FANS

For explosive atmospheres
Category ATEX 2GD

INSTRUCTIONS MANUAL

(Revision 5)

INDEX

DECLARATION OF CONFORMITY

Directive 94/9/CE ATEX

DECLARES

That fan type ……..……

Identified by serial number ……

technical file deposited at Notified Body 0066 number 1969/2

 0066 II C 2GD T3

To which this declaration refers,

CONFORMS

to the requirements of the following Directives and European Laws :

- 94/9/CEE (Directive ATEX)
- EN 1127-1:2001
- EN 13463-1:2003
- EN 14986:2007
- 2006/42/CE, acknowledged in Italy with legislative decree 17/2010 (Machine Directive)
- 2006/95/CE (Low voltage directive)
- 2004/108/CE acknowledged in Italy with legislative decree 194 dated 4th November 2007 (Electromagnetic compatibility)

The legal representative or delegate

……..

PREMISE

THIS INSTRUCTIONS MANUAL REFERS ONLY TO THE FAN.
FOR INSTRUCTIONS FOR THE ELECTRIC MOTOR REFER TO THE SPECIFIC MANUAL OF THE MOTOR MANUFACTURER ATTACHED.

Read this manual carefully before machine installation.
Explosive atmosphere is a serious danger for the health of the operators and therefore all possibile preventive measures must be carried out.

THIS FAN IS CERTIFIED CE ATEX IIC 2GD T3
THEREFORE IT CAN BE INSTALLED **IN AREA CLASSIFIED WITH DANGER OF EXPLOSION 1-21 OR 2-22**
IN ACCORDANCE TO LEGISLATIVE DECREE 81/08 titolo XI°

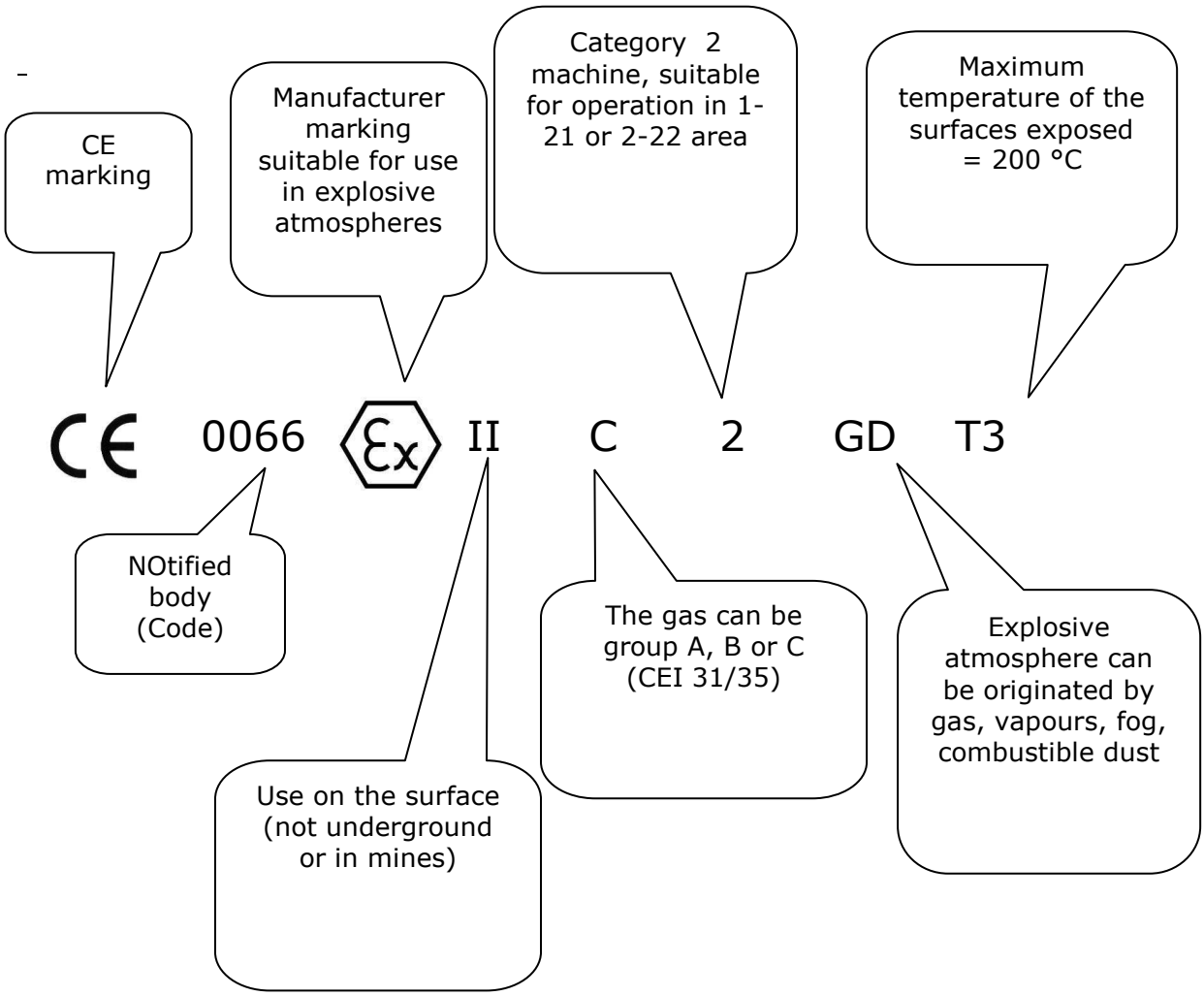
AREA 1-21 INDICATES THAT THE EXPLOSIVE ATMOSPHERE IS OCCASIONALLY PRESENT DURING NORMAL OPERATION
AREA 2-22 INDICATES THAT THE EXPLOSIVE ATMOSPHERE IS NOT USUALLY PRESENT DURING NORMAL OPERATION, OR RARELY AND FOR SHORT PERIODS.

2GD ALSO INDICATES THAT THE EXPLOSIVE ATMOSPHERE IS PRODUCED BY GAS, VAPOURS, FOG AND COMBUSTIBLE DUST.
T3 INDICATES THAT THE SUPERFICIAL MAXIMUM TEMPERATURE OF THE DEVICE IS 200 DEGREES CENTIGRADE

LEGISLATIVE DECREE 81/08 STATES THAT THE EMPLOYER (USER), MUST CLASSIFY THE AREA AND THEREFORE MUST CHECK THAT THE AREA IN WHICH THE MACHINE IS INSTALLED IS COHERENT TO CATEGORY 2 OR 3 ATEX
THE MANUFACTURER IS NOT RESPONSIBLE FOR MACHINE INSTALLATION IN AN AREA DIFFERENT FROM AREA 1-21 OR 2-22

POSSIBLE MACHINE USE IN NORMAL ATMOSPHERE (NOT EXPLOSIVE) DOES NOT IMPAIR ITS OPERATION OR THE SAFETY OF THE OPERATORS.

MARKING



CE MARKING PLATE

Type ……. Nr …….
Kw ……. Volt …….

CE 0066 Ex IIC 2GD T3
Nr.deposit : 1969/2

ORGANIZATIONAL MEASURES

The organizational measures foreseen by the employer (user), in the prevention field and the protection against explosures foresee:

- elaboration of written instructions, if foreseen by the document regarding the protection against explosions,
- training the workers regarding protection from explosions,
- sufficient qualification of the operators,
- application of a system of authorizations for dangerous activities, whereby foreseen by the document regarding protection against explosions,
- interventions of maintenance ,
- checks and surveillance,
- where necessary signals to indicate potentially explosive areas.

The organizational measures adopted must be indicated in the document regarding protection against explosions.

Warning: the expectable duration of the product, for safety regarding protection against explosions, is five years. Once this period has been exceeded the safety functions which protect against explosions are no longer guaranteed .The user must therefore substitute the product or make sure it is completely revisioned by the company of manufacture and other specialized company for the release of a new declaration of conformity.

Warning: this manual describes the block fan + motor that comes with it (electroblowing fan)
Should only the fan be supplied, without the electric motor, the parts of the manual concerning the electrical parts must not be taken into consideration.
In this case the buyer chooses the electric motor.

