



Electronic Service Manuals

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Serving the Cleaning Industry Since 1922

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GENERAL NOTES

This guide has been edited for the CONSUMER according to directive CE89/392 and its ensuing amendments.

Carefully read the notes contained in this guide since they provide with important directions regarding the safety of assembling, use and maintenance.

Each machine, in accordance with directive CE89/392 and its ensuing amendments, is identified by a specific plate positioned on the frame and containing the following information:

- **Manufacturer**
- **Model**
- **Manufacturing year**
- **Serial number**
- **Power supply voltage**
- **Working voltage**
- **Installed power**
- **Weight**

DESCRIPTION OF CONTROLS



1



2



3



4

- 1 - Filter-shaker push-button**
- 2 - Main switch (Main broom)**
- 3 - Side broom switch**
- 4 - Centrifugal electric fan switch**

CONDITION OF USE

CONSENTED USES

The 24" Battery Vacuum Sweeper is built for cleaning the ground in the following conditions of employment:

a - Environments:

- * Both closed and opened.

b - Working surfaces:

- * Level surfaces enough compact and not much irregular as:
 - Ceramics.
 - Wood.
 - Marble.
 - Concrete.
 - Asphalt.
 - Various plastic materials.
 - Carpets

c - Nature of the materials to remove:

- * Dust.
- * Dirt in general.
- * Mould and rubble.
- * Not excessively heavy or large objects.

NOT CONSENTED USES

a - Environments:

- * In presence of inflammable materials.

b - Working surfaces:

- * With gradients exceeding 2%.
- * Particularly irregular.
- * Particularly wet.

c - Kind of materials:

- * Lighted cigarettes-end or any other material that could cause combustion of debris inside the waste compartment.
- * Toxic materials.
- * Oils
- * Chemical materials.

CAUTION!!!!

Minimum working temperature -20°C (-4°F)

Maximum working temperature +40°C (+104°F)

Do not leave the unused machine exposed to UV rays because they could damage the cover.

UNPACKING AND SETUP OF THE MACHINE

1- Remove the packing and make sure of the machine integrity.

2- Before using the machine proceed in this way:

- 2.1 Take from the **Waste Hopper Table B-1**
the **Side Broom – Table A-20**
- 2.2 Unscrew the **screw and washers Table A-24** from the **Gearmotor Table A-15**.
Insert the broom on the gearmotor axle having the key slot matching the key,
leaving the spacer between the broom and the gearmotor, then fix it with the
screw and washers
- 2.3 Remove the **Cover Table A- 1** unscrewing the four screws that keep it fixed on the
machine frame.
- 2.4 Make sure that the input voltage of the **Battery-charger** corresponds to the input
voltage available.
The machine leaves the factory set for an input voltage of 120 VAC

For input voltages of 210/240 VAC :
Follow **connections as per Table B – 5**
- 2.5 Connect the battery terminals paying attention to the correspondence of polarities.
- 2.6 Provide for the charge of the battery (See the following directions PAGE 4 –
Battery-charger).

MACHINE SETUP

State of rest: the machine can be placed whether with the handle folded down or with the handle in vertical position.

MACHINE STARTING UP AND OPERATION

Main broom

Operating the **switch (Figure 1-2)** the main broom **Table C- 14** starts to work reaching immediately the running speed. The lighting of a green LED signals the regular operation.

With the main broom working it is possible to operate:

Side broom

Operating the **switch (Figure 1-3)** the side broom will start working.
To adjust the side broom operate on the **knob (Table A- 22)**.

Vacuum

Operating the **switch (Figure 1-4)** the centrifugal electric motor fan starts to work.

Electric filter-shaker

With the battery connected, the electric filter-shaker is always active.

- The operation takes place pressing the **push-button (Figure 1- 1)**.
- With the machine in movement, before operating the filter-shaker, it is suggested to switch-off the vacuum, **switch (Figure 1- 4)**.
- With the machine still and the hopper out, switch-off the suction and the main broom, **switch (Figure 1 - 2)** , before operating the filter-shaker.

Battery

- The “**discharged battery**” limit is signalled by the lighting of a **red Led** and afterwards by the motors switching off.
- To complete the work switch-off for a while the **switch (Figure 1- 2)**.
- To make use of a further residual of charge, switch-off the side broom **switch (Figure 1- 3)**.

CAUTION: In case of prolonged inactivity of the machine disconnect the battery terminals.

Battery charger

To charge the battery:

- **Make sure that the transformer connections have been set for the suitable voltage from 90 up to 240 volts Figure 3 – Page 9.**
- Use the **cable** already connected to the machine (**Table A- 11**), insert the plug in any suitable AC. outlet.
- The time required for the complete recharge varies from 8 to 15 hours, depending on the power grid condition.
- During the charge all functions are automatically switched-off.

