

BENCHMARK ELECTRONICS INC  
Form 10-K  
February 29, 2016

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

**FORM 10-K**

(Mark One)

<input checked="" type="checkbox"/>	<b>Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934</b>
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For the fiscal year ended December 31, 2015

or

<input type="checkbox"/>	<b>Transition Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934</b>
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For the transition period from		to	
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Commission File Number 1-10560

**BENCHMARK ELECTRONICS, INC.**

(Exact name of registrant as specified in its charter)

<b>Texas</b>	<b>74-2211011</b>
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification Number)

**3000 Technology Drive**  
**Angleton, Texas 77515**  
**(979) 849-6550**

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(Address, including zip code, and telephone number, including area code, of principal executive offices)

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

Title of each class	Name of each exchange on which registered
Common Stock, par value \$0.10 per share	New York Stock Exchange, Inc.

**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 and posted on its corporate website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter periods that the registrant was required to submit and post such files).

Yes  No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

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

Large accelerated filer <input checked="" type="checkbox"/>	Accelerated filer <input type="checkbox"/>	Non-accelerated filer <input type="checkbox"/>	Smaller Reporting Company <input type="checkbox"/>
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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, 2015, the number of outstanding Common Shares was 51,730,365. As of such date, the aggregate market value of the Common Shares held by non-affiliates, based on the closing price of the Common Shares on the New York Stock Exchange on such date, was approximately \$1.1 billion.

As of February 25, 2016, there were 49,819,231 Common Shares of Benchmark Electronics, Inc., par value \$0.10 per share, outstanding.

**Documents Incorporated by Reference:**

Portions of the Company's Proxy Statement for the 2016 Annual Meeting of Shareholders (Part III, Items 10-14).

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## PART I

### Item 1. *Business.*

*This annual report (the Report) contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended and Section 21E of the Securities Exchange Act of 1934, as amended. These forward-looking statements are identified as any statement that does not relate strictly to historical or current facts and includes words such as “anticipate,” “believe,” “intend,” “plan,” “projection,” “forecast,” “strategy,” “position,” “continue,” “estimate,” “expect,” “may,” “will,” or the negative or other variations thereof. In particular, statements, whether express or implied, concerning future operating results or the ability to generate sales, income or cash flow are forward-looking statements. Undue reliance should not be placed on any forward-looking statements. Forward-looking statements are not guarantees of performance. They involve risks, uncertainties and assumptions that are beyond our ability to control or predict, including those discussed under Item 1A of this Report. Should one or more of these risks or uncertainties materialize, or should underlying assumptions prove incorrect, actual outcomes, including the future results of our operations, may vary materially from those indicated.*

*The Company’s fiscal year ends on December 31. Consequently, references to 2015 relate to the calendar year ended December 31, 2015; references to 2014 relate to the year ended December 31, 2014, etc.*

### **General**

Benchmark Electronics, Inc. (Benchmark), a Texas corporation, began operations in 1979 and has become a worldwide provider of integrated manufacturing, design and engineering services and product life cycle solutions. In this Report, references to Benchmark, the Company or use of the words “we”, “our” and “us” include the subsidiaries of Benchmark unless otherwise noted.

We provide our services to original equipment manufacturers (OEMs) of industrial equipment (including equipment for the aerospace and defense industries), telecommunication equipment, computers and related products for business enterprises, medical devices, and testing and instrumentation products. A substantial portion of our services are commonly referred to as electronics manufacturing services (EMS).

