INSTRUCTION MANUAL

for

FANS

for explosive atmospheres

ATEX CATEGORIES

2G – 2GD – 3G – 3GD

Venplast srl

Via Staffali, 24

37062 Dossobuono di Villafranca (VR) – Italia

Tel. 0039 045 8600479 – www.venplast.com

P.iva 02595330230

INDEX

FOREWORD

THE PRESENT INSTRUCTION MANUAL IS RELEVANT TO THE ASSEMBLED FAN, EQUIPPED WITH ELECTRIC MOTOR (IF INCLUDED IN THE PURCHASE AGREEMENT), SUITABLE TO BE INSTALLED IN AN EXPLOSION DANGER AREA (ATEX)
FOR WHAT CONCERNS THE SPECIFIC INSTRUCTIONS FOR THE ELECTRIC MOTOR, REFERENCE SHOULD BE MADE TO THE RELEVANT MANUAL RELEASED BY THE MANUFACTURER OF THE MOTOR, WHICH IS ENCLOSED TO THE INSTRUCTION MANUAL.

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.

THE PRESENT MANUAL REFERS TO TWO CATEGORIES OF FAN FOR ATEX: **CATEGORY 2** AND **CATEGORY 3**. THE TWO CATEGORIES, IN TURN, DIVERSIFY IN TWO TYPES OF FLUID: **GAS (G)** OR **GAS+DUST (GD).**
THESE DATA CAN BE READ BOTH ON THE PLATE APPLIED ONTO THE FAN AND IN THE COMPLIANCE STATEMENT INCLUDED WITH THE MOTOR, AND THEY MARK THEIR SPECIFIC CHARACTERISTICS.

THE FOLLOWING TABLE DESCRIBES THE CORRESPONDENCE BETWEEN CATEGORY/CLASS AND CLASSIFIED AREA

CATEGORY	TYPE	DESTINATION	REMARKS
2	G (gas)	area 1-2	Atex area, with **occasional** presence of **gas**.
	GD (gas-DUST)	area 21-22	Atex area, with **occasional** presence of **gas-dust**.
3	G (gas)	area 2	Atex area, **gas rarely** present.
	GD (gas-DUST)	area 22	Atex area, **gas-dust rarely** present.

CATEGORY 2 IS THEREFORE BUILT IN SUCH A WAY AS NOT TO TRIGGER THE AREAS IN WHICH THE ATEX EXPLOSIVE ATMOSPHERE IS OCCASIONALLY POSSIBLE. CATEGORY 3 INSTEAD IS BUILT IN SUCH A WAY AS NOT TO TRIGGER THE AREAS IN WHICH THE ATEX EXPLOSIVE ATMOSPHERE IS NOT NORMALLY PRESENT, BUT IT CAN RARELY OCCUR (USUALLY IN CASE OF DEFECTS OR FAULTS).

VENPLAST FANS DO NOT BELONG TO CATEGORY 1, WHICH MEANS THAT THEY ARE NOT SUITABLE TO OPERATE IN ATEX 0-20 AREAS, WHERE ATEX IS OFTEN PRESENT OR PRESENT FOR LONG PERIODS OF TIME.

THE **"T" TEMPERATURE CLASS** IDENTIFIES THE MAXIMUM TEMPERATURE OF THE EXPOSED SURFACES OF THE FAN. THE TABLE HERE BELOW SHOWS ALL THE TEMPERATURE CLASSES ADMITTED BY THE ATEX NORMS.

TEMPERATURE CLASS	MAXIMUM TEMPERATURE OF THE SURFACES
T1	450°C
T2	300°C
T3	200°C
T4	135°C
T5	100°C
T6	85°C

THE CLASS WITH HIGHER NUMBER IS ADEQUATE ALSO FOR THE CLASSES WITH LOWER NUMBER.
FOR EXAMPLE: TEMPERATURE CLASS T6 IS SUITABLE ALSO FOR T5-T4-T3-T2-T1
TEMPERATURE CLASS T4 IS SUITABLE ALSO FOR T3-T2-T1, NOT FOR T5 and T6

BEFORE INSTALLATION OF THE MOTOR IT IS IMPORTANT FOR THE USER TO CAREFULLY CHECK THE FAN CATEGORY, TYPE OF FLUID AND TEMPERATURE CLASS.

MARKING

Venplast srl

37062 DOSSOBUONO DI VILLAFRANCA (VR) – ITALY
Via Staffali, 24 – TE 0039 045 8600479 – FAX 0039 045 987032

ATEX

TYPE	XXXX	**ROT**	XX		XX
FAN no.	XXXX	**Ta**	-20°C / +60°C	**Date**	XX/XX/XXXX
ATEX	XXXX	**GAS**	XXXX	**Polveri**	XXXX

MOT KW	XX	**ATEX**	XXXXXXXXXX		
RPM MOT	XXX	**VOLT**	XXXX	**MOT. no.**	XXXX

General rules for interpretation of the information included in ATEX marking plates.

GENERAL INFORMATION

II — I = underground (mines) II = surface

2 — Machinery category 2 for zone 1 or 21 / cat. 3 for zone 2 or 22 / cat. 2/3 (internal /external)

GD — G= gas, vaporous, fog GD= gas, vaporous, fog, combustible dust

INFORMATION FOR GAS AND VAPOROUS

Ex (d) h — Construction method used

IIC — Fan suitable to be installed in environment gas group IIA, IIB, IIC

T5 — Maximum temperature of the surfaces exposed from T1 to T6 see previous pages

Gb — Protection level EPL EN 60079-0 Gb for zone 1 Gc for zone 2

INFORMATION FOR DUST

Ex (d) h — Construction method used

IIIC — Groups of admitted gases IIIA fibers, IIIB not conductive dusts, IIIC conductive dusts

T100°C — Maximum temperature reached by the equipment

Db — Protection level EPL Db for zone 21 Dc for zone 22

X — Verify all information mentioned on the conformity declaration

(d) → when the fan is supplied with electric motor with flameproof enclosure

VIBRATIONS

Model "2GD" including the letter X in the plate (see marking) is suitable for installation in an environment where combustible dusts are present (for example wood), therefore the machinery must be fitted with an alarm sensor intervening when the maximum vibration level allowed is exceeded, to avoid triggering of the dusts by any anomalous friction. This device must be connected to the stop sequence procedure of the motor so as to stop the machine in case of faulty operation (only for the "dusts" model). The device must be installed by the client. Category 3GD model, instead, does not require a vibration sensor.

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 responsibility of the choice of the electric motor is up to the buyer, who will have to take care of choosing a motor which is compatible with the fan certification.

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 VENPLAST s.r.l. 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.
See also the chapter "General sales conditions" on the last page.

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

According to the material used for its manufacture, the fan may convey dangerous fluids/vapours.
Check against the table that follows, which is only an indication, compatibility of resistance to corrosion.