CAUTION: during the battery charging avoid to have contacts with parts of the circuit concerned by the network voltage.

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ORDINARY MAINTENANCE

Maintenance and replacement of the main broom:

a- Cleaning:

Check periodically, according to the use of the machine, the wear conditions of the **main broom Table C-14**. To carry out this operation, the following tools are needed:

- Heavy-duty gloves.
- Breathing mask.
- Scissors
- Pliers

Switch off the machine. In order to see the main broom:

- Remove the **waste container (Table B-1) and the battery (Table A- 9)**.
- Tilt the machine.
- Clean away from the broom any filaments or other.

b- Adjustment:

To adjust the distance of the main broom to the ground, operate the cam **Table A-26** from position 1 to position 5.

c- Replacement:

If the broom wear is such to require it, replace the broom :

- Release the driving belt **Table A - 14**.
- Disassemble the **internal flap Table C- 13**.
- Release the **belt Table A- 14**.
- Unscrew the **eccentrics Table C- 1**
- Remove the broom unit from its housing.
- Remove the two **spacers Table C- 2 Table C- 3** .
- Remove the **pulley-hub Table C- 5** and the **free hub Table C- 6**.
- **Using a new broom, carry out the operations in reverse order.**

Maintenance and replacement of the side broom:

With procedures and tools similar to the above mentioned ones.

a- Adjustment:

- Act on the **knob Table A- 22**

b- Replacement:

- Unscrew the fastening screw **Table A - 24** and replace the **broom (Table A- 20)**, paying attention to the flat key that lock the broom to the gearmotor shaft.

Maintenance and replacement of the filter:

To carry out this procedure the following tools are needed:

- Heavy duty gloves.
- Breathing mask.

a- Cleaning / Replacement:

- Withdraw the **split pin Table B- 11** from the hole of the **Pin Table B -11** that hold the **filter-support (Table B- 10)** at the machine frame.
- Remove the **filter (Table B-12)** and check the wear condition.
- If necessary, replace it.
- If not, proceed to clean it, beating it on the floor and, if possible, blow with compressed air from the upper side at a distance of about 15 cm.
- **Reassemble carrying out operations in reverse order.**

Maintenance and replacement of the flaps:

- Periodically check the conditions of flaps' rubbers.

a- Replacement of the front flap rubber:

- Unscrew the **rod (Table C- 7)**.
- Unscrew the **front strap iron (Table C- 9)**.
- Unscrew the **straps iron (Table C- 8) -(Table C- 10)**.
- Replace the **rubber (Table C- 13)**.
- **Reassemble following the same operations in reverse order.**

b- Replacement of the side flap's rubber:

- Unscrew the **bus-bar (Table C- 11)**.
- Replace the **rubber (Table C- 14)**.

c- Replacement of the back flap's rubber:

- Unscrew the **back strap iron (Table C- 9)**.
- Replace the **rubber (Table C- 12)**.

Maintenance and replacement of the electronic circuit board:

In case of non-operation of some electrical components, check out the integrity of the fuses:

Figure 2 - F2

In case of a non good operation of the function of battery charging, check out the integrity of the fuses:

