

SUMMARY

1. INTRODUCTION	2
2. DESCRIPTION OF THE FUNCTIONS	2
3. PRELIMINARY INSPECTION AND ASSEMBLY	4
3.1. Assembling the cartridge	4
4. DIRECTIONS FOR USE AND LIMITS OF USE	6
5. TECHNICAL DATA	8
5.1 Cartridge filter	11
6. INSTALLATION	14
7. ADJUSTMENTS	14
7.1 System	14
8. MAINTENANCE	14
8.1 Oil discharge	16
9. ELECTRICAL CIRCUIT DIAGRAMS	18
10. MARKING AND CERTIFICATION	19
11. SYMBOLS	19
12. TROUBLESHOOTING	21
13. WARRANTY	22



1. INTRODUCTION

This manual contains all the information necessary in order to use the machine correctly. The user is requested to read it thoroughly and follow the directions it contains carefully. It is also important to keep the booklet in a suitable place out of harm's way. The content of this manual may be changed without notice in order to include variations and improvements to units which have already been sent out.

2. DESCRIPTION OF THE FUNCTIONS

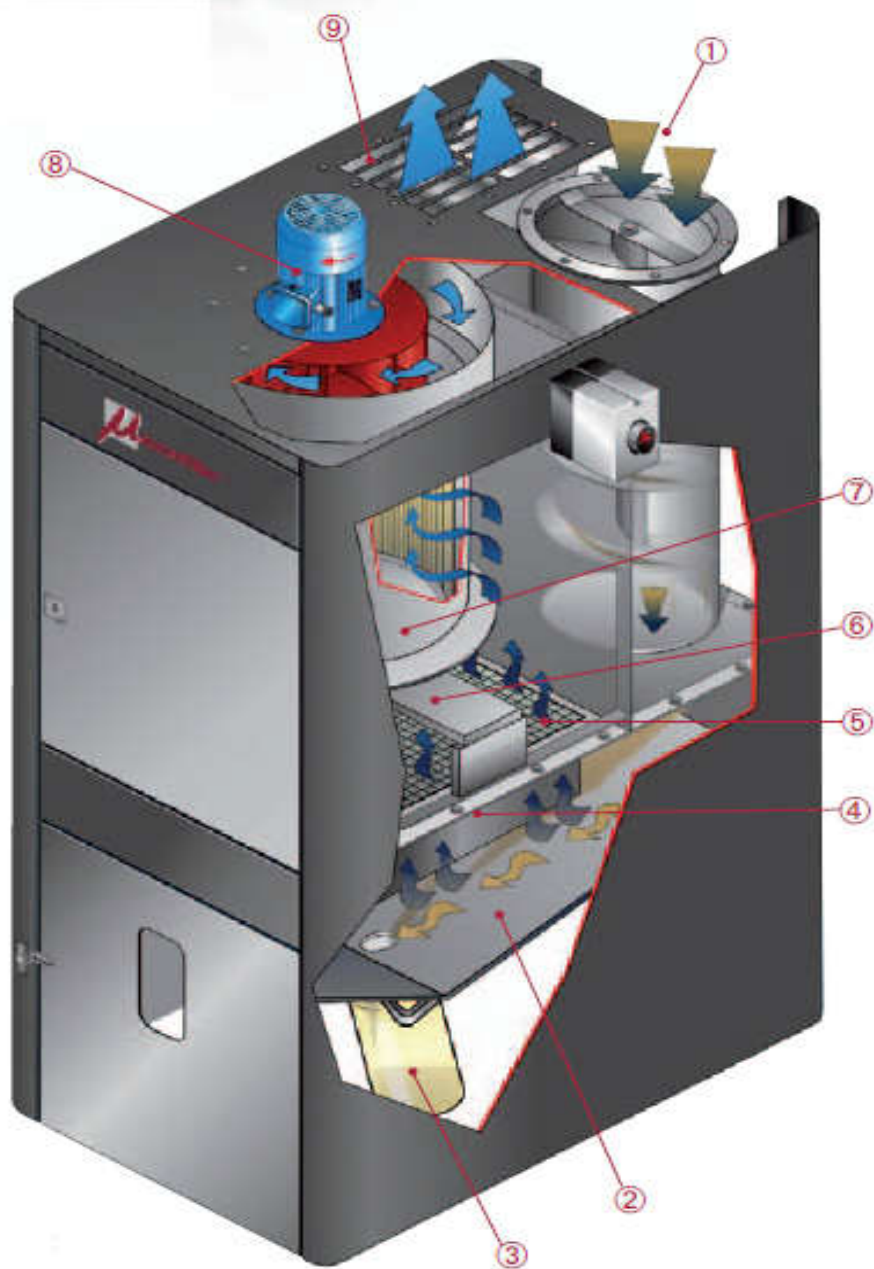
The polluted air from the oil particle is extracted through the air intake **(1)** due to the negative pressure created inside the centrifugal aspirator casing. It passes through the vertical duct, where mechanical separation of the particles suspended in the air takes place because of the centrifugal effect due to the rotation of the air imparted by the helical element.