WARRANTY

The manufacturer guarantees its products for a period of (twelve) months from the date of purchase. This warranty covers only free reparation or substitution of those parts that after careful examination by the company of manufacture result to be faulty (this excludes electrical parts and the tools). The warranty, with exclusion of any responsibility for direct or indirect damage, is limited only to faults in the material and is no longer valid should the parts returned result as having been disassembled, tampered with or repaired outside the factory.
The warranty does not cover damage caused by carelessness, negligence, bad or improper use of the equipment and incorrect use by the operator.
The warranty is no longer valid and will not answer for damages should the safey devices that come with the equipment have been removed. In addition, the warranty is no longer valid should non original spare parts be used.
The equipment returned, even if under warranty, must be delivered carriage paid.

PRESERVATION OF THE MANUAL

This manual must be kept in a safe place by the head of department's office.
The employer must give this instructions manual (original or copy) to the workers in order to adequately inform them of correct machine use.

GENERAL INFORMATION

SITUATIONS OF DANGER

It is strictly forbidden to introduce limbs or the whole body inside the parts in movement

Is is strictly forbidden to remove, take away, modify and/or alter the safeties.

LIMITATIONS OF USE

The fan has been designed and maunufactured to direct air with presence of corrosive gas/vapours at a temperature between -15C° and +70C°. The limits of concentration of corrosive substances that can be conveyed are shown below. Any other use is forbidden.
For fan compatibility with the fluids/liquids trasported, keep to the table below.

TABLE FOR COMPATIBILITY WITH CHEMICAL AGENTS

1 Resistant - 2 Partially Resistant - 3 NOT Resistant

*****The above data are not binding*****

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Acetaldehyde -water base solution	100	25	3	1	2
		60	3	2	-
		100	-	-	-
	40	25	3	1	1
		60	3	2	2
		100	-	-	-
Acetic Acid	s25	25	1	1	1
		60	2	1	1
		100	-	-	1
	30	25	1	1	1
		60	2	1	1
		100	-	-	1
	60	25	1	1	1
		60	2	1	1
		100	-	-	2
	80	25	1	2	1
		60	2	3	3
		100	-	-	3
-glacial	100	25	2	1	1
		60	3	2	2
		100	-	-	3
Acetic Anhydride	100	25	3	2	1
		60	3	2	2
		100	-	-	3
Acetone	10	25	3	1	1
		60	3	-	3
		100	-	-	3
	100	25	3	2	1
		60	3	2	3
		100	-	-	3
Acetophenone	nd	25	-	-	1
		60	-	-	3
		100	-	-	-
Acrylonitrile	technical pure	25	-	1	1
		60	3	1	1
		100	-	-	-
Adipic Acid -water base solution	sat	25	1	1	1
		60	2	1	1
		100	-	-	-
Allyl Alcohol	96	25	2	1	1
		60	3	2	1
		100	-	-	1
Alum -water base solution	dil	25	1	1	1
		60	2	1	1
		100	-	-	-
	sat	25	-	1	1
		60	2	1	1
		100	-	-	-
Aluminum -Chloride	all	25	1	1	-
		60	1	1	-
		100	-	-	-
-Fluoride	100	25	1	1	-
		60	1	1	-
		100	-	-	-
-Hydroxide	all	25	1	-	-
		60	1	-	-
		100	-	-	-
-Nitrate	nd	25	1	-	-
		60	1	-	-
		100	-	-	-
-Sulfate	deb	25	1	1	1
		60	1	1	1
		100	-	-	-
	sat	25	1	1	1
		60	1	1	1
		100	-	-	2
Ammonia... -water base solution	deb	25	1	1	1
		60	2	1	-
		100	-	-	-
	sat	25	1	-	1
		60	2	-	-
		100	-	-	-

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
...Ammonia -Dry Gas	100	25	1	1	1
		60	1	1	1
		100	-	-	-
-Liquid	100	25	2	1	1
		60	3	1	-
		100	-	-	-
Ammonium -Acetate	sat	25	-	1	1
		60	2	1	1
		100	-	-	-
-Carbonate	all	25	1	1	1
		60	2	1	1
		100	-	-	-
-Chloride	sat	25	1	1	1
		60	1	1	1
		100	-	-	2
-Fluoride	25	25	1	1	1
		60	2	1	1
		100	-	-	-
-Phosphate	all	25	1	1	1
		60	1	1	1
		100	-	-	-
-Hydrosulphate	dil	25	1	1	1
		60	2	1	1
		100	-	-	-
-Hydroxide	28	25	1	1	1
		60	2	1	1
		100	-	-	-
-Metaphosphate	all	25	1	-	1
		60	1	-	1
		100	-	-	-
-Nitrate	sat	25	1	1	1
		60	1	1	1
		100	-	-	1
-Persulphate	all	25	1	-	1
		60	1	-	-
		100	-	-	-
-Sulphur	deb	25	1	1	1
		60	2	1	1
		100	-	-	-
	sat	25	1	1	1
		60	1	1	1
		100	-	-	-
-Triphosphate	all	25	1	-	1
		60	1	-	1
		100	-	-	-
Amyl Acetate	100	25	3	1	2
		60	3	2	-
		100	-	-	-
Amyl Alcohol	nd	25	1	1	1
		60	2	1	1
		100	-	-	1
Aniline	all	25	3	2	1
		60	3	2	1
		100	-	-	-
-Chlorhydrate	nd	25	2	2	2
		60	3	2	2
		100	-	-	3
Anthraquinone Sulfonic Acid	susp	25	1	1	1
		60	2	-	1
		100	-	-	-
Aqua Regia	100	25	2	3	3
		60	2	3	3
		100	-	-	3
Arsenious Acid	deb	25	1	1	1
		60	2	1	1
		100	-	-	-
	80	25	1	1	1
		60	2	1	1
		100	-	-	2

TABLE FOR COMPATIBILITY WITH CHEMICAL AGENTS

1 Resistant - 2 Partially Resistant - 3 NOT Resistant

*****The above data are not binding*****

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Barium		25	1	1	1
-Carbonate	all	60	1	1	1
		100	-	-	-
		25	1	1	1
-Chloride	10	60	1	1	1
		100	-	-	-
		25	1	1	1
-Hydroxide	all	60	1	1	1
		100	-	-	-
		25	1	1	1
-Sulfate	nd	60	1	1	1
		100	-	-	-
		25	1	-	1
-Sulphur	sat	60	1	-	-
		100	-	-	-
Beer		25	1	1	-
	comm	60	1	1	-
		100	-	-	-
Benzaldehyde		25	3	2	3
	nd	60	3	2	3
		100	-	-	-
Benzene		25	3	3	3
	100	60	3	3	3
		100	-	-	3
		25	3	-	3
-+Petrol	20/80	60	3	-	3
		100	-	-	-
	technical	25	3	2	1
-Chloride	pure	60	-	-	-
		100	-	-	-
Benzoic Acid		25	1	1	1
	sat	60	2	1	1
		100	-	-	3
Benzyl Alcohol		25	-	1	1
	100	60	-	2	2
		100	-	-	-
Boric Acid		25	1	1	1
	deb	60	2	1	1
		100	-	-	1
		25	1	1	1
	sat	60	2	1	1
		100	-	-	1
Brine		25	1	-	1
	comm	60	1	-	-
		100	-	-	-
Bromic Acid		25	1	1	-
	10	60	1	1	-
		100	-	-	-
Bromine		25	3	3	3
-liquid	100	60	3	3	3
		100	-	-	3
		25	2	3	3
-steam	minim	60	-	3	3
		100	-	-	3
Butadiene		25	1	-	1
	100	60	1	3	3
		100	-	-	-
Butane Gas		25	1	1	1
	10	60	-	1	-
		100	-	-	-
Butanediol		25	1	-	1
	10	60	3	-	-
		100	-	-	-
		25	2	2	2
	conc.	60	3	3	2
		100	-	-	-
Butanone		25	3	1	1
	all	60	3	2	2
		100	-	-	-
Butyl Acetate		25	3	3	2
	100	60	3	3	3
		100	-	-	3

