

BLACK FOLDER FILE COPY

TRONCATRICE A DISCO PER METALLI FERROSI
CUTTING-OFF MACHINE WITH CIRCULAR BLADE FOR FERROUS METALS
METALL-KREISSAEGE
TRONÇONNEUSE A DISQUE POUR METAUX FERREUX
CORTADORA DE DISCO PARA METALES FERROSOS

MANUALE DI ISTRUZIONI PER L'USO - INSTRUCTION MANUAL FOR OPERATION
BETRIEBSANLEITUNG - MANUEL D'INSTRUCTIONS POUR L'EMPLOI
MANUAL DE INSTRUCCIONES DE USO

COSTRUTTORE:

MANUFACTURER :

ERBAUER:

CONSTRUCTEUR:

CONSTRUCTOR:

MACC S.p.A. SCHIO (VI) - ITALY

MODELLO:

MODEL :

MODELL:

MODELE:

MODELO:

NEW 250 DV

MATRICOLA:

SERIAL NUMBER:

KENNNUMMER:

MATRICULE:

MATRICULA:

N. 73533

ANNO DI COSTRUZIONE:

YEAR OF CONSTRUCTION:

BAUJAHR:

ANNEE DE CONSTRUCTION:

AÑO DE COSTRUCCION :

2006

1. INTRODUCTION

The "Operating Instructions" are an integral part of the machine and should be consulted before, during and after the start-up of the machine and when ever else required. The content of these instructions should always be carefully observed.

The observance of the above is the only way to achieve the two fundamental aims of this manual:

- a) Optimization of machine performance
- b) Prevent damage to the machine and injury to the operator

The index of the chapters and the index of the drawings, diagrams and tables is contained in chapter 3 and can be used to help the location of specific information.

CAUTION: BEFORE INSTALLING THE MACHINE, READ THE OPERATING INSTRUCTIONS CAREFULLY

2. INFORMATION ABOUT MAINTENANCE ASSISTANCE

2.1 GUARANTEE

- MASC's products are guaranteed against material and manufacturing defects for a period of 12 months from the date of delivery or, if the machine is installed by MASC employees, from the date of machine start-up.
- The buyer is only entitled to the replacement of parts which are acknowledged as faulty; cartage and packing are at the buyer's expense. In the event of the above, the following information should be supplied:
 1. Date and number of purchasing document
 2. Machine model
 3. Serial number
 4. Code of any relevant drawings
- Requests for compensation for the inactivity of the machine will not be accepted.
- The guarantee does not cover uses which are not in line with these operating instructions which are an integral part of the machine. If its maintenance covered if the instructions supplied are not observed.
- The guarantee will not cover machines which have undergone unauthorised modifications.
- Modification or tampering with the safety devices is strictly forbidden.

3. INDEX

3.1 INDEX OF CHAPTERS

Chap. 1	Introduction
Chap. 2	Information about maintenance assistance
Chap. 3	Index of chapters, drawings, diagrams and tables
Chap. 4	Description of the machine Description of the machine and its components
Chap. 5	Main technical data
Chap. 6	Handling and transportation
Chap. 7	Installation
Chap. 8	Start up and operation Devices and their location Tools supplied Operation Special safety checks General safety rules Measures to prevent residual risks
Chap. 9	Maintenance and repairs General safety measures Routine checks and maintenance Description of routine maintenance
Chap. 10	Information regarding environmental noise
Chap. 11	List of spare parts
Chap. 12	Laying off and dismantling

3.2 INDEX OF DRAWINGS, DIAGRAMS AND TABLES

ENCL. TYPE	DESCRIPTION	ENCL No.	CHAP.
Table	Choice of circular blade	1	9.3
Drawings	Handling and transportation- Installation plan	2	6/7/8
Drawings	Electrical details	3	7
Diagram	Electrical installation	4	
Drawings	Motor-blade block	5	7/8.3/9
Drawings	Base block and vice	6	8.3/9.3
Drawing	Machine assembly	7	8.3

4.1 DESCRIPTION OF THE MACHINE AND ITS COMPONENTS

The NEW 250 DV cutting-off machine with circular blade for ferrous metals produced by MACC is made from a solid casting, carefully processed and provided with holes for fastening to a bench or pedestal. The upper surface, designed to allow the complete draining away of the cutting fluid, has been processed using precision machinery to allow the attachment of a sturdy vice with burr-proof jaws.

The bar-stop device allows the length required to be preset and a constant level of performance for repeated cuts.

The blade-holding head is firmly attached to a reduction unit in oil bath built onto the motor and to the base by means of a joint which provides 45° rotation both to the left and right and the cutting movement with manual feed.

The coolant pump is also securely attached to the motor block.

The main switch is located above the motor block. Another switch is used to select motor rotation speed and therefore cutting speed.

The control lever, fitted with an ergonomic hand-grip and blade activation button with safety release action, reduces fatigue during operation to a minimum.

The blade is protected by a guard which in its turn protects the operator from ejected shavings and coolant.

The machine is supplied with a set of service spanners.

4.2 INTENDED AND UNSUITABLE USES OF THE MACHINE

The NEW 250 DV cutting-off machine with circular blade has been designed and built to cut bars, structural steel and ferrous metal pipes in accordance with the instructions contained in this manual.

Therefore, the cutting of other materials is not permitted: if the above recommendations are not observed, the machine could be damaged and the health and safety of the operator put at risk.

Cutting is not permitted, if the bar has not been first locked in the vice.

5. MAIN TECHNICAL DATA

Under no circumstances should the following data be altered, this is in order to protect the correct functioning of the machine and to avoid creating safety risks for the operator.

MOTOR	three-phase or single-phase
Motor Power	three-phase KW 0,95/1,32 - single-phase KW 0,9
Motor revolutions (two speeds)	1400-2800 rpm
CIRCULAR BLADE (SAW)	Number of teeth and feed holes according to table
Maximum diameter and thickness	Diameter: 250 mm Thickness: 2
BLADE REVOLUTIONS per minute	40-80 rpm
CUTTING ANGLE	45° right - 45° left
PIECE LOCKING VICE: MAX OPENING	100 mm
COOLANT TANK CAPACITY	litres 3
MACHINE WEIGHT	85 kg -833,5 N

6. HANDLING AND TRANSPORTATION

For safe handling and transportation use a lift truck for movement indoors or a bridge crane; in this case, also using cables fastened to the sling positions indicated on the drawing Encl. 2. Keep the machine in its normal position and avoid turning it upside down. If the machine is fastened to the pedestal, stability will be greatly reduced and therefore all the necessary measures should be taken to stop the machine from tipping over.

All handling and transportation operations should be carried out by trained staff.

7. MACHINE INSTALLATION

A. MACHINE CHECK AND CONTROL LEVER ASSEMBLY

The machine should be checked to make sure that it has not been damaged during transportation and handling. Control lever assembly (drawing 5. Encl. 5) (drawing 4 Encl 2): Fit the supplied head lever 22, into position 21 and fasten it by means of the nut 86. To fit the handle, connect the electric cable terminals 220 to the microswitch 218 and place it in the left second half of the handle as shown in draw. 4 Encl.3. Then insert the button 222 and the lever 22. Complete the assembly using the screws 221 and then 219. Make sure that the cable is inserted into the lever slot 22, after having checked that there are no burrs or sharp edges in the slot.

