

CAD CONTROL SYSTEMS

Exclusive Sales & Service Agent

Established in 1983, CAD Control Systems has long been recognized as a leader in the design and manufacture of BOP Control Systems, Diverter Control Systems, High Pressure Testing Systems and Subsea equipment for some of the world's leading drilling contractors. Headquartered in Broussard, Louisiana, CAD has offices located in Houston, Singapore and Dubai (UAE). CAD equipment is utilized by customers throughout North and South America, Europe, the Middle East and Far East. Each piece of CAD Control Systems equipment is designed by our in-house engineering staff and manufactured at our 35,000 square foot production facility.

CAD Control Systems doesn't just stop at manufacturing quality equipment. We back it up with installation and commissioning by qualified technicians worldwide and with comprehensive training accomplished at CAD Control Systems headquarters or at the customer's location. We are proud to have a service department that is available 24/7, 365 days a year. Whatever your controls and equipment needs may be, CAD Control Systems can deliver and exceed your expectations.

CAD Specialises in:

- Accumulator Rack
- BOP Control Systems
- Chart Recorders
- Custom Manufactured Equipment
- Data Acquisition Systems
- Diverter Control Systems
- Fluid Filtration Systems
- Fluid Mixing Systems
- High Pressure Test Systems
- Nitrogen Booster Pump
- Pump Packages
- Remote Operations Panels
- Shear Boost & Dedicated Shear Boost Systems
- Subsea Equipment
- SURE-FIRE Relief Valve System
- Training (On-site or In-house)

CAD Control Systems provides equipment to the world's leading drilling contractors and our global reach extends to over 30 countries world-wide. We also offer manufacturing services for equipment your company has designed. From design to delivery, CAD Control Systems can meet all of your control system needs. CAD Control Systems dedication to quality extends throughout the organization and every facet of operations. Our certifications include:

- PRESAFE PRODUCTION QUALITY ASSURANCE NOTIFICATION
PRODUCTION QUALITY ASSURANCE NOTIFICATION
EQUIPMENT OR PROTECTED SYSTEM INTENDED FOR USE IN POTENTIALLY EXPLOSIVE
ATMOSPHERES DIRECTIVE 94/9/EC
- AMERICAN PETROLEUM INSTITUTE (API) QUALITY REGISTRAR
ISO 9001:2015 - QUALITY MANAGEMENT SYSTEM INTERNATIONAL STANDARD
- AMERICAN PETROLEUM INSTITUTE (API) QUALITY REGISTRAR
- API SPECIFICATION Q1 - QUALITY MANAGEMENT SYSTEM STANDARD
- AMERICAN PETROLEUM INSTITUTE (API)
CERTIFICATE OF AUTHORITY TO USE THE OFFICIAL API MONOGRAM
- UL 508A PANEL SHOP LISTED

Approved systems include:

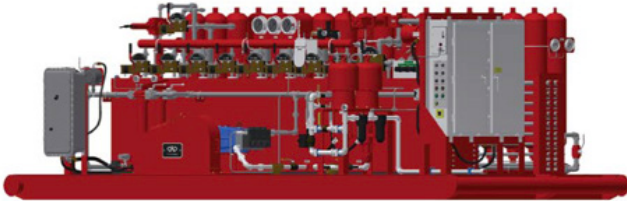
- ▶ API MONOGRAM
- ▶ ABS – CDS
- ▶ CE MARKED WITH ATEX/IECEX

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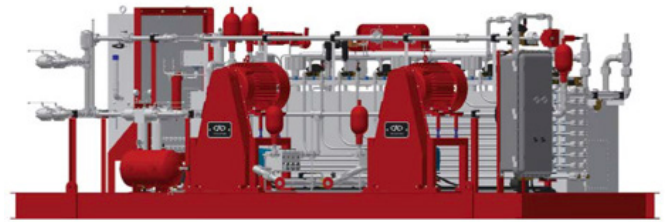
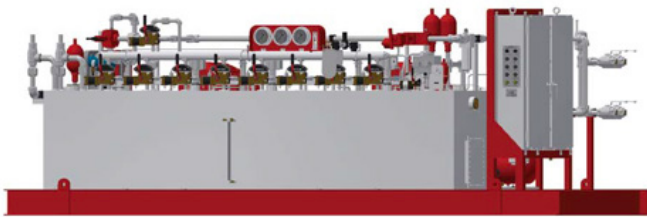
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CONTROL SYSTEMS

