

INNOVATIVE ELECTRO-HYDRAULIC SYSTEMS™



MOBILE HYDRAULIC SOLUTIONS

CHIEF®

SURE GRIP™
CONTROLS INC.

MAXIM®

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ELECTRO-HYDRAULIC SYSTEMS

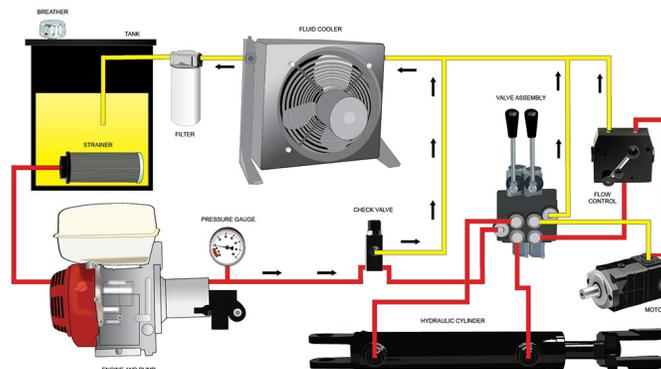
COMPANY OVERVIEW

Bailey is a recognized leader in the mobile hydraulics industry and excels at the manufacturing and distribution of custom and standard components, including cylinders, pumps, motors, valves, and hydraulic power units. All of these key components are essential to completing your hydraulic system.

Bailey has expanded our offering to include hydraulic and electro-hydraulic system design, fabrication, installation and commissioning. Given Bailey's vast history of being your valued supplier of components, we are an excellent choice to help you solve your hydraulic system needs.

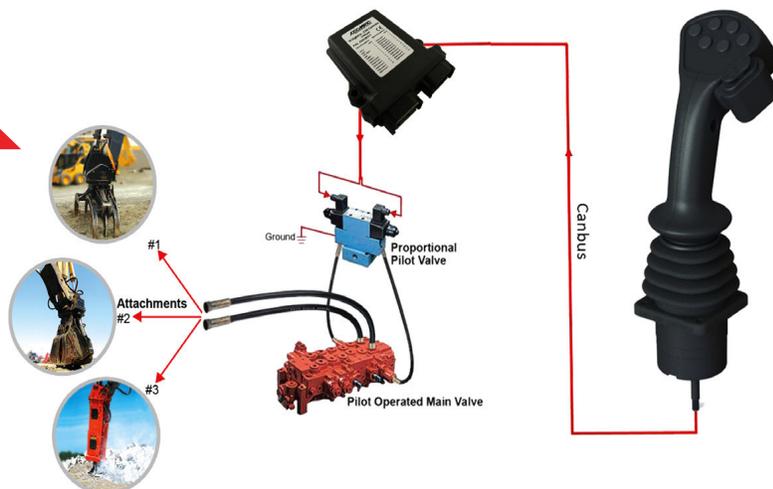
SYSTEM DESIGN

An electro-hydraulic system consists of a prime mover (pump), controls (valves and joysticks), and an end effector (cylinder or hydraulic motor). Bailey's product offering covers all of these elements of a system design. Our engineering design team offers a full range of system design capabilities, from basic manual hydraulic control systems to fully proportional controls with computer control systems. We work closely with you from initial consultation, through conceptual design, system fabrication, testing, installation, and commissioning. We also offer maintenance programs to support your team after installation.



SUB SYSTEMS DESIGN

Bailey's engineering design services can be applied to upgrade an existing system as well. We follow a similar process to a full system design and work closely with you to achieve the results you need.



