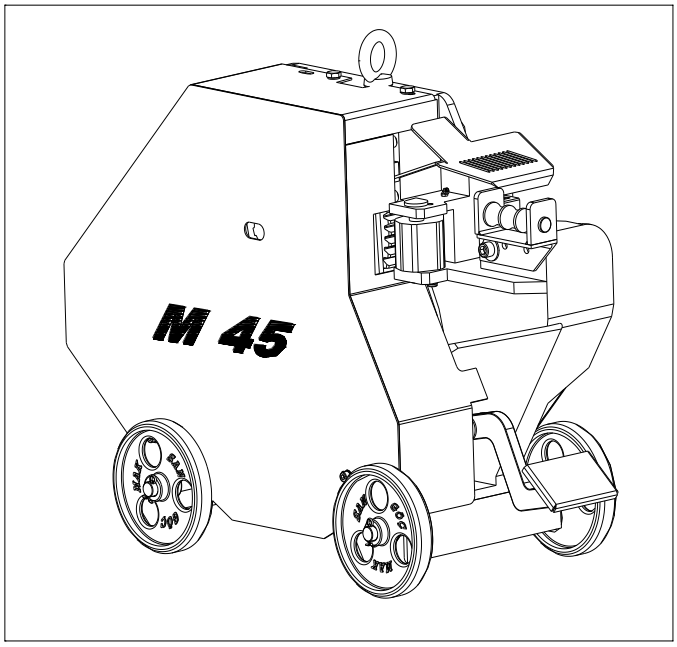
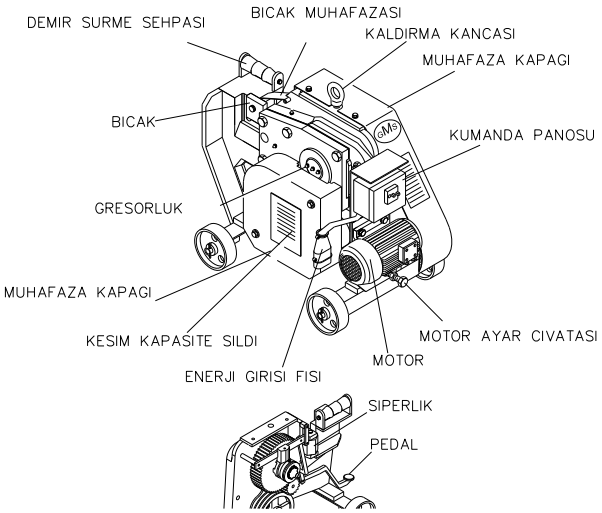


MECHANICAL CUTTING MACHINE FOR CONSTRUCTION IRON OPERATING & MAINTENANCE MANUAL

CE®



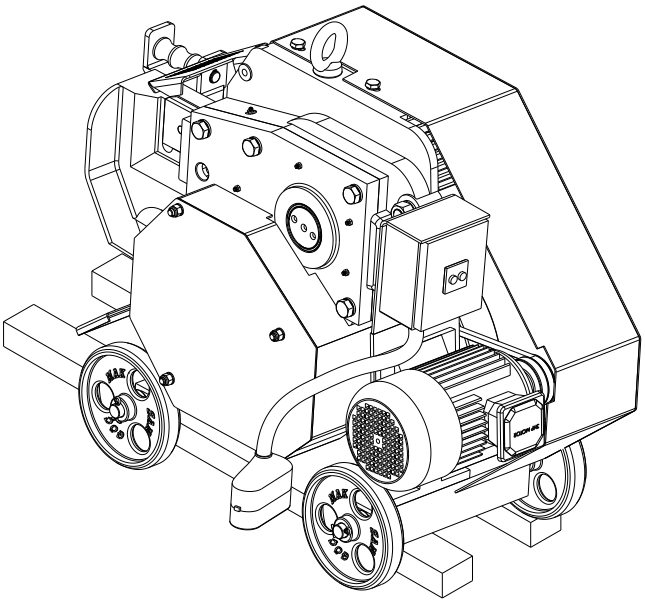
M 45 Mechanical steel cutting machine is manufactured only for the purposes of cutting the steel materials. The use of the machine for other purposes is not permitted. The machine can be easily transported within the short distances under the site conditions by the help of the wheels.

Important Warning!

