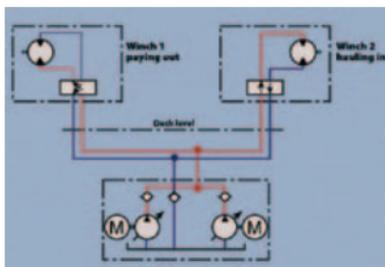


## Rauma Brattvaag™

High-pressure hydraulic anchoring and mooring systems for merchant vessels

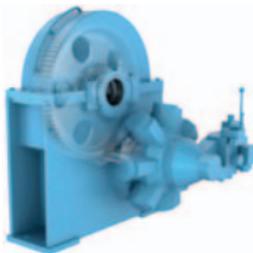
Rauma Brattvaag high-pressure hydraulic anchoring and mooring systems are well-proven and compact deck machinery solutions for passenger and cargo vessels. With over 60 years of experience, Rauma Brattvaag builds high quality, thoroughly workshop tested systems in an ISO 9001 certified environment.

These systems conform to major international standards and meet all rules and regulations presently in force.



### Construction and structural design

The high-pressure hydraulic system consists of two basic components: the hydraulic power pack and the winch itself with a hydraulic motor and control valve. The system is compact and easy to install, operate and maintain. It is always a tailored solution built of modular, well-proven components. Standard delivery includes winches with motor and control valve, power packs with electric motors, starters, oil coolers and bell mouths. The speed control is stepless from zero to maximum speed.



### Hydraulic system

The Rauma Brattvaag high-pressure hydraulic system is of the open loop type and based on a working pressure of 200 to 280 bar. It is a central hydraulic system and therefore under constant pressure. In such a system one pump unit can supply a number of winches or other hydraulic driven devices.

The system can also be supplied directly from the vessel's central hydraulic system without need of a separate, dedicated power pack.

The hydraulic motor is of either single or dual displacement type. The dual displacement motor automatically provides a faster winding speed in no-load situation. The pump is of variable displacement type with constant pressure control.

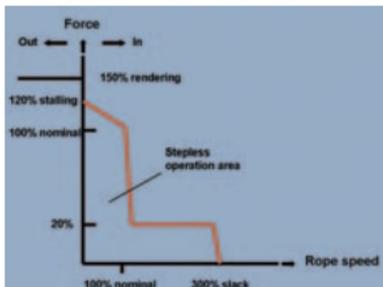
Control valve block includes a counter balance valve, which makes it possible to pay out the rope under full control in all conditions. It also includes a pressure relief valve to protect the winch against overload and to act as a tension control valve.

Internal hydraulic circuits are designed to eliminate the need for separate drain lines. Instead the oil is led through the return lines.

# Fact Sheet

## Performance characteristics

Rauma Brattvaag hydraulic high-pressure systems ensure total control of mooring lines and anchor chain under all conditions, including payout in high-load situations. The system provides stepless control of the mooring line tension and speed and it has excellent overload characteristics.



## Options

### Winches

- auto-tensioning system keeps the tension in the mooring line within preset limits.
- remote control for drum brakes and clutches
- rope tension monitoring system
- remote control for speed and rotation direction
- stainless steel brake drum surface

### Windlasses

- remote controlled brake
- cable length indicator
- chain stoppers
- stainless steel brake drum surface



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