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		25	3	1	2
-water base solution	100	60	3	2	-
		100	-	-	-
		25	3	1	1
	40	60	3	2	2
		100	-	-	-
Acetic Acid		25	1	1	1
	s25	60	2	1	1
		100	-	-	1
		25	1	1	1
	30	60	2	1	1
		100	-	-	1
		25	1	1	1
	60	60	2	1	1
		100	-	-	2
		25	1	2	1
	80	60	2	3	3
		100	-	-	3
		25	2	1	1
-glacial	100	60	3	2	2
		100	-	-	3
Acetic Anhydride		25	3	2	1
	100	60	3	2	2
		100	-	-	3
Acetone		25	3	1	1
	10	60	3	-	3
		100	-	-	3
		25	3	2	1
	100	60	3	2	3
		100	-	-	3
Acetophenone		25	-	-	1
	nd	60	-	-	3
		100	-	-	-
Acrylonitrile		25	-	1	1
	technical pure	60	3	1	1
		100	-	-	-
Adipic Acid		25	1	1	1
-water base solution	sat	60	2	1	1
		100	-	-	-
Allyl Alcohol		25	2	1	1
	96	60	3	2	1
		100	-	-	1
Alum		25	1	1	1
-water base solution	dil	60	2	1	1
		100	-	-	-
		25	-	1	1
	sat	60	2	1	1
		100	-	-	-
Aluminum		25	1	1	-
-Chloride	all	60	1	1	-
		100	-	-	-
		25	1	1	-
-Fluoride	100	60	1	1	-
		100	-	-	-
		25	1	-	-
-Hydroxide	all	60	1	-	-
		100	-	-	-
		25	1	-	-
-Nitrate	nd	60	1	-	-
		100	-	-	-
		25	1	1	1
-Sulfate	deb	60	1	1	1
		100	-	-	-
		25	1	1	1
	sat	60	1	1	1
		100	-	-	2
Ammonia...		25	1	1	1
-water base solution	deb	60	2	1	-
		100	-	-	-
	Sat	25	1	-	1
		60	2	-	-

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
...Ammonia		25	1	1	1
-Dry Gas	100	60	1	1	1
		100	-	-	-
		25	2	1	1
-Liquid	100	60	3	1	-
		100	-	-	-
Ammonium		25	-	1	1
-Acetate	sat	60	2	1	1
		100	-	-	-
		25	1	1	1
-Carbonate	all	60	2	1	1
		100	-	-	-
		25	1	1	1
-Chloride	sat	60	1	1	1
		100	-	-	2
		25	1	1	1
-Fluoride	25	60	2	1	1
		100	-	-	-
		25	1	1	1
-Phosphate	all	60	1	1	1
		100	-	-	-
		25	1	1	1
-Hydrosulphate	dil	60	2	1	1
		100	-	-	-
		25	1	1	1
-Hydroxide	28	60	2	1	1
		100	-	-	-
		25	1	-	1
-Metaphosphate	all	60	1	-	1
		100	-	-	-
		25	1	1	1
-Nitrate	sat	60	1	1	1
		100	-	-	1
		25	1	-	1
-Persulphate	all	60	1	-	-
		100	-	-	-
		25	1	1	1
-Sulphur	deb	60	2	1	1
		100	-	-	-
		25	1	1	1
	sat	60	1	1	1
		100	-	-	-
		25	1	-	1
-Triphosphate	all	60	1	-	1
		100	-	-	-
Amyl Acetate		25	3	1	2
	100	60	3	2	-
		100	-	-	-
Amyl Alcohol		25	1	1	1
	nd	60	2	1	1
		100	-	-	1
Aniline		25	3	2	1
	all	60	3	2	1
		100	-	-	-
		25	2	2	2
-Chlorhydrate	nd	60	3	2	2
		100	-	-	3
Anthraquinone Sulfonic Acid		25	1	1	1
	susp	60	2	-	1
		100	-	-	-
Aqua Regia		25	2	3	3
	100	60	2	3	3
		100	-	-	3
Arsenious Acid		25	1	1	1
	deb	60	2	1	1
		100	-	-	-
		25	1	1	1
	80	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	-	-	-
-Chloride	10	25	1	1	1
		60	1	1	1
		100	-	-	-
-Hydroxide	all	25	1	1	1
		60	1	1	1
		100	-	-	-
-Sulfate	nd	25	1	1	1
		60	1	1	1
		100	-	-	-
-Sulphur	sat	25	1	-	1
		60	1	-	-
		100	-	-	-
Beer	comm	25	1	1	-
		60	1	1	-
		100	-	-	-
Benzaldehyde	nd	25	3	2	3
		60	3	2	3
		100	-	-	-
Benzene	100	25	3	3	3
		60	3	3	3
		100	-	-	3
-+Petrol	20/80	25	3	-	3
		60	3	-	3
		100	-	-	-
-Chloride	technical pure	25	3	2	1
		60	-	-	-
		100	-	-	-
Benzoic Acid	sat	25	1	1	1
		60	2	1	1
		100	-	-	3
Benzyl Alcohol	100	25	-	1	1
		60	-	2	2
		100	-	-	-
Boric Acid	deb	25	1	1	1
		60	2	1	1
		100	-	-	1
	sat	25	1	1	1
		60	2	1	1
		100	-	-	1
Brine	comm	25	1	-	1
		60	1	-	-
		100	-	-	-
Bromic Acid	10	25	1	1	-
		60	1	1	-
		100	-	-	-
Bromine	100	25	3	3	3
-liquid		60	3	3	3
		100	-	-	3
-steam	minim	25	2	3	3
		60	-	3	3
		100	-	-	3
Butadiene	100	25	1	-	1
		60	1	3	3
		100	-	-	-
Butane Gas	10	25	1	1	1
		60	-	1	-
		100	-	-	-
Butanediol	10	25	1	-	1
		60	3	-	-
		100	-	-	-
	conc.	25	2	2	2
		60	3	3	2
		100	-	-	-
Butanone	all	25	3	1	1
		60	3	2	2
		100	-	-	-
Butyl Acetate	100	25	3	3	2
		60	3	3	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	20	25	1	1	3
		60	2	2	3
		100	-	-	3
	conc	25	3	3	3
		60	3	3	3
		100	-	-	3
Calcium	nd	25	1	1	1
-Bisulphate		60	1	1	1
		100	-	-	-
-Carbonate	all	25	1	1	1
		60	1	1	1
		100	-	-	-
-Chlorate	nd	25	1	1	1
		60	1	1	-
		100	-	-	-
-Chloride	all	25	1	1	1
		60	2	1	1
		100	-	-	2
-Hydroxide	all	25	1	-	1
		60	1	-	1
		100	-	-	-
-Hypochlorite	sat	25	-	1	1
		60	2	1	1
		100	-	-	-
-Nitrate	50	25	1	1	1
		60	1	-	-
		100	-	-	-
-Sulfate	nd	25	1	1	1
		60	1	1	1
		100	-	-	-
-Sulphur	sat	25	1	2	1
		60	1	2	-
		100	-	-	-
Carbon	100	25	1	1	1
-Dioxide Gas		60	1	1	1
		100	-	-	-
-water base solution		25	1	1	1
		60	2	1	1
		100	-	-	-
-Monoxide	100	25	1	1	1
		60	1	1	1
		100	-	-	-
-Sulphur	100	25	2	2	1
		60	3	-	3
		100	-	-	3
-Tetrachloride	100	25	2	2	3
		60	3	3	3
		100	-	-	-
Carbonic Acid	100	25	1	-	-
-dry		60	1	-	-
		100	-	-	-
-water base solution	sat	25	1	-	-
		60	1	-	-
		100	-	-	-
-damp	all	25	1	-	-
		60	1	-	-
		100	-	-	-
Chloramine	dil	25	1	1	1
-water base solution		60	-	-	-
		100	-	-	-
Chloric Acid	20	25	1	1	1
		60	2	3	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		25	3	3	3
	100	60	3	-	3
		100	-	-	3
Chlorine		25	2	-	-
	sat	60	3	-	-
		100	-	-	-
		25	1	-	3
-dry gas	10	60	2	-	3
		100	-	-	-
		25	2	-	3
	100	60	3	-	3
		100	-	-	-
		25	1	-	3
-damp gas	5 gr/m3	60	3	-	3
		100	-	-	-
		25	2	-	3
	10 gr/m3	60	2	-	3
		100	-	-	-
		25	2	-	3
	66 gr/m3	60	2	-	3
		100	-	-	-
		25	3	3	3
-liquid	100	60	-	-	3
		100	-	-	-
Chloroacetic Acid		25	1	2	1
	85	60	2	3	3
		100	-	-	3
		25	1	2	-
	100	60	2	3	3
		100	-	-	3
Chloroform		25	3	2	2
	all	60	3	-	3
		100	-	-	3
Chlorosulfuric Acid		25	2	3	3
	100	60	3	3	3
		100	-	-	3
Chromic Acid		25	1	2	1
	10	60	2	3	2
		100	-	-	3
		25	1	2	2
	30	60	2	3	3
		100	-	-	3
		25	1	2	2
	50	60	2	3	3
		100	-	-	3
		25	1	3	3
-Solution	50/35/15	60	2	3	3
		100	-	-	-
Citric Acid		25	1	1	1
-water base solution	50	60	1	1	1
		100	-	-	1
Copper		25	3	-	1
-Cyanide	all	60	3	-	1
		100	-	-	-
		25	1	1	1
-Chloride	sat	60	1	1	1
		100	-	-	-
		25	1	1	3
-Fluoride	all	60	1	1	3
		100	-	-	-
		25	1	1	1
-Nitrate	nd	60	2	1	1
		100	-	-	-
		25	1	1	3
-Sulfate	dl	60	1	1	3
		100	-	-	-
		25	1	1	1
	sat	60	1	1	1
		100	-	-	-
Cresol		25	2	1	1
	s90	60	3	-	-
		100	-	-	-
		25	3	-	2
	> _	60	3	-	-
		100	-	-	-