- Prior to operate the machine read through this Operating & Maintenance Manual, carefully.
- Only the qualified personnel are allowed to operate the machine.
- Disconnect the power prior to make checks, maintenance, lubrication, and/or adjustments.
- Observe all guidelines provided in this Operating & Maintenance Manual.

1. SET-UP PROCEDURES

1.1 Level the machine on a flat and sound ground by using the wooden wedges to support it from the bottom so as the wheels will not get in contact with the ground **(Figure 1).**
1.2 Connect the power by a qualified electrician.
1.3 Working Voltage Of the Machine Should be 380 V.

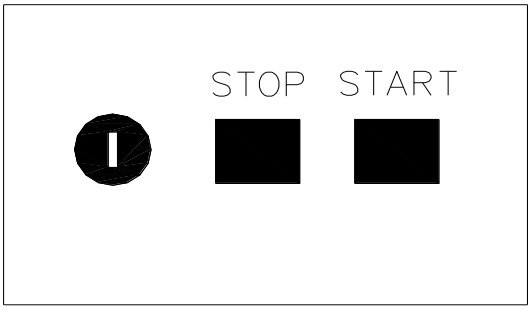


1.2 . START UP PROCEDURE

1.2.1 Check and ensure that the machine is installed in accordance with instructions.
1.2.2 Remove any substance between the blades and the machine, if any.
1.2.3 Keep your hands away the blades.
1.2.4 Ensure the Blade Protector Cover is closed.
1.2.5 Press the "Start" button to operate the machine **(Figure 2).**
1.2.6 Open Blade Protector Cover, put the material to be cut between the blades and adjust and support the retainer according to the dimension of the material to be cut.
1.2.7 Ensure the Blade Protector Cover is closed again.
1.2.8 Press the foot pedal and use the control lever for to make cutting.
1.2.9 Press the stop button to stop the machine **(Figure 2).**

START –STOP BUTTONS

Figure : 2



2 . TECHNICAL SPECIFICATIONS

Machine Cutting Capacity :

Piece	STRENGTH OF MATERIAL		
	45 kg/mm²	65 kg/mm²	85 kg/mm²
1	● 45	● 40	● 30
1	● 40	● 34	● 30
2	● 36	● 30	● 24
3	● 26	● 22	● 20
3	● 24	● 20	● 18
3	● 20	● 18	● 14
5	● 14	● 12	● 10
1	■ 34	■ 30	■ 24
2	■ 26	■ 22	■ 20
3	■ 20	■ 18	■ 16
4	■ 18	■ 16	■ 14
1	▬ 70x20	▬ 60x50	▬ 50x12
1	▬ 60x20	▬ 50x18	▬ 40x20
1	▬ 50x15	▬ 40x15	▬ 30x15

- Model : M 45
- Name : Mechanical Cutting Machine For Construction Iron

Dimensions Of Blades :

Width : 85 mm
Length : 85 mm
Width : 25 mm

V Belt : 13x1175

Machine Dimensions:

Width : 54 Cm
Legth : 105 Cm
Height : 79 Cm
Weight : 475 Kgs

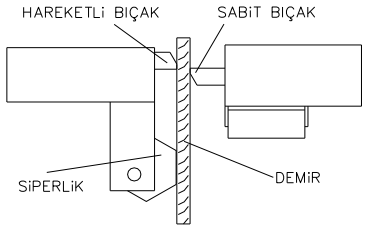
Motor Specifications:

Power : 3kW
Speed : 1500 rpm
Voltage : 380 V
Frequency : 50 Hz

3. APPARATUS AND TOOLS SUPPLIED WITH THE MACHINE

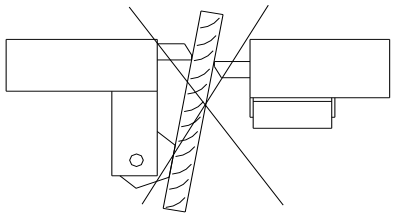
- Allen Key 14 mm 1 ea
- Grease Pump 500 cm^3 1ea
- Spare Blades 85x85x25 2 ea

Correct placement of the steel between the blades (A View From The Top)



