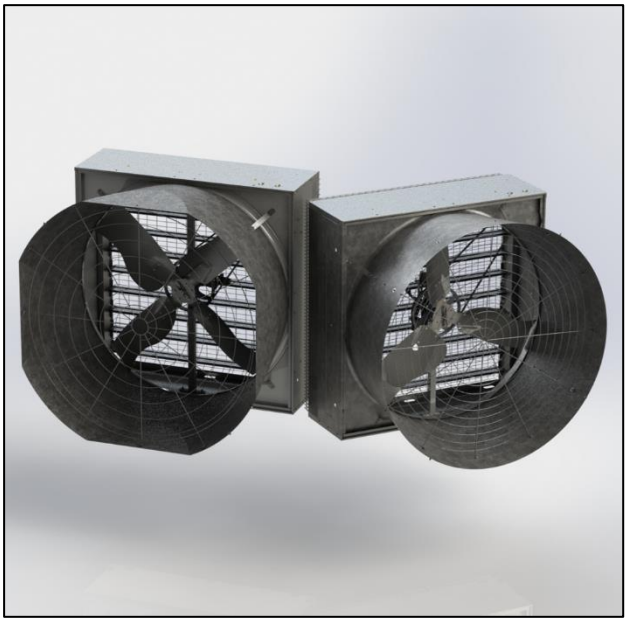
EC

Assembly manual



Spare part list + Assembling guideline

EC

Air extraction fan

Models: EC52 - EC50

Ag/MIT/ImEN-2712-02/19 Rev 1.2

Munters

EC

Assembly manual

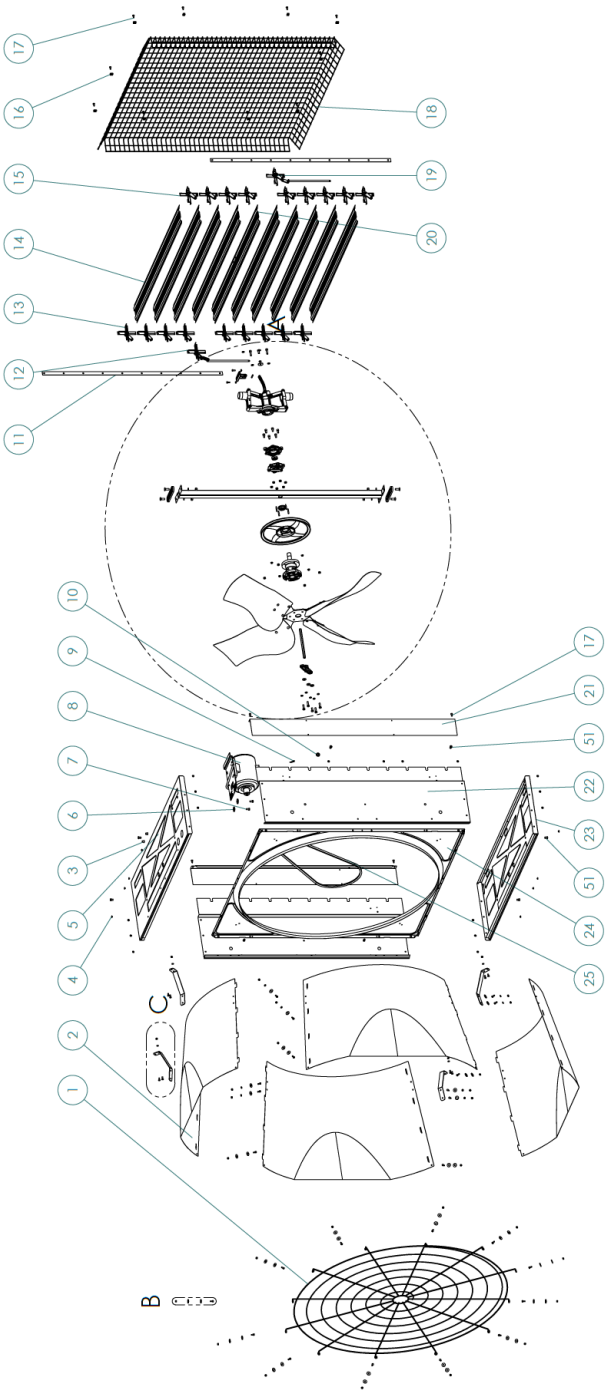
Original instructions
Revision 1.2

CONTENTS

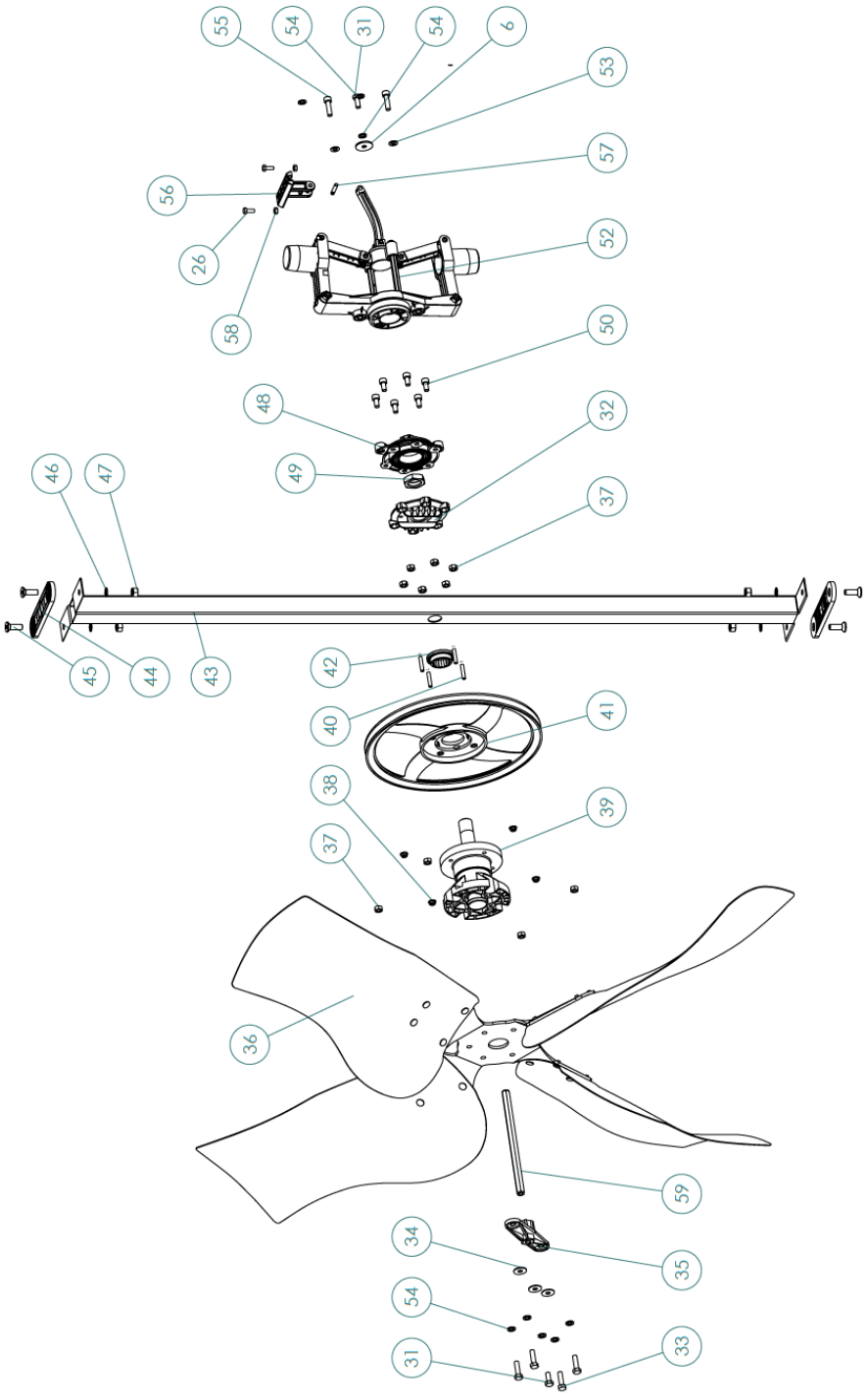
WARNING All the components and spare parts MUST be storaged in dry and clean environment.

