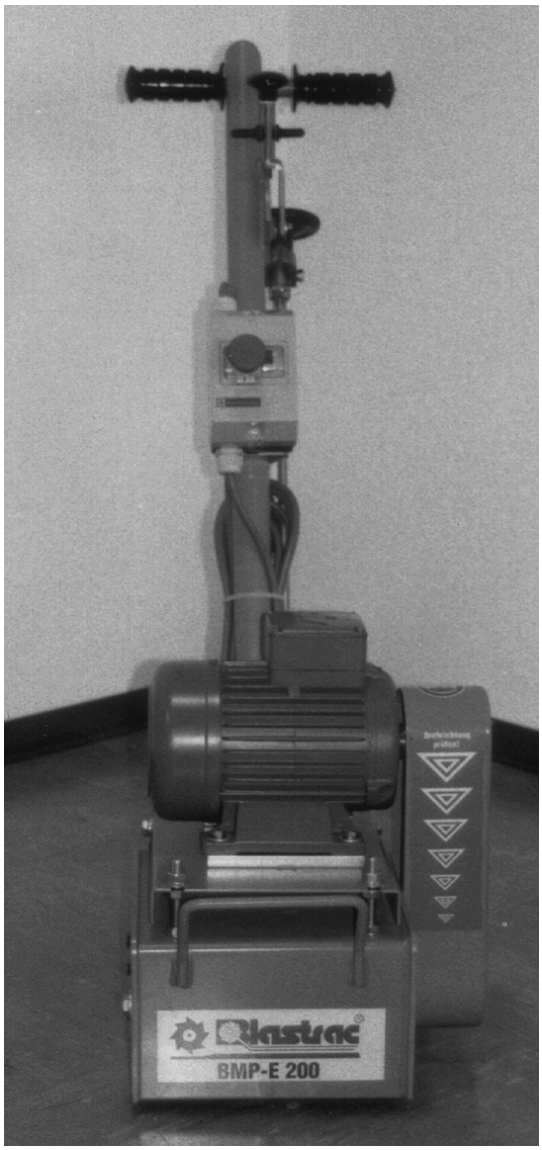
Operating Manual
BMP-200



BLASTRAC

Blastrac
Utrechthaven 12
3433 PN Nieuwegein
THE NETHERLANDS
T +31(0)30 - 601 88 66
F +31(0)30 - 601 83 33
E info@surfacepreparation.nl
I www.surfacepreparation.com

Contents Chapter 1

Technical Data

1.1 Rating

1

Unit / designation: **Blastrac** Scarifier

Machine type: **BMP-200**

Manufacturer:

Blastrac
Utrechthaven 12
NL-3433PN Nieuwegein
THE NETHERLANDS

1.2 Unit specifications

Technical data

Scarifier	BMP-E200/400	BMP-E200/230	BMP-B200
Power consumption	2,2 kW	1,85 kW	3,7 kW
Connected loads	400 V, 50 Hz, for CEE-plug 5-pol Fuse protection 16A	230 V, 50 Hz for shook-proof plug Fuse protection 16A	Combustion Engine (Fuel)
Scarifier holder width	200 mm	200 mm	200 mm
Working width	200 mm	200 mm	200 mm
Traction Drive	Manual	Manual	Manual
Scarifying output	up to 80 m²/h	up to 80m²/h	up to 80 m²/h
Dust hose connection	50 mm Ø	50 mm Ø	50 mm Ø
Recommended Filter unit	317DCP	317DCP	317DCP
Noise Level	L_{pA} 89,4 dB	L_{pA} 89,4 dB	L_{pA} 89,4 dB
Vibration Level	2,99 ms²	2,99 ms²	2,99 ms²

Dimensions:

	Machine		Filter unit 317 DC	
Length	900	mm	850	mm
Width	370	mm	670	mm
Height	1000	mm	1380	mm
Weight BMP-E	55	kg	64	kg
Weight BMP-B	56	kg		

1.3 Operative range and correct usage

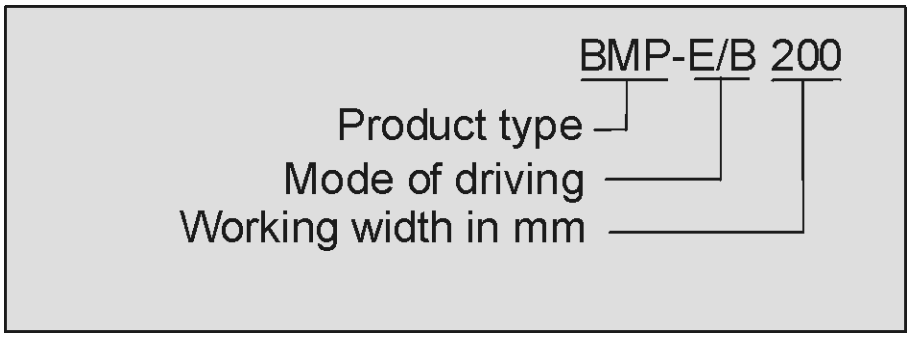
The scarifier BMP-200 is exclusively designed to clean horizontal surfaces. The machine may not be used for other purposes. The manufacturer will not be liable for damage resulting from such incorrect usage. In these cases the user assumes all risks.

1.4 Stand-by power supply (Generator)

If the scarifier BMP-200 is operated using a generator, this generator must be operated in accordance with the current VDE directives (this applies to the protective earth conductor in particular) in order to ensure that all safety devices are functioning and to eliminate possible damage to electrical components.

1.5 Machine type designation

1



1.6 Advice for operators of the scarifier

When you use the scarifier BMP-200 it is possible to exceed the allowed scale of sound level of 85 db(A). If the scale of sound level reaches 85 db(A) or more, the operators and the persons who work in the surroundings must wear noise protection.

Contents Chapter 2

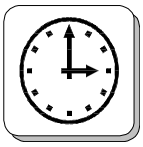
2.1 Warnings and Symbols

The following denominations and symbols are used in the Operating Instructions to highlight areas of particular importance:

Symbol of operational safety.
In these Operating Instructions this symbol will be shown next to all safety precautions that are to be taken in order to ensure prevention to life and injury. Follow these instructions and take special care in these circumstances. In addition to these instructions, the general safety precautions and accident prevention guidelines are also to be followed.

Particular details regarding the economical use of the equipment.

Information, instructions and restrictions with regard to possible risks to persons or to extensive material damages.

Warning against dangerous voltages.	
Indications relating to protective devices in electrical appliances.	
Indications relating to protective devices in electrical appliances.	
Instructions relating to periodical checks.	
Reference to important instructions contained in the Operating Instructions.	

2.2 Organisational measures

The **Operating Instructions** are to be kept **near the location where the machine** is located and must be **within reach at all times**!

2

In addition to the Operating Manual general and legal regulations regarding accident prevention and environmental protection must be complied with and indicated!

Such duties may for example relate to the handling of hazardous substances or to the provision and wearing of personal protection equipment as well as compliance with traffic regulations.

The Operating Instructions must be **supplemented** by **instructions** including the duty to **supervise** and **report** relating to **particular working practices**, for example work organisation, work procedures and personnel allocation.

Personnel entrusted with working with the machine must have read the **Operating Manual** before starting work, in particular the **Safety Advice** chapter. To read these instructions during work is too late. This particularly applies to incidental activities such as setting up the equipment, carrying out maintenance work or training staff to work with the machine.

From time to time the working practices of the staff are to be checked regarding awareness of **safety and hazards**.

Personnel must tie back long hair and not wear loose clothing or jewellery including rings. There is a risk of injury through getting stuck or being drawn into moving machinery.

Use **personnel protection equipment** if necessary or required by regulations! Take notice of **all** safety and hazard notices on the machine!

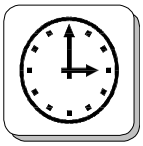
All **safety and hazard notices** at or on the machine must be kept complete and **legible**!

If **safety-critical changes** occur to the machine or its working method, the machine must be **shut down immediately**! The cause of the fault must be established immediately!

Changes, add-ons or conversions to the machine which might impair safety must not be undertaken **without the manufacturer's permission**!

This applies in particular to the fitting and adjustment of safety devices as well as to welding on load-bearing parts.

Spare parts must comply with the technical requirements specified by the manufacturer. This is always guaranteed if original spare parts are used.



Intervals for recurring **checks and inspections** specified in these Operating Instructions must be complied with!

To perform maintenance work correctly it is imperative to be equipped with the proper tools for the task in question.

The **location** and the operation of **fire extinguishers** must be made known on each building site!

Take note of the facilities for reporting and fighting fires!

2.3 Personnel selection and qualification

Fundamental duties:

Work on the machine may only be undertaken by **reliable personnel**.

Only trained personnel may be deployed. **Note the statutory minimum age!** Specify clearly the responsibilities of personnel for operation, setting up, servicing and maintenance work!

Make sure that only **authorised** personnel operates or works on the machine!

Define responsibilities of the machine operator also regarding to **traffic safety regulations** and empower him to decline instructions from third parties which are not complying with the safety requirements!

2

Personnel being trained or made acquainted with the equipment may only be deployed on the machine **under constant supervision of an experienced person**!

Work on **electrical** equipment or operating materials may only be undertaken by a **skilled electrician** or by **trained** persons under the **guidance** and **supervision** of a **skilled electrician** as well as in accordance with the **electrical engineering regulations**.

2.4 Safety precautions applicable to some operating sequences

Ban any method of working that **impairs safety**!

Some measures have to be taken in order to operate the machine in safe and operative conditions!

Only operate the machine when all **safety devices** and related **safety equipment,** e.g. detachable **safety devices,** emergency stops and suction devices are present and **operational**

Check the machine visually for any **damage** and **defects** at least once a day!

In the event of **operational malfunctions** the machine must be **shut down immediately** and secured!

Secure the **work area** around the machine in **public areas** providing a **safety distance** of at least 2 m from the machine

Faults must be immediately rectified!

Carry out the switch on and off operations and pay attention to control display according to the operation manual!

Before switching on the machine make sure that no-one can be endangered when the machine starts up!

Do not switch off or remove the exhaust and ventilation devices when the machine is running!

All persons in the proximity of the machine, when it is working, must wear ear protectors, safety glasses with lateral protection, noise protection as well as safety shoes. The operator is obliged to wear close-fitting protective clothing.

Use only extension cable for extending the main cable that are sized and marked in accordance with the overall power consumption of the machine and the valid VDE guidelines.

2.5 Special work within the scope of use of the equipment and maintenance activities as well as repairs during operation

Mechanical servicing work:

Put the machine in the **Safety off position** as described in chapter 2.6 for any servicing work on the machine.

Please follow any special **safety instructions** in the various chapters on servicing the machine.
See chapter 7.1 - 7.9.

Adjustment, servicing and inspection work and time limits specified in these Operating Instructions as well as any information on the replacement of parts and equipment must be **undertaken and/or complied with**!

These activities may only be undertaken by **qualified personnel**.

The **operator has to be informed** about all kind of **maintenance works** before starting the process!

At all works that are related to normal operation, conversion of tools adjustment of the machine and its safety devices as well as before inspection , maintenance and repair all ON and OFF functions have to be carried out according the operation manual and advises for maintenance and repair.

2

If the equipment is switched off in order to do maintenance , repair or adjustment it has to be secured against unintended restart.

Switch OFF and disconnect it from the power supply and secure **the main switch** with a **padlock**.

See **Chapter 2.6 Safety off position for specific details.**

Always dispose the contends of the **dust bin** of the dust collector used before **loading** it on van or truck. Observe the **waste disposal regulations,** in uncertain situation ask your next policy level.
Do not use any **aggressive** cleaning materials!
Use lint-free **cleaning cloths**!
Always tighten any screw connections that are undone during servicing and maintenance work!

If **safety devices** need to be taken off or **dismantled** during service and repair, these **safety devices** must be **reinstalled** and inspected immediately after completion of the servicing and repair work.

Make sure that process materials and replaced parts are disposed of safety and in an environmentally-friendly manner!

Work on **electrical** equipment or operating materials may only be undertaken by a **skilled electrician** or by **trained** persons under the **guidance** and **supervision** of a **skilled electrician** as well as in accordance with the **electrical engineering regulations**.

Make sure that electrical components used for replacement purposes comply with the original parts and are correctly adjusted if necessary.