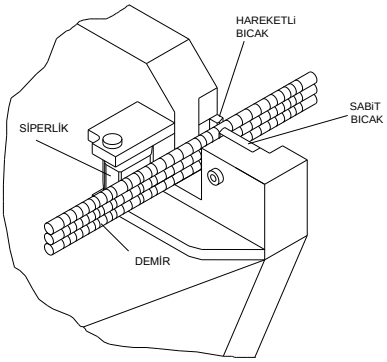
CORRECT CUTTING

Correct placement of the steel between the blades



INCORRECT CUTTING

For multi-cutting operations, place one steel on the top of the other in an amount indicated in the capacity plate. **Figure : 4**



4. DISALLOWED OPERATIONS ON THE MACHINE :

▼ No cutting work should be conducted without closing the blade casing.
▼ The machine will be powered off and the electrical system will be switched off during a blade replacement or maintenance work.
▼ No one should be allowed to stand in front of the machine during a cutting work.
▼ The limbs should be kept away from the cutting blades.
▼ The adze, hammer, meter, compass, lever and similar construction apparatus should not be inserted between the blades other than the material to be cut when the machine is running.
▼ The machine should not be started up if it is wet.
▼ The sizes and numbers indicated in the capacity plate of the machine should be observed for cutting purposes.
▼ The steel to be cut should be leaned against the fixed blade and Blade Protection Cover . No cutting should be conducted otherwise **(see Figure 3).**
▼ The steel is to be cut by putting one on the top of the other by leaning against the Blade Protection Cover for multi-cutting of the steel, provided the number of steel indicated in the capacity plate is observed **(see Figure 4).**
▼ The machine should not be started up when the cover of the switch box is open.
▼ The default settings of the thermal current adjustment field as provided by the machine manufacturer should not be intervened.
▼ The machine should not be operated without the earthing connection.
▼ The machine should not be started when the protective covers are in disassembled position.
▼ The unauthorized and untrained people should not be permitted to work on the machine.
▼ The machine should not be operated without lubricants.
▼ The warning labels affixed on the machine should not be torn down.
▼ No cutting should be applied by using blunt and cracked blades.

5. WARRANTY CONDITIONS :

The manufacturer accepts the warranty and liability only if the following conditions are observed.

▼ The protectors placed on the machine are used.
▼Observe the warning signs.
▼Do not operate the machine without lubricants. Rubber grease 3.
▼ The machine is not started without installing the earthing connection.
▼ Only the spare parts manufactured by Göçmaksan are used for the replacement of the malfunctioned parts of the machine.
▼ The conditions specified as the safety measures are observed.
▼ The disallowed operations are avoided.
▼ The machine is installed in accordance with the assembly conditions.
▼ The machine is operated by the trained and authorized people.
▼ The measurements and dimensions indicated in the capacity plate are observed.
▼ The machine is used in a manner suiting to its original purpose of use.
▼ The electrical connection is installed by the authorized and competent people.
▼ The machine is carried in accordance with the handling conditions **(See Figure 5).**
▼ For multi-cutting purposes, one steel is put on the top of the other.
▼ Any of the parts on the machine is not used in a dismounted manner.
▼ The machine motor is not replaced.
▼ No parts should be used on the machine other than those manufactured originally by Göçmaksan.
▼ The machine is serviced in accordance with the maintenance conditions.
▼ The machine is not operated without the Blade Protection Cover in position. The steel to be cut should be secured against the Blade Protection Cover **(See Figure 3).**

6. PROTECTORS TO BE USED DURING OPERATION OF THE MACHINE:

6.1. The protective clothing:

- Hard hat
- Glasses
- Boots with a steel head
- Gloves
-

The above mentioned protectors are to be used. Otherwise, there is a risk of injury, getting caught by the machine and cutting of hands.

6.2 Work clothing:

The objects having the risk of getting caught and seized up while working on the machine are listed below, which may cause injury if not observed.

Long hair, dress with long sleeves, jewelry on arm, aprons with long bottoms, jewelry protruding from the body.

