, for syndicated credit facilities denominated in the applicable Affected Currency at such time in the United States and (B) the related Benchmark Replacement Adjustment; *provided*, that if the Benchmark Replacement as determined above would be less than the Floor, the Benchmark Replacement will be deemed to be the Floor for the purposes of the Agreement and the other Loan Documents; and *provided further*, that any such Benchmark Replacement shall be administratively feasible as determined by the Administrative Agent in its sole discretion; and *provided further*, that with respect to a Term RFR Transition Event for any Affected Currency, on the Term RFR Transition Date the "Benchmark Replacement" shall be the Term RFR for such Affected Currency.

"Benchmark Replacement Adjustment" means, with respect to any replacement of the then-current Benchmark relating to an Affected Currency with an Unadjusted Benchmark Replacement for any applicable Available Tenor for any setting of such Unadjusted Benchmark Replacement, the spread adjustment, or method for calculating or determining such spread adjustment, (which may be a positive or negative value or zero) that has been selected by the Administrative Agent and the Borrowers for the applicable Corresponding Tenor giving due consideration to any evolving or then-prevailing market convention, including any applicable recommendations made by the Relevant Governmental Body, for syndicated credit facilities denominated in the applicable Affected Currency at such time in the United States; *provided* that, if the then-current Benchmark is a term rate, more than one tenor of such Benchmark is available as of the applicable Benchmark Replacement Date and the applicable Unadjusted Benchmark Replacement will not be a term rate, the Available Tenor of such Benchmark for purposes of this definition of "Benchmark Replacement Adjustment" shall be deemed to be the Available Tenor that has approximately the same length (disregarding business day adjustments) as the payment period for interest calculated with reference to such Unadjusted Benchmark Replacement.

"Benchmark Replacement Date" means, with respect to any Affected Currency, a date and time determined by the Administrative Agent, which date shall be at the end of an Interest Period, if applicable, and no later than the earliest to occur of the following events with respect to the then-current Benchmark:

(1) in the case of clause (1) or (2) of the definition of "Benchmark Transition Event," the later of (A) the date of the public statement or publication of information referenced therein and (B) the date on which the administrator of such Benchmark (or the published component used in the calculation thereof) permanently or indefinitely ceases to provide all Available Tenors of such Benchmark (or such component thereof);

(2) in the case of clause (3) of the definition of "Benchmark Transition Event," the date determined by the Administrative Agent, which date shall promptly follow the date of the public statement or publication of information referenced therein; or

(3) in the case of a Term RFR Transition Event, the date that is set forth in the Term RFR Notice provided to the Lenders and the Borrowers pursuant to this Section

titled "Benchmark Replacement Setting", which date shall be at least 30 days from the date of the Term RFR Notice.

For the avoidance of doubt, (i) if the event giving rise to the Benchmark Replacement Date occurs on the same day as, but earlier than, the Reference Time in respect of any determination, the Benchmark Replacement Date will be deemed to have occurred prior to the Reference Time for such determination and (ii) the "Benchmark Replacement Date" will be deemed to have occurred in the case of clauses (1), (2) or (3) of this definition with respect to any Benchmark upon the occurrence of the applicable event or events set forth therein with respect to all then-current Available Tenors of such Benchmark (or the published component used in the calculation thereof).

"Benchmark Transition Event" means the occurrence of one or more of the following events, with respect to any then-current Benchmark for any Affected Currency:

(1) a public statement or publication of information, by or on behalf of the administrator of such Benchmark for such Affected Currency (or the published component used in the calculation thereof), announcing that such administrator has ceased or will cease to provide all Available Tenors of such Benchmark for such Affected Currency (or such component thereof), permanently or indefinitely; *provided that*, at the time of such statement or publication there is no successor administrator that will continue to provide any Available Tenor of such Benchmark for such Affected Currency (or component thereof);

(2) a public statement or publication of information by an Official Body having jurisdiction over the Administrative Agent, the regulatory supervisor for the administrator of such Benchmark for such Affected Currency (or the published component used in the calculation thereof), the Board of Governors of the Federal Reserve System, the Federal Reserve Bank of New York, an insolvency official with jurisdiction over the administrator for such Benchmark for such Affected Currency (or such component), a resolution authority with jurisdiction over the administrator for such Benchmark for such Affected Currency (or such component) or a court or an entity with similar insolvency or resolution authority over the administrator for such Benchmark for such Affected Currency (or such component), which states that the administrator of such Benchmark for such Affected Currency (or such component) has ceased or will cease to provide all Available Tenors of such Benchmark for such Affected Currency (or such component thereof) permanently or indefinitely; *provided that*, at the time of such statement or publication, there is no successor administrator that will continue to provide any Available Tenor of such Benchmark for such Affected Currency (or such component thereof); or

(3) a public statement or publication of information by the regulatory supervisor for the administrator of such Benchmark (or the published component used in the calculation thereof) or an Official Body having jurisdiction over the Administrative Agent announcing that all Available Tenors of such Benchmark (or such component thereof) are no longer representative.

"Benchmark Unavailability Period" means the period (if any) (x) beginning at the time that a Benchmark Replacement Date pursuant to clauses (1) or (2) of that definition has occurred if, at such time, no Benchmark Replacement has replaced the then-current Benchmark for all purposes under the Agreement and under any Loan Document in accordance with Section 4(k) [Benchmark Replacement Setting for Affected Currencies] and (y) ending at the time that a Benchmark Replacement has replaced the then-current Benchmark for all purposes under the Agreement and under any Loan Document in accordance with Section 4(k) [Benchmark Replacement Setting for Affected Currencies].

"Borrowing Tranche" shall mean specified portions of the Loans outstanding as follows: any Loans to which a Daily Simple RFR Option applies which are in the same Affected Currency shall constitute one Borrowing Tranche.

"British Pounds" or "£" mean the lawful currency of the United Kingdom.

"Business Day" means any day other than a Saturday or Sunday or a legal holiday on which commercial banks are authorized or required to be closed for business in Pittsburgh, Pennsylvania and if the applicable Business Day relates to any direct or indirect calculation or determination of, or is used in connection with any interest rate settings, fundings, disbursements, settlements, payments, or other dealings with respect to any RFR Loan, the term "Business Day" means any such day that is also an RFR Business Day.

"Conforming Changes" means, with respect to Daily Simple RFR, Term RFR, or any Benchmark Replacement, any technical, administrative or operational changes (including changes to the definition of "Base Rate," the definition of "Business Day," the definition of "Interest Period," timing and frequency of determining rates and making payments of interest, timing of borrowing requests or prepayment, conversion or continuation notices, the applicability and length of lookback periods, the applicability of breakage provisions, and other technical, administrative or operational matters) that the Administrative Agent decides may be appropriate to reflect the adoption and implementation of any Daily Simple RFR, Term RFR, or Benchmark Replacement and to permit the administration thereof by the Administrative Agent in a manner substantially consistent with market practice (or, if the Administrative Agent decides that adoption of any portion of such market practice is not administratively feasible or if the Administrative Agent determines that no market practice for the administration of Daily Simple RFR, Term RFR, or any Benchmark Replacement exists, in such other manner of administration as the Administrative Agent decides is reasonably necessary in connection with the administration of the Agreement and the other Loan Documents).

"Corresponding Tenor" with respect to any Available Tenor means, as applicable, either a tenor (including overnight) or an interest payment period having approximately the same length (disregarding business day adjustment) as such Available Tenor.

"Daily Simple RFR" means, for any day (an "RFR Day"), a rate per annum determined by the Administrative Agent, for any Obligations, interest, fees, commissions or other amounts denominated in, or calculated with respect to any applicable RFR below by dividing (the resulting quotient rounded upwards, at the Administrative Agent's discretion, to the nearest 1/100 of 1%) (a) the applicable RFR set forth below by (b) a number equal to 1.00 minus the RFR Reserve Percentage:

(a) British Pounds, SONIA for the day (such day, adjusted as applicable as set forth herein, the "SONIA Lookback Day") that is two (2) Business Days prior to (A) if such RFR Day is a Business Day, such RFR Day or (B) if such RFR Day is not a Business Day, the Business Day immediately preceding such RFR Day, in each case, as such SONIA is published by the SONIA Administrator on the SONIA Administrator's Website; and

(b) Euro, €STR for the day (such day, adjusted as applicable as set forth herein, the "€STR Lookback Day") that is two (2) Business Days prior to (A) if such RFR Day is a Business Day, such RFR Day or (B) if such RFR Day is not a Business Day, the Business Day immediately preceding such RFR Day, in each case, as such €STR is published by the €STR Administrator on the €STR Administrator's Website;

provided that if the sum of the adjusted rate as determined above plus the applicable RFR Adjustment would be less than the Floor, such rate shall be deemed to be the Floor for purposes of the Agreement. The adjusted Daily Simple RFR rate for each outstanding RFR Loan shall be adjusted automatically as of the effective date of any change in the RFR Reserve Percentage. The Administrative Agent shall give prompt notice to the Borrowers of the adjusted Daily Simple RFR as determined or adjusted in accordance herewith, which determination shall be conclusive absent manifest error.

If by 5:00 pm (local time for the applicable RFR) on the second (2^{nd}) Business Day immediately following any Daily Simple RFR Lookback Day, the RFR in respect of such Daily Simple RFR Lookback Day has not been published on the applicable RFR Administrator's Website and a Benchmark Replacement for the applicable Daily Simple RFR has not been instituted in accordance with the provisions of the Agreement, then the RFR for such Daily Simple RFR Lookback Day will be the RFR as published in respect of the first preceding Business Day for which such RFR was published on the RFR Administrator's Website; *provided* that any RFR determined pursuant to this sentence shall be utilized for purposes of calculation of Daily Simple RFR for no more than three (3) consecutive RFR Days. Any change in Daily Simple RFR due to a change in the applicable RFR shall be effective from and including the effective date of such change in the RFR without notice to the Borrowers.

"Daily Simple RFR Lookback Days" means, collectively, SONIA Lookback Day and €STR Lookback Day, and each individually is a Daily Simple RFR Lookback Day.

"Daily Simple RFR Option" means the option of the Borrowers to have Loans bear interest at the rate and under the terms specified in Section 4(e)(i)(B) [Daily Simple RFR Option].

"Dollar Equivalent" means, for any amount, at the time of determination thereof, (a) if such amount is expressed in an Affected Currency, the equivalent of such amount in Dollars determined by using the rate of exchange for the purchase of Dollars with the Affected Currency last provided (either by publication or otherwise provided to the Administrative Agent or the Issuing Lender, as applicable) by the applicable Bloomberg source (or such other publicly available source for displaying exchange rates as determined by the Administrative Agent or the

Issuing Lender, as applicable, from time to time) on the date that is the applicable Daily RFR Lookback Day (for amounts relating to RFR Loans and Letters of Credit denominated in an Affected Currency to which a Daily Simple RFR would apply) immediately preceding the date of determination, or otherwise on the date which is two (2) Business Days immediately preceding the date of determination or otherwise with respect to Loans to which any other Interest Rate Option applies, the lookback date applicable thereto (or if such service ceases to be available or ceases to provide such rate of exchange, the equivalent of such amount in Dollars as determined by the Administrative Agent or the Issuing Lender, as applicable using any method of determination it deems appropriate in its sole discretion) and (b) if such amount is denominated in any other currency, the equivalent of such amount in Dollars as determined by the Administrative Agent or the Issuing Lender, as applicable, using any method of determination it deems appropriate in its sole discretion. Any determination by the Administrative Agent or the Issuing Lender pursuant to this definition shall be conclusive absent manifest error.

"€STR" means a rate equal to the Euro Short Term Rate as administered by the €STR Administrator.

"€STR Administrator" means the European Central Bank (or any successor administrator of the Euro Short Term Rate).

"€STR Administrator's Website" means the European Central Bank's website, currently at http://www.ecb.europa.eu, or any successor source for the Euro Short Term Rate identified as such by the €STR Administrator from time to time.