The oil particles separated in this way come together on the wall of the pipe, held back by a wire mesh. They drip into the collection hopper **(2)** and from here to the removable PVC drum **(3)**.

The air leaving the duct is filtered again when it passes through a drop separator **(4)** and the metal filter **(5)**, and then passes through the cartridge, composed of a coalescing cloth and a paper filter **(7)**, and is sent through the centrifugal aspirator **(8)** to the expulsion opening **(9)** where it is sent back into the environment.

The combined effect of the mechanical separation of the oil particles that takes place in the duct and filtering through the drop separator, the metal filter and the cartridge ensures highly effective air purification.





Drawing 1



THE UNIT IS DESIGNED TO WORK WITH NEGATIVE PRESSURE.

3. PRELIMINARY INSPECTION AND ASSEMBLY

The ECOTECH filter reaches the customer fully assembled. The unit is protected by suitable packaging and can be transported on pallets. **For the weights, refer to the information shown in the technical table.**



In order to move the material, use appropriate lifting equipment and take all the safety precautions envisaged on the construction site.

After removing the material from the packaging, make a visual check that it has not been damaged during transportation and use the checklist to check that all the components have been supplied. If this is not the case, inform your dealer as soon as possible and nevertheless no later than 10 days from delivery.

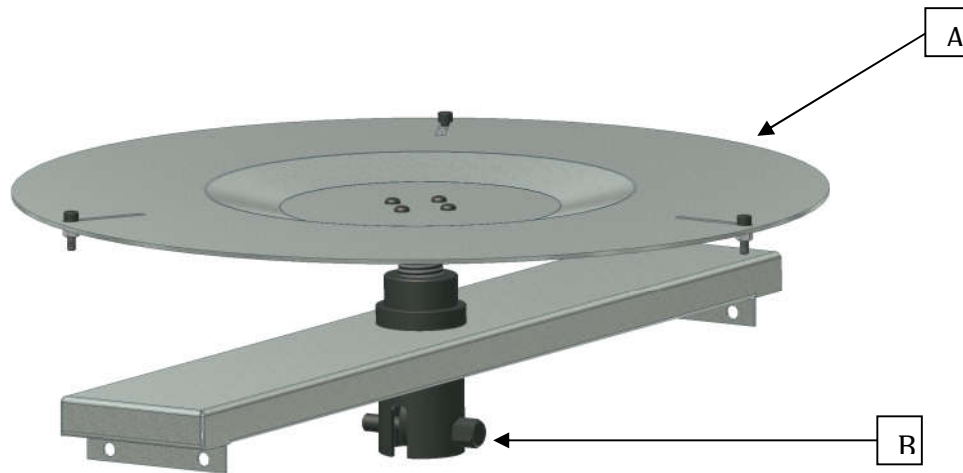
For movement over short distances in the workplace, it is necessary to disconnect the source of electrical energy and the utilities. It is then possible to move the machine with ease.

3.1. Assembling the cartridge

The cartridge is fixed to the platform by pressure exerted by the support plate **(A)**: after placing the cartridge on the plate, rotate it clockwise, positioning the seal of the cartridge a few millimetres from the roof. Using the box spanner supplied, turn the bolt **(B)** clockwise until fully blocked.



This operation must be carried out carefully in order to prevent any leakage.
For a clearer picture of assembly, see Drawings 2 and 3.



Drawing 2

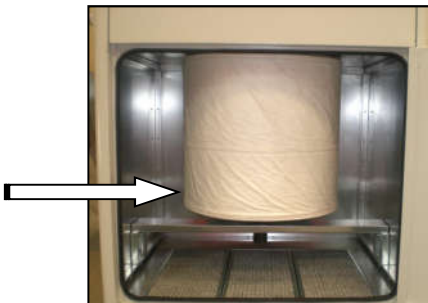


“The cartridge is fixed to the platform by pressure exerted by the support plate...”





“...after placing the cartridge on the plate...”



“...rotate it clockwise, positioning the seal of the cartridge a few millimetres from the roof.”



“Using the box spanner supplied...”



“..turn the bolt clockwise until fully blocked.”



4. DIRECTIONS FOR USE AND LIMITS OF USE

The filter has been designed for separating oil particles and oil emulsions from the air taken from machine tools such as lathes, gear cutters, grinders and cold printing machines. It is also possible to use it whenever there are oily mists, even in the food, pasta industries etc. on the condition that operating temperatures do not exceed 40°C.



The filter is not designed to treat flammable or explosive vapours by nature or by reaction. For these uses, always consult the MICRONFILTER Technical Office.