7. TRANSPORTATION OF THE MACHINE

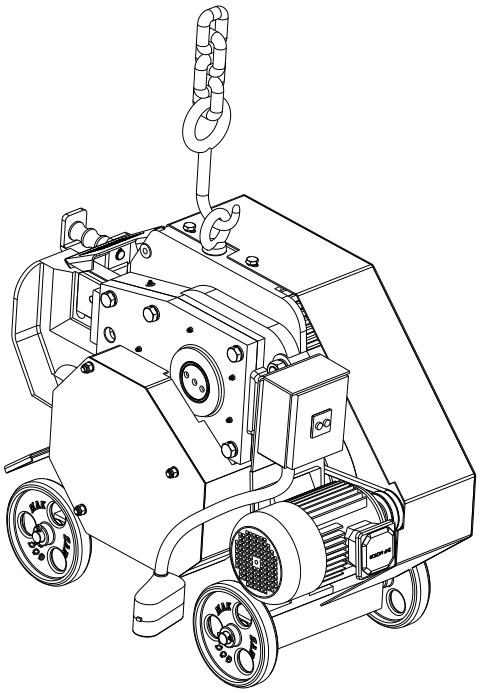
The machine should be carried and transported by means of the forklift, traveling crane or bridge cranes. The forklift may only be used when the machine is enclosed in the box. To carry the machine in the boxed situation, a wedge should be inserted underneath the machine in a manner not allowing the wheels of the machine to contact with the box surface or the wheels will be SHIMled out. The steel rope chain and polyester sling shot should be used for lifting the machine. The lifting ring on the machine should be used for lifting without a box. The experienced expert people and subcontractors should be employed in the lifting works.

WARNING!!!

The machine should be moved without vibration. The machine should not be carried in the wet places.

Any parts lost or damaged during the transportation process should be notified to the manufacturer in the form of a report

- When using the lifting and handling equipment, the maximum carrying capacity of these equipments will be taken into consideration.
- The weight gravity center of the equipment should be taken into consideration during the lifting.
- The warning signals on all of the handling equipments should be observed.



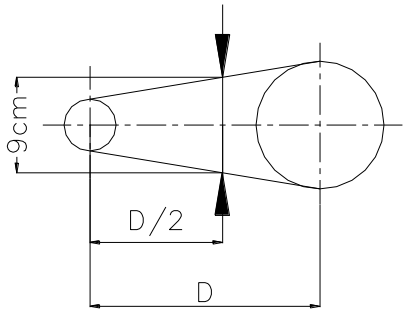
8. CHECKS & ADJUSTMENTS ON THE MACHINE AND BLADE REPLACEMENT

8.1.Changing and Adjustment of V-belt:

The V-belts placed on the machine are loosened over time. Also the belt adjustment is necessary as it will be misadjusted after the belt replacements. If the belt is loose, it causes noise during the running of the machine and shortens the life time of the belt. The machine fails to cut if the belt is too loose. However, it may cause the roller bearings on the motor and body to warm up if the belt is set very tightly.

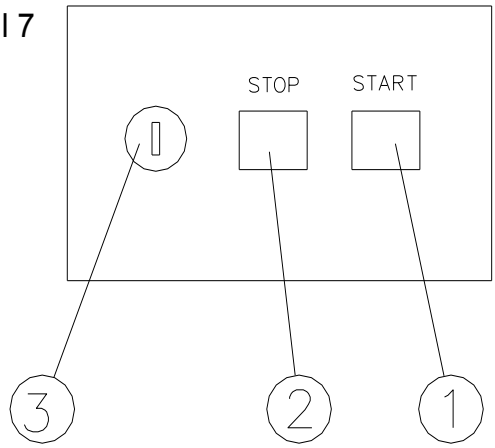
The tightness of the belt should be adjusted from the motor adjustment bolt, so that the distance between the two sides of the belt should be 9 cm when it is pressed at the middle of both of the pulley centers.

1 Demount the protective cover at the pulley side of the machine.
2 Loosen the motor connection bolt.
3 Unscrew the contra-nut of the motor adjustment bolt.
4 Make the pulley close to each other by turning the motor adjustment bolt.
5 Remove the V-belt firstly from the small pulley and then from the bigger one.
6 To fit the belt in position, fit it firstly to the big pulley and then to the smaller one.
7 Set the tension of the belt by means of the motor tension bolt.
8 Tighten the motor connection bolt.
9 Complete the belt replacement process by fastening the protective cover