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Cyclohexane		25	3	1	1
	all	60	3	-	2
		100	-	-	-
Cyclohexanone		25	3	1	-
	all	60	3	-	3
		100	-	-	3
Decalin decahydronaphthalene		25	1	1	3
	nd	60	1	2	3
		100	-	-	-
Dextrin		25	1	1	1
	nd	60	2	1	1
		100	-	-	-
Dichloroacetic Acid		25	1	1	1
	100	60	2	2	2
		100	-	-	-
Dichloro Benzene		25	3	-	3
	all	60	3	-	3
		100	-	-	-
Dichloroethane		25	3	3	1
	100	60	3	3	-
		100	-	-	-
Dichloroethylene		25	3	3	2
	100	60	3	3	-
		100	-	-	-
Diethylether		25	3	3	1
	100	60	3	3	1
		100	-	-	-
Diglycolic Acid		25	1	1	1
	18	60	2	1	1
		100	-	-	-
Dimethylamine		25	2	-	1
	100	60	3	2	2
		100	-	-	-
Dioctyl Phthalate		25	3	1	2
	all	60	3	2	2
		100	-	-	-
Dybutil Phthalate		25	3	3	3
	10	60	3	-	3
		100	-	-	-
Ether		25	3	-	3
	all	60	3	-	3
		100	-	-	-
Ethyl Acetate		25	3	1	2
	100	60	3	3	3
		100	-	-	3
Ethyl Alcohol		25	1	1	1
	nd	60	2	2	1
		100	-	-	1
Ethyl Chloride		25	3	2	3
	all	60	3	-	3
		100	-	-	-
Ethyl Ether		25	3	-	3
	all	60	3	-	3
		100	-	-	-
Ethylene Glycol		25	1	1	1
	comm	60	2	3	1
		100	-	-	-
Ethylene Chlorohydrin		25	3	-	-
	100	60	3	-	-
		100	-	-	-
Fatty Acids		25	1	-	-
	nd	60	1	-	-
		100	-	-	-
Fertilizer		25	1	1	1
	%10	60	1	1	1
		100	-	-	-
		25	1	1	1
	sat	60	1	1	1
		100	-	-	-
Fluorine Dry Gas		25	2	2	3
	100	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		25	1	1	1
	50	60	2	1	1
		100	-	-	-
		25	1	1	1
	100	60	3	1	1
		100	-	-	-
Fruit		25	1	1	1
-pulp and juice	comm	60	1	-	1
		100	-	-	-
Gas		25	1	-	-
-from exhaust acids	all	60	1	-	-
		100	-	-	-
		25	1	1	1
-with nitrous vapors	traces	60	1	1	1
		100	-	-	-
		25	1	1	1
-illuminating	100	60	-	-	-
		100	-	-	-
Gasoline		25	1	-	1
-row	100	60	1	-	3
		100		-	-
		25	1	-	1
-refined	100	60	-	1	3
		100	-	-	-
Gelatine		25	1	1	1
	100	60	1	-	1
		100	-	-	-
Glucose		25	1	1	1
	all	60	2	1	1
		100	-	-	-
Glycerine		25	1	1	1
-water base solution	all	60	1	1	1
		100	-	-	1
Glycocoll		25	1	1	1
	10	60	1	1	1
		100	-	-	1
Glycolic Acid		25	1	1	1
	37	60	1	1	-
		100	-	-	-
Heptane		25	1	1	3
	100	60	2	3	3
		100	-	-	-
Hexafluorosilicic Acid		25	1	1	1
	32	60	1	1	1
		100	-	-	-
Hexane		25	1	1	1
	100	60	2	2	2
		100	-	-	-
Hydrobromic Acid		25	1	1	1
	10	60	2	1	1
		100	-	-	3
		25	1	1	1
	48	60	2	1	1
		100	-	-	3
Hydrochloric Acid		25	1	1	1
	s25	60	2	1	1
		100	-	-	1
		25	1	1	1
	s37	60	1	2	1
		100	-	-	2
Hydrocyanic Acid		25	1	1	1
	deb	60	1	1	1
		100	-	-	-