We offer comprehensive and integrated design and manufacturing services and solutions—from initial product concept to volume production including direct order fulfillment and post-deployment services. Our operations comprise three principal areas:

- *Manufacturing and assembly operations*, which include printed circuit board assemblies (PCBAs) and subsystem assembly, box build and systems integration. Systems integration is often building a finished assembly that includes PCBAs, complex subsystem assemblies, mechatronics, displays, optics, and other components. These final products may be configured to order and delivered directly to the end customer across all the industries we serve.
- *Precision technology manufacturing*, which complements our electronic manufacturing expertise by providing further vertical integration of critical mechanical components. These capabilities include precision machining, advanced metal joining, assembly and functional testing primarily for customers in the medical, aerospace, and test & instrumentation markets (which include semiconductor capital equipment).
- *Specialized engineering services and solutions*, which includes product design for electronic systems, sub-systems, and components, printed circuit board layout, prototyping, automation and test development. We provide these services across all the industries we serve, but lead with engineering to manufacturing solutions primarily in regulated industries such as medical, complex industrials, aerospace and defense.

Our core strength lies in our ability to provide concept-to-production solutions in support of our customers. Our global manufacturing presence increases our ability to respond to our customers' needs by providing accelerated time-to-market and time-to-volume production of high-quality products – especially for complex products with lower volume and higher mix in regulated markets. These capabilities enable us to build strong strategic relationships with our customers and to become an integral part of their operations.

Our customers often face challenges in designing supply chains, planning demand, procuring materials and managing their inventories efficiently due to fluctuations in their customer demand, product design changes, short product life cycles and component price fluctuations. We employ enterprise resource planning (ERP) systems and lean manufacturing principles to manage the procurement and manufacturing processes in an efficient and cost-effective manner so that, where possible, components arrive on a just-in-time, as-and-when-needed basis. We are a significant purchaser of electronic components and other raw materials and can capitalize on the economies of scale associated with our relationships with suppliers to negotiate price discounts, obtain components and other raw materials that are in short supply, and return excess components. Our agility and expertise in supply chain management and our relationships with suppliers across the supply chain enable us to help reduce our customers' cost of goods sold and inventory exposure.

Our global operations include manufacturing facilities in seven countries. Benchmark's worldwide manufacturing facilities include 1.4 million square feet in our domestic facilities in Alabama, Arizona, California, Minnesota, New Hampshire and Texas; and 2.3 million square feet in our international facilities in China, Malaysia, Mexico, the Netherlands, Romania and Thailand.

We have enhanced our capabilities through acquisitions and through internal expansion:

- In November 2015, we acquired Secure Communication Systems, Inc. and its subsidiaries (collectively, Secure Technology or Secure) (the Secure Acquisition), a leading provider of customized high-performance electronics, sub-systems, and component solutions for mission critical applications in highly regulated industrial, aerospace and defense markets.
- In October 2013, we acquired the full-service EMS segment of CTS Corporation (the CTS Acquisition). The CTS Acquisition expanded our portfolio of customers in non-traditional and highly regulated markets and strengthened the depth and scope of our new product express capabilities on the West Coast.
- In June 2013, we acquired Suntron Corporation (the Suntron Acquisition) to better serve customers in the aerospace and defense industries.
- In 2011, we acquired facilities and other assets to expand our precision technology capabilities in Penang, Malaysia. This expansion added sheet metal and frames fabrication services and advanced metal joining and grinding services, along with complex mechanical assembly and machining services to our Asia service offerings to complement our full service offerings in the Americas.



We believe our primary competitive advantages are our product design, manufacturing, engineering, testing and supply chain management capabilities provided by a highly skilled team of personnel. We continue to invest in our business to expand our skills and service offerings from direct customer inputs. We have a closed-loop feedback system in place to respond to customer ideas to enhance our future flexible design and manufacturing solutions in support of the full life cycle of their products. These solutions provide accelerated time-to-market, time-to-volume production, and reduced production costs. Working closely with our customers and responding promptly to their needs, we become an integral part of their go-to market planning.

In addition, we believe that a strong focus on human capital through the talent we hire and retain is critical to maintaining our competitiveness. Through our employee survey process, we solicit and act upon feedback to improve our Company and better support our customers in the future. We have taken steps aimed at attracting the best leaders and are accelerating efforts to mentor and develop key leaders for the future.