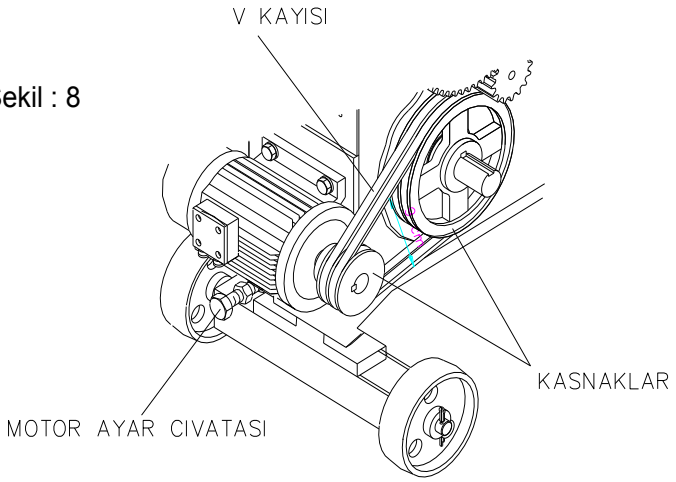
8.2 Adjustment of the thermal current adjustment field:
It has a default value of 10 A for a motor with 3 kW 3000 r/min. It is not recommended that the user meddles with this setting. See Figure 7.

Şekil 7



NO	BUTTON	FUNCTION
1	START	Starts the machine up by triggering the current application to the machine
2	STOP	Stops the machine by cutting off the electrical current to the machine.
3	MOTOR CURRENT ADJUSTMENT FIELD	Adjusted to 10A based on the current absorbed by the motor. Not recommended to be adjusted without the manufacturer's knowledge.

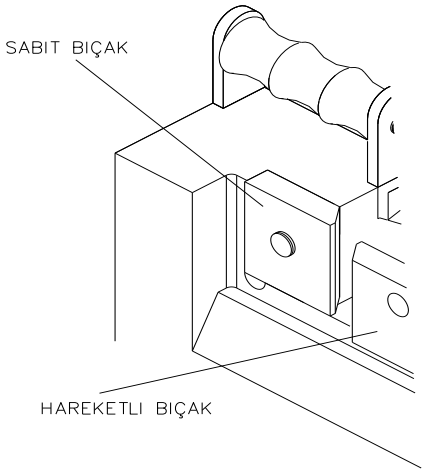
Şekil : 8



8.4. Blade Replacement:

Remove first the movable blade and then the fixed blade while replacing the blades. Ensure that the cutting edges are matching each other while fitting the blades.

Şekil 9



MAINTENANCE OF THE MACHINE

It is of great importance that the maintenance is performed properly in order to increase the service life of the machine and ensure a safe cutting work. We recommend that each user installs a reliable system for the control and maintenance of the machine. The following instructions are provided only for reference purposes. The machine should be lubricated with the rubber grease.

9.1 Daily Maintenance of the Machine:

- Check the machine for the noise when running.
- If the machine is operated in open air conditions, protect from rain when it is rainy.
- Clean the blade spaces with a brush.
- Check the blades for crushes and cracks, and replace if necessary.

9.2 Weekly Maintenance of the Machine:

- Replace the broken grease nipples fitted on the machine with the new ones.
- Lubricate the machine with the grease pump using the grease nipples fitted on the machine.
- Check the blade bolts for tightness.
- Check the machine belts for their tensions

9.3. Monthly Maintenance of the Machine:

- Check the bolt connections on the machine for their tightness.
- Demount the protective covers of the machine and lubricate the movable sections of the gear parts, engagement parts and foot pedal.
- Demount the protective cover and clean the steel tuffs accumulated between the movable sections.

9.4 6- Month Maintenance of the Machine:

- Demount the protective covers of the machine and remove the contaminated oil on the movable parts and re-lubricate them.
- Check the movable running gears, engagers and carriers, machine bodies and machine components for crushes, breaks and cracks.
- Check if cavities are formed due to wear on the bronze bearings of the machine, and replace the bronze bearings if so.
- Check the roller bearings of the machine for proper functioning

9.5.Annual Maintenance of the Machine :

- Check if cavities are formed due to wear on the bronze bearings of the machine, and replace the bronze bearings if so.
- Check the roller bearings of the machine for proper functioning and replace if necessary.