Figure 2 - F1

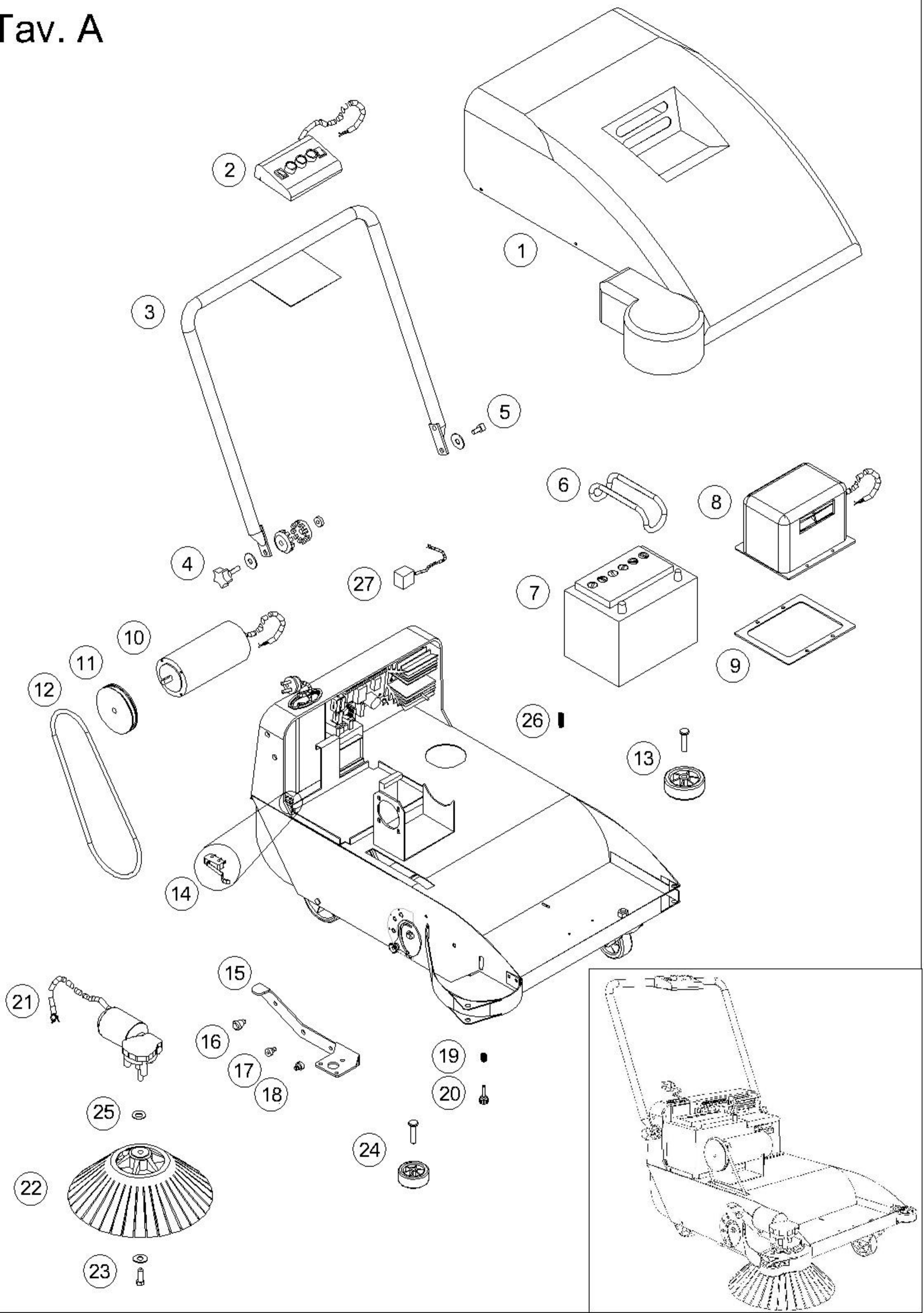
Figure 3 - FUN

Figure 3 - FUR

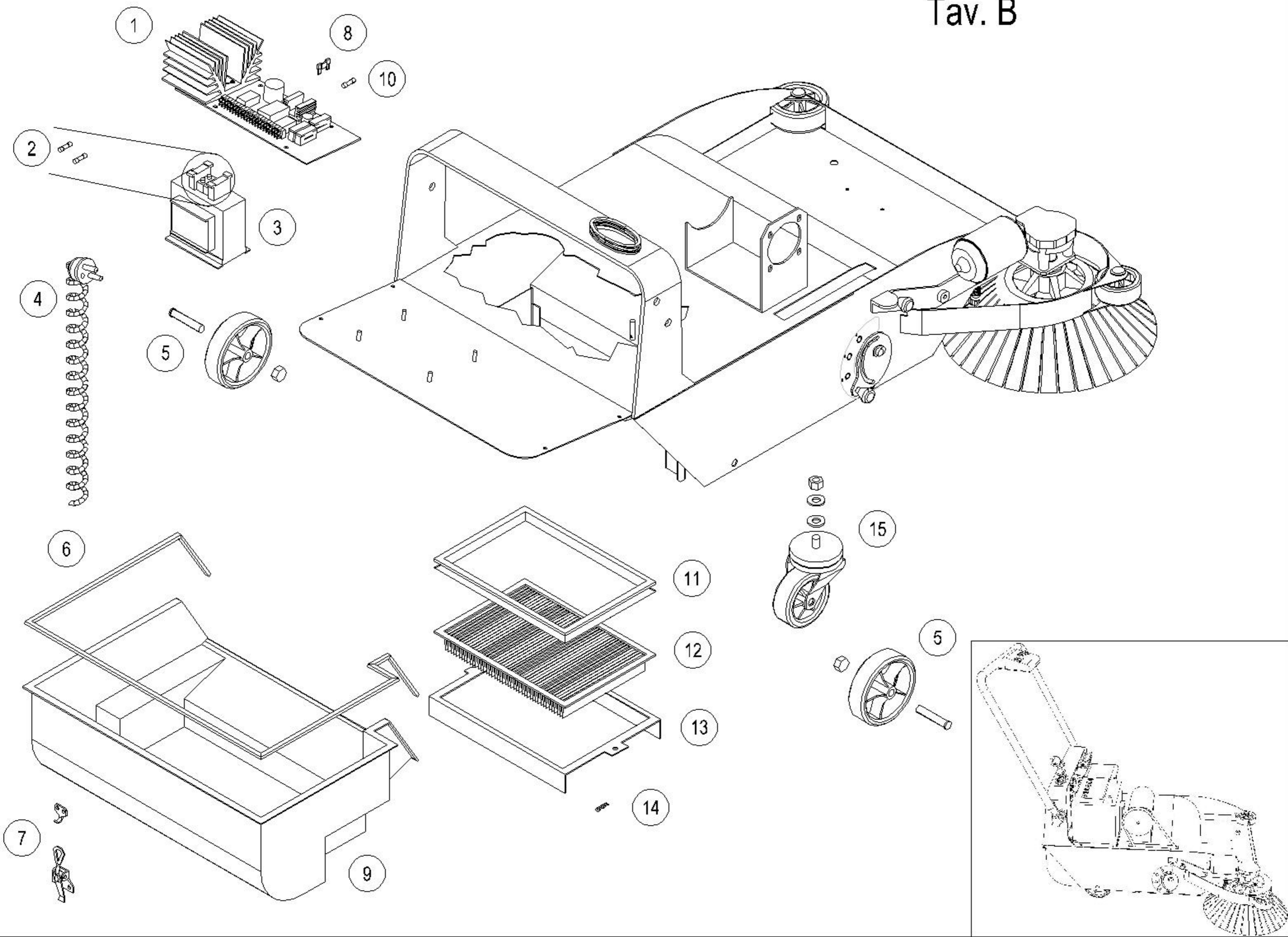
If necessary, replace them with integral ones.