2.6 Definition of the Safety off position

Definition:

The machine is in a safe condition when it cannot generate any hazard.

Putting the equipment in the Safety off position means:

- ☑ **Manipulate the quick lift (Upper Position).**
- ☑ **Switch off the machine.**
- ☑ **Switch off the dust collector.**
- ☑ **Wait for standstill of all drives.**
- ☑ **Pull out mains plug.**
- ☑ **Secure against unintended restart**

2.7 Particular dangerous aspects of the equipment

Any machine, if it is **not used according the regulations**, may be **hazardous** for operating, setting-up and service personnel. The **operating authority** is responsible for **compliance with the safety regulations** during operation and maintenance of **safety devices** supplied with the machine as well as the provision of appropriate additional safety devices!

2.8 Electrical engineering regulations

2

Work on **electrical** equipment or operating materials may only be undertaken by a **skilled electrician** or by **trained** persons under the **guidance** and **supervision** of a **skilled electrician** as well as in accordance with the **electrical engineering regulations**.

Use only extension cable for extending the main cable that are sized and marked in accordance with the overall power consumption of the machine and the valid VDE guidelines.

The electrical equipment for the plant must be **inspected regularly**. Defects such as **loose** connections or **scorched** cables must be rectified **immediately**. **Call a skilled electrician or our Customer Services.**

A **second** person must be at side in order to unplug or to control the emergency stops if maintenance or repair requires working on live parts.
The work area must be blocked off using a red and white **safety chain** and a danger sign. Use a tool that is **insulated against voltages**.

Only start work once you are familiar with the **electrical engineering regulations** that apply to your area.

Only use voltage seekers that **comply with the regulations** when troubleshooting. From time to time check voltage seekers to ensure that they are operationally efficient.

Contents Chapter 3

3.1 Care and maintenance

Special attendance and regular maintenance of the machine are imperative for functioning and safety.

3

3.2 Scope of supply

Scope of supply of the machine:

- ☑ Scarifier (BMP-200)
- ☑ Filter unit 317 DC (Option)
- ☑ Dust hose (Option)
- ☑ Operating manual 1 x

3.3 Description of the machine

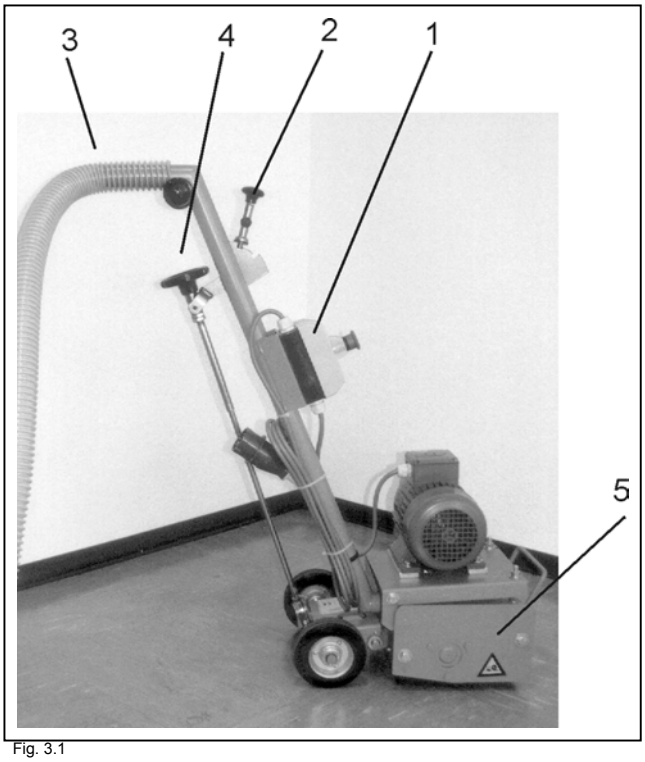


Fig. 3.1

1	Control box	4	Working depth adjustment
2	Quick lift lever	5	Machine housing
3	Filter unit connection		

The **Blastrac** scarifier of the range of BMP-200 will be supplied, dependent on your request, with an electrical motor 230 V, 400 V or with a internal combustion engine. The scarifiers BMP-200, with a working width of 200 mm, are rugged machines can be set in on any surface. The BMP-200 can reach an output of 80 m² per hour dependent on the surface: concret, steel, stone, wood or asphalt.. You can adjust the working depth progressively and so precise that the surface will be treated with care. The scarifiers BMP-200 are very versatile and with the appropriate flailes they can be set in for example for the following works:

- To roughen concrete
- To clean any surface
- To scarify coatings
- To corrugate concrete surfaces
- To derust metal surfaces, e.g. ship's decks and Tanks
- To descale

The coefficient of performance of the flailes can be fully used through the progressively deep adjustment and the surface will be treated with care.

A specially designed dust collection system ensures nearly dust-free operation of the machine and clean air at the workspace. Blastrac uses specially designed dust collection systems which guarantee a high cleaning level.

3

3.4 Control box

The control box is equipped with a push button "ON", and a emergency shutdown switch.

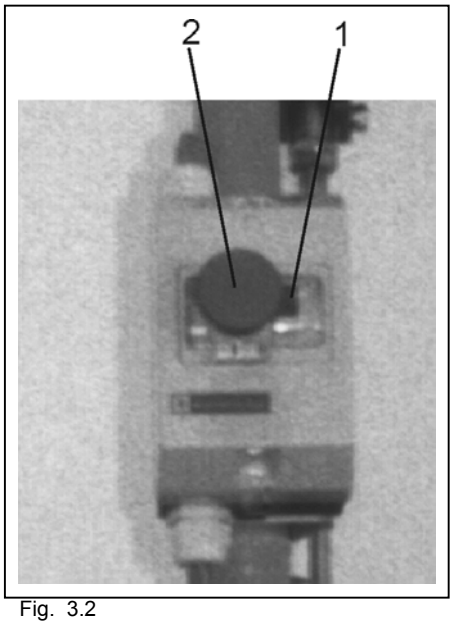


Fig. 3.2

1 "ON" push button
2 Emergency shutdown switch

ON Switch

The ON push button is located on the control box.

Before switching on the machine the scarifier must be lifted with quick lift lever in order to prevent a start or rather a run out of the motor under full load.

Emergency shutdown switch

Red mushroom-shaped press switch. Pressing this switch immediately interrupts power supply to the driving motor.

3.5 Operating elements

The Quick lift

The **Blastrac** scarifier BMP-200 has a quick lift (Fig. 3.1 Item 2). The scarifying drum can be lift with the quick lift lever without changing the working depth to transport or to remove the scarifier.

The progressively deep adjustment

The working depth will be adjusted through turning the adjust wheel or handwheel (Fig. 3.1, Item.4), so that every tool may grip (scrape) correctly and you will reach the requested quality of finish. The progressively depth adjustment enables the flailes to impact on the surface being treated only at the required and necessary depth. The scarifying depth must be adjust, considering the surface to be treated, so that the flailes will be unhindered thrown up through the centrifugal force and they can free turn over lateral axle. When the deep adjustment is correctly selected, the scarifier will run quiet and constant. Oval worn flailes as well as broken drum axle indicating a too "high" scarifying depth adjustment. Do not set the machine so the flailes causing high vibration , this indicates not enough clearance between flaile and axle.

3.6 The scarifying drum

The heart of the scarifier is the scarifying drum.
The assembly of the scarifying drum is very easy. Each tool will be pushed on the axle together with spacers according to the enclosed assembly plans. The spacers ensure the necessary distance between the flailes. The enclosed assembly plans take into account the required lateral clearance of the flailes, approximately 3 - 5 mm.

3

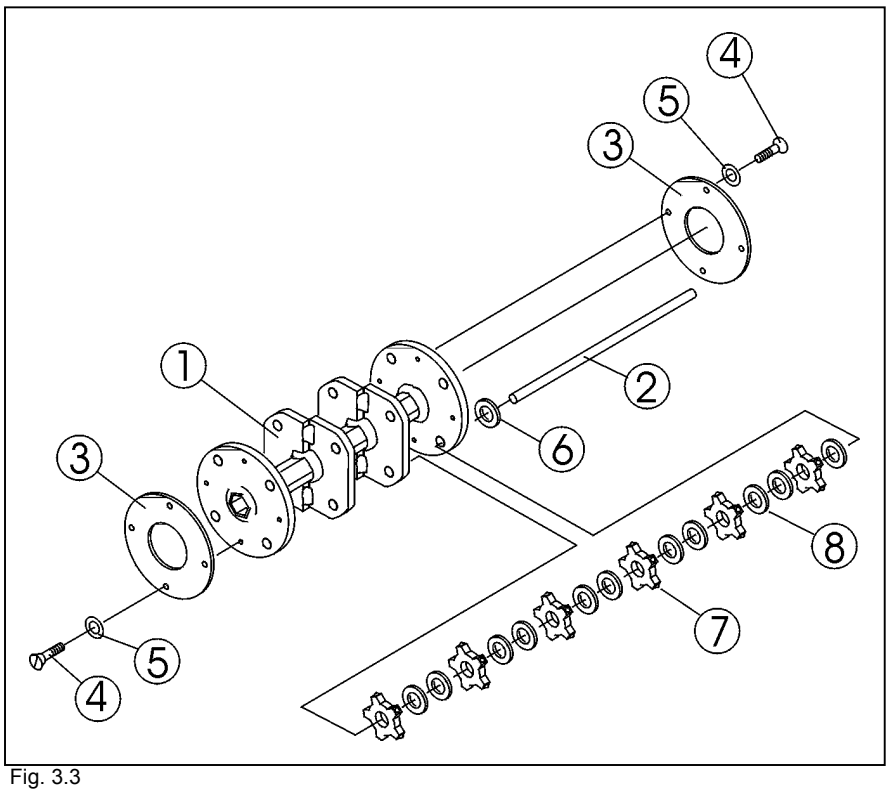


Fig. 3.3

1 Scarifying drum
2 Axle
3 Lock plate
4 Safety screw
5 Washer
6 Distance ring
7 Scarifying flaile
8 Spacer

3.7 The scarifying flailes

Through a lot of different flailes, and with few alterations, it is possible to adjust the Blastrac - Scarifier for the applications or rather for the requirements of the specific surfaces. All the machines work according the principle of the loose of a tool seated on an axle. The rotation of the scarifying drum generates a centrifugal force on the flailes which are kept by the lateral axles. The flailes will be thrown outwards as far as the clearance between flaile and axle allow it when striking the surface particles will be taken of the surface and the flaile will rebound in the max inner position. So to avoid significant wear on the axles as well as on the drum it is required that the flailes still have enough clearance to the axle when striking the surface. See also chapter 3.5.