"Euro" or "€" mean the single currency of the Participating Member States.

"Floor" means a rate of interest equal to 0.50%.

"IOSCO Principles" means the International Organization of Securities Commissions' (IOSCO) Principles for Financial Benchmarks, as the same may be amended or supplemented from time to time.

"Participating Member State" means any member state of the European Union that has the euro as its lawful currency in accordance with legislation of the European Union relating to Economic and Monetary Union.

"Reference Time" means, with respect to any setting of the then-current Benchmark, the time determined by the Administrative Agent in its reasonable discretion.

"Relevant Governmental Body" means with respect to a Benchmark Replacement in respect of Loans denominated in any Affected Currency, (1) the central bank for the Affected Currency in which such Benchmark Replacement is denominated or any central bank or other supervisor which is responsible for supervising either (A) such Benchmark Replacement or (B) the administrator of such Benchmark Replacement or (2) any working group or committee officially endorsed or convened by (A) the central bank for the Affected Currency in which such Benchmark Replacement is denominated, (B) any central bank or other supervisor that is responsible for supervising either (i) such Benchmark Replacement or (ii) the administrator of such Benchmark

Replacement, (C) a group of those central banks or other supervisors or (D) the Financial Stability Board or any part thereof.

"RFR" means, for any Obligations, interest, fees, commissions or other amounts denominated in, or calculated with respect to, (a) British Pounds, SONIA and (b) Euro, €STR.

"RFR Adjustment" means with respect to RFR Loans or Term RFR Rate Loans, the adjustment set forth in the table below corresponding to such Affected Currency for the corresponding Daily Simple RFR Option or Term RFR Option:

Currency	**Adjustment to Daily Simple RFR**	**Adjustment to Term RFR**
Euros	0.0456%	0.0456%
British Pounds	0.0326%	0.0326%

"RFR Administrator" means the the SONIA Administrator or the €STR Administrator, as applicable.

"RFR Administrator's Website" means the SONIA Administrator's Website or the €STR Administrator's Website, as applicable.

"RFR Business Day" means as applicable, for any Obligations, interest, fees, commissions or other amounts denominated in, or calculated with respect to (i) Euro, a TARGET Day and (ii) British Pounds, a day on which banks are open for general business in London.

"RFR Loan" means a Loan that bears interest at a rate based on a Daily Simple RFR or, after the replacement of the then-current Benchmark for any Affected Currency for all purposes hereunder or under any Loan Document with a Term RFR pursuant to Section 4(n) [Term RFR Transition Event], the Term RFR for such Affected Currency, as the context may require.

"RFR Reserve Percentage" means as of any day, the maximum effective percentage in effect on such day, if any, as prescribed by the Board of Governors of the Federal Reserve System (or any successor) for determining the reserve requirements (including, without limitation, supplemental, marginal and emergency reserve requirements) with respect to RFR Loans.

"SONIA" means a rate equal to the Sterling Overnight Index Average as administered by the SONIA Administrator.

"SONIA Administrator" means the Bank of England (or any successor administrator of the Sterling Overnight Index Average).

"SONIA Administrator's Website" means the Bank of England's website, currently at http://www.bankofengland.co.uk, or any successor source for the Sterling Overnight Index Average identified as such by the SONIA Administrator from time to time.

"TARGET2" means the Trans-European Automated Real-time Gross Settlement Express Transfer payment system which utilizes a single shared platform and which was launched on November 19, 2007.

"TARGET Day" means any day on which TARGET2 is open for the settlement of payments in Euros.

"Term RFR" means, with respect to the applicable Affected Currency for any Interest Period, a rate per annum determined by the Administrative Agent, for any Obligations, interest, fees, commissions or other amounts denominated in, or calculated with respect to any applicable Term RFR Forward Looking Rate by dividing (the resulting quotient rounded upwards, at the Administrative Agent's discretion, to the nearest 1/100 of 1%) (a) the applicable Term RFR Forward Looking Rate by (b) a number equal to 1.00 minus the RFR Reserve Percentage; *provided* that if the sum of the adjusted rate as determined above plus the applicable RFR Adjustment would be less than the Floor, such rate shall be deemed to be the Floor for purposes of this Agreement. The adjusted Term RFR rate for each outstanding Term RFR Rate Loan shall be adjusted automatically as of the effective date of any change in the RFR Reserve Percentage. The Administrative Agent shall give prompt notice to the Borrowers of the adjusted Term RFR rate as determined or adjusted in accordance herewith, which determination shall be conclusive absent manifest error.

"Term RFR Forward Looking Rate" means, with respect to the applicable Affected Currency for any Interest Period, the forward-looking term rate for a period comparable to such Interest Period based on the RFR for such Affected Currency that is published by an authorized benchmark administrator and is displayed on a screen or other information service, each as identified or selected by the Administrative Agent in its reasonable discretion at approximately a time and as of a date prior to the commencement of such Interest Period determined by the Administrative Agent.

"Term RFR Notice" means a notification by the Administrative Agent to the Lenders and the Borrowers of the occurrence of a Term RFR Transition Event.

"Term RFR Option" means the option of the Borrowers to have Loans bear interest at the rate and under the terms specified in Section 4(e)(i)(A) [Term RFR Option].

"Term RFR Rate Loan" means a Loan in an Affected Currency that bears interest at a rate based on Term RFR.

"Term RFR Transition Date" means, in the case of a Term RFR Transition Event, the date that is set forth in the Term RFR Notice provided to the Lenders and the Borrowers pursuant to Section 4(n) [Term RFR Transition Event], which date shall be at least 30 (thirty) calendar days from the date of the Term RFR Notice.

"Term RFR Transition Event" means, with respect to the applicable Affected Currency for any Interest Period, the determination by the Administrative Agent that (a) the applicable Term RFR for such Affected Currency is determinable for each Available Tenor, (b) the administration of such Term RFR is administratively feasible for the Administrative Agent, (c) the RFR Administrator publishes, publicly announces or makes publicly available that such Term RFR is administered in accordance with the IOSCO Principles, (d) such Term RFR is used as a benchmark rate in at least five currently outstanding syndicated credit facilities denominated in the applicable Affected Currency (and such syndicated credit facilities are identified and are publicly available for review), and (e) such Term RFR is recommended for use by a Relevant Governmental Body.

"Unadjusted Benchmark Replacement" means the applicable Benchmark Replacement excluding the related Benchmark Replacement Adjustment.

3. Effect of Definitions. The Existing Agreement is hereby amended and modified to incorporate the definitions set forth in Section 2, *mutatis mutandis*, to the extent used in the Agreement, including as a result of the effectiveness of this Amendment. If the Existing Agreement as in effect immediately prior to giving effect to the provisions of this Amendment already defines any term defined in Section 2, the corresponding definition in Section 2 shall (y) to the extent that such definition also relates to Loans other than those denominated in an Affected Currency, supplement such definition in the Existing Agreement and (z) to the extent that such definition relates solely to Loans denominated in an Affected Currency, supersede such definition in the Existing Agreement, in each case, solely with respect to Loans denominated in an Affected Currency, for the purpose and solely for the purpose of the definitions and provisions contained in this Amendment.

4. Terms Applicable to Loans in Affected Currencies.

(a) Affected Currencies. Notwithstanding anything to the contrary herein or in any other Loan Document, effective as of the Effective Date, (i) the LIBOR Rate Option shall not be available for any Loan denominated in any Affected Currency, and (ii) any request for a new Loan denominated in an Affected Currency, or to continue or convert an existing Loan denominated in an Affected Currency, shall be deemed to be a request for a new RFR Loan denominated in such Affected Currency; *provided*, that to the extent any Loan denominated in an Affected Currency and bearing interest at the LIBOR Rate is outstanding on the Effective Date, such Loan shall continue to bear interest at the LIBOR Rate until the end of the current Interest Period or payment period applicable to such Loan; *provided* that, in the case of a Loan that bears interest at a daily floating rate with no Interest Period, such Loan shall be deemed to be an RFR Loan immediately upon the Effective Date.

(b) References to LIBOR Rate, LIBOR Rate Option, and Interest Period in the Agreement and Loan Documents.

(i) References to the LIBOR Rate and LIBOR Rate Option in provisions of the Agreement and the other Loan Documents that are not specifically addressed herein (other than the definitions of "LIBOR Rate" and "LIBOR Rate Option") shall be deemed to mean, with respect to Affected Currencies, the Daily Simple RFRs, Term RFRs, Daily Simple RFR Option and Term RFR Option, as applicable, for each Affected Currency.

(ii) For purposes of any requirement for the Borrowers to compensate the Lenders for losses in the Agreement resulting from any continuation, conversion, payment or prepayment of any Loan that bears interest based upon the LIBOR Rate on a day other than the last day of any Interest Period (as defined in the Agreement), references to the Interest Period (as defined in the Agreement) shall be deemed to include any relevant interest payment date or payment period for a Term RFR Rate Loan.

(c) Interest Rates. The Administrative Agent does not warrant or accept responsibility for and shall not have any liability with respect to the administration, submission or any other matter related to the rates in the definition of "RFR", "Daily Simple RFR" or "Term RFR", or with respect to any alternative or successor rate thereto, or replacement rate therefor, or of any Conforming Changes.

(d) Conforming Changes. With respect to any Daily Simple RFR, Term RFR, or any Benchmark Replacement, the Administrative Agent will have the right to make Conforming Changes from time to time and, notwithstanding anything to the contrary herein, in the Agreement or in any other Loan Document, any amendments implementing such Conforming Changes will become effective without any further action or consent of any other party to this Amendment, the Agreement or any other Loan Document; *provided* that with respect to any such amendment effected, the Administrative Agent shall provide notice to the Borrowers and the Lenders of each such amendment implementing such Conforming Changes reasonably promptly after such amendment becomes effective.

(e) Interest Rate Options. Subject to the provisions of the Existing Agreement relating to default interest and numbers of Borrowing Tranches, the Borrowers shall pay interest in respect of the outstanding unpaid principal amount of the Loans denominated in Affected Currencies as selected by it from the applicable Interest Rate Options specified below applicable to the Revolving Credit Loans, it being understood that, subject to the provisions of the Agreement, the Borrowers may select different Interest Rate Options and different Interest Periods to apply simultaneously to the Loans denominated in Affected Currencies comprising different Borrowing Tranches and may renew one or more Interest Rate Options with respect to all or any portion of the Loans denominated in Affected Currencies comprising any Borrowing Tranche; *provided* that if an Event of Default or Potential Default exists and is continuing, the Borrowers may not request or renew any Term RFR Option or Daily Simple RFR Option for any Loans and the Required Lenders may demand that all existing Borrowing Tranches denominated in an Affected Currency shall either (i) (x) in relation to Term RFR Rate Loans, be converted immediately to the Base Rate Option denominated in Dollars (in an amount equal to the Dollar Equivalent of such Affected Currency) at the end of the Interest Period therefor; and (y) in relation to Daily Simple RFR Loans, be converted immediately to the Base Rate Option denominated in Dollars (in an amount equal to the Dollar Equivalent of such Affected Currency) or (ii) in relation to Term RFR Rate Loans, be prepaid at the end of the applicable Interest Period in full, subject in all cases to the obligation of the Borrowers to pay any indemnity under the Agreement in connection with any such conversion. If at any time the designated rate applicable to any Loan made by any Lender exceeds such Lender's highest lawful rate, the rate of interest on such Lender's Loan shall be limited to such Lender's highest lawful rate. The applicable Base Rate, Daily Simple RFR or Term RFR shall be determined by the Administrative Agent, and such determination shall be conclusive absent manifest error. Interest on the principal amount of each Loan denominated in an Affected Currency shall be paid by the Borrowers in such Affected Currency.

