



**Bf BloomFoss**<sup>®</sup>  
Moving with Strength and Direction!



# Tank Gauging System

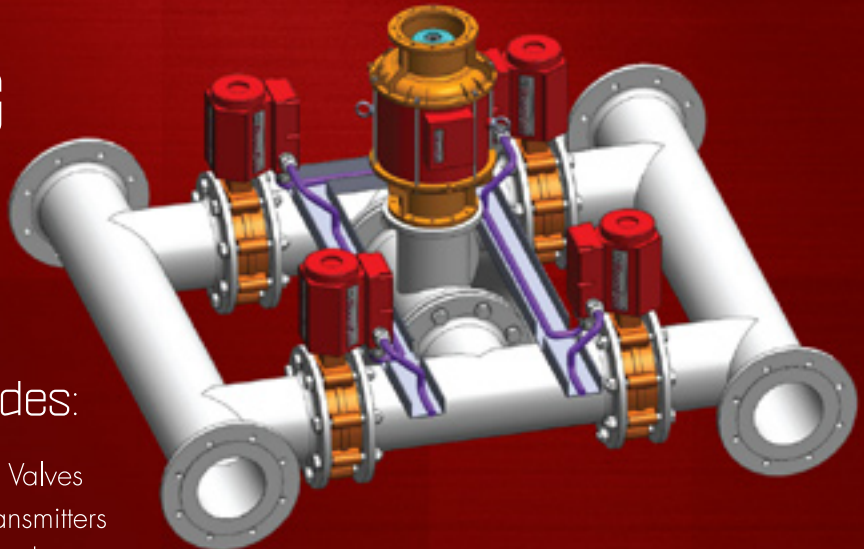


- ▶ Radar Systems – Frequency Modulation Continuous Wave (FMCW)
- ▶ Radar Systems – Microwave Frequencies
- ▶ Guided Radar Systems
- ▶ Hydrostatic Pressure Systems
- ▶ Pneumatic / Electro – Pneumatic Systems

## Features:

- Cargo Vapor Pressure & Load Monitoring
- Cargo Level Measurement
- Cargo Overfill Monitoring
- Draft Measurement
- Ballast Measurement
- Cargo Temperature Measurement
- Inert Gas Pressure Monitoring
- Anti Heeling & Stability Test
- Hull Stress Monitoring

# ANTI-HEELING CONTROL SYSTEMS



The complete system includes:

1. Anti-Heeling Control Panel
2. Pump Starter Panel
3. Heeling Pump
4. Heeling Valves
5. Level Transmitters
6. Level switches

The Anti-Heeling System AH2000 and AH2000i can work in conjunction with the stability control system and the Valve Remote Control System for bilge and ballast valve control, the precision heeling sensor, mounted athwart to the ship's direction and supplies the heeling angle signal to the master PLC.

The systems can operate with reversible or non-reversible pumps, using Remote Controlled Valves to ballast water flow. More complex Anti-Heeling System makes use of 4 Anti-heeling tanks and inclinometers with 4 axis (port, starboard, forward, and aft).

The master CPU is housed in a flash mounting. The front panel of the anti-heeling includes selected switch for mode selection and lamp test, integrated in a mimic panel. The ballast pump starts only if it gets the signal that the respective valves are open. These valves will be controlled by means of master PLC. When pump starter panel in operation mode, signal "SYSTEM READY" will send to master PLC, anti-heeling control system is enabled.