**Our Industry**

Outsourcing enables OEMs to concentrate on their core strengths, such as research and development, branding, and marketing and sales. In an outsourcing model, OEMs also benefit from improved efficiencies and reduced production costs, reduced fixed capital investment requirements, improved inventory management, and access to global manufacturing. OEMs continue to turn to outsourcing for these manufacturing benefits in addition to reducing time-to-market and time-to-volume production through utilization of their EMS providers' product design and engineering services benefits.

Beginning in the 1990s, the EMS industry changed rapidly as an increasing number of OEMs outsourced their manufacturing requirements. In recent years, the number of industries served by EMS providers and their market penetration in certain industries increased, and we believe further growth opportunities exist for EMS providers to penetrate the worldwide manufacturing markets. In 2008, the industry's revenue declined as a result of significant cutbacks in customers' production requirements, consistent with overall global economic downturns. Beginning in 2015, the industry has again experienced revenue declines as customers in certain sectors have reduced their production requirements due to global economic uncertainty; however, OEMs have continued to seek the benefits of a product design and outsourced model. While not all industries we serve are experiencing outsourcing growth rates, we believe that under-penetrated outsourcing markets such as medical, industrials (including aerospace and defense), and test & instrumentation will continue to increase outsourcing in the future.

## **Our Strategy**

Our goal is to be the solutions provider of choice to leading OEMs that we perceive offer the greatest potential for profitable growth. To meet this goal, we have implemented the following strategies:

- *Focus on More Complex Products for Customers in Higher-Value Markets.* EMS providers serve a wide range of OEMs in different industries, such as consumer electronics, internet-focused businesses and information technology equipment. The product scope ranges from easy-to-assemble, low-cost, high-volume products targeted for the consumer market to complicated, state-of-the-art, mission-critical products. Higher volume manufacturing customers in the more traditional markets of computing and telecommunications often compete on price with short product life cycles and require less value-add from EMS providers. Lower-volume manufacturing customers in the medical, industrial, and test & instrumentation markets are often in highly regulated industries where they are increasingly outsourcing higher value-added services to their EMS providers to meet stringent regulatory and time-to-market requirements. We choose to focus on customers in the traditional markets with more complex requirements and in the higher-value markets where outsourcing growth rates are increasing, product life cycles are longer, and there is a strong match between our capabilities and the needs of these customers. The ability to serve customers in both markets is important to our strategy.
- *Leverage Advanced Technology and Lead with Engineering Solutions.* In addition to strengths in manufacturing complex high-density PCBAs, complex mechanical systems, and full systems integration, we offer customers specialized and tailored advanced design solutions. We provide this engineering expertise through our design

capabilities in our design centers in the Americas, Europe and Asia. Leading with engineering is important in our strategy to increase sales to customers in our targeted higher-value markets. Through leveraging our advanced technology and engineering solutions, customers can focus on core branding and marketing initiatives while we focus on bringing their products to market efficiently and timely.

- *Maintain and Develop Close, Long-Term Relationships with Customers.* Our strategy is to establish long-term relationships with leading OEMs in expanding industries by becoming an integral part of their concept-to-production and full product life cycle requirements. To accomplish this, we rely on our global and local management teams to respond with speed and flexibility to frequently changing customer design

specifications and production requirements. We focus on caring for our customers and insuring that their needs are met and exceeded.