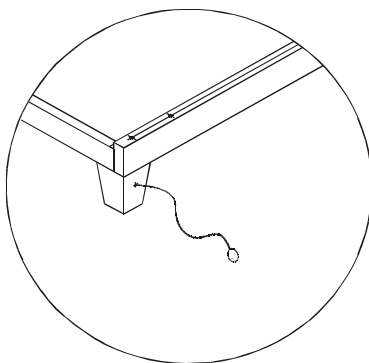
It is forbidden to smoke while the filter is operating.



The incorrect cleaning or replacement of the filter media leads to the risk of allowing the polluting agent to be released into the outdoor and working environments.



It is compulsory to earth the filter by connecting the contact points to a copper plait with a suitable cross section (a cross section of 2.5 mm² is recommended), secured to the article, taking care to maintain continuity.



Drawing 3



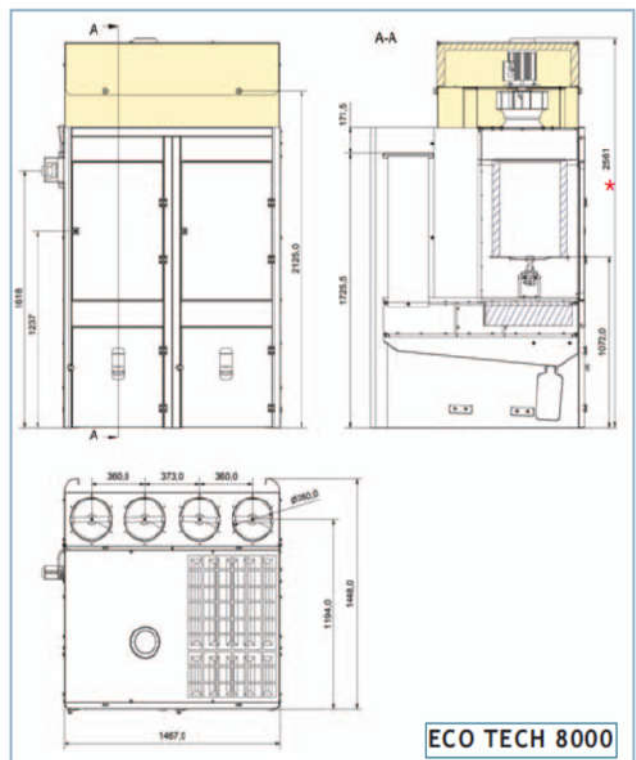
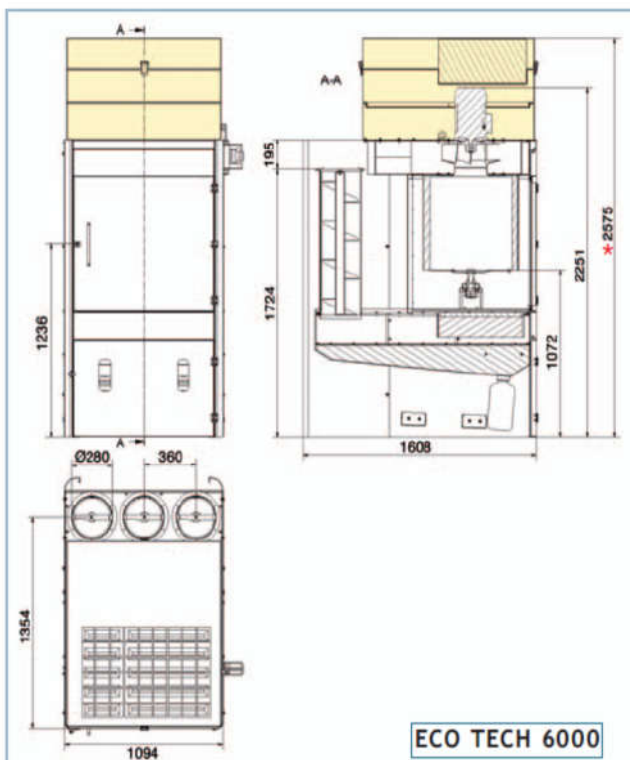
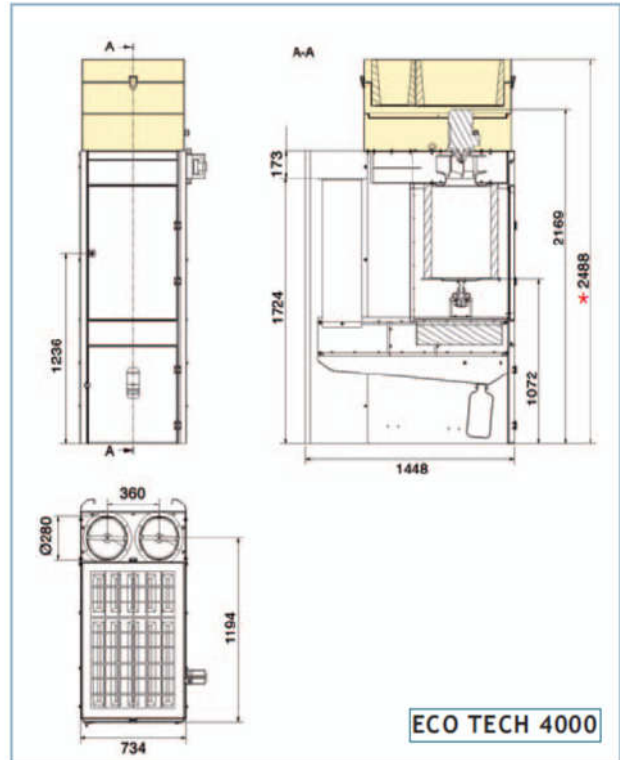
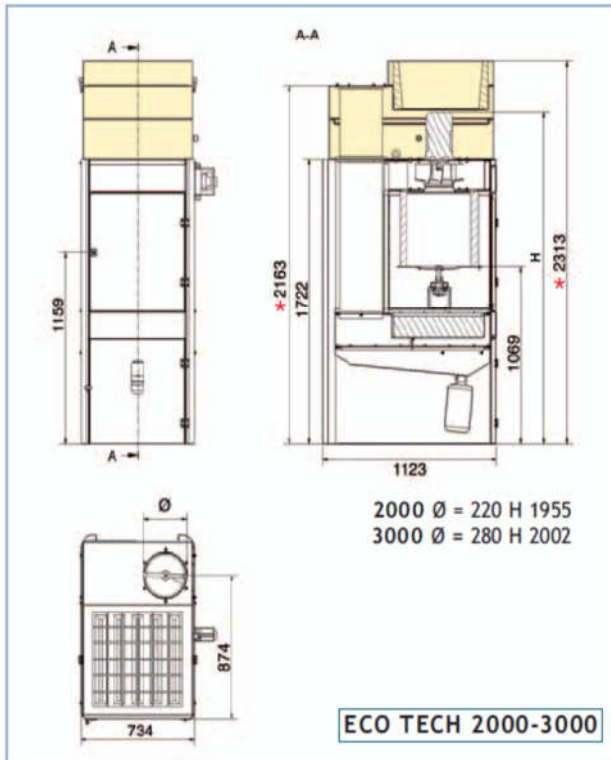
Any act which compromises the functionality, integrity and/or safety of the machine structure, the internal equipment, both electrical and mechanical, and any control and connection component is considered improper use. The MICRONFILTER Technical Office is always available for any further information about using the product.

