

**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**

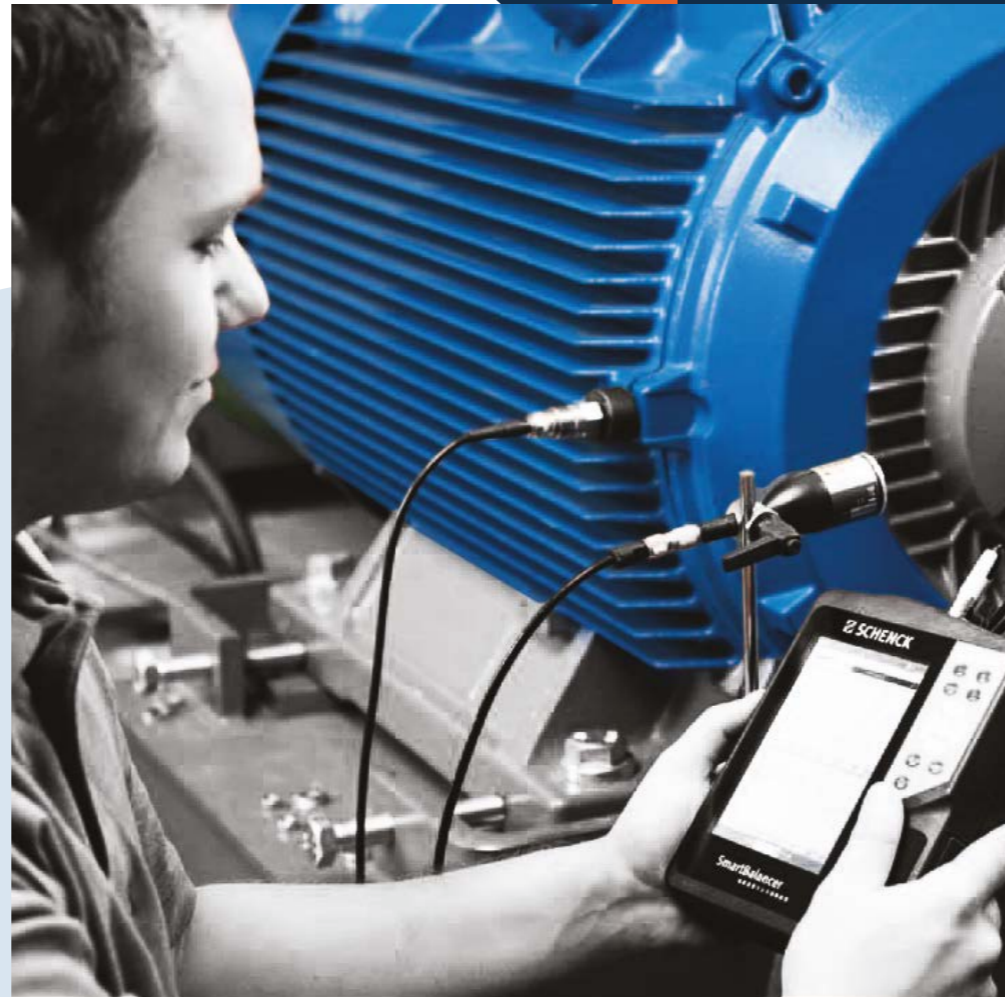
# QUALITY

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.



## 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:

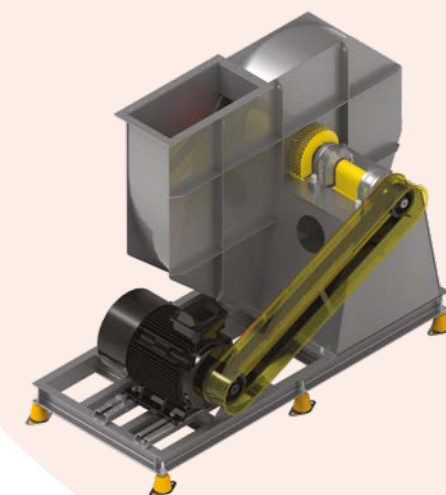
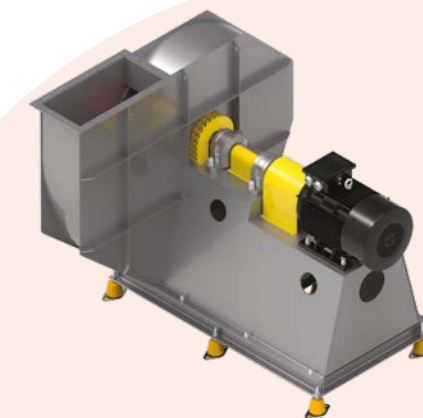
- capacity range from 400 ÷ 240 000 m<sup>3</sup>/h
- pressure increase from 100 ÷ 25 000 Pa

### 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.

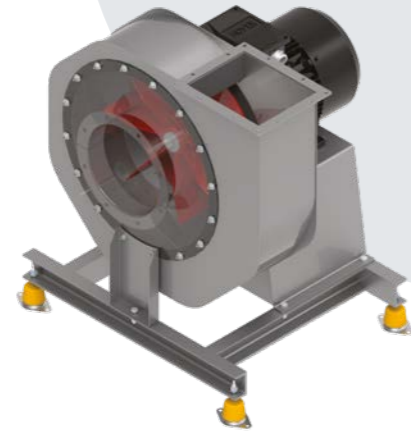
### Application:

- **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
- **hipbuilding 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.