B. FASTENING OF THE MACHINE

The machine will be able to operate in keeping with the technical parameters supplied by MACC if it is positioned correctly and fastened securely to the bench or the factory floor so that vibrations are minimal during operation . Consult drawing 2 NEW 250 DV Installation plan Encl. 2.

C. ASSEMBLY OF CIRCULAR BLADE

For the assembly of the circular blade, remove the screw No. 52 (Draw. 6 Encl. 4), keeping the motor-blade block raised and rotate the mobile guard 76 backwards. Unscrew the screw 25 clockwise, withdraw the flange 27, insert the circular blade, making sure that the toothing faces the same direction as the arrow on the mobile guard. Then refit flange 27 and screw 25.

D. ELECTRICAL CONNECTION TO THE MAINS

Install a differential thermomagnetic switch with characteristics suited to the mains.

Make sure that the power supply voltage corresponds to the voltage on the motor plate. Connect the cable to the power supply line observing the colour codes of the individual wires, pay particular attention to the earth wire. Connect the machine, make sure that the rotation of the circular blade is in the direction shown by the arrow on the guard.

E. CUTTING COOLANT

For the cooling of the circular blade, fill the tank with emulsible oil obtained from a mixture of water and AGIP ULEX 260 EP oil with a percentage of 5-7%

8. MACHINE START UP AND OPERATION

8.1 DEVICES AND THEIR LOCATION

(The location of the devices described is shown on the NEW 250 DV installation plan Encl. 2)

Code 218	START-STOP MICROSWITCH: situated inside the handle located at the end of the control lever and has safety release action.
Code 37	CUTTING ANGLE DEVICE: to check that cutting inclination is as required
Code 59	LOCKING VICE
Code 45	BAR-STOP
Code 22	CONTROL LEVER WITH HANDLE

8.2 TOOLS SUPPLIED

1	Allen wrench size 3
1	Allen wrench size 4
1	Allen wrench size 5
1	Allen wrench size 6
1	Allen wrench size 14

8.3 OPERATION

CHECKS TO CARRY OUT BEFORE EACH CUT

- Make sure that the circular blade is fastened securely by means of screw 25 (DRAW.6 ENCL.4)
- Check that the hand indicates the required cutting angle (vice scale)
- Make sure that the head and vice are locked by means of the lever 50 (DRAW.7-8 ENCL.4)
- With the motor off, lower the head and check that at the end of the stroke, the circular blade does not touch the counter-vice 43. If the circular blade does touch, adjust the screw 40 located at the centre of the head support 17 (DRAW.5 ENCL.4)
- Make sure that the piece to be cut is adequately secured in the vice.
- Make sure that the coolant is circulating in the machine.

CUTTING OPERATION

- Before each cutting operation, if the cutting inclination is not as required, correct or change the inclination by placing the bench lever 50 in position 2 (DRAW.8 ENCL.4) and after correction, forcefully turn it to position 1.
- Clamp the piece to be cut by means of the handwheel 55 (DRAW.7 ENCL.4), turn the speed switch 203 to the position required (we recommend No.1), **use the second speed 80 RPM only in case of need and no longer than 5 minutes.** Take hold of the handle 78 located at the end of the head lever and press button 218. The blade will now start turning.
- Position the blade carefully on the piece to be cut. Then increase the pressure in order to accelerate the cutting operation without using excessive force. To make a series of cuts, position the bar-stop 45 at the size

- required. Fix it into position by using the knob 46 (DRAW.9 ENCL.5).
- D. To replace the circular blade carry out the same operations used to assemble the circular blade. (chapter 7c).
- E. For the choice of most suitable blade consult the table ENCL. 1.

We strongly discourage the use of blades with ruined or insufficiently sharp cutting edges

8.4 SPECIAL SAFETY CHECKS

- A. Before using the machine, check carefully that the safety devices are in good working order, that the mobile parts are not blocked, that no parts are damaged and that all the components are installed correctly and are functioning properly.
- B. Make sure, before operating the machine, that the screws of the guards and other protective devices are adequately secured, especially the screws on the circular blade guard and the rotation levers of the circular blade mobile guard.
- C. Check that the safety microswitches and the emergency button are functioning correctly. Test them during a loadless machine cycle.
- D. Make sure that the mobile guard does not leave uncovered an angle of more than 5° in order to prevent fingers from entering.
- E. Pay attention to environmental conditions. Do not expose the machine to rain; do not use it in damp environments, position the machine on a clean dry floor that has no oil or grease stains.
- F. Before using the machine, the operator should make sure that all tools and service spanners used for maintenance or adjustment have been removed.

8.5 GENERAL SAFETY RULES

- A. Wear appropriate clothing. The operator's clothing should not be loose or dangling nor should it have parts which could easily get caught. Sleeves should contain elastic. Belts, rings or chains should not be worn. Long hair should be kept in a net.
- B. Avoid unstable operating positions. Find a safe and evenly balanced position to operate the machine.
- C. Keep the work area tidy, untidiness increases the risk of accidents.
- D. Do not use the power supply cable to disconnect the plug from the socket. Protect the cable from high temperatures, oil or sharp edges. For outdoor use, only use extension cables which are in line with current regulations.

8.6 MEASURES TO PREVENT RESIDUAL RISKS

- A. The removal of guards and tampering with the safety devices is strictly forbidden.
- B. Gloves should always be worn.
- C. Standard work clothing should be used and kept closed and should not have flapping parts.
- D. The machine should not be cleaned with liquids under pressure.
- E. In the event of fire, extinguishers should not be used unless they are the powder type. The electric power supply to the machine should always be disconnected in these circumstances.
- F. Do not insert foreign bodies into the motor cover and do not supply the machine with voltage by tampering with the safety microswitches or main switch.
- G. Take the necessary precautions to avoid the machine being started by other people during loading, adjustment, piece changing or cleaning.

9. MAINTENANCE AND REPAIRS

9.1 GENERAL SAFETY MEASURES

- A. Before carrying out any work on electrical equipment, remove the power supply plug from the control panel (disconnect voltage).
- B. Only use cables to supply power, which have a cross-section suited to the power of the machine.
- C. Opening key. The keys of the machine should be kept by authorized personnel. Do not leave the keys for doors which provide access to the hydraulic or electrical parts or keys to lockable switches in easy of reach of unauthorized personnel.
- D. Repairs should only be carried out by authorized personnel. Only spare parts made by the original manufacturer should be used, otherwise these could cause damage or injury.

