Remote-controlled valve system
Overview

MacGregor’s remote controlled valve system utilises the physical characteristics within a hydraulic circuit to produce reliable information on valve position without the use of electrical cabling either on deck or in the tanks. The system gives the operator positive positional indication for variable valves and clear indication when the O/C (Open/Closed) valves are locked in either fully open or closed positions.

MacGregor’s global manufacturing expertise produces a cost effective solution while focusing upon maximising reliability.

Flexibility and local knowledge enables us to design systems to maximise profitability for your vessels’ specific operations.
MacGregor self-locking actuator

Strategically positioned emergency operation point

- No electrical equipment on deck or in tanks
- Competitively priced world-class manufacturing techniques
- Great flexibility during conversions and modernisation
- Mechanical end locking status for each valve

System features

- Accurate and reliable control through proven design
- Use of standard, off-the-shelf components
- Backed by MacGregor’s worldwide service network and our experience in the design of ship systems

- Accumulator matched to system operation
- Low noise
- Standard components

Compact hydraulic power unit

Control valve stand

- Local operation of solenoid valves
- Simple tube identification and installation
- Quick fit field wiring connections
- Correct maintenance access
- Supplied ready for installation

Modular valve control unit (VCU)

- Designed for specific systems
- Simplified visual layout
- Modular design provides standby capacity

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Modernisation opportunities

- Remote deck controls replaced
- Replacement of worn flow metres
- Accurate throttling
- Simplification of unreliable system
Flow management components

**Easy VCU**
The MacGregor VCU is specifically designed to offer flexibility combined with accuracy for repeatable valve operation.

Simple programming language allows operators to commission and alter program parameters with the easy-to-use keypad mounted on the fascia. No peripherals are required.

A modular network arrangement gives a high level of standby capacity which also allows modernisation to be completed with minimum disruption and a reduction in costs.

**Hardware integration**
HMI interface and control for cargo, ballast and fuel tanks is fast becoming a standard installation feature.

Significant increases in operating performance can be gained by correctly designing and installing the HMI interface. MacGregor offers specialised consultancy to ensure that the proposed system is optimised for the vessel’s use.

MacGregor HMI integration offers remote dialogistic, data collection and monitoring of the entire loading/unloading cycle of ballast and cargo systems.

**Engineered system control**
Each MacGregor control panel is built using world-class manufacturing techniques. The vessel operating efficiency drives the design.

Control during loading and unloading operations is simplified by featuring only relevant indication and switches.

All panels, valve stands and other power plant are supplied with easy-to-fit connections which reduce installation time and increase build quality.

**Flow control**
The MacGregor Mark III flow meter has been developed to offer lifetime accuracy combined with cost-effectiveness. Its modular simplicity is the result of the latest advances in manufacturing techniques.

The modularity and size of the flow meter facilitates easy modernisation of any remote control valve system without the need to change the main equipment.

The Mark III flow control assembly is designed to the Ceetop Three standard, allowing a wide variety of system modernisation at low cost.
Flow management components

Valve stands & power packs
Valve stands and power packs form the heart of any hydraulic system. A consultation with MacGregor will establish the requirements of each valve stand and power pack to ensure that the system:

- Is reliable and easy to commission and maintain
- Is provided with suitable standby capacity
- Has all relevant system dynamics considered
- Keeps space requirements to a minimum.

The MacGregor valve system can be used to upgrade actuators and valve combinations of any make or age. A free survey is available through your local MacGregor service office.

Tubing
MacGregor recommends using copper nickel multicore tubing for all large hydraulic systems.

The benefits are:

- Typically 30–40% less man hours required
- Low risk of damage due to bundle strength
- Tube identification is easy

MacGregor’s established partnership with tube manufacturers allows a competitive offering of a comprehensive range of multicore tubing. Installation, training and site assistance are available on request.
Actuators

The MacGregor double acting actuator is designed with secure mechanical self end locking. The trusted rack and pinion design has an extended groove preventing the spindle from rotating without the piston first being moved.

The actuator also has air bleed fittings at either end of the cylinder allowing the connection of a standard hose for easy removal of air during filling and commissioning of the system.

MacGregor actuators can be fitted to any manufacturer’s valve using an adaptor. Different applications will require various valve type, material, size, design and pressure. MacGregor offers a wide variety of valves for many applications.

MacGregor will always mount the actuator to the valve to guarantee correct operation.

A complete range of services and components is available from MacGregor worldwide network, including:

- Newbuildings
- Modernisations
- Conversions
- Maintenance contracts
- Hydraulic fluid testing
- Comprehensive survey of existing system
- Tool kits
Wherever needed, you can rely on our support.