1. SPARE PART LIST EC52

EC52 exploded view



DETAIL A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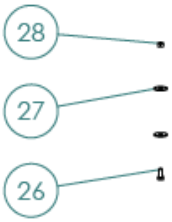
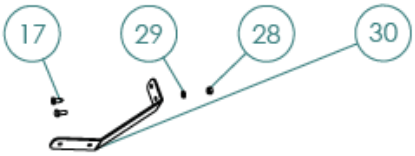
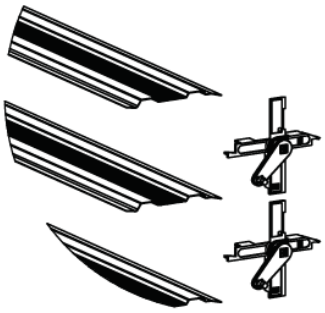
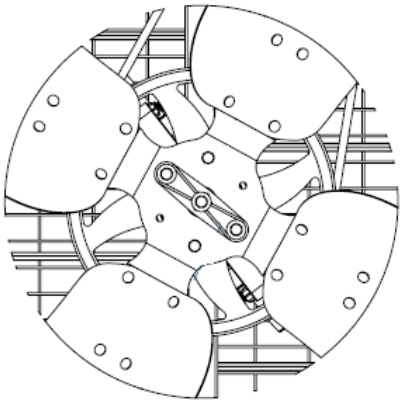
DETAIL B	DETAIL C



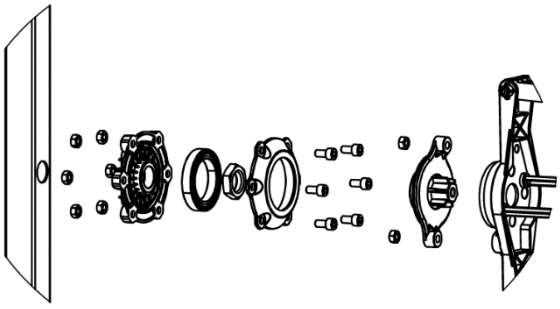


DETAIL D: ALIGNEMENT OF SHUTTER BLADE	POSITIONING OF PROPELLER FLANGE

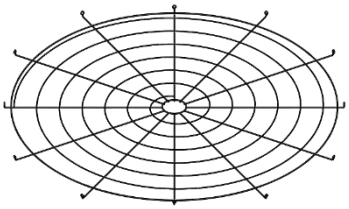




ALIGNEMENT FOR REAR AND FLANGE FLANGES

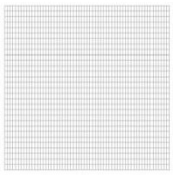


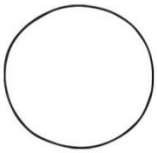
Spare parts EC52

Ref	Picture	Description	Q.ty
1		ROUND SAFETY MESH	1
2		CONE SECTOR	4
3		THREADED BUSH M8X12.5	2
4		POP UP RIVET 6.4X8	28
5		TOP PANEL	1

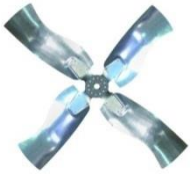
6		Ø8X32 WASHER	3
7		HEX SCREW M8X16	2
8		MOTOR	1
9		HOOK FOR SPRING	2
10		RUBBER FOR CABLE	1
11		PLASTIC TIE ROD	2

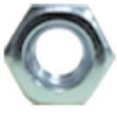
12		CENTRAL PLASTIC BEARING RIGHT	1
13		PLASTIC BEARING RIGHT	9
14		SHUTTER BLADE	9
15		PLASTIC BEARING LEFT	9
16		METAL CLIP FOR MESH	10
17		Ø6,3×19 SELF-TAPPING SCREW	18

18		PYRAMIDAL SAFETY MESH**	1
19		CENTRAL PLASTIC BEARING LEFT	1
20		CENTRAL SHUTTER BLADE	1
21		COVER PLATE	2
22		SIDE PANEL	2
23		BOTTOM PANEL	1

24		CONVEYOR	1
25		V-BELT	1
26		M6X16 HEX SCREW	30
27		Ø6×24 WASHER	40
28		M6 HEX NUT THICK	28
29		Ø6 SPRING WASHER	12

30		CONE BRACKETS	4
31		HEXAGON SCREW M8X20	2
32		REAR FIXED FLANGE W/BUSH	1
33		HEX SCREW M8X30	4
34		PLAIN WASHER D8X24	3
35		PROPELLER FLANGE W/ BUSHES	1