9.2 ROUTINE CHECKS AND MAINTENANCE

FREQUENCY (working hours)	OPERATION
1000 hours	Replace the oil in the gear box with AGIP ACER 320 oil (0.2 litres) or equivalent.
1000	Lubrication of mobile parts in the piece locking vice (GREASE AGIP MU 2)
50	Cleaning of the coolant tank and filter check
if necessary	Check functioning of bench lever

9.3 DESCRIPTION OF ROUTINE MAINTENANCE

A. Replacement of gear box oil

Remove caps 34 and 90 (draw.5-6 Encl.4), let all the used oil flow out into a container which should have a label indicating the contents for the purposes of disposal. Replace cap 34. Feed 0.2 litres of oil (as specified above) into the oil feed hole located on the upper part of the gear box and then replace cap 90.

B. Lubrication of mobile parts of piece locking vice

Remove jaw 60 (draw.7 Encl.4), withdraw vice 59 completely by turning hand wheel 55. Clean and grease the parts worked by the counter-vice 43 and vice 59. Put a drop of oil in the oil feed hole 67 located behind the handwheel.

C. Cleaning of the coolant tank: Filter check.

Empty the coolant from the tank by means of the tap located on the rear part of the machine bench (after moving the liquid feed pipe away from this). Collect the coolant in a container for future disposal.

Remove screws 64 and the drilled plate 62 (draw.8 Encl.4). Clean out the shavings and the metallic powder, taking care not to scatter this over the machine especially around the motor and the box containing the electrical equipment. Refit the plate 62 and fasten it with screws 64, turn the tap off and reconnect the pipe. Check filter 88 and if necessary replace it. Fill the tank with the amount and liquid stated previously.

D Checking of bench lever functioning

Check regularly that the rotation release - locking lever is working properly. In the event of the lever not locking correctly, loosen grub screw 51 (draw.7 Encl.4), tighten nut 49 and fasten grub screw 51 again. Make sure that with the bench lever in position 2, arm 17 which supports the blade-motor block can rotate freely.

10.INFORMATION REGARDING ENVIRONMENTAL NOISE

An environmental noise test carried out on the NEW 250 DV cutting-off machine with circular blade, identical to the machine to which these operation instructions refer, has given the following results:

ACOUSTIC RADIATION PRESSURE

1. $L_{Aeq} = 83.2$ dB (A)
2. $L_{peak} = 90.6$ dB (the maximum acceptable value is 140 dB).
3. The level of background noise has no influence = 48.5-54.2 dB (A).

LIST OF SPARE PARTS

POS	DESCRIPTION	CODE	Quant
1	Selflocking ring nut M15x1,5		1
2	Worm screw	021/05	1
3	Key 5x5x30 DIN 6885		1
4	Splash guard 25-47-7		1
5	Bearing 6205 zz		1
6	Rotor		1
7	Stator		1
8	HSHC screw 6x16		4
9	Head gear	040/05	1
10	Bearing 6204 zz	151/36	1
11	Bearing 629	043/05	1
12	Snap ring D.9 DIN 471		1
13	Pump carrier	003/05	1
14	Motor casing		1
15	HH screw 8x40 DIN 933		1
16	Nut M 8 DIN 934		2
17	Head carrying arm	002/18	1
18	Motor flange		1
19	Key 7x8x28 DIN 6885		1
20	Helical gear	004/28	1
21	Head	001/28	1
22	Head lever	039-A/05	1
23	Vice lever	007/31	1
24	Selflocking ring nut M 25x1,5		1
25	Disk fastening screw	018/05	1
26	Disk shaft	016/05	1
27	Disk flange	017/05	1
28	Splash guard 30-40-7	044/05	1
29	Disk guard	009/05	1
30	Water pipe		1
31	Flat countersunk head washer with hexagonal socket 10x20		2
32	Screw HSHC M 4x10		2
33	Pump	041/05	1
34	Oil level plug		1
35	Washer Ø 6		8
36	Pin head	023/05	1
37	Graduated scale	024/05	1
38	HSHC screw 6x12 DIN 912		2
39	Disk		
40	HH screw 8x50 DIN 933		1
41			
42	Bench	001/05	1
43	Countervice	008/28	1
44	Bar stopped rod	031/05	1
45	Bar stopped	004/05	1
46	Bar stopped knob	077/25	2

47	Hexagon socket grub screw 6x10 DIN 914		4
48	Counterservice pin	007/28	1
49	Bench lever nut M20	032/95	1
50	Bench lever	002/05	1
51	Hexagon socket grub screw 6x10 DIN 914		1
52	HSHC screw 6x20 DIN 912		3
53	Flat countersunk head screw 10x20 DIN 933		2
54	Elastic pin 6x36 DIN 1481		1
55	Vice handwheel	029/03	1
56	Bush \varnothing 6		2
57	Hexagon socket grub screw 8x10		1
58	Vice screw	011/28	1
59	Vice	009/28	1
60	Vice left jaw	063/05	1
61	Vice right jaw	062/05	1
62	Crucible	037/05	1
63	Bench tap	042/05	1
64	HSHC screw 6x55 DIN 912		2
65	Nut M16 DIN 934		1
66	Bearing 6301	003/28	1
67	Oiler \varnothing 6		1
68	HSHC screw M6x12		2
69	Washer D.6 DIN 125/A		2
70	HSHC screw 4x12 DIN 912		3
71	Fan guard		1
72	Fan		1
73	Nut M8 DIN 934		6
74	HSHC screw 8x20 DIN 912		2
75	Disk movable guard fixed rod	005/28	1
76	Disk movable guard	010/05	1
77	Snap ring D.45 DIN 471		1
78	Head lever handle	046/05	1
79	Hexagon socket grb screw 8x40 DIN 914		2
80	Jet - breacker	020/05	1
81			
82			
83	Washer \varnothing 35 E 8x16		2
84	Flat countersunk head screw with hexagon soket 8x16		2
85	Belleville washer \varnothing 15 e \varnothing 6,2		4
86	Nut M14 DIN 934		1
87	Vice bearing flange	020/31	1
88	Filter FB 1	045/05	1
89	Movable guard rod	006/28	1
90	Oil filling cap		1
91	Flange rear motor		1
92	Hexagon socket grub screw 8x35		2
93	Nut M6 DIN 934		6

94	Low voltage controller support plate	048/05	6
95	Fifth wheel AS 30 47	061/31	2
96	Vice spring	021/31	1
97	Cage AXK 30 47	060/31	1
98	HSFHC screw		1
99	Bush	025/03	1
100	Hexagon socket grub screw M8x35		1
101	Washer ø 35E 8x16		1
102	Hexagon socket grub screw 6x10		2
199	Cover box	067/90	1
200	Box	066/90	1
201	Plate	069/90	1
202			
203	Changeover switch	011/90	1
204	RH screw M4x14 DIN 7981		4
205	HSHC screw M4x6 DIN 912		3
206			
207			
208			
209			
210	Remote controlled switch	032/90	1
211	Thermical relais	053/90	1
212			
213			
214			
215			
216			
217	Transformer	042/90	1
218	Microswitch	028/90	1
219	HSFHC screw M4x8 DIN 7991		2
220	Electrical cable 2x1		1
221	RH screw M2,9x13 DIN 7981		6
222	Button		1

12. LAYING OFF AND DISMANTLING

12.1 LAYING OFF

If the machine is to be laid off or left idle for a long period, the following operations must be carried out:

1. Disconnect the machine from the electricity mains.
2. Empty oil from the gear box and cooling liquid from its tank
3. Clean carefully the machine by getting rid of all traces of grease, especially on the worked parts that must be protected with anti-oxidants.
4. Cover the machine with a sheet, preferably not plastic as it can cause rust due to the humidity condensation.
5. Store the machine in a closed, dust-free place.

