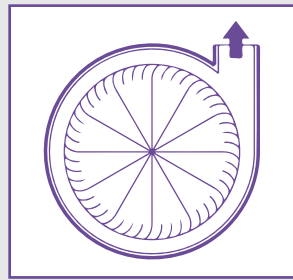


MCF 500 CENTRIFUGAL FAN FOR AIR, FOR BIOGAS, LANDFILL AND NATURAL GAS



MAPROBioGas
Technology



ISO 9001 - Cert. n. 1835

MAPRO

MCF 500 CENTRIFUGAL FAN FOR COMBUSTIBLE GASES

MCF 500 centrifugal fan for biogas, natural gas or combustible gases, in conformity to the 2014/34/EU European Directive (ATEX), for Zones 1 and 2, or, especially for US and Canada, in conformity to the requirements of Class I hazardous locations

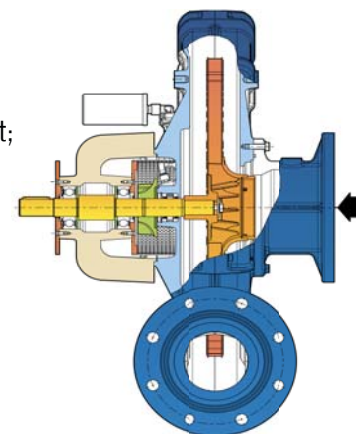


Operating principle

The MAPRO® MCF500 centrifugal fan is made of:

- an intake duct conveying the aspirated gas to the impeller inlet, which is coaxial to the shaft;
- a closed impeller with axial flow inlet and radial flow exit;
- a toroidal discharge volute with tangential exit.

While the impeller is rotating, the vanes give a centrifugal thrust to the aspirated gas which is forced outwards into the toroidal discharge volute. The volute collects the gas delivering it to a tangential nosepiece. The compression occurs through the increment of kinetic energy given to the gas by the vanes of the impeller and the subsequent conversion of the kinetic energy into static pressure in the discharge volute.



Advantages

The rotating parts are not in contact with the casing during rotation. There is therefore no friction during operation and thus no internal lubrication is necessary. The gas moving through the machine therefore remains uncontaminated and completely oil-free.

The other main advantages of using the MAPRO® MCF500 centrifugal fan are:

- easy installation;
- low noise level;
- no vibration;
- pulsation free gas flow and no surge;
- minimal maintenance.



Features of construction

To extract or compress combustible gases, such as biological gas or natural gas, the MCF 500 centrifugal fan has been designed, with a specific MAPRO® manufacturing technology, identified by the trademark:

MAPROBioGas
Technology

This technology, whose main construction features are listed below, is applied also to the fans fitted with NEMA motors in conformity to the requirements of Class I hazardous locations in the US and Canada.

Only the so-called "CLOSE COUPLED" version (see below) is not available with NEMA motors.

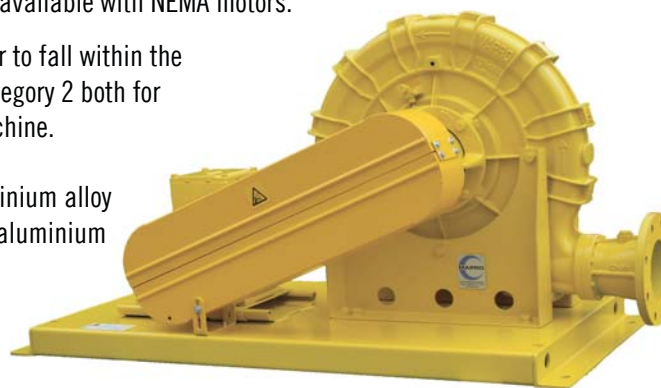
The MAPRO® MCF500 centrifugal fan has been designed in order to fall within the Equipment-Group II as defined by the 2014/34/EU Directive, Category 2 both for the surrounding area conditions and for the internals of the machine.

Its main construction features are the following:

- aluminium casted casing, impeller made of spark proof aluminium alloy with caulked vanes, bearings housing made in cast iron and aluminium casted caps, shaft in carbon steel;
- casing impregnated with Loctite;
- casing halves sealed;
- shaft sealing by a pair of special double-lip seals lubricated for life for speed of rotation up to 4200 rpm and by an automatic lubricator for higher rpm.

The centrifugal fan is generally coupled to the electric motor via belt drive and the safety drive guard is made from spark-free material. We can also offer machines coupled to the electric motor via flexible shaft coupling and centrifugal fans manufactured in the so-called "CLOSE COUPLED" version (not available with NEMA motors) - i.e. a flange mounted electric motor is bolted to the fan casing and the impeller, which is dynamically balanced, is fitted directly onto the motor shaft extension.