- *Deliver Complete High- and Low-Volume Manufacturing Solutions Globally.* OEMs increasingly require a wide range of specialized design engineering and manufacturing services from EMS providers in order to reduce costs and accelerate their time-to-market and time-to-volume production. Building on our integrated engineering and manufacturing capabilities, we offer services from initial product design and test to final product assembly and distribution to OEM customers. Our precision machining and complex mechanical manufacturing, along with our systems integration assembly and direct order fulfillment services allow our customers to reduce product cost and risk of product obsolescence by reducing their total work-in-process and finished goods inventory. These services are available at many of our manufacturing locations. We continue to expand our global capabilities:

- in 2009, we added precision machining assets and capabilities to provide precision machining, metal joining and complex electromechanical manufacturing services in Arizona, California and Mexico;

- in 2011, we expanded our precision technologies capabilities in Penang, Malaysia. This expansion added sheet metal and frames fabrication services, advanced metal joining and grinding services, along with complex mechanical assembly and machining services to our Asia service offerings;

- in 2013, we strengthened our capabilities to better serve the aerospace and defense industries and added depth and scope to our new product express capabilities on the West Coast; and

- in 2015, we acquired Secure Technology, which designs and produces encrypted and ruggedized communication systems, avionics displays and military-grade components.

These full service capabilities allow us to offer customers the flexibility to move quickly from design and initial product introduction to production and distribution. We offer our customers the opportunity to combine the benefits of low-cost manufacturing (for the portions of their products or systems that can benefit from the use of these geographic areas) with the benefits and capabilities of our higher complexity support in Asia, Europe and the Americas.

- *Continue to Seek Cost Savings and Operational Excellence.* We seek to optimize all of our facilities to provide cost-efficient services for our customers. We have a global culture of continuous improvement, sharing best practices and implementing lean principles. We try to optimize the efficiencies of our operations in order to provide efficient solutions to our customers.

- *Pursue Strategic Acquisitions.* Our capabilities have continued to grow through acquisitions and we will continue to selectively seek acquisition opportunities. In addition to expanding our global footprint, our acquisitions have enhanced our business in the following ways:

- enhanced customer growth opportunities;
- developed strategic relationships;
- broadened service and solution offerings;
- provided vertical solutions;
- diversified into new market sectors; and
- added experienced management teams.

We believe that growth by selective acquisitions is critical for achieving the scale, flexibility and breadth of customer services required to remain competitive.

**Services We Provide**





We offer a wide range of design, engineering, automation, test, manufacturing and fulfillment solutions that support our customers' products from initial concept and design through prototyping, design validation, testing, ramp-to-volume production, worldwide distribution and aftermarket support. We support all of our service offerings with supply chain management systems, superior quality program management and sophisticated information technology systems. Our comprehensive service offerings enable us to provide a complete solution for our customers' outsourcing requirements. All of our services are supported through a strong quality management system designed to globally provide the process discipline to reliably deliver high quality services, solutions and products to our customers.

### ***Engineering Solutions***

Our approach is to coordinate and integrate our concept, design, prototype and other engineering capabilities in support of our customers' go-to-market and product life cycle requirements. These services strengthen our relationships with our manufacturing customers and attract new customers requiring specialized design and engineering services.

- *New Product Design, Prototype, Testing and Related Engineering.* We offer a full spectrum of new product design, automation, test development, prototype and related engineering for projects contracted by our customers who pay for and own the resulting designs in our contract design services business. We employ a proven 7-step process for concept-to-production in our design services model that enables a shorter product development cycle and gives our customers a competitive advantage in time-to-market and time-to-profit. Our multi-disciplined engineering teams provide expertise in a number of core competencies critical to serving OEMs in our target markets, including award-winning industrial design, mechanical and electrical hardware, firmware, software and systems integration and support. We create specifications, designs and quick-turn prototypes, and validate and ramp our customers' products into high-volume manufacturing.
- *Solution Development, Concept and Design.* We also provide our customers a range of solutions designed to their specifications where the customers elect not to own the IP or know-how associated with an integrated hardware solution. These solutions are currently focused on the defense and transportation industries. Often, these solutions begin in our advanced technology organization where we invest in new technologies required to solve problems presented by our customers. We take these solutions from concept through our engineering design and into volume production to fulfill production orders from customers. We have the ability to take existing products and catalog them as building blocks for future designs. Since we retain the solution and own the associated intellectual property, we also have the ability to take an existing solution and create a purpose-optimized version to meet the requirements of additional customers.
- *Custom Testing and Automation Equipment Design and Build.* We provide our customers a comprehensive range of custom automated test equipment, functional test equipment, process automation and replication solutions. We have expertise in tooling, testers, equipment control, systems planning, automation, floor control, systems integration, replication and programming. Our custom functional test equipment, process automation and replication solutions are available to our customers as part of our full-service product design and manufacturing solutions package or on a stand-alone basis for products designed and manufactured elsewhere. We also provide custom test equipment and automation system solutions to OEMs, which pay for and own the designs. Our ability to provide these