12.2 DISMANTLING

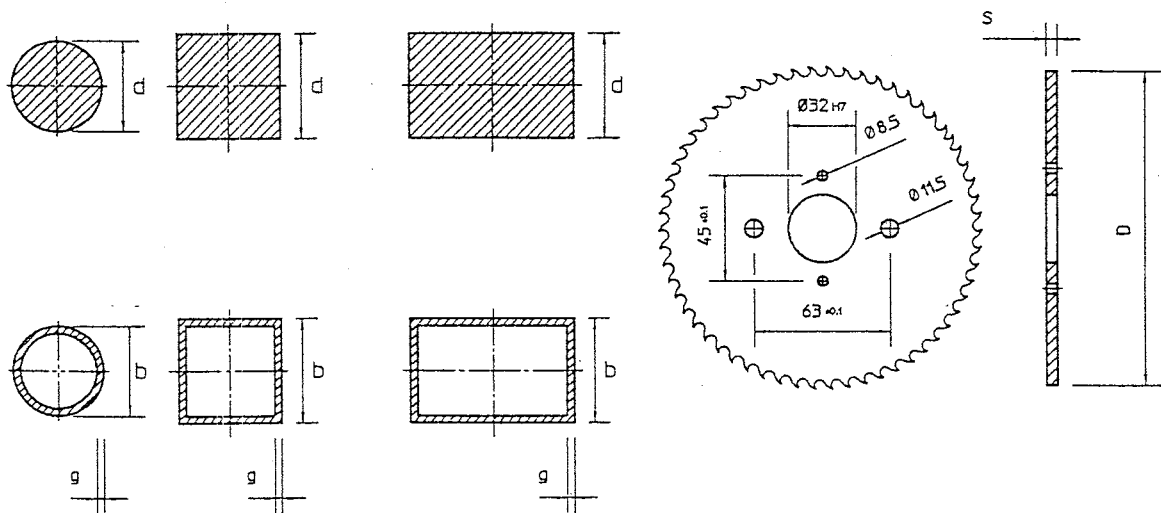
If the machine must be definitively dismantled, its components must be sub-divided for the purpose of a possible recycle of the materials and for the environment safety. The following table is given for your guidance:

Steel	Light alloy	Cast iron	Bronze Copper	Plastic	Various
Bolts	Cylinders	Structural parts	Motors winding		
Springs				Seals	
Flanges	Gearboxes			Flexible pipes Gaskets	
Pins, pivots			Bushings		Friction items

Used oil and materials must be disposed of according to 75/439/EEC and 87/101/EEC Directives and to country specific regulations

Scelta delle seghe - Blade selection
 Choix des Fraises scie - Wahl der Sageblätter

Diametro - Diameter Diametre - Durchmesser		200	225	250	275	300	315	350
Spessore - Thickness Epaisseur - Dicke		1,8	1,8	2	2,5	2,5	2,5	3
b= 10 - 80 g = ≤ 2	t	3	3	3	3	3	3	3
	z	200	230	250	280	300	320	350
b= 10 - 80 g= 2- 4 d=10 - 18	t	5	5	5	5	5	5	5
	z	130	140	160	170	190	200	220
b= 20 - 80 g= 4-10 d=18 - 30	t	8	8	8	8	8	8	8
	z	80	90	100	110	120	120	140
d= 30- 40	t	10	10	10	10	10	10	10
	z	60	70	80	90	90	100	110
d>40	t	//	//	//	12	12	12	12
	z	//	//	//	70	80	80	90



Si garantisce il funzionamento ottimale della vite-corona utilizzando seghe con fori di trascinamento.
 Best performance of worm screw worm wheel gearing is guaranteed when circular saw blades with drawing-holes are used

Nous garantissons le bon fonctionnement de la vis et couronne seulement si l'on emploie des fraise-scies avec trous d'entraînement.

Die verwendung von Sageblättern mit Mitnehmerlochern sichern den guten Betrieb der Schnecke und des Sackenkranzes.

b= diametro esterno/altezza (tubi) – outside diameter/height (pipe)
 diamètre extérieur/hauteur (tube) – aussendurchmesser/hohe (rohr)

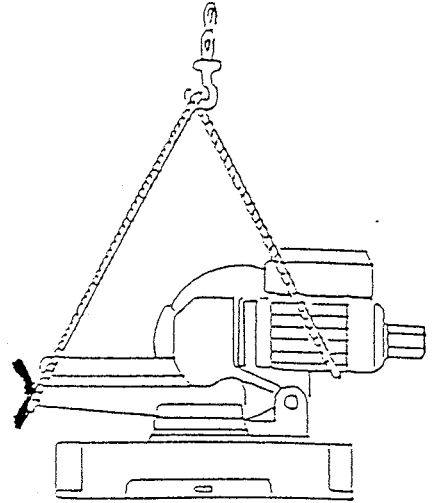
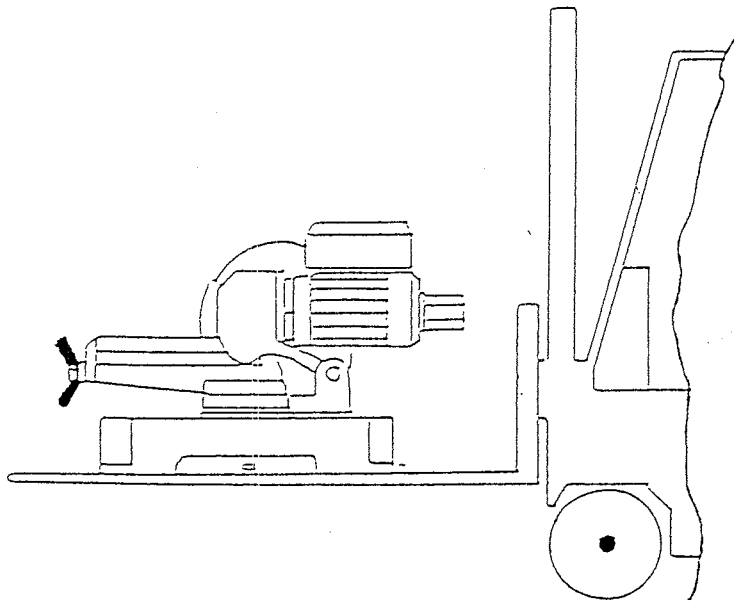
d= diametro/altezza (pieni) – diameter/height (solid)
 diamètre/hauteur (plein) – durchmesser/hohe (voll)

