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ISO 9001 - Cert. n. 1835



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SIDE CHANNEL BLOWERS for BIOGAS

MAPRO BioGas
Technology

Construction Features

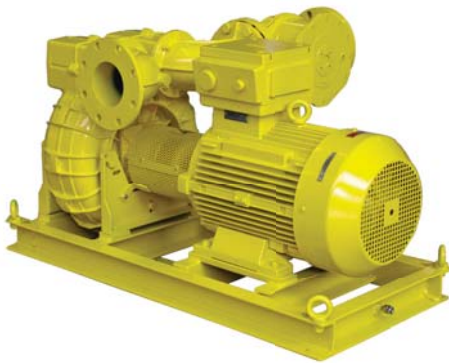
- casing and impeller made completely of spark proof aluminium alloy
- casing impregnated with Loctite
- casing halves sealed by silicone compound (or PTFE compound on request)
- shaft sealing by special double-lip seals which do not require lubrication:
 - one double-lip seal for operating pressure $p \leq 300$ mbarg
 - two double-lip seals for operating pressure $p > 300$ mbarg
- two-pole, type of protection "d", flameproof electric motors, with specific marking Ex II 2 G, additional marking Ex-d IIB T3.
If the area surrounding the equipment is classified as Zone 2, where, for the Group II, Category 3 equipments are accepted, the machine could be equipped with the type of protection "n" non-sparking motor, with specific marking Ex II 3 G, additional marking Ex-nA II T3.
- manufacturing versions:
 - the simplest solution is the so-called "CLOSE COUPLED" version – i.e., a flange mounted electric motor is bolted to the blower casing; the impeller, which is dynamically balanced, is fitted directly onto the motor shaft extension;
 - or we can offer machines with their own shaft and bearings and coupled to the electric motor via flexible shaft couplings or belt drives. In these cases, the safety drive guards are made from spark-free material.
- other options are available; for example:
 - blower shaft in stainless steel
 - all the internal aluminium parts wetted by gas treated with anodic oxidation.
- connection flanges:
 - EN1092-1 PN 16 DN... (as Standard) - ANSI (on request)
- Materials:
 - Casing and impeller: Spark-proof Aluminium EN AB 46400 - Shaft: Carbon steel C45 EN10083-1 (ASTM 1042)



Main advantages of using MAPRO® side channel blowers

- easy installation
- low noise level
- no vibration
- pulsation free gas flow
- corrosion strength of the aluminium to the attack of acids contained in the biogas
- minimal maintenance.

Moreover no internal lubrication is necessary, and therefore **the gas moving through the machine remains uncontaminated and completely oil-free.**



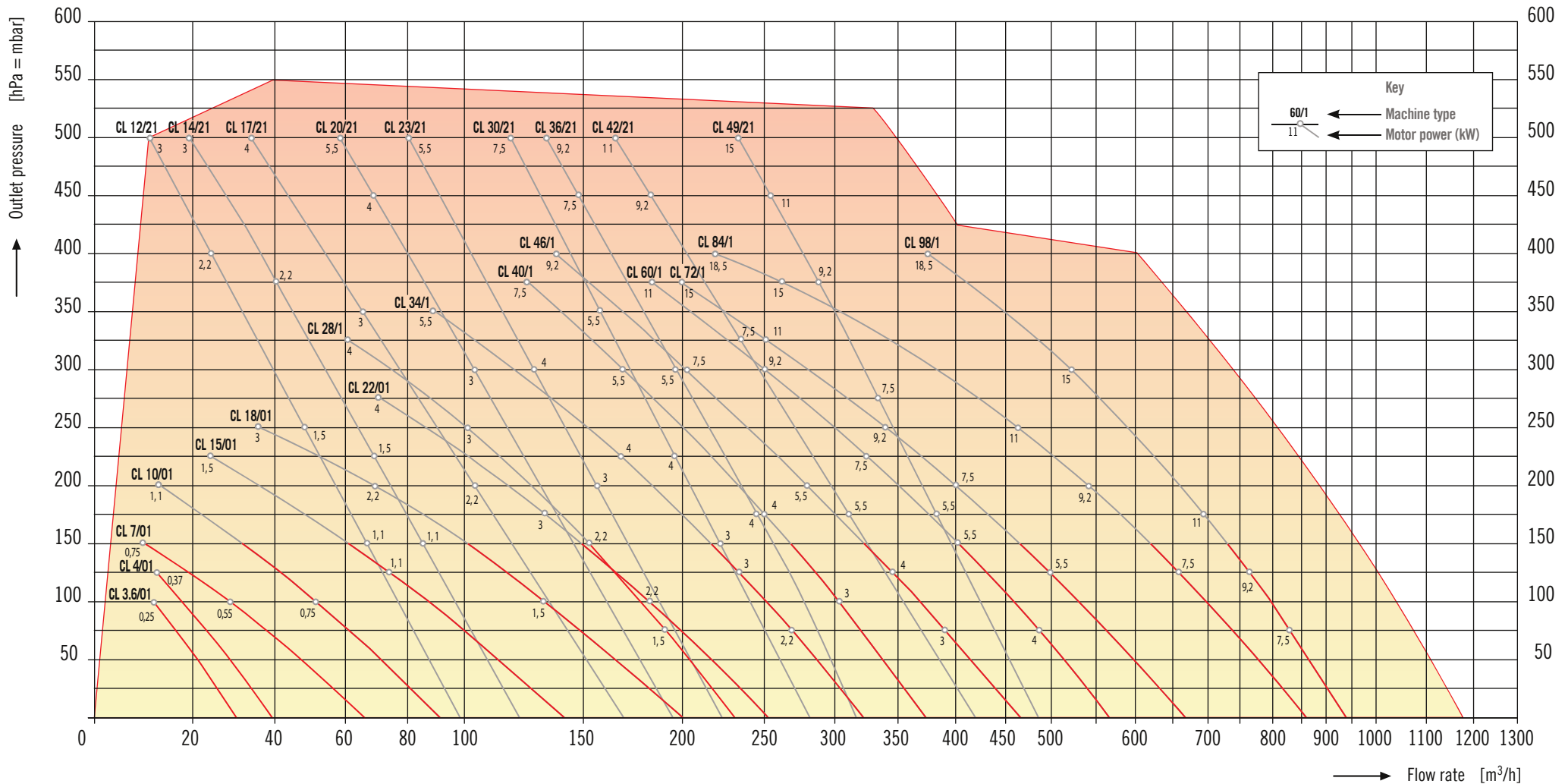
Conformity with 94/9/EC Directive (ATEX)

All MAPRO® side channel blowers to be used for extraction or compression of **combustible gases**, such as **biological or natural gas**, have been designed in order to fall within the **Equipment-Group II** as defined by the **94/9/EC Directive (ATEX), Category 2** both for the surrounding area conditions and for the internals of the machines. They are therefore suitable for use in hazardous places, classified as **Zone 1**, where an explosive atmosphere, consisting of a mixture of air and flammable gases, is likely to occur.





Side channel blowers for biogas - Range of duty



The performance curves "flow rate - outlet pressure" and the "motor powers" shown in the literature, are given, as an indication only, **at fixed rpm (50Hz – 2900rpm)** and for a biogas with specific weight 1.14kg/Nm³. The suction pressure is assumed at 10 mbar and the inlet temperature at 35°C.

The part of the curves in red colour refers to the pressure range in which the blowers fitted with a "compact by-pass" could be used. Yet, this range could be even more reduced depending on the machine working time with the full capacity by-passed back to the blower suction. Please contact MAPRO® Sales Department for every specific case.