CAD's systems are as unique as your business needs. All systems are custom engineered and manufactured according to your exact specifications. Power packages are available in electric and pneumatic. We offer standard electrical auxiliary interfaces for control system remote operation and use the very latest in fiber optic technology to make our world class systems even better. The use of fiber optics has proven to improve communication between systems and auxiliary panels by eliminating the risk caused by electro-magnetic interference. Fiber optic communication lines are durable and have proven to provide more reliable communication than conventional electrical communication lines.



With over 30 years of experience in the design and manufacture of control systems, we have set the industry standard for quality, innovation, and reliability. CAD Control Systems' engineering staff will design a control system to meet your exact specification and operational requirements. Each system is manufactured in accordance with API, ISO, and DNV quality management requirements. We also have approved system design packages including API 16D monogram, ABS CDS, and ATEX/CE marked systems.



Control System Features

- ▶ Land and off shore applications
- ▶ API Monogrammed Systems
- ▶ CE/ATEX systems
- ▶ Custom designed to meet exact requirements
- ▶ Rated for extreme arc-c or desert climates
- ▶ Uninterruptable power supply
- ▶ Integrated or fixed diverter
- ▶ Diesel systems available
- ▶ Pneumatic and/or electric pump systems
- ▶ Class 1, Div 1 hazardous location designs
- ▶ Blind/Shear Rams
- ▶ Shear boost
- ▶ ABS/CDS approved designs
- ▶ Touchscreen remote operations
- ▶ Data-Event logging capabilities
- ▶ 3,000 & 5,000 PSI systems
- ▶ PLC, HMI Touchscreen or Pneumatic Remote Operations

DIVERTOR CONTROL SYSTEMS

CAD's Diverter Control Systems meet the same rigid standards as our control systems. We use the highest quality components available to ensure the safest and most reliable equipment in the industry. Designed as freestanding systems for fixed diverters or as an integral part of the BOP Control System for wellhead-type diverters, diverter control systems can be configured for a variety of remote operation options and can be rated for use in Zone 1 hazardous locations.



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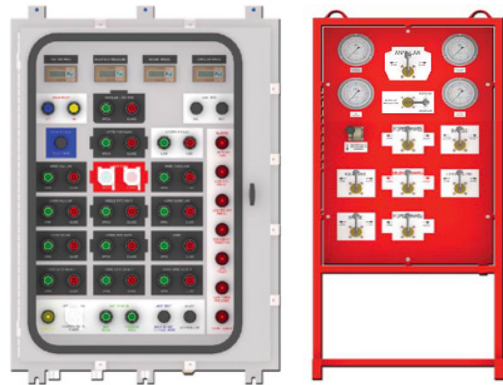
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REMOTE OPERATION PACKAGES

When the situation demands immediate action CAD's line of remote operations panels provide the flexibility and proven reliability to operate your control system, safely, from designated locations. We offer pneumatic operated, PLC based, and HMI touchscreen remote operations panels designed to meet your operating requirements.

Our PLC based remote operations panels provide a clean, user friendly layout that reflects the operators unique stack configuration. They also afford users the same ease of use and two handed operation safety feature as our HMI touchscreen remote panels. Illuminated push button control gives the user visual position indication for each stack function with digital read out pressure meters that provide real time system pressure readings.