If this operation does not bring to the drawback elimination, turn to an authorized workshop.

Tav. A



Tav. B



Tav. C

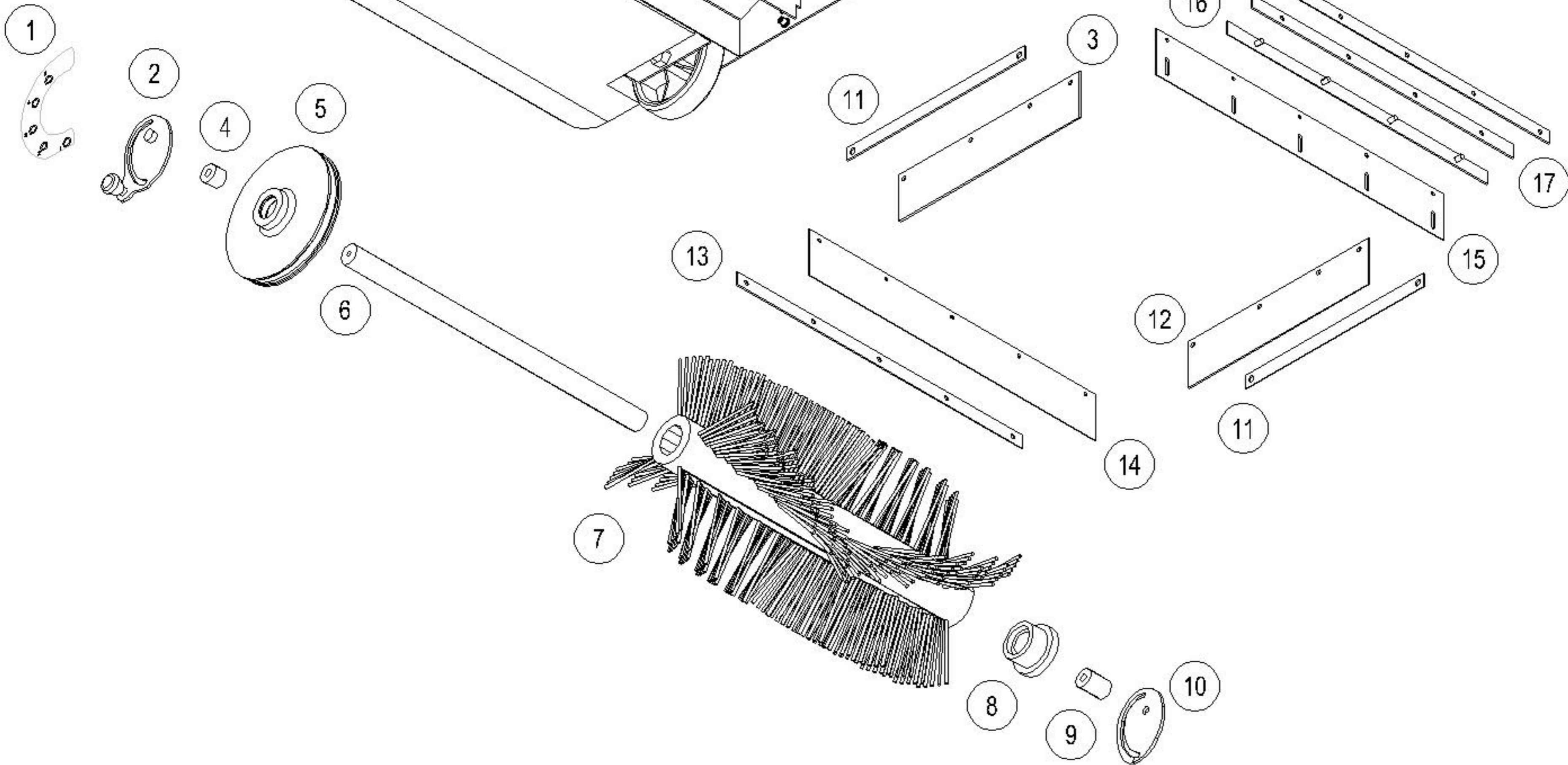