36		PROPELLER	1
37		M8 HEX NUT	10
38		HEX NUT M6 WITH FLANGE	4
39		HUB WITH AXLE	1
40		M6×30 HEX SCREW	4
41		CENTRAL PULLEY	1

42		WATERPROOF DISTANCE PIECE	1
43		CENTRAL SUPPORT	1
44		PLASTIC OVAL PLATE	2
45		M10×30 SCREW	4
46		EXT TOOTHED WASHER D10.5X18	4
47		M10 HEX NUT	4

48		FRONT FLANGE	1
49		M25 HEX NUT	1
50		HEX SOCKET HEAD CAP SCREW M8X16	6
51		THREADED BUSH M8X17.5	8
52		CENTRIFUGAL SYSTEM	1
53		PLAIN WASHER D8X16	2

54		SPRING WASHER D8	8
55		HEX SOCKET HEAD CAP SCREW M8X30	2
56		PLASTIC FORK	1
57		BRASS PIN	1
58		M6 HEX NUT	2
59		HEXAGONAL AXLE	1

60*		WARNING STICKER A-1997 35X210	1
61*		WARNING STICKER B-1997 70X105	1
62*		PRODUCT LABEL G-1998 95X115	1
63*		NO HIGH PRESSURE STICKER 42X118	2
64*		MUNTERS PROTECT STICKER 70X46	1

* *References not appearing in the exploded view.*

*** Mandatory in EU under 2.7 m.*

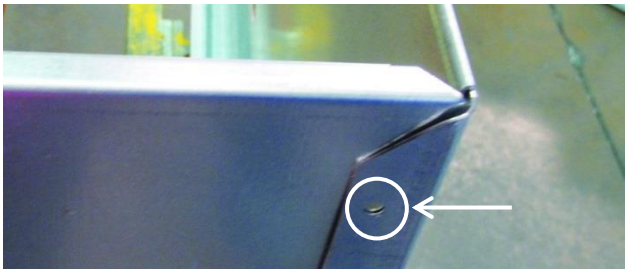
2. ASSEMBLING TOOLS

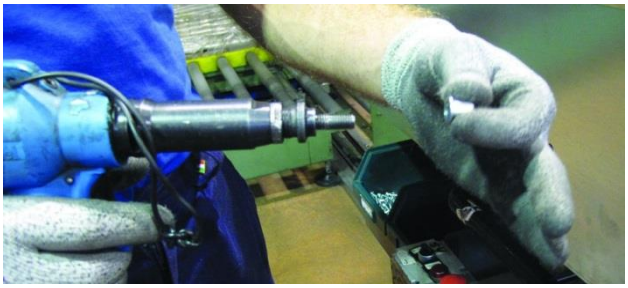
Ref.	Picture	Description	Q.ty
1		RIVETING MACHINE RAC171	1
2		INSERTING MACHINE KJ 45	1
3		PNEUMATIC SCREWDRIVER	1
4		17mm SPANNER	1
5		10mm LONG SPANNER	1

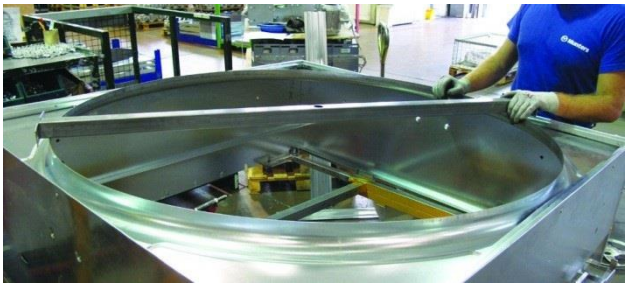
6		13mm LONG SPANNER	1
7		6mm LONG ALLEN SPANNER	1
8		36mm SPANNER	1
9		PHILLIPS SCREW HEAD ADAPTOR	1
10		13mm RING SPANNER	1
11		SMALL HAMMER	1

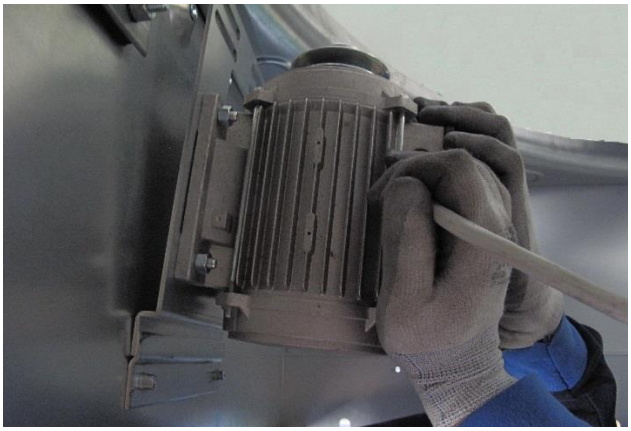
12		10mm COMBINATION SPANNER	2
13		SCREWDRIVER	1
14		RATCHET DRIVE EXTENSION	1
15		17MM COMBINATION SPANNER	1
6		10MM ALLEN KEY	1

3. ASSEMBLING GUIDELINES

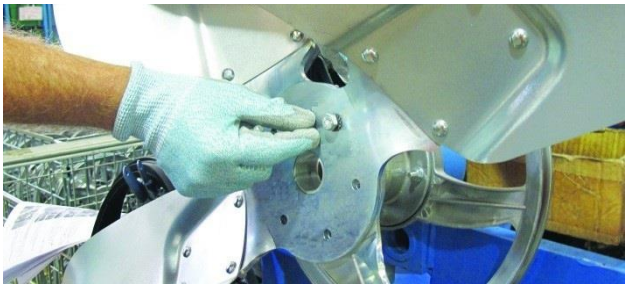
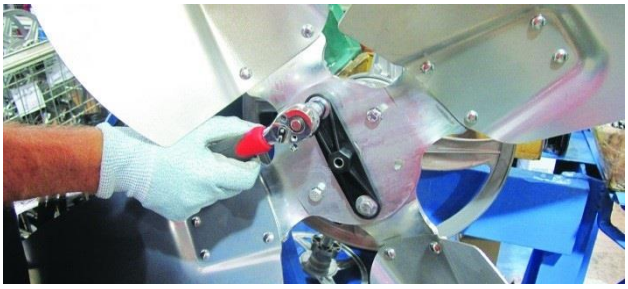
HOUSING ASSEMBLING	
	Take the bottom panel (*ref. 23*), the side panels (*ref. 22*) and place them taking care that slot for the plastic bearing is downward.
	Before fixing the bottom and the side panels make sure that these pieces are in the right position as in the picture (place the edge of the bottom panel outside the side panel).
	Join bottom panel with side panels and fix qty. 3 pop rivets (*ref. 4*) for each edge by using riveting machine (*ref. 1/Assembling tools*). To make the mounting of the Venturi (*ref. 24*) easy take care to fix the signed pop rivet after the Venturi assembling (see arrow in the previous picture).
	Insert Venturi into the housing on the right side as in the picture. Fix Venturi to bottom panel with qty. 4 pop rivets (*ref. 4*). Then fix Venturi to each side panels with qty. 4 pop rivets (*ref. 4*).