PLC based remote operation panels are designed and manufactured in accordance with your operational requirements and specifications and can be rated for use in Class 1 Div 1 or Zone 1 hazardous environments.



ACCUMULATOR BOTTLES AND SYSTEMS

Customized accumulator systems consisting of piston or bladder style accumulators can be provided for numerous different applications. While many of the systems provided by CAD are used for stored energy on BOP Control Systems, both in surface and subsea applications, we can provide bottles and systems to meet many other needs.

Stored Energy - Racks of accumulators can be provided as a source of stored energy for many needs, including back up power sources for power plants and steel mills. These systems can be as small as one quart to actuate a single valve or be built out to supply thousands of gallons of fluid for large industrial systems that require large volumes at high pressure.

Emergency Systems - Accumulators can act as an emergency energy source in case of loss of electricity or pump output so that emergency sequences have an energy source in order to bring the system to a safe condition.

Hydraulic line shock - Properly sized accumulator systems can help eliminate hydraulic line shock caused by fast actuating valves and high flow circuits.

Pump Cavitation - Installed on the outlet of pump system accumulators can significantly reduce pump cavitation and noise.

Pressure holding & Leak compensation - Accumulators provide a steady supply of pressure and can make up for system leakage, ensuring that your systems operate smoothly and reliably.

Thermal expansion - In closed loop hydraulic circuits, accumulators can be utilized to provide protection from thermal expansion.



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PUMP PACKAGES

Electric (Triplex)

The electric motor driven module is the primary source for generating the hydraulic energy which is stored in the accumulators to operate the BOP functions. The pumps are offered in a variety of options to incorporate them into the complete BOP control system. The electric driven pump modules manufactured by CAD are designed for operation in hazardous locations where the presence of explosive gases are anticipated and include electric explosion proof motor starters and pressure switches as required.



Pneumatic

Pneumatic operated pump modules are used to provide high pressure fluid energy to charge the accumulators and operate the BOP stack functions. They are used in conjunction with electric pump modules as an option to provide/meet the requirement for multiple power sources for BOP control systems. Pneumatic pump modules are supplied in various options and configurations to meet specific system requirements.



Nitrogen Booster Pump

CAD manufactures a range of air driven nitrogen boosters capable of providing pressures in excess of 10 KSI. Single and double acting nitrogen pumps are available to meet flow rate requirements. They can be used for pre-charging accumulators or for high pressure testing. The systems can be designed for mobile, fixed and offshore installations.

Features:

- Working Pressures: 100 PSI - 6,000 PSI
- Air driven, reciprocating piston design pump
- 40:1 Compression Ratio
- Typical Gases to be boosted
 - ▶ Air
 - ▶ Nitrogen
 - ▶ Nitrous Oxide
 - ▶ Oxygen
 - ▶ Hydrogen
 - ▶ Carbon Dioxide



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CHART RECORDER

Analog

CAD Control Systems has the toughest, most compact chart recorders in the industry today. They are ideal for use in terra stockers, desiccators or for factory recording conditions simultaneously in several cleanroom locations.

Features:

- Single pen or dual point recording
- Highly reliable and vibration proof
- Removable chart drive modules ensure easy chart paper changes and easy calibration



Digital

CAD provides a convenient, inexpensive solution to pressure monitoring. These fully digital chart recorder offer an array of improvements over the conventional analog circular style chart recorder. It can be mounted to the front panel of the test unit or detached and stored when not in use. There is also a DAQ to monitor Laptop Package for Record Maintenance.

Features:

- Multiple points recording/monitoring of temperature, humidity, cold storage, warehouses, effluent and borehouses
- Highly reliable and vibration proof
- Secure data recording with 64 MB internal flash memory and archiving to SD memory card
- Comprehensive audit trail, secure archiving format and extensive physical and configuration security features, making SM500F ideally suited to applications where compliance to 21CFR part 11 is required
- Extensive physical and electronic security features ensure integrity of recorders configuration and archived data