(i) Revolving Credit Interest Rate Options. The Borrowers shall have the right to select from the following Interest Rate Options applicable to the Revolving Credit Loans denominated in an Affected Currency:

(A) Term RFR Option: On and after the Term RFR Transition Date with respect to any applicable Affected Currency, in the case of Loans denominated in any Affected Currency that bear interest based on a Term RFR, a rate per annum (computed on the basis of a year of 360 days and actual days elapsed, except that interest on Loans denominated in Affected Currencies as to which market practice differs from the foregoing shall be computed in accordance with market practice for such Loans) equal to the Term RFR for such Affected Currency as determined for each applicable Interest Period *plus* the RFR Adjustment *plus* the Applicable Margin.

(B) Daily Simple RFR Option: Prior to the Term RFR Transition Date with respect to Loans that bear interest at a rate based on a Daily Simple RFR denominated in any Affected Currency, a fluctuating rate per annum (computed on the basis of a year of 360 days and actual days elapsed, except that interest on Loans denominated in any Affected Currency as to which market practice differs from the foregoing shall be computed in accordance with market practice for such Loans) equal to the Daily Simple RFR for such Affected Currency *plus* the RFR Adjustment *plus* the Applicable Margin, such interest rate to change automatically from time to time effective as of the effective date of each change in the applicable Daily Simple RFR.

(ii) [Reserved].

(f) Interest Payment Dates. Interest on Loans denominated in Affected Currencies to which the Term RFR Option applies shall be due and payable on the last day of each Interest Period for those Loans and, if such Interest Period is longer than three (3) months, also on the 90th day of such Interest Period, and at such other times as may be specified in the Agreement. Interest on Loans denominated in Affected Currencies to which the Daily Simple RFR Option applies shall be due and payable in arrears on each Payment Date applicable thereto and at such other times as may be specified in the Agreement.

(g) Interest Periods. At any time when the Borrowers shall select any RFR Loan, or convert to or renew a Term RFR Option with respect to Revolving Credit Loans denominated in Affected Currencies, the Borrowers shall notify the Administrative Agent thereof at least four (4) Business Days prior to the effective date of (y) the selection of such Daily Simple RFR Option or such Term RFR Option, or (z) the conversion to or renewal of such Term RFR Option, in each case, by delivering a Loan Request. The notice shall specify an Interest Period during which such Interest Rate Option shall apply. Notwithstanding the preceding sentence, the following provisions shall apply to any selection of, renewal of, or conversion to a Term RFR Option:

(i) Amount of Borrowing Tranche. Each Borrowing Tranche of Loans under the Term RFR Option shall be in integral multiples of One Million Dollars ($1,000,000) (or the Dollar Equivalent thereof) and not less than Five Million Dollars ($5,000,000) (or the Dollar Equivalent thereof).

(ii) Renewals. In the case of the renewal of a Term RFR Option at the end of an Interest Period, the first day of the new Interest Period shall be the last day of the preceding Interest Period, without duplication in payment of interest for such day.

(iii) No Conversion of Affected Currency Loans. No Loan denominated in any Affected Currency may be converted into a Loan with a different Interest Rate Option, or a Loan denominated in a different currency.

(h) Selection of Interest Rate Options. If the Borrowers fail to select a new Interest Period to apply to any Borrowing Tranche of Loans in an Affected Currency under any Term RFR Option at the expiration of an existing Interest Period applicable to such Borrowing Tranche in accordance with the provisions of Section 4(g) [Interest Periods] above, then, unless such Borrowing Tranche is repaid as provided herein, the Borrowers shall be deemed to have selected that such Borrowing Tranche shall automatically be continued under the applicable Term RFR Option in its original Affected Currency with an Interest Period of one (1) month at the end of such Interest Period. If on and after the Term RFR Transition Date with respect to any Affected Currency, the Borrowers provide any Loan Request related to a Loan at the Term RFR Option for such Affected Currency, but fail to identify an Interest Period therefor, such Loan Request shall be deemed to request an Interest Period of one (1) month. Any Loan Request that fails to select an Interest Rate Option shall be deemed to be a request for the Base Rate Option. If no election as to currency is specified in the applicable Loan Request, then the requested Loans shall be made in Dollars.

(i) Computations of Dollar Equivalent Amounts of Loans in Affected Currencies. With respect to any amount of any Loan denominated in an Affected Currency, the Administrative Agent may determine the Dollar Equivalent utilizing Administrative Agent's standard practices (which determination shall be conclusive absent manifest error) with such frequency (including daily) that the Administrative Agent deems to be necessary or advisable in its sole discretion.

(j) Rate Unascertainable; Increased Costs; Deposits Not Available; Illegality.

(i) Unascertainable; Increased Costs; Deposits Not Available. If at any time:

(A) the Administrative Agent shall have determined (which determination shall be conclusive and binding absent manifest error) that (x) the Daily Simple RFR or Term RFR applicable to a Loan denominated in an Affected Currency cannot be determined pursuant to the definition thereof, including, without limitation, because such rate for the corresponding applicable Affected Currency is not available or published on a current basis or (y) a fundamental change has occurred in the foreign exchange or interbank markets with respect to such Affected Currency or with respect to such rate (including, without limitation, changes in national or international financial, political or economic conditions or currency exchange rates or exchange controls), or

(B) the Administrative Agent determines (which determination shall be conclusive and binding absent manifest error) that (x) prior to the Term RFR Transition Date with respect to any Loans that bear interest based on a Daily Simple RFR denominated in any Affected Currency, the Daily Simple RFR with respect to such Affected Currency cannot be determined pursuant to the definition thereof or (y) on and after the Term RFR Transition Date with respect to any Loans that bear interest based on a Term RFR denominated in any Affected Currency, the Term RFR for such Affected Currency cannot be determined pursuant to the definition thereof on or prior to the first day of any Interest Period, or

(C) any Lender determines that for any reason in connection with any request for a Term RFR Rate Loan denominated in an Affected Currency or a conversion thereto or a continuation thereof that (A) deposits in the applicable Affected Currency are not available to any Lender in connection with such Term RFR Rate Loan, or are not being offered to banks in the market for the applicable Affected Currency, amount, and Interest Period of such Term RFR Rate Loan, or (B) the Term RFR Option for any requested Affected Currency or Interest Period with respect to a proposed Term RFR Rate Loan, as applicable, does not adequately and fairly reflect the cost to such Lenders of funding, establishing or maintaining such Loan and, in each case, such Lender has provided notice of such determination to the Administrative Agent,

then the Administrative Agent shall have the rights specified in Section 4(j)(iii) [Administrative Agent's and Lender's Rights] below.

(ii) Illegality. If at any time any Lender shall have determined, or any Official Body shall have asserted, that the making, maintenance or funding of any Loan denominated in an Affected Currency to which any Interest Rate Option applies, or the determination or charging of interest rates based upon any Interest Rate Option has been made impracticable or unlawful, by compliance by such Lender in good faith with any Law or any interpretation or application thereof by any Official Body or with any request or directive of any such Official Body (whether or not having the force of Law), or any Official Body has imposed material restrictions on the authority of such Lender to purchase, sell, or take deposits of any Affected Currency in the applicable interbank market for the applicable Affected Currency,

then the Administrative Agent shall have the rights specified in Section 4(j)(iii) [Administrative Agent's and Lender's Rights] below.

(iii) Administrative Agent's and Lender's Rights. In the case of any event specified in Section 4(j)(i) [Unascertainable; Increased Costs; Deposits Not Available] above, the Administrative Agent shall promptly so notify the Lenders and the Borrowers thereof, and in the case of an event specified in Section 4(j)(ii) [Illegality] above, such Lender shall promptly so notify the Administrative Agent and endorse a certificate to such notice as to the specific circumstances of such notice, and the Administrative Agent shall promptly send copies of such notice and certificate to the other Lenders and the Borrowers.

(A) Upon such date as shall be specified in such notice (which shall not be earlier than the date such notice is given), the obligation of (i) the Lenders, in the case of such notice given by the Administrative Agent, or (ii) such Lender, in the case of such notice given by such Lender, to allow the Borrowers to select, convert to or renew a Loan under the affected Interest Rate Option in each such Affected Currency shall be suspended (to the extent of the affected Interest Rate Option, or the applicable Interest Periods) until the Administrative Agent shall have later notified the Borrowers, or such Lender shall have later notified the Administrative Agent, of the Administrative Agent's or such Lender's, as the case may be, determination that the circumstances giving rise to such previous determination no longer exist.

(B) If at any time the Administrative Agent makes a determination under Section 4(k)(i) [Unascertainable; Increased Costs; Deposits Not Available] above, (i) if any Borrower has previously notified the Administrative Agent of its selection of, conversion to or renewal of an affected Interest Rate Option, and such Interest Rate Option has not yet gone into effect, such notification shall with regard to any such pending request for Loans denominated in an Affected Currency, be deemed ineffective (in each case, to the extent of the affected Interest Rate Option, or the applicable Interest Periods), (ii) any outstanding affected Loans denominated in Dollars shall be deemed to have been converted into Base Rate Loans immediately or, in the case of Term RFR Rate Loans, at the end of the applicable

Interest Period, and (iii) any outstanding affected Loans denominated in an Affected Currency shall, at such Borrower's election, either be converted into Base Rate Loans denominated in Dollars (in an amount equal to the Dollar Equivalent of such Affected Currency) immediately or, in the case of Term RFR Rate Loans, at the end of the applicable Interest Period or prepaid in full immediately or, in the case of Term RFR Rate Loans, at the end of the applicable Interest Period; *provided*, however that absent notice from the Borrowers of conversion or prepayment, such Loans shall automatically be converted to Base Rate Loans (in an amount equal to the Dollar Equivalent of such Affected Currency).

(C) If any Lender notifies the Administrative Agent of a determination under Section 4(j)(ii) [Illegality] above, the Borrowers shall, subject to the Borrowers' indemnification Obligations under the Agreement, as to any Loan of the Lenders to which an affected Interest Rate Option applies, on the date specified in such notice either convert such Loan to the Base Rate Option otherwise available with respect to such Loan (which shall be, with respect to Loans denominated in an Affected Currency, in an amount equal to the Dollar Equivalent of such Affected Currency) or prepay such Loan in accordance with the Agreement. Absent due notice from the Borrowers of conversion or prepayment, such Loan shall automatically be converted to the Base Rate Option otherwise available with respect to such Loan (which shall be, with respect to Loans denominated in an Affected Currency, in an amount equal to the Dollar Equivalent of such Affected Currency) upon such specified date.

(k) Benchmark Replacement Setting for Affected Currencies. Notwithstanding anything to the contrary herein or in any other Loan Document (and any agreement executed in connection with an Interest Rate Hedge shall be deemed not to be a "Loan Document" for purposes of this Section 4(k)), if a Benchmark Transition Event and its Related Benchmark Replacement Date has occurred prior to the Reference Time in respect of any setting of the then-current Benchmark for any Affected Currency, then such Benchmark Replacement will replace such Benchmark for all purposes hereunder and under any Loan Document in respect of any Benchmark setting at or after 5:00 p.m. (New York City time) on the fifth (5th) Business Day after the date notice of such Benchmark Replacement is provided to the Lenders without any amendment to, or further action or consent of any other party to, the Agreement or any other Loan Document so long as the Administrative Agent has not received, by such time, written notice of objection to such Benchmark Replacement from Lenders comprising the Required Lenders.

(l) Notices; Standards for Decisions and Determinations. The Administrative Agent will promptly notify the Borrowers and the Lenders of (A) any occurrence of a Benchmark Transition Event and its related Benchmark Replacement Date, (B) the implementation of any Benchmark Replacement, (C) the effectiveness of any Conforming

Changes, (D) the removal or reinstatement of any tenor of a Benchmark pursuant to Section 4(m) [Unavailability of Tenor of Benchmark] below and (E) the commencement of any Benchmark Unavailability Period. Any determination, decision, or election that may be made by the Administrative Agent or, if applicable, any Lender (or group of Lenders) pursuant to this Section 4(l), including any determination with respect to a tenor, rate, or adjustment or of the occurrence or non-occurrence of an event, circumstance, or date and any decision to take or refrain from taking any action or any selection, will be conclusive and binding absent manifest error and may be made in its or their sole discretion and without consent from any other party to the Agreement or any other Loan Document except, in each case, as expressly required pursuant to this Section 4(l).