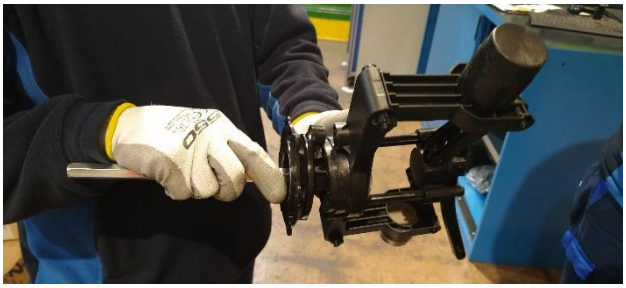
	Place the top panel (*ref. 5*) as in the picture (place the edge of the top panel outside the side panel). Fix it to side panels with qty. 3 pop rivets for side.
	Fix it to Venturi with qty. 4 pop rivets (*ref. 4*).
 	Place the threaded bushes (*ref. 60*) in correspondence of proper holes around the housing. Qty. 2 threaded bushes for each panel.

	The propeller central support (ref. 43) shall be fixed to housing by means of qty. 4 screws M10x30 (ref. 45), qty. 2 oval plates (ref. 44), qty. 4 external toothed washers D10.5x18 (ref. 46) and qty. 4 hexagonal nuts M10 (ref. 47).
	Place the oval plates between propeller central support and panels. The conic surface of the holes shall face the metal panels (top and bottom).
	Place the central support over the oval plates. Put the toothed washers and start to screw the nuts. Tighten by using pneumatic screwdriver (ref. 3/Assembling tools) in order to fix the central support to the top and bottom panels.
	Place the qty. 2 threaded bushes (ref. 3) on the top panel by using inserting machine (ref.2/ Assembling Tools).

	Insert the electric motor (*ref. 8*) into its slot taking care to fix it over proper track on the top side.
	Fix motor slide to top panel by means qty. 2 screws M8x16 (*ref. 7*) and qty. 2 washers D8x32 (*ref. 6*). Tighten screws by using 13mm spanner (ref. 10/Assembling tools).
CENTRIFUGAL SYSTEM AND PULLEY TO PROPELLER ASSEMBLING	
	Take the pulley (*ref. 41*) and insert qty. 4 M6x30 screws (*ref. 40*) on external part of it.
	Turn the pulley upside down and place the hub (*ref. 39*) on it.

	Insert and fix qty. 4 M6 hex nuts with flange (*ref. 38*) over the bolts.
	Tighten the nuts by using pneumatic screw-driver (*ref. 3/Assembling tools*).
	Place the waterproof distance piece (*ref. 42*) on the axle and then place the axle on a support.
	Place the v-belt (*ref. 25*) on the central pulley.
	Before assembling the propeller make sure that the hub is oriented as shown in the picture. The 4 highlighted holes are used to fix the propeller to the hub.

	Place the propeller (*ref. 36*) on the hub as shown in pictures. Fix qty. 2 hex screws M8x30 (*ref. 33*), qty. 2 D8 spring washers (*ref. 54*) and qty. 2 M8 hex nuts (*ref. 37*) in order to fix the propeller to the hub.
	Fix other 2 hex screws M8x30 (*ref. 33*), qty. 2 D8 spring washers (*ref. 54*), qty. 2 plain washers D8x24 (*ref. 34*) and qty. 2 M8 nuts (*ref. 37*) in order to fix the propeller and the propeller flange w/bushes.
	Tighten the screws.
CENTRIFUGAL MASS TO CENTRAL SUPPORT ASSEMBLING	
	Insert the hexagonal axle (*ref. 59*) in the front flange (*ref. 48*). This operation will be easier if the hexagonal axle surface will be lubricated with silicon or spray lubricant.

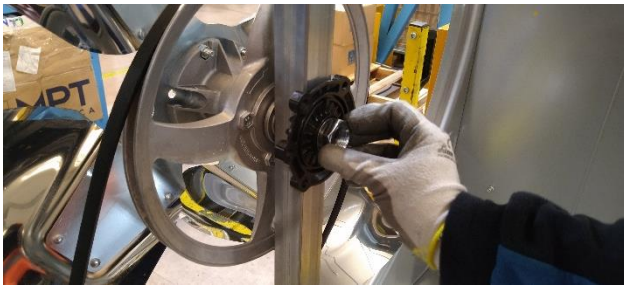


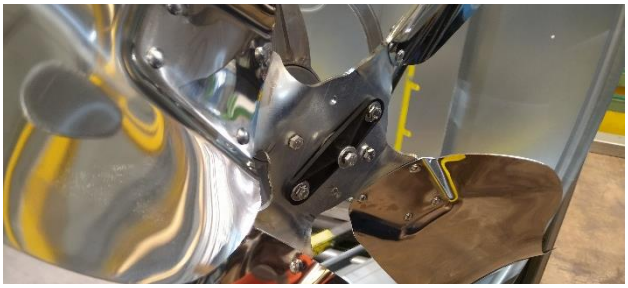
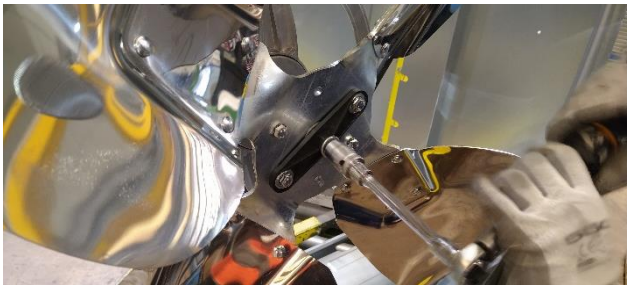
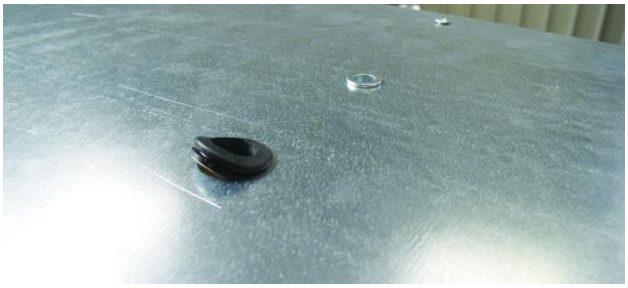
Insert the centrifugal mass (*ref. 52*) and fix it to the front flange with qty. 2 D8x16 plain washers (*ref. 53*), qty. 2 D8 spring washers (*ref. 54*) and qty. 2 hex socket head cap screws M8x30 (*ref. 55*).

