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OPERATING MANUAL

**MODEL
BMG-435MKII
Grinder**



CONTENTS – SECTION 1

- 1.1 Rating
- 1.2 Unit specifications
- 1.3 Operative range and correct usage
- 1.4 Stand-by power supply
- 1.5 Machine type designation

OPERATING MANUAL



SECTION 1 TECHNICAL DATA

1.1 RATING

Unit / Designation: Diamatic Grinding Machine

Machine Type: BMG-435MKII

Manufacturer:

**Diamatic US**13201 North Santa Fe
Oklahoma City, OK 73114
United States of America
Local: 405/478-3440
toll-free: 800/256-3440**Diamatic BV**Utrecht Haven 12
3433 PN Nieuwegein
THE NETHERLANDS
T +31(0)30 – 601 88 66
F +31(0)30 – 601 83 33

1.2 UNIT SPECIFICATIONS

Technical Data:

Grinding Machine	BMG-435MKII
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For 230V Machines:

Power Consumption	2,2 KW, 3HP
Connected loads	230V single phase, 12,9A

For 115V Machines:

Rated HP Output	1,3 KW, 1.75 HP
Connected Loads	115V single phase, 15 FLA
R.P.M.	1725



Dimensions:

	BMG-435MKII
Length	27.6 in / 700 mm
Width	17.1 in / 435 mm
Height	47.2 in / 1200 mm
Weight	254 lbs / 115 kg

1.3 OPERATIVE RANGE AND CORRECT USAGE



The BMG-435 is exclusively designed to process horizontal surfaces. The machine must not be used for other purposes. The manufacturer will not be liable for damage resulting from incorrect usage. In these cases, the user takes responsibility for all risks.

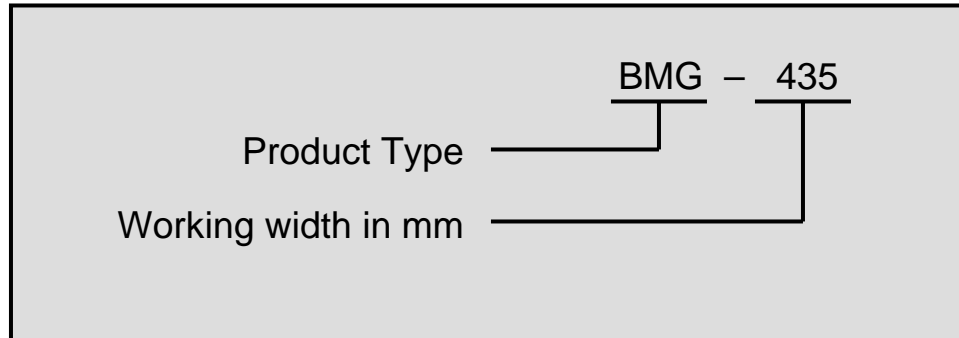
1.4 STAND-BY SUPPLY (GENERATOR)



If the BMG-435 is to be operated using power from a generator, the generator must be operated in accordance with the current **U. S. National Electric Code guidelines or European VDE standards, as appropriate** (this applies, but is not limited 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



CONTENTS – SECTION 2

- 2.1 Warnings and symbols
- 2.2 Organizational measures
- 2.3 Personnel selection and qualification
- 2.4 Safety precautions applicable to some operating sequences
- 2.5 Special work within the scope of use of the equipment and maintenance activities as well as repairs during operation
- 2.6 Definition of the safety off position
- 2.7 General Safety Considerations
- 2.8 Electrical engineering regulations

OPERATING MANUAL



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 followed to maximize safety and equipment performance. 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, property or equipment.



Warning of dangerous voltages.



Indicates protective devices in electrical appliances.



Indicates where consultation with the manufacturer is required.



Instructions relating to periodic checks.



Reference to important instructions contained in the Operating Instructions.

2.2 ORGANIZATIONAL MEASURES



These Operating Instructions are to be kept with the machine, and must be within reach at all times!

In addition to these Operating Instructions, general and legal regulations regarding accident prevention and environmental protection must be complied with per local regulations.

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

The Operating Instructions must be supplemented by other instructions, including the duty to supervise and report incidents relating to particular working practices, for example work organization, work procedures and personnel safety.

Personnel entrusted with working with the machine must read and understand the Operating Instructions before starting work, paying specific attention to the Safety information. To read these instructions after work has commenced 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 operators are to be checked by a supervisor, especially regarding awareness of safety and hazards.

Operators must tie back long hair, and not wear loose clothing or jewelry including rings. There is a risk of injury by items getting caught, or being drawn into moving machinery.



Use personnel protection equipment if necessary or required by local 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 and remedied.



Changes, additions or conversions to the machine must not be made, without the manufacturer's permission!

This applies in particular to the fitting and adjustment of safety devices.

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.



The location and the operation of fire extinguishers must be made known on each work 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 trained personnel.

Only trained personnel may be employed. Note the statutory minimum age. Clearly specify the responsibilities of personnel for operation, setting up, servicing and maintenance work.

Make sure that only authorized personnel operate or work on the machine.

Define responsibilities of the machine operator, with regard to traffic safety regulations, and inform him not to take instructions from third parties who may not be complying with the local safety requirements.

Personnel, who are being trained to operate equipment, may only use the machine under constant supervision of an experienced person.



Work on electrical equipment may only be performed by a skilled electrician or by trained persons under the supervision of a skilled electrician, as well as in accordance with the local electrical engineering regulations.

2.4 SAFETY PRECAUTIONS APPLICABLE TO SOME OPERATING SEQUENCES

Do not allow any method of working that impairs safety.

Recognized official procedures have to be used to ensure the machine is operated in the safest and best conditions.



Only operate the machine when all safety devices, and related safety equipment, are present and operational!

SECTION 2 SAFETY INSTRUCTIONS

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 6.5 feet (2 meters) from the machine.

Faults must be immediately remedied.

Carry out the switch on, and switch off, operations in accordance with the operations manual.

Before turning on the machine verify that no one can be endangered when the machine starts up.

Do not turn off the dust collector while the machine is running.



All persons in the proximity of the machine must wear ear protectors and safety shoes. In addition, the machine operator must wear close fitting protective clothing.



Use only extension cables, used for extending the main cable, that are sized and marked in accordance with the overall power consumption of the machine and valid U. S. National Electric Code guidelines or European VDE standards, as appropriate.

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 Section 2.6 before carrying out any service work on the machine.

Follow any special safety instructions in sections on servicing the machine. See Sections 7.1 – 7.9.

Service and maintenance intervals specified in these Operating Instructions, as well as information on the replacement of parts must be undertaken and/or complied with.

These activities may only be undertaken by qualified personnel.

The operator must be given information about maintenance and work procedures before starting the cleaning process. This includes, but is not limited to the following:

- Procedures that are related to normal operation
- Methods of tools adjustment on the machine, and its safety devices,
- All “ON and OFF” functions that have to be carried out according to the operation manual
- Methods for maintenance and repair.

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

Switch OFF and disconnect the machine from the power supply.

See Section 2.6 Safety off position for specific details.

Always dispose of the contents of the dust bin or of a connected dust collector before loading the machine onto a vehicle.

Observe the local waste disposal regulations; in uncertain situations ask the next higher authority.

SECTION 2 SAFETY INSTRUCTIONS

Do not use any aggressive cleaning materials.

Only use lint-free cleaning cloths.

Always verify that any bolted connections that were loosened during service and maintenance work are properly secure and tight.

If safety devices need to be removed 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 safely and in an environmentally friendly manner.



Work on electrical equipment may only be performed by a skilled electrician or by trained persons under the supervision of a skilled electrician, as well as in accordance with the local 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 where it cannot be a hazard.

Putting the equipment in the Safety off position involves:

- Switching off the machine.
- Switching off the dust collector (if being used).
- Waiting for all drives to stop.
- Pulling out mains plug.
- Securing against unintended restart.

2.7 GENERAL SAFETY CONSIDERATIONS



Any machine, if it is not used according to regulations, may be hazardous during operation, set-up and servicing. The machine owner is responsible for compliance with the safety regulations during operation and maintenance, and for the use of safety devices supplied with the machine, as well as the provision of appropriate additional safety devices!

2.8 ELECTRICAL ENGINEERING REGULATIONS



Work on electrical equipment may only be performed by a skilled electrician or by trained persons under the supervision of a skilled electrician, as well as in accordance with the local electrical engineering regulations.



Use only extension cables, used for extending the main cable, that are sized and marked in accordance with the overall power consumption of the machine and the U. S. National Electric Code guidelines or European VDE standards, as appropriate.

The electrical components of the equipment must be inspected regularly. Defects such as loose connections or scorched cables must be replaced immediately. Call a skilled electrician or our Customer Service.

A second person must be in attendance while the electrician is working on the equipment.

The work area must be secured against any third party entering the work area, by means of a red and white safety chain and a danger sign. Use only tools that are insulated against electricity.

Only start work after you are familiar with the electrical engineering regulations that apply to the local area.

Only use multi-meters that comply with the regulations when troubleshooting. From time to time check multi-meters to ensure that they are operating correctly.

CONTENTS – SECTION 3

- 3.1 Range of application
- 3.2 Scope of supply
- 3.3 Description of the machine
- 3.4 Operating elements
- 3.5 Electric components
- 3.6 Driving part
- 3.7 Care and maintenance



SECTION 3 GENERAL

3.1 RANGE OF APPLICATION

Typical ranges of applications for the BMG-435 are for example:

- To remove undulated concrete surfaces
- To prepare the surface for coatings
- To polish the surface
- To remove coating defects
- To remove glue residue
- To remove coatings from wood floors
- To renovate wood floors for new coatings

3.2 SCOPE OF SUPPLY

Scope of supply of the machine:

- Grinding machine (BMG-435)
- Dust hose (Optional)
- Operating manual (1x)

OPERATING MANUAL



3.3 DESCRIPTION OF THE MACHINE

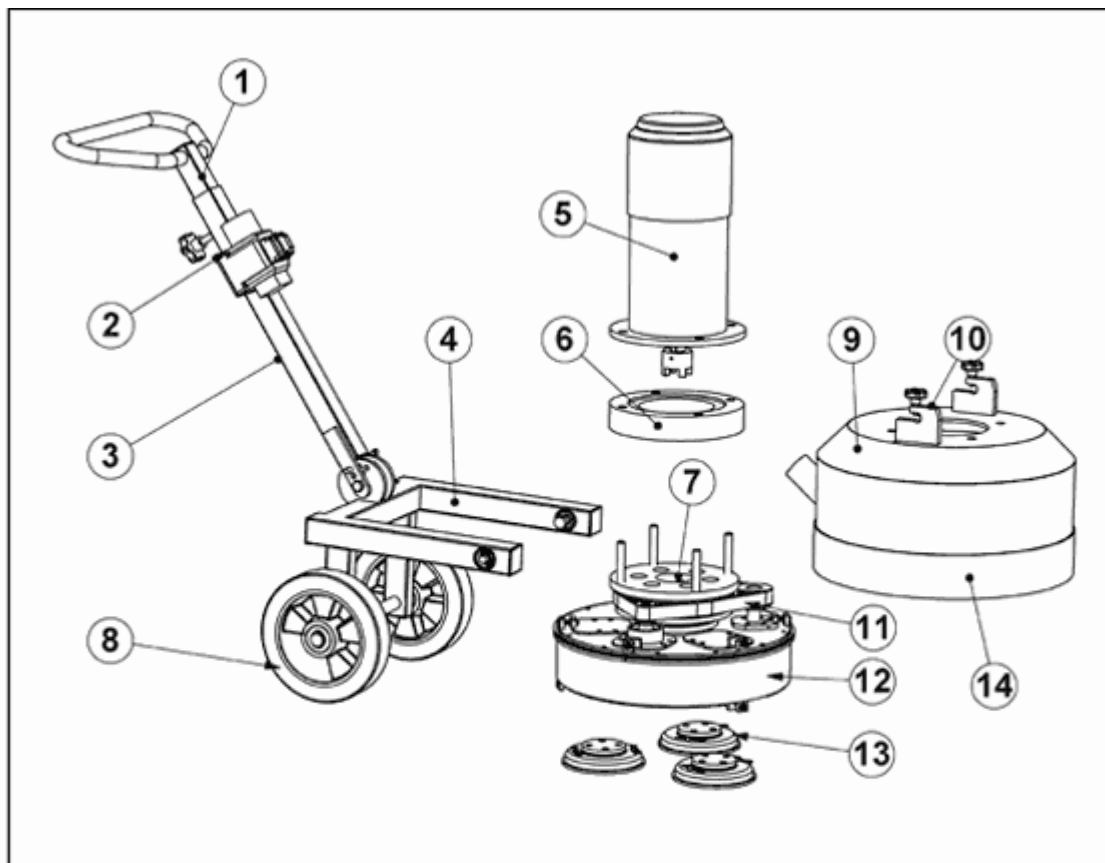


Fig. 3.1

1	Steer	6	Fill-up block	11	Tension pulley
2	Switch	7	Drive mechanism	12	Housing
3	Bottom handle	8	Wheel	13	Diamond plate holders
4	Wheel frame	9	Cover	14	Rubber seal
5	Motor	10	Hinge plate		

Note: On the 115V version, Item 5 will also include a gear reducer and item 6 is replaced by an adapter plate.

The Diamatic BMG-435 has a working width of 435 mm and gives excellent performance due to its economic efficiency and easy handling.

The machine is capable of leveling uneven and undulating floors. This process is suitable for an optimization of surfaces, concrete polishing, wood sanding and removing tiger striping after shot blasting.

SECTION 3 GENERAL

Alternately, the machine can be used to smooth floor surfaces as preparation for coatings to be applied.

Depending on the application the diamond disc holder can be fitted with several different types of diamond-grinding discs.

The tools run at 1500 revs/min.

3.4 OPERATING ELEMENTS

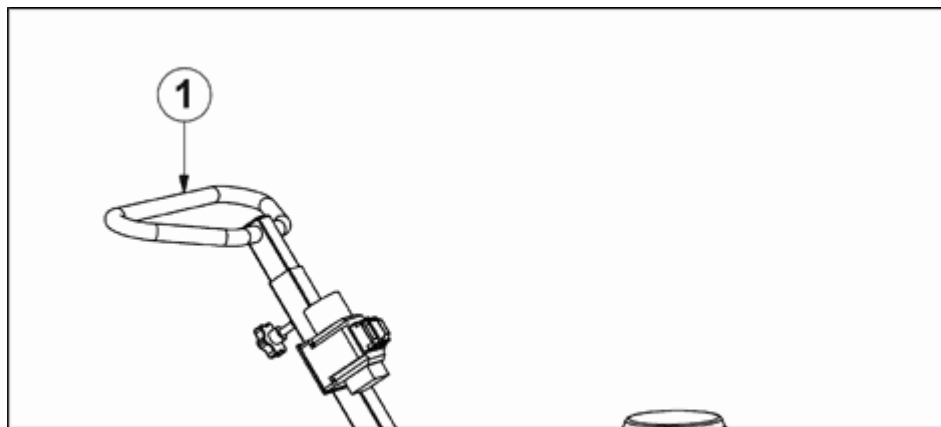


Fig. 3.2

Before switching on the BMG-435, the front part of the grinding machine must be lifted by pushing the handgrip (1) down toward the floor until the machine is approximately 4 inches (10 cm) from the ground.

3.5 ELECTRIC COMPONENTS

The Switch box is equipped with all control elements and instruments to monitor the grinding machine.