g= spessore del tubo – pipe thickness
 épaisseur du tube – rohrdicke

t= passo dentatura – toothing pitch
 pas denture – entfernung verzahnung

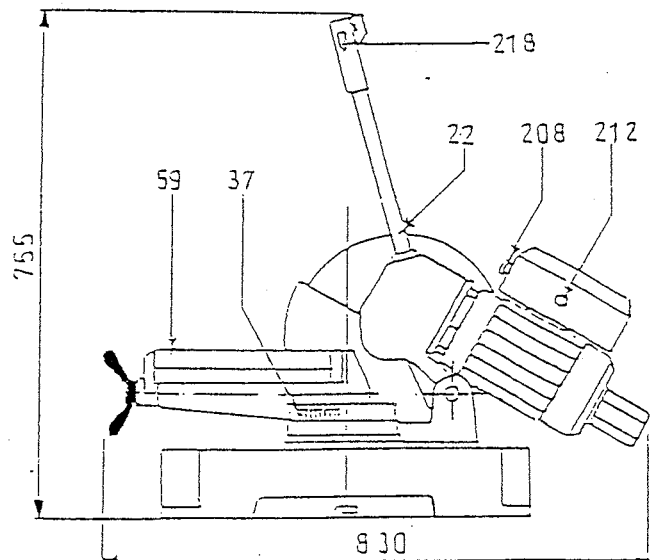
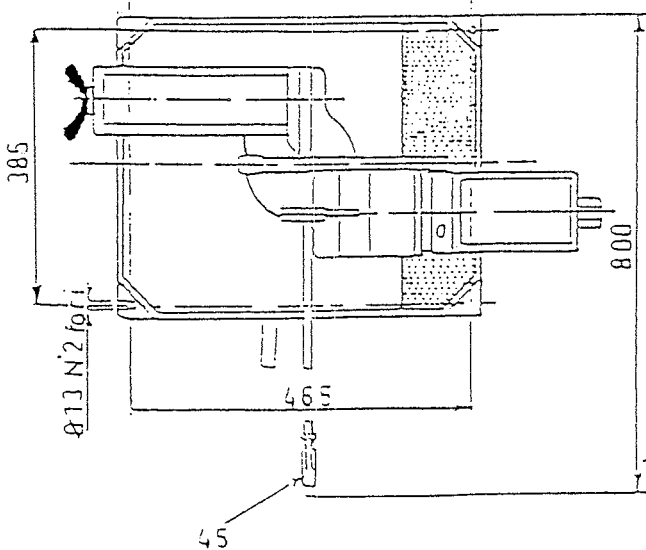
z= numero di denti – number of teeth
 numero de dents - zahnnummer