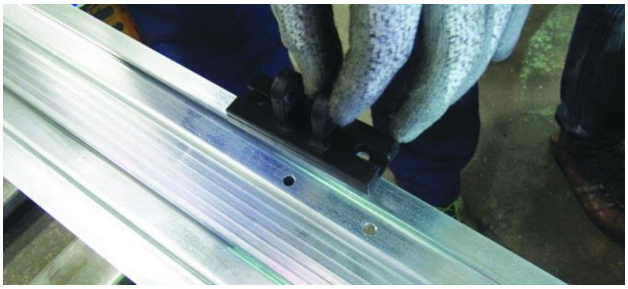
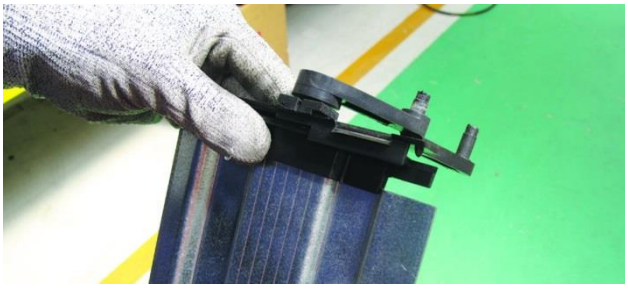
Tighten them by means of a 6mm long allen spanner (ref. 7/ Assembling tools), closing torque 20 Nm.

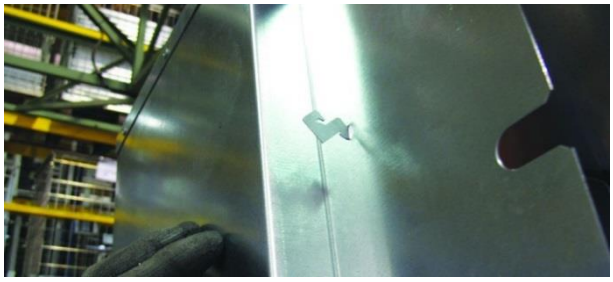
Fix the hexagonal axle by using qty. 1 D8x32 washer (*ref. 6*), qty. 1 D8 spring washer (*ref. 54*) and qty. 1 M8x20 hex screw (*ref. 31*).

Tighten them by means of a 13mm ring spanner (ref. 10/ Assembling tools).

	Insert the rear fixed flange w/bush (*ref. 32*) on the propeller axle.
	Insert the M25 hex nut (*ref. 49*).
	Tighten the nut by using a pneumatic screw-driver (ref. 3/ Assembling tools) equipped with a 36 mm spanner (ref. 8/ Assembling tools) by applying a torque of 60 Nm.
	Insert the complete assembly paying attention to center the holes of the front flange with the ones of the rear fixed flange w/bush.
	Fix the complete assembly to the rear fixed flange w/bush with qty. 6 M8x16 hex socket head cap screws (ref. 50) and qty. 6 M8 hex nuts (ref. 37). Tighten them with a closing torque of 20 Nm.

	Insert qty. 1 plain washer D8x24 (*ref. 34*), qty. 1 D8 spring washer (*ref. 54*) and qty. 1 M8x20 hex screw (*ref. 31*) and screw it on thread present on hexagonal axle.
	Tighten the screws by means of a 13mm ring spanner (ref. 10/Assembling tools).
	Place the rubber grommet (*ref. 10*) on the left side panel for electric cable protection.

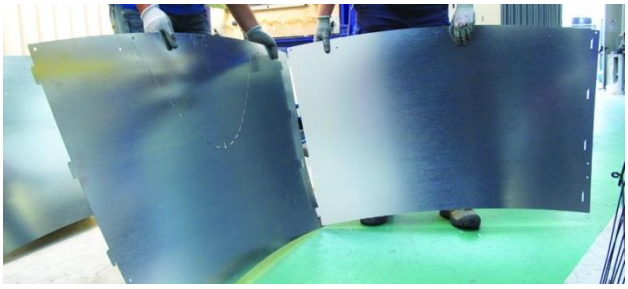
SHUTTER BLADES ASSEMBLING	
	Insert the plastic bearings (*ref. 13 and ref. 15*) without spring on all thin shutter blades (thickness 0.6 mm - *ref. 14*). Plastic bearings marked with “DX” are for right side, the ones marked with “SX” are for left side (seeing the fan from its rear side). Be sure to assemble the bearings with the right orientation.
	Insert qty. 2 M6 nuts (*ref. 58*) in the slots of the plastic fork (*ref. 56*) as shown in the picture.
	Assemble the plastic fork (*ref. 56*) and the central shutter blade (thickness 1.2 mm - *ref. 20*) with qty. 2 M6×16 screws (*ref. 26*) by using two 10 mm combination spanners (*ref. 12/ Assembling tools*).
	Insert the plastic bearing with spring (*ref. 12 and 19*) on the central shutter blade (*ref. 20*). “DX” is for right side, “SX” is for left side.

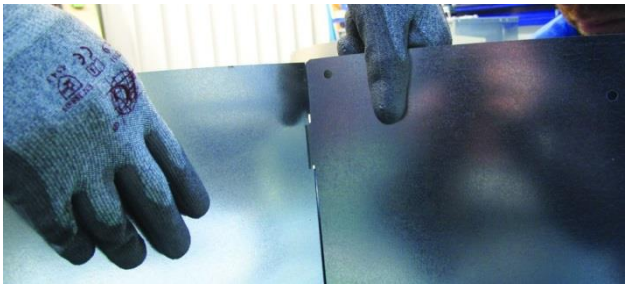
	Fit the assembled central shutter blade on the central slot (fifth position from the top) of the housing.
	Insert the spring hooks (*ref. 9*) in the holes of the side panels (*ref. 22*).
	Insert the free terminal of the spring on the hook.
	Connect the centrifugal system to the fork of the central shutter blade with the knurled brass pin (*ref. 57*). To insert the pin use a small hammer (*ref. 11/ Assembling tools*).
	Insert qty. 9 shutter blades (*ref. 14*) in the free slots of the housing and then place the fan horizontally.