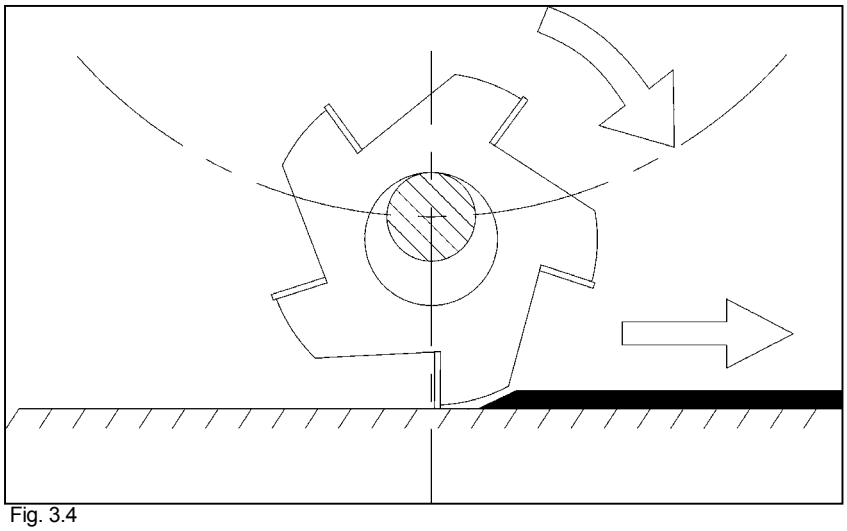
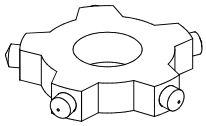
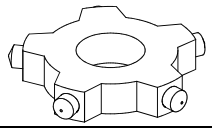
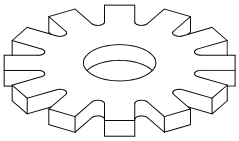
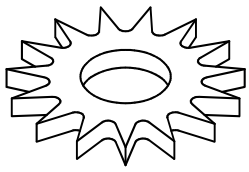
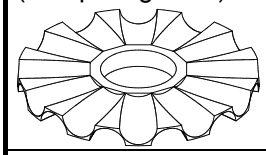
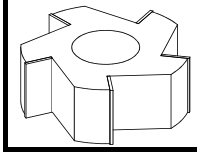


Fig. 3.4

Description	Part no.	Range of application
Pentagon flaile HQ (with HM-Points) 	MPL11	Wear resistant:. For hart applications: • To roughen, cut and scarify concrete surfaces. • To corrugate concrete and asphalt. • To clean stone and concrete surfaces. • To remove road markings. • To remove and level uneven floors.
Pentagon flaile (with HM Points) 	MPL12	Application like pentagon flaile HQ • Smaller outside diameter
Rays flaile 40 (Tempering steel) 	MPL15	To remove rolling skin.. • To remove dirt sediments. • To derust and clean without damage de surface. • To remove road markings. • To corrugate soft background.
Star flaile 40 (Tempering steel) 	MPL16	To derust and clean ship's decks, containers, tanks. To remove rolling skin. • To remove rubber residues. • To roughen asphalt. • To remove thin colour coatings, glue residues. • To remove carpets backings.
Waves flaile 40 (Tempering steel) 	MPL17	For a light cleaning and treatment of the area without damaging the surface. • To derust. • To remove thin colour coatings.
Milling cutter 11 HM (Full-HM) 	MPL42	To remove thermoplastic and cold plastic markings from asphalt and concrete. • To scarify Epoxy coatings. • To remove floor covering with a Thermoplastic basis.

3

Description	Part No.	Range of application
Spacer 15	MPL35	To use between every tool.
Spacer 25	MPL36	To use between every tool.
Spacer 20	MPL39	To use between every tool.
Steel wire brush rough	MPL21	To clean and remove rust formation from sheet metal. • To treat the surface after the use of the flailes.
Steel wire brush fine	MPL34	To clean and remove rust formation from sheet metal. • To treat the surface after the use of the flailes.
Nylon- wire brush	MPL33	To clean wood

Contents Chapter 4

4.1 Transport of the machine with vehicles

When transporting the machine proceed in such a manner that damage due to the effects of the use of force or incorrect loading and unloading is avoided. Secure the machine with a tightening belt. Use at least two belts and tighten the machine.

4.2 Manuel mode of moving the machine

In order to move the machine the quick lifting device has to be manipulated as described in chapter 3.5.
Now the machine can be moved by hand very easy.

4

The has to be machine is to be transported after being separated into:

- Scarifier
- Filter unit 317 DC if off-the-shelf
- General accessories

4.3 Transport with cranes and lifts

If you have to transport the machine with **hoists** like crane or lifts, pay attention to the max. load that these devices may carry. Use only allowed and homologated sling tools. **Notice the machine weight** from **chapter 1.2 "Unit specifications"** or rather from the shield-type you'll find bolted to the machine.

4.4 Operation of the machine while scarifying

The machine will be operated while scarifying in accordance with the instructions given in Chapter 5 "Initial operation".

4.5 Unit specifications

Model variant	**BMP-E200**	**BMP-B200**
Dimensions in mm L x W x H	900 x 370 x 1000	900 x 370 x 1000
Weight	55 Kg	56 Kg

Model variant	**Filter unit 317 DC**
Dimensions in mm L x W x H	850 x 670 x 1380
Weight (empty)	64 Kg

Contents Chapter 5

Initial operation

5.1 Preparation for initial operation

Before switching on make sure that all existing protective devices are mounted and that the filter unit is connected correctly.

Handle all plugs, cables, hoses and operating devices with care. Avoid any contact with live wires.

If problems with the current supply arise during the assembly or the start up, call a qualified person for help. Work on electrical equipment may only be undertaken by qualified personnel.

Regular inspection is important in order to avoid downtimes. Carry out the following checks before any start-up:

5

- ☑ Check whether all machine parts are assembled safely and correctly.
- ☑ Check all screws and other fasteners for tight seat.
- ☑ Check the scarifying unit for foreign bodies and remove them.
- ☑ Check the scarifying drum, housing and fastening screws or damages and wear.
- ☑ Check the tightness of the hose connections and the condition of the hose (if available).
- ☑ Make sure the dust bin of the filter unit is empty.
- ☑ Check the electrical connections for dirt and foreign body deposits.
- ☑ Check the driving motor for dirt and other contaminants.

Before start-up the operating personnel must be familiar with the safety regulations given in this manual.

☑ Put the scarifier and the filter unit on the surface to be treated. In order to move the machine manually, manipulate the quick lift as described in chapter 3.5.

☑ When machine is in place set the quick lift into down position and arrange the depth adjustment by the handwheel so the flails just slightly touching the ground. Job depending adjustment needs to be done after the start up procedure as described in the following paragraphs. (Initial Operations 5.2) Set the quick lift back into the upwards position.

☑ Check the main power cable and the dust hose for damage. Replace or repair all damaged parts before starting the machine.

☑ Connect the scarifier and the filter unit with the dust hose. Use hose clamps at the connections.

☑ Connect the electric cable of the scarifier with the site supply (only by electric driven units).

☑ Connect the electric cable of the filter unit with the site supply.

5.2 Initial operation

All persons in the proximity of the machine, while it is working, must wear ear protectors, safety glasses with lateral protection as well as safety shoes. The operator is obliged to wear tight protective clothing.

The start of the scarifier and the filter unit (if available) is effected in the following sequence:

1 <u>Switching on the filter unit</u>

☑ Main switch of the filter unit "ON".

2 <u>Initial operation of the scarifier</u>

☑ Check that the scarifying drum is lifted up by the quick lift.

Initial operation

☑ Check that the emergency shutdown switch is not actuated.
(Not necessary by internal combustion engine)

☑ Press the push button "ON"
(In case of internal combustion engine follow the instructions of the manufacturer.

☑ Check the turning direction of the drive motor. See the turning direction marking on the motor.
(Not necessary by motors with 230 V and internal combustion engine.) In case of wrong turning direction turn the phase inverter in the plug.

☑ Let down now the scarifier with the quick lift.

☑ Dependent on the surface to be treated, you can adjust now the scarifying depth with the handwheel until you have reached the required surface profile.

5

☑ Readjust the machine by the handwheel if it runs harshly.
Adjusting the machine so it starts vibrating or hammering hardly means you have to reduce the depth adjustment by the handwheel. Keep going without readjusting means to have a negative effect on the material of the machine. It does not generate more performance.

☑ By pushing the machine you can treat the surface without effort The advancing speed is dependent on the conditions and the required surface profile of the surface to be treated.

Contents Chapter 6

Operation

6.1 Operation

Normal start-up and operation of the scarifier BMP-200 isn't different from the procedure described in Chapter 5 "Initial operation".

Carry out scarifying operation in parallel tracks in such a way that the dust hose and electric cable do not become twisted.

Figure 6.1 shows the recommended scarifying paths leading away from the filter unit.

Make sure that no vehicles, such as forklift trucks and other equipment run over the electric cable and the dust hose.

The selection of the correct speed of the scarifier is important for a good result. In the case that the surface has different characteristics (e.g. different hardness or different coating thickness), a uniform result can be achieved by varying the speed during operation.

6.2 Rate of feed information

Speed adjustment depends on conditions and the required surface profile of the surface to be treated.

Observe the surface in order to set the correct speed and vary the speed dependent on the required penetration depth and profile achieved.

6.3 Recommended direction of operation

☑ Position the filter unit near to a power supply connection.

☑ Place the scarifier near to the filter unit and spread out the hose as shown in fig. 6.1.

☑ Work with the scarifier, with the hose spread out in the opposite direction, repeating the process away from the filter unit..

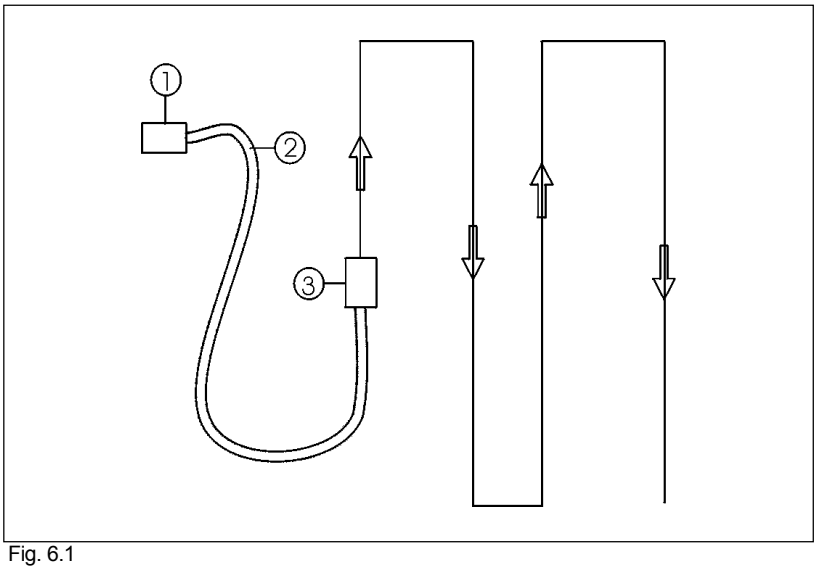


Fig. 6.1

1 Filter unit
2 Dust hose
3 Scarifier

☑ Travel stepwise over the work area considering the service length of the dust hose.

☑ Finish the scarifying process by scarifying the area where the filter unit originally stood.

☑ Finish the scarifying process by scarifying the area where the filter unit originally stood.

6.4 Switching-off the machine

☑ Lift the scarifying drum from the surface by the quick lift.

☑ Push the emergency shutdown switch.
(In case of working with the BMP-200 with internal combustion engine, take into account the enclosed information of the manufacturer).

☑ Switch off the connected filter unit.
(If available)

☑ When the **Blastrac** scarifier is put out of operation for a longer period of time, pull out the mains plug and cover the machine with a plastic foil.

Make sure that all turning machine parts have come to standstill before any inspection or maintenance works are started. **Note the prescribed safety off position . (Chapter 2.6)**

6.5 Trouble shooting

Irrespective of the following information, the local safety regulations are valid in any case for the operation of the machine.

First put the machine to its **Safety off position**. Afterwards start searching for the fault.

6.6 Safety shutdown

The machine has to be into its **"Safety off position"** before starting repair works. See Chapter 2.6 "Safety instructions".

6.7 Restarting after a fault

See Chapter 5 "Initial operation".

6.8 Proceedings- prior and after stationary period

Before a long standstill period

- ☑ Switch off the machine (see Chapter 6.4).
- ☑ Protect the electric motors from moisture, heat, dust and shocks.

  (In case of working with the BMP-200 with internal combustion engine, take into account the enclosed information of the manufacturer).
- ☑ Clean the machine and cover it with a plastic foil.

After a long standstill period

See Chapter 5 "Initial operation".

Contents Chapter 7

7.1 Recommendations

Prior to any repair works on the machine and its drives, secure the machine against unintentional switching-on. Put the machine to its safety off position. Chapter 2.6

Failures due to inadequate or incorrect maintenance may generate very **high repair costs** and long standstill periods of the machine. **Regular** maintenance therefore is imperative.

Operational safety and service life of the machine depend, among other things, on proper maintenance.

The following table shows recommendations about time, inspection and maintenance for the normal use of the machine.

The time indications are based on uninterrupted operation. When the indicated number of working hours is not achieved during the corresponding period, the period can be extended. However a full overhaul must be carried out at least once a year.

Due to different working conditions it can't be foreseen how frequently inspections for wear check's, inspection, maintenance and repair works ought to be carried out. Prepare a suitable inspection schedule considering your own working conditions and experience.

7

Our specialists will be happy to assist you with more advice.

Follow additional operating and maintenance of OEM if included during your service and maintenance work.

Pay attention to special notice, given by instructions for electric-motors or combustion engines.