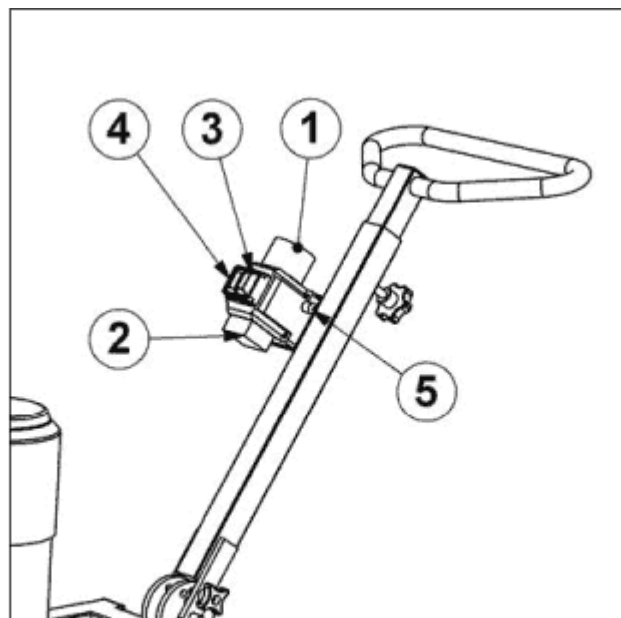


Fig. 3.3

- | | | | | | |
|---|-------------------------------|---|--------------|---|------------------------|
| 1 | Electrical inlet power supply | 3 | Stop button | 5 | Terminal safety switch |
| 2 | Electrical inlet motor | 4 | Start button | | |

Stop button: The red button will stop the machine.

Start button: By pressing the green button, the motor will start.

Terminal safety switch: The terminal safety switch will turn off the motor when the motor is overloaded. When the motor is overloaded, wait a few seconds. Press the safety switch in, then the motor can be restarted.

3.6 DRIVING PART

The center axle is driven by the motor and drives the pulleys and contra pulley by the belts. The contra pulley drives the drive mechanism, so the housing will turn the opposite direction off the pulleys.

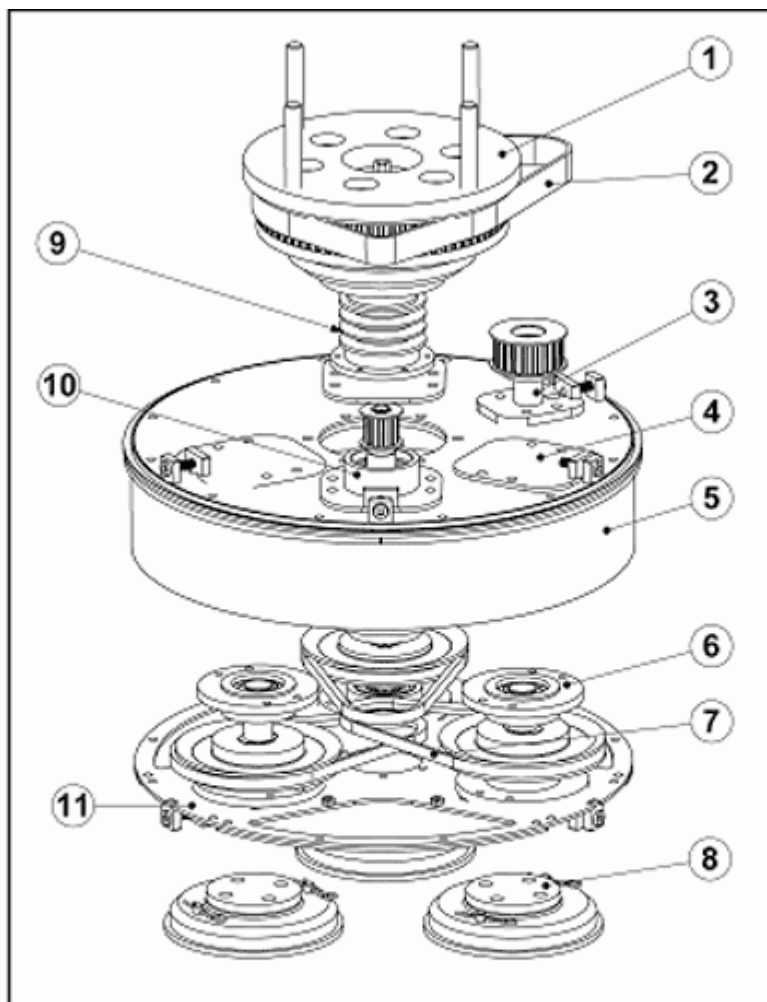


Fig. 3.4

- | | | | | | |
|---|-----------------|---|----------------------|----|----------------------|
| 1 | Drive mechanism | 5 | Housing | 9 | Center axle |
| 2 | PU belt | 6 | Pulley | 10 | Contra pulley |
| 3 | Tensioner | 7 | Belt | 11 | Housing bottom plate |
| 4 | Cover plate | 8 | Diamond plate holder | | |

SECTION 3 GENERAL

3.7 CARE AND MAINTENANCE



Special care and regular maintenance of the machine are imperative for proper function and safety.

Pay attention to unusual noises or strong vibrations. Check for the cause of every big change. Call a technician if you have doubts about the cause or when a repair without a technician seems not possible without damages. Only use genuine parts.

Generally the grinding machine BMG-435 requires very little special attention regarding its maintenance.

Verify that any wastes or fiber residues do not remain in the area of the grinding disc.

Depending upon the use of the machine the pulley should be checked about every 200 hours.

Before using the machine you should always verify that all bolted connections are secure and tight.



Use of non-original replacement components or wear parts may void the machine warranty.

CONTENTS – SECTION 4

- 4.1 Unit specifications
- 4.2 Manual mode of moving the machine
- 4.3 Transport with cranes or lifts
- 4.4 Transport of the machine with vehicle
- 4.5 Operation of the machine while grinding



4.1 UNIT SPECIFICATIONS

Model	BMG -435MKII
Dimensions in inches	27.6 x 17.1 x 47.2
Dimensions in mm	700 x 435 x 1200
Weight	254 lbs / 115 kg

4.2 MANUAL MODE OF MOVING THE MACHINE

To move the machine press down the handgrips (see fig.4.1) of the machine until the front part rises approximately 4 inches (10 cm) from the ground. It can now be pushed around on its wheels.

The machine can only be moved around after attachments are disconnected, such as:

- Generator, (if being employed)
- Dust collection unit, (optional extra)

The machine can also be transported in several parts. By unscrewing the bolts (1) you can take the frame apart from the machine. The frame can also be disassembled into two parts, the steer (7) and the wheel frame (2). If you take off the motor (and gear box for 115V version) (3) then the fill-up block (or adapter plate for the 115V version) (4), you can have two parts, the cover (6) and the planetary system (5), so the machine can be transported easily.

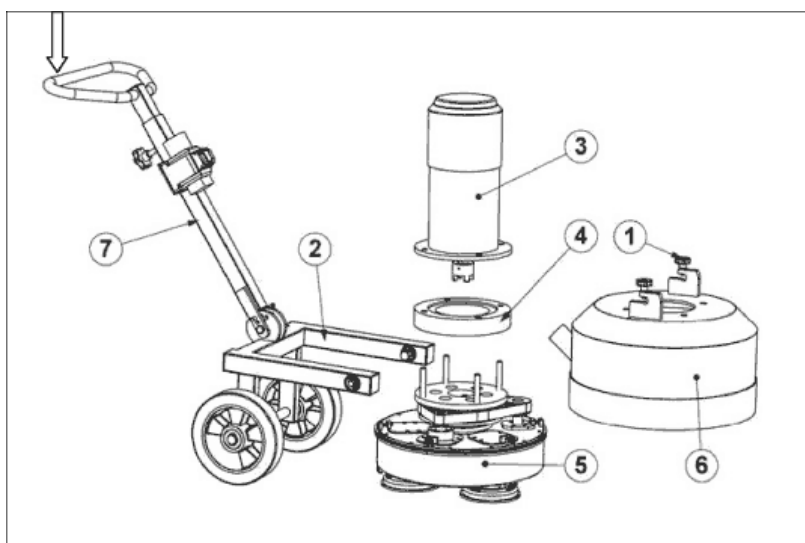


Fig. 4.1

SECTION 4 TRANSPORT

4.3 TRANSPORT WITH CRANES OR LIFTS

If the machine is to be transported by a crane or a fork lift, verify that the lifting strap(s) has sufficient capacity to support the weight of the machine (the gross weight is shown in Section 4.1 Unit specifications), and also shown on the serial number plate on the machine.

Fasten any lifting slings to the points (2) on the machine frame; these points are also suitable as a fixing point for fastenings or tie-downs, during transportation of the machine on a vehicle.

4.4 TRANSPORT OF THE MACHINE WITH VEHICLE

When transporting the machine in a vehicle, always drive carefully and in a manner to avoid the machine shifting. Secure the machine with a tightening load strap over the lower frame (2). Use at least two straps, and tighten down with the load straps to the body of the vehicle.

4.5 OPERATION OF THE MACHINE WHILE GRINDING

The machine must always be operated in accordance with the instructions given in Section 5.2 Initial operation.



CONTENTS – SECTION 5

- 5.1 Preparation for initial operation
- 5.2 Initial operation

OPERATING MANUAL



SECTION 5 INITIAL OPERATION

5.1 PREPARATION FOR INITIAL OPERATION



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



- Put the grinding machine and the filter unit onto the surface to be treated.
- Attach the appropriate diamond tooling that is required for this particular process. Please read Section 7 Maintenance of this manual.
- Using the correct cables, connect the machine and the dust collector to the electricity supply point. These electric supply points should be protected and equipped with an FI-switch. In case of doubt, ask the local safety officer.
- Check the extension cable for external damage.
- Check the dust hose for damage.
- Connect the grinding machine and the dust collector unit with the flexible dust hose. Use hose clamps at the connections.
- Make sure the dust bin of the dust collector unit is empty.



If problems with the BMG-435 arise during the assembly or start-up, call a qualified person for help. Work on electrical equipment may only be undertaken by qualified personnel.



Any machine, if it is not used according to the regulations, may be hazardous to the operating, set-up and service personnel. The equipment owner 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.

5.2 INITIAL OPERATION

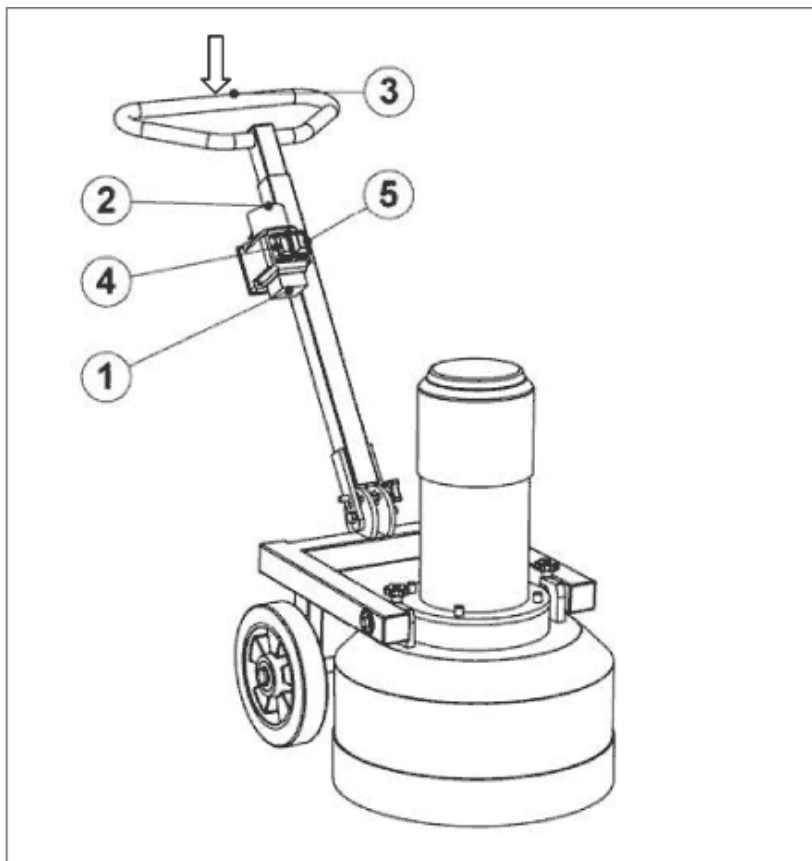


Fig. 5.1

Use the following sequence to start the machine:

Switching on the grinding machine:

- Connect the motor to the electrical outlet (1) of the switch.
- Connect the machine to the electrical outlet with an extension cable that complies with the appropriate European or U.S. NEC guideline, as appropriate.
- Press down both handgrips (3) until the front part rises approximately 4 inches (10 cm) from the ground.

- Push the start button. (4).
- Let down the grinding disc on the surface and begin the grinding work. Move the machine slowly forward or reverse depending on the grinding work. (See Section 6).

Switching off the grinding machine:

- Push the off button on the power box (5).



CONTENTS – SECTION 6

- 6.1 Operation
- 6.2 Switching-off the machine
- 6.3 Trouble shooting
- 6.4 Safety shutdown
- 6.5 Restarting after a fault
- 6.6 Proceedings- before and after a stationary period

OPERATING MANUAL

SECTION 6 OPERATION

6.1 OPERATION



These Operating Instructions are to be kept with the machine and must be within reach at all times.

Only trained personnel may be employed. Note the statutory minimum age. Specify clearly the responsibilities of personnel for operation, set up, service and maintenance work.

Make sure that only authorized personnel operate or work on the machine.



Regular inspection is necessary to prevent unplanned down time of your grinding machine. See Section 7.2 Maintenance.

Pay attention to following aspects during operation of the Diamatic BMG-435.

Before beginning the grinding work, verify that all bolted connections are properly secured and tight.

Before switching the machine on, make sure that all protective housings are fitted and the dust collector unit is correctly connected.

Handle all plugs, cables, hoses and operating elements carefully. Avoid contact with live wires.

Before grinding, clean the surface to be treated with a broom. There should not be any debris such as stones, cloths or standing liquid on the surface.

Any obstructions in the surface to be treated, like concrete reinforcing steel or other objects, should be removed from the work surface to prevent damage to the machine seals and diamond discs.



While using the dust collector unit, observe any special workers' protection rules, and local regulations regarding waste disposal.

SECTION 6 OPERATION



The normal start up of the Diamatic BMG-435 for daily operation does not differ from the process described in Section 5.2 Initial operation.



If there are doubts as to how to start up the machine, read Sections 5.1 and 5.2 of this operating manual.

Verify that the electric cable and dust hose are clear from vehicle traffic, such as forklifts and other equipment.

6.2 SWITCHING OFF THE MACHINE

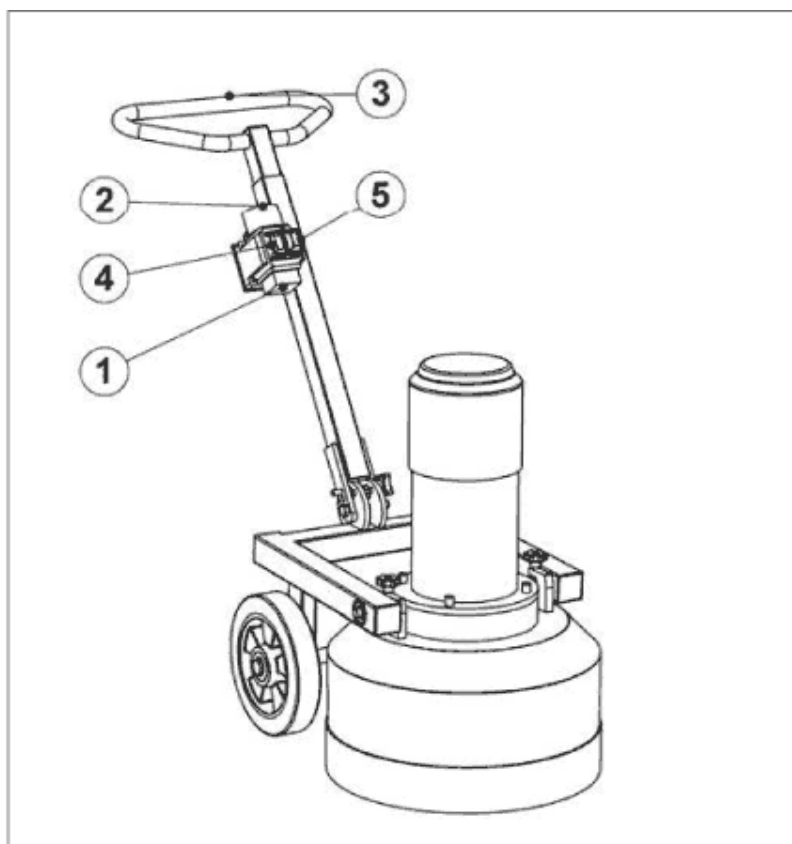


Fig. 6.1

To switch off the machine, push the off button on the power box (5).