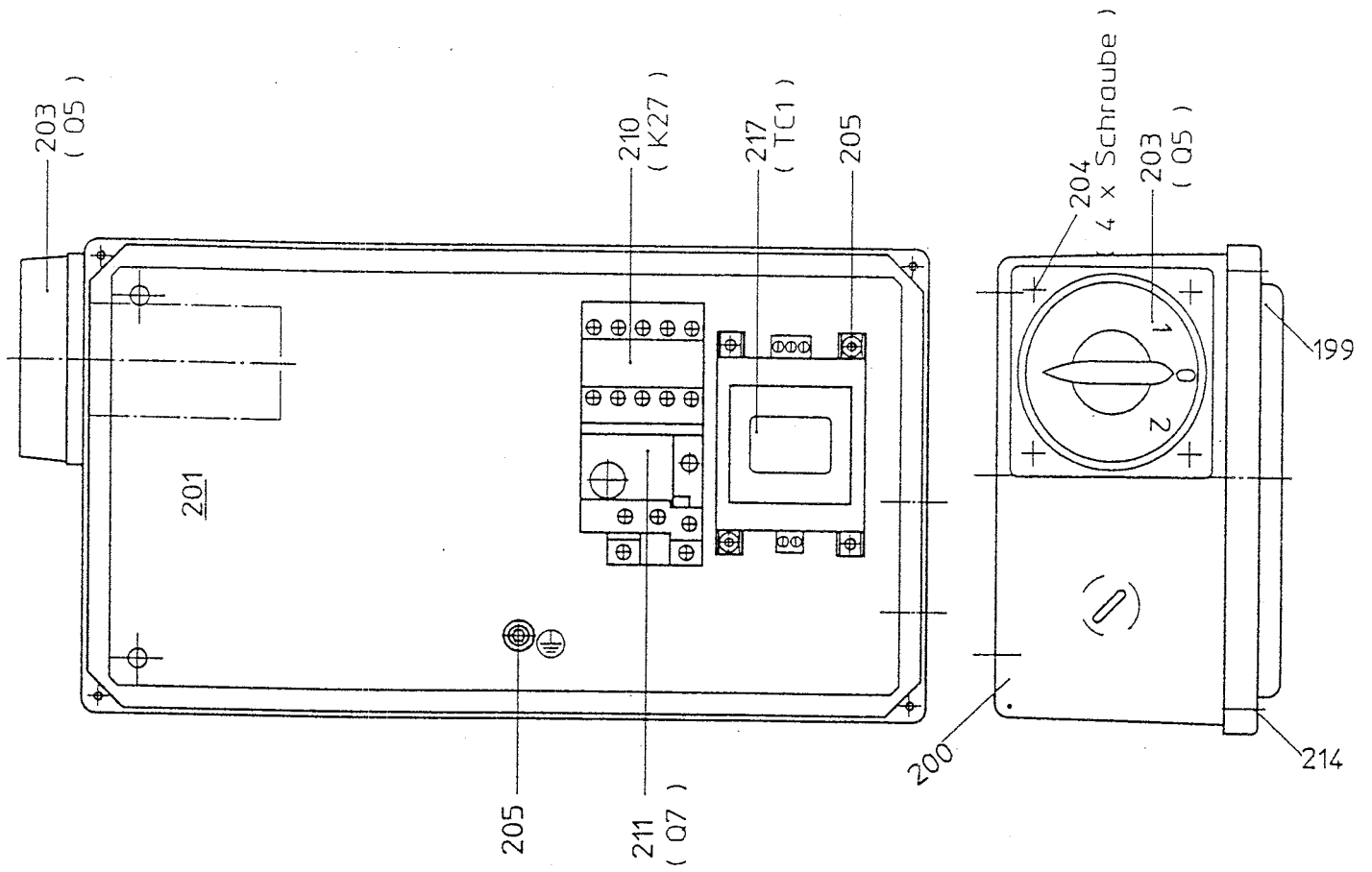
MOVIMENTAZIONE E TRASPORTO



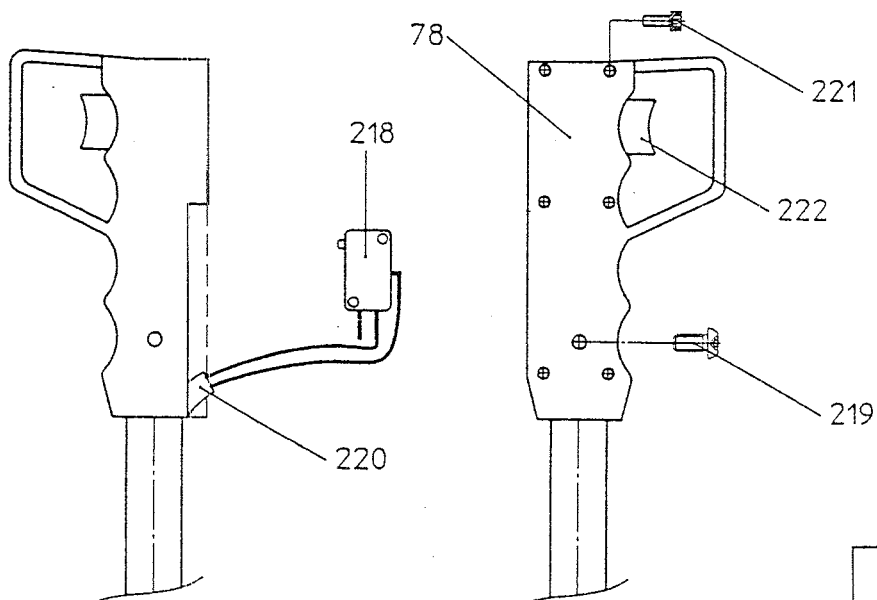
DIS. 1

PIANO DI INSTALLAZIONE





Cassetta Impianto elettrico
 Electric Box
 Boîte Electrique
 Schaltkasten
 Caja Eléctrica



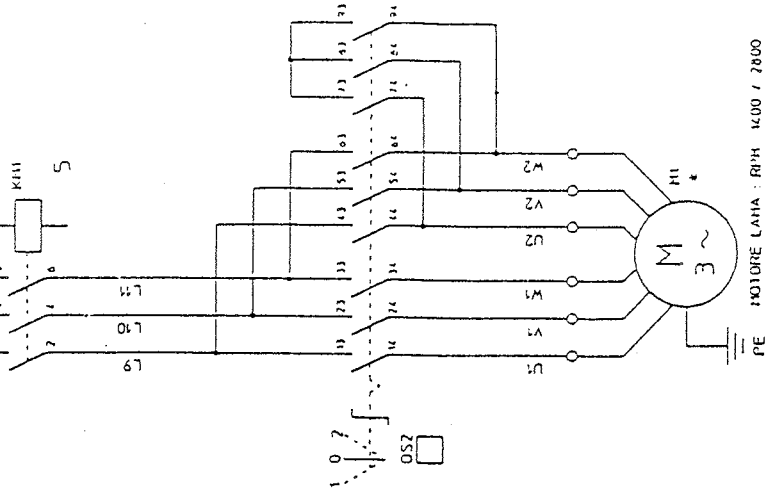
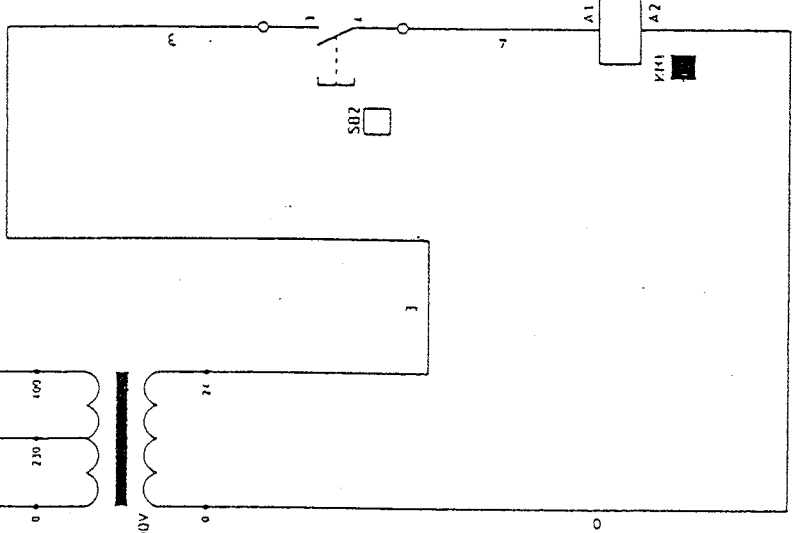
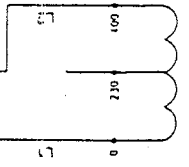
ALLEGATO 3