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Butyl Alcohol		25	1	1	1
		60	2	1	2
		100	-	-	2
Butyl Phenol	100	25	2	3	3
		60	2	3	3
		100	-	-	-
Butylene Glycol	100	25	-	1	1
		60	2	1	-
		100	-	-	-
Butyric Acid		25	1	1	3
	20	60	2	2	3
		100	-	-	3
		25	3	3	3
	conc	60	3	3	3
		100	-	-	3
Calcium		25	1	1	1
-Bisulphate	nd	60	1	1	1
		100	-	-	-
		25	1	1	1
-Carbonate	all	60	1	1	1
		100	-	-	-
		25	1	1	1
-Chlorate	nd	60	1	1	-
		100	-	-	-
		25	1	1	1
-Chloride	all	60	2	1	1
		100	-	-	2
		25	1	-	1
-Hydroxide	all	60	1	-	1
		100	-	-	-
		25	-	1	1
-Hypochlorite	sat	60	2	1	1
		100	-	-	-
		25	1	1	1
-Nitrate	50	60	1	-	-
		100	-	-	-
		25	1	1	1
-Sulfate	nd	60	1	1	1
		100	-	-	-
		25	1	2	1
-Sulphur	sat	60	1	2	-
		100	-	-	-
Carbon		25	1	1	1
-Dioxide Gas	100	60	1	1	1
		100	-	-	-
		25	1	1	1
-water base solution		60	2	1	1
		100	-	-	-
		25	1	1	1
-Monoxide	100	60	1	1	1
		100	-	-	-
		25	2	2	1
-Sulphur	100	60	3	-	3
		100	-	-	3
		25	2	2	3
-Tetrachloride	100	60	3	3	3
		100	-	-	-
Carbonic Acid		25	1	-	-
-dry	100	60	1	-	-
		100	-	-	-
		25	1	-	-
-water base solution	sat	60	1	-	-
		100	-	-	-
		25	1	-	-
-damp	all	60	1	-	-
		100	-	-	-
Chloramine		25	1	1	1
-water base solution	dil	60	-	-	-
		100	-	-	-
Chloric Acid		25	1	1	1
	20	60	2	3	3
		100	-	-	3

TABLE FOR COMPATIBILITY WITH CHEMICAL AGENTS

1 Resistant - 2 Partially Resistant - 3 NOT Resistant

*****The above data are not binding*****

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Chloride Methylene	100	25	3	3	3
		60	3	-	3
		100	-	-	3
Chlorine	sat	25	2	-	-
		60	3	-	-
		100	-	-	-
-dry gas	10	25	1	-	3
		60	2	-	3
		100	-	-	-
	100	25	2	-	3
		60	3	-	3
		100	-	-	-
-damp gas	5 gr/m3	25	1	-	3
		60	3	-	3
		100	-	-	-
	10 gr/m3	25	2	-	3
		60	2	-	3
		100	-	-	-
	66 gr/m3	25	2	-	3
		60	2	-	3
		100	-	-	-
-liquid	100	25	3	3	3
		60	-	-	3
		100	-	-	-
Chloroacetic Acid	85	25	1	2	1
		60	2	3	3
		100	-	-	3
	100	25	1	2	-
		60	2	3	3
		100	-	-	3
Chloroform	all	25	3	2	2
		60	3	-	3
		100	-	-	3
Chlorosulfuric Acid	100	25	2	3	3
		60	3	3	3
		100	-	-	3
Chromic Acid	10	25	1	2	1
		60	2	3	2
		100	-	-	3
	30	25	1	2	2
		60	2	3	3
		100	-	-	3
	50	25	1	2	2
		60	2	3	3
		100	-	-	3
-Solution	50/35/15	25	1	3	3
		60	2	3	3
		100	-	-	-
Citric Acid -water base solution	50	25	1	1	1
		60	1	1	1
		100	-	-	1
Copper -Cyanide	all	25	3	-	1
		60	3	-	1
		100	-	-	-
-Chloride	sat	25	1	1	1
		60	1	1	1
		100	-	-	-
-Fluoride	all	25	1	1	3
		60	1	1	3
		100	-	-	-
-Nitrate	nd	25	1	1	1
		60	2	1	1
		100	-	-	-
-Sulfate	dl	25	1	1	3
		60	1	1	3
		100	-	-	-
	sat	25	1	1	1
		60	1	1	1
		100	-	-	-
Cresol	s90	25	2	1	1
		60	3	-	-
		100	-	-	-
	> _	25	3	-	2
		60	3	-	-
		100	-	-	-

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Cyclohexane	all	25	3	1	1
		60	3	-	2
		100	-	-	-
Cyclohexanone	all	25	3	1	-
		60	3	-	3
		100	-	-	3
Decalin decahydronaphthalene	nd	25	1	1	3
		60	1	2	3
		100	-	-	-
Dextrin	nd	25	1	1	1
		60	2	1	1
		100	-	-	-
Dichloroacetic Acid	100	25	1	1	1
		60	2	2	2
		100	-	-	-
Dichloro Benzene	all	25	3	-	3
		60	3	-	3
		100	-	-	-
Dichloroethane	100	25	3	3	1
		60	3	3	-
		100	-	-	-
Dichloroethylene	100	25	3	3	2
		60	3	3	-
		100	-	-	-
Diethylether	100	25	3	3	1
		60	3	3	1
		100	-	-	-
Diglycolic Acid	18	25	1	1	1
		60	2	1	1
		100	-	-	-
Dimethylamine	100	25	2	-	1
		60	3	2	2
		100	-	-	-
Dioctyl Phthalate	all	25	3	1	2
		60	3	2	2
		100	-	-	-
Dybutil Phthalate	10	25	3	3	3
		60	3	-	3
		100	-	-	-
Ether	all	25	3	-	3
		60	3	-	3
		100	-	-	-
Ethyl Acetate	100	25	3	1	2
		60	3	3	3
		100	-	-	3
Ethyl Alcohol	nd	25	1	1	1
		60	2	2	1
		100	-	-	1
Ethyl Chloride	all	25	3	2	3
		60	3	-	3
		100	-	-	-
Ethyl Ether	all	25	3	-	3
		60	3	-	3
		100	-	-	-
Ethylene Glycol	comm	25	1	1	1
		60	2	3	1
		100	-	-	-
Ethylene Chlorohydrin	100	25	3	-	-
		60	3	-	-
		100	-	-	-
Fatty Acids	nd	25	1	-	-
		60	1	-	-
		100	-	-	-
Fertilizer	%10	25	1	1	1
		60	1	1	1
		100	-	-	-
	sat	25	1	1	1
		60	1	1	1
		100	-	-	-
Fluorine Dry Gas	100	25	2	2	3
		60	3	3	3
		100	-	-	-

TABLE FOR COMPATIBILITY WITH CHEMICAL AGENTS

1 Resistant - 2 Partially Resistant - 3 NOT Resistant

*****The above data are not binding*****

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Formaldehyde		25	1	1	1
		60	2	1	1
		100	-	-	-
Formic Acid	50	25	1	1	1
		60	2	1	1
		100	-	-	-
	100	25	1	1	1
		60	3	1	1
		100	-	-	-
Fruit -pulp and juice	comm	25	1	1	1
		60	1	-	1
		100	-	-	-
Gas -from exhaust acids	all	25	1	-	-
		60	1	-	-
		100	-	-	-
-with nitrous vapors	traces	25	1	1	1
		60	1	1	1
		100	-	-	-
-illuminating	100	25	1	1	1
		60	-	-	-
		100	-	-	-
Gasoline -row	100	25	1	-	1
		60	1	-	3
		100		-	-
-refined	100	25	1	-	1
		60	-	1	3
		100	-	-	-
Gelatine	100	25	1	1	1
		60	1	-	1
		100	-	-	-
Glucose	all	25	1	1	1
		60	2	1	1
		100	-	-	-
Glycerine -water base solution	all	25	1	1	1
		60	1	1	1
		100	-	-	1
Glycocoll	10	25	1	1	1
		60	1	1	1
		100	-	-	1
Glycolic Acid	37	25	1	1	1
		60	1	1	-
		100	-	-	-
Heptane	100	25	1	1	3
		60	2	3	3
		100	-	-	-
Hexafluorosilicic Acid	32	25	1	1	1
		60	1	1	1
		100	-	-	-
Hexane	100	25	1	1	1
		60	2	2	2
		100	-	-	-
Hydrobromic Acid	10	25	1	1	1
		60	2	1	1
		100	-	-	3
	48	25	1	1	1
		60	2	1	1
		100	-	-	3
Hydrochloric Acid	s25	25	1	1	1
		60	2	1	1
		100	-	-	1
	s37	25	1	1	1
		60	1	2	1
		100	-	-	2
Hydrocyanic Acid	deb	25	1	1	1
		60	1	1	1
		100	-	-	-