(m) Unavailability of Tenor of Benchmark. Notwithstanding anything to the contrary herein or in any other Loan Document, at any time (including in connection with the implementation of a Benchmark Replacement), (i) if the then-current Benchmark is a term rate and either (A) any tenor for such Benchmark is not displayed on a screen or other information service that publishes such rate from time to time as selected by the Administrative Agent in its reasonable discretion or (B) the regulatory supervisor for the administrator of such Benchmark has provided a public statement or publication of information announcing that any tenor for such Benchmark is or will no longer be representative, then the Administrative Agent may modify the definition of "Interest Period" (or any similar or analogous definition) for any Benchmark settings at or after such time to remove such unavailable or non-representative tenor and (ii) if a tenor was removed pursuant to clause (i) above either (x) is subsequently displayed on a screen or information service for a Benchmark (including a Benchmark Replacement) or (y) is not, or is no longer, subject to an announcement that it is or will no longer be representative for a Benchmark, then Administrative Agent may modify the definition of "Interest Period" (or any similar or analogous definition) for all Benchmark settings at or after such time to reinstate such previously removed tenor.

(n) Term RFR Transition Event. Notwithstanding anything to the contrary in this Amendment, the Existing Agreement or in any other Loan Document and subject to the proviso below in this paragraph, if a Term RFR Transition Date has occurred prior to the Reference Time in respect of any setting of the then-current Benchmark consisting of a Daily Simple RFR for the applicable Affected Currency, then the applicable Term RFR, if any, will replace such Benchmark for all purposes hereunder or under any Loan Document in respect of such Benchmark for the applicable Affected Currency setting and subsequent Benchmark settings, without any amendment to, or further action or consent of any other party to, the Agreement or any other Loan Document; *provided* that this clause (i) shall not be effective unless the Administrative Agent has delivered to the Lenders and the Borrowers a Term RFR Notice with respect to the applicable Term RFR Transition Event. For the avoidance of doubt, the Administrative Agent shall not be required to deliver a Term RFR Notice after a Term RFR Transition Event and may elect or not elect to do so in its sole discretion.

Exhibit 10.23

EXECUTION VERSION

**AMENDMENT NO. 3 TO
FOURTH AMENDED AND RESTATED CREDIT AGREEMENT**

This Amendment No. 3 to Fourth Amended and Restated Credit Agreement (this "**Amendment**"), dated as of February 28, 2022, is made by and among STONERIDGE, INC., an Ohio corporation (the "**Parent**"), STONERIDGE ELECTRONICS, INC., a Texas corporation ("**Electronics**"), STONERIDGE CONTROL DEVICES, INC., a Massachusetts corporation ("**Controls**"), STONERIDGE B.V., a private company with limited liability (*besloten vennootschap met beperkte aansprakelijkheid*) under the laws of the Netherlands, registered with the Dutch Chamber of Commerce under file number 67928471 ("**Stoneridge Netherlands**", and together with the Parent, Electronics and Controls, the "**Borrowers**"), STONERIDGE AFTERMARKET, INC., an Ohio corporation ("**Aftermarket**"), ORLACO INC., a Delaware corporation ("**Orlaco**"), SRI HOLDINGS US LLC, a Delaware limited liability company ("**SRI Holdings US**") and SRI DELAWARE HOLDINGS, LLC, a Delaware limited liability company ("**SRI Holdings**" and, together with Aftermarket, Orlaco and SRI Holdings US, the "**Guarantors**"), the various Lenders (as hereinafter defined) which are a party to this Amendment and PNC BANK, NATIONAL ASSOCIATION, a national banking association, as the administrative agent (in such capacity, the "**Administrative Agent**") and the collateral agent (in such capacity, the "**Collateral Agent**", and together with the Administrative Agent, the "**Agents**").

Recitals:

A. The Borrowers have been extended certain financial accommodations pursuant to that certain Fourth Amended and Restated Credit Agreement, dated as of June 5, 2019 (as amended, supplemented, amended and restated or otherwise modified from time to time, including as amended hereby, the "**Credit Agreement**"), among the Borrowers, the Guarantors party thereto from time to time, the financial institutions party thereto from time to time, as lenders (the "**Lenders**") and the Administrative Agent;

B. The parties hereto desire to amend certain provisions of the Credit Agreement as more fully set forth below; and

C. The Borrowers, the Lenders and the Administrative Agent constitute the parties required for purposes of providing this amendment pursuant to Section 11.1 of the Credit Agreement.

Agreements:

NOW THEREFORE, in consideration of the mutual promises and agreements contained herein and other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, each of the parties hereto hereby agrees as follows:

Section 1 **DEFINED TERMS.**

Each defined term used herein and not otherwise defined herein shall have the meaning ascribed to such term in the Credit Agreement, as amended by this Amendment.

Section 2 **AMENDMENTS TO THE CREDIT AGREEMENT.**

Subject to the terms, conditions and limitations of this Amendment, including, without limitation, Section 4, below, the Credit Agreement is hereby amended as of the Amendment Effective Date (as hereinafter defined) as follows:

2.1 **Amendment to Section 1.1 [Certain Definitions] of the Credit Agreement**. The following definitions are hereby inserted into Section 1.1 [Certain Definitions] as new defined terms therein in the appropriate alphabetical order:

"Cash Balance Amount" shall mean, on any date during the Specified Period, an amount equal to the sum of (i) the aggregate amount of cash and Cash Equivalents on hand of the

Parent and its Subsidiaries (including any proceeds of outstanding Revolving Credit Loans to the extent such proceeds remain on the balance sheet) held in the United States on such date *plus* (ii) 65% of the aggregate amount of cash and Cash Equivalents on hand of the Parent and its Subsidiaries (including any proceeds of outstanding Revolving Credit Loans to the extent such proceeds remain on the balance sheet) held outside of the United States on such date.

"Specified Period" shall mean any time from the Third Amendment Effective Date until the Compliance Certificate for the fiscal quarter ending March 31, 2023 has been delivered to the Administrative Agent in form and substance satisfactory to the Administrative Agent.

"Third Amendment Effective Date" shall mean the "Amendment Effective Date" as defined in that certain Amendment No. 3 to Fourth Amended and Restated Credit Agreement, dated as of February 28, 2022, among the Borrowers, the Guarantors, the Lenders party thereto and the Administrative Agent.

2.2 **Amendment to Section 1.1 [Certain Definitions] of the Credit Agreement**. The following defined terms contained in Section 1.1 [Certain Definitions] are hereby amended in their entirety to read as follows:

"Covenant Relief Period" shall mean any time from the First Amendment Effective Date until the Compliance Certificate for the fiscal quarter ending June 30, 2021 has been delivered to the Administrative Agent in form and substance satisfactory to the Administrative Agent. For the avoidance of doubt, the Covenant Relief Period terminated on August 4, 2021.

"Swing Loan Commitment" shall mean PNC's commitment to make Swing Loans to the Domestic Borrowers pursuant to Section 2.1.2 [Swing Loan Commitment] hereof in an aggregate principal amount up to Thirty Million Dollars ($30,000,000).

2.3 **Amendment to Section 1.1 [Certain Definitions] of the Credit Agreement**. The definition of "Permitted Acquisition" is hereby amended by amending and restating clause (e) thereof in its entirety, to read as follows:

"(e) (1) during the Specified Period, (A) the Leverage Ratio is less than or equal to 3.50 to 1.00 on a Pro Forma Basis after the consummation of such Acquisition and (B) the Parent and its Subsidiaries are in compliance, on a Pro Forma Basis, with Section 8.2.17 [Minimum Interest Coverage Ratio] and (2) after the expiration of the Specified Period, the Parent and its Subsidiaries are in compliance, on a Pro Forma Basis with the Financial Covenants (in the case of a Permitted Acquisition that is a Material

Acquisition, including the increase pursuant to Section 8.2.16 [Maximum Leverage Ratio]),"

2.4 **Amendment to Section 2.12 [Incremental Commitments, Increasing Lenders and New Lenders] of the Credit Agreement**. Section 2.12.1.11 of the Credit Agreement is hereby amended and restated in its entirety to read as follows:

"2.12.1.11. Specified Period. No Incremental Effective Date shall occur during the Specified Period, unless (a) the Leverage Ratio is less than or equal to 3.50 to 1.00 on a Pro Forma Basis after giving effect to any increase in Commitments or advance of Incremental Loans requested on such Incremental Effective Date (and any Permitted Acquisition or Investment consummated substantially concurrently therewith), as certified by an Authorized Officer, in form and substance reasonably satisfactory to the Administrative Agent and including reasonably detailed calculations demonstrating compliance with the foregoing or (b) otherwise approved in writing by the Required Lenders."

2.5 **Amendment to Section 4.6 [Successor LIBOR Rate Index] of the Credit Agreement**. Section 4.6 of the Credit Agreement is hereby amended and restated in its entirety as follows:

"4.6 Benchmark Replacement Setting. Notwithstanding any provision of this Agreement or any Loan Document to the contrary, the terms set forth in this Section 4.6 [Benchmark Replacement Setting] shall apply solely to Loans made, continued or converted in Dollars.

(a) Announcements Related to LIBOR. On March 5, 2021, the ICE Benchmark Administration, the administrator of LIBOR (the "IBA") and the U.K. Financial Conduct Authority, the regulatory supervisor for the IBA, announced in a public statement the future cessation or loss of representativeness of overnight/Spot Next, 1-week, 1-month, 2-month, 3-month, 6-month and 12-month USD LIBOR tenor settings (collectively, the "Cessation Announcements"). The parties hereto acknowledge that, as a result of the Cessation Announcements, a Benchmark Transition Event occurred on March 5, 2021 with respect to USD LIBOR under clauses (1) and (2) of the definition of Benchmark Transition Event below; provided however, no related Benchmark Replacement Date occurred as of such date.

(b) Benchmark Replacement. Notwithstanding anything to the contrary herein or in any other Loan Document (and any agreement executed in connection with an Interest Rate Hedge shall be deemed not to be a "Loan Document" for purposes of this Section 4.6 [Benchmark Replacement Setting], if a Benchmark Transition Event, an Early Opt-in Election or an Other Benchmark Rate Election, as applicable, and its related

Benchmark Replacement Date have occurred prior to the Reference Time in respect of any setting of the then-current Benchmark, then (x) if a Benchmark Replacement is determined in accordance with clause (1) or (2) of the definition of "Benchmark Replacement" for such Benchmark Replacement Date, such Benchmark Replacement will replace such Benchmark for all purposes hereunder and under any Loan Document in respect of such Benchmark setting and subsequent Benchmark settings without any amendment to, or further action or consent of any other party to, this Agreement or any other Loan Document and (y) if a Benchmark Replacement is determined in accordance with clause (3) of the definition of "Benchmark Replacement" for such Benchmark Replacement Date, such Benchmark Replacement will replace such Benchmark for all purposes hereunder and under any Loan Document in respect of any Benchmark setting at or after 5:00 p.m. (New York City time) on the fifth (5th) Business Day after the date notice of such Benchmark Replacement is provided to the Lenders without any amendment to, or further action or consent of any other party to, this Agreement or any other Loan Document so long as the Administrative Agent has not received, by such time, written notice of objection to such Benchmark Replacement from Lenders comprising the Required Lenders.

(c) Benchmark Replacement Conforming Changes. In connection with the implementation of a Benchmark Replacement, the Administrative Agent will have the right to make Benchmark Replacement Conforming Changes from time to time and, notwithstanding anything to the contrary herein or in any other Loan Document, any amendments implementing such Benchmark Replacement Conforming Changes will become effective without any further action or consent of any other party to this Agreement or any other Loan Document.

