



NYBORG – MAWENT
INDUSTRIAL FANS MANUFACTURER

OUR HISTORY

Nyborg-Mawent S.A. is a leading supplier of comprehensive solutions for pressing and conveyance of air, gas mixtures and other substances. It has been present in world-wide and Polish market **since 1956**. Many-year **experience** is a warranty of **reliability** of our products and services and a solid basis for further **development**.



Nyborg – Mawent brand was established **in 2005** as a result of the merger of Norwegian **Nyborg AS** – leading producer of industrial fans with Malborska Fabryka Wentylatorów **Mawent S.A.**

The experience of both companies dating back to the 1950s is the warranty of the highest **quality and durability** of produced fans.

NYBORG GROUP was established in **2010** – it is a group of companies which deals with the complete project execution – from the design through production and assembly.

The following companies belong to

NYBORG GROUP:

Nyborg AS

Nyborg-Mawent S.A.

NM Design Office Sp Z O.O.

The company specialises in the production of axial and radial fans which are successfully used in off-shore and on-shore applications. Equipment produced by Nyborg-Mawent operates worldwide, at various geographic latitudes and longitudes, often in extreme conditions.

The goal of **Nyborg-Mawent S.A.** is to manufacture products which are **competitive** for their operational parameters and **reliability** of use, of demanded quality, meeting the requirements of domestic and foreign customers.

Our aim is to provide **maximum customer satisfaction**.

The manufactured fans are distinguished by:

- **failure – free** operation
- **economic** operation
- **declared** flow parameters



Sustaining the highest quality of our products and being socially responsible is a priority for us. We strongly believe that it will enable us to strengthen our leading position on the ventilation market. Our constant strive for excellence and efficient management system are confirmed by the awarded quality certificates:

- **ISO 9001:2015 – Quality Management System**
- **ISO 14001:2015 – Environment Management System**
- **PN-EN ISO 3834-2:2007 – Welding Quality Management System**
- **PN-EN PN-N-180001:2004 – Occupational Safety and Health Management System**

QUALITY

In the implementation and measurement **laboratory** we **constantly improve** the manufactured product range and **test** new designs and solutions.

This innovative approach allows us to promptly react to the needs of changing market – which directly translates into the **satisfaction** of our customers.

In our measurement laboratory we perform the following tests:

- flow and acoustic tests of fans
- measurement of fan's vibrations
- measurement of drive system temperature (belt and clutch drive)
- inspection of impeller's casing conditions (NDT)
- centrifugation and balancing of impellers
- electrical measurements: measurements of the motor insulation condition, measurements of the current and power consumption
- measurement of leakage resistance
- measurement of maximum temperature of fan's surface depending on medium's temperature



The possibility of carrying these tests and measurements in our in-house laboratory allows production **modernisation** and on-going supervision over the manufactured products on each phase of production process.

Measurements carried out at the Laboratory or on the customer's site allow **meeting special requirements** related to the environment protection, checking the fan's operation points in a process system, power consumption, performance or level of acoustic pressure. The above allows the selection of **new, more efficient solutions**, adapted to required process parameters.

Laboratory of Nyborg-Mawent S.A. works under a certified quality system ensuring the required level of flow, acoustic, dynamical and electrical parameters of all fans manufactured in our factory.

LABORATORY

PRODUCTS

Market expectations clearly indicate that the fan shall be adaptable to **individual needs** of each system, including the required air flow rate, the shape of the rooms and the ventilation paths, expectations in terms of noise emissions, the system performance or the energy consumption.

Through the **knowledge and experience** of our engineers we match the product from our standard product range to the customer's requirements, and if this is not possible, we modify the standard product or design a completely new solution.

Many years of knowledge and constant investment in the development of design and research give us the potential to create new solutions. The development of the product portfolio is often driven by the introduction of a new range of equipment resulting from market demand.



AXIAL FANS

Axial fans designed for ventilation of low-dust rooms, suitable for vertical and horizontal mounting, with diameters ranging from 200 to 3000 mm.

The fan casing and impeller can be made of regular quality steel, aluminium, or corrosion- and acid-resistant steel.

Available in on-shore, marine or explosion-proof versions.

Flow parameters of fans:

- capacity range from 200 ÷ 465 000 m³/h
- pressure increase from 50 ÷ 1500 Pa

Axial fans operate in the following temperature ranges:

- in standard version with standard motor up to 40°C
- in standard version with class F insulation motor up to 100°C
- in heat-resistant version with belt drive up to 160°C



Application

- **shipbuilding market:** or use in ventilation systems, on seagoing vessels with unrestricted sailing range, for the exchange of air in closed spaces such as: cargo holds, engine rooms, superstructure rooms, accommodation spaces, etc.
- **off-shore market:** as equipment for drilling rig installations
- **on-shore market:** for ventilation of halls, rooms, accommodation facilities, technological installations, for aerodynamic tunnels, for tunnel ventilation installations.