SECTION 6 OPERATION

6.3 TROUBLE SHUTDOWN



In case of emergency or operating trouble, such as vibrations or loud noises, switch the machine off immediately by pushing the OFF button on the power box (5).

6.4 SAFETY SHUTDOWN



The machine has to be in its Safety off position before starting repair work. See Section 2.6.



Before performing inspection or maintenance work make sure that all moving machine parts are stopped. Observe the Safety off position, Section 2.6.

The local safety regulations are valid in all cases regarding the operation of the machine and will always supersede any instructions provided in this manual.

6.5 RESTARTING AFTER A FAULT



The results of all electrical repair work must be verified using the appropriate measurement techniques per the regulations stated in the European VBG4 and VDE 0701 standards or per the applicable U.S. guidelines, as appropriate. See also Section 5.2 Initial operation.

6.6 PROCEEDINGS – BEFORE AND AFTER STATIONARY PERIOD

Before a long stationary period:

If the Diamatic grinding machine will be out of action for a long period observe following aspects:

- Clean the machine and cover it with a tarp.
- Protect the electric motors from moisture, heat, dust and impacts.

After a long stationary period:

See Section 5.1 Initial operation.



CONTENTS – SECTION 7

- 7.1 Recommendations
- 7.2 Maintenance and inspection list
- 7.3 Repairing
- 7.4 Grinding disc replacement / assembly
- 7.5 Driving part
- 7.6 Center axle maintenance
- 7.7 Center pulley maintenance
- 7.8 Pulley maintenance
- 7.9 Contra pulley maintenance
- 7.10 Tension pulley maintenance
- 7.11 Other maintenance



SECTION 7 MAINTENANCE

7.1 RECOMMENDATIONS



Prior to any repair work on the machine and its drives, secure the machine against unintentional activation. Put the machine in its safety off position. Section 2.6

Failures due to inadequate or incorrect maintenance may generate very high repair costs and potentially long periods of down time for the machine. Therefore, regular maintenance is required.

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

The table in section 7.2 shows recommended service intervals for 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, inspection and maintenance intervals may vary. Prepare a suitable inspection schedule considering known working conditions and experience.

Our specialists will be happy to assist with more advice.

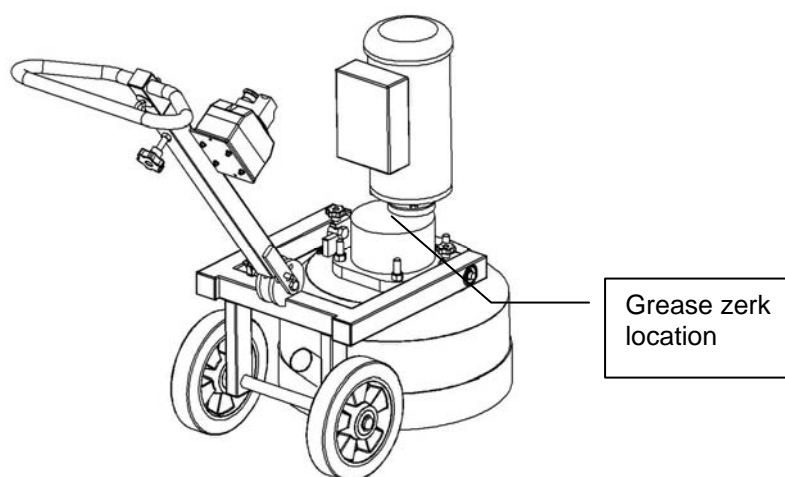


Follow additional operating and maintenance procedures of OEM parts, if included, during your service and maintenance work.

Pay attention to special notice given in instructions for electric-motors.

7.2 MAINTENANCE AND INSPECTION LIST

Operating hours/time period	Inspection points, and maintenance instructions
12 hours after repairing	Check all accessible screw connections for tightness.
Every 100 hours	Clean the grease zerk and add one pump of NLGI-2 grease to the gear box. (see below image for location) <i>Note: 115V version only.</i>
Daily and prior to starting work	Verify all safety devices are working correctly. Check the power supply cable for damage. Check the dust collector hose for damage. Check grinding disk coupling and remove any foreign material and debris. Check the grinding disc and the coupling for wear. Check the tension of the V-belt, adjust as is required. Check the brush dust seal.
Quarterly	Clean the machine with a damp cloth.
Annually	Full overhaul and cleaning of the complete machine. Replacement of the pulley parts. (about 200 hours).



Note: 115V model only.

7.3 REPAIRING



As previously mentioned in Section 5.1 Initial operation, we recommend conducting initial repair work on the machine with the support of Diamatic personnel, by taking this advice, maintenance personnel get the opportunity to be trained by an expert on the machine.

If parts or components are to be replaced, the following sequence of maintenance must be followed.



It is advisable to stock all spare or wear parts that cannot be obtained quickly. As a rule, production standstill periods are more expensive than the cost for carrying the corresponding spare part.

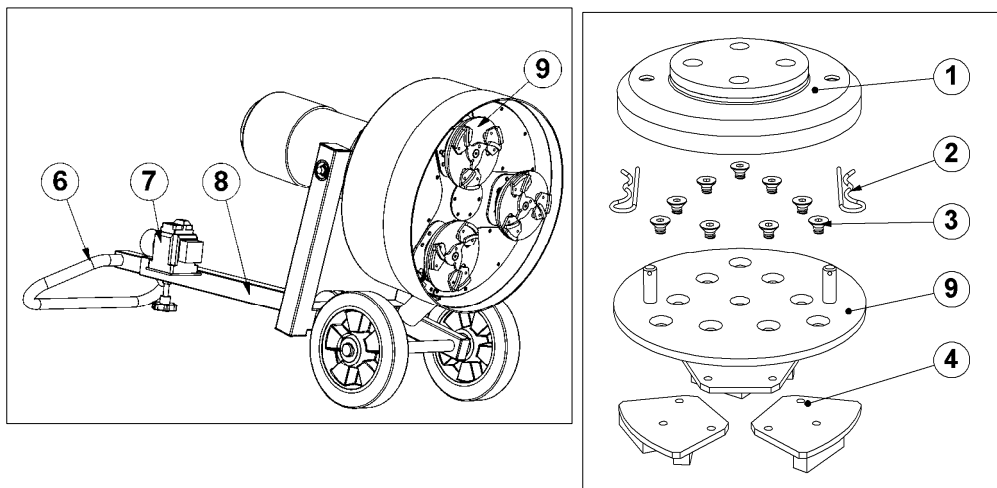
Screws that have been removed must be replaced with those of the same quality (strength, material) and design.



Prior to any repair work on the machine and its drives, secure the machine against unintentional activation. See Section 2.6.

Use of non-original replacement components or wear parts may void the machine warranty.

7.4 GRINDING DISC REPLACEMENT/ASSEMBLY



Disassembly:

1. Make sure that the power supply is disconnected from the electrical inlet (7).
2. The steer (8) must set in the upper hole of the adjustable blocks.
3. Tilt the machine to the back with the help of the handgrips (6) and lay it down on the steer (6).
4. Remove the spring cotters (2)
5. Take the adapter (9) out of the flex disc (1)
6. Loosen the bolts (3) so the diamond wings (4) can be replaced.

Assembly:

7. Clean the flex disc (1) thorough.
8. Place the diamond wings (4) on the adapter (9).
9. Tighten the bolts (3) and place the adapter (9) with wings under the flex disc (9)
10. Lock the flex discs (9) with a spring cotter (2).
11. Tilt the machine forwards.



When replacing the grinding disc, also check the condition of the drive pulley and the diamond tool holders.

Always replace any worn fasteners.

7.5 DRIVING PART



Prior to any repair work being carried out on the machine or its drives, secure the machine against unintentional activation. See Section 2.6.

230V/400V Machines:

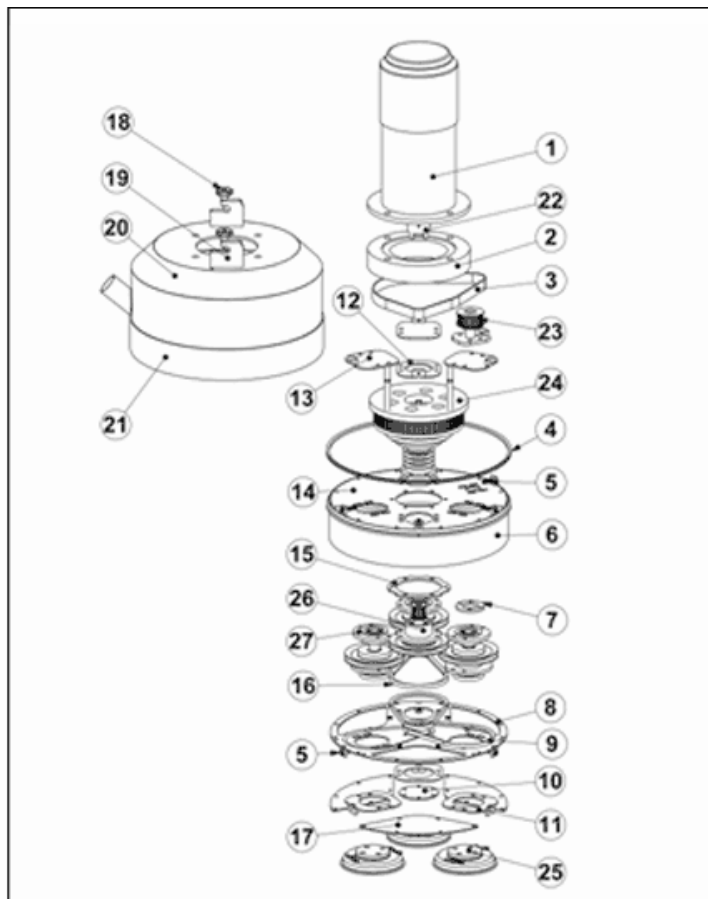


Fig. 7.2

Disassembly:

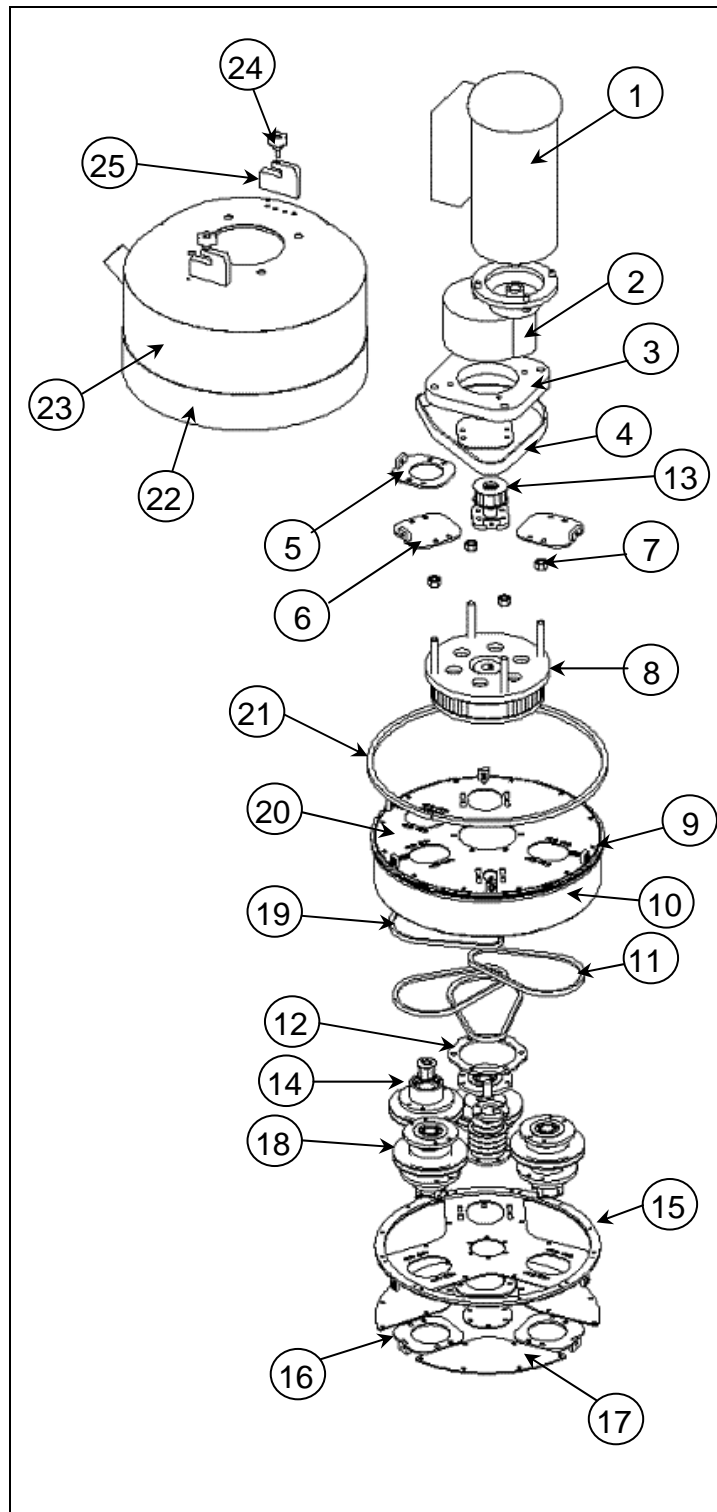
1. Unscrew the motor bolts, so the motor (1), fill-up block (2) and cover (20) can be taken off.
2. Release the tension of the tension pulley (23) so the PU belt (3) can be removed.
3. Remove the diamond plate holder (25).

4. Release the tension of the pulleys (27) and contra pulley (26) by unscrewing the bolts (5) and removing the cover plates (11) and (10) and the housing under plate (8).
5. Remove the V-belts.
6. Disassemble the pulleys (27) and contra pulley (26) by unscrewing the bolts by cover plates (13) and (12).
7. Unscrew the bolts by the center ring (15) and take off the drive mechanism (24).

Assembly:

8. The v-ring seal (4) is glued to the ring with Loctite 407.
9. Assemble the parts in the reverse order that they have been disassembled.

115V Machines:





Prior to any repair work being carried out on the machine or its drives, secure the machine against unintentional activation. See Section 2.6.

Disassembly:

1. Unscrew the nuts holding the motor (1), gear reducer (2), and adapter plate (3) in place.
2. Remove the cover (23).
3. Release the tension of the tension pulley (13) so the PU belt (4) can be removed.
4. Remove the tool holder.
5. Release the tension of the pulleys (18) and contra pulley (14) by unscrewing the bolts (7) and removing the cover plates (5) and (6) and the housing under plate (15).
6. Remove the V-belts.
7. Disassemble the pulleys (18) and contra pulley (14) by unscrewing the bolts by cover plates (5) and (6).
8. Unscrew the bolts by the center ring (12) and take off the drive mechanism (8).