FAULTS AND REMEDIES :

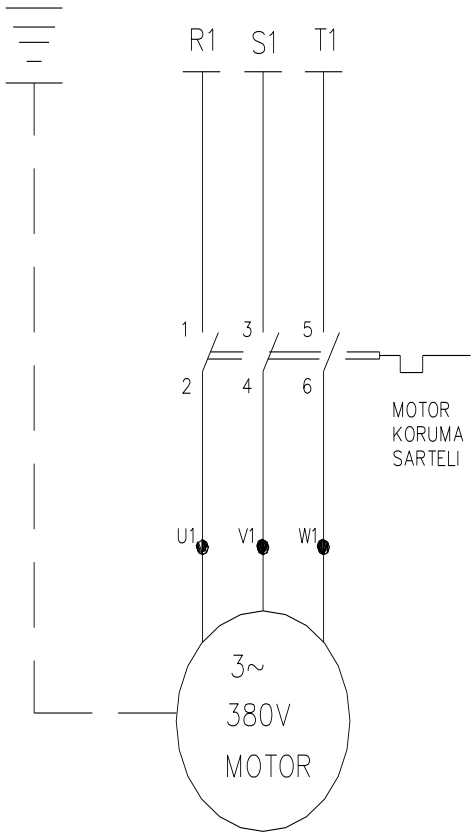
The faults to arise during the operation of the machine and their reasons and remedies are given in the following chart.

NO	FAULT	DESCRIPTION	REMEDY
1.	1.The power switch is interrupted frequently	1.There may be a short circuit in the machine or installation.	1. Check the belts for their tightness.
		2. The thermal current adjustment field may be misadjusted.	2. Check if there is a short circuit.
		3. The motor protection switch may be malfunctioned and does not activate the starters.	3. Check the control adjustment field of the thermal adjustment field. If low, adjust it to 10 A.
		4. The motor protection switch may be malfunctioned and does not activate the starters.	4. Check the power switch. Replace it if defective.

2	The machine does not start up .	1. There may be an interruption in the cabling.	1. Check the cabling connections.
		2. There may be a short circuit in the motor.	2. Check if there is a short circuit by cutting off the electrical connection of the machine.
		3. The electrical network to which the machine is connected fails to receive phase	3. Check the fuses on the electrical panel.
3	The machine fails to cut.	1. The belts may be loose or torn	1. Check the belts.
		2. The engagement is not active	2. Replace the engagement driving springs.
		3. The gear is broken off .	3. Check the gears.
		4. The excentric axle or lever may be broken off.	4. Check the eccentric axle or lever.
		5. The cut steel is not in the required size or strength.	5. Check the cut steel acc. to the cutting capacity plate

NO	FAULT	DESCRIPTION	REMEDY
4	Machine is noisy when running.	1. The engagement threads may be worn. 2. The belts may be loose. 3. The roller bearings may be failed. 4. The machine is not lubricated enough. 5. The protective cover of the machine is crushed. 6. The motor fan cover may be crushed.	1. 1. Replace the engagement. 2. Check the belt for its tightness. 3. Check the roller bearings. 4. Check and lubricate the machine. 5. Check the protective covers. 6. Check the motor fan cover.
5	1. The machine frequently causes the blade bolt to be broken off.	1. The bearings to which the blades are connected may be widened.	1. Check the blade connecting points and repair if necessary.