	Fix the pvc tie-rod (*ref. 11*) on plastic bearing pivots.
	Put the cover plates (*ref. 21*) over the plastic bearing mechanism.
	By means of a screwdriver (*ref. 13/Assembling tools*) insert the cover plate over the fan housing.
	Fix the cover plate on each side by using the 6.3×19 screws (*ref. 17*) with a pneumatic screwdriver (*ref. 3/ Assembling tools*).

Place v-belt on the pulley and then rotate the propeller clockwise in order to tighten the v-belt on the pulley. Check tensioning: right tensioning is obtained when tension over the v-belt corresponds to a resonance frequency of 35-41 Hz measured by a v-belt tension meter like the “Trummy 2” manufactured by Fag or the “Ten-Sit” manufactured by Sit.

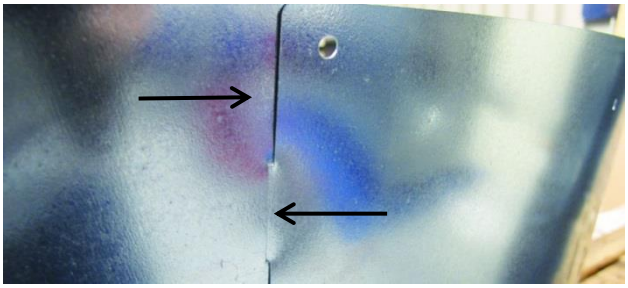
EC52 CONE DISCHARGE ASSEMBLING

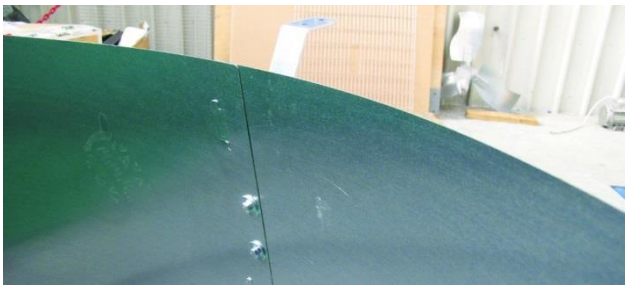
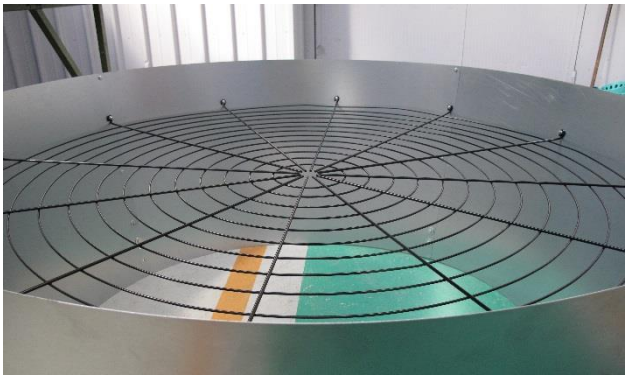


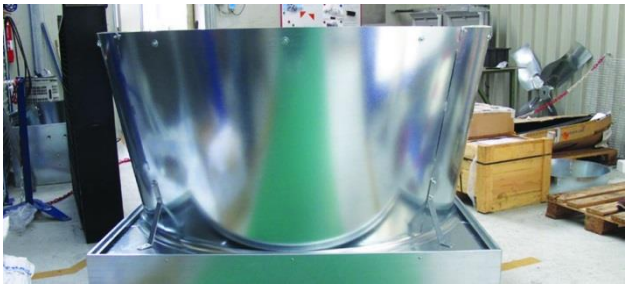


Assemble the cone sectors (*ref. 2*) as shown in the pictures, inserting the wings of the first sector in the slots of the second one. Repeat the operation for all four sectors.

To obtain the discharge cone join the first sector with the last one.

	Make sure that the sectors wings are correctly inserted in the slots and that the holes of the sectors are coincident (see arrows).
	Fix the cone sectors together by using qty. 1 M6×16 screw (*ref. 26*) with qty. 1 D6.4×24 washer (*ref. 27*) for the internal side and qty. 1 D6×24 washer (*ref. 27*) with qty. 1 M6 nut (*ref. 28*) for the external side of the cone. Repeat the operation 8 times. Tighten the screws by using two 10 mm combination spanners (*ref. 12/Assembling tools*) or similar 10mm tool.
	Place the round mesh (*ref. 1*) on the discharge cone. In order to fix it, use qty. 1 M6×16 screw (*ref. 26*) with qty. 1 D6.4×24 washer (*ref. 27*) for the internal side and qty. 1 D6.4×24 washer (*ref. 27*) with qty. 1 M6 nut (*ref. 28*) for the external side of the cone. Repeat the operation for each of the 12 spokes of the mesh.
	Tighten the screws by using two 10 mm combination spanners (*ref. 12/Assembling tools*) or similar 10mm tool.

