M SERIES MECHANICAL REBAR CUTTING MACHINE OPERATION AND MAINTENANCE GUIDE

444 6 467
444 6 GMS
info@gocmaksan.com

Rev:01/2013

CONTENTS

INTRODUCTION

M 45 Mechanic Rebar Cutting Machine is manufactured only for cutting steel materials. Use other than the intended purpose is prohibited. Machine can be moved easily in short distances with the help of its wheels under the site conditions**.**

Important Warning !!!

- ***User's and maintenance manuals must be read.***
- Machine should be operated by instructed workers.
- Machine should be turned off and electricity of the machine must be cut off when making adjustments such as control, maintenance, lubrication, cutter change, belt tension.
- All of the explanations and rules given under user's and maintenance manual must be complied with.

1	Lifting Hook	6	Pedal
2	Tool Cutter Shield	7	Plate
3	Rebar Leading Table	8	Rear Casing
4	Cutter	9	Control Panel
5	Front Casing	10	Motor

1. MAIN PARTS OF CUTTING MACHINE

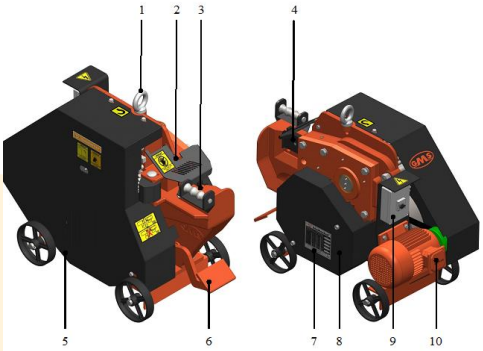

Figure 1: Main parts of bending machine

2. MACHINE ASSEMBLY

- Machine should be leveled on a solid ground by preventing wheels contact with the floor using wedges.
- Electricity connection of the machine should be made by competent technicians.
- Operating voltage of the machine should be 380 V.
- Grounding connection should be made for safe operation. Machine shouldn't be operated without making grounding connection.

Explanation:

Electricity Connection
For main electricity connection plug should be connected to supply line with a 4x5 mm² isolated cable and then plugged into power outlet.

Electricity Grounding
The following procedures should be followed for this system.

Connect one end of the grounding to a copper wire (minimum 16 mm²) as it will enable electrical conductivity. The other end should be either connected with a pipe that has a conductivity capacity immersed into the ground (preferably into a humid ground) or the copper plate should be buried into the ground as much as deep.

Figure 2: Machine should be leveled with the help of wedges.

3. MACHINE RUNNING PROCEDURES ORDER

- Be sure that the machine is assembled in conformance with the Machine Assembly procedures
- If there are any objects between the cutter of the machine they must be removed.
- Hands must be kept away from the cutters.
- Cutter shield is closed.
- Machine should be run by pressing on the start button. **(Figure 3)**
- Tool cutter shield should be removed and the rebar should be placed between the tool cutters and the rebar should lean to the retainer by adjusting the retainer according to the dimensions of the rebar. **(Figure 4)**
- Cutter shield is closed.
- Cutting is performed by pressing on the foot pedal.
- Machine is stopped by pressing on the stop button after the completion of works. **(Figure 3)**

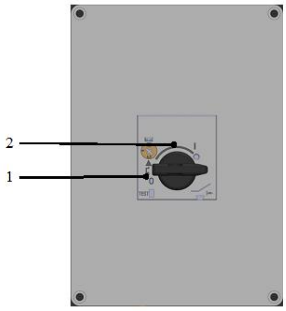

Figure 1: Control buttons

1	**Stop**
2	**Start**

4. TECHNICAL DATA

	kw	45 kg/mm2		65 kg/mm2		85 kg/mm2			
Model		1	2	1	2	1	2		
M36	3	36	24	32	20	28	18	55*102*70	350
M45	3	45	36	40	30	30	24	55*115*78	475
M55	3	55	32	42	28	36	24	69*118*80	691

5. EQUIPMENT SUPPLIED WITH MACHINE

•Allen Key(14mm) ..... 1 Piece
•Cutter(85x85x25mm).....2 Pcs.
•Grease Pump(500ccm).....1 Pc.