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CASE STUDIES

Mobile Office Trailer

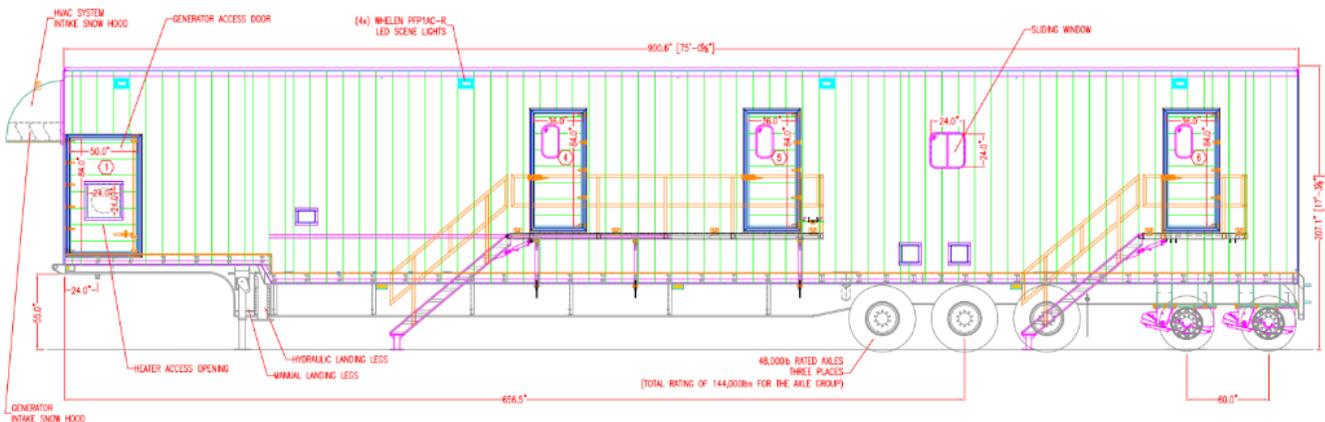
Our customer had a mobile office located in Alaska and wanted to upgrade their system to electrically control two slides and two sets of stairs.



During initial electro-hydraulic system design consultation, system improvements were identified such as flow dividers, warm up circuits, and manual overrides. All of these features added tremendous value for the customer with minimal cost.

The complete system design was a collaboration between Bailey's application engineers and the customer. Using Bailey cylinders, valves and control systems, we designed the electro-hydraulic subsystem to work with their existing power unit (pump).

Bailey supplied components were shipped to the customer who was responsible for installing and commissioning the entire system. During the commissioning, an issue was identified and Bailey's application engineers were able to provide clear instructions over the phone to resolve the issue.



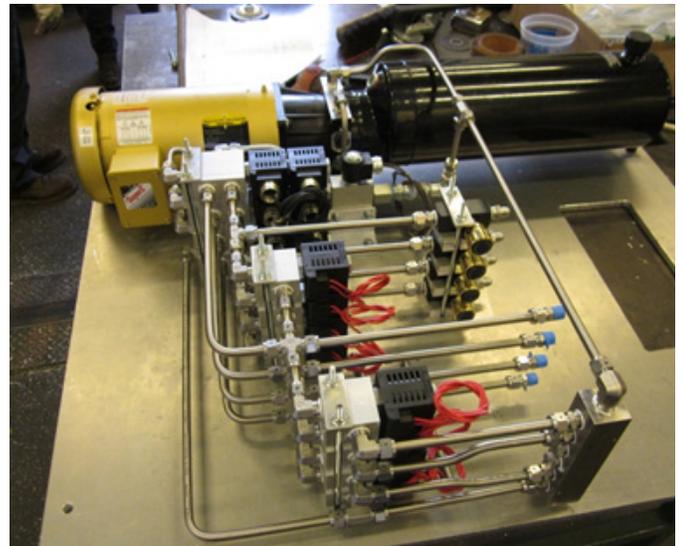
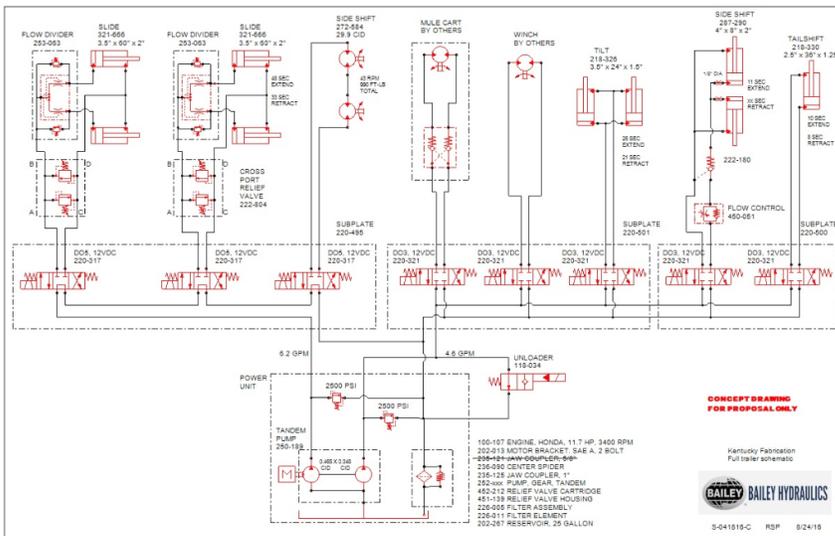
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CASE STUDIES

Customized Flatbed Trailer

This application was a multiple function trailer used to transport lawn buildings. While already using Bailey high-quality cylinders, they began experiencing problems, such as slow cycle times, stalled side shift motors, and leaking pumps.