For particular duties and/or in function of the gas composition, fans with special construction features could be proposed; for example with the aluminium casted parts treated with anodic oxidation and the blades of the impeller in stainless steel; and it is also possible to fit the double-lip seals in pair on the shaft so that they are suitable for a barrier fluid in between.

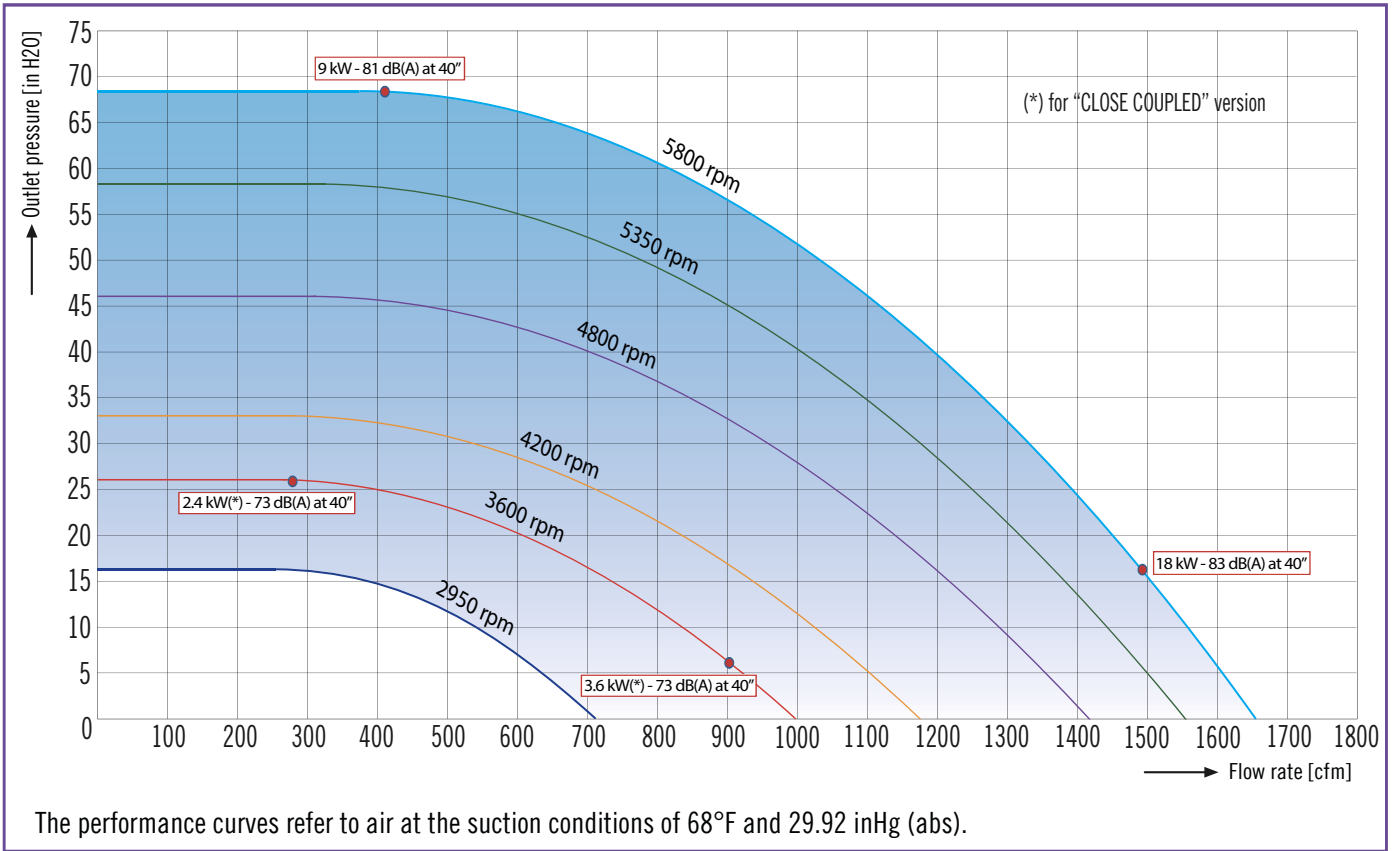


MCF500 CENTRIFUGAL FAN FOR AIR

The MAPRO® MCF500 centrifugal fan can be supplied also for the compression or extraction of ambient air in hazardous locations. In such a case its construction is simplified and the casing is not gas-tight.