(d) Notices; Standards for Decisions and Determinations. The Administrative Agent will promptly notify the Borrowers and the Lenders of (i) any occurrence of a Benchmark Transition Event, a Term SOFR Transition Event, an Early Opt-in Election or an Other Benchmark Rate Election, as applicable, and its related Benchmark Replacement Date, (ii) the implementation of any Benchmark Replacement, (iii) the effectiveness of any Benchmark Replacement Conforming Changes, (iv) the removal or reinstatement of any tenor of a Benchmark pursuant to paragraph (e) below and (v) the commencement or conclusion of any Benchmark Unavailability Period. Any determination, decision or election that may be made by the Administrative Agent or, if applicable, any Lender (or group of Lenders) pursuant to this Section 4.6 [Benchmark Replacement Setting], including any determination with respect to a tenor, rate or adjustment or of the occurrence or non-occurrence of an event, circumstance or date and any decision to take or refrain from taking any action or any selection, will be conclusive and binding absent manifest error and may be made in its or their sole discretion and without consent from any other party to this Agreement or any other Loan Document, except, in each case, as expressly required pursuant to this Section 4.6 [Benchmark Replacement Setting].

(e) Unavailability of Tenor of Benchmark. Notwithstanding anything to the contrary herein or in any other Loan Document, at any time (including in connection with the implementation of a Benchmark Replacement), (i) if the then-current Benchmark is a term rate (including Term SOFR, USD LIBOR or any alternative rate selected in an Early Opt-in Election or Other Benchmark Rate Election) and either (A) any tenor for such Benchmark is not displayed on a screen or other information service that publishes such rate from time to time as selected by the Administrative Agent in its reasonable discretion or (B) the regulatory supervisor for the administrator of such Benchmark has provided a public statement or publication of information announcing that any tenor for such Benchmark is or will be no longer representative, then the Administrative Agent may modify the definition of "Interest Period" for any Benchmark settings at or after such time to remove such unavailable or non-representative tenor and (ii) if a tenor that was removed pursuant to clause (i) above either (A) is subsequently displayed on a screen or information service for a Benchmark (including a Benchmark Replacement) or (B) is not, or is no longer, subject to an announcement that it is or will no longer be representative for a Benchmark (including a Benchmark Replacement), then the Administrative Agent may modify the definition of "Interest Period" for all Benchmark settings at or after such time to reinstate such previously removed tenor.

(f) Benchmark Unavailability Period. Upon the Borrowers' receipt of notice of the commencement of a Benchmark Unavailability Period, the Borrowers may revoke any request for a Loan bearing interest based on USD LIBOR , conversion to or continuation of Loans bearing interest based on USD LIBOR to be made, converted or continued during any Benchmark Unavailability Period and, failing that, the Borrowers will be deemed to have converted any such request into a request for a Loan of or conversion to Loans bearing interest under the Base Rate Option. During any Benchmark Unavailability Period or at any time that a tenor for the then-current Benchmark is not an Available Tenor, the component of the Base Rate based upon the then-current Benchmark or such tenor for such Benchmark, as applicable, will not be used in any determination of the Base Rate.

(g) Term SOFR Transition Event. Notwithstanding anything to the contrary herein or in any other Loan Document and subject to the proviso below in this paragraph, if a Term SOFR Transition Event and its related Benchmark Replacement Date have occurred prior to the Reference Time in respect of any setting of the then-current Benchmark, then (i) the applicable Benchmark Replacement will replace the then-current Benchmark for all purposes hereunder or under any Loan Document in respect of such Benchmark setting (the "Secondary Term SOFR Conversion Date") and subsequent Benchmark settings, without any amendment to, or further action or consent of any other party to, this Agreement or any other Loan Document; and (ii) Loans outstanding on the Secondary Term SOFR Conversion Date bearing interest based on the then-current Benchmark shall be deemed to have been converted to Loans bearing interest at the Benchmark Replacement with a tenor approximately the same length as the interest payment period of the then-current Benchmark; provided that, this paragraph (g) shall not be effective unless the Administrative Agent has delivered to the Lenders and the Borrowers a Term SOFR Notice. For the avoidance of doubt, the Administrative Agent shall not be required to deliver a Term SOFR Notice after a Term SOFR Transition Event and may do so in its sole discretion.

(h) Certain Defined Terms. As used in this Section 4.6 [Benchmark Replacement Setting]:

"Available Tenor" means, as of any date of determination and with respect to the then-current Benchmark, as applicable, (x) if the then current Benchmark is a term rate or is based on a term rate, any tenor for such Benchmark that is or may be used for determining the length of an Interest Period pursuant to this Agreement as of such date and not including, for the avoidance of doubt, any tenor for such Benchmark that is then-removed from the definition of "Interest Period" pursuant to paragraph (e) of this Section 4.6 [Benchmark Replacement Setting], or (y) if the then current Benchmark is not a term rate nor based on a term rate, any payment period for interest calculated with reference to such Benchmark pursuant to this Agreement as of such date. For the avoidance of doubt, the Available Tenor for the Daily LIBOR Rate is one month.

"*Benchmark*" means, initially, USD LIBOR; provided that if a Benchmark Transition Event, a Term SOFR Transition Event, an Early Opt-in Election or an Other Benchmark Election, as applicable, and its related Benchmark Replacement Date have occurred with respect to USD LIBOR or the then-current Benchmark, then "Benchmark" means the applicable Benchmark Replacement to the extent that such Benchmark Replacement has replaced such prior benchmark rate pursuant to paragraph (b) of this Section titled "Benchmark Replacement Setting."

"*Benchmark Replacement*" means, for any Available Tenor, the first alternative set forth below that can be determined by the Administrative Agent for the applicable Benchmark Replacement Date:

(1) the sum of: (a) Term SOFR and (b) the related Benchmark Replacement Adjustment;

(2) the sum of: (a) Daily Simple SOFR and (b) the related Benchmark Replacement Adjustment;

(3) the sum of: (a) the alternate benchmark rate that has been selected by the Administrative Agent and the Borrowers as the replacement for the then-current Benchmark for the applicable Corresponding Tenor giving due consideration to (i) any selection or recommendation of a replacement benchmark rate or the mechanism for determining such a rate by the Relevant Governmental Body or (ii) any evolving or then-prevailing market convention for determining a benchmark rate as a replacement for the then-current Benchmark for U.S. dollar-denominated syndicated credit facilities at such time and (b) the related Benchmark Replacement Adjustment;

provided that, in the case of clause (1), such Unadjusted Benchmark Replacement is displayed on a screen or other information service that publishes such rate from time to time as selected by the

Administrative Agent in its reasonable discretion; provided, further, that, in the case of an Other Benchmark Rate Election, the "Benchmark Replacement" shall mean the alternative set forth in clause (3) above and when such clause is used to determine the Benchmark Replacement in connection with the occurrence of an Other Benchmark Rate Election, the alternate benchmark rate selected by the Administrative Agent and the Borrowers shall be the term benchmark rate that is used in lieu of a USD LIBOR-based rate in relevant other U.S. dollar-denominated syndicated credit facilities; *provided*, *further*, that, with respect to a Term SOFR Transition Event, on the applicable Benchmark Replacement Date, the "Benchmark Replacement" shall revert to and shall be determined as set forth in clause (1) of this definition; *provided*, *further*, that notwithstanding the foregoing clauses (1) and (2), if an Early Opt-in Election or Other Benchmark Rate Election has been made, the Benchmark Replacement will be the sum of the benchmark rate selected in connection with such Early Opt-in Election or Other Benchmark Rate Election plus the related Benchmark Replacement Adjustment. If the Benchmark Replacement as determined pursuant to clause (1), (2) or (3) above would be less than the Floor, the Benchmark Replacement will be deemed to be the Floor for the purposes of this Agreement and the other Loan Documents.

"Benchmark Replacement Adjustment" means, with respect to any replacement of the then-current Benchmark with an Unadjusted Benchmark Replacement for any applicable Available Tenor for any setting of such Unadjusted Benchmark Replacement:

(1) for purposes of clauses (1) and (2) of the definition of "Benchmark Replacement," the applicable amount(s) set forth below:

Available Tenor	Benchmark Replacement Adjustment*
One-Month	0.11448% (11.448 basis points)
Three-Months	0.26161% (26.161 basis points)
Six-Months	0.42826% (42.826 basis points)
* These values represent the ARRC/ISDA recommended spread adjustment values available here: https://assets.bbhub.io/professional/sites/10/IBOR-Fallbacks-LIBOR-Cessation_Announcement_20210305.pdf	

; *provided*, *however*, that notwithstanding the foregoing, if an Early Opt-in Election or Other Benchmark Rate Election has been made, the Benchmark Replacement Adjustment will be determined pursuant to clause (2) below.

(2) for purposes of clause (3) of the definition of "Benchmark Replacement" or in connection with an Early Opt-in Election or Other Benchmark Rate Election, the spread adjustment, or method for calculating or determining such spread adjustment,

(which may be a positive or negative value or zero) that has been selected by the Administrative Agent and the Borrowers for the applicable Corresponding Tenor giving due consideration to (i) any selection or recommendation of a spread adjustment, or method for calculating or determining such spread adjustment, for the replacement of such Benchmark with the applicable Unadjusted Benchmark Replacement by the Relevant Governmental Body on the applicable Benchmark Replacement Date or (ii) any evolving or then-prevailing market convention for determining a spread adjustment, or method for calculating or determining such spread adjustment, for the replacement of such Benchmark with the applicable Unadjusted Benchmark Replacement for U.S. dollar-denominated syndicated credit facilities;

provided that, if the then-current Benchmark is a term rate, more than one tenor of such Benchmark is available as of the applicable Benchmark Replacement Date and the applicable Unadjusted Benchmark Replacement will not be a term rate, the Available Tenor of such Benchmark for purposes of this definition of "Benchmark Replacement Adjustment" shall be deemed to be the Available Tenor that has approximately the same length (disregarding business day adjustments) as the payment period for interest calculated with reference to such Unadjusted Benchmark Replacement.

"Benchmark Replacement Conforming Changes" means, with respect to any Benchmark Replacement, any technical, administrative or operational changes (including changes to the definition of "Base Rate," the definition of "Business Day," the definition of "Interest Period," timing and frequency of determining rates and making payments of interest, timing of borrowing requests or prepayment, conversion or continuation notices, length of lookback periods, the applicability of breakage provisions, and other technical, administrative or operational matters) that the Administrative Agent decides (which decision, solely in the case of any Early Opt-in Election or Other Benchmark Rate Election, shall be made in consultation with the Borrowers) may be appropriate to reflect the adoption and implementation of such Benchmark Replacement and to permit the administration thereof by the Administrative Agent in a manner substantially consistent with market practice (or, if the Administrative Agent decides that adoption of any portion of such market practice is not administratively feasible or if the Administrative Agent determines that no market practice for the administration of such Benchmark Replacement exists, in such other manner of administration as the Administrative Agent decides (which decision, solely in the case of any Early Opt-in Election or Other Benchmark Rate Election, shall be made in consultation with the Borrowers) is reasonably necessary in connection with the administration of this Agreement and the other Loan Documents).