Assembly:

9. The v-ring seal (21) is glued to the ring with Loctite 407.
10. Assemble the parts in the reverse order that they have been disassembled.

7.6 CENTER AXLE MAINTENANCE



Prior to any repair work being carried out on the machine or its drives, secure the machine against unintentional activation. See Section 2.6.

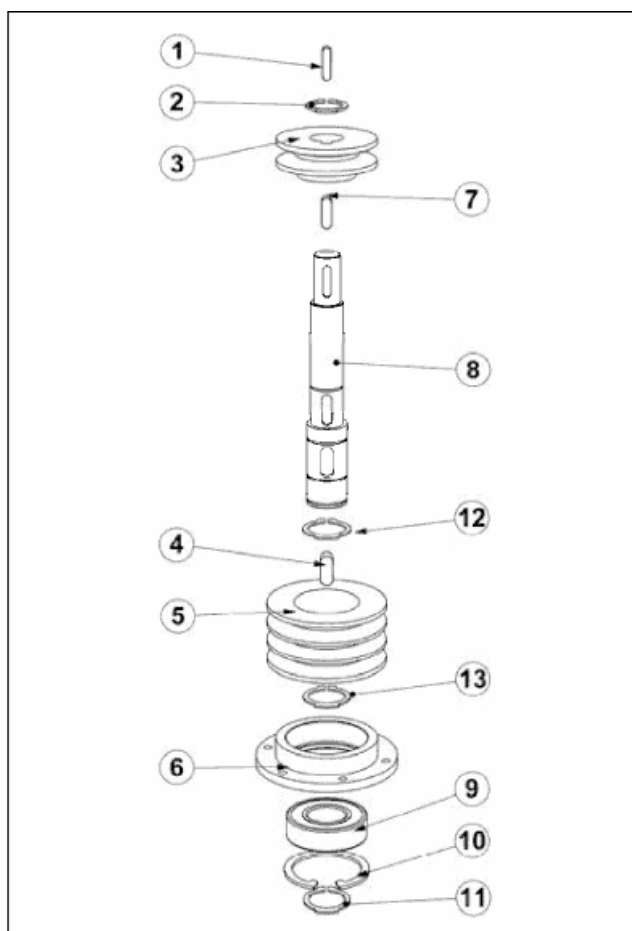


Fig. 7.3

Disassembly:

1. Remove the retaining ring (11).
2. Remove the bearing housing (6) and disassemble the bearing (9).
3. Remove the retaining ring (13) and disassemble the v-pulley (5) the key (4) and the retaining ring (12).

4. Remove the key (1) and retaining ring (2) and disassemble the v-pulley (3).

Assembly:

5. Make sure that the bearing (9) and bearing housing (6) are clean and rub the bearing (9) with a few drops of Loctite 641.
6. Assemble the parts in the reverse order that they have been disassembled.

7.7 CENTER PULLEY MAINTENANCE



Prior to any repair work being carried out on the machine or its drives, secure the machine against unintentional activation. See Section 2.6.

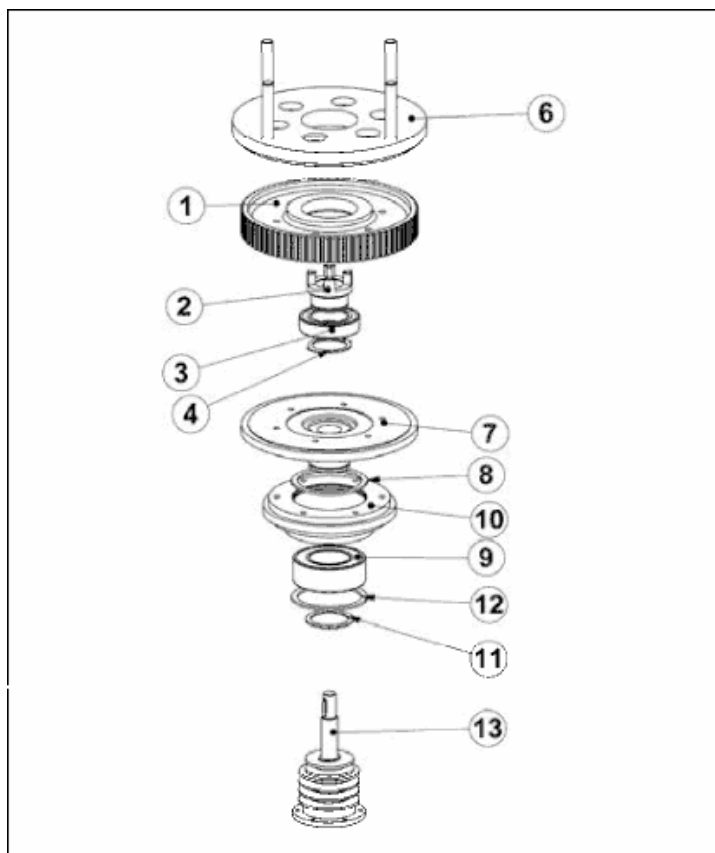


Fig. 7.4

Disassembly:

1. Unscrew the 6 bolts of the motor mount plate (6) so it can be removed.
2. Push the center axle (13) out of the coupling (2).
3. Remove the coupling (2) out of the pulley (1) and remove the retaining ring (4) from the coupling and disassemble the bearing (3).
4. Remove the retaining ring (11) and disassemble the housing bearing flange (7).

5. Disassemble the central bearing housing (10) by removing the retaining rings (8) and (11) and the bearing (9).

Assembly:

6. Make sure that the bearings (9) and (3) and bearing housings (10) and (1) are clean.
7. Rub the bearings (9) and (3) in with a few drops of Loctite 641.
8. Assemble the parts in the reverse order that they have been disassembled.



7.8 PULLEY MAINTENANCE



Prior to any repair work being carried out on the machine or its drives, secure the machine against unintentional activation. See Section 2.6.

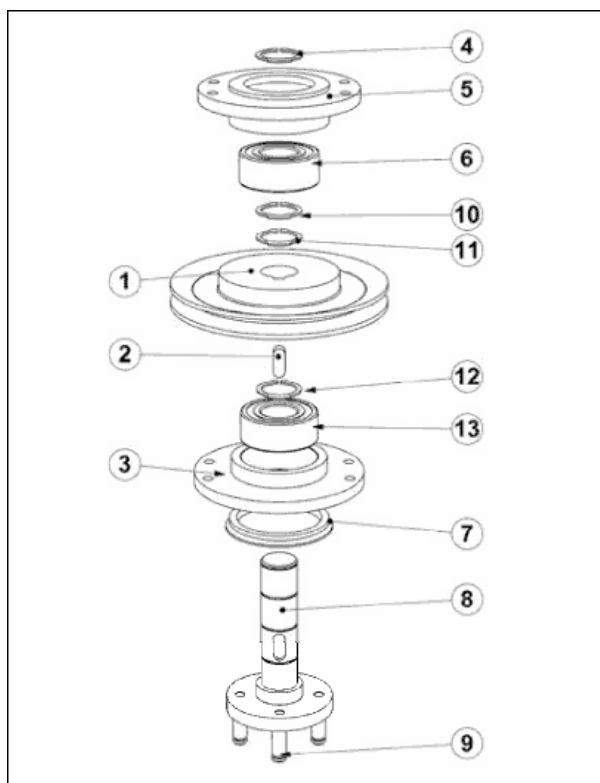


Fig. 7.5

Disassembly:

1. Remove the retaining ring (4).
2. Take off the bearing housing (5) and disassemble the bearing (6).
3. Remove the retaining rings (10) and (11) and disassemble the v-pulley (1), the key (2) and the retaining ring (12).
4. Disassemble the bearing housing (3) and remove the bearing (13) and v-seal (7).
5. The flex pins (9) can be removed by unscrewing them.

Assembly:

6. Make sure that the bearings (6) and (13) and bearing housings (5) and (3) are clean and rub the bearings (6) and (13) with a few drops of Loctite 641.
7. Rub the flex pins with Loctite 603 when assembling them.
8. Assemble the parts in the reverse order that they have been disassembled.



7.9 CONTRA PULLEY MAINTENANCE



Prior to any repair work being carried out on the machine or its drives, secure the machine against unintentional activation. See Section 2.6.

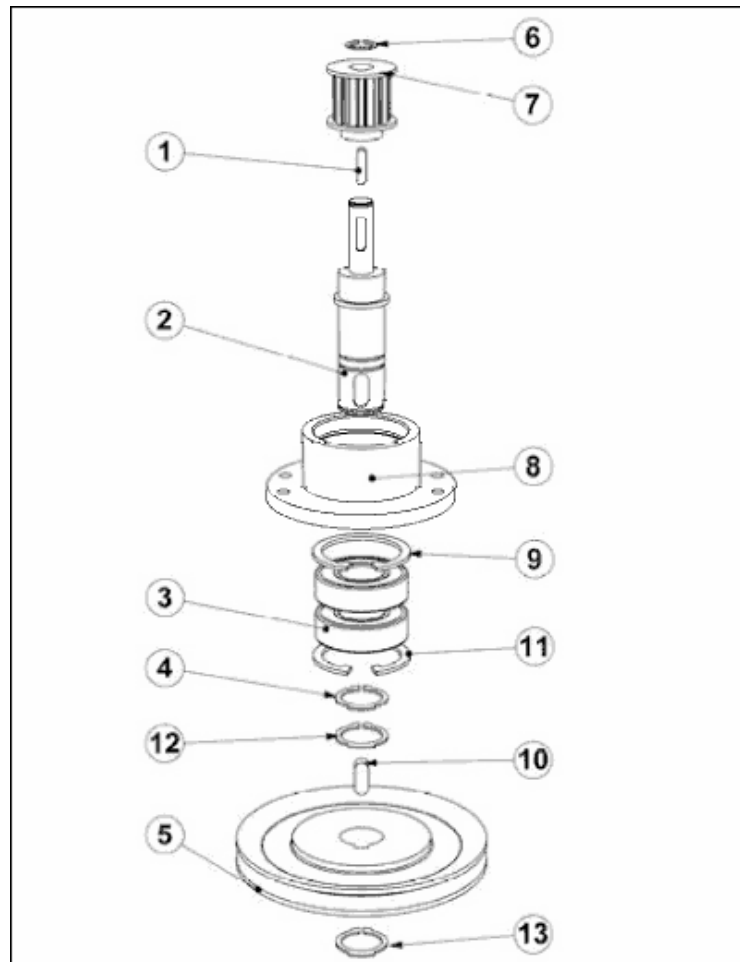


Fig. 7.6

Disassembly:

1. Take off the retaining ring (6) and remove the pulley (7).
2. Remove the retaining ring (13) and disassemble the v-pulley (5), key (10) and the retaining rings (4) and (12).
3. Remove the bearing housing (8) and take out the bearings (3) by removing the retaining rings (9) and (11).

Assembly:

4. Make sure that the bearings (3) and bearing housing (8) are clean and rub the bearings (3) with a few drops of loctite 641.
5. Assemble the parts in the reverse order that they have been disassembled.

7.10 TENSION PULLEY MAINTENANCE



Prior to any repair work being carried out on the machine or its drives, secure the machine against unintentional activation. See Section 2.6.

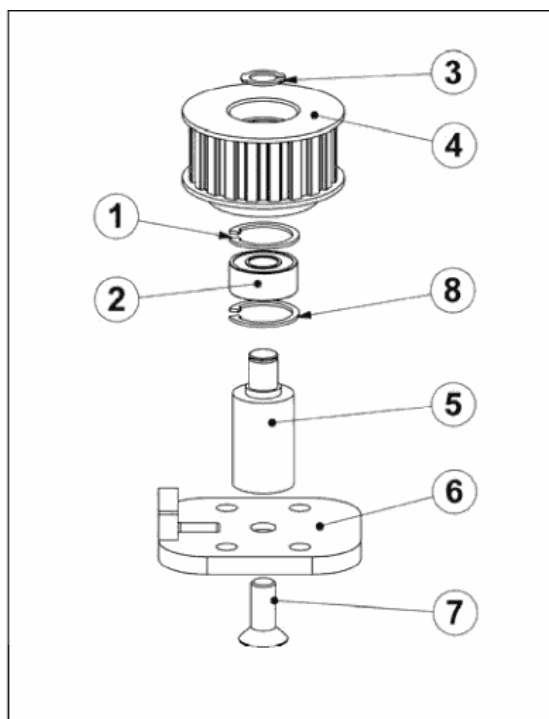


Fig. 7.7

Disassembly:

1. Unscrew the bolt (7) and remove the cover plate (6).
2. Remove the retaining ring (3) and take off the pulley (4).
3. Disassemble the bearing (2) by removing the retaining rings (1) and (8).

Assembly:

4. Make sure that the bearing (2) and bearing housing (4) are clean and rub the bearing (2) with a few drops of Loctite 641.
5. Assemble the parts in the reverse order that they have been disassembled.

7.11 OTHER MAINTENANCE

Check the seals for wear, and replace them when they no longer provide a good seal against dust emissions from the machine.

Clean the machine with a damp cloth.



Do not use high pressure water or compressed air for cleaning the machine!

Apply clean oil to the adjusting pin of the operating lever and other moving parts at regular intervals.

Use of non-original replacement components or wear parts may void the machine warranty.

CONTENTS – SECTION 8

- 8.1 Directions for electrical engineering
- 8.2 Electric Circuits Diagram - 230V / 13A / 50 and 60 HZ
- 8.3 Control Panel Layout and Device Settings - 230V / 13A / 50 and 60 HZ
- 8.4 Electrical Schematic – 115V / 15A
- 8.5 Control Panel Layout and Device Settings - 115V / 15A



SECTION 8 ELECTRICAL SYSTEMS

8.1 DIRECTIONS FOR ELECTRICAL ENGINEERING



Work on electrical equipment or operating materials may only be performed 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.



To identify electrical components refer to the electrical schematics in Section 8.2 or call a Diamatic service center.