# Valve Remote Control System

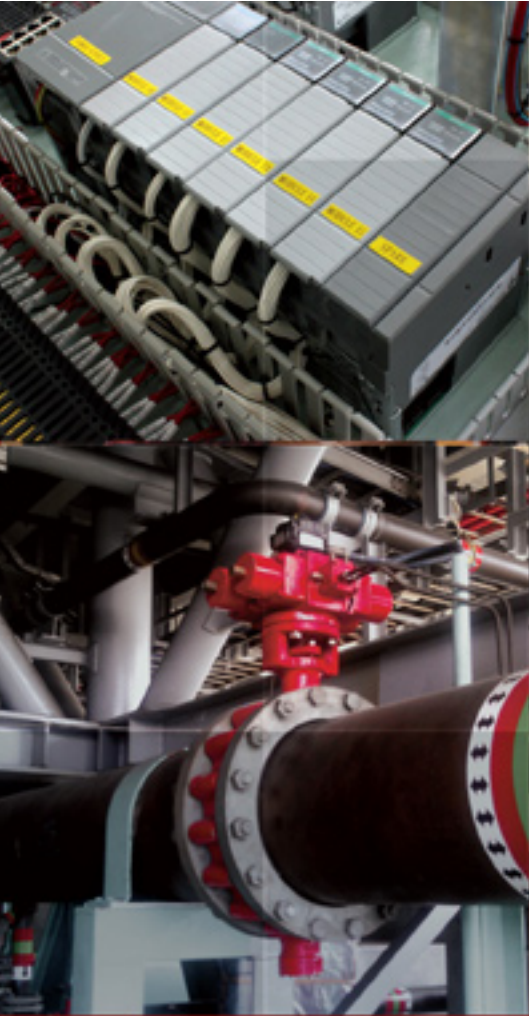
Valve Remote Control function can be done from a conventional control console, from the Scada of a computer / PLC based system or from an integrated ship automation system.

- ▶ Valve Fully Open / Close - on / off indication
- ▶ Valve Throttling Control - Modulation Indication
- ▶ Systems Default Alarms - Alarm Viewer (Valve open/close fault, Power Failure)
- ▶ Signal Output - Communicating with Monitoring Systems through fieldbus

Computer Type consist of Marine Approved Systems combined with Marina Kit / Stations Type Pentium Processor, RAM, Hard Disk Windows Operating System, 19" LCS Display, Trackball / Keyboard, printer.

Hard Mimic Control Panel with control switches and position indicators normally installed in the control console located in Cargo Control Room (CCR) or in the Engine Control Room (ECR)





## Signal Processing Cabinet

### Features

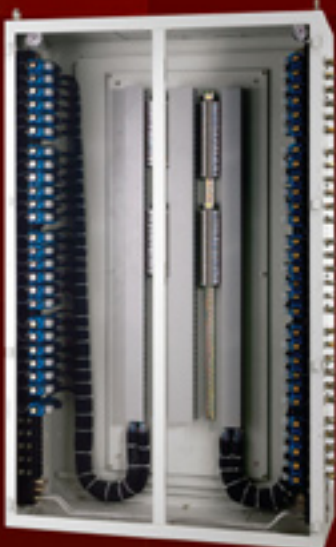
- ▶ Processing Cabinet the link between SCADA / HMI consoles to the actuator field equipment.
- ▶ They process the data collected from field equipment and convert them to signals comprehensible by computers.
- ▶ They perform a very important role to bridge device differences.
- ▶ Our processing cabinets / local control cabinets can be of various designs:
  - Hardwire / Relay Systems
  - PLC Processor based design with Hot / Cold Standby Systems.
  - Hazardous Area / Increased Safety Systems.



## Solenoid Valve Cabinet

- The Solenoid Valve Cabinet is installed in safe, non-hazardous area receives control which activates the solenoid valves.
- The cabinet consists of solenoid valves, throttle valves for adjusting actuator operation time, high-pressure filter and quick connectors for emergency operation.
- In case the valve position indication is of indirect type, flow switches and / or volumetric indicators are also installed in this cabinet.

Model Available: SVC60 / SVC72/SVC80/SVC96 & etc.



# Hydraulic Power Unit (HPU)

Model available:

- ▶ HPU 150S/E/BV-150 litres
- ▶ HPU 250S/E/BV-150 litres
- ▶ HPU 350S/E/BV-350 litres

A hydraulic power unit supplies the hydraulic fluid to the solenoid valves in the electro-hydraulic solenoid valve cabinet and shall include a hydraulic accumulator unit. A remote operation panel to be installed in the control console is available as option.