"Benchmark Replacement Date" means the earliest to occur of the following events with respect to the then-current Benchmark:

(1) in the case of clause (1) or (2) of the definition of "Benchmark Transition Event," the later of (a) the date of the public statement or publication of information referenced therein and (b) the date on which the administrator of such Benchmark (or the published component used in the calculation thereof) permanently or indefinitely

ceases to provide all Available Tenors of such Benchmark (or such component thereof);

(2) in the case of clause (3) of the definition of "Benchmark Transition Event," the date determined by the Administrative Agent, which date shall promptly follow the date of the public statement or publication of information referenced therein;

(3) in the case of a Term SOFR Transition Event, the date that is set forth in the Term SOFR Notice provided to the Lenders and the Borrowers pursuant to this Section 4.6 [Benchmark Replacement Setting], which date shall be at least 30 days from the date of the Term SOFR Notice; or

(4) in the case of an Early Opt-in Election or an Other Benchmark Rate Election, the sixth (6th) Business Day after the date notice of such Early Opt-in Election or Other Benchmark Rate Election, as applicable, is provided to the Lenders, so long as the Administrative Agent has not received, by 5:00 p.m. (New York City time) on the fifth (5th) Business Day after the date notice of such Early Opt-in Election or Other Benchmark Rate Election, as applicable, is provided to the Lenders, written notice of objection to such Early Opt-in Election or Other Benchmark Rate Election, as applicable, from Lenders comprising the Required Lenders.

For the avoidance of doubt, (i) if the event giving rise to the Benchmark Replacement Date occurs on the same day as, but earlier than, the Reference Time in respect of any determination, the Benchmark Replacement Date will be deemed to have occurred prior to the Reference Time for such determination and (ii) the "Benchmark Replacement Date" will be deemed to have occurred in the case of clause (1) or (2) with respect to any Benchmark upon the occurrence of the applicable event or events set forth therein with respect to all then-current Available Tenors of such Benchmark (or the published component used in the calculation thereof).

"Benchmark Transition Event" means the occurrence of one or more of the following events with respect to the then-current Benchmark:

(1) a public statement or publication of information by or on behalf of the administrator of such Benchmark (or the published component used in the calculation thereof) announcing that such administrator has ceased or will cease to provide all Available Tenors of such Benchmark (or such component thereof), permanently or indefinitely, provided that, at the time of such statement or publication, there is no successor administrator that will continue to provide any Available Tenor of such Benchmark (or such component thereof);

(2) a public statement or publication of information by an Official Body having jurisdiction over the Administrative Agent, the regulatory supervisor for the administrator of such Benchmark (or the published component used in the calculation thereof), the Federal Reserve Board, the Federal Reserve Bank of New York, an

insolvency official with jurisdiction over the administrator for such Benchmark (or such component), a resolution authority with jurisdiction over the administrator for such Benchmark (or such component) or a court or an entity with similar insolvency or resolution authority over the administrator for such Benchmark (or such component), which states that the administrator of such Benchmark (or such component) has ceased or will cease to provide all Available Tenors of such Benchmark (or such component thereof) permanently or indefinitely, provided that, at the time of such statement or publication, there is no successor administrator that will continue to provide any Available Tenor of such Benchmark (or such component thereof); or

(3) a public statement or publication of information by the regulatory supervisor for the administrator of such Benchmark (or the published component used in the calculation thereof) or an Official Body having jurisdiction over the Administrative Agent announcing that all Available Tenors of such Benchmark (or such component thereof) are no longer representative.

For the avoidance of doubt, a "Benchmark Transition Event" will be deemed to have occurred with respect to any Benchmark if a public statement or publication of information set forth above has occurred with respect to each then-current Available Tenor of such Benchmark (or the published component used in the calculation thereof).

"Benchmark Unavailability Period" means the period (if any) (x) beginning at the time that a Benchmark Replacement Date pursuant to clauses (1) or (2) of that definition has occurred if, at such time, no Benchmark Replacement has replaced the then-current Benchmark for all purposes hereunder and under any Loan Document in accordance with this Section 4.6 [Benchmark Replacement Setting] and (y) ending at the time that a Benchmark Replacement has replaced the then-current Benchmark for all purposes hereunder and under any Loan Document in accordance with this Section 4.6 [Benchmark Replacement Setting].

"Corresponding Tenor" with respect to any Available Tenor means, as applicable, either a tenor (including overnight) or an interest payment period having approximately the same length (disregarding business day adjustment) as such Available Tenor.

"Daily Simple SOFR" means, for any day, SOFR, with the conventions for this rate (which will include a lookback) being established by the Administrative Agent in accordance with the conventions for this rate selected or recommended by the Relevant Governmental Body for determining "Daily Simple SOFR" for business loans; provided, that if the Administrative Agent decides that any such convention is not administratively feasible for the Administrative Agent, then the Administrative Agent may establish another convention in its reasonable discretion.

"Early Opt-in Election" means, if the then-current Benchmark is USD LIBOR, the occurrence of:

(1) a notification by the Administrative Agent to (or the request by the Borrowers to the Administrative Agent to notify) each of the other parties hereto that at least five currently outstanding U.S. dollar-denominated syndicated credit facilities at such time contain (as a result of amendment or as originally executed) a SOFR-based rate (including SOFR, a term SOFR or any other rate based upon SOFR) as a benchmark rate (and such syndicated credit facilities are identified in such notice and are publicly available for review), and

(2) the joint election by the Administrative Agent and the Borrowers to trigger a fallback from USD LIBOR to such benchmark rate and the provision by the Administrative Agent of written notice of such election to the Lenders.

"Floor" means the benchmark rate floor, if any, provided in this Agreement initially (as of the execution of this Agreement, the modification, amendment or renewal of this Agreement or otherwise) with respect to USD LIBOR or, if no floor is specified, one-half percent (0.50%).

"*ISDA Definitions*" means the 2006 ISDA Definitions published by the International Swaps and Derivatives Association, Inc. or any successor thereto, as amended or supplemented from time to time, or any successor definitional booklet for interest rate derivatives published from time to time by the International Swaps and Derivatives Association, Inc. or such successor thereto.

"*Other Benchmark Rate Election*" means, if the then-current Benchmark is USD LIBOR, the occurrence of: (x) either (i) a request by the Borrowers to the Administrative Agent , or (ii) notice by the Administrative Agent to the Borrowers, that, at the determination of the Borrowers or the Administrative Agent, as applicable, U.S. dollar-denominated syndicated credit facilities at such time contain (as a result of amendment or as originally executed), in lieu of a USD LIBOR based rate, a term benchmark rate as a benchmark rate, and (y) the Administrative Agent, in its sole discretion, and the Borrowers jointly elect to trigger a fallback from USD LIBOR to such benchmark rate and the provision, as applicable, by the Administrative Agent of written notice of such election to the Borrowers and the Lenders.

"Reference Time" with respect to any setting of the then-current Benchmark means (1) if such Benchmark is USD LIBOR, 11:00 a.m. (London time) on the day that is two London banking days preceding the date of such setting, and (2) if such Benchmark is not USD LIBOR, the time determined by the Administrative Agent in its reasonable discretion.

"Relevant Governmental Body" means the Federal Reserve Board or the Federal Reserve Bank of New York, or a committee officially endorsed or convened by the Federal Reserve Board or the Federal Reserve Bank of New York, or any successor thereto.

"SOFR" means, with respect to any Business Day, a rate per annum equal to the secured overnight financing rate for such Business Day published by the SOFR Administrator on the SOFR Administrator's Website on the immediately succeeding Business Day.

"SOFR Administrator" means the Federal Reserve Bank of New York (or a successor administrator of the secured overnight financing rate).

"SOFR Administrator's Website" means the website of the Federal Reserve Bank of New York, currently at http://www.newyorkfed.org, or any successor source for the secured overnight financing rate identified as such by the SOFR Administrator from time to time.

"Term SOFR" means, for the applicable Corresponding Tenor as of the applicable Reference Time, the forward-looking term rate based on SOFR that has been selected or recommended by the Relevant Governmental Body.

"*Term SOFR Notice*" means a notification by the Administrative Agent to the Lenders and the Borrowers of the occurrence of a Term SOFR Transition Event.

"*Term SOFR Transition Event*" means the determination by the Administrative Agent that (a) Term SOFR has been recommended for use by the Relevant Governmental Body, and is determinable for each Available Tenor, (b) the administration of Term SOFR is administratively feasible for the Administrative Agent and (c) a Benchmark Transition Event or an Early Opt-in Election, as applicable, (and, for the avoidance of doubt, not in the case of an Other Benchmark Rate Election) has previously occurred resulting in a Benchmark Replacement in accordance with Section 4.6 [Benchmark Replacement Setting] that is not Term SOFR.

"Unadjusted Benchmark Replacement" means the applicable Benchmark Replacement excluding the related Benchmark Replacement Adjustment.

"USD LIBOR" means the London interbank offered rate for Dollars.

2.6 **Amendment to Section 7.2 [Each Loan or Letter of Credit] of the Credit Agreement**. Section 7.2 of the Credit Agreement is hereby amended and restated in its entirety as follows:

> "7.2 Each Loan or Letter of Credit. At the time of making any Loans or issuing, extending or increasing any Letters of Credit and after giving effect to the proposed extensions of credit: (i) the representations and warranties of the Loan Parties as set forth in Article 6 [Representations and Warranties] shall then be true and correct in all material respects (except that (x) any representation and warranty that is already qualified as to materiality shall be true and correct in all respects as so qualified and (y) representations and warranties which expressly relate solely to an earlier date or time shall be true and correct on and as of the specific dates or times referred to therein),

(ii) no Event of Default or Potential Default shall have occurred and be continuing, (iii) the applicable Borrower shall have delivered to the Administrative Agent a duly executed and completed Loan Request or to the Issuing Lender an application for a Letter of Credit, as the case may be and (iv) during the Specified Period, the Cash Balance Amount shall not exceed Seventy Million Dollars ($70,000,000). Each Loan Request and Letter of Credit application shall be deemed to be a representation that the conditions specified in this Section 7.2 [Each Loan or Letter of Credit] have been satisfied on or prior to the date thereof.

2.7 **Amendment to Section 8.1.5. [Visitation Rights] of the Credit Agreement**. Section 8.1.5 of the Credit Agreement is hereby amended and restated in its entirety as follows:

"8.1.5. Visitation Rights. Each Loan Party shall, and shall cause each of its Subsidiaries to, permit any of the officers or authorized employees or representatives of the Administrative Agent or any of the Lenders (so long as no Event of Default has occurred and is continuing, at their own expense) to visit and inspect, subject to Section 11.9 [Confidentiality], any of its properties and to examine and make excerpts from its books and records and discuss its business affairs, finances and accounts with its officers, all in such detail and at such times and as often as any of the Lenders may reasonably request, provided that each Lender shall provide the Administrative Agent and, so long as no Event of Default has occurred and is continuing, the Borrowers, with reasonable notice prior to any visit or inspection and no such visit or inspection shall interfere with their normal business operations. In the event any Lender desires to conduct an audit of any Loan Party, such Lender shall make a reasonable effort to conduct such audit contemporaneously with any audit to be performed by the Administrative Agent. During the Specified Period, each Loan Party shall, and shall cause each of its Subsidiaries to, permit Administrative Agent and each of its duly authorized representatives or agents to conduct field examinations or equipment appraisals at such reasonable times and intervals as the Administrative Agent or the Required Lenders may designate, in each case at Borrowers' expense; *provided* that, so long as no Event of Default has occurred and is continuing, Borrowers shall not be obligated to reimburse the Administrative Agent for more than one (1) field examination and one (1) equipment appraisal during the Specified Period."

2.8 **Amendment to Section 8.2.5. [Dividends and Related Distributions] of the Credit Agreement**.

Section 8.2.5 of the Credit Agreement is hereby amended by amending and restating the final sentence thereof in its entirety, to read as follows:

"Notwithstanding the foregoing, each of the Loan Parties shall not, and shall not permit any of its Subsidiaries to, make or pay, or agree to become or remain liable to make or pay any Restricted Payment during the Specified Period, other than (a) Restricted Payments set forth in clauses (i), (ii), (vii) and (ix) of this Section 8.2.5

[Dividends and Related Distributions], (b) Restricted Payments pursuant to clause (vi) of this Section 8.2.5 [Dividends and Related Distributions] in an aggregate amount not to exceed $5,000,000 during the Specified Period, (c) any Restricted Payment otherwise permitted by this Section 8.2.5 [Dividends and Related Distributions] so long as, solely in the case of this clause (c), the Leverage Ratio is less than or equal to 3.50 to 1.00 on a Pro Forma Basis after the making of such Restricted Payment, as certified by an Authorized Officer, in form and substance reasonably satisfactory to the Administrative Agent and including reasonably detailed calculations demonstrating compliance with the foregoing or (d) as otherwise approved in writing by the Required Lenders."