solutions allows us to capitalize on OEMs' increasing needs for custom manufacturing solutions and provides an additional opportunity for us to introduce these customers to our comprehensive engineering and manufacturing services.

### ***Manufacturing and Fulfillment Solutions***

As OEMs seek to provide greater functionality in smaller products, they increasingly require sophisticated manufacturing technologies and processes. Our investment in advanced manufacturing equipment and process development, as well as our experience in innovative packaging and interconnect technologies, enable us to offer a variety of advanced manufacturing solutions. These packaging and interconnect technologies include:

- *Printed Circuit Board Assembly & Test.* We offer a wide range of complex, printed circuit board assembly and test solutions, including printed circuit board assembly, assembly of subsystems, circuitry and functionality testing of printed assemblies, environmental and stress testing and component reliability testing.
- *Flex Circuit Assembly & Test.* We provide our customers a wide range of flex circuit assembly and test solutions. We use specialized tooling strategies and advanced automation procedures to minimize circuit handling and ensure that consistent processing parameters are maintained throughout the assembly process.
- *Systems Assembly & Test.* We work with our customers to develop product-specific test strategies. Our test capabilities include manufacturing defect analysis, in-circuit tests to check the circuitry of the board and functional tests to confirm that the board or assembly operates in accordance with its final design and manufacturing specifications. We either custom design test equipment and software ourselves or use test equipment and software provided by our customers. We also offer our own internally designed functional test solutions for cost effective and flexible test solutions, and provide environmental stress tests of assemblies of boards or systems
- *Failure Analysis.* We offer an array of analytical solutions and expertise to challenging issues faced by our customers. This includes focused techniques for failure mode, failure mechanism, and root cause determination. Specialized analytical skill sets associated with electrical, mechanical, and metallurgical disciplines are used in conjunction with a vast array of equipment such as ion chromatography, x-ray fluorescence, and scanning electron microscopy. Our state-of-the-art lab facilities provide customers with detailed reporting and support in an unbiased, timely and cost-effective manner. Mastering emerging technologies coupled with a complete understanding of potential failure mechanisms positions us to exceed customer expectations and maintain our technological diversity.
- *Direct Order Fulfillment.* We provide direct order fulfillment for some of our OEM customers. Direct order fulfillment involves receiving customer orders, configuring products to quickly fill the orders and delivering the products either to the OEM, a distribution channel or directly to the end customer. We manage our direct order fulfillment processes using a core set of common systems and processes that receive order information from the customer and provide comprehensive supply chain management, including procurement and production planning. These systems and processes enable us to process orders for multiple system configurations and varying production quantities, including single units. Our direct order fulfillment services include build-to-order (BTO) and configure-to-order (CTO) capabilities. BTO involves building a complete system in real-time to a highly customized configuration ordered by the OEM's end customer. CTO involves configuring systems to an end customer's

specifications at the time the product is ordered. The end customer typically places this order by choosing from a variety of possible system configurations and options. We are capable of meeting a 2- to 24-hour turnaround time for BTO and CTO. We support our direct order fulfillment services with logistics that include delivery of parts and assemblies to the final assembly site, distribution and shipment of finished systems, and processing of customer returns.