CHEMICAL AGENTS	Conc. %	Temp. (°C)	PVC	PE	PP
Hydrogen		25	-	-	-
	all	60	-	-	-
		100	-	-	-
		25	1	1	1
-Peroxide	30	60	1	1	1
		100	-	1	-
		25	1	2	1
	50	60	1	-	2
		100	-	-	-
		25	1	1	1
	90	60	1	2	2
		100	-	-	-
		25	1	1	1
-dry sulphide	sat	60	2	1	1
		100	-	-	-
		25	1	1	1
-damp sulphide	sat	60	2	1	1
		100	-	-	-
Hydrosulphite		25	1	-	1
	%10	60	2	-	1
		100	-	-	-
hydroxylamine sulphate		25	1	1	1
	12	60	1	-	1
		100	-	-	-
Hydrofluoric Acid		25	1	1	1
	10	60	2	1	1
		100	-	-	3
		25	2	1	1
	60	60	3	-	3
		100	-	-	3
Iodine		25	2	-	1
-dry and damp	3	60	3	-	-
		100	-	-	-
		25	2	2	1
-iodine	3	60	3	3	3
		100	-	-	-
Iron		25	1	-	1
-Chloride	10	60	2	-	1
		100	-	-	-
		25	1	1	1
	sat	60	1	1	1
		100	-	-	1
		25	1	1	1
-ferrous Chloride	sat	60	1	1	-
		100	-	-	-
		25	1	1	-
-Nitrate	nd	60	1	1	-
		100	-	-	-
		25	1	1	1
-ferric Sulfate	nd	60	1	1	-
		100	-	-	-
		25	1	1	1
-ferrous Sulfate	nd	60	1	1	-
		100	-	-	-
Isooctane		25	1	2	2
	100	60	-	-	3
		100	-	-	-
Isopropyl Alcohol		25	-	-	1
	100	60	2	-	1
		100	-	-	-
Isopropyl Ether		25	2	2	2
	100	60	3	3	3
		100	-	-	-
Lactic Acid		25	1	1	1
	<28	60	2	1	1
		100	-	-	1
Lanolin		25		1	1
	nd	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	-	-	-
-camphor oil		25	1	3	3
	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	-	-	-
-castornut oil		25	1	-	3
	comm	60	1	-	1
		100	-	-	-
-cottonseed oil		25	1	-	1
	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	-	-	-
-vaseline oil		25	1	1	1
	100	60	3	2	2
		100	-	-	-
-transformer oil		25	1	1	1
	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		25	1		2
	100	60	1	2	2
		100	-	-	-
Sulphur		25	1	-	1
	100	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		25	1	1	1
	s10	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. Balancing in according to ISO14694 – G6.3. *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.

CHARACTERISTIC CURVES AND OPERATION PARAMETERS

The operation curves of the fan, the speed and torque parameters, are listed in the catalogue and in the following website: http://www.venplast.com/it/prodotti.html .

CHARACTERISTICS OF THE MOTOR TO BE COUPLED

In those cases when Venplast does not supply the fan with its own motor, the installation technicians must choose a motor with adequate characteristics and rotation speed, according to the curves and the operation parameters of the fan.
Moreover, the installation technicians must choose a motor in such a way as to have no more than one category difference between the inside and the outside.
The motors used must comply with the norms in force applicable to them, and they must be in compliance with norm EN 60079-0.

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

ENVIRONMENT AND FLUID SUCKED TEMPERATURE

The fan is suitable to work in an external atmosphere, or fluid sucked, with a maximum temperature field of –20 + 60°C.

THE WHOLE MOTOR-FAN

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.

The user must therefore know that the reference plate for the whole unit must always and only be that of the fan.

ASSESSMENTS IMPOSED BY LAW

The systems installed in explosion dangerous areas may have to undergo tests by the relevant authorities according to the national law.
Notifications, tests and trials are responsibility of the end user.

MAINTENANCE

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.

INSTALLATION FAR FROM SOURCES OF HEAT

Provided that the limitations of use regarding temperatures and environment of installation are complied with, as shown here below, the fan must be installed far from a source of heat which may cause overheating.

WARNING

INSPECTION DOORS

Some fan models come with internal inspection door. It is recommended to open it only when the machine is stopped.

VIBRATIONS

The model "2GD" (see marking) is suitable for installation with environment with combustible dust (for example wood), therefore an alarm sensor is necessary to intervene when the permitted maximum vibration limit is exceeded, in order to avoid dust caused by an anomalous friction. Such a device must be connected to the stop sequence of the motor to stop the machine in case of anomaly (only for the model "dust"). The device must be installed by the purchaser. The model category 3GD on the contrary does not need any vibration sensor.

SPEED REGULATION WITH INVERTER

The fan does not come with speed regulation with operation (inverter). Therefore it is not possible to exceed the motor nominal speed or to operate at low speed because the motor would overheat.
Should the buyer need a speed regulation, he must contact the manufacturer to install the necessary additional protection measures (thermoprotector on the motor, speed limiting device, etc…)

CLASSIFICATION OF THE AREA AROUND THE FAN

Since the fan does not guarantee stability of its shaft, the surrounding area is to be considered explosive. To determine the type of area consider the whole dangerous fluid workload conveyed by the fan (considering only the polluting material and not the workload of the air processed by the fan).

FOREIGN MATTERS INPUT (only for cat . 2)

The input of foreign matters into the fan can damage it, it is therefore necessary for the user to arrange suitable mesh stopping systems to stop the foreign matters larger than 3 mm.

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 may be installed outdoors or indoors. In case of outdoor installation, it is advised to see to protecting it from weather conditions and solar radiation.
The internal parts of the fan which are in contact with the fluid to be conveyed are designed to operate within -20° and +60C° temperature range.

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 a pallet.

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. Verify that there is sufficient room around the motor to enable air circulation in order to avoid overheating.
3. All those openings from which an inflammable substance can be emitted under the form of gas, vapour, fog, combustible dusts are sources of emission.
4. Make sure possible sources of start up can not spread through the aspiration channels.
5. The electrical connections to the motor must be explosion proof in category 2GD, if this is not so the protection results to be void.
6. 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:

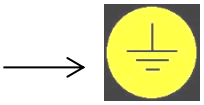
- FREE FLAMES (oxyhydrogen welding)
- ELECTRIC MATERIAL
- SPARKS FROM MECHANICAL /ABRASION (grinding, cutting, abrasion, welding)
- HOT SURFACES (welding)
- ELECTROSTATIC DISCHARGE (insulating material)
- EXOTHERMIC REACTIONS (chemical reactions)
- SHOCK WAVES
- IONOGENIC AND NON IONOGENIC RADIATIONS
- 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 fan case with an equipotential cable to the metal mass of the motor, or to an arranged equipotential node.
7. Connect the suction and delivery pipes, taking care to avoid applying thrust forces onto the fan itself, in such a way as to avoid structural deformations which may give origin to frictions between the revolving unit and the fixed parts.
8. Isolate the fan using appropriate fixed protections in order to make it inaccessible.
9. If this is not arranged on the fan case, arrange for the fan to be inspected when needed.
10. 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.
11. Protect the fan using apposite grids/grates to avoid contact should the dangerous moving parts be accessible.
12. The channels must be in compliance with the ISO norms 5801 and 5802, for correct design and installation devoid of vibrations.

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.

It is recommended that ground electrical connection be carried out in the relevant clamp 

The electrical connection must be carried out in compliance with norm CEI EN 6024-1.
It is recommended that the motor is protected by short circuits, by overload and lack of phase.