2.9 **Amendment to Section 8.2.16. [Maximum Leverage Ratio] of the Credit Agreement**. Section 8.2.16 of the Credit Agreement is hereby amended and restated in its entirety as follows:

"8.2.16. Maximum Leverage Ratio. The Loan Parties (i) shall not permit the Leverage Ratio as of the end of the fiscal quarter ending December 31, 2021 to exceed 4.00 to 1.00, (ii) shall not be required to comply with any maximum Leverage Ratio under this Section 8.2.16 [Maximum Leverage Ratio] for the fiscal quarters ending March 31, 2022 through September 30, 2022, inclusive and (iii) shall not permit the Leverage Ratio as of the end of any other fiscal quarter to exceed the ratio specified below for the periods specified below:

Fiscal Quarter Ending	Maximum Leverage Ratio
December 31, 2022	4.75 to 1.00
March 31, 2023 and thereafter	3.50 to 1.00

provided that, after the expiration of the Specified Period and upon and following a Material Acquisition, upon written notice from the Parent to the Administrative Agent, the Leverage Ratio shall not exceed 3.75 to 1.00 as of the last day of (i) the fiscal quarter during which such Material Acquisition occurred (any fiscal quarter during which a Material Acquisition occurs being hereinafter referred to as an "Acquisition Quarter") and (ii) the three fiscal quarters immediately following the Acquisition Quarter; provided, further, that there shall be at least one fiscal quarter as of the end of which the maximum Leverage Ratio has reverted to 3.50 to 1.00 before the maximum Leverage Ratio may be increased in respect of a subsequent Material Acquisition."

2.10 **Amendment to Section 8.2.17. [Minimum Interest Coverage Ratio] of the Credit Agreement**.

Section 8.2.17 of the Credit Agreement is hereby amended and restated in its entirety as follows:

"8.2.17. Minimum Interest Coverage Ratio. The Loan Parties shall not permit the ratio of (a) Consolidated EBITDA to (b) Consolidated Interest Expense of the Parent and its Subsidiaries, calculated as of the end of each fiscal quarter for the four (4) fiscal quarters then ended, to be less than the ratio specified below:

Fiscal Quarter Ending	Minimum Interest Coverage Ratio
December 31, 2021	3.50 to 1.00
March 31, 2022	2.50 to 1.00
June 30, 2022	2.25 to 1.00
September 30, 2022	3.00 to 1.00
December 31, 2022	3.00 to 1.00
March 31, 2023 and thereafter	3.50 to 1.00

2.11 **Amendment to Schedule 1.1(A) [Pricing Grid] of the Credit Agreement**. Schedule 1.1(A) of the Credit Agreement is hereby amended and restated in its entirety as set forth on Annex I hereto.

2.12 **Amendment to Schedule 1.1(B) [Commitments of Lenders and Addresses for Notices] of the Credit Agreement**. Part 1 of Schedule 1.1(B) of the Credit Agreement is hereby amended and restated in its entirety as set forth on Annex II hereto.

Section 3 **REPRESENTATIONS AND WARRANTIES.**

Each Loan Party hereby represents and warrants to the Lenders and the Agents as follows:

3.1 **The Amendment**. This Amendment has been duly and validly executed by an authorized executive officer of such Loan Party and constitutes the legal, valid and binding obligation of such Loan Party enforceable against such Loan Party in accordance with its terms.

The Credit Agreement, as amended by this Amendment, remains in full force and effect and remains the valid and binding obligation of such Loan Party party thereto enforceable against such Loan Party in accordance with its terms, except as such enforceability may be limited by any applicable bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditor's rights generally and by general principles of equity.

3.2 **No Potential Default or Event of Default.** No Potential Default or Event of Default exists under the Credit Agreement as of the date hereof (after giving effect to this Amendment) and no Potential Default or Event of Default will occur as a result of the effectiveness of this Amendment.

3.3 **Restatement of Representations and Warranties.** The representations and warranties of such Loan Party contained in the Credit Agreement, as amended by this Amendment, and the other Loan Documents are true and correct in all material respects (or, if already qualified by materiality therein, in all respects) on and as of the Amendment Effective Date (after giving effect to this Amendment) as though made on the Amendment Effective Date, unless and to the extent that any such representation and warranty is stated to relate solely to an earlier date, in which case such representation and warranty shall be true and correct in all material respects (or, if already qualified by materiality therein, in all respects) as of such earlier date.

3.4 **Organizational Documents**. There have been no changes to the articles or certificate of incorporation, by-laws, code of regulations, certificate of formation, limited liability company agreement or other organizational documents, as the case may be (collectively, the "Organizational Documents") of such Loan Party since the most recent certification provided to the Administrative Agent, and such Organizational Documents remain in full force and effect as of the Amendment Effective Date.

Section 4 **CONDITIONS TO EFFECTIVENESS.**

The date and time of the effectiveness of this Amendment (the "**Amendment Effective Date**") is subject to the satisfaction of the following conditions precedent:

4.1 **Execution.** The Administrative Agent shall have received counterparts to this Amendment duly executed and delivered by an Authorized Officer of each Loan Party and the Lenders.

4.2 **Good Standing Certificates.** The Administrative Agent shall have received copies of certificates from the appropriate state officials (dated not more than thirty (30) days prior to the Amendment Effective Date) as to the continued existence and good standing of each Domestic Loan Party in each jurisdiction where organized.

4.3 **Payment of Costs and Expenses**. The Borrowers shall have paid all outstanding and reasonable costs, expenses and the disbursements of the Administrative Agent and its advisors, service providers and legal counsels incurred in connection with the documentation of this Amendment, to the extent invoiced, as well as any other fees payable on or before the Amendment Effective Date pursuant to any fee letter or agreement with the Administrative Agent.

4.4 **Other.** All corporate and other proceedings, and all documents, instruments, certificates and other legal matters in connection with the transactions contemplated by this Amendment shall be reasonably satisfactory in form and substance to the Administrative Agent and its counsel.

The Administrative Agent or its counsel will advise the Parent and the Lenders promptly by electronic mail of the occurrence of the Amendment Effective Date.

Section 5 **MISCELLANEOUS**.

5.1 **Governing Law**. This Amendment shall be governed by and construed in accordance with the laws of the State of New York without giving effect to the conflict of laws rules thereof.

5.2 **Severability**. Any provision of this Amendment which is prohibited or unenforceable shall be ineffective to the extent of such prohibition or unenforceability without invalidating the remaining provisions of this Amendment.

5.3 **Counterparts**. This Amendment may be executed in any number of counterparts and by different parties hereto on separate counterparts, each of which when so executed and delivered shall be deemed to be an original, and all of which taken together shall constitute but one and the same instrument.

5.4 **Headings**. Section headings used in this Amendment are for the convenience of reference only and are not a part of this Amendment for any other purpose.

5.5 **Negotiations**. Each Loan Party acknowledges and agrees that all of the provisions contained herein were negotiated and agreed to in good faith after discussion with the Agents and the Lenders.

5.6 **Nonwaiver.** The execution, delivery, performance and effectiveness of this Amendment shall not operate as, or be deemed or construed to be, a waiver: (i) of any right, power or remedy of the Lenders or the Agents under the Credit Agreement or the other Loan Documents, or (ii) of any term, provision, representation, warranty or covenant contained in the Credit Agreement or any other Loan Document. Further, none of the provisions of this Amendment shall constitute, be deemed to be or construed as, a waiver of any Potential Default or Event of Default under the Credit Agreement as amended by this Amendment.

5.7 **Reaffirmation**. Each Loan Party hereby (i) ratifies and reaffirms all of its payment and performance obligations, contingent or otherwise, under the Credit Agreement and each of the other Loan Documents to which it is a party and (ii) ratifies and reaffirms its grant of security interests and Liens under such documents and confirms and agrees that such security interests and Liens hereafter secure all of the Obligations.

5.8 **Confirmation of Obligations**. Each Loan Party hereby affirms as of the date hereof all of its respective Obligations and other obligations to each of the Lenders under and pursuant to the Credit Agreement and each of the other Loan Documents and that such Obligations and other obligations are owed to each of the Lenders according to their respective terms. Each Loan Party hereby affirms as of the date hereof that there are no claims or defenses to the enforcement by the Agents or Lenders of the Obligations and other obligations of such Loan Party to each of them under and pursuant to the Credit Agreement or any of the other Loan Documents.

5.9 **Reference to and Effect on the Credit Agreement**. Upon the effectiveness of this Amendment, each reference in the Credit Agreement to "this Agreement," "hereunder," "hereof," "herein," or words of like import shall mean and be a reference to the Credit Agreement as amended by this Amendment and each reference to the Credit Agreement in any other document, instrument or agreement executed and/or delivered in connection with the Credit Agreement shall mean and be a reference to the Credit Agreement, as amended by this Amendment.

[SIGNATURES FOLLOW]

IN WITNESS WHEREOF, the parties hereto, by their officers thereunto duly authorized, have executed this Amendment as of the day and year first above written.

STONERIDGE, INC.,
as a Borrower

STONERIDGE CONTROL DEVICES, INC.,
as a Borrower

STONERIDGE AFTERMARKET, INC.,
as a Guarantor

ORLACO INC.,
as a Guarantor

SRI DELAWARE HOLDINGS, LLC,
as a Guarantor

SRI HOLDINGS US LLC,
as a Guarantor
By: Stoneridge, Inc., its sole member

By: /s/ Jonathan B. DeGaynor
Name: Jonathan B. DeGaynor
Title: President

STONERIDGE ELECTRONICS, INC.,
as a Borrower

By: /s/ Matthew R. Horvath
Name: Matthew R. Horvath
Title: Vice President & Treasurer

STONERIDGE B.V., as a Borrower

By: /s/ Jonathan B. DeGaynor
Name: Jonathan B. DeGaynor
Title: Attorney-in-fact

PNC BANK, NATIONAL ASSOCIATION, as
the Administrative Agent, the Collateral Agent and
a Lender

By: /s/ Scott Neiderheide
Name: Scott Neiderheide
Title: Senior Vice President

[Signature Page to Amendment No. 3]

CITIBANK, N.A., as a Lender

By: /s/ John J. McGuire
Name: John J. McGuire
Title: Senior Vice President

[Signature Page to Amendment No. 3]

CITIZENS BANK NATIONAL ASSOCIATION, as a Lender

By: /s/ Erin Kane______________________________________
Name: Erin Kane
Title: Workout Officer

[Signature Page to Amendment No. 3]

BMO HARRIS BANK, N.A., as a Lender

By: /s/ Douglas Steen
Name: Douglas Steen
Title: Director

[Signature Page to Amendment No. 3]

U.S. BANK NATIONAL ASSOCIATION, as a Lender

By: /s/ Jeffrey S. Johnson
Name: Jeffrey S. Johnson
Title: Senior Vice President

[Signature Page to Amendment No. 3]

THE HUNTINGTON NATIONAL BANK, as a Lender

By: /s/ Cameron Hinojosa
Name: Cameron Hinojosa
Title: Vice President

[Signature Page to Amendment No. 3]

HSBC BANK USA, N.A., as a Lender

By: /s/ Shaun R. Kleinman
Name: Shaun R. Kleinman
Title: Senior Vice President

[Signature Page to Amendment No. 3]

KEYBANK NATIONAL ASSOCIATION, as a Lender

By: /s/ David Mannarino
Name: David Mannarino
Title: Michigan Market President

[Signature Page to Amendment No. 3]

NORTHWEST BANK, as a Lender

By: /s/ Stephen J. Orban____________________________________
Name: Stephen J. Orban
Title: Senior Vice President

[Signature Page to Amendment No. 3]

Annex I

SCHEDULE 1.1(A)

PRICING GRID--

VARIABLE PRICING AND FEES BASED ON LEVERAGE RATIO

Level	Leverage Ratio	Facility Fee	Letter of Credit Fee	Revolving Credit Base Rate Spread	Revolving Credit LIBOR Rate Spread
I	Less than 1.25 to 1.00	0.25%	1.25%	0.25%	1.25%
II	Greater than or equal to 1.25 to 1.00 but less than 2.00 to 1.00	0.30%	1.45%	0.45%	1.45%
II	Greater than or equal to 2.00 to 1.00 but less than 2.75 to 1.00	0.30%	1.70%	0.70%	1.70%
IV	Greater than or equal to 2.75 to 1.00 but less than 3.50 to 1.00	0.35%	1.90%	0.90%	1.90%
V	Greater than or equal to 3.50 to 1.00	0.40%	2.35%	1.35%	2.35%

For purposes of determining the Applicable Margin, the Applicable Facility Fee Rate and the Applicable Letter of Credit Fee Rate:

(a) The Applicable Margin, the Applicable Facility Fee Rate and the Applicable Letter of Credit Fee Rate shall be determined on the Third Amendment Effective Date based on the rates in Level V.