6. USING THE MACHINE

6.1. Correct Placement of the Rebars to be cut on the machine

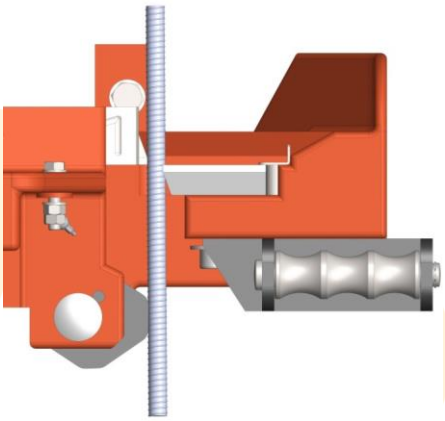

Figure 2: Correct placement of the rebar between the cutters

6.2. Incorrect placement of the rebars to be cut on the machine

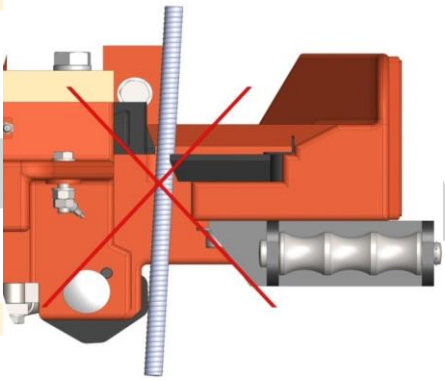

Figure 3: Incorrect placement of the rebar

6.3 Incorrect placement of the rebars for multi-cutting on the machine

During the multi cutting number of rebars stated on the capacity plate (Figure 1-7) should be aligned one on top of the other.

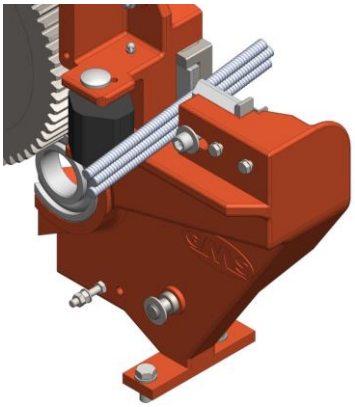

Figure 4: Correct placement of the rebar between the cutters for multi-cutting

Figure 5: Wrong positioning of the person making cut

7. PROHIBITED USAGE ON THE MACHINE

- No cutting should be made without closing the tool cutter shield.
- Cutter replacement shouldn't be made without stopping the machine and turning the electricity system off during the machine check and maintenance.
- When cutting no one must stand in front of the machine and any one standing must be taken away.
- Organs such as hand, arm, finger mustn't be put between the cutters.
- While the machine is running no any other construction material such as adze, hammer, meter, caliper etc. should be put between the cutters other than the material that will be cut.
- Machine mustn't be run when it is wet.
- No any cutting should be made other than the dimensions and units stated on the capacity plate.
- The rebar that will be cut should be leaned to the fixed cutter and retainer. No any cutting should be made other then this cutting type. **(Figure 4)**
- During the multi cutting number of rebars stated on the capacity plate should be aligned one on top of the other and should be leaned to the retainer. No any other cutting should be made other than this. **(Figure 6)**

€ Machine shouldn't be run when the switch box cover is open.

€ Thermal flow setting range made by the manufacturer shouldn't be changed.

€ Machine shouldn't be operated without making grounding connection.

- Machine shouldn't be operated when the housing covers are dismantled.
- Machine shouldn't be operated by uninstructed workers.
- Machine never should be run unlubricated.
- Warning plates attached on the machine mustn't be removed.
- No cutting should be made with blunt and cracked knives.
- Machine should be cleaned by air.
- Machine should be handled in conformance with the handling conditions. **(Figure 8)**

8. SCOPE OF WARRANTY

Manufacturer acknowledges warranty and liability provided that complying with the following conditions.

- Protectors found on the machine should be used.
- Warning signs should be taken into account.
- Machine shouldn't be run unlubricated.

€ Machine shouldn't be operated without making grounding connection.

- Parts manufactured by Göçmaksan company should be used in case it is required to replace a broken part.
- Conditions indicated under the safety measures should be taken into account.
- Prohibited usage should be taken into account.
- Machine should be assembled in conformance with the assembly conditions.
- Machine should be used by informed and authorized person.
- Measurements and dimensions stated on the capacity plate should be taken into account.
- Machine should be used in conformance with its manufacturing purpose.

€ Electricity connection should be made by competent technicians.

- Machine should be handled in conformance with the handling conditions. **(Figure 8)**
- Rebars should be place one on top of the other during the multi-cutting process.
- Machine shouldn't be used with any of the parts on it disassembled.

€ Motor of the machine shouldn't be changed.

- No other parts should be mounted to the machine other than the ones manufactured by Göçmaksan company.
- Maintenance of the machine should be made in conformance with the maintenance conditions.
- Machine never should be run without retariner. Rebar to be cut should be leaned to the retainer. **(Figure 4)**

9. PROTECTORS TO BE USED WHEN WORKING WITH THE MACHINE

9.1. Protector apparel

- Helmet must be worn.
- Glasses must be worn.
- Boots with steel toe must be put on.
- Gloves must be worn.