5. TECHNICAL DATA



ECO TECH	2000	3000	4000	6000	8000
Portata massima Debit maxi Max delivery Max Luftmenge Caudal max	2000 m³/h 1177 CFM	3000 m³/h 1765 CFM	4000 m³/h 2353 CFM	6000 m³/h 3530 CFM	8000m³/h 4706 CFM
	CON FILTRO ASSOLUTO - AVEC FILTRE ABSOLU - WITH ABSOLUTE FILTER MIT ABSOLUTFILTER - CON FILTRO ABSOLUTO				
	1800 m³/h 1059 CFM	2600 m³/h 1530 CFM	3600 m³/h 2118 CFM	5400 m³/h 3175 CFM	7400 m³/h 4353 CFM
Potenza Puissance Power Leistung Potencia	1,1 kW	1,5 kW	2,2 kW	4 kW	5,5 kW
Assorbimento elettrico Absorption électrique Absorbed power Ampereaufnahme Absorbimiento electrico	2,46 A	3,26 A	4,61 A	6,1 A	10,5 A
Rumorosità senza filtro assoluto Niveau sonore sans filtre absolu Average sound level without absolute filter Schallpegel ohne absolutfilter Nivel sonoro sin filtro absoluto	73 dB(A)	73 dB(A)	75 dB(A)	76 dB(A)	78 dB(A)
Peso senza filtro assoluto Pes sans filtre absolu Weigth without absolute filter Peso ohne absolutfilter Peso sin filtro absoluto	200 Kg	230 Kg	290 Kg	420 Kg	620 Kg
Superficie filtrante Surface filtrante Filtering area Filterfläche Superficie filtrante	10 m²	18 m²	25 m²	30 m²	56 m²
Ø bocca aspirante Ø bouche aspirante Ø intake opening Ø Saugstutzen Ø boca de aspiracion	220 mm 0,85 INCH	280 mm 1,092 INCH	2x280 mm 2x1,092 INCH	3x280 mm 3x1,092 INCH	4x280mm 4x1,092 INCH
Capacità bidone di raccolta Capacité de bidon de recuperation Wheeled collection bins capacity Spaenesammelvolumen Capacidad bidón de recolección	5 l.	5 l.	5 l.	10 l.	10 l.
Cartuccia filtrante Cartouche filtrante Filter cartridge Filterpatrone Cartucho filtrante	CELLULOSA - CELLULOSE - CELULOSE - ZELLULOSE - CELULOSA				
Prefiltro a coalescenza Prefiltre a coalescence Coalescence prefilter Vorfilter zur Koaleszenz Prefiltro a coalescencia	POLIPROPILENE - POLYPROPYLENE - POLYPROPYLENE POLYPROPYLEN - POLIPROPILENO >95%				
Efficienza di filtrazione Efficacité de filtration Filtering efficiency Filtration Leistungsfähigkeit Eficiencia de filtration	CON FILTRO ASSOLUTO - AVEC FILTRE ABSOLU - WITH ABSOLUTE FILTER MIT ABSOLUTFILTER - CON FILTRO ABSOLUTO 99,997%				