11. ELECTRICAL DIAGRAM:



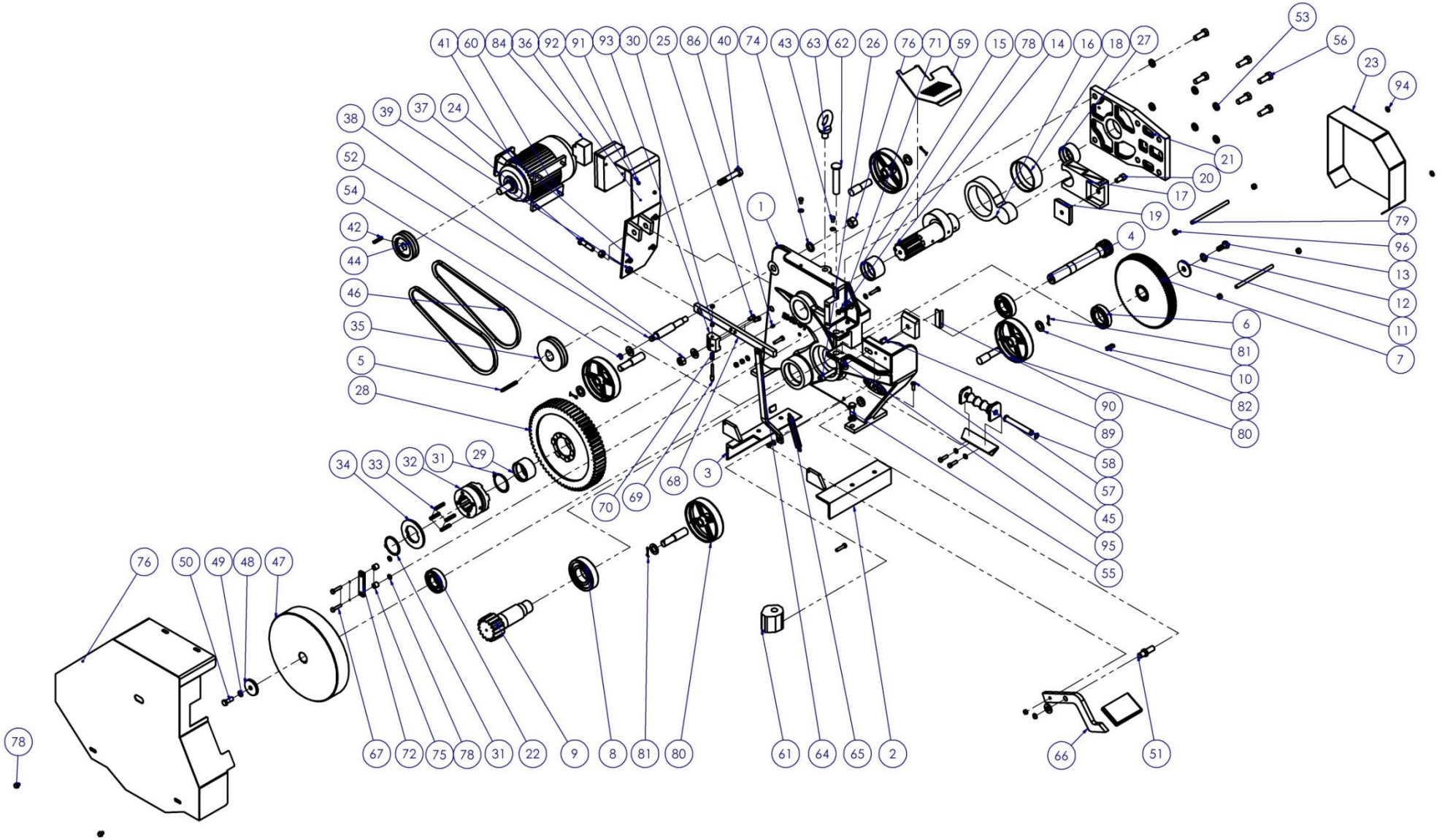
POWER CONNECTION:
Plug on the power supply cord of 5x4 mm^2 to the feeding line of main power. Made the power connection by a qualified electrician

GROUNDING CONNECTION: Follow the procedure below:
Connect one end of the ground cable to a copper wire (minimum16 mm) so as to ensure electrical conductivity. The other end of the cable is to be connected to a tube having ability of conductivity dipped sufficiently into the ground (into the damp soil, preferably), or to a copper plate buried under the soil as deeper as possible

SPARE PARTS LIST		
NO	**PART NUMBER- PART NAME**	**QTY**
1	M45-01(MAIN BODY)	1
2	M45-02 (FRONT WHEEL CONNECTION BRACKET TABLE)	1
3	M45-03 (BACK WHEEL CONNECTION BRACKET TABLE)	1
4	M45-04 (PINION GEAR Z=15 MN=3,5)	1
5	M45-05 (Ø12x8x90 KEY)	1
6	M45-06 (BEARING 6211)	1
7	M45-07 (HELICAL GEAR MN: 3,5M 85D 20HA)	1
8	M45-08 (BEARING 6313)	1
9	M45-09 (PINION PLAIN GEAR 6M 15D)	1
10	M45-10 (14x9x40 KEY)	1
11	M45-11 (WIDE SHIM)	1
12	M45-12 (M20 SPRING WASHER)	1
13	M45-13 (M20x40 BOLT)	1
14	M45-14 (ECCENTRIC AXLE)	1
15	M45-15 (Ø85xØ75x58,2mm BRONZE BEARING)	1
16	M45-16 (CARRYING ARM)	1
17	M45-17(BLADE CARRIER)	1
18	M45-18 (Ø138xØ128x48mm BRONZE BEARING)	1
19	M45-19 (85X85X25 BLADE)	2
20	M45-20 (M16x30 BOLT)	1
21	M45-21 (CARRYING CHANNEL)	1
22	M45-22 (BEARING 6309)	2
23	M45-23 (FRONT COVER)	1
24	M45-24 (M10 WASHER)	10
25	M45-25 (M10x20 BOLT)	2
26	M45-26 (M16x70 BOLT)	1
27	M45-27 (Ø85xØ75x40mm BRONZE BEARING)	2
28	M45-28 (PLAIN GEAR Z=64 MN=6)	1
29	M45-29 (Ø85xØ75x51mm BRONZE BEARING)	1
30	M45-30 (M8 NUT)	2
31	M45-31 (Ø72 x 2.5 SPLIT RING)	2
32	M45-32 (CLUTCH)	1