The customer welcomed design assistance and we were able to identify key areas for improvement to meet system performance. We then finalized the system design and obtained approval from the customer prior to fabrication. The fabrication of the system, installation and commissioning occurred in collaboration with the customer and was a great success. The electro-hydraulic solution provided met the demanding application while exceeding customer's expectations.



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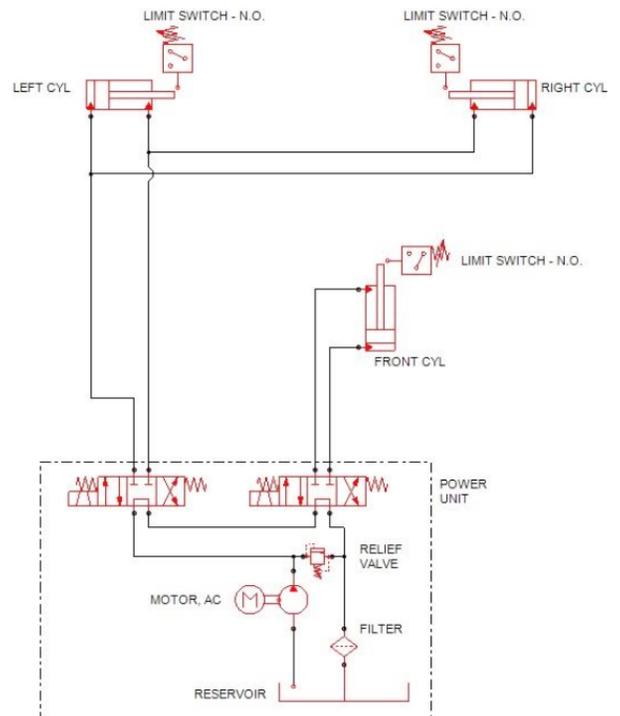
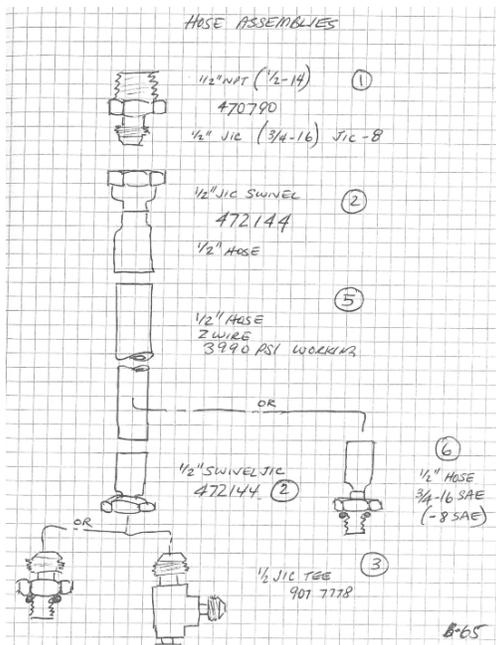
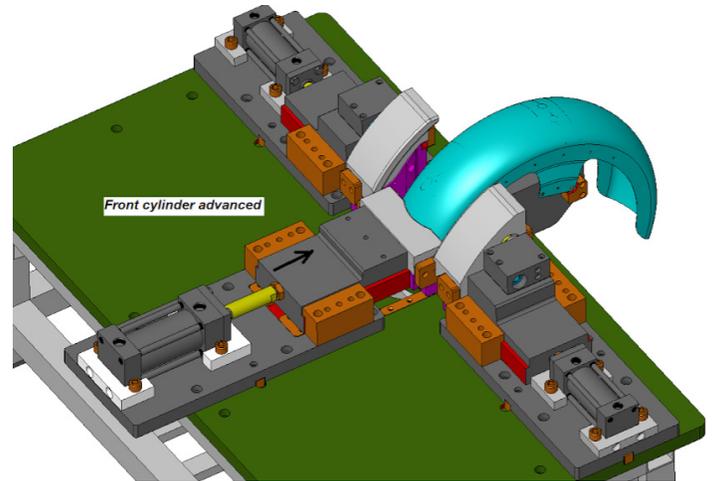
CASE STUDIES

Motorcycle Fender Press

This particular customer manufactured motorcycle fenders using a multiform synchronized press.