5.1 Cartridge filter



D3



6066

IFA-BGIA

TESSUTI FILTRANTI - TISSUS FILTRANTES - FILTERGEWEBE - TEJIDOS FILTRANTES - TECIDOS FILTRANTES

Articolo / Article Article / Artikelbezeichnung Artículo / Artigo		6066
Composizione / Composition Composition / Faserzusammensetzung Composición / Composição		100% CELLULOSE
Peso / Poids Weight / Gewicht Peso / Peso	[g/m ²]	213
Spessore / Epaisseur Thickness / Dicke Espesor / Espessura	[mm]	0,60
Densità / Densité Density / Dichte Densidad / Densidade	[g/cm ³]	-----
Massima resistenza alla trazione trasversale / Résistance maximum à la traction transversale / Tensile strength md / Hochstzugkraft langs / Máxima resistencia a la tracción transversal / Máxima resistência à tração transversal	[N/5cm]	435
Massima resistenza alla trazione longitudinale / Résistance maximum à la traction longitudinale / Tensile strength cd / Hochstzugkraft / Máxima resistencia a la tracción longitudinal / Máxima resistência à tração longitudinal	[N/5cm]	260
Contenuto di resina / Contenu en résine Resin content / Harz gehalt Contenido de resina / Conteúdo de resina	[%]	19
Permeabilità all'aria / Perméabilité à l'air Permeability to air / Luftdurchlässigkeit Permeabilidad al aire / Permeabilidade ao ar	[m ³ /m ² h]	630 ca
Dimensione dei pori / Dimensions des pores Size of pores / Porengrösse Dimensión de los poros / Medida dos poros	[µm]	NOT MEASURABLE
Volume dei pori / Volume des pores Volume of pores / Porenvolumen Volumen de los poros / Volume dos poros	[%]	69
Certificazione di efficienza IFA/BGIA / Certification de filtrage efficient IFA/BGIA / Certification of filtration efficiency IFA/BGIA / Filtereffizienz-Zertifizierung IFA/BGIA / Certificación de eficacia de filtración IFA/BGIA / Certificação de eficiência de filtragem IFA/BGIA		M
Tinta / Couleur Color / Farbe Color / Cor		YELLOW



Fotografia al microscopio del tessuto 6066
Photographie au microscope du tissu 6066
Microscopic photograph of 6066 fabric
Fotografie des Gewebes 6066 am Mikroskop
Fotografia al microscopio del tejido 6066
Fotografia no microscópio do tecido 6066

A

A Vista dall'alto / Vue du haut / View from top / Ansicht von Oben / Vista desde arriba / Vista de cima

Rev. January 2011





D3

6066

IFA-BGIA

TESSUTI FILTRANTI - TISSUS FILTRANTES - FILTERING FABRICS - FILTERGEWEBE - TEJIDOS FILTRANTES - TECIDOS FILTRANTES

Il tessuto filtrante 6066 è una cellulosa realizzata mediante un innovativo procedimento che ha lo scopo di conferire alta resistenza meccanica ed elevata durata. Questo metodo di fabbricazione consente di non avere nessuna variazione sulla permeabilità all'aria permettendo una migliore efficienza di filtrazione, ed una elevata stabilità. La certificazione IFA-BGIA (copia disponibile a richiesta) del 6066 risponde alle direttive DIN EN 60335-2-69:2008, che esige un rilascio inferiore 0,1% per polveri di granulometria compresa tra i 0,2 e i 2 micron con una velocità di passaggio di 0,056 m/s che corrisponde ad una categoria di classificazione M. La temperatura massima di utilizzo in funzionamento continuo è di 60°C.

Le tissu filtrant 6066 est une cellulose réalisée au moyen d'un procédé innovateur qui a pour but de conférer une haute résistance mécanique et durée élevée. Cette méthode de fabrication permet de n'avoir aucune variation de la perméabilité à l'air en obtenant une meilleure efficacité de filtration, et une stabilité élevée. La certification IFA-BGIA (copia disponible sur demande) du 6066 répond aux directives DIN EN 60335-2-69:2008, qui exige un relâchement inférieur 0,1% pour des poussières de granulométrie comprise entre 0,2 et 2 microns avec une vitesse de passage de 0,056 m/s qui correspond à une catégorie de classification M. La température maximum d'exercice en fonctionnement continu est de 60°C.