33	M45-33 (CLUTCH SPRING)	4
34	M45-34 (CLUTCH FLANGE)	1
35	M45-35 (200 SHIMLEY)	1
36	M45-36 (MOTOR AND SWITCH CONNECTION SHEET)	1
37	M45-37 (M16 x 65 BOLT)	1
38	M45-38 (M20 NUT)	1
39	M45-39 (M16 NUT)	2
40	M45-40 (M20 x 100 BOLT)	1
41	M45-41 (3KW MOTOR)	1
42	M45-42 (Ø8x8x50mm KEY)	1
43	M45-43 (M10x15 BOLT)	4
44	M45-44 (Ø90 PULLEY)	1
45	M45-45 (M10x30 RETAINER POSITIONER)	1
46	M45-46 (13x1150 V BELT)	2
47	M45-47 (FLYWHEEL)	1
48	M45-48 (Ø70xØ14x10mm SHIM)	1
49	M45-49 (M14 SPRING WASHER)	1
50	M45-50 (M14x40 BOLT)	1
51	M45-51 (FOOT PEDAL PIN)	1
52	M45-52 (DISENGAGEMENT PIN)	1
53	M45-53 (M20 SPRING WASHER)	6
54	M45-54 (Ø20 x1.2mm SPLIT RING)	3
55	M45-55 (M16 x 40 BOLT)	4
56	M45-56 (¾" x 50 BOLT)	6
57	M45-57 (ROLLER)	1
58	M45-58 (ROLLER AXLE)	1
59	M45-59 (BLADE PROTECTIVE)	1
60	M45-60 (M10x40 BOLT)	6
61	M45-61 (RETAINER)	1
62	M45-62 (RETAINER AXLE)	1
63	M45-63 (M20 LIFTING HOOK)	1
64	M45-64 (FOOT PEDAL LAMA)	1
65	M45-65 (FOOT PEDAL SPRING)	1
66	M45-66 (FOOT PEDAL)	1
67	M45-67 (M10x45 BOLT)	3
68	M45-68 (DISENGAGEMENT AXLE)	1
69	M45-69 (DISENGAGEMENT PIN)	1

70	M45-70 (CLUTCH PIN SPRING)	1
71	M45-71 (M10 NUT)	11
72	M45-72 (CHAIN SHEET)	1
73	M45-73 (M24 SHIM)	1
74	M45-74 (Ø20xØ10,5x19mm ADJUSTMENT SHIM)	2
75	M45-75 (M24 x 2.0 NUT)	1
76	M45-76 (BACK COVER)	1
77	M45-77 (M10 SHIM)	10
78	M45-78 (FOOT PEDAL SHIM)	5
79	M45-79 (M12x213 SPANNER)	2
80	M45-80 (Ø185 WHEEL)	4
81	M45-81 (4x35mm JOINER PIN)	4
82	M45-82 (M25 SHIM)	4
83	M45-83 (SWITCH BOX)	1
84	M45-84 (MOTOR PROTECTIVE SWITHC)	1
85	M45-85 (POWER PLUG)	1
86	M45-86 (3-8 PLAIN GREASING NIPPLE)	8
87	M45-87 (3-8 VERTICAL GREASING NIPPLE)	1
88	M45-88 (ROLLER CONNECTION BRACKET)	1
89	M45-89 (BLADE RETAINER)	1
90	M45-90 (BLADE PROTECTIVE BRACKET)	1
91	M45-91 (M6x15 BOLT)	2
92	M45-92 (M6 NUT)	2
93	M45-93 (DISENGAGEMENT)	1
94	M45-94 (M16 SHIM)	4
95	M45-95 (M12 SPRING WASHER)	4
96	M45-96 (M12 NUT)	4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67 72 75 78 31 22 9 8 81 80 61 64 65 2 66 51