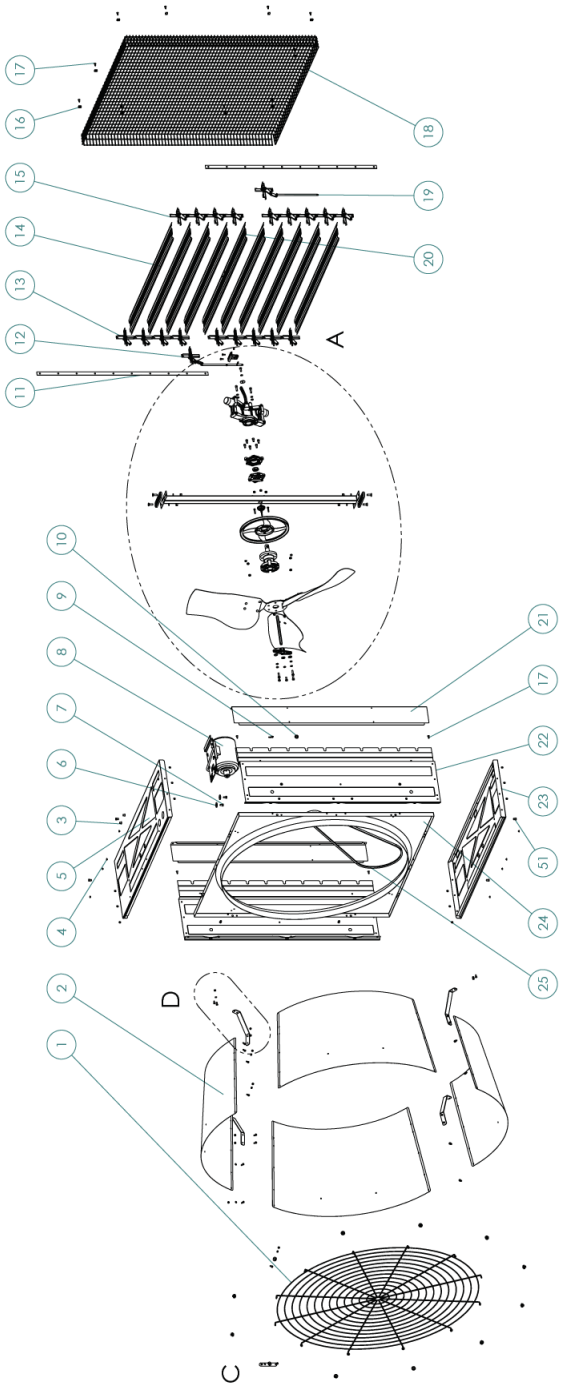
	Fix the cone bracket (*ref. 30*) to the discharge cone by using qty. 1 M6x16 screw (ref. 26) with qty. 1 D6x24 washer (ref. 27) for the internal side and qty. 1 D6 spring washer (*ref. 29*) with qty. 1 M6 nut (*ref. 28*) for the external side of the cone.
EC50 CONE DISCHARGE ASSEMBLING	
	Place qty. 4 cone sectors (*ref. 2*) on the ground. Join one by one by means of qty. 2 M6x16 screw (*ref. 26*), qty. 2 D6 spring washer (*ref. 29*) and qty. 2 M6 nut (*ref. 28*). Place the bolts and nuts as in the picture.
	To obtain the discharge cone join the first sector with the last one. Put the safety mesh guard (*ref.* 1) into the discharge cone. In order to fix it, use qty. 1 M6×16 screw (*ref. 26*) with qty. 1 D6.4×24 washer (*ref. 27*) for the internal side and qty. 1 D6.4×24 washer (*ref. 27*), qty. 1 D6 spring washer (*ref. 29*) with qty. 1 M6 nut (*ref. 28*) for the external side of the cone. Repeat the operation for each of the 12 spokes of the mesh.
	Fix the cone bracket (*ref. 30*) to the discharge cone by using qty. 1 M6x16 screw (ref. 26) and qty. 1 M6 nut (*ref. 28*)

CONE ASSEMBLING TO FAN	
	Make sure that the bracket is assembled in the correct way, as shown in the picture, and tighten the screw with two 10 mm combination spanners (*ref. 12/ Assembling tools*). Repeat the operation for each of the four brackets of the discharge cone.
	Place the complete assembly on the conveyor. Make sure that the discharge cone is positioned outside of the conveyor edge.
	Fix the discharge cone to the conveyor with qty. 1 6.3×19 screws (*ref. 17*) and qty. 1 M6x16 screw (ref. 26) with qty. 1 D6 spring washer (*ref. 29*) with qty. 1 M6 nut (*ref. 28*) for the internal side.

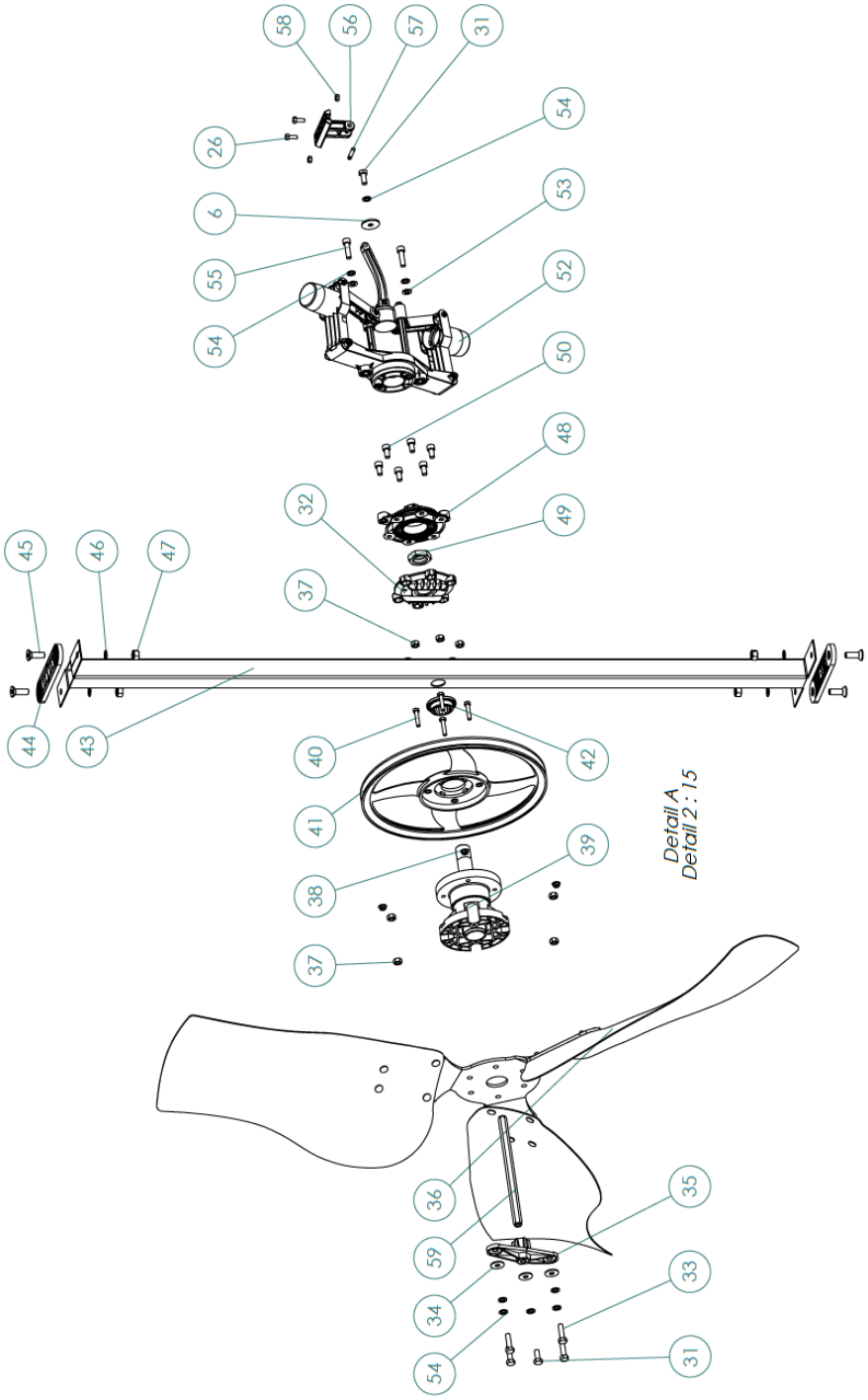
OPTIONAL PYRAMIDAL SHAPE MESH ASSEMBLING	
	Put the pyramidal shape mesh (*ref. 18*) on the fan as in the picture. The rectangular holes must have the long side in horizontal position.
	Fix it to the panels by means of qty. 10 metal clips (*ref. 16*) and qty. 10 D6.3x19 screws (*ref. 17*). Fix it by using a pneumatic screwdriver (*ref. 3/ Assembling tools*) and its proper adapter (*ref. 9/ Assembling tools*).