6066 cellulose filtering fabric is made using an innovative process to confer high mechanical resistance and extra durability. The production method ensures constant air permeability throughout for better filtering efficiency and higher stability. The 6066 IFA-BGIA certificate (a copy is available upon request) complies with DIN EN 60335-2-69:2008 Directives specifying release less than 0,1% for 0,2 to 2 micron size range dust and a flow rate of 0,056 m/s corresponding to a M rating. The maximum continuous working temperature is 60°C.

Beim Filtergewebe 6066 handelt es sich um eine durch ein neuartiges Verfahren realisierte Zellulose mit hohem mechanischem Widerstand und hoher Lebensdauer. Bei dieser Herstellungsmethode erfolgt keinerlei Veränderung der Luftdurchlässigkeit bei einer verbesserten Filtereffizienz und einem hohen Stabilitätsvermögen. Die IFA BGIA Zertifizierung (Kopie auf Anfrage erhältlich) des 6066 entspricht den Richtlinien DIN EN 60335-2-69:2008, in welchen eine Staubfreigabe von unter 0,1% bei Korngrößen zwischen 0,2 und 2 Mikron bei einer Durchgangsgeschwindigkeit von 0,056 m/s gefordert ist, was der Klassifizierungskategorie M entspricht. Die Höchsttemperatur bei der Benutzung im Dauerbetrieb beträgt 60°C.

El tejido filtrante 6066 es una celulosa realizada con un procedimiento innovador, para otorgarle una elevada resistencia mecánica y una gran duración. Este método de fabricación permite que no exista ninguna variación de la permeabilidad al aire, haciendo posible una mayor eficiencia de filtración y una elevada estabilidad. La certificación IFA-BGIA (copia disponible a petición) del 6066 responde a las directivas DIN EN 60335-2-69:2008, que exigen una emisión inferior a 0,1% para los polvos de una granulometría de 0,2 a 2 micrones, con una velocidad de paso de 0,056 m/s, que corresponde a una categoría de clasificación M. La temperatura máxima de uso en funcionamiento continuo es de 60°C.

O tecido filtrante 6066 é uma celulose realizada mediante um processo inovador que tem a finalidade de conferir alta resistência mecânica e duração elevada. Este método de fabricação permite de não ter nenhuma variação na permeabilidade ao ar permitindo uma melhor eficiência de filtragem e uma estabilidade elevada. A certificação IFA-BGIA (cópia disponível a pedido) do 6066 corresponde às diretrizes DIN EN 60335-2-69:2008, que exige uma soltura inferior 0,1% para poeiras com granulometria compreendida entre 0,2 e 2 micron, com uma velocidade de passagem de 0,056 m/s que corresponde a uma categoria de classificação M. A temperatura máxima de utilização em funcionamento contínuo é de 60°C.

Rev. January 2011



6. INSTALLATION

The design features of the ECOTECH filter mean it is conceived for use on board the machine, installed in the immediate vicinity of the utilities and connected via rigid or flexible raceways to the collection systems which the machine tools are equipped with.

On the top, the filter is fitted with a grid through which the filtered air exits, therefore, for outdoor installations, it is advisable to protect the filter using a canopy in order to keep the article safe from infiltrations of rain.

7. ADJUSTMENTS

7.1 System

To adjust the unit flow rate, intervene on the throttle shutter (optional), mounted on the raceways using the respective knob. The opportunity to adjust the flow rate allows better execution of the work, ensuring a longer working life for the various filtering baffles and less power absorption by the fan with consequent energy saving.

8. MAINTENANCE



Do not perform maintenance while the machine is operating or connected to the electrical energy source. During these phases, remember to disconnect the plug and, if necessary, padlock the control to prevent unwanted start-ups.



When cleaning the filters, do not use flammable liquids.

The filter has been designed not to require particular regular maintenance. It is nevertheless advisable to:

- Check the condition of the electrical power cables periodically;



- Check the condition of the cartridges through the special inspection hatch: replace the cartridge if abrasions and/or breakages are evident;
- Check the state of the coalescing pre-filter that surrounds the cartridge;
- Drain the PVC oil-collection container periodically;
- Periodically, check that the fan does not show signs of anomalous vibrations.

The frequency of inspections cannot be pre-determined as it is influenced by factors which cannot be estimated beforehand, such as the frequency of use.



8.1 Oil discharge



It is possible to access the PVC oil collection container by opening the inspection hatch (A). The bottom of the container (B) is screwed to the collection hopper.