Features:

- Well designed, well composed and highly reliable with established long years of parts and service support.
- From standard units to custom units. From hardwired units to processor based units.
- High charge power accumulator at 90 Bar up to 170 Bar
- Standard IP56 Protection on Control Panel
- High Temperature Alarm / Low Pressure Alarm
- Automatic Start / Stop of Motors & Pumps
- Redundancy with Dual power supply inputs with auto switch over during power failure
- Major Class Approval ABS, DNV,LR and other



# Portable & Local Hand Pump

For emergency operation of the valves complete with control valve



## ▶ Local Hand Pump

- Pressure Gauge
- Oil Tank of 3 Liters
- With Position Display



## ▶ Portable Hand Pump

- Pressure Gauge
- Two Hoses
- Quick Connectors
- Oil Tank of 3 Liters

# Hydraulic Actuator – BT series

- ▶ The hydraulic actuators are mounted on the valves and remotely operated from the solenoid valves.
- ▶ Single acting, fail safe type (e.g shut down functions) or double acting.
- ▶ Double acting actuators with a failsafe, spring return function is also available.
- ▶ Unique and simple design Rack & Pinion design.
- ▶ Compact with high torque output 200 NM – 20,000NM.
- ▶ Easy adaptation of major quarter turn valves (90°  $\pm$  30°).
- ▶ High quality carbon steel / grade from G8 countries.
- ▶ Wide range of accessories and control blocks to complete system.



# Electro Hydraulic Type Actuators Based on BT series

Advantages:

- ▶ No Hydraulic tubing to actuators
- ▶ No Hydraulic Power Unit
- ▶ No Solenoid Valve Cabinets



# Pneumatic Actuator



Pneumatic systems are able to operate in Safe and Hazardous environments as air is almost non-combustible. Some systems even go to the extend of using Inert gases for extreme safe measures.

Our pneumatic actuators operate from minimum of 5 BAR to maximum of 20 BAR.

Material range from Aluminum of Stainless Steel.

# Electric Actuator

Bloomfoss EQ series Electric Actuator is specifically designed for marine and offshore applications. Focused on compact, simple, rugged and long lasting scotch-yolk design philosophy.

Material made from anodized aluminum coated with high resistance coating.

Wide Range from 25NM to 10000NM

## Limit Switch Box



Versions	Switches & Potentiometer
Material	AlMgSi 1.0 Anodized Aluminum
IP Rating	IP 66 / IP 68 on request
Ambient Temperature	-10 deg C to 45 deg C
Local Indication	On Top of Box
Power	24VDC
Cable Entry	DIN Connection Plug

## Volumetric Position Indicator



Shaft	Stainless Steel A316
Cap	ST45
Bushing	POM
Housing	AlMgSi Black Anodized (Brass: Optional)
Gear	Steel FE 52.2
Back Rod	Steel FE 52.2
Seal	Buna N (Viton; Optional)
Sight Glass	PMMA



Type:

- VPI-V - Visual Indication Only
- VPI-E - On / Off Feedback Switch
- VPI-C - 4-20mA Continuous

- ▶ Direct indication of the valve position (also called "true indication") means that the indicator transmitter is mounted directly on the actuator.
- ▶ For actuators with OPEN/CLOSE control, direct position indication is done by means of limit switch or inductive contacts located in a protected box mounted on the actuator.
- ▶ For actuators with throttle control, by means of a potentiometer or position transmitter with 4-20mA output.
- ▶ In both cases, electric wiring from actuator to control console is required and will require Ex-proof equipment or intrinsically circuits if actuator is located in hazardous area.
- ▶ Direct indication is recommended for all non-submerged valves especially for shipside and bilge valves.

## Indication System - Indirect

Indirect indication means that the valve position is determined by transmitters installed in the solenoid valve cabinet, which monitors the hydraulic branch lines to/from each actuator.

Valve position for actuators with OPEN / CLOSE control is done by means of flow switches in the hydraulic branch lines.

For actuators with throttle control by means of a Volumetric Position Indicator.



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## About Us

Bloomfoss Pte Ltd is a Marine and Offshore company that has been providing quality and reliable Cargo Management Systems and Ship Automation Systems for many years now.

We are the market leaders in the industry with the unrivalled technical support, extensive R & D, and our products enhancing your requirements – Your fleet will always be out in front!

With the increasing demands and newly extended product range, we are formed out of the strategic plan of our parent company, Norr Systems Pte Ltd. The company designs, manufactures, and supplies Valve Remote Control, Tank Gauging, and Anti Heeling Systems around the globe.