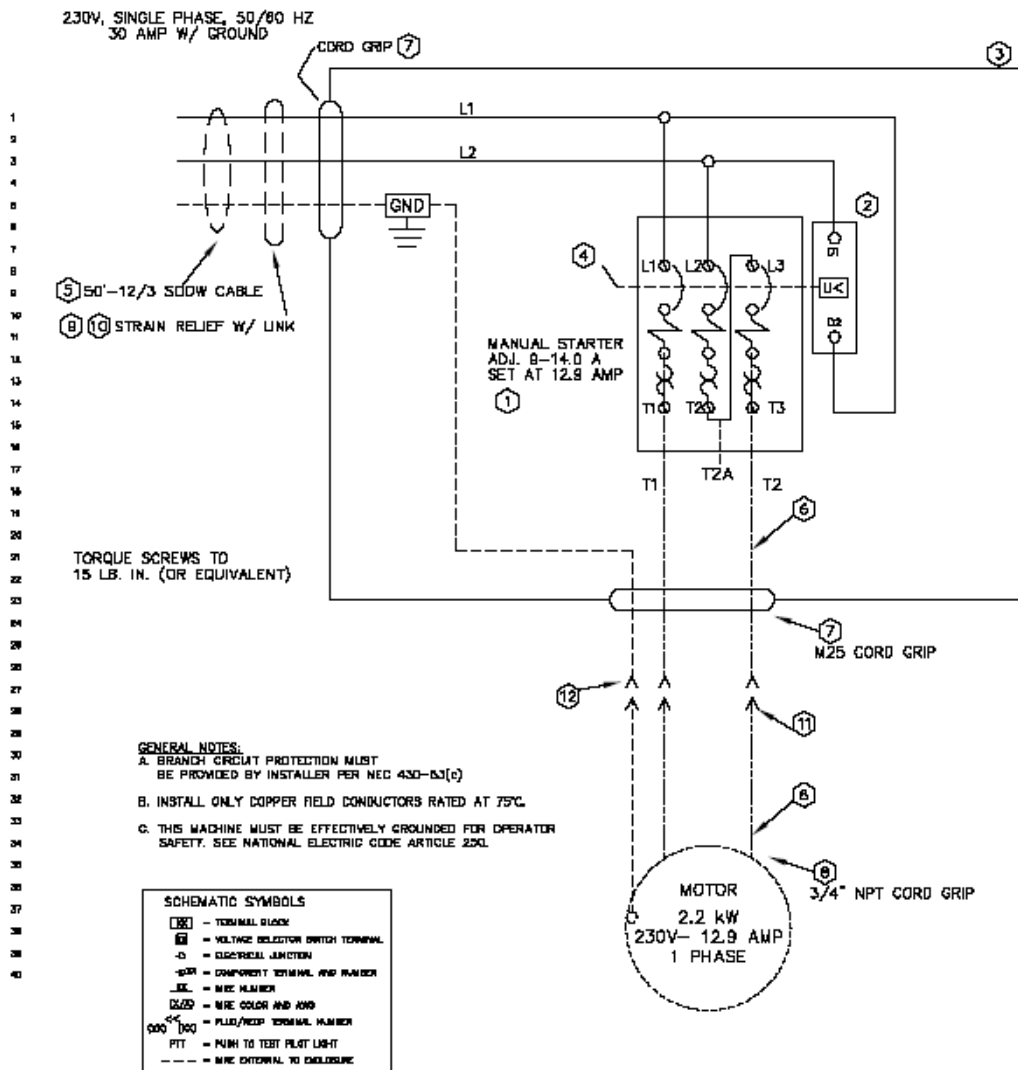
The results of all electrical repair work must be verified using the appropriate measurement techniques per the regulations stated in the European VBG4 and VDE 0701 standards or per the applicable U.S. guidelines, as appropriate. See also Section 5.2 Initial operation.

SECTION 8 ELECTRICAL SYSTEMS

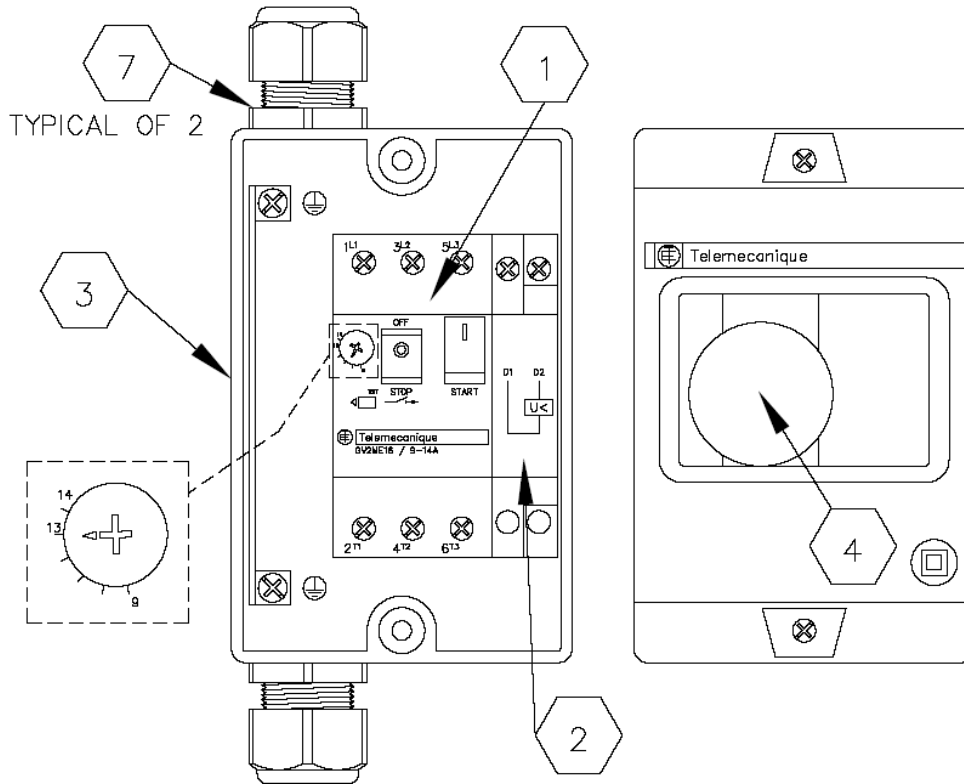
8.2 ELECTRIC CIRCUITS DIAGRAM 230V / 13A /
50 AND 60 HZ

BMG-435 CONTROL PANEL FOR 230V 50/60Hz 1 PHASE

TOTAL FLA	LARGEST MOTOR FLA	SUPPLY VOLTAGE
12.9 AMPS	12.9 AMPS	230V
PHASE - 1	ENCLOSURE - TYPE 1	
HERTZ - 50/60	MODEL - BMG-435	
MAX. BRANCH CIRCUIT PROTECTION	30 AMPS	

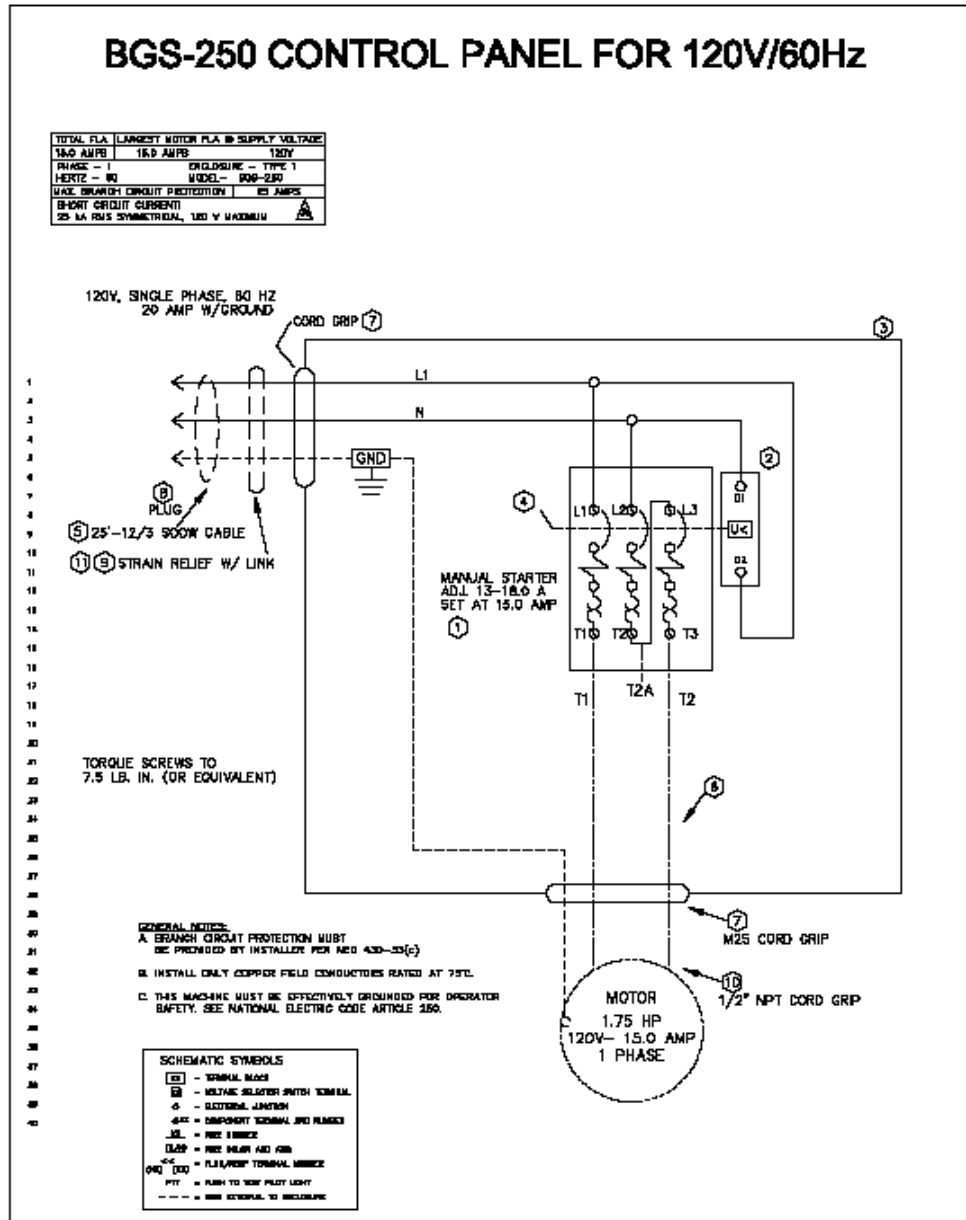


8.3 CONTROL PANEL LAYOUT AND DEVICE SETTINGS FOR 230V / 13A / 50 AND 60 HZ

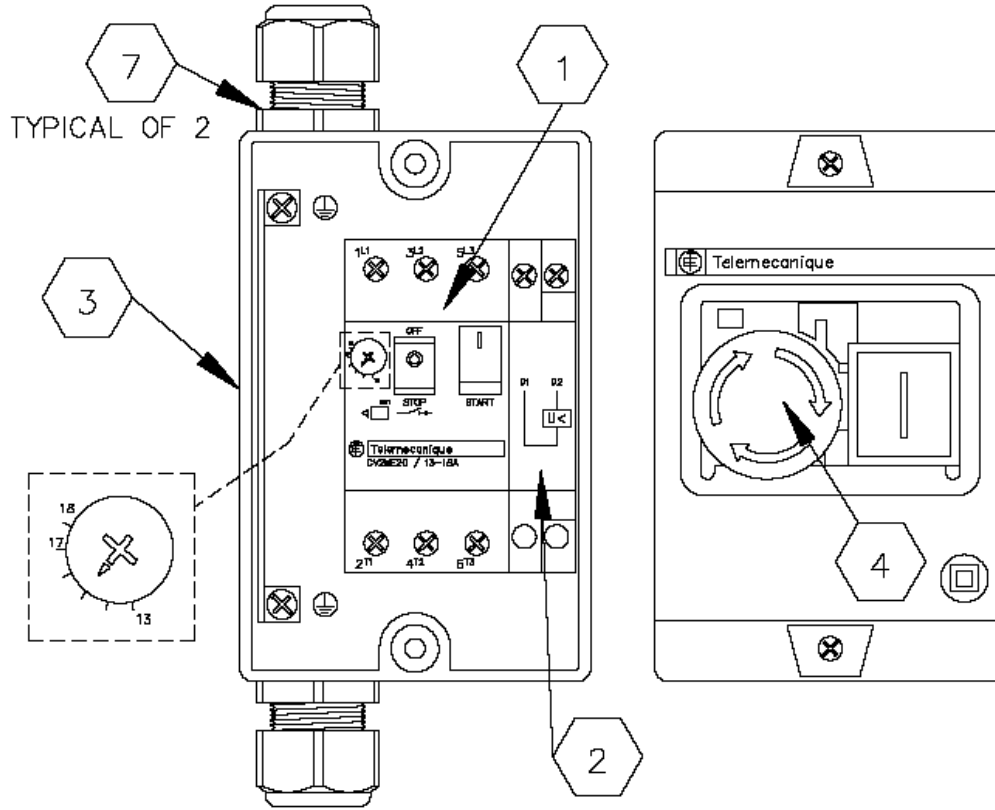


ITEM NUMBER	QTY	P/N	DESCRIPTION
1	1	P003742	MANUAL STARTER
2	1	P003745	UNDERVOLTAGE TRIP, 230 VAC 60 Hz, 220 VAC 50 Hz
3	1	P003741	SURFACE MOUNT ENCLOSURE
4	1	P004983	STOP BUTTON, MUSHROOM, SPRING RETURN.
5	50	P002255	WIRE, 12AWG, 3 CONDUCTOR TYPE SO
6	5	P003757	WIRE, 12AWG, 3 CONDUCTOR TYPE SO, 5 FOOT SECTION
7	2	P003739	CORD GRIP
8	1	P003097	CORD GRIP
9	1	714657	STRAIN RELIEF, DOUBLE EYELET
10	1	P000329	LINK, QUICK, 5/16, CLIP CLOSURE
11	1	P003800	TWIST-LOCK MALE PLUG
12	1	P003801	TWIST-LOCK FEMALE CONNECTOR

8.4 ELECTRICAL SCHEMATIC 120V / 15A



8.5 CONTROL PANEL LAYOUT AND DEVICE SETTINGS FOR 120V / 15A



ITEM NUMBER	PN	QTY	DESCRIPTION
1	P003743	1	MANUAL STARTER
2	P003755	1	UNDERVOLTAGE TRIP, 115VAC 60 Hz
3	P003741	1	SURFACE MOUNT ENCLOSURE
4	P003740	1	STOP BUTTON
5	5330005	25	12/3 CORD - 25' SECTION
6	P003757	5	12/3 CORD - 5' SECTION
7	P003739	2	CORD GRIP
8	P000712	1	PLUG, 2 POLE W/ GROUND, 120VAC, 15 AMP
9	714657	1	STRAIN RELIEF
10	P003756	1	CORD GRIP
11	P000329	1	LINK, QUICK, 5/16, CLIP CLOSURE

CONTENTS – SECTION 9

- 9.1 Troubleshooting - grinding machine
- 9.2 Troubleshooting - electrical system

OPERATING MANUAL



SECTION 9 FAULT DIAGNOSIS

9.1 TROUBLESHOOTING – GRINDING MACHINE



Prior to any repair work on the machine or its drives, the machine must be secured against unintentional activation. Put the machine in its Safety off position. See section 2.6.

Fault	Possible Cause	Remedy
Excessive vibration	Imbalance due to worn or broken grinding tools.	Replace all worn or broken parts.
	PU-belt is too tight.	Release the tension of the upper belt.
Unusual noises	Defective bearing.	Check the bearing on the axle drive shaft and replace if necessary.
	Wrong tension of the V-belt.	Check the tension of the V-belt, replace the V-belt if necessary.
	Defective motor bearing.	Change the motor.
	Debris deposit on the coupling.	Clean the coupling.
Reduced or no grinding performance	Grinding tools have reached the maximum permissible wear.	Replace the worn parts.
	Inappropriate grinding tool for the application.	Replace the grinding tools with appropriate grinding tools for the surface to be treated.
	Too low tension of the V-belt.	Re-tension the V-belt.

SECTION 9 FAULT DIAGNOSIS

9.2 TROUBLESHOOTING – ELECTRICAL SYSTEM



Work on electrical equipment or operating materials may only be performed 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.



Prior to any repair work on the machine or its drives, the machine must be secured against unintentional activation. Put the machine in its Safety off position. See section 26.

Fault	Possible Cause	Remedy
Motor does not switch on	Under voltage trip due to power interruption	Check the main power supply for proper voltage and switch on again.
	Defective Component	Troubleshoot and replace defective component.
	GFCI device tripped	Reset GFCI device and retry. If device trips again, determine cause and replace.
Motor turns off while running	Motor protection switch triggered because of overload.	Reduce additional load or increase extension cord wire size.
	Motor protector switch tripped because of low or under voltage condition.	Increase extension cord wire size.
	Motor defective.	Have motor checked by a trained professional to confirm.

