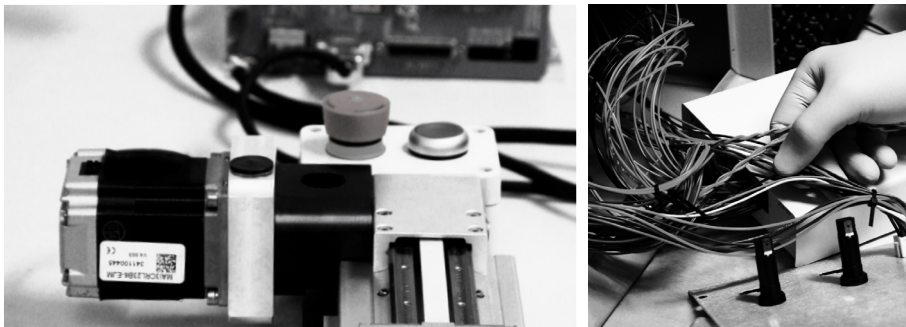




## COMPANY

WRW Engineering (WRW), a WBENC certified Bishop-Wisecarver Group company, helps industry integrate mechanical, electrical, and software engineering for custom mechatronics solutions.

This holistic approach allows our customers to realize higher production efficiencies, faster time to market, and increased revenues.



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**CAGE CODE: 6UBY6**  
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## TOP NAICS CODES SERVED:

- 541711—Research/Development in Biotech
- 325414—Biological Product Manufacturing
- 541712—Research/Development in Physical, Engineering, Life Sciences (except Biotechnology)
- 339112—Surgical/Medical Instrument Manufacturing
- 334519—Other Measuring/Controlling Device Manufacturing
- 339116—Ophthalmic Goods Manufacturing
- 339114—Dental Equipment/Supplies Manufacturing
- 334510—Electromedical/Electrotherapeutic Apparatus Manufacturing
- 334413—Semiconductor/Related Device Manufacturing

## SERVICES & CAPABILITIES

- Engineering solutions and design
- Embedded intelligence systems
- Motion control and automation
- Mechanical, electrical, and software integration
- Design, modeling, and analysis
- Product design and prototyping
- Complete automated and turnkey solutions
- Data acquisition systems
- LabVIEW based programming
- MATLAB modeling and simulation
- FEA—Finite Element Analysis
- GUI (Graphical User Interface) design and development
- Develop detailed user manuals
- Design to UL and CE principles
- Track and monitor deliverables using project management
- Timely and expert technical support (remote, onsite)

## MAJOR CUSTOMERS

- Raytheon Corporation
- California Department of Public Health (CDPH)
- JDS Uniphase Corporation
- Luminex Corporation
- Maxim Integrated





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## TECHNICAL CAPABILITIES

### ENGINEERING SOLUTIONS AND DESIGN

- Mechanical design
  - Motion systems and actuators
  - Vibration isolation systems
  - Mounting systems and support structures
  - Electronics packaging
- Electrical design
  - Data acquisition systems
  - Controllers
  - Amplifiers
  - Transducers (sensors, motors)

### SYSTEM INTEGRATION

- Actuators
  - Motors (DC, AC, linear, piezo, stepper)
  - Pneumatic/hydraulic cylinders
- Sensors
  - Position (linear and rotary encoders, resolvers, interferometers, capacitive, inductive)
  - Acceleration (accelerometers, gyros)
  - Velocity (geophones, tachometers, resolvers)
  - Limit switches (inductive, magnetic, mechanical)
- Electronics
  - Controllers
  - HMI - Human machine interface
  - Amplifiers
  - Signal conditioning
  - Data acquisition modules
  - Power supplies
  - Communication components
  - Switches and indicators
  - Wiring and enclosures
- Software
  - User interface
  - Low level control (controller firmware)
  - High level control (Labview, C)
  - interlocks and safety management
  - Monitoring and diagnosis
  - Password protection
  - Real-time Labview measurement and control software development
  - Supervisory control and data acquisition
  - Real-time image processing (machine vision)

- Integration with customers' systems
  - Inter controller communication
  - Sensor calibration
  - Remote software change and updates
- Integrating mechanical actuators with:
  - Transducers
  - Electronics
  - Software

### MOTION CONTROL

- Control algorithm development (feedback and feedforward)
- Control system analysis
- Multi-axis motion control
- Customizable motion trajectories
- Servo drive controllers
  - Delta Tau
  - ACS
  - Copley
- Microcontrollers
  - National Instruments
  - ARM
  - Xilinx
- Programmable logic controllers
  - Automation Direct
  - Siemens
  - Allen Bradley

### ENGINEERING ANALYSIS AND MODELING

- System characterization
  - Frequency response analysis
  - Identification of system limitations
- FEA Analysis
  - Mechanical and structural
  - Stress analysis
  - Modal analysis
- Matlab simulation
  - Dynamic system modeling
  - Open and closed loop models
  - Signal processing