7.2 Maintenance and inspection list

Operating hours/ time period	Inspection points, maintenance instructions
12 h after repairing	Check all accessible screw connections for tight seat.
Daily and prior to starting work	Check all safety devices working adequate. Check the power supply cable for damages. Check the hose to the filter for damages. Check whether there is any foreign matter in the scarifying drum. Clean the scarifying drum specially in case of moist surfaces. (Concrete deposits in the scarifying drum).* Make sure that the dust container of the filter is emptied. Check the scarifying drum, lateral axles, tools and housing for wear. Check the tension of the belt, stretch again if necessary In case of using a scarifier with internal combustion engine, please take into account the recommendations of the manufacturer.
Annually	Full overhaul and cleaning of the complete machine.

* Moist subsoil mill without Dust collector

7.3 Repairing

As already mentioned in Chapter 5 “Initial operation” we recommend to execute the first repair works on the machine having support of **Blastrac** personnel. Doing this together , your maintenance personnel gets the opportunity to be trained intensely.

We will describe only regular maintenance works that could occur within the bounds of regular maintenance or work that is required to replace wear parts.

If you replace parts yourself for specific reason, the following instructions and work sequence have to be observed.

You should also stock all spare or wear parts that cannot be supplied quickly. As a rule, production standstill periods are more expensive than the cost for the corresponding spare part.

Screws that have been removed must be replaced with those of the same quality (strength, material) and design.

Prior to any repair works on the machine and its drives, secure the machine against unintentional switching-on. Pull out the mains plug or rather the spark plug connector in order to do this.

7.4 The scarifying drum

The scarifying drum is a very important component of your scarifier, due to this you should pay special attention while maintaining and repairing.

The main shaft has to be cleaned and lubricated when you replace the scarifying drum, so that any rust or sediment can't complicate your work when you change the drum the next time.

7

If the scarifier drum should be disassembled in order to rearrange it in a different way or to replace wear parts, it is absolute necessary to observe the quantity of flailes and spacers as described in the assembly plans shown in chapter 10. Also, pay attention that the bores on the cover plate for the lateral axle are not worn out and all screws are tightened. In order to obtain a uniform and perfect scarifying pattern on the surface , you need to adjust the correct scarifying working depth, watch correct assembly of the scarifying drum as well as the appropriate selection of tools for the surface to be treated.

If the scarifying drum is not uniform assembled the machine will become unbalanced and excessive wear, will arise.

Blastrac will not feel responsible for any faulty parts, that are damaged caused by inappropriate assembly.

Following important key factors affect the scarifying pattern:

- The selected speed must be suitable for the conditions of the surface.
- You need to choose appropriate tools for different application.

7.5 Drum Assembly Layout

We have tested the assembly layout examples enclosed in this manual they will result in the best possible pattern being achievable.

The selection of the flail type as well as the arrangement on the drum assembly is most important to obtain an optimum work with the scarifier BMP-200.

Incorrect arrangement of the assembly will cause high wear and costs as well as insufficient machine performance.
See assembly layouts at chapter. 10.

7.6 Drum Replacement

Prior to any repair works on the machine and its drives, secure the machine against unintentional switching-on. Put the machine to its safety off position. Chapter 2.6

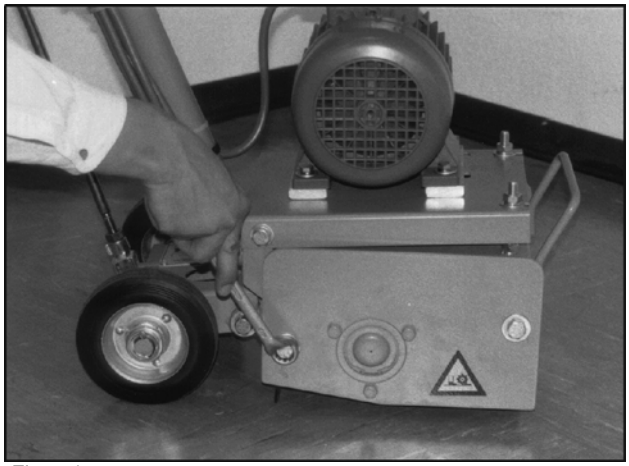


Fig. 7.1

Disassembly:

1 Loosen the fastening screws on the side plate fitted to the housing and remove them, pull off the side-plate. (Fig. 7.1)

2 Pull out the drum sideways towards you on the shaft. (Fig. 7.2)

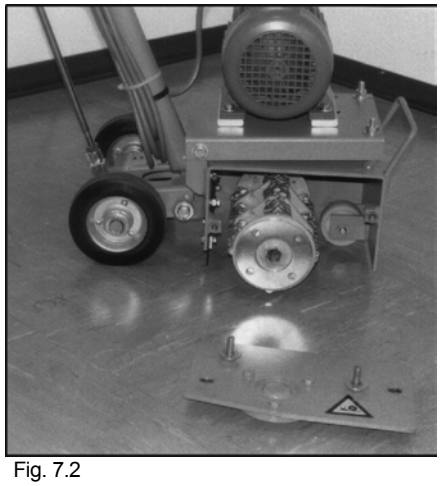


Fig. 7.2

Assembly:

1 Clean the main shaft and lubricate it uniform

2 Push the scarifying drum on the drive shaft until it hits its heel.

3 Fit back the side plate and pay attention to have the correct position to avoid damaging the bearing that's located in the side plate.

Never use the scarifier without a side plate fitted or incorrect fitted plate.

7.7 Influence on the pattern of the scarifier

The scarifying pattern depends on the surface being treated the change of working depth, tool selection and selected speed will mostly have influence on the result.

Depending on the required surface structure you will have to change the tools (Flailes) .
In order to get the best result compare the individual results of the tools. Do your testing having the same speed selection in order to get comparable visual results.

A check on the scarifying pattern should always being done after new or other types of tools have been fitted. Just that way efficient work is possible, will prevent from unnecessary wear and repair cost's.

7.8 Synchronous

Prior to any repair works on the machine and its drives, secure the machine against unintentional switching-on. Put the machine to its safety off position. Chapter 2.6

Dismount:

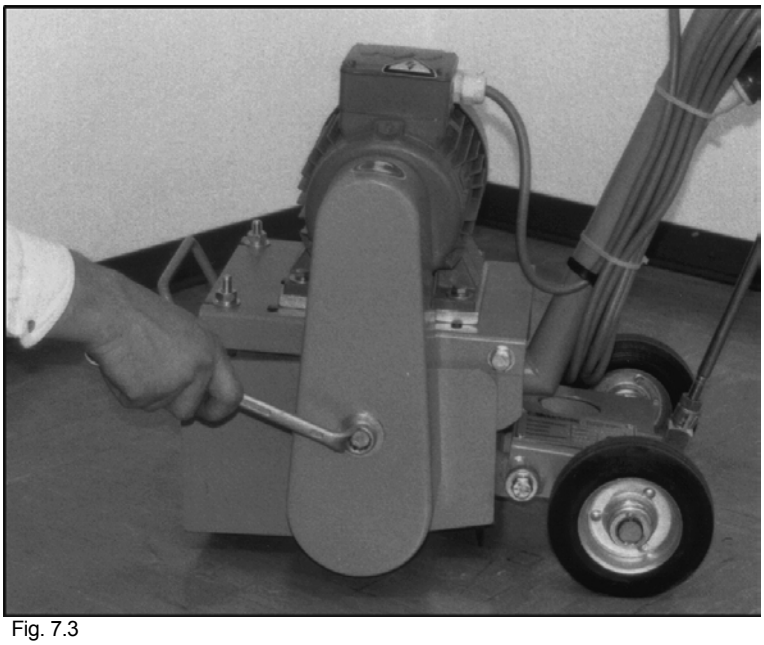


Fig. 7.3

- Remove the screws of the synchronous belt protection.

- Stretch the synchronous belt, if necessary, in order to remove it.

The tension of the synchronous belt will be carried out through the motor plate. the motor can be lifted and let down with the 4 hexagon nuts, which are located above and under the motor plate. The synchronous belt will be stretched and loosed by lifting and letting down the motor.

Mount:

- Put on the synchronous belt on the pulley belt and stretch it.
- Pay attention that the synchronous belt lies parallel and has the correct tension. The belt has the correct tension If you could press it in for approx. 5mm.

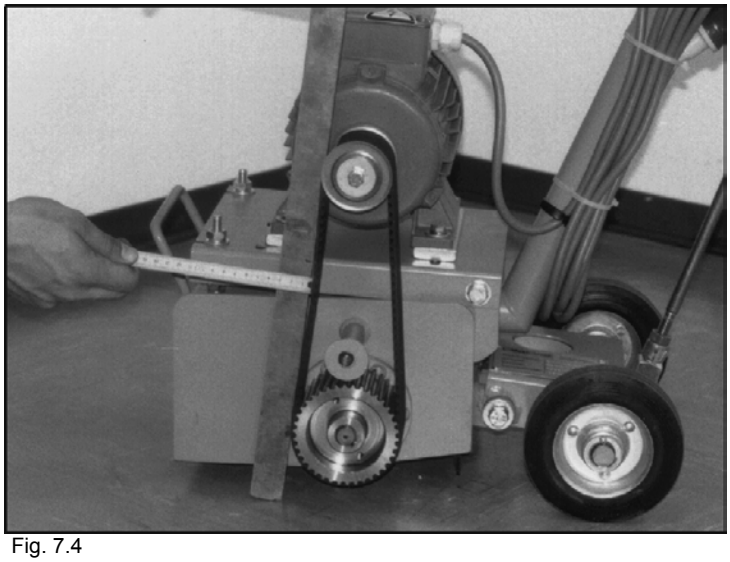


Fig. 7.4

7.9 The motor

The motor is designed for a long working life
Damages at the motor can be perceived through unusual noises , malfunctions or rather interruptions.

In case of malfunction of the internal combustion engine consult the recommendations of the manufacturer.

If the malfunction can not be repaired, inform please the **Blastrac** service centre.