Electrical cabling must be compatible with the equipment category (2 or 3). Cabling being carried out wrongly may render null and void all the Atex protections of the electric fan. In particular it is recommended that the electric performance in category 2 be carried out ExD explosion proof, and complete with resin-bonded locking joints.

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

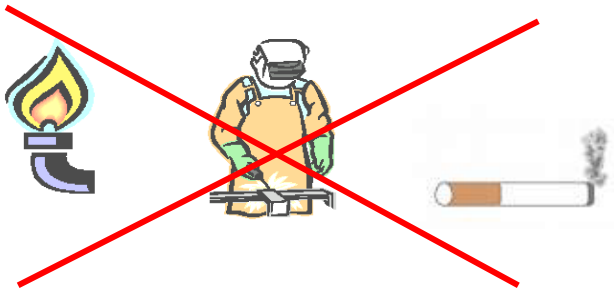
INTERVENTION	PERIODICITY
Replacement of the bearing of the electric motor and of the conveying support, if present.	every 30.000 hours
Integrity of the marking plate CE ATEX. Absence of rust in the internal and external metal parts.	every 1.500 hours
Fastening of bolts and nuts Internal and external cleaning (in particular removal of inflammable layers of dust) Tensioning of the conveying belts (only for models with belt conveying system) Minimum space between impeller and cone and nozzle (min 2 mm)	every 500 hours
Overall integrity of the structure Check of vibrations. Check of unusual noises. Check for any overheating of the impeller and/or the bearings. Check presence of dust layers.	every 40 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 :

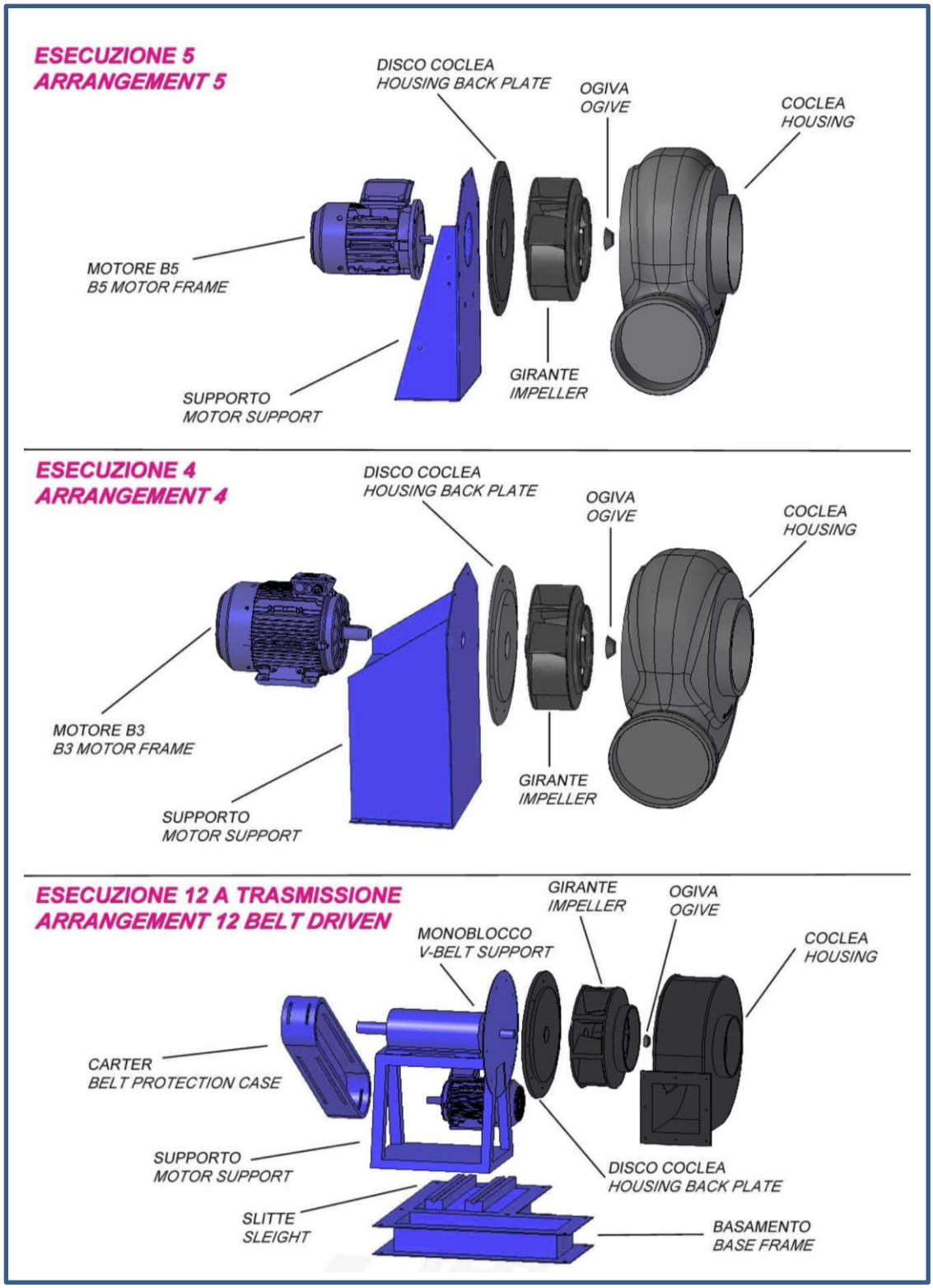
- The description of the problem that is the most probable symptom of malfunction;
- The possible cause or causes of damage;
- Suggested solutions;