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Hydrogen	all	25	-	-	-
		60	-	-	-
		100	-	-	-
-Peroxide	30	25	1	1	1
		60	1	1	1
		100	-	1	-
	50	25	1	2	1
		60	1	-	2
		100	-	-	-
	90	25	1	1	1
		60	1	2	2
		100	-	-	-
-dry sulphide	sat	25	1	1	1
		60	2	1	1
		100	-	-	-
-damp sulphide	sat	25	1	1	1
		60	2	1	1
		100	-	-	-
Hydrosulphite	%10	25	1	-	1
		60	2	-	1
		100	-	-	-
hydroxylamine sulphate	12	25	1	1	1
		60	1	-	1
		100	-	-	-
Hydrofluoric Acid	10	25	1	1	1
		60	2	1	1
		100	-	-	3
	60	25	2	1	1
		60	3	-	3
		100	-	-	3
Iodine -dry and damp	3	25	2	-	1
		60	3	-	-
		100	-	-	-
-iodine	3	25	2	2	1
		60	3	3	3
		100	-	-	-
Iron -Chloride	10	25	1	-	1
		60	2	-	1
		100	-	-	-
	sat	25	1	1	1
		60	1	1	1
		100	-	-	1
-ferrous Chloride	sat	25	1	1	1
		60	1	1	-
		100	-	-	-
-Nitrate	nd	25	1	1	-
		60	1	1	-
		100	-	-	-
-ferric Sulfate	nd	25	1	1	1
		60	1	1	-
		100	-	-	-
-ferrous Sulfate	nd	25	1	1	1
		60	1	1	-
		100	-	-	-
Isooctane	100	25	1	2	2
		60	-	-	3
		100	-	-	-
Isopropyl Alcohol	100	25	-	-	1
		60	2	-	1
		100	-	-	-
Isopropyl Ether	100	25	2	2	2
		60	3	3	3
		100	-	-	-
Lactic Acid	<28	25	1	1	1
		60	2	1	1
		100	-	-	1
Lanolin	nd	25		1	1
		60	2	1	2
		100	-	-	-

TABLE FOR COMPATIBILITY WITH CHEMICAL AGENTS

1 Resistant - 2 Partially Resistant - 3 NOT Resistant

*****The above data are not binding*****

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Lead		25	1	1	1
-Acetate	sat	60	1	-	2
		100	-	-	-
		25	1	1	1
-Tetra-Ethyl	100	60	2	-	-
		100	-	-	-
Lubricating Oils		25	1	3	1
	comm	60	1	-	2
		100	-	-	-
Magnesium		25	1	-	1
-Carbonate	all	60	1	-	1
		100	-	-	-
		25	1	1	1
-Chloride	sat	60	1	1	1
		100	-	-	2
		25	1	-	1
-Hydroxide	all	60	1	-	1
		100	-	-	-
		25	1	1	1
-Nitrate	nd	60	1	1	1
		100	-	-	-
		25	1	1	1
-Sulfate	dl	60	1	1	1
		100	-	-	-
		25	1	1	1
	sat	60	1	1	1
		100	-	-	-
Maleic Acid		25	1	1	1
	nd	60	1	1	1
		100	-	-	1
Malic Acid		25	1	1	1
	nd	60	-	-	1
		100	-	-	-
Mercury		25	1	1	1
	100	60	2	1	1
		100	-	-	-
		25	1	-	1
-Cyanide	all	60	1	-	1
		100	-	-	-
		25	1	1	1
-Chloride	sat	60	1	1	1
		100	-	-	-
		25	1	1	1
-Nitrate	nd	60	1	1	1
		100	-	-	-
Methanesulfonic Acid		25	1	2	2
	50	60	2	2	2
		100	-	-	3
		25	1	3	3
	100	60	2	3	3
		100	-	-	3
Methyl		25	-	-	1
-Acetate	100	60	-	-	1
		100	-	-	-
		25	3	3	3
-Bromide	100	60	-	-	3
		100	-	-	-
		25	3	1	3
-Chloride	100	60	3	-	3
		100	-	-	3
Methyl Alcohol		25	1	1	1
	nd	60	1	1	2
		100	-	-	2
Methylamine		25	2	1	1
	32	60	3	2	-
		100	-	-	-
Milk		25	1	1	1
	100	60	1	-	1
		100	-	-	1
Molasses		25	1	1	1
	comm	60	2	2	1
		100	-	-	2

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Naphta		25	2	2	1
	100	60	3	3	3
		100	-	-	-
		25	1	-	1
	comm	60	1	2	2
		100	-	-	-
Naphthalene		25	1	1	3
	100	60	-	2	3
		100	-	-	3
Nickel		25	1	1	1
-Chloride	all	60	1	1	1
		100	-	-	1
		25	1	1	1
-Nitrate	nd	60	1	1	1
		100	-	-	2
		25	1	1	1
-Sulfate	dl	60	1	2	1
		100	-	-	-
		25	1	1	1
	sat	60	1	1	1
		100	-	-	-
Nitric Acid		25	3	-	3
	anhyd.	60	3	-	3
		100	-	-	3
		25	1	1	1
	s20	60	2	2	2
		100	-	-	3
		25	1	-	2
	40	60	1	2	3
		100	-	-	3
		25	1	3	2
	60	60	2	3	3
		100	-	-	3
		25	3	3	3
	98	60	3	3	3
		100	-	-	3
Nitrobenzene		25	3	-	1
	all	60	3	2	2
		100	-	-	-
Oil		25	1	-	1
-fuel oil	100	60	1	-	2
		100	-	-	-
		25	1	3	3
-camphor oil	nd	60	-	3	3
		100	-	-	-
		25	-	-	1
-olive oil	comm	60	2	3	1
		100	-	-	-
		25	1	-	1
-paraffin oil	nd	60	1	-	3
		100	-	-	-
		25	1	-	3
-castornut oil	comm	60	1	-	1
		100	-	-	-
		25	1	-	1
-cottonseed oil	comm	60	1	-	1
		100		-	-
		25	1	-	1
-linseed oil	comm	60	2	2	1
		100	-	-	-
		25	1	1	1
-silicon oil	nd	60	3	2	1
		100	-	-	-
		25	1	1	1
-vaseline oil	100	60	3	2	2
		100	-	-	-
		25	1	1	1
-transformer oil	nd	60	2	2	2
		100	-	-	-
Oleic Acid		25	1	-	1
	comm	60	1	2	2
		100	-	-	-

TABLE FOR COMPATIBILITY WITH CHEMICAL AGENTS

1 Resistant - 2 Partially Resistant - 3 NOT Resistant

*****The above data are not binding*****

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Oleum	nd	25	3	3	3
		60	3	3	3
		100	-	-	-
-steam	minim	25	3	-	3
		60	3	-	3
		100	-	-	-
	high	25	3	-	3
		60	3	-	3
		100	-	-	-
Oxalic Acid	10	25	1	1	1
		60	2	1	2
		100	-	-	2
	sat	25	1	1	1
		60	1	1	2
		100	-	-	3
Oxygen	all	25	1	1	3
		60	1	2	3
		100	-	-	-
Ozone	nd	25	1	2	3
		60	2	3	3
		100	-	-	-
Palmitic Acid	10	25	1	-	-
		60	1	-	3
		100	-	-	-
	70	25	1	-	-
		60	1	3	3
		100	-	-	-
Paraffin	nd	25	-	-	-
-emulsion		60	2	2	1
		100	-	-	-
	comm	25	1	2	3
		60	1	2	3
		100	-	-	-
Perchloric Acid	10	25	1	1	1
		60	2	1	1
		100	-	-	-
	70	25	1	1	1
		60	2	2	-
		100	-	-	-
Phenol	1	25	1	1	1
-water base solution		60	-	-	1
		100	-	-	3
	s90	25	2	1	1
		60	3	-	3
		100	-	-	3
Phenylhydrazine	all	25	3	2	2
		60	3	2	2
		100	-	-	-
-Chloride	sat	25	1	1	1
		60	3	3	3
		100	-	-	-
Phosgene Gas	100	25	1	2	2
		60	2	2	2
		100	-	-	-
Phosphoric Acid	s25	25	1	1	1
		60	2	1	1
		100	-	-	1
	s50	25	1	1	1
		60	1	1	1
		100	-	-	1
	s85	25	1	1	1
		60	1	2	1
		100	-	-	1
Phosphorus	nd	25	1	1	1
-Pentoxide		60	2	1	-
		100	-	-	-
-Trichloride	100	25	3	1	1
		60	3	-	-
		100	-	-	-
Phthalic Acid	50	25	-	1	1
		60	3	1	1
		100	-	-	-