The project scope was to provide a complete electro-hydraulics solution to control the multiple functions of the metal press. Consultation with the customer identified the need to automate the hydraulic forming operations. This included system requirements such as side cylinders, sequence front cylinder, prevent collisions, and one button press to complete all sequences.

After successful design, fabrication, and installation, an improvement change was identified during commissioning. Press operators requested a sequence change and a manual selector switch to choose the desired operation. All of these were made the same day by the Bailey system commissioning team.



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CASE STUDIES

U.S. Naval Laboratory's Hydraulic Robot

This customer required an electro-hydraulic system to test and develop a hydraulic robot. The power unit had to be designed for remote operation and monitoring of system variables via the customer's existing PLC interface. The customer also required a wide range of flow rates for their testing purposes but was concerned about heat buildup and system efficiency.

As a solution, Bailey designed and provided a custom hydraulic power unit driven by a variable frequency drive. The power unit included field sensors to provide feedback for flow, temperature, pressure and reservoir level. The VFD enabled the use of a rugged and reliable fixed-displacement pump and provided the flow variability to meet the customer's needs without the need for inefficient flow control valves.

The poster for the MeRLIn initiative features a central image of a four-legged hydraulic robot. Surrounding it are various technical components and text boxes. On the left, a section titled 'What is the Meso-scale?' shows icons for Boston Dynamics LS3, MIT Cheetah, and NRL Scout. Below this, 'Unique Capabilities' lists tasks like intelligence, surveillance, and EOD inspection. 'Increased Performance' notes the robot's ability to navigate challenging terrain. 'Lighter' notes its portability. On the right, technical callouts identify parts like 'Custom developed high power hydraulic cylinders (TR 6)', 'Subminiature magnetic joint encoders (TR 6)', 'Leg Prototype (TR 4)', 'Custom integral load sensing (TR 5)', and 'Custom contact sensor with force-sensitive resistor (TR 4)'. A 'Hydraulic power unit with custom integral gear pump (TR 3)' is also shown. The bottom left identifies 'Glen Henshaw, Principal Investigator, US Naval Research Laboratory'. The bottom right includes the text 'DISTRIBUTION A. Approved for public release; distribution unlimited' and the date 'June 1, 2015'.