(b) The Applicable Margin, the Applicable Facility Fee Rate and the Applicable Letter of Credit Fee Rate shall be recomputed as of the end of each fiscal quarter ending after the Third Amendment Effective Date based on the Leverage Ratio as of such quarter end. Any increase or decrease in the Applicable Margin, the Applicable Facility Fee Rate or the Applicable Letter of Credit Fee Rate computed as of a quarter end shall be effective on the date on which the Compliance Certificate evidencing such computation is due to be delivered under Section 8.3.3 [Certificate of Parent]. If a Compliance Certificate is not delivered when due in accordance with such Section 8.3.3 [Certificate of Parent], then the rates in Level V shall apply as of the first Business Day after the date on which such Compliance Certificate was required to have been delivered and shall remain in effect until the date on which such Compliance

Certificate is delivered; and the rates in Level V shall apply upon and during the continuance of any other Event of Default.

(c) If, as a result of any restatement of or other adjustment to the financial statements of the Parent or for any other reason, the Borrowers or the Lenders determine that (i) the Leverage Ratio as calculated by the Borrowers as of any applicable date was inaccurate and (ii) a proper calculation of the Leverage Ratio would have resulted in higher pricing for such period, the Borrowers shall immediately and retroactively be obligated to pay to the Administrative Agent for the account of the applicable Lenders, promptly on demand by the Administrative Agent (or, after the occurrence of an actual or deemed entry of an order for relief with respect to the Borrowers under the Bankruptcy Code of the United States, automatically and without further action by the Administrative Agent, any Lender or the Issuing Lender), an amount equal to the excess of the amount of interest and fees that should have been paid for such period over the amount of interest and fees actually paid for such period. This paragraph shall not limit the rights of the Administrative Agent, any Lender or the Issuing Lender, as the case may be, under Section 2.9 [Letter of Credit Subfacility] or Section 4.3 [Interest After Default] or Section 9 [Default]. The Borrowers' obligations under this paragraph shall survive the termination of the Commitments and the repayment of all other Obligations hereunder.

Annex II

SCHEDULE 1.1(B)

COMMITMENTS OF LENDERS AND ADDRESSES FOR NOTICES

Part 1 - Commitments of Lenders and Addresses for Notices to Lenders

Lender	**Amount of Commitment for Revolving Credit Loans**	**Ratable Share**
Name: PNC Bank, National Association Address: 1900 East Ninth Street Cleveland, Ohio 44114 Attention: Lisa Baier Telephone: (412) 768-5447 Telecopy: (412) 705-2400	$60,000,000	20.00%
Name: Citibank, N.A. Address: 227 West Monroe Street 24th Floor Chicago, IL 60606 Attention: Michael Saurer Telephone: (312) 627-3488	$52,500,000	17.50%
Name: Citizens Bank, National Association Address: 71 S. Wacker Drive Chicago, IL 60606 Attention: Lisa Garling, Corporate Banking Portfolio Manager Telephone: (312) 777-3610 Telecopy: (312) 777-4003	$39,000,000	13.00%
Name: BMO Harris Bank, N.A. Address: 135 N. Pennsylvania St., 9th Floor Indianapolis, IN 46204 Attention: Betsy Phillips, VP Commercial Banking Telephone: (317) 269-1291 Telecopy: (317) 269-2169	$39,000,000	13.00%
Name: U.S. Bank National Association Address: 425 Walnut Street	$39,000,000	13.00%

Cincinnati, OH 45202 Attention: Michael Temnick Telephone: (513) 623-4133 Telecopy: (513) 632-4894		
Name: The Huntington National Bank Address: Two Towne Square SOU607 Southfield, MI 48076 Attention: Steven J. McCormack, Managing Director Telephone: (248) 637-8234 Telecopy: (877) 274-8593	$24,000,000	8.00%
Name: HSBC Bank USA, N.A. Address: 95 Washington St. Floor 1 SW Buffalo, NY 14203 Attention: Meghan Quinn Telephone: (716) 841-5182	$24,000,000	8.00%
Name: KeyBank National Association Address: 400 Town Center Suite 1260 Southfield, MI 48075 Attention: Brandon Welling Telephone: (248) 204-6548	$11,250,000	3.75%
Name: Northwest Bank Address: 535 Smithfield St., Suite 501 Pittsburgh, PA 15222 Attention: C. Forrest Tefft, Senior Vice President Telephone: (412) 325-6216 ext. 3 Telecopy: (412) 325-6250	$11,250,000	3.75%
Total:	**$300,000,000**	**100%**

EXHIBIT 21.1

PRINCIPAL SUBSIDIARIES

Name of Subsidiary	Jurisdiction in Which Organized or Incorporated
Consolidated Subsidiaries of Stoneridge, Inc.:	
Exploitatiemaatschappij Berghaaf B.V.	Netherlands
Orlaco GmbH	Germany
Orlaco Inc.	Delaware
Orlaco Products B.V.	Netherlands
PST Eletronica Ltda.	Brazil
PST Teleatendimento Ltda.	Brazil
Positron Rastreadores Argentina S.A.	Brazil
SRI CS LLC	Michigan
SRI Delaware Holdings LLC	Delaware
SRI Holdings US LLC	Delaware
Stoneridge Aftermarket GmbH	Germany
Stoneridge Aftermarket, Inc.	Ohio
Stoneridge Asia Holdings Ltd.	Mauritius
Stoneridge Asia Pacific Electronics (Suzhou) Co. Limited	China
Stoneridge B.V.	Netherlands
Stoneridge Control Devices, Inc.	Massachusetts
Stoneridge do Brasil Participacoes Ltda.	Brazil
Stoneridge Electronics AB	Sweden
Stoneridge Electronics AS	Estonia
Stoneridge Electronics, Inc.	Texas
Stoneridge Electronics Limited	Scotland, United Kingdom
Stoneridge Electronics S.r.l.	Italy
Stoneridge GmbH	Germany
Stoneridge Nordic AB	Sweden
TED de Mexico S. de R.L. de C.V.	Mexico
TED de Mexico Servicios S. de R.L. de C.V.	Mexico

EXHIBIT 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the following Registration Statements:

Registration	Description of Registration Statement
333-240206	Form S-8 – Stoneridge, Inc. 2016 Long-Term Incentive Plan, As Amended
333-190395	Form S-8 – Stoneridge, Inc. Amended and Restated Long-Term Incentive Plan, as Amended, and Stoneridge, Inc. Amended Directors’ Restricted Shares Plan,
333-172002	Form S-8 – Stoneridge, Inc. Amended and Restated Long-Term Incentive Plan, as Amended, and Stoneridge, Inc. Amended Directors’ Restricted Shares Plan,
333-149436	Form S-8 – Stoneridge, Inc. Amended and Restated Long-Term Incentive Plan,
333-127017	Form S-8 – Stoneridge, Inc. Directors’ Restricted Shares Plan,
333-219648	Form S-8 – Stoneridge, Inc. Deferred Compensation Plan,
333-212867	Form S-8 – Stoneridge, Inc. 2016 Long-Term Incentive Plan, and
333-226505	Form S-8 – Stoneridge, Inc. 2018 Amended and Restated Directors’ Restricted Shares Plan;

of our reports dated February 28, 2022, with respect to the consolidated financial statements and financial statement schedule of Stoneridge, Inc. and subsidiaries and the effectiveness of internal control over financial reporting of Stoneridge, Inc. and subsidiaries included in this Annual Report (Form 10-K) of Stoneridge, Inc. for the year ended December 31, 2021.

/s/ Ernst & Young LLP

Detroit, Michigan
February 28, 2022

EXHIBIT 31.1

CHIEF EXECUTIVE OFFICER CERTIFICATION PURSUANT TO SECTION 302 OF THE SARBANES–OXLEY ACT OF 2002

I, Jonathan B. DeGaynor, certify that:

(1) I have reviewed this Annual Report on Form 10-K of the Company;

(2) Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

(3) Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the Company as of, and for, the periods presented in this report;

(4) The Company’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a – 15(f) and 15d – 15(f)) for the Company and we have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the Company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the Company’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation;

(d) Disclosed in this report any change in the Company’s internal control over financial reporting that occurred during the Company’s most recent quarter that has materially affected, or is reasonably likely to materially affect, the Company’s internal control over financial reporting;

(5) The Company’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the Company’s auditors and the audit committee of the Company’s board of directors:

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the Company’s ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the Company’s internal control over financial reporting.

/s/ JONATHAN B. DEGAYNOR
Jonathan B. DeGaynor, President and Chief Executive Officer
February 28, 2022

EXHIBIT 31.2

CHIEF FINANCIAL OFFICER CERTIFICATION PURSUANT TO SECTION 302 OF THE SARBANES–OXLEY ACT OF 2002

I, Matthew R. Horvath, certify that:

(1) I have reviewed this Annual Report on Form 10-K of the Company;

(2) Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

(3) Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the Company as of, and for, the periods presented in this report;

(4) The Company's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a – 15(f) and 15d – 15(f)) for the Company and we have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the Company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the Company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation;

(d) Disclosed in this report any change in the Company's internal control over financial reporting that occurred during the Company's most recent quarter that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting;

(5) The Company's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the Company's auditors and the audit committee of the Company's board of directors:

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the Company's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the Company's internal control over financial reporting.

/s/ MATTHEW R. HORVATH
Matthew R. Horvath
Chief Financial Officer and Treasurer
February 28, 2022

EXHIBIT 32.1

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Jonathan B. DeGaynor, President and Chief Executive Officer, of Stoneridge, Inc. (the “Company”), certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) the Annual Report on Form 10-K of the Company for the year ended December 31, 2021 (the “Report”) which this certification accompanies fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a) or 78o(d)); and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ JONATHAN B. DEGAYNOR
Jonathan B. DeGaynor, President and Chief Executive Officer
February 28, 2022

A signed original of this written statement required by Section 906 of the Sarbanes-Oxley Act of 2002 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

EXHIBIT 32.2

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Matthew R. Horvath, Chief Financial Officer and Treasurer, of Stoneridge, Inc. (the "Company"), certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) the Annual Report on Form 10-K of the Company for the year ended December 31, 2021 (the "Report") which this certification accompanies fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a) or 78o(d)); and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ MATTHEW R. HORVATH
Matthew R. Horvath
Chief Financial Officer and Treasurer
February 28, 2022

A signed original of this written statement required by Section 906 of the Sarbanes-Oxley Act of 2002 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.