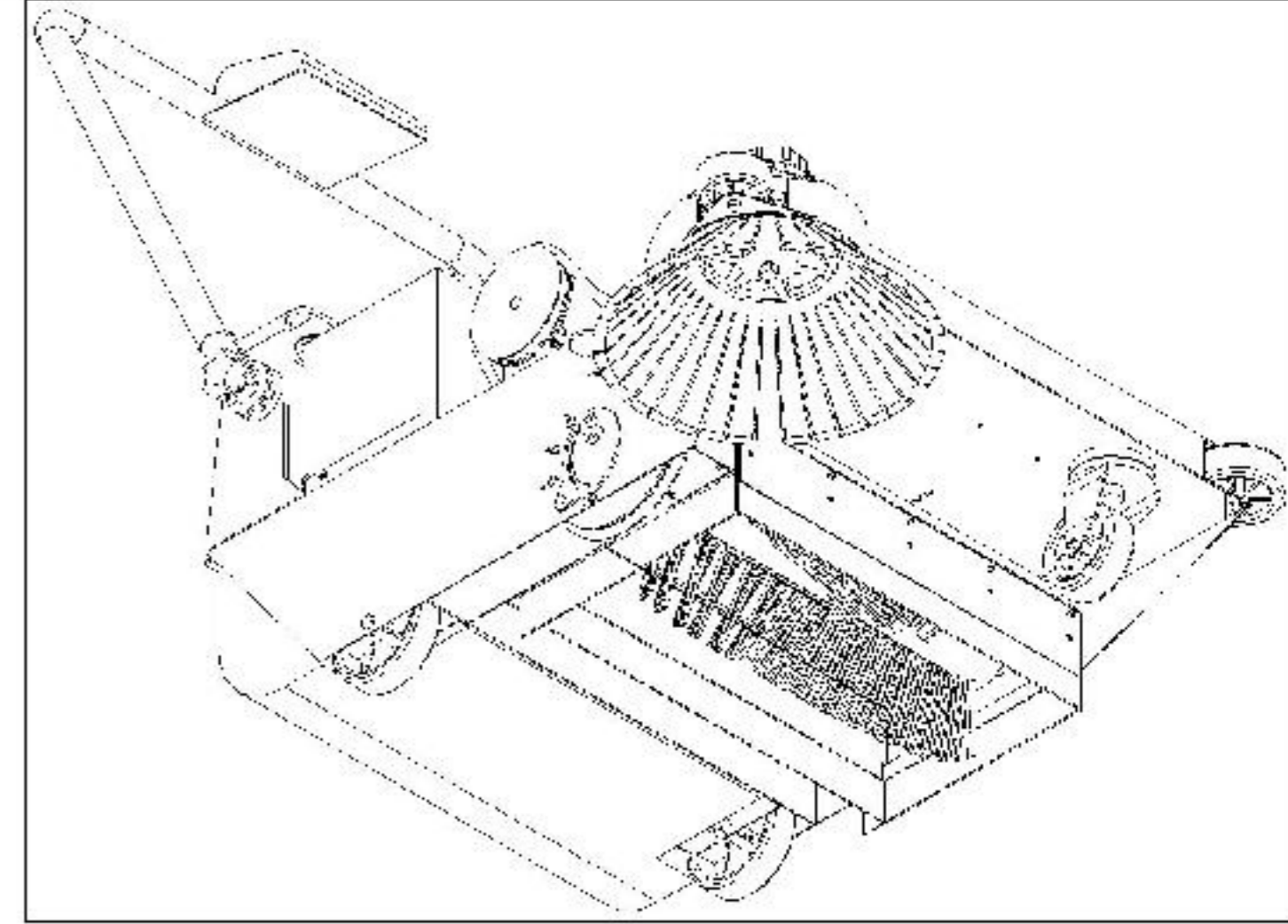
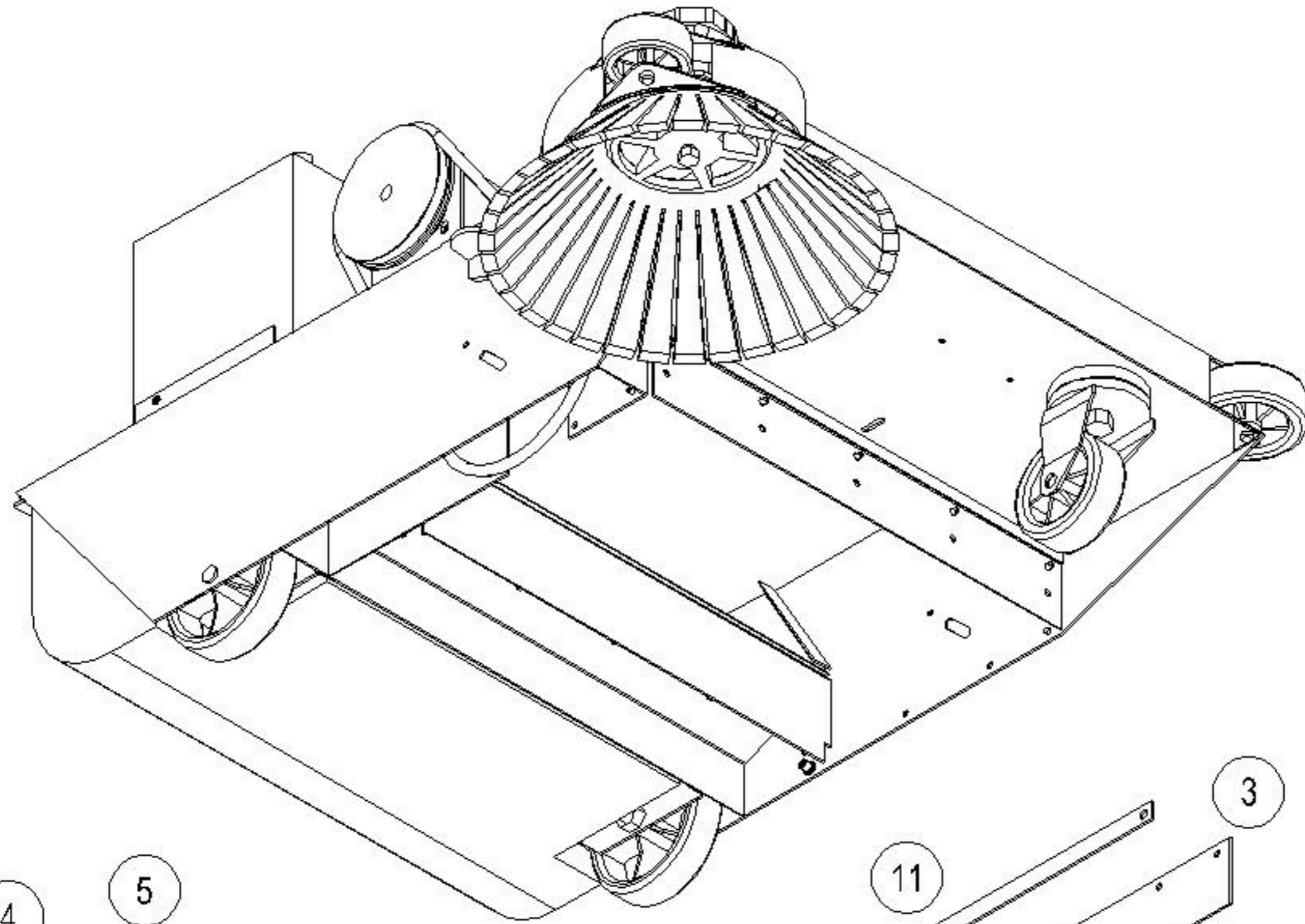