CENTRIFUGAL FANS

Centrifugal fans designed for pressing or extraction of gases of various contamination levels, adapted for installation in vertical or horizontal position. The fan casing and impeller can be made of regular quality steel, aluminium, or corrosion- and acid-resistant steel. Fans are available in standard, heat-resistant, explosion-proof and many other versions.

Flow parameters of fans:

- capacity range from 400 ÷ 240 000 m³/h
- pressure increase from 100 ÷ 25 000 Pa

Centrifugal fans operate in the following temperature ranges:

- drive 1 – direct drive up to 80°C
- drive 1 C* - direct drive up to 220°C – heat-resistant version
- drive 2 – belt drive up to 350°C
- drive 4 – clutch drive up to 350°C
- in special version up to 550°C
- the fans use three-phase induction motors with squirrel cage rotors in IP55 version or in another configuration, if requested by the customer. As standard, motors are rated IE2 or IE3. The motors can be designed to work with a frequency converter. Additionally, the motor can be equipped with an encoder, PTC sensors, vibration sensors, temperature sensors and heater elements. The motors are available in marine, on-shore or explosion-proof versions.



Application:

- **shipbuilding market:** for use in ventilation systems, on seagoing vessels with unrestricted sailing range, for the exchange of air in closed spaces such as: cargo holds, engine rooms, superstructure rooms, accommodation spaces, etc.
- **off-shore market** as equipment for drilling rig installations
- **on-shore market:** they are designed for pressing or extracting gases in production processes, technological processes, ventilation systems, drying rooms, paint shops, air-conditioning and refrigeration units, filter-ventilation systems, fume extraction systems, drying ovens and many others.

LOUVERS

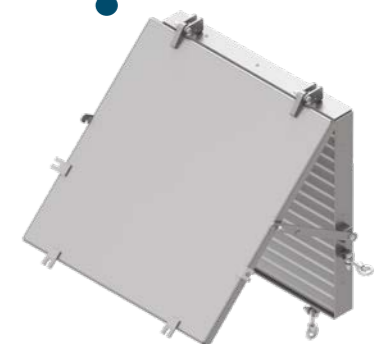
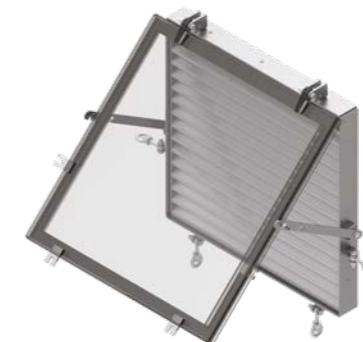
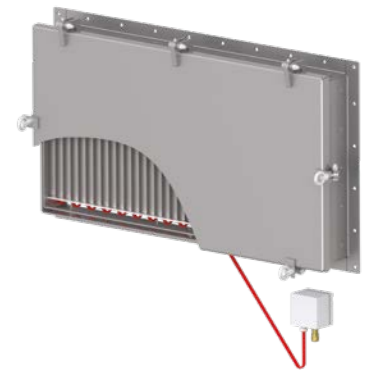
Louvers are designed and engineered for use in on-shore, marine and off-shore conditions. They can be installed both indoors and outdoors. The main purpose of the louvers is to operate at the inlets and outlets of ventilation systems. Made of ordinary quality hot-dip galvanised steel, aluminium or, on customer's request, of painted ordinary quality steel, or of acid-resistant and corrosion-proof steel. The louvers can be equipped with a mesh, counter flange, filter, actuators or hinged cover.

Types of louvers:

- **louvers with a water trap** to separate water droplets, moisture and mist from the air flow
- **weather louvers**
- **heating louvers** – installed indoors and outdoors where the temperature is below 0°C, they constantly maintain a positive blade temperature to address the problem of ice accumulation. They are equipped with a cable and terminal box and prevent water from freezing on the blades.

Application:

Louvers are used where a weather resistant airtight seal is not necessary, primarily for extraction, but also for supply ducts, if a small amount of water is allowed to penetrate. Some types of louvers can be used primarily as a cut-off throttle, but can also be used as a control throttle to adjust the air volume.



KPP TYPE RECTANGULAR FIRE FLAPS

KPP type fire flaps are designed to prevent the spread of fire, heat and smoke within the ventilation duct. They are designed to be mounted vertically or horizontally. They can be produced in the range from 100 to 1600 mm.

The fire flaps are designed for installation on bulkheads or insulated decks in explosion-proof class A-0 (operation in vertical or horizontal plane), they are used exclusively as elements of ventilation ducts.