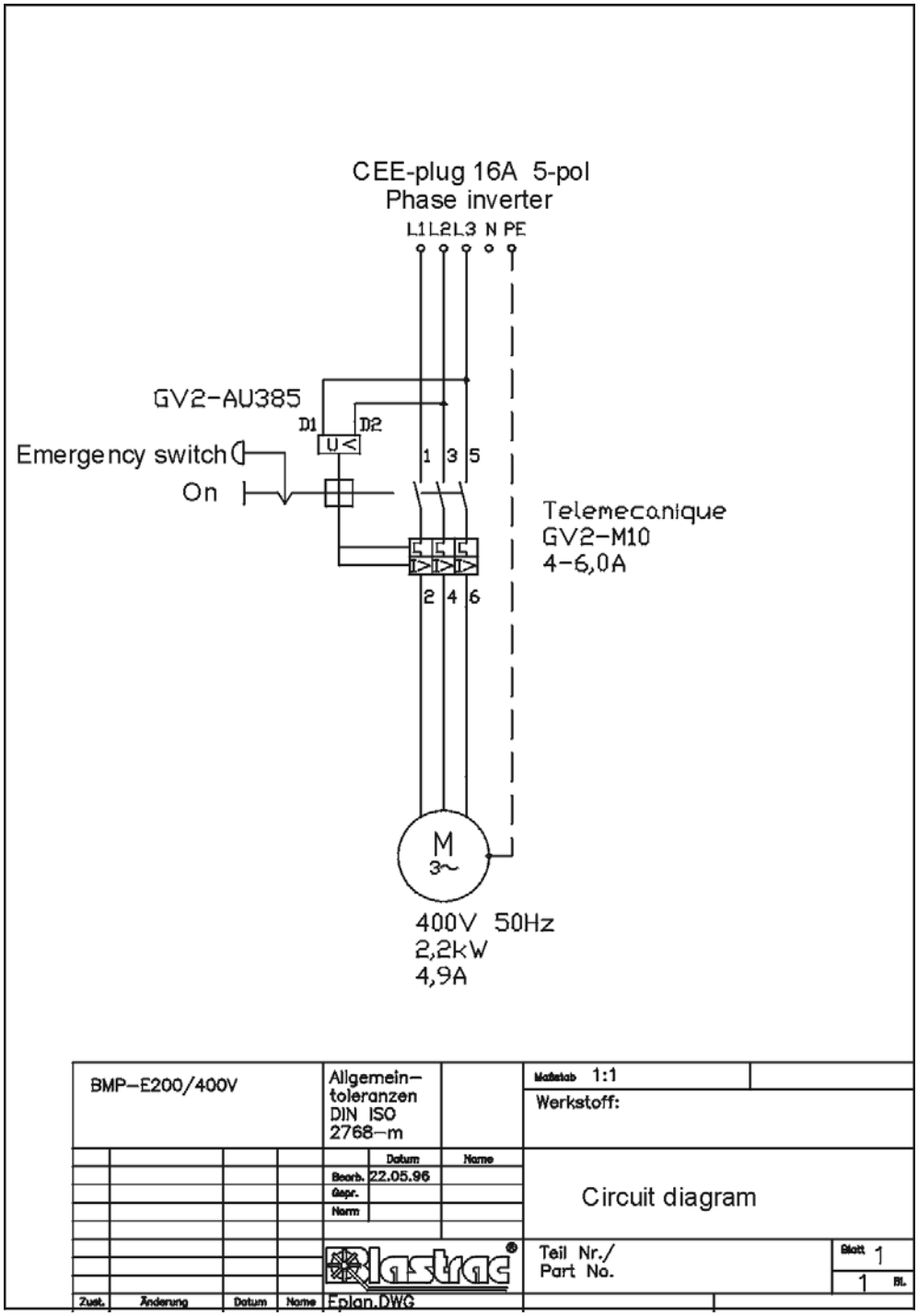
Contents Chapter 8

Electrical system

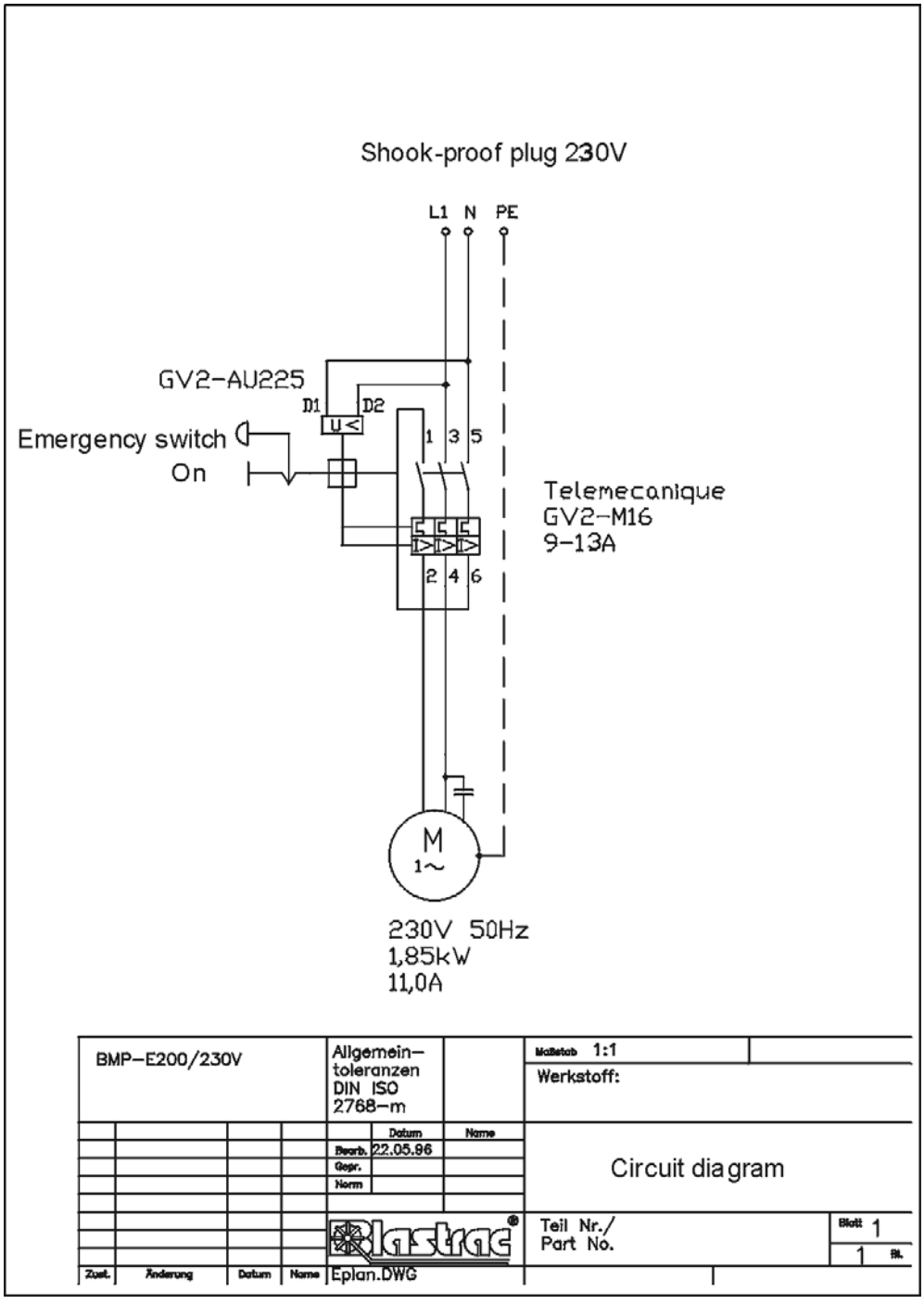
Work on electrical equipment or operating materials may only be undertaken by a **skilled electrician** or by trained persons under the guidance and supervision of a skilled electrician as well as in accordance with the electrical engineering regulations..

Order the electric items with reference to the circuit diagrams in chapter 8.1 or call a Blastrac service centre.

8.1 Electric circuits diagram



Electrical system



8

Contents Chapter 9

9.1 Fault diagnosis scarifier

Prior to any repair works on the machine or its drives the machine must be secured against unintentional switching-on. Put the machine to its Safety off position.

Fault	Possible cause	Remedy
Excessive vibration	Imbalance due to worn or broken flailes	Replace all worn or broken parts from the machine
Unusual noises	Defective bearing	Check the bearing of the axle drive shaft and replace if necessary
	Wrong tension of the belt	Check the tension of the belt, replace the belt if necessary
	Defective motor	Replace the motor
Reduced or no scarifying performance	Flailes have reached the maximum permissible wear	Replace the worn parts
	Inappropriate flaile for the application	Replace the flailes by appropriate flailes for the surface to be treated.
	In case of internal combustion engine, follow the information of the manufacturer	

9.2 Fault diagnosis - electrical system

Prior to any repair works on the machine or its drives the machine must be secured against unintentional switching-on. Put the machine on its Safety off position.

Fault	Possible cause	Remedy
Control system does not switch on	Motor protection switch has triggered	Check the main power supply and next switch on again
Motor does not start		Follow the enclosed information of the manufacturer

Contents Chapter 10

Spare parts

10.1 Scarifier BMP-200 spare parts list

Item	Part No.	Qty.	Spare Parts	Pièces de rechange	Bezeichnung
1	MP04006	1	Housing	Caisson du rabot	Gehäuse
2	MP04007	1	Side plate	Couvercle	Seitendeckel
3	MP04008	1	Guard for gear belt	Couvercle de protection	Schutzhaube
4	MP04009	1	Top plate	Support moteur	Motorenplatte
5	MP04010	1	Rubber flap	Caoutchouc de protection	Gummidichtung
6	MP04011	1	Flap clamping bar	Règle fixatrice	Klemmleiste
7	MP04012	1	Machine guide bar	Tube de guidage	Führungsrohr
8	MP04013	2	Rubber grip	Poignée	Gummigriff
9	MP04014	1	Engine EL 230 V	Moteur EL 230 V	Motor EL 230V
10	MP04015	1	Engine EL 400 V	Moteur EL 400 V	Motor EL 400 V
11	MP04016	1	Engine B Honda	Moteur B Honda	Motor B Honda
12	MP04084	1	Box / Switch	Boîte / Disjonctreur	Gehäuse für Schalter
12.1*	MP04071	1	Protective switch	Disjoncteur de protection moteur	Motorschutz-schalter 230V
12.2*	MP04071-2	1	Undervoltage release	Disjoncteur à minimum	Unterspan-nungsauslöser 230V
12.3*	MP04072	1	Protective switch	Disjoncteur de protection moteur	Motorschutz-schalter 400V
12.4*	MP04072-2	1	Undervoltage release	Disjoncteur à minimum	Unterspan-nungsauslöser 400V
12.5**	MP04085	1	Emergency touch switch	Bouton poussoir de sécurité	Not Aus Schlagtaster
13	MP04084/1	1	Softboard	Plaque d'isolation	Dämmplatte
14	MP04012/1	1	Adapter Machine guide bar	Adaptateur de tuyau flexible Tube de guidage	Schlauch-adapter für Führungsrohr

* Without image.
**Machine till 12/97 only in conjunction with Item12

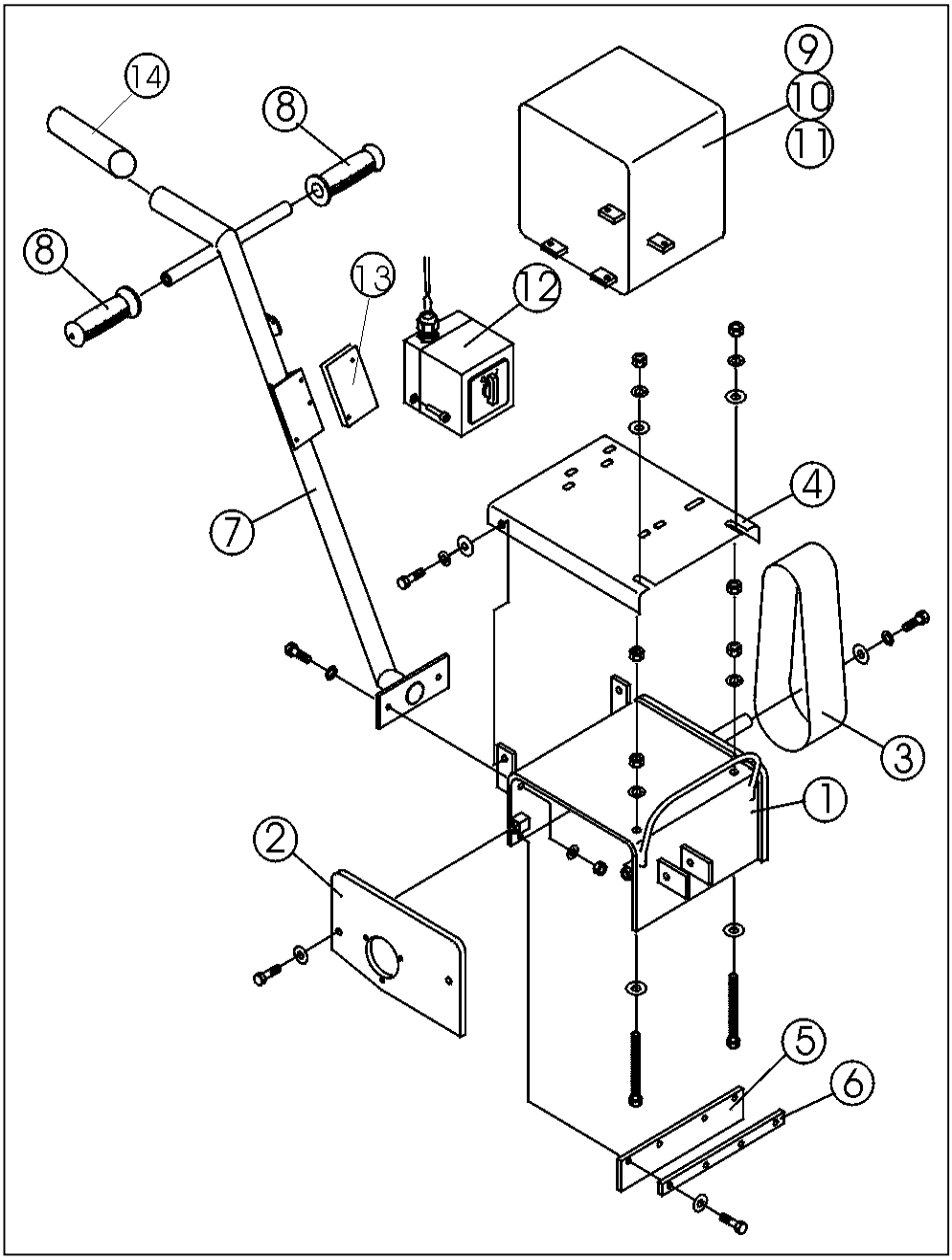


Fig. 10.1

Spare parts

Item	Part No.	Qty.	Spare Parts	Pièces de rechange	Bezeichnung
1	MP04014	1	Engine EL 230 V	Moteur EL 230 V	Motor EL 230V
2	MP04090	1	Relay	Relais	Umschaltrelais
3	MP04086	1	Fan	Ventilateur	Lüfterflügel
4	MP04087	1	Fan cover	Capot ventilateur	Lüfterhaube
5	MP04094	1	Holder for condenser	Porte- condensateur	Halter zu Kondensator
6	MP04091	1	Starting condenser	Condensateur de démarrage	Anlauf-Kondensator
7	MP04092	1	Operating condenser	Condensateur d´ exploitation	Betriebs-Kondensator
8	MP04015	11	Engine EL 400 V	Moteur EL 400 V	Motor EL 400 V
9	MP04088	1	Fan	Ventilateur	Lüfterflügel
10	MP04089	1	Fan cover	Capot ventilateur	Lüfterhaube
11	MP04098	1	Terminal box	Plaque à bornes	Klemmenbrett
12	MP04099	1	Plate for E Motor	Support E Moteur	Unterlage E Motor
13	MP04100	1	Counterplate E Motor	Plateau E Moteur	Gegenplatte E Motor
14	MP04016	11	Engine B Honda	Moteur B Honda	Motor B Honda
15	MP04101	1	Air filter B Honda	Filter d` air B Honda	Luftfilter B Honda
16	MP04102	1	Counterplate B Motor	Plateau B Moteur	Gegenplatte B Motor