10.1 Spares Parts - BMG-435MKII

OPERATING MANUAL



10.1 SPARE PARTS – BMG-435MKII

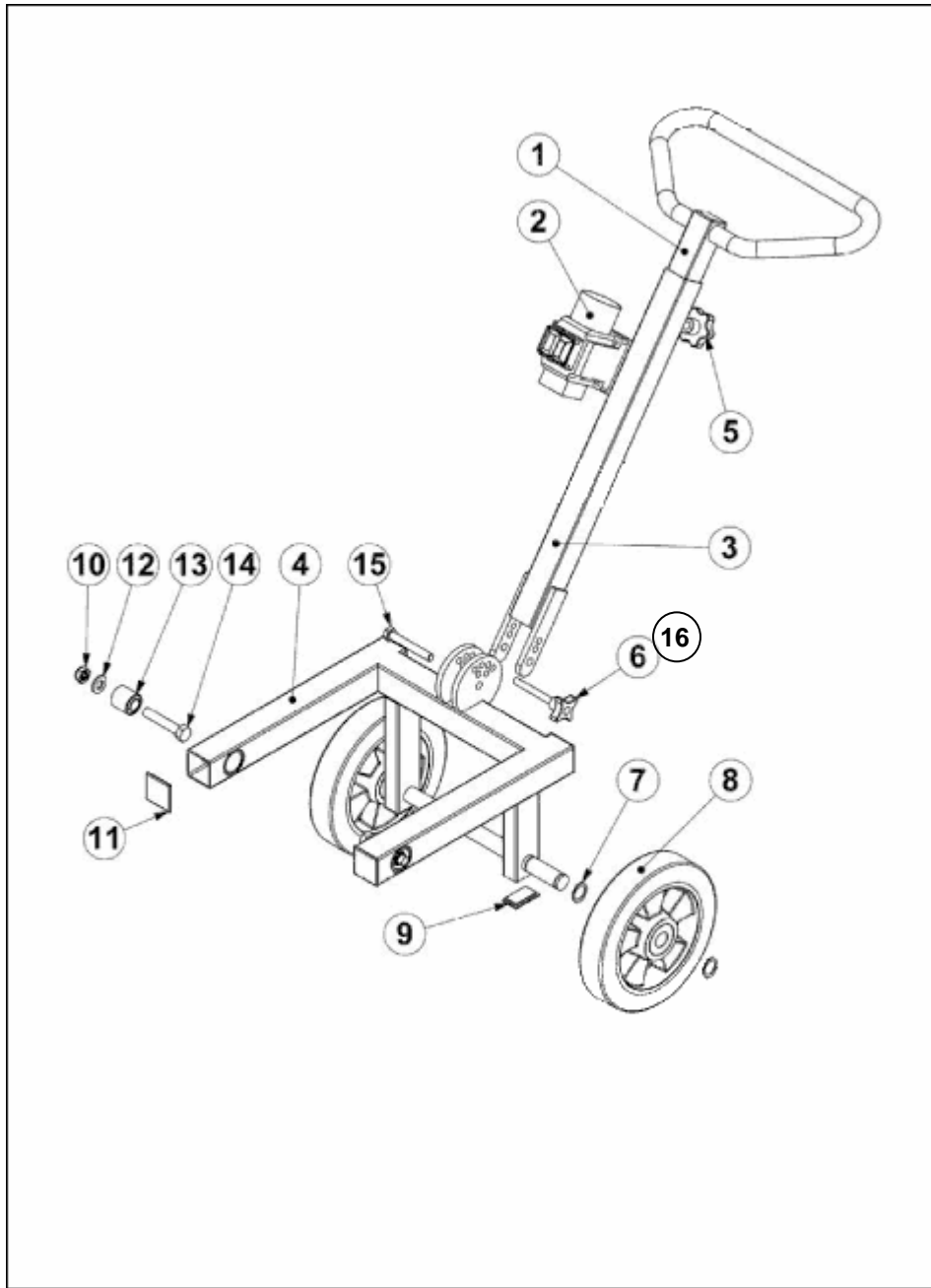


Fig. 10.1

Frame

Item	Part no.	Description	Qty.
1	E01514	Steer	1
*2	P003799	*Control Panel, 230V, 50 and 60 HZ (see Section 8 for parts list)	1
*2	P004567	*Control Panel, 115V / 60 Hz (see Section 8 for parts list)	1
3	E01515	Bottom handle	1
4	E01513	Wheel frame	1
5	E01496	Disc knob M12	1
6	E03550	Locking pin complete	1
7		Retaining ring	4
8	E01491	Wheel	2
9	E01498	Tube cap 50x30	2
10		M14 lock nut	2
11	E01497	Tube cap 50x50	3
12		M14 washer	2
13	E01492	Megi bush	2
14		M14x75 hexagon bolt	2
15		M12x80 hexagon bolt + M12 lock nut	1
16	6960020	Cotter Pin	1

BMG-435-230V (50 and 60 HZ) / BMG-435-230/400V / BMG-435-110V 50 HZ

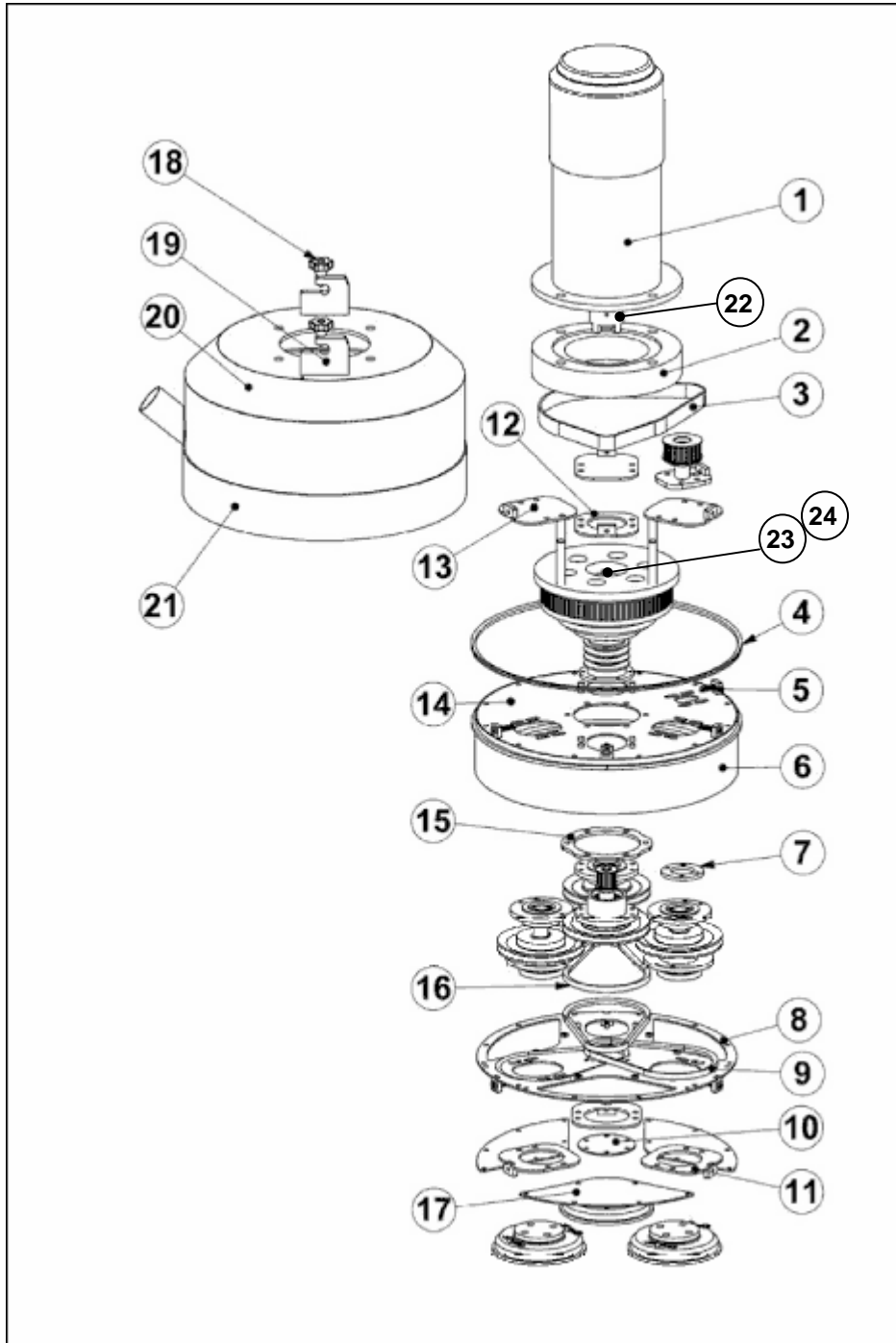
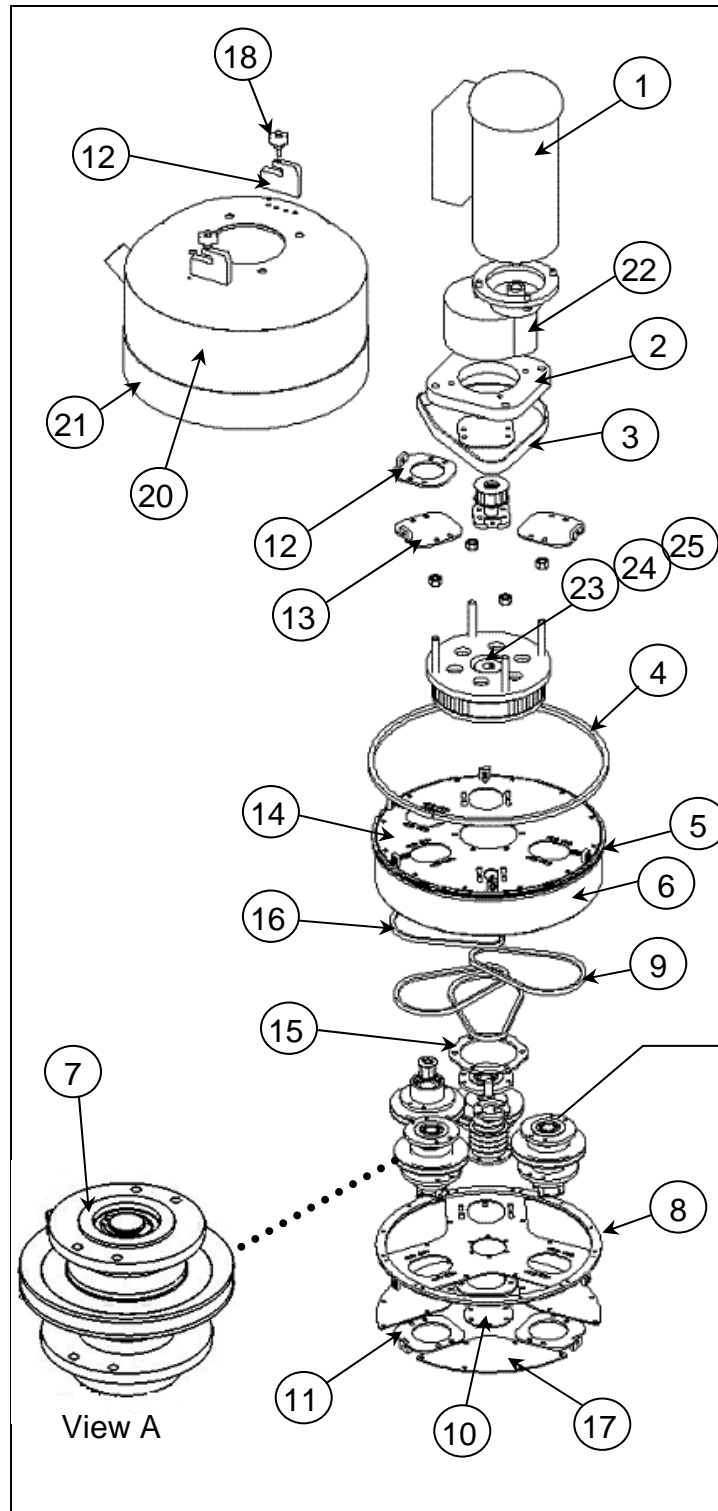


Fig. 10.2

Planetary system –
BMG-435-230V (50 and 60 HZ) /BMG-435-230/400V / BMG-435-110V 50 HZ

Item	Part no.	Description	Qty.
1	E01493	Motor 2,2 kw / 230v / 50hz	1
	E01522	Motor 2,2 kw / 230v / 60hz	1
	E01525	Motor 3,0 kw / 230/400v	1
	E01518	Motor 2,2 kw / 110v / 50hz	1
2	E01465	Fill-up block	1
3	E01479	Pu belt	1
4	E01494	V-ring seal	1
5		Hexagon socket head cap screw m8x35 + Contra nut m8	8
6	E01509	Housing scroll	1
7	E01512	Tension pulley mount ring	1
8	E01510	Housing bottom plate	1
9	E01485	V-belt	3
10	E01502	Center axle bottom cover 1	1
11	E01505	Cover plate bottom	3
12	E01506	Cover plate contra pulley	1
13	E01507	Cover plate	3
14	E01511	Housing top plate	1
15	E01503	Center ring	1
16	E01484	V-belt	1
17	E01504	Check cover	3
18	E03689	Disc knob m8x20	2
19	E01473	Hinge plate	2
20	E01516	Cover	1
21	E03502	Rubber seal	1.55m
22	E01483-1	Shaft coupling, upper	1
23	CP-10008	Spider coupling	1
24	E01483-2	Shaft coupling, lower	1

115V 60 Hz



Planetary system – 115V 60 Hz

Item	Part no.	Description	Qty.
1	P004621	Motor, 1.75 hp / 115v / 60 hz / 1 phase	1
2	PA-10225	Adapter plate	1
3	E01479	Pu belt	1
4	E01494	V-ring seal	1
5		Hexagon socket head cap screw m8x35 + Contra nut m8	8
6	E01509	Housing scroll	1
7	E01512	Tension pulley mount ring	1
8	E01510	Housing bottom plate	1
9	E01485	V-belt	3
10	E01502	Center axle bottom cover 1	1
11	E01505	Cover plate bottom	3
12	E01506	Cover plate contra pulley	1
13	E01507	Cover plate	3
14	E01511	Housing top plate	1
15	E01503	Center ring	1
16	E01484	V-belt	1
17	E01504	Check cover	3
18	E03689	Disc knob m8x20	2
19	E01473	Hinge plate	2
20	E01516	Cover	1
21	E03502	Rubber seal	1.55m
22	** P004623	** Gear reducer (required with item 1, p/n: p004621)	1
23	CP-10007	Shaft coupling, upper	1
24	CP-10008	Spider coupling	1
25	E01483-2	Shaft coupling, lower	1