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Piric Acid	1	25	1	1	1
		60	1	-	-
		100	-	-	-
	>1	25	3	1	3
		60	3	1	3
		100	-	-	-
Plating chemical solution	comm	25	1	-	-
		60	1	-	-
		100	-	-	-
Potassium	40	25	1	1	1
-Dichromate		60	1	-	-
		100	-	-	-
-Borate	sat	25	1	-	1
		60	2	-	1
		100	-	-	-
-Bromide	sat	25	1	1	1
		60	1	1	1
		100	-	-	-
-Carbonate	sat	25	1	1	1
		60	1	1	-
		100	-	-	-
-Chloride	sat	25	1	1	1
		60	1	1	1
		100	-	-	2
-Cyanide	sat	25	1	1	1
		60	1	1	1
		100	-	-	-
-Chromate	40	25	1	1	1
		60	1	1	1
		100	-	-	-
-Ferrocyanide	100	25	1	1	1
		60	1	1	1
		100	-	-	2
-Fluoride	sat	25	-	1	1
		60	-	1	1
		100	-	-	-
-Hydroxide	60	25	1	1	1
		60	2	1	1
		100	-	-	1
-Nitrate	sat	25	1	1	1
		60	1	1	1
		100	-	-	-
-Perborate	all	25	1	-	1
		60	1	-	-
		100	-	-	-
-Permanganate	10	25	1	1	1
		60	1	1	2
		100	-	-	-
-Persulfate	nd	25	1	1	1
		60	2	1	1
		100	-	-	-
-Sulfate	sat	25	-	-	1
		60	1	1	1
		100	-	-	-
-Chromic Sulfate	nd	25	1	1	1
		60	2	1	1
		100	-	-	2
Propane	100	25	1	1	1
-gas		60	-	-	-
		100	-	-	-
-liquid	10	25	1	2	2
		60	-	-	-
		100	-	-	-
Propyl Alcohol	nd	25	1	1	1
		60	2	1	1
		100	-	-	-
Pyridine	nd	25	3	1	2
		60	3	2	2
		100	-	-	-
Silicic Acid	all	25	1	1	1
		60	1	1	1
		100	-	-	-

TABLE FOR COMPATIBILITY WITH CHEMICAL AGENTS

1 Resistant - 2 Partially Resistant - 3 NOT Resistant

****The above data are not binding*****

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Silver		25	1	-	1
-Cyanide	all	60	1	-	1
		100	-	-	-
-Nitrate	nd	25	1	1	1
		60	2	1	1
		100	-	-	2
Sodium		25	1	1	1
-Acetate	100	60	1	1	1
		100	-	-	1
-Baking Soda	nd	25	1	1	1
		60	1	1	1
		100	-	-	1
-Bisulfite	100	25	1	1	1
		60	1	1	1
		100	-	-	2
-Bromide	sat	25	1	-	1
		60	1	-	1
		100	-	-	-
-Carbonate	sat	25	1	1	1
		60	1	1	1
		100	-	-	-
-Cyanide	all	25	1	-	1
		60	1	-	1
		100	-	-	-
-Chlorate	nd	25	1	1	1
		60	2	1	-
		100	-	-	-
-Chloride	dl	25	1	1	1
		60	2	1	1
		100	-	-	-
	sat	25	1	1	1
		60	1	1	1
		100	-	-	3
-Ferrocyanide	sat	25	1	1	-
		60	1	1	-
		100	-	-	-
-Phosphate	all	25	1	-	1
		60	1	-	1
		100	-	-	1
-triphosphate	all	25	1	1	1
		60	1	1	1
		100	-	-	1
-Fluoride	all	25	1	1	-
		60	1	1	-
		100	-	-	-
-Hydroxide	s60	25	1	1	1
		60	1	1	1
		100	-	-	1
-hypochlorite	deb	25	1	1	1
		60	2	-	2
		100	-	-	-
-Hyposulphite	nd	25	1	-	1
		60	1	-	-
		100	-	-	-
-Nitrate	sat	25	1	1	1
		60	1	1	1
		100	-	-	-
-Perborate	all	25	1	-	1
		60	1	-	-
		100	-	-	-
-Sulfate	dl	25	1	-	1
		60	1	-	1
		100	-	-	-
	sat	25	1	1	1
		60	1	1	1
		100	-	-	-
-Sulfite	sat	25	1	-	1
		60	1	-	1
		100	-	-	-
-Sulphur	dl	25	1	1	1
		60	2	1	1
		100	-	-	-
	sat	25	1	1	1
		60	1	1	1
		100	-	-	-

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Stearic Acid	100	25	1		2
		60	1	2	2
		100	-	-	-
Sulphur	100	25	1	-	1
		60	2	-	1
		100	-	-	-
-liquid Dioxide	100	25	2	1	-
		60	3	2	-
		100	-	-	-
-dry	all	25	1	1	1
		60	1	1	1
		100	-	-	3
-water base solution	sat	25	1	1	1
		60	2	-	-
		100	-	-	-
-Trioxide	100	25	2	3	3
		60	2	3	3
		100	-	-	-
Sulphuric Acid	s10	25	1	1	1
		60	1	1	1
		100	-	-	1
	s75	25	1	1	1
		60	2	2	2
		100	-	-	2
	s90	25	1	2	1
		60	2	2	2
		100	-	-	3
	s96	25	2	2	3
		60	3	2	3
		100	-	-	3
-steaming	all	25	2	-	3
		60	3	-	3
		100	-	-	3
Sulphuric Acid +Nitric Acid +H2O	48/49/3	25	1	3	3
		60	2	3	3
		100	-	-	3
	50/50/0	25	2	3	3
		60	3	3	3
		100	-	-	3
	10/20/70	25	1	2	2
		60	1	2	2
		100	-	-	-
Tallow Emulsion	comm	25	1	1	1
		60	1	2	2
		100	-	-	-
Tannic Acid	10	25	1	1	-
		60	1	1	-
		100	-	-	-
Tartaric Acid	all	25	1	1	1
		60	2	1	1
		100	-	-	-
Tetrachloroethane	nd	25	3	2	2
		60	3	3	3
		100	-	-	-
Tetrachloroethylene	nd	25	3	2	2
		60	3	3	3
		100	-	-	-
Tetrahydrofuran	all	25	3	2	2
		60	3	3	3
		100	-	-	3
Thionyl Chloride		25	3	3	3
		60	-	-	-
		100	-	-	-
Thiophene	100	25	3	2	2
		60	3	2	3
		100	-	-	-
Tin	sat	25	1	1	1
-stannic chloride		60	1	1	1
		100	-	-	-
-stannous chloride	dl	25	1	1	1
		60	1	1	1
		100	-	-	-

TABLE FOR COMPATIBILITY WITH CHEMICAL AGENTS

1 Resistant - 2 Partially Resistant - 3 NOT Resistant

*****The above data are not binding*****

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Toluene	100	25	3	2	2
		60	3	3	3
		100	-	-	3
Toluic Acid	50	25	2	-	-
		60	3	-	-
		100	-	-	-
Trichloride Antimony	100	25	1	1	1
		60	1	1	1
		100	-	-	-
Trichloroacetic Acid	s50	25	1	1	1
		60	3	2	1
		100	-	-	-
Trichloroethylene	100	25	3	2	3
		60	3	2	3
		100	-	-	-
Triethanolamine	100	25	2	1	1
		60	3	-	-
		100	-	-	-
Turpentine	100	25	2	2	3
		60	2	3	3
		100	-	-	-
Urea -water base solution	10	25	1	1	1
		60	2	1	1
		100	-	-	-
	33	25	1	1	1
		60	2	1	1
		100	-	-	-
Uric Acid	10	25	1	-	-
		60	2	-	-
		100	-	-	-
Urine	nd	25	3	1	1
		60	2	1	1
		100	-	-	-
Vinyl Acetate	nd	25	3	-	-
		60	3	-	-
		100	-	-	-
Water -purified	100	25	1	1	1
		60	1	1	1
		100	-	-	1
-sea water	100	25	1	1	1
		60	1	1	1
		100	-	-	1
-distilled	100	25	1	1	1
		60	1	1	1
		100	-	-	1
-rain water	100	25	1	1	1
		60	1	1	1
		100	-	-	1
-drinking water	100	25	1	1	1
		60	1	1	1
		100	-	-	1
Water base solution soap	alto	25	1	-	1
		60	2	-	-
		100	-	-	-
Whisky	comm	25	1	-	1
		60	1	-	-
		100	-	-	-
Wine	comm	25	1	1	1
		60	1	-	1
		100	-	-	-
Vinegar	comm	25	1	1	1
		60	2	1	1
		100	-	-	-