They were tested in accordance with the International Fire Test Procedure Code (FTP Code 2010) and were awarded MED Certificate No. 1463/17.

Flaps in their normal (working) position are open. Flaps are actuated when fire or fire symptoms occur, they are closed automatically by thermoelectric trigger. Flaps close as a result of power supply cut-off, by the force of return spring placed in the actuator. Trigger will work when the temperature rises above the pre-set value inside or outside the flap. The flap can be controlled with 24 V AC/DC or 230 or V AC, 50/60 Hz (depending on the actuator).

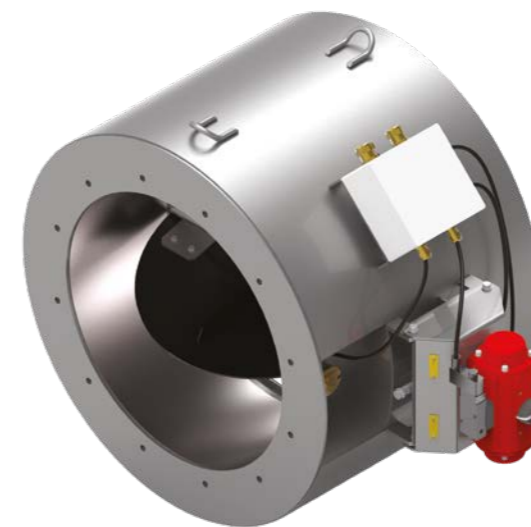


BSS TYPE ROUND FIRE FLAPS

BSS type round fire flaps are designed exclusively for operation as elements of ventilation and air-conditioning ducts. They can be manufactured in the range from Ø 250 to Ø 1400 mm. They are intended for installation on bulkheads and decks.

Manufactured in A-30 explosion-proof class (for vertical or horizontal operation). The fire flaps were tested in accordance with the International Fire Test Procedure Code - IMO Res. MSC.307(88) - FTP Code 2010 in relation to Commission Directive 2012/32/EU, no. A.1/3.22 > and have been awarded MED certificate no. 1463/15.

BSS flaps in their normal position are open, supplied with compressed air with a nominal pressure of 6 bar. Flaps are actuated when fire or fire symptoms occur, they close automatically. The flap can be controlled with 24V AC/DC only.



THROTTLES

Throttle valves are designed to cut off and control the amount of air flow by means of blades, installed in ventilation or air-conditioning ducts. They are made of hot-dip galvanised carbon steel and - upon customer's request - of stainless steel or aluminium alloy.

Types of throttle valves:

- **LSS-R** – round shut-off damper with a single vane, with diameters from 250 to 1400 mm, operated manually, electrically or pneumatically. The throttle body is made of ordinary quality hot-dip galvanised steel or acid resistant steel, while the shut-off damper is made of acid resistant steel.
- **SSVENT** – rectangular multi-vane shut-off damper, manually, pneumatically or electrically operated, can be provided with a circular adapter for mounting directly to axial fans or circular ducts. The coaming is made of ordinary quality hot-dip galvanised or acid-resistant steel, while the vanes and opening mechanism are made of acid-resistant steel.
- **BFD** – return (one-way) throttle valve is used in ventilation systems where backflow or return flow must be prevented. Often used for fans mounted in parallel (one is running, the other is in standby mode) to prevent backflow to the standby fan. The throttle is fully mechanical, opens to air flow, closes by force of gravity. Can operate horizontally and vertically. Available in non-standard sizes, from B100xH100 to B1600xH1600.



ADDITIONAL VENTILATION EQUIPMENT

To meet our customers' needs, we also provide a wide range of ventilation accessories such as:

- ventilation heads
- goose necks
- inlet and outlet flexible connectors
- noise silencers
- counter flanges
- adjustment elements,
- pressure vessels
- duct inlets,
- and other



A sound technological and engineering background and the experience of our engineers enable us to manufacture fans with non-standard parameters, **tailored** to the customer's requirements. Thanks to our **individual** approach, we successfully design and manufacture devices to be used in unusual conditions, such as:

- **explosion-proof versions for zones 21 and 22,**
- **fans designed for high temperatures – up to 550°C**
- **acid- and corrosion-resistant versions**
- **versions with heat and noise insulation.**

CLASSIFICATION SOCIETIES

The products manufactured by Nyborg – Mawent S.A. are compliant with the requirements of numerous international Classification Societies:

- DNV GL GROUP AS
- LRS – Lloyd´s Register of Shipping
- ABS – American Bureau of Shipping
- BV – Bureau Veritas
- CCS – Chinese Classification Society
- KR – Korean Register of Shipping
- RMRS – Russian Maritime Register of Shipping
- PRS – Polski Rejestr Statków
- RRR – Russian River Register
- and other recommended by a customer.



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