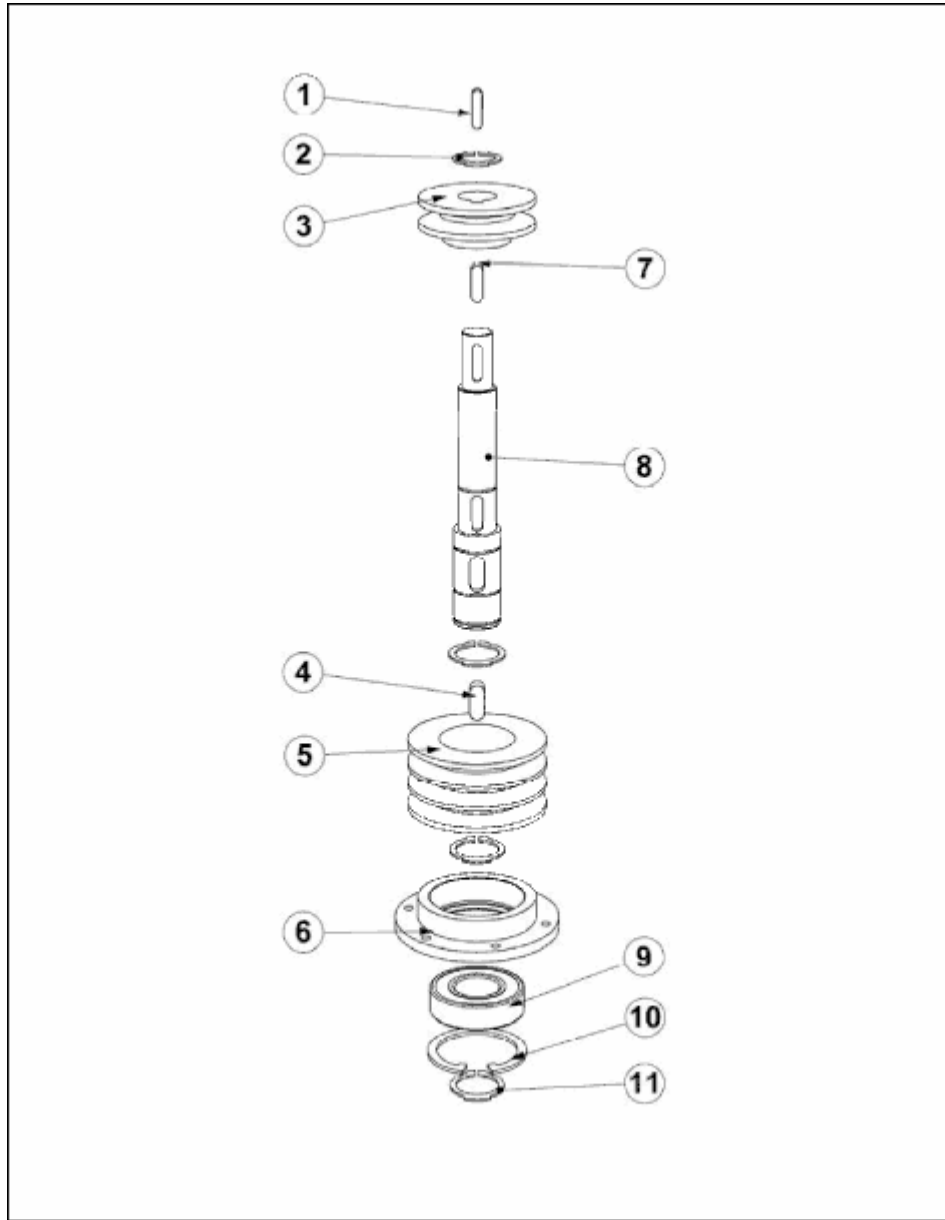


Fig. 10.3

Center Axle

Item	Part no.	Description	Qty.
1		Key	1
2		Retaining ring	1
3	E01487	V-pulley	1
4		Key	1
5	E01488	V-pulley	1
6	E01461	Central bearing housing bottom	1
7		Key	1
8	E01463	Center axle	1
9	222-2331-E	Bearing	1
10		Retaining ring	1
11		Retaining ring	3

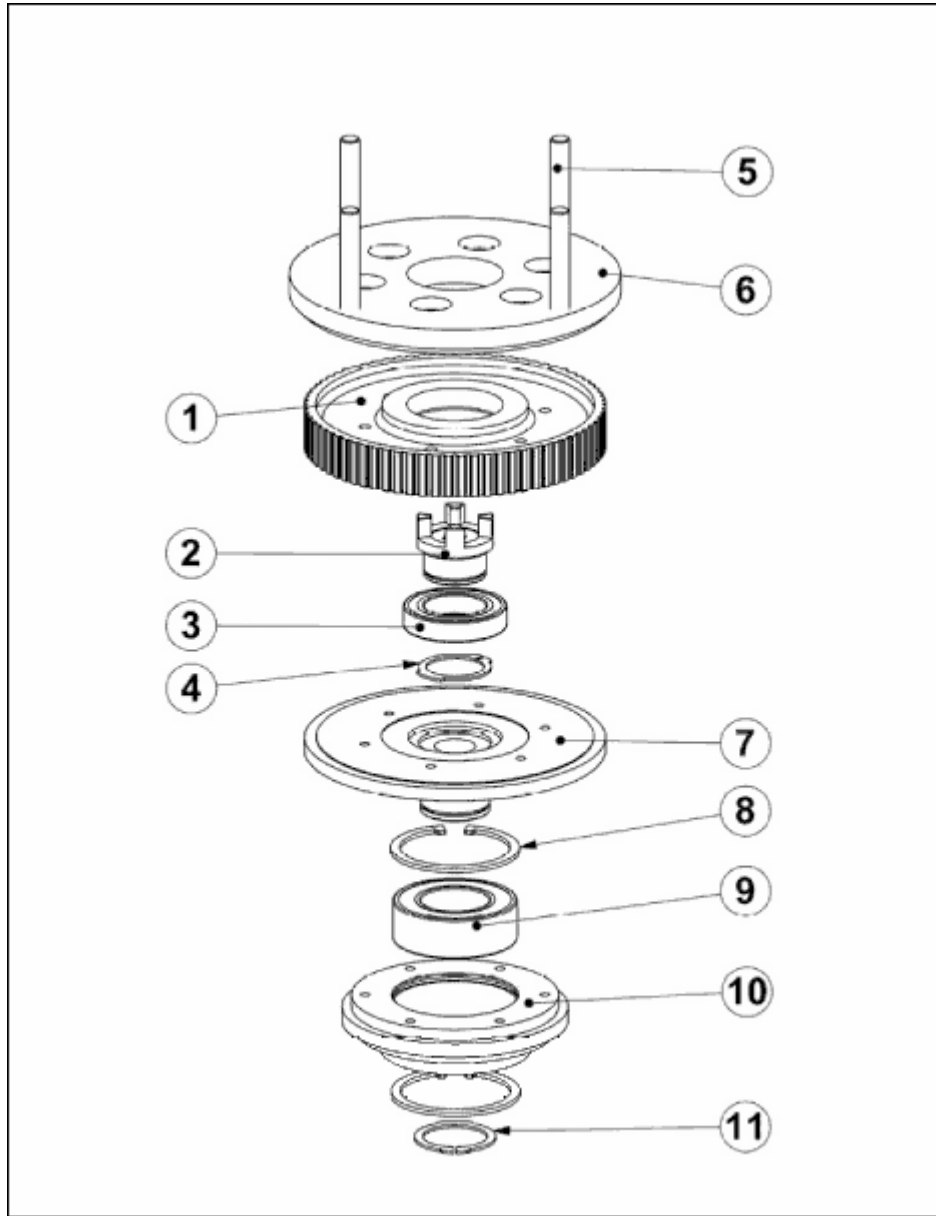


Fig. 10.4

Drive Mechanism

Item	Part no.	Description	Qty.
1	E01482	Pulley	1
2	E01483-2	Shaft coupling	1
3	E01477	Bearing	1
4		Retaining ring	1
5	E03504	Stud bolt M14x100mm	4
6	E01467	Motor mount plate	1
7	E01466	Housing bearing flange	1
8		Retaining ring	2
9	E01490	Bearing	1
10	E01462	Central bearing house top	1
11		Retaining ring	1

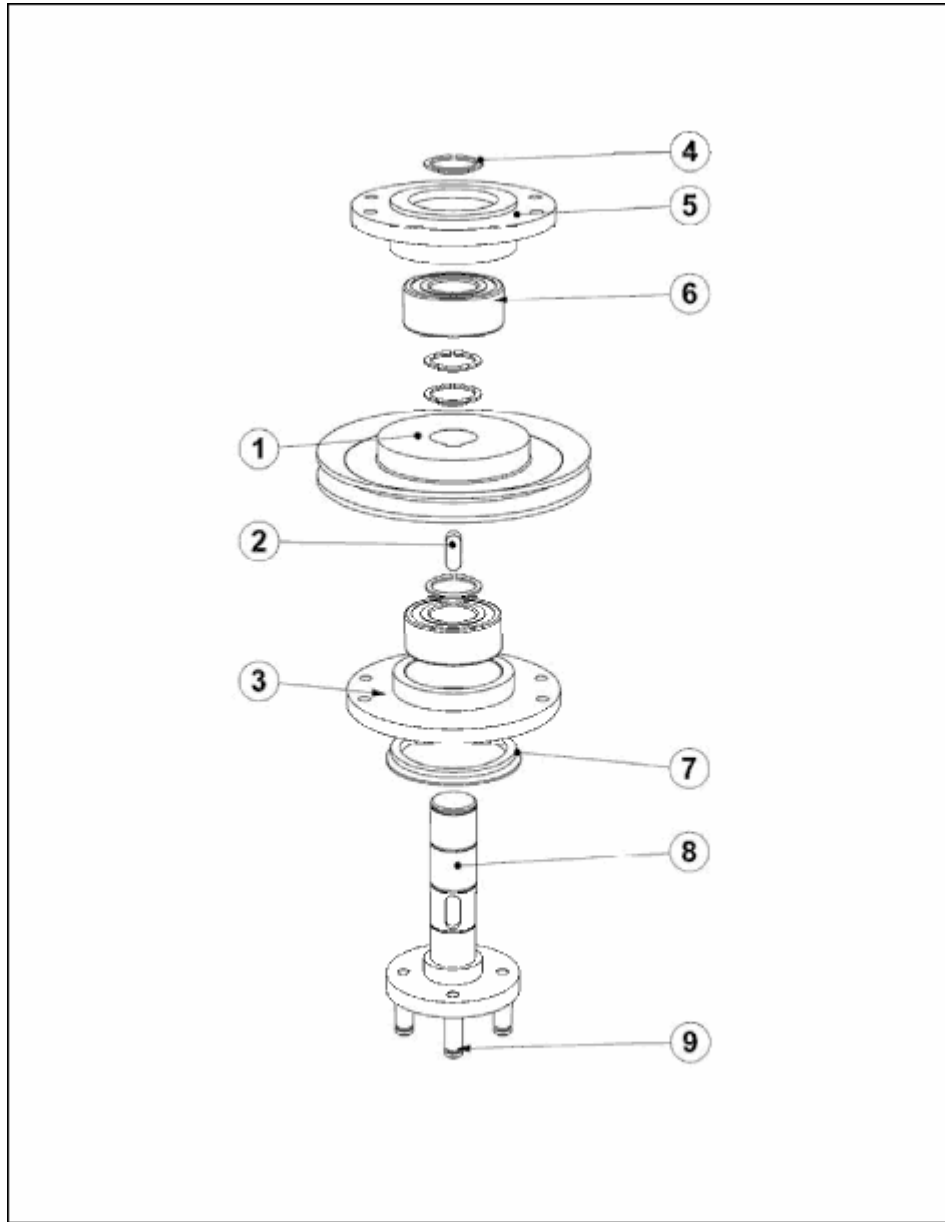


Fig. 10.5

Pulley Axle I

Item	Part no.	Description	Qty.
1	E01486	V-pulley	1
2		Key	1
3	E01458	Bearing housing bottom	1
4		Retaining ring	4
5	E01460	Bearing housing top	1
6	E03245	Bearing	2
7	E01489	V-ring seal	1
8	E01468	Pulley axle I	1
9	E01474	Flex pin	4



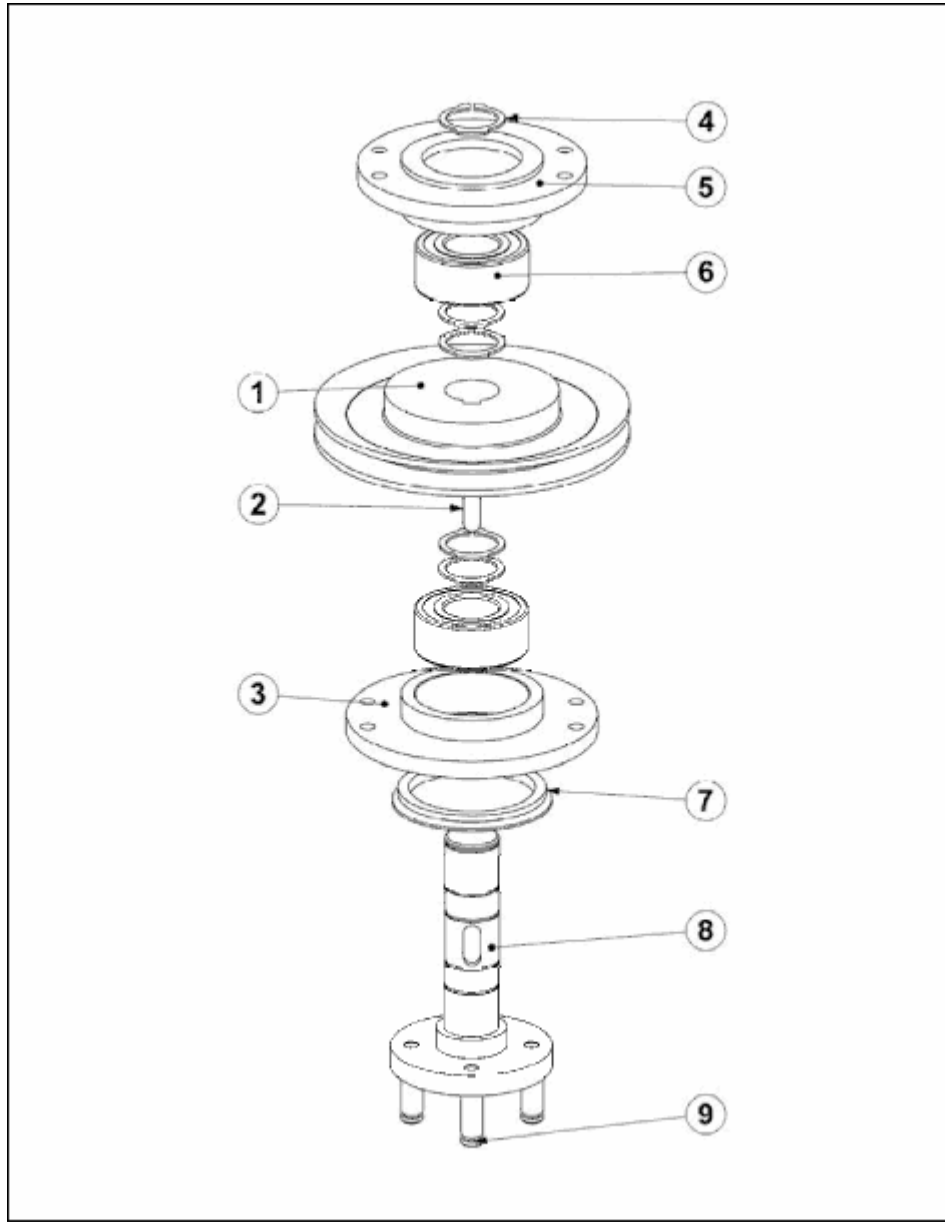


Fig. 10.6

Pulley axle II

Item	Part no.	Description	Qty.
1	E01486	V-pulley	1
2		Key	1
3	E01458	Bearing housing bottom	1
4		Retaining ring	5
5	E01460	Bearing housing top	1
6	E03245	Bearing	2
7	E01489	V-ring seal	1
8	E01469	Pulley axle II	1
9	E01474	Flex pin	4

