SANTORQUE

HYDRAULIC AND ELECTRO-HYDRAULIC COMPONENTS
HIGH-PERFORMANCE ACTUATORS

/ Meet the latest class rules in terms of materials and operating pressure
  / DNV-GL type approved
  / Actuator body made of ductile iron according to latest DNV-GL and LR rules
  / Control pressure 103 bar according to industry standard EN15714-4.

/ Easy installation due to modular design
  / Any installation orientation possible, even IP68 submerged
  / Operating conditions -55°C to +80°C, dry / submerged / on deck, winterization
  / Adjustable flange size according to ISO 5211
  / Variable shaft dimensions and shapes
  / Adjustable torque and opening/closing time
  / NAMUR connection for limit switch/positioner
  / Coating suitable for severe marine environment

/ Simple maintenance by crew
  / Very long service intervals: Tested for up to 75,000 load cycles
  / Single-acting actuators: Easy service gas pressure reservoir instead of spring pack
  / All components readily accessible
  / Reduced external hydraulic piping
  / Integrated position indication in shaft end

/ Available options:
  / Open/close limit switch or 0-100% positioner
  / Adjustable cycle time
  / Emergency operation by hand wheel or hand pump
  / Special application sealing materials
  / Special designs for offshore application (submerged, resistant, ...)

Made in Germany for customers all over the seas.
**FULL TORQUE – COMPACT DESIGN**

**Limit switch**
- Installed on valve
- Provides a digital signal indicating if the valve is open or closed
- Protection class IP68 (permanently submerged) possible
- Hazardous zone installation possible

**Volume indicator**
- Installed in hydraulic control cabinet in non-hazardous, dry environment
- Provides an analogue 4-20mA signal based on hydraulic oil volume transferred to actuator
- Remote indication of opening angle of valve

**Position feedback**
- Installed on valve
- Provides an analogue 4-20mA signal indicating opening angle of the valve
- Protection class IP67 possible
- Hazardous zone installation possible

**Control block**
- Suitable for all SANDER hydraulic actuators
- Aluminum or bronze material
- Allows various valve operating modes
- Quick & Easy connection of emergency hand pump
- Adjustable running time
- Bypass for de-aeration of hydraulic piping system
HYDRAULIC ACTUATORS

Rotary actuators
- 90° part-turn actuator for butterfly and ball valves
- Dry and submerged service
- Compact design
- Flanges ISO 5211 F07 to F40
- Square, flat or round shaft
- Torque up to 15700 Nm
- Body material EN-GJS-400-15

Linear actuators
- Used for stop and non-return valves
- Dry and submerged installation
- Stroke 18-30 mm
- Compact design
- Body material EN-GJS-400-15

AUXILIARY EQUIPMENT

Hydraulic power unit HPU
- Central power supply for a hydraulic remote control valve system
- Designed for 103 bar control pressure according to EN 15714-4
- Wide range of operating pressure adjustable
- Two pumps for redundancy
- Very long maintenance intervals > 20,000 operating hours

Local power unit LPU
- Decentralized hydraulic power supply for linear or rotary actuators
- Designed for 103 bar control pressure according to EN 15714-4
- LPU can be installed in any direction, mounted on actuator or separately
- Protection class IP68 for double-acting actuators

SANSWITCH 3.0 control unit
- Local or remote operation of electro-hydraulic valves
- Includes 0-100% position indication of valve
- DNV-GL type approved according to DNVGL-CG-0339 (Nov. 2016)
- Modbus RTU capable
- Self-monitoring incl. preventive maintenance and automatic unblocking
A RANGE OF RELIABLE OPTIONS

Hydraulic actuators

Hydraulic actuators are the most commonly used devices to operate marine valves from a distance. They convert oil pressure into a 90° rotating (ball or butterfly valves) or a linear movement (non-return or stop valves).

Hydraulic vs. electro-hydraulic

A hydraulic remote control valve system (RCVS) is operated by a central hydraulic power unit (HPU) and valve cabinet, while an electro-hydraulic RCVS is based on decentralized local power units (LPU) which open and close individual valves.

Double- vs. single acting actuators

Standard actuators are double-acting, opening and closing is done by hydraulic power. However, some critical applications require valves which open (or close) automatically, even in case of a complete power or pressure loss. Consequently, all SANDER hydraulic actuators are also available as single-acting version: Only one direction requires hydraulic power, while the reverse direction is powered by a spring pack or gas pressure reservoir.
The Sander Meson Group is your one-stop solution provider for fluid management. The product range includes manual valves and fittings according to DIN, ANSI and JIS standard, most of which are available from stock. In-house certification according to DNV-GL, LR, RINA and RMRS class saves cost and reduces lead time for critical spare parts.

Based on warehouses as well as sales & service stations we can provide a quick and reliable spare parts supply and technical support in:

- SWEDEN
- GERMANY
- SINGAPORE
- DENMARK
- NORWAY
- DUBAI
- INDIA
- TURKEY
- SPAIN
- ROMANIA
- RUSSIA

For new building vessels and retrofits we supply:

**SANSYS**
Customizable control and monitoring system

**SANVALUE**
Tank level gauging system incl. SOLAS flooding detection or bunker alarm system

**SANHEEL**
Anti-heeling system

**SANDER NAVY**
Valves and systems according to international Navy standards

**SANCONTROL**
Hydr./el.-hydr./pneum./el. remote control valve system

**SANFAST**
Pneumatic or hydraulic quick closing valve system

**SANTORQUE**
Hydraulic and electro-hydraulic actuators and accessories

**SANDER MARINE**
After sales support and services

Sander Meson Group is part of Indutrade AB.