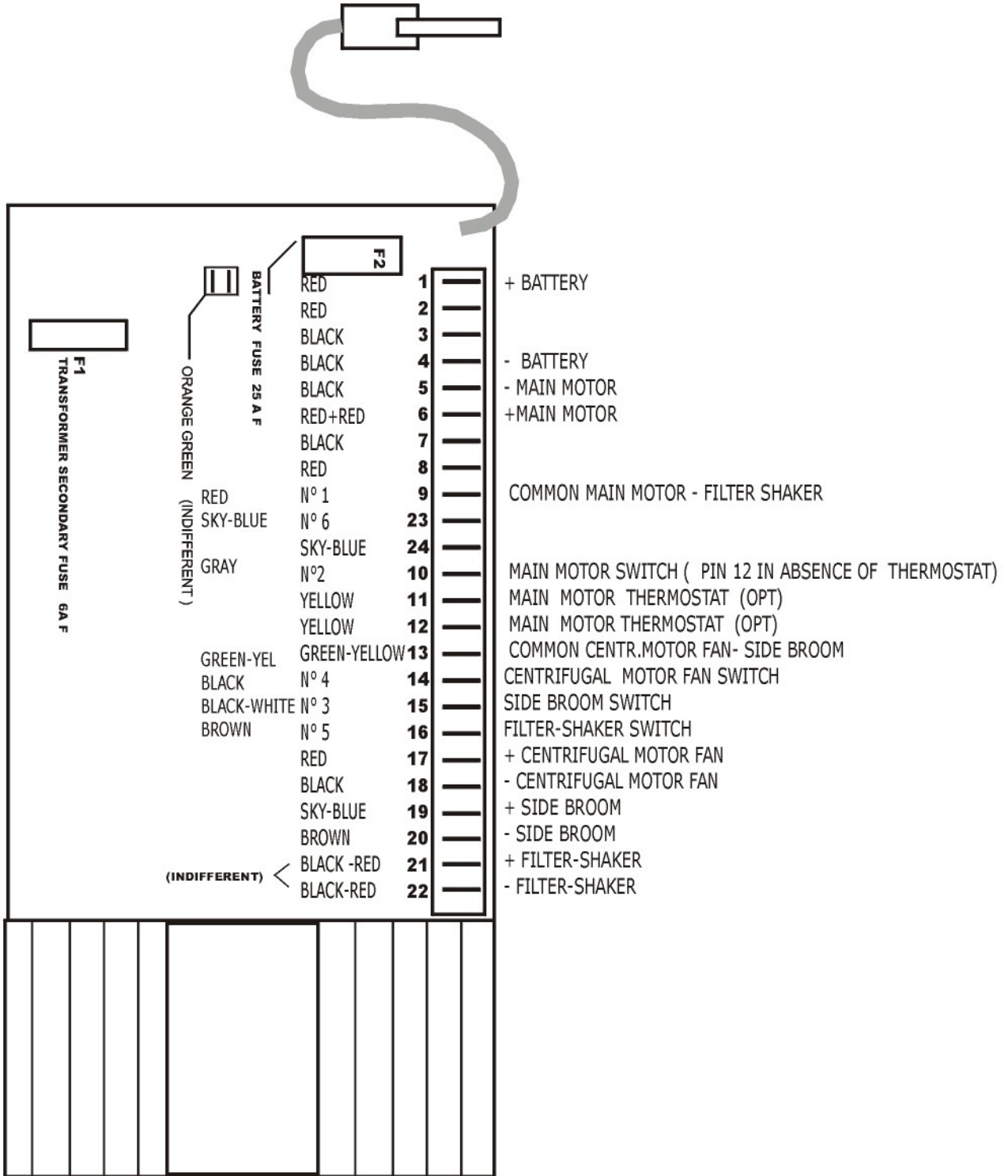
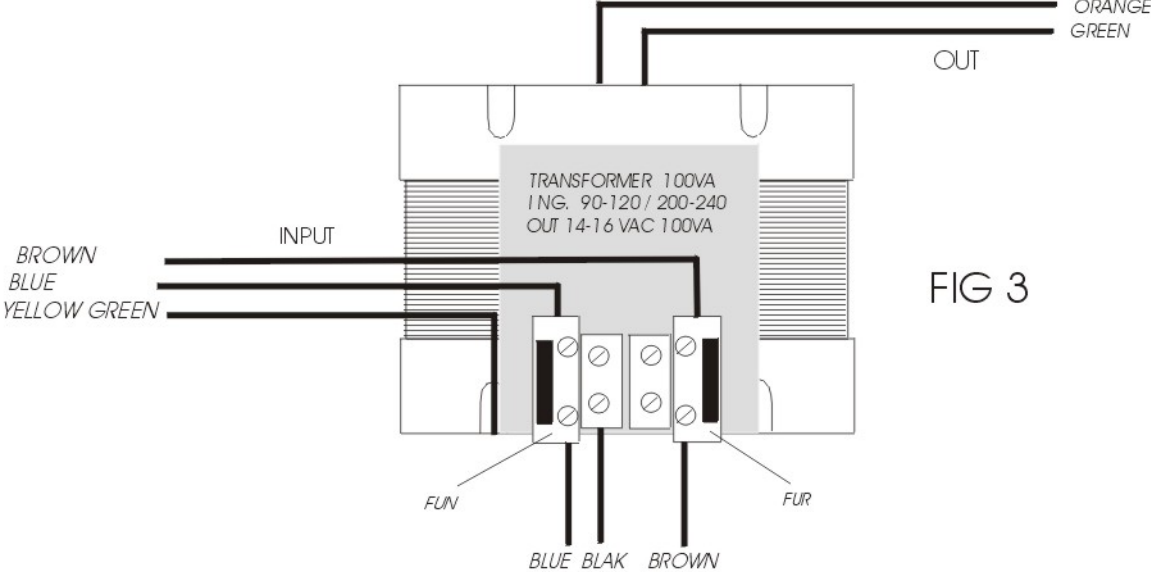