- *Aftermarket Non-Warranty Services.* We provide our customers a range of aftermarket non-warranty services, including repair, replacement, refurbishment, remanufacturing, exchange, systems upgrade and spare part manufacturing throughout a product's life cycle. These services are tracked and supported by specific information technology systems that can be tailored to meet our customers' individual

requirements.

- *Value-Added Support Systems.* We support our engineering, manufacturing, distribution and aftermarket support services with an efficient supply chain management system and a superior quality management program. Our value-added support services are primarily implemented and managed through web-based information technology systems that enable us to collaborate with our customers throughout all stages of the engineering, manufacturing and order-fulfillment processes.
- *Supply Chain Management.* We offer full end-to-end supply chain design, inventory-management and volume-procurement capabilities to provide assurance of supply, optimized cost, and reduce total cycle time. Our materials strategy focuses on leveraging our procurement volume Company-wide while providing local execution for maximum flexibility at the division level. We employ a full complement of electronic data interchange transactions with our suppliers to coordinate forecasts, orders, reschedules, and inventory and component lead times. Our enterprise resource planning systems provide product and production information to our supply chain management, engineering change management and floor control systems. Our information systems include a proprietary module that controls serialization, production and quality data for all of our facilities around the world using state-of-the-art statistical process control techniques for continuous process improvements. To enhance our ability to rapidly respond to changes in our customers' requirements by effectively managing changes in our supply chain, we utilize web-based interfaces and real-time supply chain management software products, which allow for scaling operations to meet customer needs, shifting capacity in response to product demand fluctuations, reducing materials costs and effectively distributing products to our customers or their end-customers.
- *PCBA Manufacturing Technologies.* We offer our customers expertise in a wide variety of traditional and advanced manufacturing technologies. Our technical expertise supports printed circuit board assembly, sub-assembly manufacturing, and finished goods assembly. More advanced systems require complex systems integration and order fulfillment that require advanced engineering skills and equipment to develop and maintain.

We also provide our customers with a comprehensive set of PCBA manufacturing technologies and solutions, which include:

- Advanced Surface Mount;
- Fine Pitch Ball Grid Array and Land Grid Array;
- Package on Package;
- Flip Chip;
- Chip On Board/Wire Bonding;
- Compliant Pin and Pin Through Hole Technology;

- In-Circuit Test;
- Board Level Functional Test; and
- Stress Test.

We also provide specialized solutions in support of our customers' components, products and systems, which include:

- Conformal Coating;
- Ultrasonic Welding;
- Complex Final Assembly;
- Fluidics Assembly;
- Splicing and Connectorization for Optical Applications;
- Hybrid Optical/Electrical Printed Circuit Board Assembly and Testing; and
- Sub-Micron Alignment of Optical Sub-Assemblies.

- *Component Engineering Services.* We help customers deal with evolving international environmental laws and regulations on content, packaging, labeling and similar issues concerning the environmental impact of their products including: “RoHS” (EU Directive 2011/65/EC on Restriction of certain Hazardous Substances); “WEEE” (EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment); “REACH” (EC Regulation No 1907/2006 on Registration, Evaluation and Authorization of Chemicals); EU Member States’ Implementation of the foregoing; and the People’s Republic of China (PRC) Measures for Administration of the Pollution Control of Electronic Information Products of 2006. Manufacturing sites in the Americas, Asia and European regions are certified in both water soluble and no-clean processes and are currently producing products that are compliant with these environmental laws and regulations.

- *Precision Machining Technologies.* We provide precision machining, metal joining and complex electromechanical manufacturing services and use the following precision technologies:

- Complex Small / Medium / Large Computer Numerical Controlled Machining;
- Precision Multi-Axis Grinding of Aerospace Engine Blades, Vanes and Nozzles;
- Precision Grinding of Mass Spectrometer Components;
- Sinker Electrical Discharge Machining;
- Turnkey Precision Clean Room Module Assembly and Functional Test;
- Major Electromechanical Assemblies;
- Advanced Metal Joining; and
- Sheet metal and frame manufacturing.