Unscrew the PVC in an anti-clockwise direction. Pay special attention while screwing on the container. The thread could cause leaks if fitted incorrectly.



The operations referred to in the previous points must be carried out by skilled personnel equipped with personal protective equipment (protective masks, gloves) and fully respecting the accident prevention regulations in the country of use.



NOTE: the term qualified personnel refers to personnel that have followed specialist courses and training and have experience in installing, putting into service and maintaining the systems.



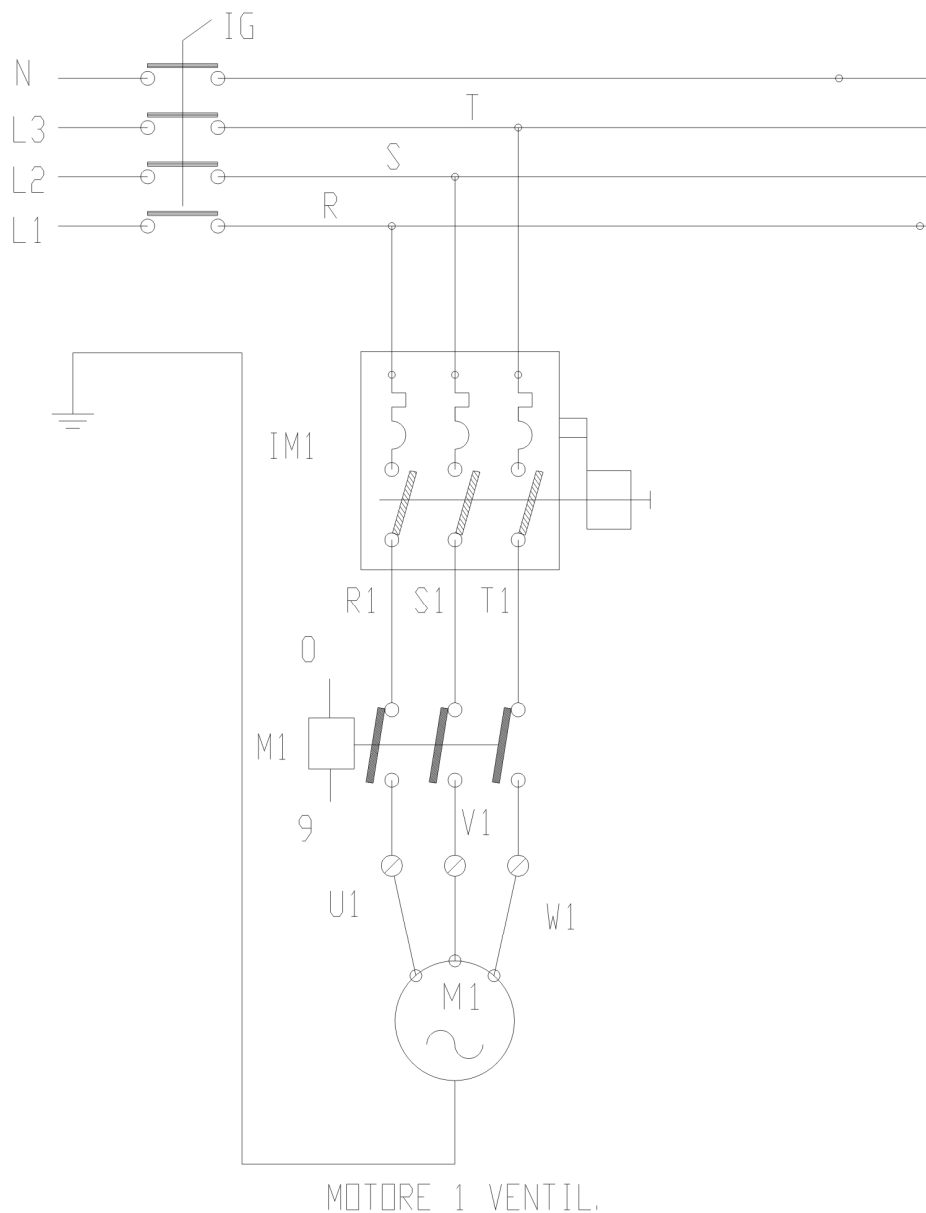
Dispose of the used filters carefully, sending them to specialised disposal companies in compliance with applicable legislation.



9. ELECTRICAL CIRCUIT DIAGRAMS

During electrical connection, respect the voltage, correct polarity and direction or rotation

WIRING DIAGRAM WITH CIRCUIT BREAKER



10. MARKING AND CERTIFICATION



The “ECOTECH” model has been examined in compliance with the Machinery Directive 2006/42/CE as amended. Its suitability is shown by the application of the CE marking on the machine

and the declaration of conformity which accompanies this manual.

11. SYMBOLS



These symbols, together with the relative wording, indicate the potential risk resulting from disregarding the provisions with which they have been combined, as specified below:



Sticker indicating that live parts at 400V are present on the control panel.