The aforementioned protectors will be used. In case of not using these apparels there are risks of injury, cutting and trapping hands.

9.2. Work clothes

Inappropriate clothes against snatch or grip while working with the machine are listed below and in case of not conforming with this list might cause risk of injury.

Long hair, dress with long arms, bracelet, uniform with long skirt, any ornament leaning out.

10. HANDLING THE MACHINE

In order to carry the machine forklift, mobile crane or a hoist should be used. Forklift should be used only when the machine is inside the chest. In order to carry the machine inside

the chest a wedge should be placed under the machine to prevent wheels touching to the floor of the chest or the wheels should be dismantled. When lifting the machine steel cable, chain or fiber sling should be used. When lifting out of the chest lifting lugs on the machine should be used. During the lifting operations experienced expert staff and subcontractors should be assigned.

WARNING!!!
Machine should be moved without any vibration. Machine shouldn't be run in a wet environment. If there are any lost or damaged parts during the handling, they should be reported to the manufacturer.

- When using the lifting and carrying equipments their maximum loading capacities should be taken into consideration.
- During the lifting equipment's center of gravity should be taken into consideration.
- Warning signs on the carrier equipment should be taken into consideration.

Figure 6: Handling the machine

11. CONTROLS AND SETTINGS ON THE MACHINE

a. Adjustment of the belt

V Belts on the machine may loosen or break within time. Thus it should be adjusted since the belt shall be out of adjustment. If the belt is loose then it may make noise when operating the machine and it may reduce the service life of the belt. If the belt is too loose then the machine may not make cuttings. Nevertheless, if the belt adjustment is too tight then it may cause over heating of bearings on the motor and body.

Ideal adjustment of the belt is tightening from motor adjustment screw by ensuring a distance of 9 cm between interior distance of the pulleys by tightening the middle of the pulley centers.

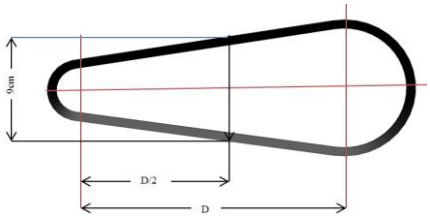

Figure 7: Belt tension adjustment

b. Thermal Flow Setting Range:

For a motor 3 kW 3000 rpm it is set 10 A by machine manufacturer. It is not appropriate for user to change settings. (Figure 10)

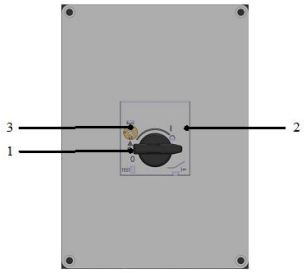

Figure1: **Thermal Flow Setting**

NO	BUTTON	FUNCTION
1	STOP	Stops the machine by cutting the electricity current to the machine.
2	START	Runs the machine ensuring application of current to the machine.
3	MOTOR CURRENT SETTING RANGE	The motor is set to 10 A according to the current drawn. It is not appropriate to make adjustment other than the manufacturer.

c. V-Belt Removal Order on the Machine

- Remove the casing cap on the machine's pulley side.
- Loosen the motor connection bolt.
- Loosen the lock nut of motor adjustment bolt.
- Pull the pulleys to each other by turning the motor adjustment bolt.
- V belt should be removed first from the small pulley then from the big pulley.
- To mount the V belt first replace the belt on the big pulley then on the small pulley. **(Figure 11)**
- Belt tension should be adjusted by motor tension bolt. **(Figure 9)**
- Tighten the motor connection bolt.
- Belt replacement procedure should be completed by remounting the casing cap.

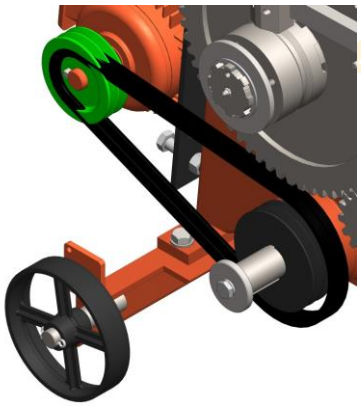

Figure8: Mounting the belts to pulleys

NO	BUTTON
1	Pulleys
2	Motor adjustment nut
3	Belts

d. Replacing tool cutter

When replacing the cutter first the fixed one then the moving one shall be dismantled. When connecting the cutters, attention would be paid to mount cutting edges so that placed one another

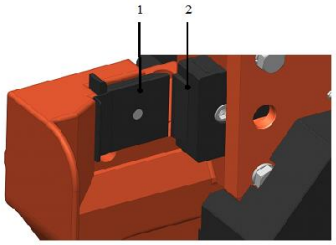

Figure9: Correct placement of the cutters

NO	BUTTON
1	Fixed Tool Cutter
2	Sliding tool cutter

12. MAINTENANCE AND LUBRICATION INSTRUCTIONS

It is important to make maintenance correctly in order to extend service life of the machine and to ensure safe cutting. We suggest for each user to set up a secure system for control and maintenance of the machine. The following descriptions are given for reference. Machine should be lubricated with rubber grease.