3 x 380 V
50 Hz

L1
L2
L3
PE

1.5mm²

L1
L2
L3



PE MOTORE LAHA : RPH 1400 / 2800
- Voli 400 50 Hz

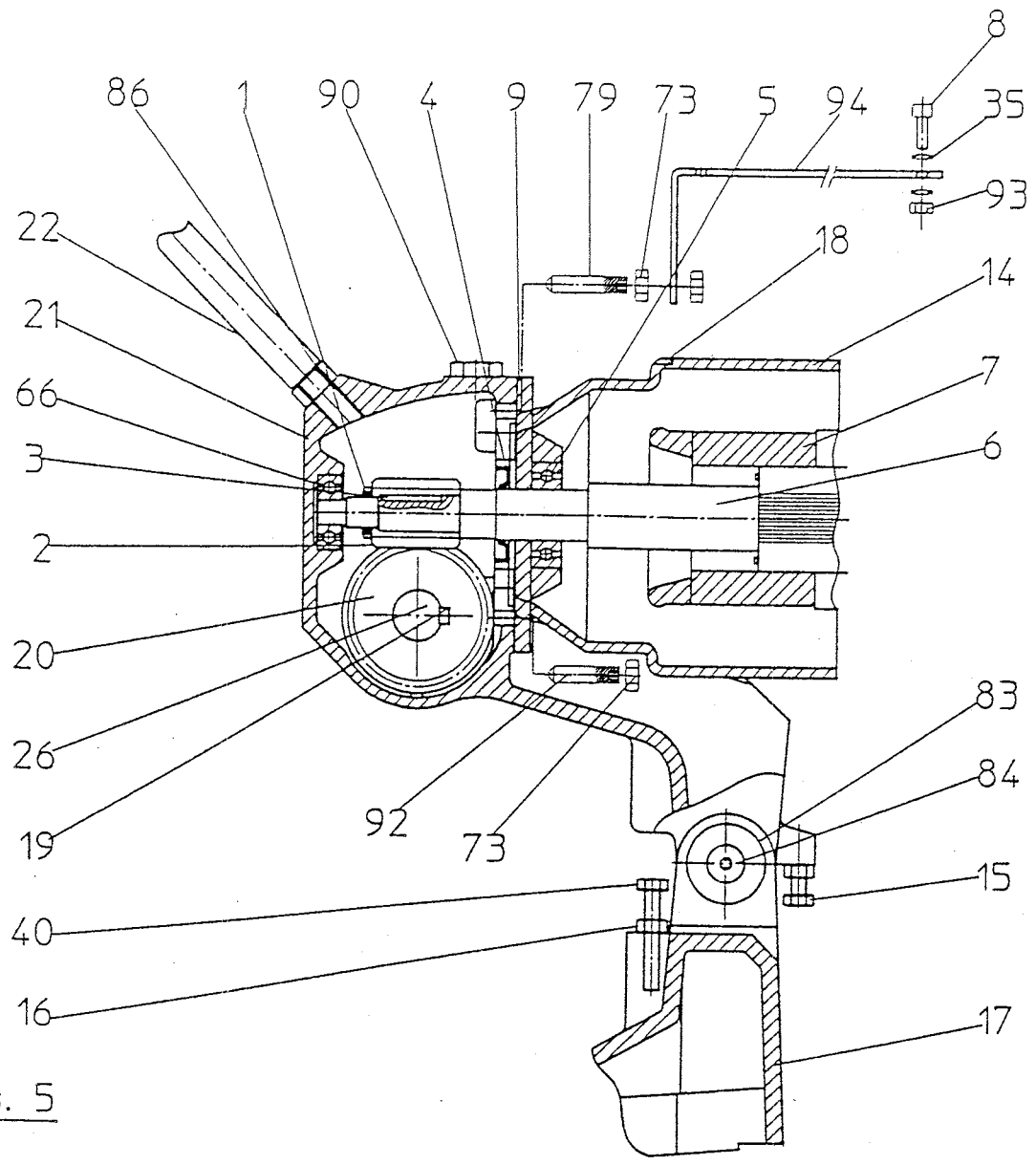
ALLEGATO 4

SCHEMA ELETTRICO per : TRONCATRICE mod. KEW 2500V Infilas

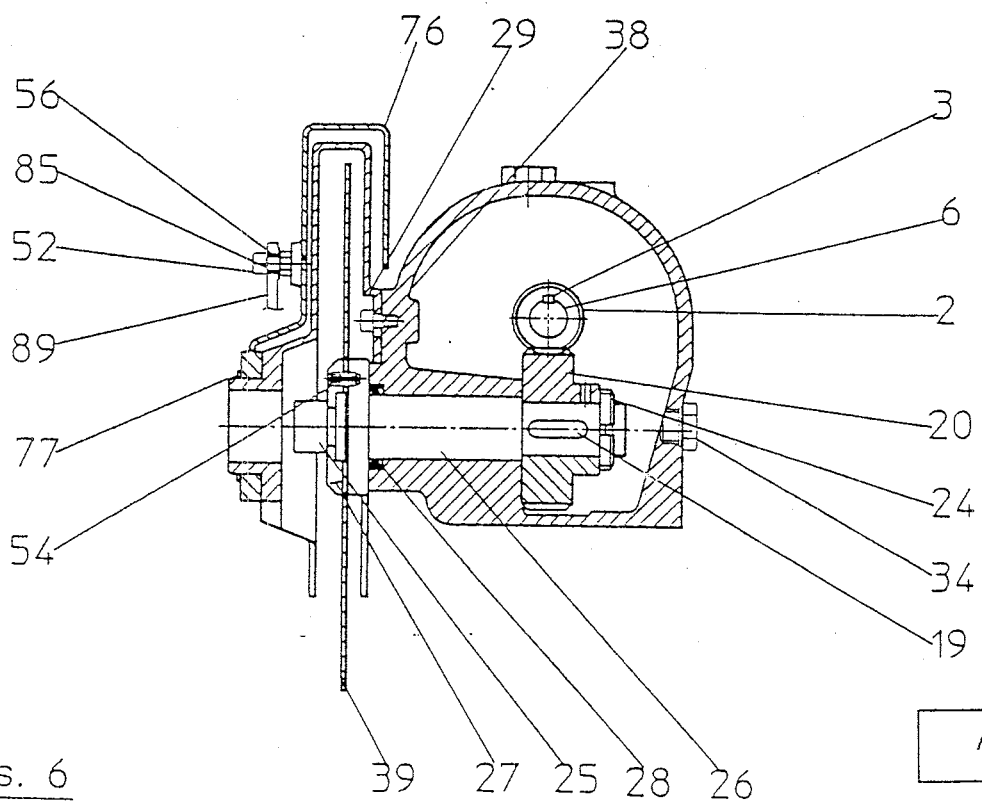
Data	14.3.00
Firma /	