Control Panel – As Designed



Control Panel – As Built



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PROCESS

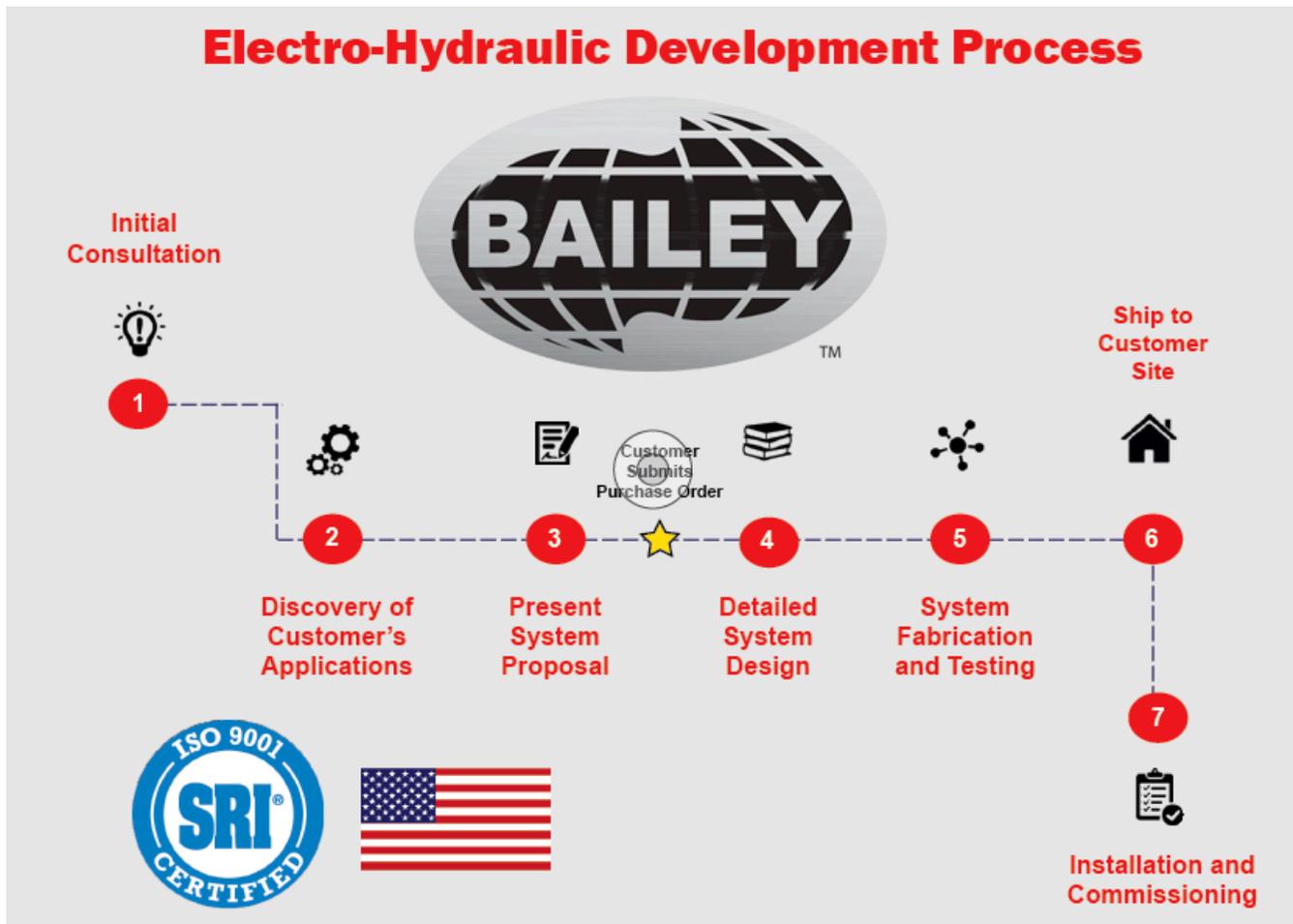
System Design

Bailey has a team of IFPS certified specialists, electrical engineers, and application engineers to design your electro or manual hydraulic system.

Depending on your requirements, we can design a system with standard or customized components, including cylinders, motors, hoses, valving, joysticks, sensors, PLC's, CAN bus controllers and many more.

System Components

Bailey has been a supplier of hydraulic components to fit your everyday needs for over 40 years. We add to our product portfolio on a weekly basis. Either for your individual component or to support your system development, we are your trusted supplier for quality electro-hydraulic components.

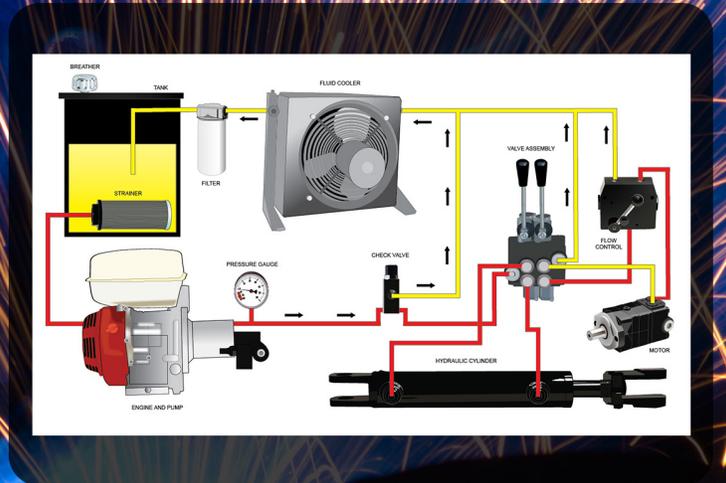




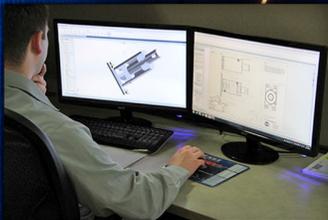
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