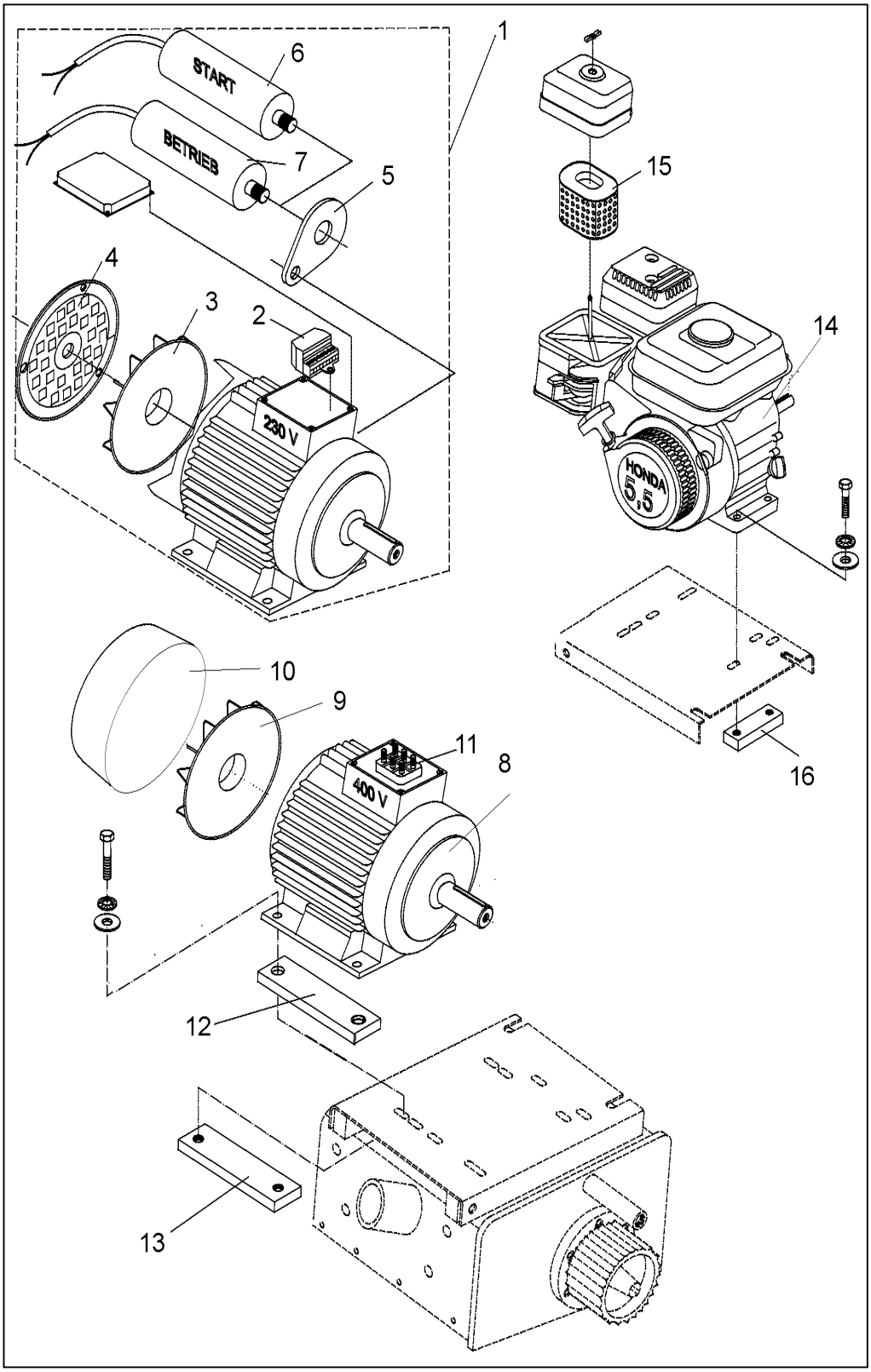

1
6
START
BETRIEB
7
5
4
3
2
230 V
15
14
HONDA
5,5
10
9
11
8
400 V
16
12
13

Fig. 10.2

Spare parts

Item	Part No.	Qty.	Spare Parts	Pièces de rechange	Bezeichnung
1	MP04017	1	Wheel balance - wheel shaft	Système du réglage - axes	Wippe
2	MP04018	2	Bush	Guide	Lagerbüchse
3	MP04019	2	Rubber wheel	Roue	Gummirad
4	MP04020	1	Spacer tube	Tube distance	Zwischenstück
5	MP04021	1	Spacer tube	Tube distance	Zwischenstück
6	MP04022	1	Depth control wheel	Poignée de réglage	Tiefenverstellrad
7	MP04023	1	Cylinder	Baue de guidage	Gelenkbüchse Messing
8	MP04024	1	Adjustment tube	Tige de réglage	Spindelhülse
9	MP04025	1	Adjustment bar	Tige de prolongation	Verstellstange
10	MP04026	1	Fork piece	Fourche	Gabelkopf
11	MP04027	1	Locking plate	Plaquette de sécurité	Sicherung m. Bolzen
12	MP04028	1	Lift off handle	Poignée de réglage	Verstellhebel
13	MP04029	2	Finger knob	Poignée de prise en main	Fingergriff
14	MP04030	1	Fixation pin	Percuteur	Rasterbolzen
15	MP04031	1	Shaft for finger knob	Axe pour poignée	Achse zu Fingergriff
16	MP04032	1	Spring	Ressort	Feder
17	MP04033	1	Knob	Poignée de débrayage	Pilzgriff
18	MP04034	1	Supporting wheel	Roue plastique	Stützrad
19	MP04035	1	Axle	Axe	Achse
20	MP04036	1	Lift off handle complete	Poignée de réglage complet	Verstellhebel komplett
21	MP04095	1	Nut	Contre-écrou	Gegenmutter für Pilzgriff
22	MP04096	1	Pin	Goupille de fixation	Schwerspannstift
23	MP04097	1	Washer	Bague	Tellerscheibe

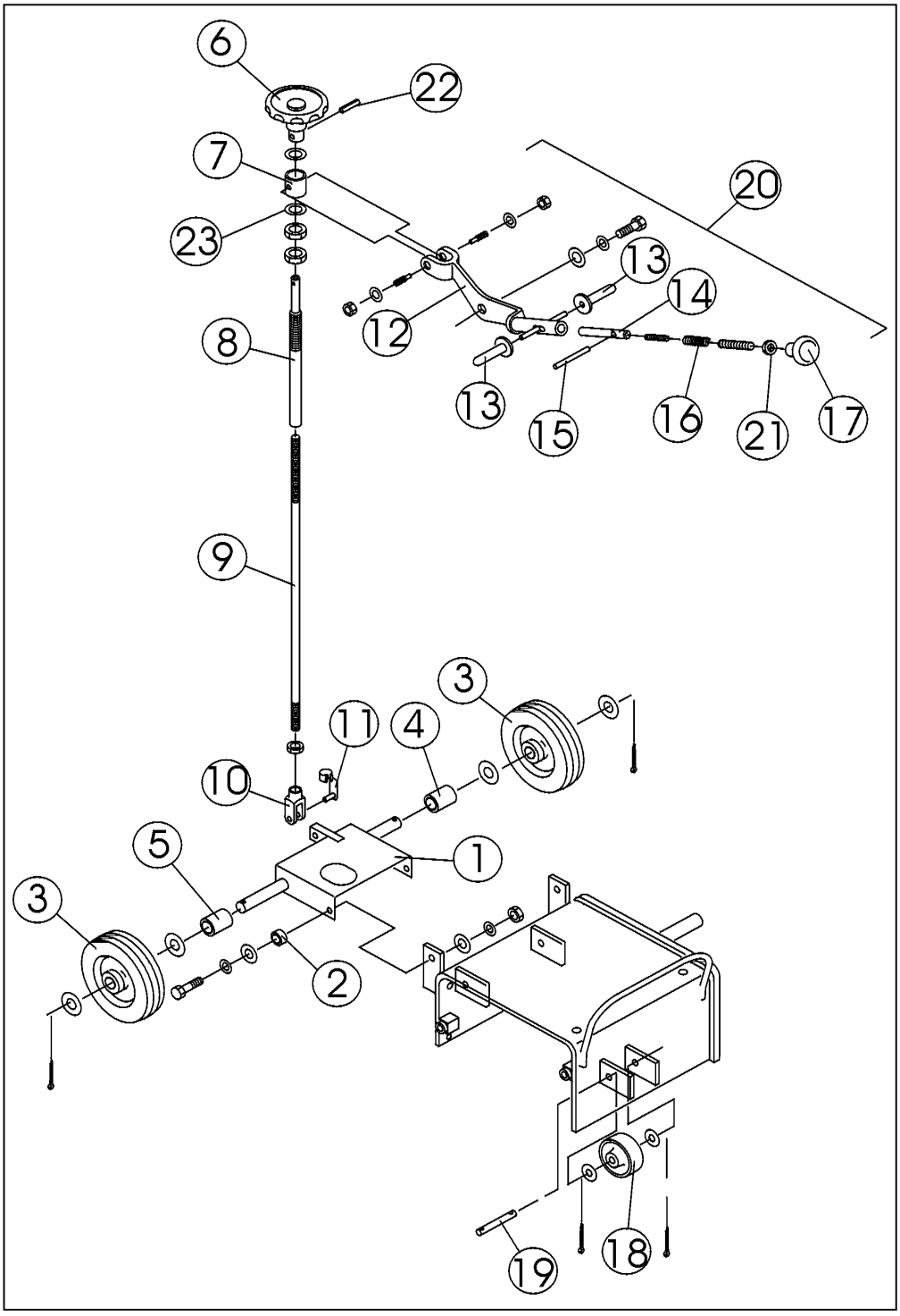


Fig 10.3

Spare parts

Item	Part No.	Qty.	Spare Parts	Pièces de rechange	Bezeichnung
1	a.A.	1	Drum	Tambour	Korbgehäuse
2	MPA200	4	Cutter shaft	Axe	Achse
3	MP04038	2	Retaining plate	Flasque	Sicherungsblech
4	MP04039	8	Countersunk screw	Vis de sécurité	Sicherungs-schraube
6	MP04040	1	Bearing housing	Boîtier pour roulement	Lagergehäuse
7	MP04041	1	Ball bearing	Roulement	Kugellager
8	MP04042	1	Hexagon driving support	Boîtier d'entraînement diaxe	Zentrierbuchse
9	MP04043	1	Cover	Couvercle	Deckel
10	MP04044	1	Protection ring ball bearing	Bague de protection	Schutzring Kugellager
11	MP04045	2	Locking ring (55 mm)	Circlips (55 mm)	Sicherungsring (55 mm)
12	MP04046	1	Hexagon drive shaft	Axe d'entraînement	Antriebswelle
13	MP04047	1	Woodruff key	Clavette	Scheibenfedern
14	MP04048	1	Bearing housing	Boîtier de roulement	Lagerflansch
15	MP04049	2	Ball bearing	Roulement	Kugellager
16	MP04050	1	Spacer (8 mm)	Bague (8 mm)	Distanzring (8 mm)
17	MP04051	1	Intermediate ring (4 mm)	Bague (4 mm)	Anlaufscheib (4 mm)
18	MP04052	2	Locking ring (47mm)	Circlips (47mm)	Sicherungsring (47mm)
19	MP04053	1	Driving disc (lower)	Disque d'entraînement	Riemenscheibe (unten)
20	MP04054	1	Locking ring (17mm)	Circlips (17mm)	Sicherungsring (17mm)
21	MP04055	1	Protection ring	Bague de protection	Schutzring Kugellager
22	MP04001	1	Gear belt	Courroie	Zahnriemen
23	MP04068	1	Key	Clavette	Keil
24	MP04067	1	Driving disc (upper)	Disque d'entraînement	Riemenscheibe (oben)E.Mot.
25	MP04073	1	Driving disc B.Mot. Honda	Disque d'entraînement Honda	Riemenscheibe B.Mot.Honda