Co. /	

OS2	CONIUGATORE MOTORE
SB2	INTERRUTTORE MAGNETICO

N° Schema		/
Foglio	1	0

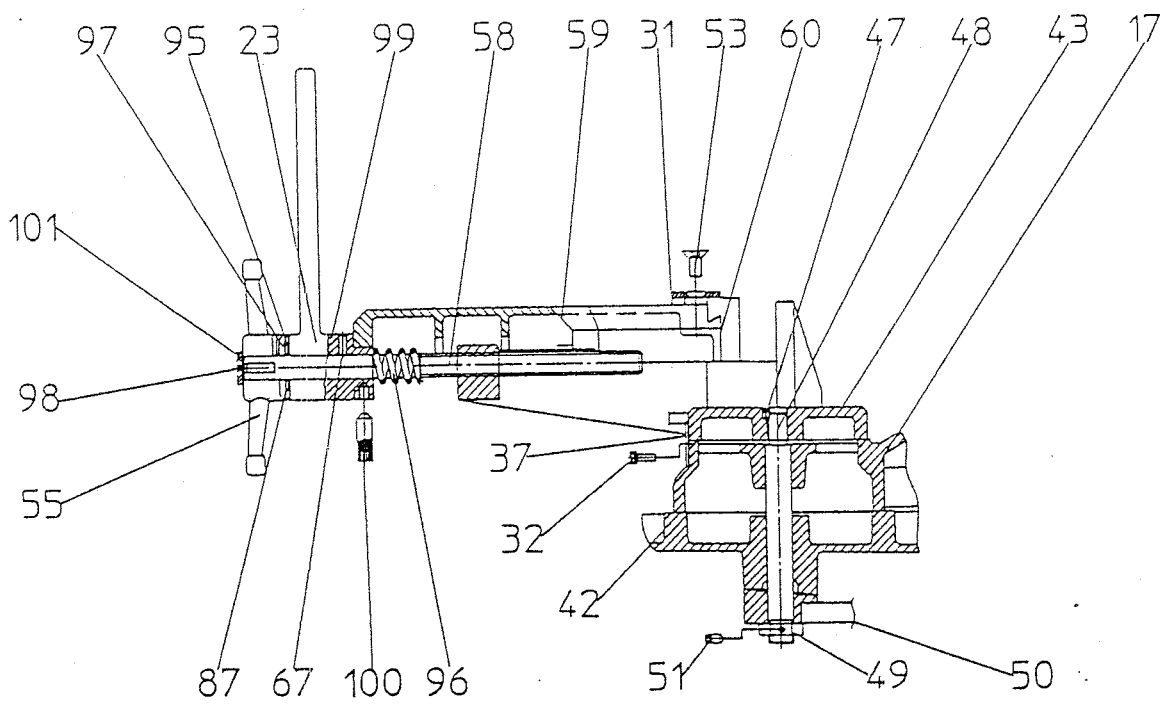


Dis. 5

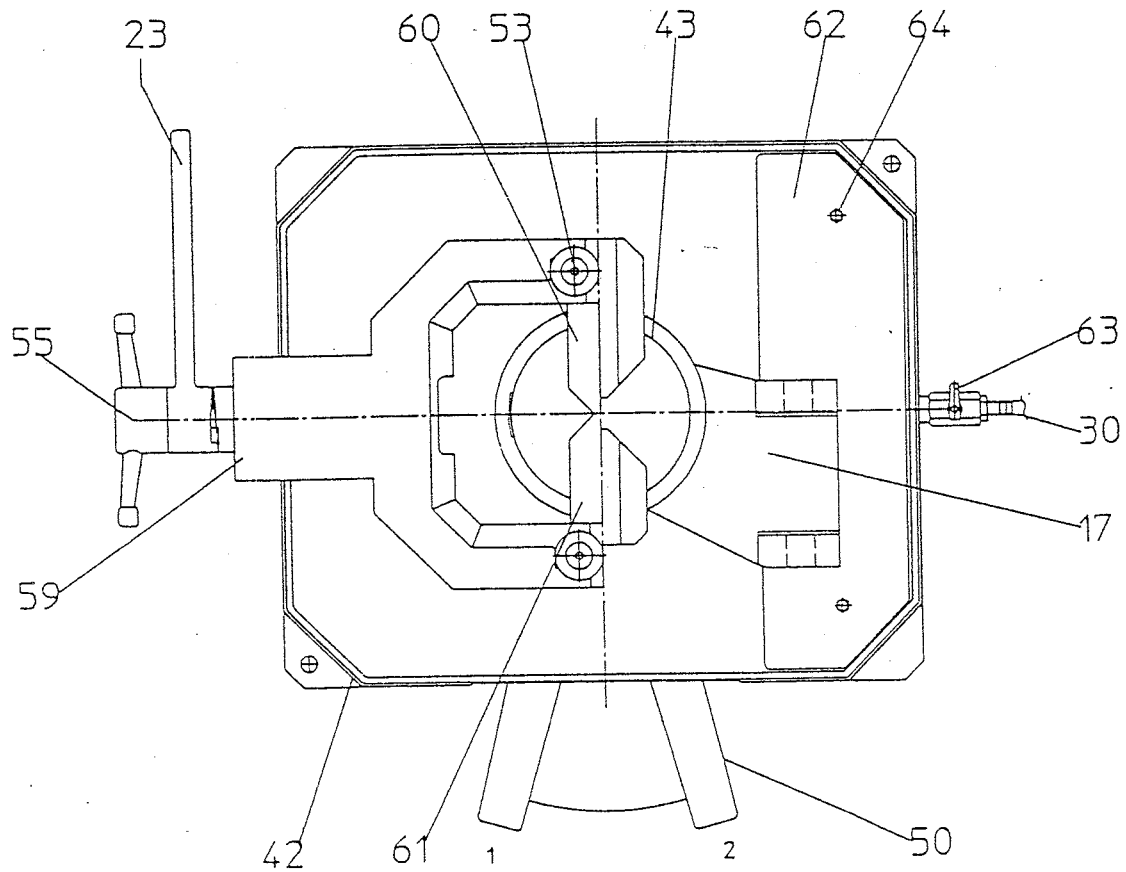


Dis. 6

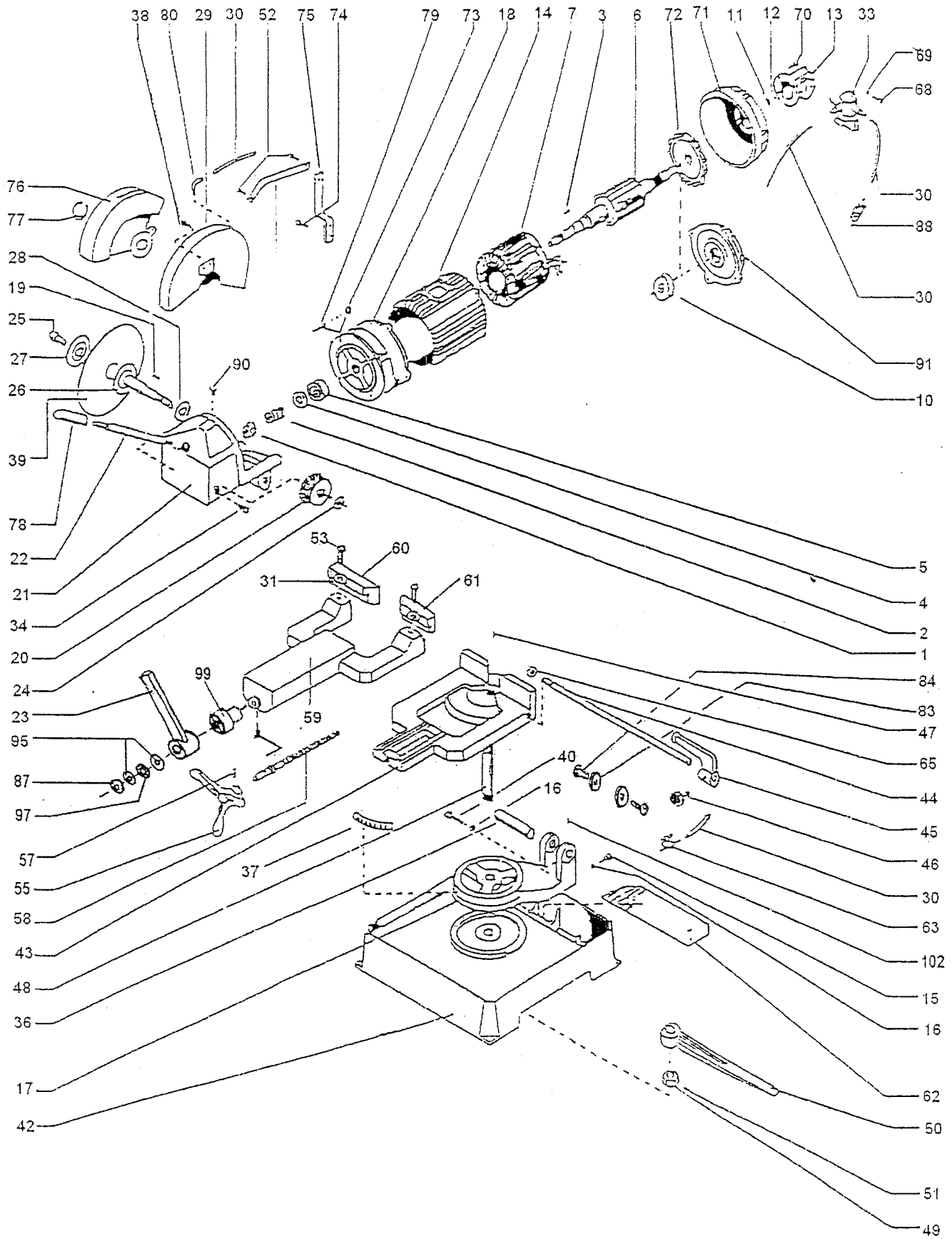
ALLEGATO 5



Dis. 7



Dis. 8



ALLEGATO 7