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Zinc -Cyanide	all	25	1	-	-
		60	1	-	-
		100	-	-	-
-Chloride	dl	25	1	1	1
		60	1	1	1
		100	-	-	-
	sat	25	1	1	1
		60	1	1	1
		100	-	-	2
-Chromate	nd	25	1	-	1
		60	1	-	1
		100	-	-	-
-Nitrate	nd	25	1	-	1
		60	1	-	1
		100	-	-	-
-Sulfate	dl	25	1	1	1
		60	1	1	1
		100	-	-	-
	sat	25	1	1	1
		60	1	1	1
		100	-	-	-

FAN DESCRIPTION

AIM	Moves air with presence of corrosive gas/vapours that can be characterized by corrosive concentrations.
WORK CYCLE	*1 Aspiration* Through the volute suction mouth the air is aspirated through a tube or directly from the environment in which it is installed. *2 Expulsion* The air can be directed into apposite pipes or into the outside air from the permanent mouth of the volute.
MAUNUFACTURE	*1 Volute* Plastic structure as described in the catologue, to direct the air with presence of gas/vapours moved by impeller. *2 Impeller* Rotor with vanes, is put into rotation by an electric motor. *3 Support structure* Supports the parts which are used directly to convey air in the presence of gas/vapours. *4 Motorization* Mechanical system that gives the rotary mode to the impeller (in the model with suffix "T" there is a transmission belt-pulley).
OPERATIONS	Direct the air with presence of gas/vapours The fan, as effect of the rotation of the impeller, creates a depression that aspirates the fluid into the volute and pushes it into the exit channel.

DESCRIPTION OF THE MOST COMMON ACCESSORIES

The fan has the following accessories that are available on request:

- Anti vibration coupling: absorb the vibrations that can be transmitted in the tubes of the aspiration system.
- Anti vibration supports: absorb the vibrations that can be transmitted to the support of the appliance.
- Butterfly valve: regulates the capacity of air in the tubes.
- Tubes: to connect the fan to the system.
- Condensation discharge: unloads the condensation that forms inside the volute.
- Curves and reductions: make up the junctions between the lengths of the pipes .

WARNING

The fan does not have a speed regulation with actioning (inverter). This is because the nominal speed of the motors must never be exceeded and because at low speed the motor increases its temperature.
Should the buyer need to regulate speed he must contact the manufacturer to install the necessary additional measures of protection (thermoprotector on the motor, speed limitator etc)

WARNING

The whole motor-fan consists of two separate parts that are united together , but which have two separate certification procedures (electric and non electric).
Therefore the electric motor , could have a marking plate showing the maximum superficial temperature (T1:T6) which is different (more preventive) from the fan temperature. There are cases in which the motor has a category which is superiour to the one of the fan .
The user must therefore know that the reference plate of the whole body must always be the one on the fan. The rule is , for the applicance as a whole, the lowest category establishes the cateogloy of the whole body.
For example: fan cat.3 + motor cat. 2 = the whole body category3

WARNING

The electric systems installed in places with risk of explosions are subject to checks before installation on behalf of the regional ARPA regionale and checks every two years.

WARNING

Periodical maintenance of the fan is extremely important to maintain safety functions of the appliance constant in time. The user must therefore adhere to the maintenance table described in the apposite chapter.

SAFETY DEVICES

The fan does not have active safety functions since it must be integrated in a system that controls feeding and control.
The buyer must therefore evaluate the risk of the appliance, on the whole, and adopt the necessary measures.
Uncovered moving parts (impeller) represent the main risk, which must be protected by protections in the areas of air entry and exit. These protections are usually represented by the air channels, in the installation phase.

ENVIRONMENTAL CONDITIONS ALLOWED

The fan can be installed in the work environment with a temperature between -15C° and +70C° and not exceeding 1000 metres above sea level (with the exception of particular agreements with the manufacturer)

WORK PLACE REQUIREMENTS

SUPPORT SURFACE:
Dimensioned so that it can support the weight as declared in the catalogue as well as loads that are already present and must be sufficiently stable to avoid possible falls.

NECESSARY CONNECTIONS:
Electric
Aeraulic

TRANSPORT

TRANSPORT DATA

The fan must be transported inside a box or crate of the size below:

Type	Width (mm)	Depth (mm)	Heightt (mm)
p 20	450	450	500
p 25-28	500	550	680
p 31-35	550	650	900
p 40-45	600	860	1050

Causes that can not be calculated in advance or when carrying out multiple transportations, could. in exceptional cases, vary the the measurements above

DANGERS

The fan must be handled as it has been delivered, it is heavy and has sharp and protruding parts which are dangerous and therefore the necessary individual items of protection must be used.

The equipment must be cleaned carefully before handling, in order to avoid debris from work processing falling inexpectably during lifting operations .

PRECAUTIONS TO BE ADOPTED


WARNING: take care at all times


WARNING: wear suitable accident prevention clothing.


WARNING: follow the procedures of this manual extremely carefully.


WARNING: make sure the lifting parts are adequately oversized for the weight needing lifting


Do not for any reason go near the equipment if it has not touched the ground and if the lifting measures are not active.

HOW TO TRANSPORT THE PACKAGING

WARNING: for safety reasons do not handle weights exceeding 25 kg by hand. If so carry out lifting operations together with other operators or use appropriate lifting devices.

- Lift the packaging and place it on the support surface inside the means of trasport.
- Transport to the place of installation.
- Unload the packaging from the means of transport and place it near the place of installation.

UNPACKAGING

- Place the packaging onto a stable surface
- Open the packaging
- Extract the fan

HOW TO TRANSPORT THE FAN

- Manual handling is allowed up to 25 kg
- Over 25 Kg more operators are required or use appropriate lifting measures.

INSTALLATION

HOW TO INSTALL THE FAN

PRECAUTIONS TO BE ADOPTED


WARNING: follow the procedures in this manual extremely carefully


WARNING: use suitable accident prevention clothing .


WARNING: for anything regarding the electric part and for connection contact a qualified electrician


WARNING: before carring out connection to the electricity supply make sure it is impossible to access the impeller with ones limbs. If this is not so segregate the appliance using the protection grid and connect it to the return and aspiration tubes.

1. Before carrying out machine installation, the area must be made safe from danger of explosions. This can be obtained by eliminating the sources of emission of inflammable substances and combustible dusts present in or around the area
2. All those openings from which an inflammable substance can be emitted under the form of gas, vapour, fog, combustible dusts are sources of emission.
3. Make sure possible sources of start up can not spread through the aspiration channels.
4. The electrical connections to the motor must be explosion proof in category 2GD, if this is not so the protection results to be void.
5. Carry out the earth electrical connection in the apposite clamp supplied by the manufacturer.

The start up source is the physical element which, bringing sufficient energy to an explosive atmosphere, provokes explosion.
Elimination of the trigger sources is of prior importance to prevent explosions.