Daily maintenance of the machine

- It should be checked whether the machine is operating noisy or not.
- If the machine is running outdoors it must be protected from rain water when raining.
- Spaces between the cutters should be cleaned with a brush.

Cutting edges should be checked. If there is any crack or crush it should be replaced

Weekly maintenance of the machine

- Cracked grease nipples mounted on the machine should be replaced.
- Machine should be lubricated from grease nipples by grease pump.
- Tightness of the cutter bolts must be checked.
- Belt tensions of the machine should be controlled.

Monthly maintenance of the machine

- All the bolt connections of the machine should be checked.
- Machine casings should be removed and gear parts, clutch parts and foot pedal moving parts should be lubricated.
- Machine casings should be removed and iron dusts collected between the moving parts should be cleaned.

Semi-annual maintenance of the machine

- Machine casings should be removed and dirty grease on the moving parts should be cleaned and re-lubricated.
- It should be checked whether there are crush, crash or crack on the moving parts, clutch and carriers, machine body and machine parts.

Annual maintenance of the machine

- It should be checked if there are any spaces within the bronze bushings of the machine due to abrasion. If there are any spaces, the bronze bushings should be replaced.

- Ball bearings of the machine should be checked if they are broken or not. Any broken ball bearings should be replaced.

13. PROBLEMS AND SOLUTION OFFERS

Any faults those might arise when running the machine, and their causes and solutions are given in the table below.

FAULT 1: *The switch blows out frequently.*

	DESCRIPTION	***SOLUTION***
1	Switch might blow out due to overheating of the motor	Check the belt tensions.
2	There might be short-circuit on the motor and installation.	Check whether there is short circuit or not.
3	Thermal flow setting range might be low.	Check the thermal flow setting range. If it is low set to 10 A.
4	Motor protection switch might be broken and may not cross the contacts.	Check the switch. If damaged replace it with new one.

FAULT 2: *Machine isn't running:*

	DESCRIPTION	***SOLUTION***
1	There might be disconnection on the cables.	Check the cable connections.
2	There might be short-circuit on the motor.	Measure whether there is short circuit or not by disconnecting the electricity connection of the machine
3	Phase may not be fed to the electric supply system which the machine is connected	Check the fuses on the electric panel.

FAULT3: *Machine is not cutting*

	DESCRIPTION	***SOLUTION***
1	The belts might be loose or broken.	Check the belts.
2	Clutch isn't moving.	Check the clutch
3	Gear might be broken down.	Check the gears.
4	Eccentric shaft or arm might be broken.	Check the eccentric shaft or arm.
5	The rebar to be cut might not have the required dimension and endurance.	Check the rebar, which had been cut, according to the cutting capacity plate.

FAULT4: Machine is making noise

	DESCRIPTION	***SOLUTION***
1	Clutch lugs might be worn off.	Check the clutch.
2	The belts might be loose.	Check the belt tension.
3	Ball bearings might be broken down.	Check the bearings
4	Machine might be lubricated.	Check the casing cap.
5	Casing cap of the machine might be crushed.	Check the casing cap.
6	Motor's propeller cap might be crushed.	Check the propeller cap of the motor.

FAULT5: *Machine frequently breaks cutter bolt off.*

	DESCRIPTION	***SOLUTION***
1	Cutter bearing connection caps might be expanded.	If the cutter connection bearings have been checked and if they are expanded then repair them.

14. SAFETY

➢ This symbol is put before the articles giving warning explanations in order to draw attention of the trained operator to important functions.

€ This symbol is put before the articles giving warning explanations in order to draw attention of the trained operator to electrical issues.

⚠ This symbol is put before the sentences in order to draw attention of the trained operator to the master instructions and directive regarding to handling or safety.

TAGS USED ON THE MACHINE

	Trademark plate of manufacturer company		Correct cutting tag
	Logo plate of manufacturer company		Tag indicating do not approach to running parts
M 36, M 45, M55	Model name tag of the machine		Blade Warning tag
	CE norm conformity tag		Lubricating tag
	Plate on capacity and technical information of the machine		Handling and carrying hook tag
	Machine user's and maintenance manual tag		Grounding output tag
	Electricity panel warning tag		