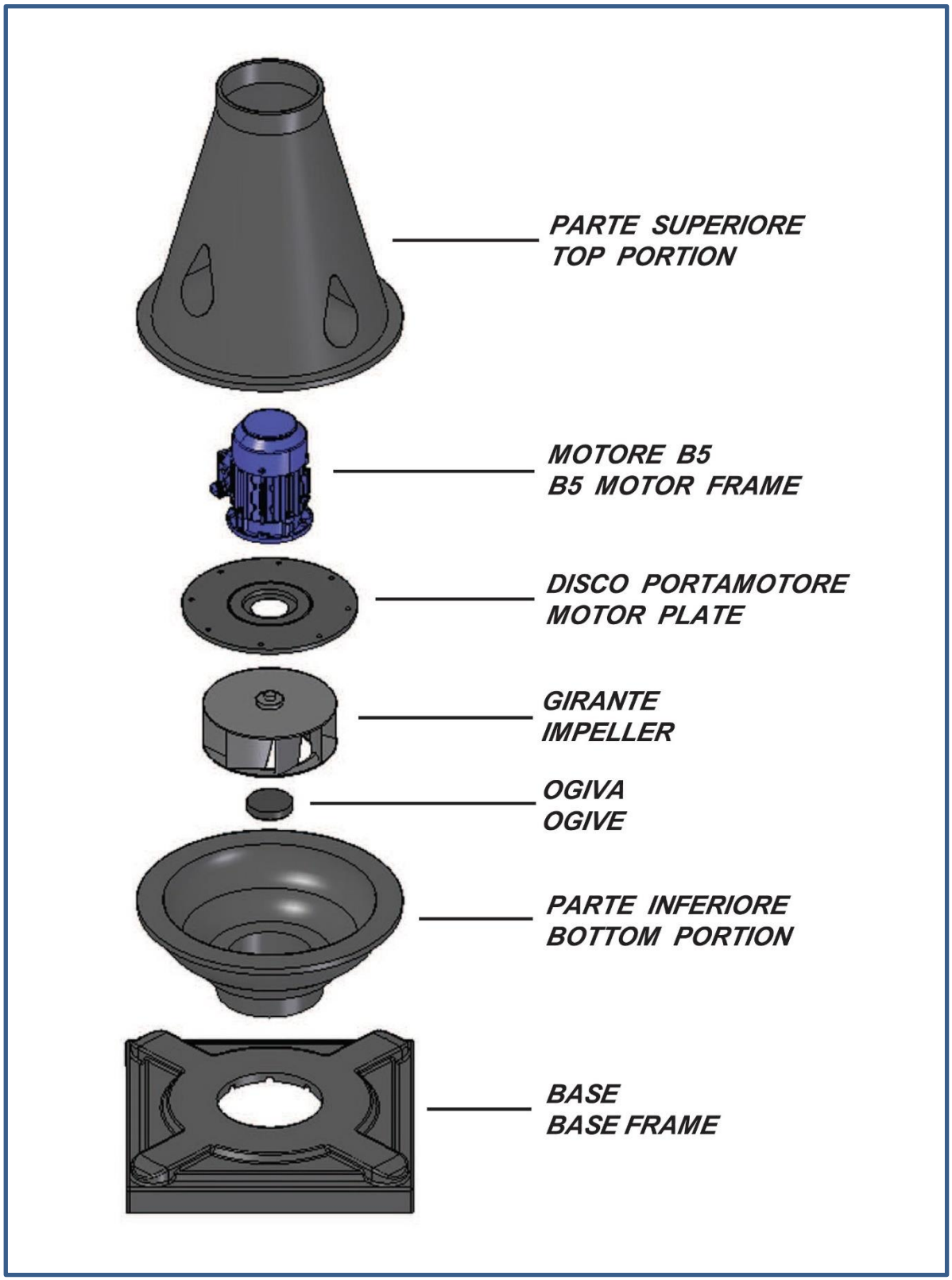
Finding breakages can be carried out by expert and qualified technical maintenance personnel, who know the machine and the risks connected to it.

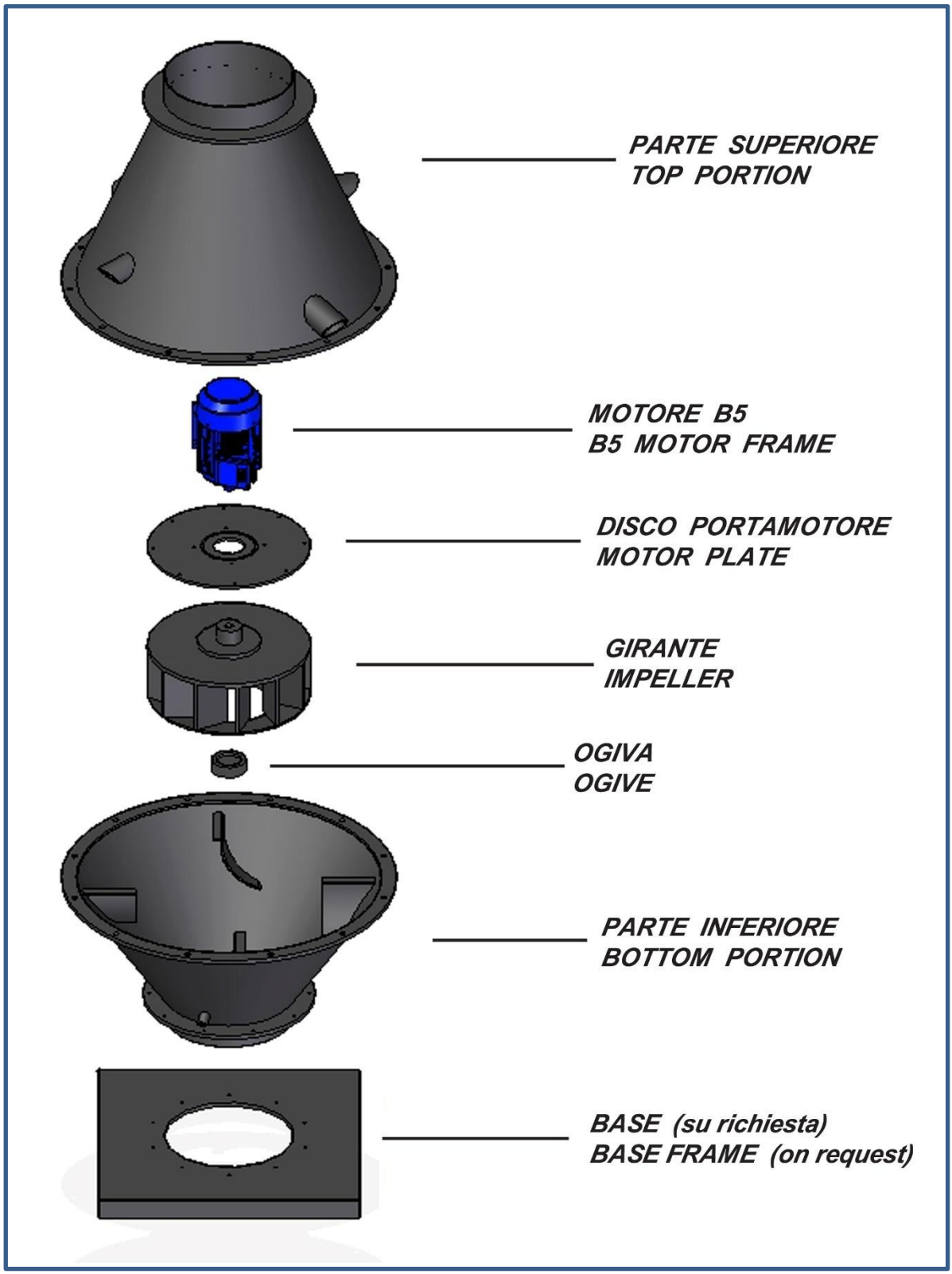
PROBLEM FOUND	CAUSE	SOLUTIONS
Lack of capacity (with reduction of power at normal speed of rotation)	Tubes obstructed and/o aspiration points obstructed. Direction of rotation inverted. Impeller obstructed. Insufficient speed of rotation	Clean tubes and hood, check position of the shutters. Check connection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