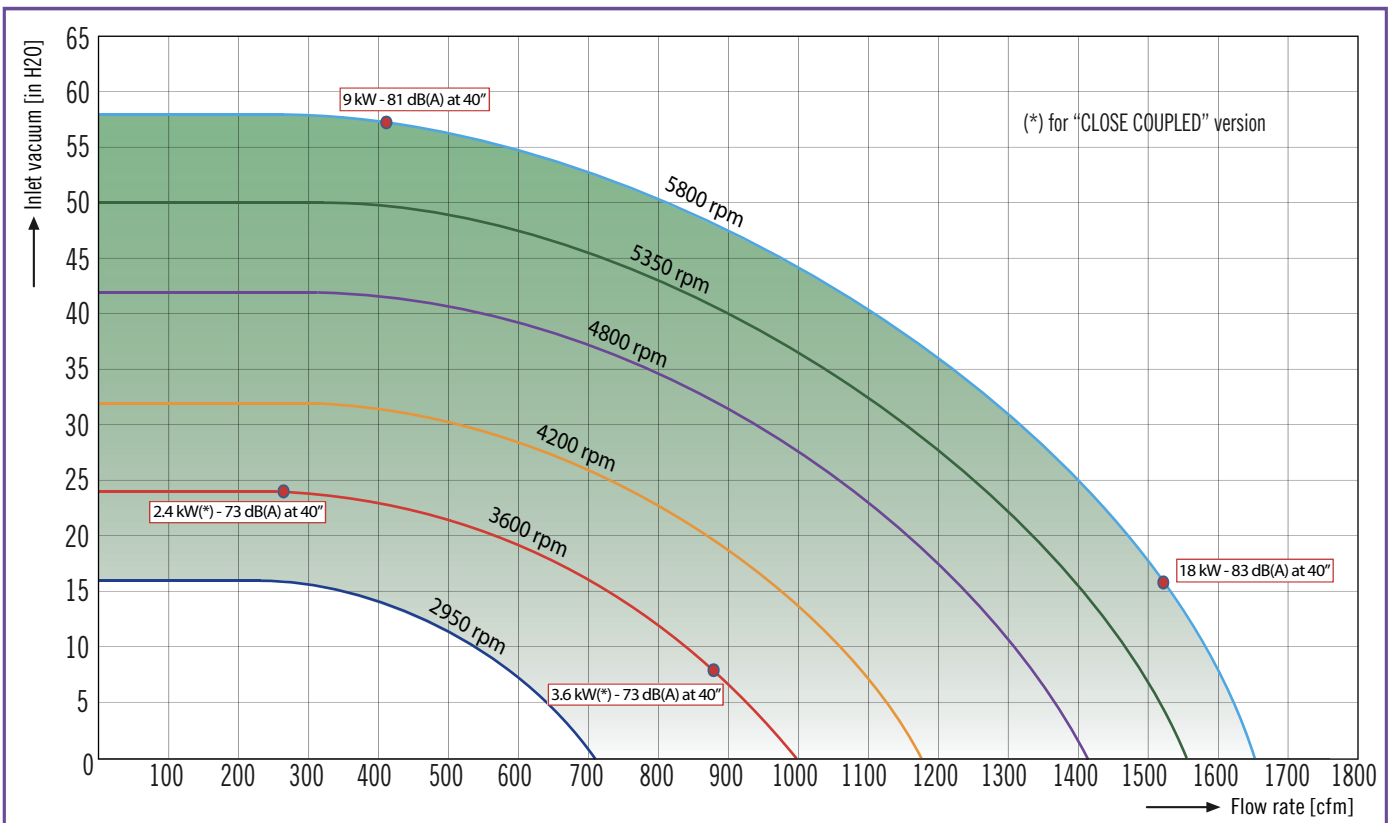


MCF500 blower for air – Range of duty



The performance curves refer to air at the suction conditions of 68°F and 29.92 inHg (abs).

MCF500 exhauster for air – Range of duty



The performance curves refer to air at 68°F and at the suction pressure. The atmospheric backpressure is considered at 29.92 inHg (abs).



"Vesuvio" Factory: Regenerative blowers and exhausters

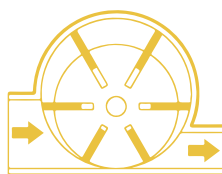


"Fermi" Factory: Centrifugal fans and Rotary compressors

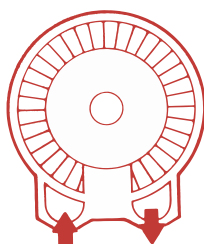


"Cinisello" Warehouse: Goods dispatch

Other MAPRO® products



Sliding vane rotary compressors
and vacuum pumps for air and gases



Regenerative blowers and exhausters
for air and gases



In the logic of continuous improvement, this catalogue is subject to revision. Please contact our Sales Department for information on the version in force.



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