4. SPARE PART LIST EC50

EC50 exploded view



DETAIL A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Detail A
Detail 2 : 15
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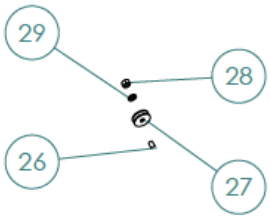
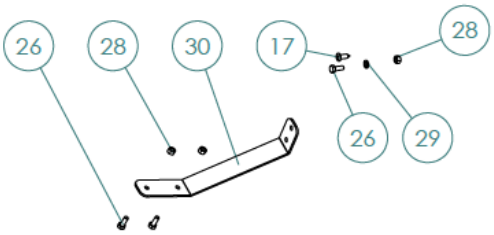
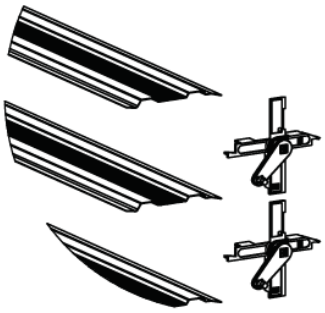
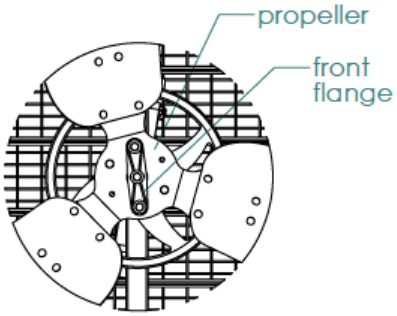
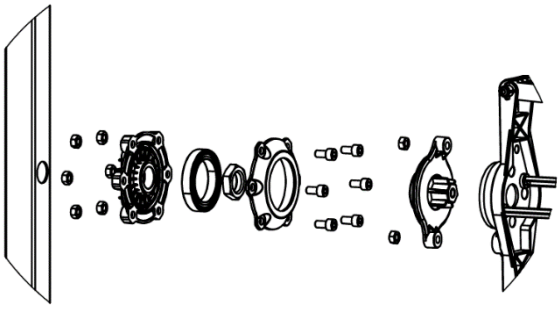
DETAIL C	DETAIL D
	

DETAIL D: ALIGNEMENT OF SHUTTER BLADE	POSITIONING OF PROPELLER FLANGE
	

ALIGNEMENT OF REAR AND FRONT FLANGES



Spare parts EC50

REF.	DESCRIPTION	QUANTITY
1	ROUND CONE SAFETY MESH	1
2	CONE SECTOR	4
3	THREADED BUSH M8X12.5	2
4	POP UP RIVET 6.4X8	28
5	TOP PANEL	1
6	Ø8X32 WASHER	3
7	HEX SCREW M8X16	2
8	MOTOR*	1
9	HOOK FOR SPRING	2
10	RUBBER FOR CABLE	1
11	PLASTIC TIE ROD	2
12	CENTRAL PLASTIC BEARING RIGHT	1
13	PLASTIC BEARING RIGHT	9
14	SHUTTER BLADE	9
15	PLASTIC BEARING LEFT	9
16	METAL CLIP FOR MESH	10
17	Ø6.3×19 SELF-TAPPING SCREW	18
18	PYRAMIDAL SAFETY MESH	1
19	CENTRAL PLASTIC BEARING LEFT	1
20	CENTRAL SHUTTER BLADE	1
21	COVER PLATE	2

22	SIDE PANEL	2
23	BOTTOM PANEL	1
24	CONVEYOR	1
25	V-BELT*	1
26	M6X16 HEX SCREW	30
27	Ø6×24 WASHER	40
28	M6 HEX NUT THICK	28
29	Ø6 SPRING WASHER	12
30	CONE BRACKETS	4
31	HEXAGON SCREW M8X20	2
32	REAR FIXED FLANGE W/BUSH	1
33	HEX SCREW M8X30	4
34	PLAIN WASHER D8X24	3
35	PROPELLER FLANGE W/ BUSHES	1
36	PROPELLER*	1
37	M8 HEX NUT	10
38	HEX NUT M6 WITH FLANGE	4
39	HUB WITH AXLE	1
40	M6×30 HEX SCREW	4
41	CENTRAL PULLEY	1
42	WATERPROOF DISTANCE PIECE	1
43	CENTRAL SUPPORT	1
44	PLASTIC OVAL PLATE	2

45	M10×30 SCREW	4
46	EXT TOOTHED WASHER D10,5X18	4
47	M10 HEX NUT	4
48	FRONT DRIVER FLANGE	1
49	M25 HEX NUT	1
50	M8X16 HEX SOCKET CAP SCREW	6
51	THREADED BUSH M8X17.5	8
52	CENTRIFUGAL SYSTEM	1
53	PLAIN WASHER D8X16	2
54	SPRING WASHER D8	8
55	M8X30 HEX SOCKET CAP SCREW	2
56	PLASTIC FORK	1
57	BRASS PIN	1
58	HEX NUT M6	2
59	HEXAGONAL AXLE	1

** References change depending on the configuration utilized.*

Munters EC extraction fans are developed and produced by Munters Italy S.p.A., Italy

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