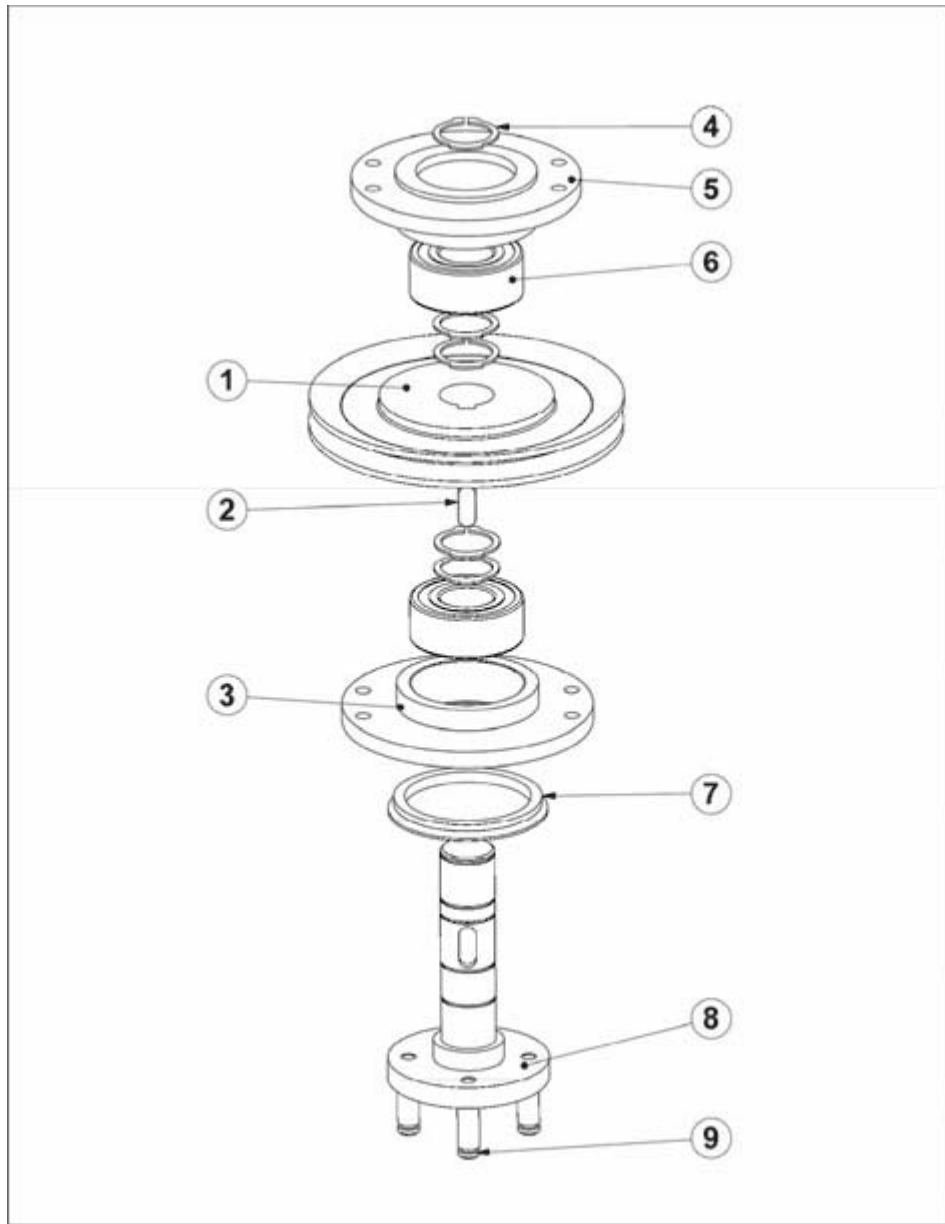


Fig. 10.7

Pulley axle III

Item	Part no.	Description	Qty.
1	E01486	V-pulley	1
2		Key	1
3	E01458	Bearing housing bottom	1
4		Retaining ring	5
5	E01460	Bearing housing top	1
6	E03245	Bearing	2
7	E01489	V-ring seal	1
8	E01470	Pulley axle III	1
9	E01474	Flex pin	4



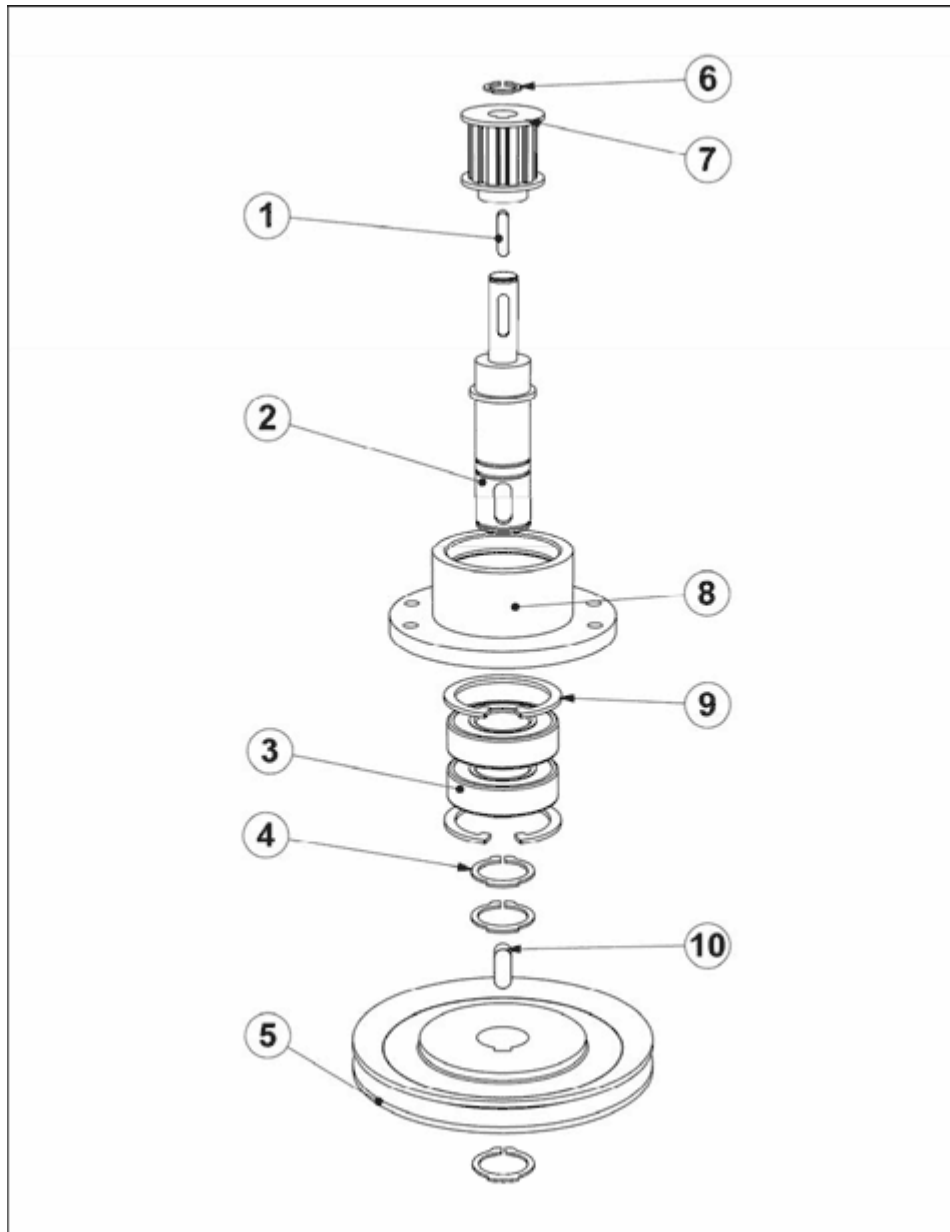


Fig. 10.8

Contra pulley

Item	Part no.	Description	Qty.
1		Key	1
2	E01464	Contra pulley axle	1
3	222-2331-E	Bearing	2
4		Retaining ring	3
5	E01486	V-pulley	1
6		Retaining ring	1
7	E01480	Pulley	1
8	E01459	Bearing housing contra pulley	1
9		Retaining ring	2
10		Key	1

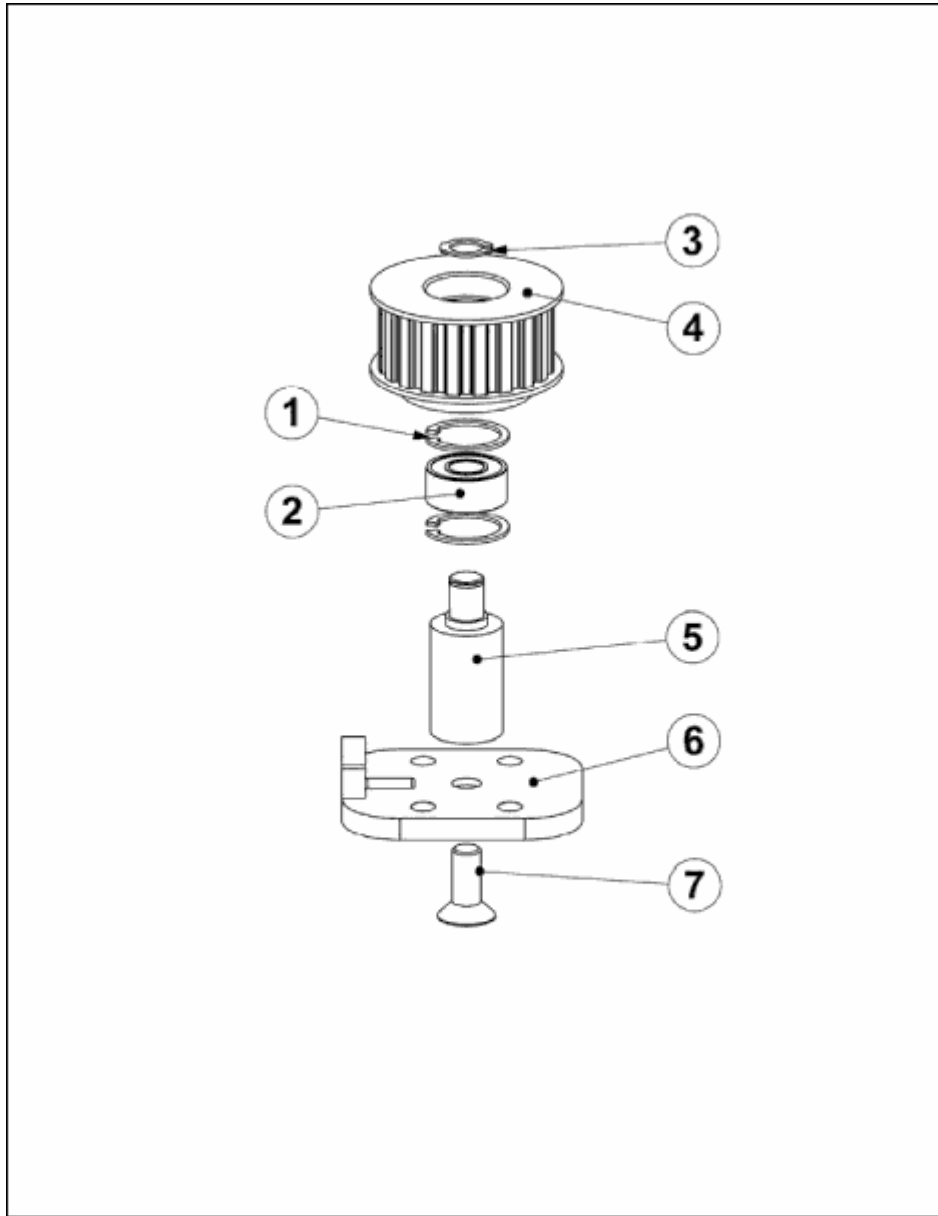


Fig. 10.9

Tension pulley

Item	Part no.	Description	Qty.
1		Retaining ring	2
2	E01478	Bearing	1
3		Retaining ring	1
4	E01481	Pulley	1
5	E01471	Tension pulley axle	1
6	E01508	Cover plate tension pulley	1
7		M10x25 Countersunk head screw	1

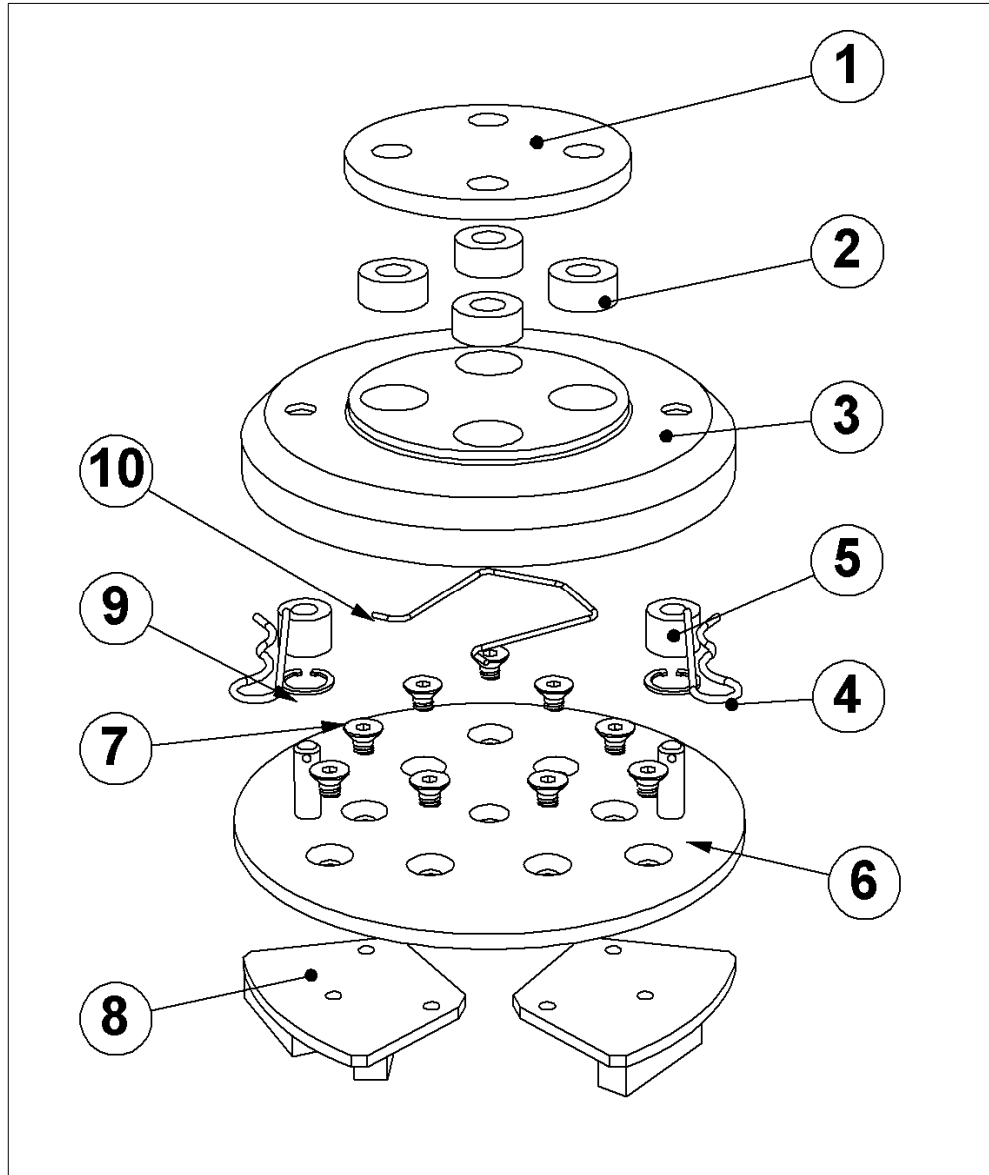


Fig. 10.10

Diamond plate holder

Item	Part no.	Description	Qty.
1	E01476	Flex disk rubber plate	1
2	E03292	Flex disc rubber	4
3	E01472	Flex disc	1
4	BE0072	Spring cotter	2
5	E03293	Diamont disc rubber	2
6	BG300212	Adapter 435	1
7	BE0131	M6x8 Countersunk head screw	9
8		Diamond wing	3
9	BE0103	Retaining ring 16, DIN 472	2
10	E03749	Locking spring	1
11			
12			
13			
14			
15			
16			
17			