Item	Part No.	Qty.	Spare Parts	Pièces de recharge	Bezeichnung
26	MPD200-4	1	Drum alone complete	Tambour vide complet.	Fräskorb komplett leer
27	MPD200-4V	1	Drum alone complete reinforced	Tambour vide complet renforcé	Fräskorb komplett leer verstärkt
28	MPD200-4X	1	Drum alone complete reinforced	Tambour vide complet renforcé	Fräskorb komplett leer Spezial mit 5 Achsen
29	MP04060	1	Spacer E.Mot.	Bague de distance	Distanzring E.Motor
30	MP04061	1	Spacer E.Mot. Honda	Bague de distance Honda	Distanzring B.Mot. Honda
	MP04005	1	Repair kit	Lot de réparation	Reparatursatz pos. 7-11,12-15,18,20.

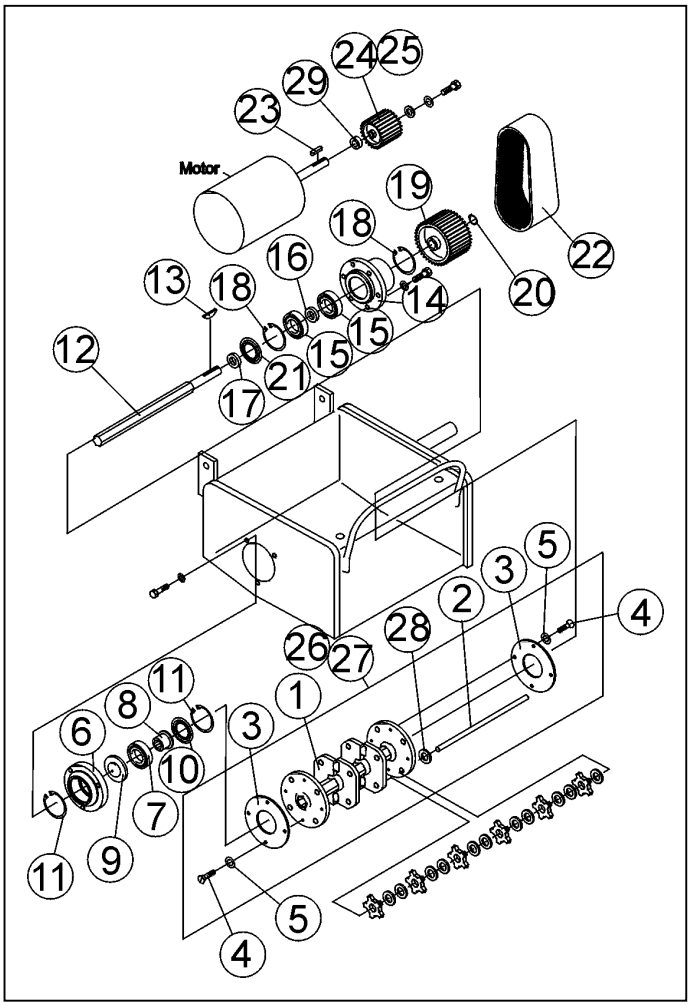


Fig. 10.4

10.2 Assembly plans

Only assemble tools and spacers so you while the tools could freely move ((Axial-Play min 1-2mm).
Every shaft needs to have the same quantity of tools and spacers being fitted in order to prevent unbalances.

The following assembly layouts show the minimum components. Drums can be assembled with more tools, depending on the surface that needs to be treated.

Please follow the above mentioned information.