Foreign bodies that may be aspirated into the fan can be a trigger source, or can damage the fan itself impairing the safety functions.
The installer, or the user, must therefore arrange a suitable system in the channel to stop foreign bodies.
Law EN14986:2007 foresees that a device to stop solid bodies is created with a level of protection not inferiour to IP20.
A list of possible trigger sources follows:

FREE FLAMES (oxyhydrogen welding) ELECTRIC MATERIAL
SPARKS FROM MECHANICAL /ABRASION (grinding, cutting, abrasion, welding)
HOT SURFACES (welding) ELECTROSTATIC DISCHARGE (insulating material)
EXOTHERMIC REACTIONS (chemical reactions) SHOCK WAVES
IONOGENIC AND NON IONOGENIC RADIATIONS HIGH POWER ELECTROMAGNETIC WAVES

BEHAVIOUR TO BE ADOPTED

1. Transport and unpack as described beforehand
2. Use the fan itself to individuate the position of the fixing screws.
3. Make the slots.
4. Position the fan so that the slots of the support structure corrrespond with those of the surface of installation.
5. Fix the structure to the surface using pressure stoppers or bolts depending whether the surface of installation is of iron or of cement. If present, use the antivibration supports.
6. Connect the return and aspiration tubes.
7. Isolate the fan using appropriate fixed protections in order to make it inaccessible.
8. If present, apply the condensation discharge in the low part of the volute to allow the condensation to drain away. Make sure there is a system to collect this condensation.
9. Protect the fan using apposite grids/grates to avoid contact should the dangerous moving parts be accessible.
10. End of installation.

CONNECTION TO THE ELECTRICITY SUPPLY

Must be carried out when the fan has been positioned. A qualified electrician must follow the indications of the electrical technical documentation attached to the terminal box of the electric motor.
Carry out the electric connection to the earth.
The electric connection must be carried out in accordance to law CEI EN 6024-1

CALIBRATION

The fan does not require initial calibration.

MAINTENANCE

WARNING: Maintenance must be carried out only by specialized technical personnel, who know the machine and the risks connected to it.

WARNING: before carrying out maintenance attach signs "maintenance in progress" in well visible and various places .

WARNING: wear protective gloves suitable for contact with the nature of the fluid with possible presence of gas/corrosive/ harmful or toxic vapours and its deposits.

WARNING: wear accident prevention clothing as foreseen by the employer

WARNING: follow the indications in this manual.

WARNING: to see more clearly inside the volute use a portable auxiliary light with protection.

WARNING: before intervening on the fan make sure the electricity supply is cut off and that measures of prevention against undesired start up have been taken.

WARNING: The impeller presents an inertia, therefore after fan shut down it continues to rotate for some time depending on its size. Wait for complete shut down before access. Consider also the possibility that the impeller can start to rotate caused by the currents of air inside the pipes.

MAINTENANCE TABLE

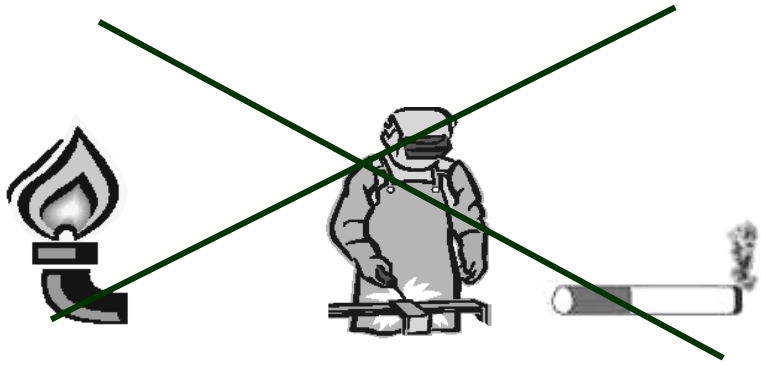
INTERVENTION	PERIODICITY
Substitution of the electric motor bearings and of the transmission support, if present.	30.000 hours
Vibration check, anomalous noise , fixing the bolts, general integrity.	500 hours

TOOLS USED IN EXPLOSIVE ATMOSPHERE

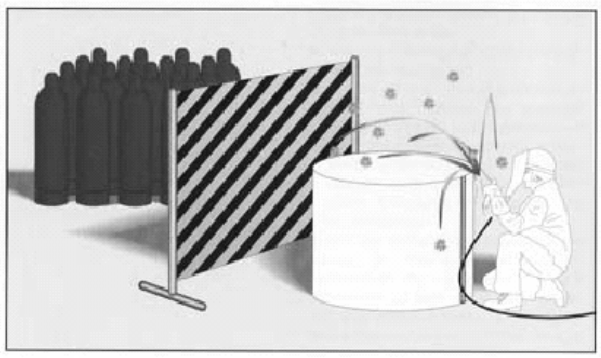
There are two types of tools:
a) tools that can cause only single sparks when used (for example screwdrivers, spanners, percussion screwdriver);
b) tools which generate a series of sparks when used to saw or grind.
In areas 0 and 20 tools which produce sparks are not allowed.
In areas 1 and 2 only stainless steel tools in confomity to a) are allowed. Tools that conform to b) are allowed only if it can be assured that dangerous explosive atmospheres are not present on the work place.
However, the use of any kind of stainless steel tool is strictly forbidden in area 1 if risk of explosion due to the presence of substances belonging to group II c (in accordance to EN 50014) (acetylene, carbon disulfide, hydrogen), and hydrogen sulphide, ethylene oxide, carbon monoxide, unless dangerous explosive atmosphere is not present on the work place when using these tools.
The use of tools in area 1, 2, 21 and 22 should be subject to a "work permit" (see last page of the manual)

DO NOT USE TOOLS WHICH MAKE SPARKS INSIDE AREAS WITH DANGER OF EXPLOSION

DO NOT USE FREE FLAMES, DO NOT SMOKE



For work which requires production of sparks (e.g., welding, fire grinding) the following measures of protection must be adopted (as in picture), if necessary activate a service of fire prevention surveillance.



REPARATIONS

TYPE OF SPECIALIZATION REQUIRED

Maintenance, reparation and cleaning operations must be carried out by skilled and qualified personnel who know the product. We recommend reparations be carried out only by the company of manufacture or by a company specialized in fans.

PREVENTIVE MEASURES

WARNING: before carrying out reparations on site attach signs "REPARATION IN PROGRESS" so that they are visible and in different places.

WARNING: wear accident prevention clothing.

FINDING BREAKAGES

The following table shows :

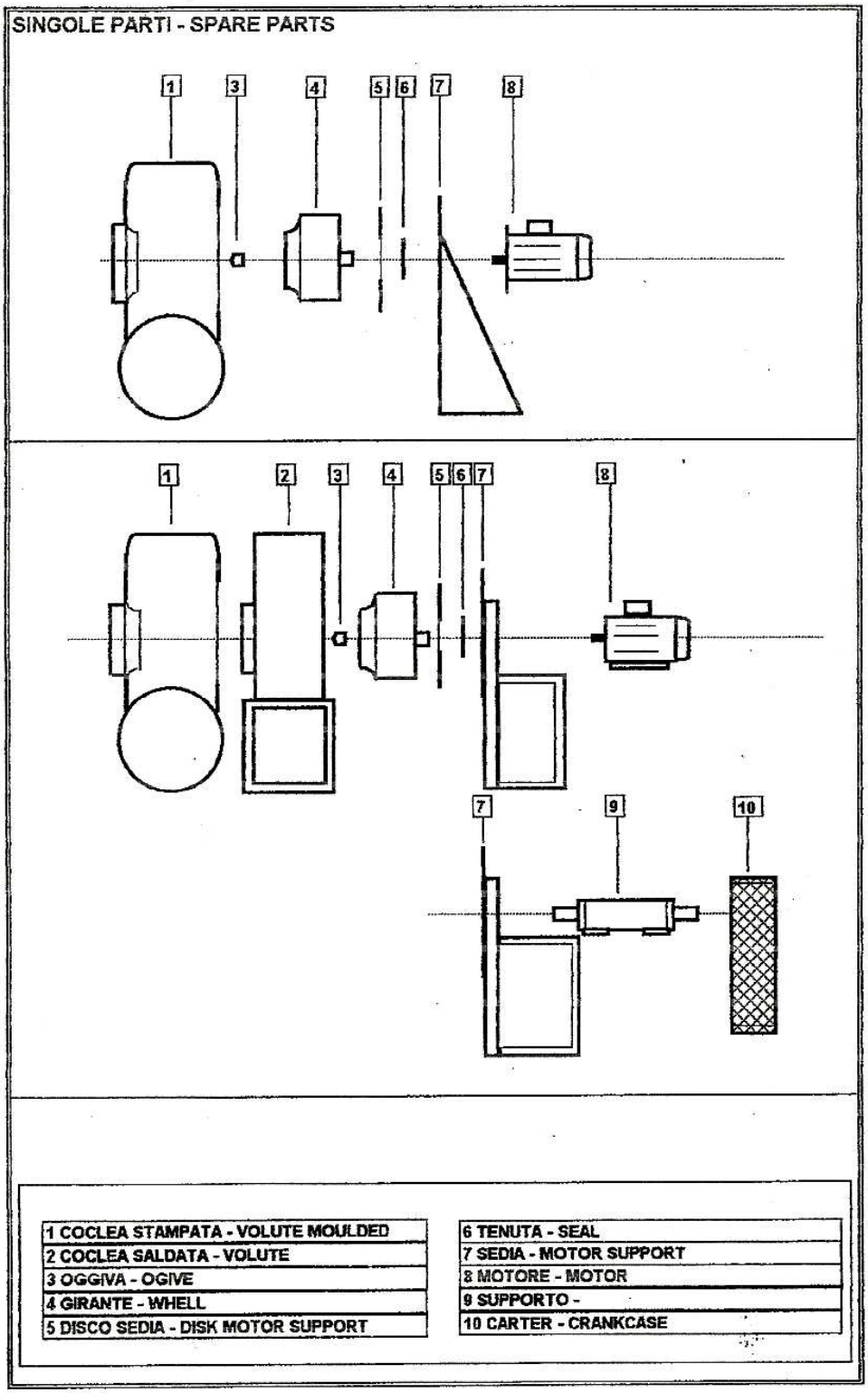
- The description of the problem that is the most probable symptom of malfunction;
- The possible cause or causes of damage;
- Suggested solutions;