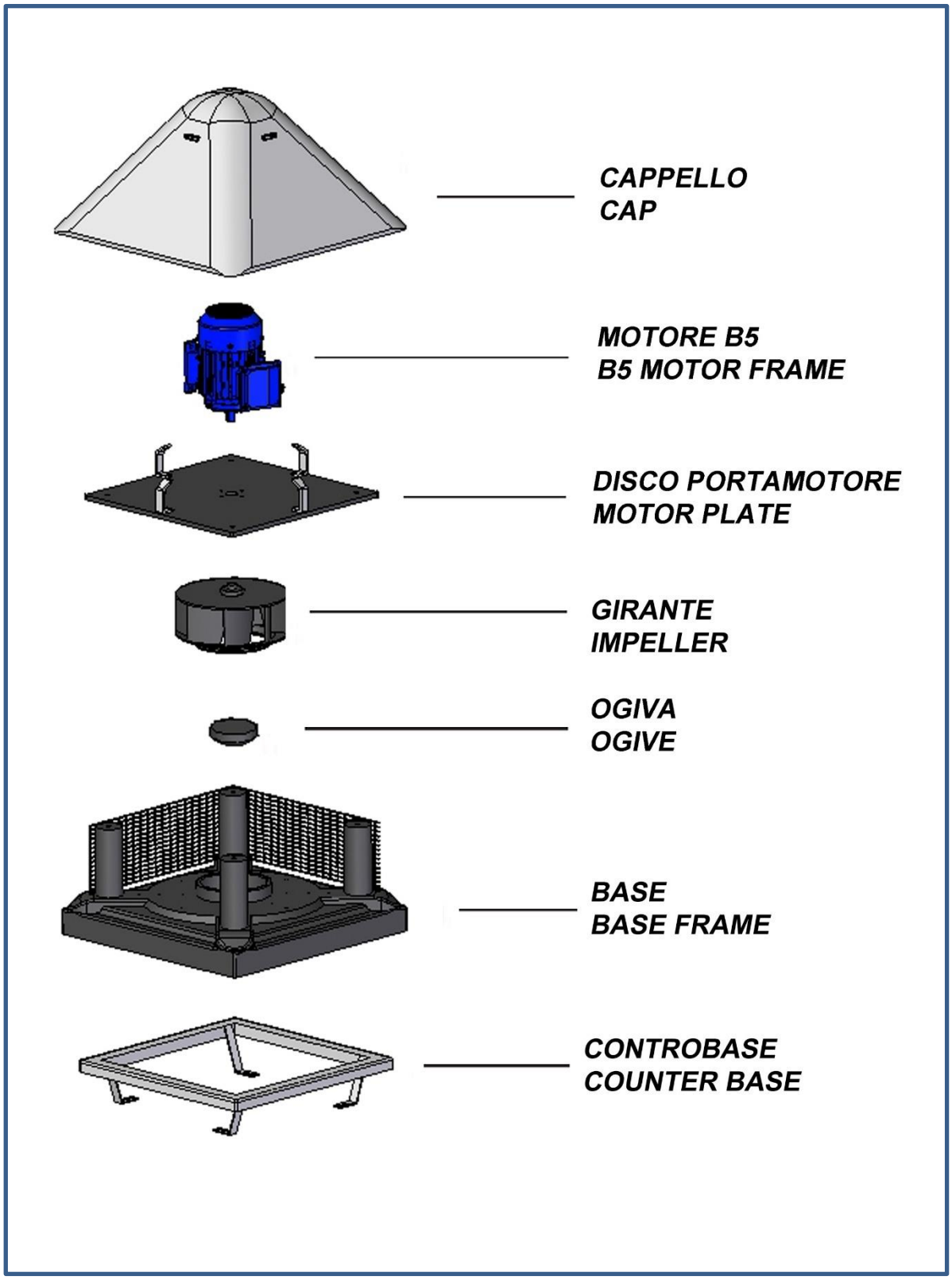
PROBLEM FOUND	CAUSE	SOLUTIONS
Start up difficult	Excessive power absorption. Reduced voltage.	Check direction of rotation; check the conditions of turbulence at aspiration; check rotation speed of the motor, voltage, winding defects. Check the data on the motor plate.
Excessive noise	Elevated number of rotations to obtain the required performance. Break down of the bearings.	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. Check bearing wear (in particular for the airtight ones).
Vibrations	Incorrect impeller balancing or impeller scraping on the volute. Unbalance of the rotating parts Support structure not suitable.	Check balancing of the impeller. Check impeller balancing again. Add weights to the structure to make it more stable.