TABLE A Spare Parts					
Veiw	BETCO #	Ref.#			DESCRIPTION
1	82892	P	030	33110	COVER
2	82893	3	017	E400B	WIRED COMMANDS CONSOLE (SWITCHES BOX)
3	82894	4	100	33201	HANDLE
4	82895	K	999	00001	HANDLE ADJUSTING KIT
5	82896	K	999	00002	HANDLE PIVOT KIT
6	82897	4	350	33200	BATTERY STRAP
7	82898	8	600	33030	GEL SEALED BATTERY 12V 42AH
8	82899	3	015	A400B	VACUUM FAN UNIT
9	82900	4	310	33160	MOTOR FAN GASKET
10	82901	7	720	33060	MOTOR
11	82902	4	281	33090	PULLEY
12	82903	8	441	21579	BELT
13	82904	K	999	00003	LEFT BUMPER WHEEL KIT
14	82905	E	MIC	01001	MICROSWITCH
15	82906	4	090	33150	GEARMOTOR SUPPORT
16	82907	8	250	33010	PIVOT
17	82908	K	999	00004	SIDE BROOM ARM PIN KIT
18	82909	K	999	00005	SIDE BROOM LOCKING PIN KIT
19	82910	4	290	33400	SIDE BROOM ADJUSTING SPRING
20	82911	8	040	05020	SIDE BROOM ADJUSTING KNOB
21	82912	7	750	33030	GEARMOTOR
22	82913	4	350	33084	SIDE BROOM
23	82914	7	602	33003	SIDE BROOM FASTENING KIT
24	82915	K	999	00006	RIGHT BUMPER WHEEL KIT
25	82916	4	240	33270	SPACER
26	82917	4	300	33160	SIDE BROOM TRACTION SPRING
27	82918	7	620	33010	FILTER-SHAKER ELECTROMAGNET
TABLE B Spare Parts					
Veiw	BETCO #	Ref.#			DESCRIPTION
1	82919	4	018	A400B	ELECTRONICS CONTROL BOARD
2	82920	E	FUS	01001	FUSE 10A Box of 10
3	82921	4	018	33011	TRANSFORMER
4	82922	S	CAV	01010	COILED CABLE
5	82923	K	999	00007	REAR WHEEL KIT
6	82924	4	310	33140	GASKET
7	82925	8	119	33100	CLAMP LEVER
8	82926	E	FUS	02002	FUSE 30 A Box of 10
9	82927	4	021	33100	HOPPER
10	82928	E	FUS	01003	FUSE 1.5 A Box of 10
11	82929	4	310	33150	FILTER SUPPORT GASKET
12	82930	3	013	B400B	FILTER
13	82931	4	070	33110	FILTER HOLDER BRACKET
14	82932	4	650	02042	SPLIT PIN
15	82933	K	999	00008	FRONT WHEEL KIT
TABLE C Spare Parts					
Veiw	BETCO #	Ref.#			DESCRIPTION
1	82934	4	202	04444	SIDE BROOM ADJUSTMENT LABEL
2	82935	4	170	33016	MAIN BROOM ADJUSTING RIGHT CAM
3	82936	4	320	33201	SIDE FLAP RUBBER
4	82937	4	240	33250	MAIN BROOM SHORT SPACER
5	82938	4	260	33170	MAIN BROOM PULLEY HUB
6	82939	4	270	33151	MAIN BROOM SHAFT
7	82940	4	340	33151	MAIN BROOM
8	82941	4	260	33160	MAIN BROOM FREE HUB
9	82942	4	240	33260	MAIN BROOM LONG SPACER
10	82943	K	999	00009	LEFT CAM KIT
11	82944	4	140	33251	SIDE FLAP STRAP
12	82945	4	320	33211	LEFT SIDE FLAP RUBBER
13	82946	4	140	33252	FRONT/REAR FLAP STRAP
14	82947	4	320	33202	REAR FLAP RUBBER
15	82948	4	320	33224	FRONT FLAP RUBBER
16	82949	4	140	33256	FRONT FLAP INTERNAL STRAP
17	82950	4	140	33258	FRONT FIXED FLAP STRAP
18	82951	4	140	33170	MAIN BROOM GASKET

COMPONENTS SIDE VIEW / CONNECTION





CONNECTION 90- 120v: CONNECT COLOUR BLAK TO POINT B AND COLOUR BROWN TO POINT C
CONNECTION 200- 240v: CONNECT COLOUR BROWN TO POINT B AND COLOUR BLAK TO POINT C