Maritime Dynamics marine controls
...custom manifolds and system design.

Problem: Maritime Dynamics needed a compact hydraulic power unit and control valve system that could withstand the rigors of the sea and be easily serviced anywhere in the world.

Solution: Engineered and manufactured custom power unit and valve manifold assembly utilizing space efficient components and corrosion resistant materials.

Result: The compact power unit and manifold assembly weigh less and take up less space, while reducing potential leak points. Maritime Dynamics can troubleshoot the system without having to dispatch a field service technician or use overseas or vendor unnecessary parts.

‘Why’ Advanced Fluid Systems?
While our custom power units and manifolds exceeded Maritime Dynamic's previous designs for power and efficiency in a restricted space, it is the support and assistance that defines our partnership. Hydraulic system review, consultation, and 24/7 technical support are just some of the free services we regularly provide.

‘How’ we did it:
Founded in 1985, Advanced Fluid Systems is a fluid power distributor and systems manufacturer committed to providing quality fluid power products, solutions and services. Built around experienced sales engineers and a culture of employee empowerment, we work closely with each customer to provide the best solution for their application. Our philosophy is simple, “learn the customer’s business; build a relationship and a partnership; and provide them the highest quality solutions, products and services.”

Learn more about us at our web site www.advancedfluidsystems.com or contact us at the phone number listed below for additional information.

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Advanced Fluid Systems’ solution-oriented approach thinks beyond the hydraulic components and assemblies to understand the entire application and how it operates. Fully understanding your application gives us the foundation to design integrated hydraulic, electronic and mechanical solutions that address all of your solution control requirements. Much of our success is attributed to the total commitment we make each project and the partnership we form with each customer. We build these relationships by taking complete responsibility for design and implementation at a fixed price, while providing state-of-the-art engineering and innovative, quality components. Our responsibility to you doesn’t end with an invoice. We provide support anywhere you need us – 24 hours a day, 7 days a week. The following case studies are a few examples of the expertise and commitment we bring to every application, regardless of size or scope. Each case demonstrates a problem identified, solution implemented and a result realized. Ask us how we can help you find your result.

**Problem:**

Shenam he’s drilling controls required low cost solutions to monitor engine power and manually adjust the hydraulic system to monitor and manually adjust the hydraulic system to monitor and maintain system load and drill speed.

**Solution:**

Utilized electro-proportional control and a digital interface to automate the drilling process and allow the operator to monitor and adjust the system to minimize system load and drill speed.

**Result:**

A less expensive field operator can monitor the system with a drill speed time significantly reduced. Operating costs and downtime are reduced by enabling the drill bit to move at the most productive speed possible without damaging the bit. The drill rig cooling fan is automatically and continuously regulated to the minimum speed adequate to maintain the temperatures of the engine, air compressor, and hydraulic system in relation to fuel consumption and noise. An electric motor is used for engine speed, and system status is all visible on the control panel LCD display.

**How we did it:**

- Replaced the manual hydraulic valves with digital multi-axis joysticks and custom Sun electro-proportional control valves, allowing the PLC control while simplifying the hydraulic circuit and reducing piping costs.
- Designed and programmed PLC logic to automatically and continuously monitor and adjust the drill bit speed and force allowing the drill bit to move at the most productive speed possible without damaging the bit.
- Employed Hawe Hydraulic’s valves for their proven ruggedness to maintain system load and provide real-time feedback.

**Why Advanced Fluid Systems?**

Advanced Fluid Systems won’t just provide drilling automation solutions that are cost-effective. We take full responsibility for design and implementation at a fixed price. We took the time to learn how the entire drill rig operated from the ground up, and partnered with Schramm to develop a unique, comprehensive solution.

**American Lafrance aerial platform...programmable valve controls and system integration**

**Problem:**

American Lafrance needed a compact and reliable hydraulic control system to monitor the vehicle's performance and control between its existing CANbus network.

**Solution:**

Employed Hawe Hydraulics’ valves for their proven ruggedness to maintain system load and allow more precise movement. Provided data integration, inventory management and remote diagnostics, reduces production and field service costs.

**Result:**

The ‘intelligent’ controls allow for monitoring various parameters and makes the vehicle more efficient. Data exchange of different protocols and other necessary management reduces production and field service costs.

**How we did it:**

- Utilized Hawe electro-hydraulic and manual proportional control valves for ladder, platform and outrigger controls. After evaluating several valves, including Parker/Apitech, Rexroth, and Herrmann, American Lafrance’s testing team unanimously agreed that the American Lafrance prefered the best.
- Incorporated microprocessor based valve controllers and developed custom software to provide more uniform ladder speed regardless of its position or orientation. A Hawe valve controller monitors the ladder elevation angles and ladder extension length through a series of sensors. When input is received, the Hawe controller and custom software calculates all adjusted control commands, which is then sent to the proportional valve. Some advantages include:
  - Instant, safe ladder control regardless of snow input or ladder position
  - Programmable position limits prevent the ladder from hitting the truck or other hard points
  - Galves reducing in calculated real-time can be monitored on multiple output displays.

Provided data integration, remote diagnostic and inventory management services, by installing J1939 and CANbus protocols. On the existing CANbus network, all hydraulic controls and valve controllers integrate with each other.

**Why Advanced Fluid Systems?**

While American Lafrance explored hydraulic control options from various manufacturers, they chose Advanced Fluid Systems for their experience in providing state-of-the-art systems that simplified their needs and reduced their overall maintenance responsibility to a single supplier. They knew that the advanced fluid platform challenges from wind and heat conditions with a complete hydraulic and electronic control solution at a partner, not a results.