Finding breakages can be carried out by expert and qualified technical maintenance personnel, who know the machine and the risks connected to it.

PROBLEM FOUND	CAUSE	SOLUTIONS
Lack of capacity (with reduction of power at normal speed of rotation)	Tubes obstructed and/o aspiration points obstructed.	Clean tubes and hood, check position of the shutters
	Direction of rotation inverted	Check connection of winding on motor terminal box
	Impeller obstructed	Clean the impeller using the apposite door hatch when the appliance is shut down
		Check voltage and connect the clamps of the motor
	Insufficient speed of rotation	Check transmission, check that the belts do not slide
Eccessive air capacity	Speed of rotation	Clean tubes and hood, check position of the shutters. Check direction of rotation; check conditions of turbulence at aspiration; check speed of motor rotation, voltage, defects in winding
	Loss of air in the duct system or badly constructed or installed components , or bypass shutters not perfectly shut	Check the system and substitute the faulty components
Insufficient pressure	Speed of rotation too low	Clean tubes and hood, check position of the shutters
	Direction of rotation inverted	Check electric connection
	Impeller partially blocked and/or damaged	Check position of assembly and condition of the impeller

PROBLEM FOUND	CAUSE	SOLUTIONS
Reduction of performance after a satisfactory period of operation	Leakage in volute casings and/or leakage in the aspiration tubes	Substitute the gaskets and verify the condition of channeling
Start up difficult	Excessive power absorption	Check direction of rotation; check the conditions of turbulence at aspiration; check rotation speed of the motor, voltage, winding defects
	Reduced voltage	Check the data on the motor plate
Excessive noise	Elevated number of rotations to obtain the required performance	Use of soundproof systems and/or silencers; choose an appliance with a bigger size equal to the performance or an appliance with minor peripheral speed
	Break down of the bearings	Check bearing wear (in particular for the airtight ones)
	Incorrect impeller balancing or impeller scraping on the volute	Check balancing of the impeller
Vibrations	Unbalance of the rotating parts	Check impeller balancing again
	Support structure not suitable	Add weights to the structure to make it more stable

SPARE PARTS TABLE



WARNING: spare parts must be requested exclusively from the manufacturer Venplast communicating the number which identifies the broken part and the type of appliance.

CLEANING

TYPE OF SPECIALIZATION REQUIRED

Specialized worker with experience of machines and trained regarding accident prevention measures.

SITUATIONS OF DANGER

These are possible only on failure to follow the manual instructions and use the adequate individual items of protection described in this manual.

PREVENTIVE MEASURES

Cut off the electricity supply and carry out the protection measures against undesired start up.
Discharge the condensation inside the volute making it flow away.
Adopt the safety measures for the type of fluid conveyed from the fan (acids, bases, toxic, harmful, corrosive, etc…)

RECOMMENDED PRODUCTS

Use only and exclusively compressed air if the appliance is used to convey air with presence of gas/vapours without particles in suspension.
Should the appliance take in vapours of particular chemical substances, refer to the safety file of the substance itself, to individuate the most suitable product for cleaning.

BEHAVIOUR TO BE ADOPTED

1. Stop the appliance by cutting off the electricity supply.
2. Gain access to the internal part of the volute by disassembling it as described in the relative chapter
3. Clean the internal parts of the volute and of the impeller using compressed air or specific products necessary for air with presence of gas/vapours.
4. Assemble the volute as described in the relative chapter

DISMANTLING

SITUATIONS OF DANGER

Connected to the fact that some of the parts of the appliance are heavy.

PARTS, ELEMENTS, SUBSTANCES THAT REQUIRE PARTICULAR PROCEDURES

No part of the appliance must be disposed of in the environment.

Every part, component or group of components must be grouped in accordance to the type of material.

For the modality to be followed and the means adopted follow the prescriptions of the law in force at the date of dismantling.

Adopt the safety measures in accordance to the type of fluid conveyed by the fan (acids, bases, toxic, harmful, corrosive, etc…)

TERMINOLOGY

ASSEMBLY: (also to associate to assembly and disassemby)
Indispensable notions for installation, maintenance, reparations and possible transportation and dismantling.

INSTALLATION: (also to associate to activation)
Information on how to arrange the machine in accordance to the operation and maintenance requirements etc in conditions of safety. Both for the purposes of machine needs and for the situations on the site of destination.

CALIBRATION: (to associate also to checks and tuning)
Operations and indications relative to correct management of the regulations of the appliance and of the method of verification.

USE: (to associate also to activation)
All the necessary information for conduction distinguishing all the possible conditions of operation: manual, automatic, stand by, emergency, start up, stop etc. including the indications for first start up.

MAINTENANCE:
Normal verifications and restoration of the conditions of optimal operation, especially referred to situations of predictable consumption and/or wear. Must be carried out periodically.

REPARATION:
Interventions to restore the conditions of optimal operation, after a breakage. Where applicable the precautions needed for critical situations must be indicated.

FAN ASSEMBLY AND DISASSEMBLY

LEVEL OF SPECIALIZATION REQUIRED

The operations described in this chapter are mentioned again in different parts of the manual. The specialization is already specified at the beginning of the chapter.

PRECAUTIONS TO BE ADOPTED

- WARNING: follow the indications in this manual.
- WARNING: wear the appropriate accident prevention clothing.

BEHAVIOUR TO BE ADOPTED

DISASSEMBLY

1. Stop the appliance by cutting off the electricity supply.
2. Remove the aspiration and return tube from the appliance.
3. Unscrew the bolts that fix the volute to the support structure
4. Unscrew the anchor screw of the impeller on the electric motor shaft.
5. Extract the impeller
6. Unscrew the bolts that fix the electric motor.
7. End of disassembly.

ASSEMBLY

1. Screw the anchor screws that fix the electric motor.
2. Assemble the impeller on the motor shaft.
3. Screw the anchor screws of the impeller on the shaft of the electric motor.
4. Screw the anchor screws that fix the volute to the support structure.
5. Restore the return and aspiration tube from the appliance.
6. End of assembly.

OUT OF USE

LEVEL OF SPECIALIZATION REQUIRED

Specialization refers to any person who is 18 years of age or older, who is intelligent and has a normal physic, who has a copy of this chapter and whose employer can guarantee his specific training.

PRECAUTIONS TO BE ADOPTED

- WARNING: follow the indications in this chapter
- WARNING: wear the appropriate accident prevention clothing .

BEHAVIOUR TO BE ADOPTED

1. Stop the appliance.
2. Cut off the electricity supply
3. Disconnect the electric cables of the motor.
4. Spread a slight layer of oil on the metal parts to prevent oxidation.
5. Cover the appliance with a nylon covering.