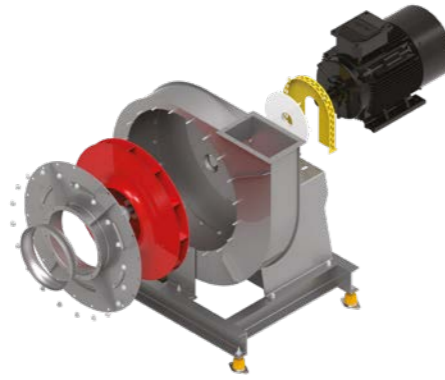


## DEDICATED FANS

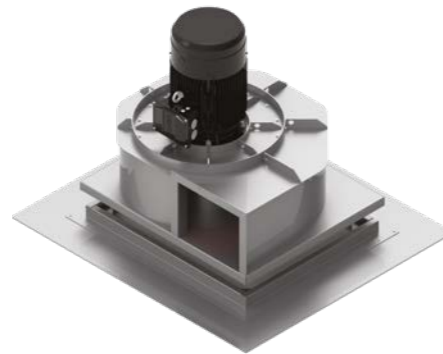
- **ZWPT centrifugal and transport fans** designed for pneumatic conveying of wood shavings, waste materials, textile or paper cuttings, dry matter, fodder, etc. Concentration of loose or fibrous material may not exceed 0.2 kg/m<sup>3</sup> of pressed air. They are recommended to be used in wood, chemical, textile and food industry. The main fan assemblies, such as impeller, housing and base, are made of ordinary quality carbon steel. Other steel grades can be used on request.



- **direct-driven heat-resistant fans** designed for pressing medium at the temperature not exceeding 250°C, widely used wherever the installation area is limited and the temperature of pressed medium exceeds 80°C, which makes it impossible to use a standard (clutch/belt) solution. The impeller of the direct drive fan is mounted directly on the motor shaft. The heat-resistant design of the direct-driven fan is characterised by the use of an air deflector and an insulation plate. The fans are suitable for both horizontal and vertical operation.



- **centrifugal fans for vertical operation** mounted on the inlet flange or with a mounting plate for easy positioning on the filter. The permissible dust content in the conveyed medium is 0.3 g/m<sup>3</sup>. They are designed for use in general ventilation systems and process lines. The main fan assemblies, such as impeller and housing, are made of ordinary quality carbon steel. In the corrosion- and acid-resistant version, the impeller and the housing are made of steel with increased corrosion resistance. Other steel grades can be used on request.



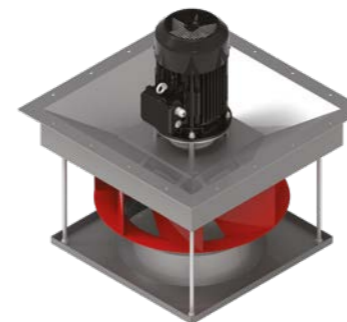
- **direct-driven AGROFAN** centrifugal fans in standard version, designed for the ventilation and cooling of all kinds of grain stored in silos or horizontal warehouses, in the process of drying grain and other materials. The permissible dust content in the conveyed medium is 0.3 g/m<sup>3</sup>. The design of the devices ensures failure-free and many years' operation in difficult weather conditions. The high efficiency of the impeller ensures optimum electricity consumption in relation to the flow parameters achieved. Thanks to the assembly on wheels, they are mobile and easy to move from place to place.



- **WCKRE centrifugal fans** with open impeller to be installed in the filter-ventilation unit. The permissible dust content in the conveyed medium is 0.3 g/m<sup>3</sup>. The impeller of the direct driven fan is mounted directly on the motor shaft. The fans are suitable for both horizontal and vertical operation.



- **RE7 circulation centrifugal fans** designed for use in chambers of elevated temperatures not exceeding 250°C. On special request, we manufacture fans intended for temperatures up to 350 . The fans are most often used in closed rooms, furnaces, tunnel furnaces, powder paint shops, drying chambers and others. The permissible dust content in the conveyed medium is 0.3 g/m<sup>3</sup>. Due to the high temperature of the handled medium, RE7 fans are not offered for use in explosion hazard zones.



## 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 m<sup>3</sup>/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

- **on-shore market:** for ventilation of halls, rooms, accommodation facilities, technological installations, for aerodynamic tunnels, for tunnel ventilation installations
- **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.



# CENTRIFUGAL AND AXIAL FANS IN EXPLOSION-PROOF VERSION

Nyborg-Mawent products meet the requirements of the current AT EX directive for explosion-proof fans, which confirms that our products comply with the standards for explosive zones. All explosion-proof fans have Ex symbol included in the fan name. The Ex fans are equipped with a motor suitable for operation in explosion hazard zones. Fans for specific Ex zones have different construction to meet the legal requirements for the respective zone.

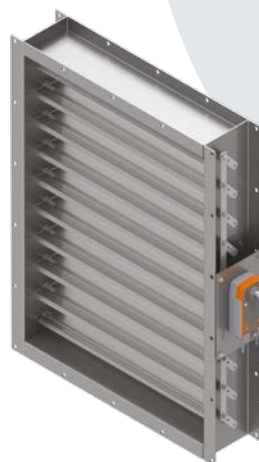
## Available versions:

- for 2 and 1 zones for gases (3G/2G)
- for 22 and 21 zones for dusts (3D/2D)

## ADDITIONAL VENTILATION EQUIPMENT

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

- inlet and outlet flexible connectors
- noise silencers
- cyclones
- elbow inlets
- louvers
- return flap valves
- adjustment elements
- and other.



## **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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