380 V



Sticker indicating the correct direction of rotation of the fan wheel.





Stickers indicating that it is compulsory to wear gloves while performing maintenance on the filters.



Stickers indicating that it is compulsory to wear masks while performing maintenance on the filters.

12. TROUBLESHOOTING

No.	Fault	Cause	Possible solutions
1	The air emitted is not sufficiently purified	Inefficient filter effect	Check that the filters are clean and remove and replace them if necessary
2	Reduction of the air flow intake	Dirty filters	Check that the filters are clean and remove and replace them if necessary
3	<i>The fan vibrates</i>	The wheel is off balance	Remove and clean the fan wheel
4	The fan rotates but there is insufficient aspiration	The direction of rotation is incorrect	Invert the two connection phases to the motor
5	No start-up	Incorrect connection	Remove the obstacles



13. WARRANTY

1. General conditions

Micronfilter s.r.l. (hereinafter known as *Supplier*) undertakes to deliver to the purchaser products conforming to the agreement which are exempt from defects such as to make them unsuitable for the use to which products of the same type are employed and guarantees the products sold for 365 days from the date of delivery with an hourly limit of use equal to 2000 hours.

The guarantee ex-*Supplier's* works is limited to the replacement or repair of the products which, in the unquestionable opinion of the *Supplier*, are defective. Components not directly constructed by the *Supplier* will be the subject of a guarantee according to the conditions used by his supplier to the *Supplier*.

It remains understood that all the components replaced shall be the property of the *Supplier* or his supplier.

2. Notification of non-conformity to guarantee or defective product

The notification of non-conformity or defect of the product must be communicated in writing to the *Supplier* with a clear indication of its nature within 15 days of the date it was found or could have been found following a thorough examination of the product. In addition, the purchaser, against *Supplier's* request, must place at the disposal of the *Supplier*, the product deemed non conforming and/or allow people assigned by the *Supplier* to carry out all the checks that the *Supplier* deems suitable in order to ascertain the effective non conformity or defect of the product. The lack of communication of the potential non-conformity or fault of the product in the times indicated and/or if the latter is not made available shall cause the immediate termination of the guarantee. The purchaser also forfeits the guarantee if, the supplier has requested the faulty piece to be returned at his expense and the purchaser omits to return such piece within a short period of the request.

The regulations of articles 40 and 44 of the Vienna Convention shall not be applicable in any case.

3. Repairs or replacements

The *Supplier* shall fulfill the obligations set out in the guarantee by repairing or replacing the non-conforming or defective parts. In order to fulfill the guarantee the *Supplier* can choose:

- a) to carry out the repairs at his factory: in this case the purchaser is obliged to send at his expense, the products to the factory indicated by the *Supplier* and to collect them ex-factory, after the execution of the guarantee.
- b) to carry out or have carried out by third parties the repairs and/or replacements in the place where the products are located. In this case the travelling costs, board and lodgings shall be at the expense of the purchaser;
- c) to have the repair and/or replacement carried out by the purchaser supplying the relative instructions and possibly supplying free of charge, ex the *Supplier's* factory or reimbursement of the spare parts.



The guarantee for the pieces replaced or repaired terminates on the same day as the guarantee of the product.

4. Exclusions

The *Supplier* shall not be held liable for defects or faults pertaining to the product which are directly or indirectly attributable to information, data, projects, materials and to any other tangible or intangible good supplied, indicated or requested by the purchaser or by third parties acting in whatever role, in the name and on behalf of the latter.

Not covered by this guarantee are all the defects directly or indirectly attributable to incorrect, excessive or improper use of the equipment and including all the times the equipment is used in a manner different from that described in the technical documentation accompanying the product. In addition excluded from the guarantee are all the parts normally subject to wear and tear such as filters, seals, fuses etc.

The guarantee shall terminate if the product is tampered with, modified, repaired by service centres other than that of the *Supplier* and by personnel not directly employed or authorized by the *Supplier* himself and/or in the case of the use of non-original components or consumables (filters, seals etc).

The *Supplier* does not guarantee the inexistence of claims or rights based on industrial or intellectual property of third parties, relating to the product or documentation transmitted to the purchaser.

5. Limitations of the *Supplier's* responsibility (responsibility for damages)

Except in the case of malice or serious wrong of the *Supplier* the possible reimbursement of any damage to the purchaser cannot however exceed the value of the product relating to the defective part. The guarantee as per this article includes and replaces the guarantees or responsibilities provided by the law and excludes all other responsibilities of the *Supplier* not originated by the products, in particular the purchaser cannot advance other requests for compensation for damage, price reduction or termination of the contract.

Once the guarantee has expired no claims shall be made to the supplier.

6. Jurisdiction

Any dispute arising between the parties, the jurisdiction will be in Turin.