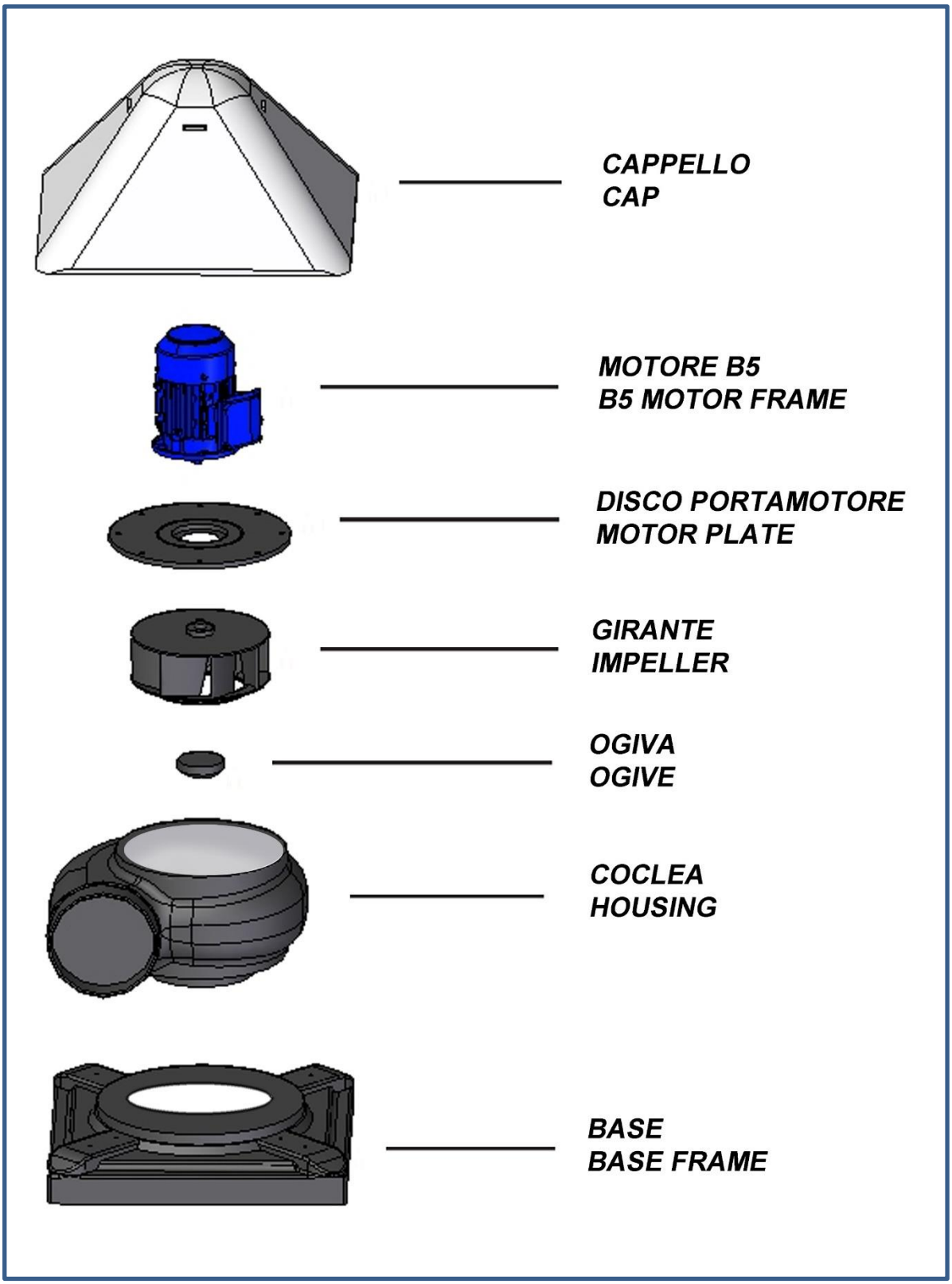
SPARE PARTS TABLE




PARTE SUPERIORE
TOP PORTION
MOTORE B5
B5 MOTOR FRAME
DISCO PORTAMOTORE
MOTOR PLATE
GIRANTE
IMPELLER
OGIVA
OGIVE
PARTE INFERIORE
BOTTOM PORTION
BASE
BASE FRAME


PARTE SUPERIORE
TOP PORTION
MOTORE B5
B5 MOTOR FRAME
DISCO PORTAMOTORE
MOTOR PLATE
GIRANTE
IMPELLER
OGIVA
OGIVE
PARTE INFERIORE
BOTTOM PORTION
BASE (su richiesta)
BASE FRAME (on request)


CAPPELLO
CAP
MOTORE B5
B5 MOTOR FRAME
DISCO PORTAMOTORE
MOTOR PLATE
GIRANTE
IMPELLER
OGIVA
OGIVE
BASE
BASE FRAME
CONTROBASE
COUNTER BASE


CAPPELLO
CAP
MOTORE B5
B5 MOTOR FRAME
DISCO PORTAMOTORE
MOTOR PLATE
GIRANTE
IMPELLER
OGIVA
OGIVE
COCLEA
HOUSING
BASE
BASE FRAME

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

WARNING:

The fans which have been certified for dusts (GD) must be kept clean from exceeding layers of dust, both internally and externally.
The inflammable layer of dust is an obstacle to the heat dissipation of the motor, which may become overheated and set to fire the layer above it.
The internal layer instead, may obstacle the mobile parts in their interconnected motion, and thus triggering frictions.
Follow the cleaning procedures table provided, as laid out by Venplast.

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.

GENERAL SALES CONDITIONS

1. Acceptance of client orders These sales conditions, with the exception of other written agreement, regulate all the present and future sales contracts between parties. Orders are subject to these sales conditions with the exception of derogations made under written form. Written sales conditions from the client in no way bind VENPLAST SRL and are to be considered invalid by these General Sales Conditions. Orders can not be cancelled or modified without agreement with VENPLAST SRL. In any case cancellations of non standard product orders or orders of products not in stock will not be accepted

2. Prices prices are in Euro, VAT, packaging and transport is not included.

3. Terms and conditions of payment Payment must be carried out exclusively at the VENPLAST SRL headquarters, unless otherwise specified in a written agreement , with legal currency and in accordance to the terms made. Should the client fail to abide to the terms and conditions of payment, VENPLAST SRL can:- request immediate payment of all the credits as a result of expiry of the terms;- suspend supplies in progress or complete them only on receipt of anticipated payment;- withdraw any other contract made with the client and interrupt negotiations in progress;- terminate the contract as in accordance with art.1456 c.c. and claim for damages as a result of client non-fulfilment.

4. **Ritention of title** Should the terms of payment be after delivery of the goods, the material remains property of VENPLAST SRL until payment of the goods has been carried out, pursuant to and in accordance with Article1523 c.c.

5. **Delivery – Costs of transport – Passage of risk** Date of delivery is approximate and not binding. In case of substantial modifications delivery starts form the date of modification itself. No penalty can be applied to VENPLAST SRL for delay of delivery, unless prevision of the fine has been expressely accepted under written form by VENPLAST SRL. All material, unless otherwise specified in a written agreement, are delivered ex warehouse VENPLAST SRL. All possible costs of transport and/or delivery are at the expense of the client. Delivery of the material to the client or to the transporter (in accordance to art. 1523 c.c.) determine the passage of risk at the expense of the client. If the client fails to withdraw the product in the terms agreed or does not supply adequate delivery instructions to VENPLAST SRL, withstanding the passage of risk to the client, VENPLAST SRL has the right to ask the client to reimburse all expenses sustained to preserve the material , and in any case, will carry out delivery in an assigned port without obligation of special warning.

6. Complaints and cancellations or partial or total modifications Complaints relative to quantity, faults and defects of quality or non conformity must be made in written form, under penalty of expiration, within and not exceeding 8 days from the date of receipt of the goods with detailed description of the defects or of the fault contested. VENPLAST SRL does not accept any cost regarding modifications and/or reparations carried out for VENPLAST SRL itself if not expressely agreed beforehand. Should the complaint be unfounded, the buyer must reimburse VENPLAST SRL all the expenses sustained for the verification. In case of damage to the products during trasportation, complaints must be made directly to the company of delivery. Complaints or disputes do not give the buyer the right to suspend payment of invoices relative to faulty material.

7. Returns Return of material will not be accepted unless authorized by VENPLAST SRL and must be made ex warehouse VENPLAST SRL. For return of material under warranty, any product returned but in reality not covered itself will be returned without any intervention to the client or with authorized intervention even over the phone by client will be charged in the invoice and however with cost of trasportation at the expense of the client. In any case VENPLAST SRL will not accept credit notes for a special product, not in stock, obsolete or non marketable.

8. Force majeure

In cases of force majeure supply of material will be suspended until the problem has been solved, subject to the right of VENPLAST SRL, at its own discretion, to cancel it.

9. Warranty VENPLAST SRL guarantees its products for a period of 12 (twelve) months from the date of purchase. This warranty regards only reparations and free substitution of those parts that, after careful examination by VENPLAST SRL, result to be faulty (electric parts are excluded). The warranty excludes any responsibility for direct or indirect damage and it is limited only to defects of material and no longer has effect should the parts returned result as having been disassembled, tampered or repaired outside VENPLAST SRL. Damage caused by negligence, bad or improper use of the machine or incorrect manoeuvres of the operator are excluded from the warranty. Removal of the safey devices, where present, will automatically make the warranty invalid and annul VENPLAST s.r.l. warranty and responsibility. In addition the warranty is no longer valid should non original spare parts be used. Equipment returned, even if under warranty, must be delivered free port.

10. Appliable law – Jurisdiction – Place of jurisdiction Contracts made with VENPLAST SRL are in accordance to the Italian law. For everything not foreseen in this contract the laws of the civil code regarding the sales of movable property are applied as far as possible. For any dispute which should occur regarding interpretation , fulfiment, non-fulfilment, execution or resolution of contracts made with VENPLAST SRL and any other question connected to these will be subject to Italian jurisdiction and the place of jurisdiction will be exclusively the one in Verona.