Assembly plan for MPD200L11S/MPD200L12S

76x MPL11 or 76x MPL12
128x MPL39, 1x MPD200-4

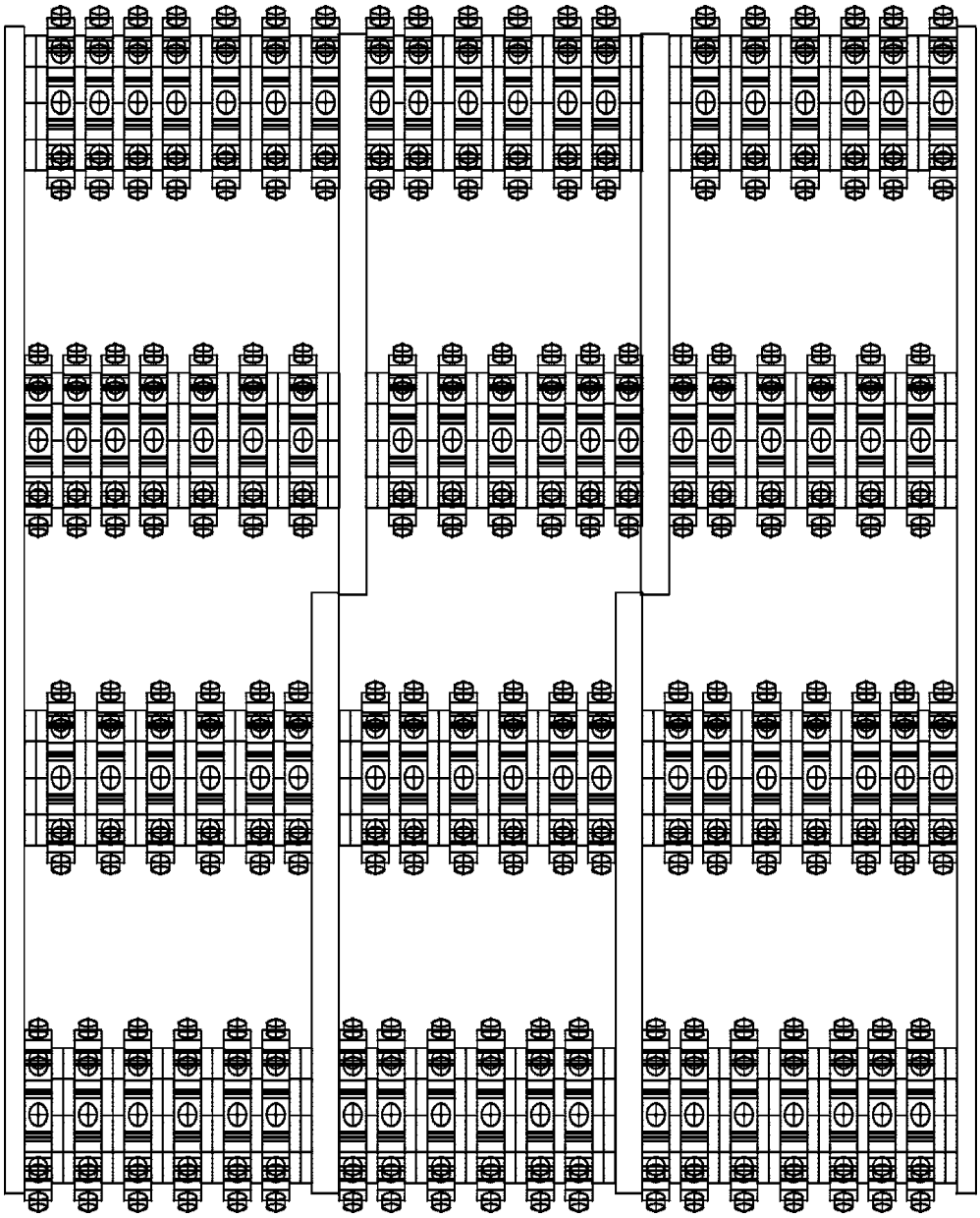


Fig. 10.5

Spare parts

Assembly plan for MPD for MPD200L11SV MPD200L12SV

76x MPL11 or 76x MPL12
108x MPL39,4 x MPL46, 1x MPD200-4V

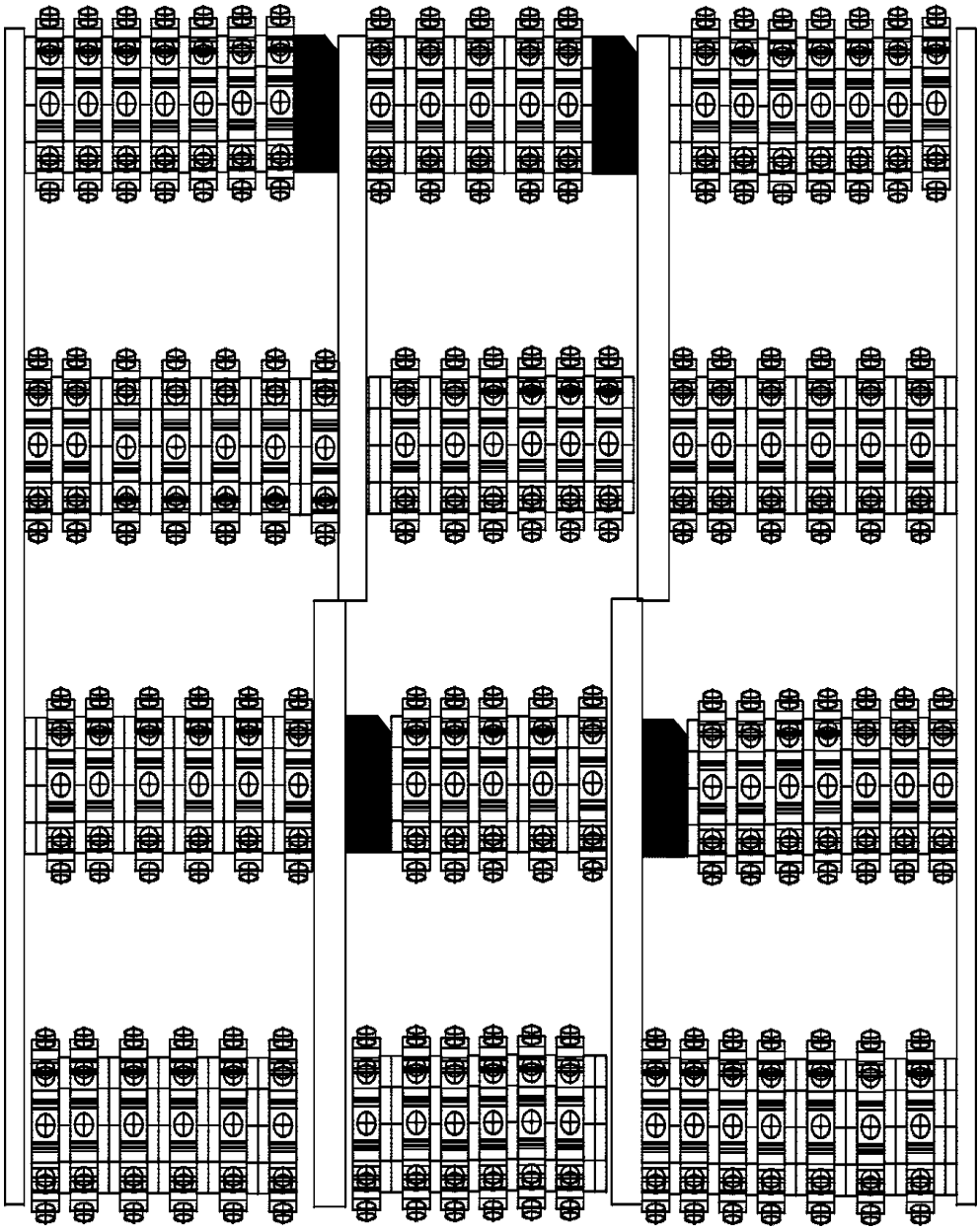


Fig. 10.6

Assembly plan for MPD200L15S/MPD200L16

88x MPL15 or 88 x MPL16
188 x MPL39, 1x MPD200-4

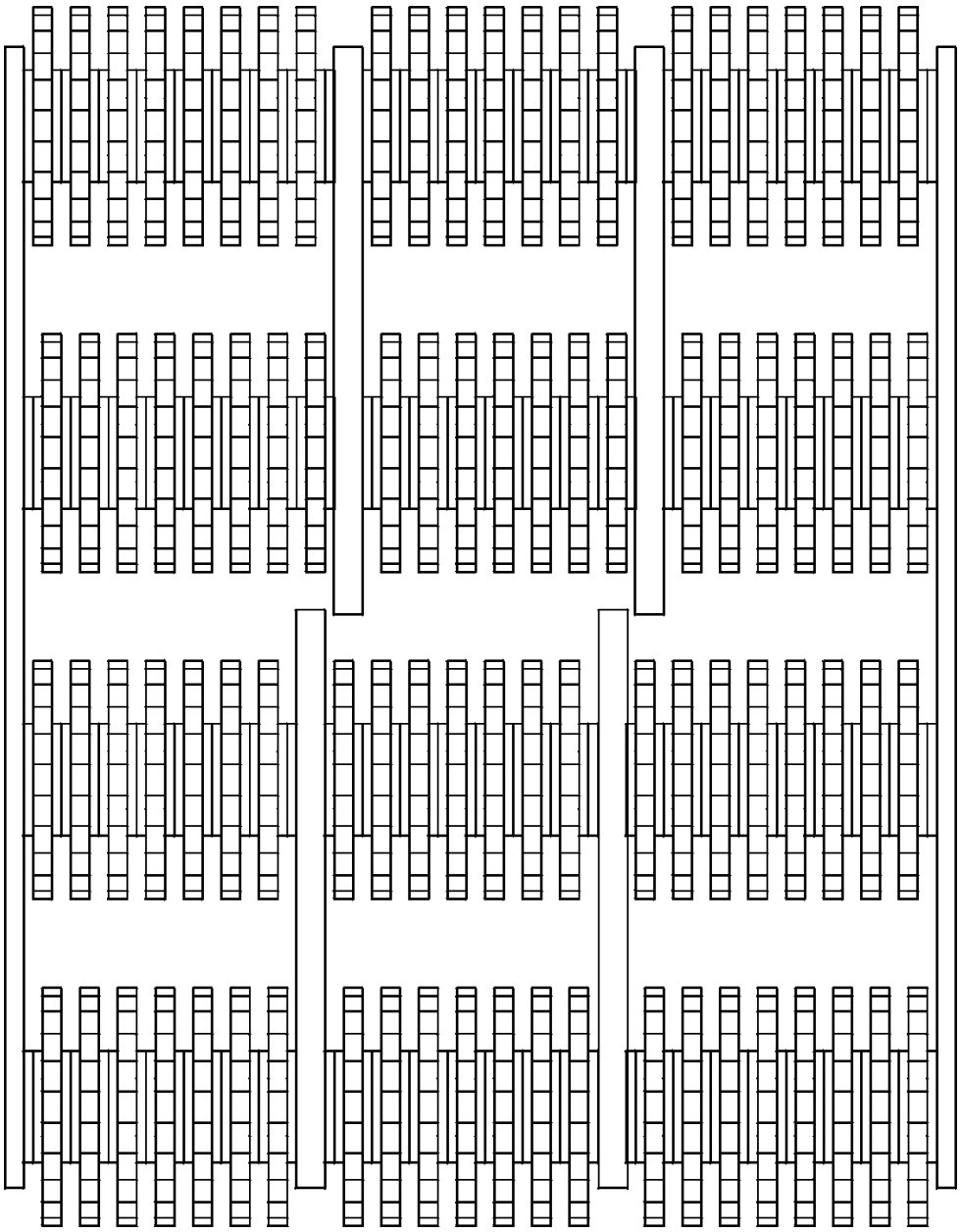


Fig.10.7

Assembly plan for MPD200L17S

112x MPL17
220x MPL48, 1x MPD200-4

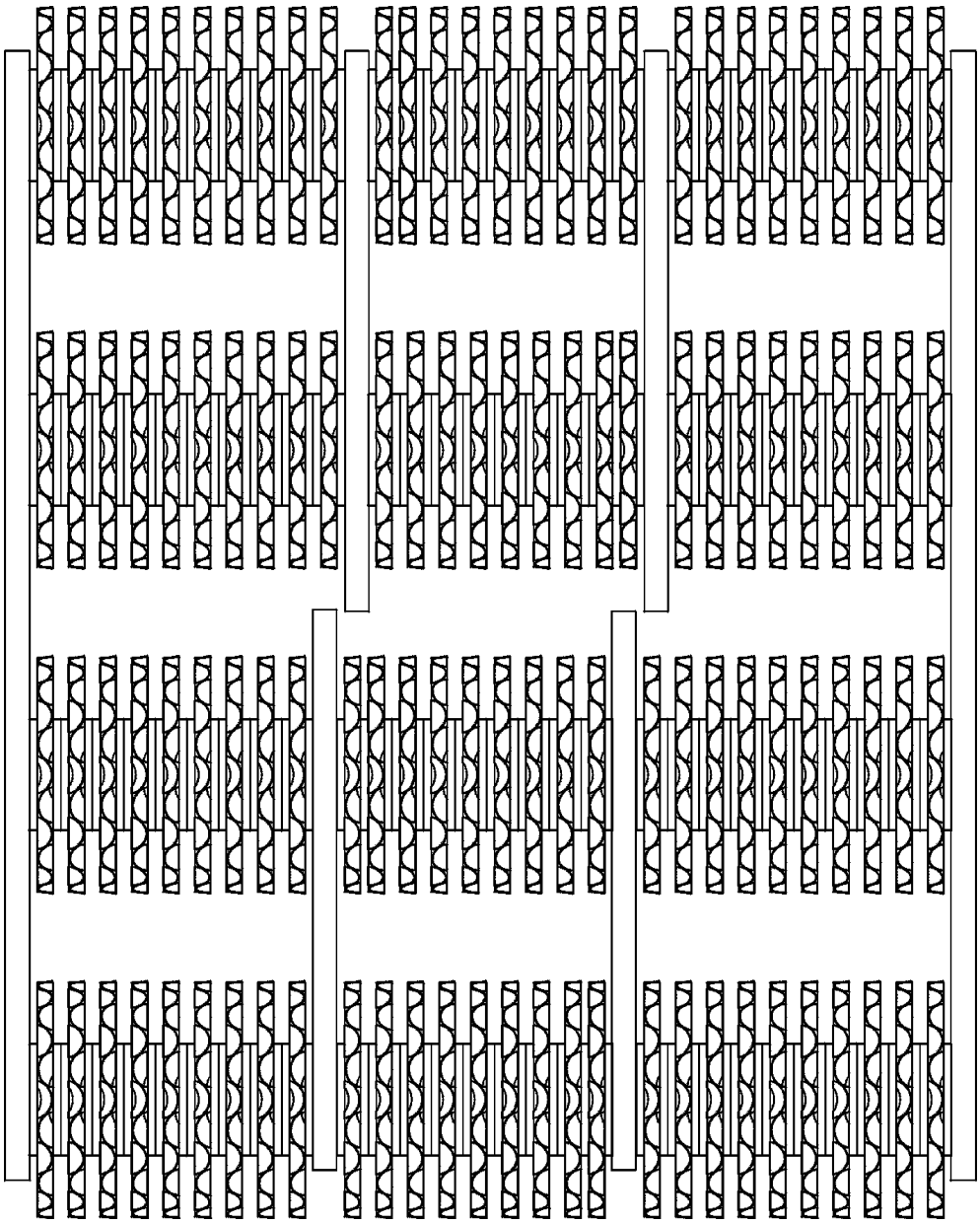
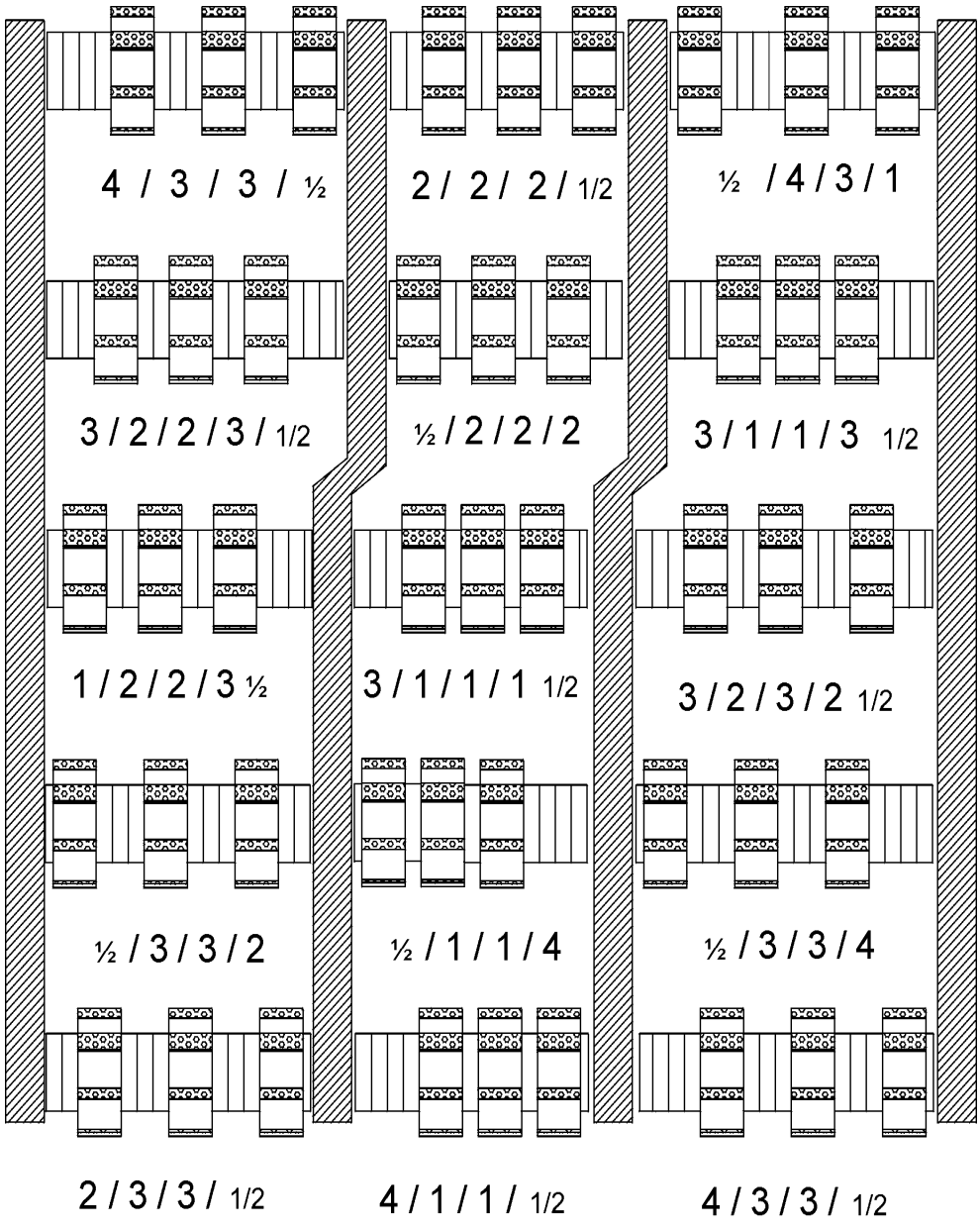


Fig. 10.8

Assembly plan for MPD200L42SX

45 x MPL42; 120 x MPL36
15 x MPL35, 1 x MPD200-4X



10

Fig. 10.9