JEPSON POWER® GERMANY
Leading Through Innovation

Magnetic Drilling Machine

MAGPRO 60/2S

MAGPRO 60M20

OPERATOR'S MANUAL

JEPSON POWER GMBH
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CONTENTS OF THE MANUAL

	List of Contents with Magnetic Drill Unit	Check List
1	Operator's Manual	YES/NO
2	Coolant Bottle	YES/NO
3	Arbor—MT2(3/4" bore)	YES/NO
4	Pilot Pin of 6.35 dia. for cutting 1" depth	YES/NO
5	Pilot Pin of 6.35 dia. for cutting 2" depth	YES/NO
6	6 mm Hexagon Key	YES/NO
7	Drill drift	YES/NO

EC Declaration of Conformity
according to EC Machinery Directive 2006/42/EC

We, Jepson Power GmbH Ernst-Abbe-Straße 5 – 52249 Eschweiler Germany, declare under our sole responsibility that the product.

Product: Electromagnetic Drilling Machine
Type Designation(s): MAGPRO 60/2S – MAGPRO 60M20
Serial No.: can be found on the machine
Year of Manufacture: 2023

to which this declaration relates is in conformity with the following standard(s) or other normative document(s);

EN ISO12100 (2010)	Safety of machinery - General principles for design – Risk assessment and risk reduction
EN60204-1/A1 (2009)	Safety of machinery - Electrical equipment of machines - Part 1: General requirements

following the provisions of Directive(s);

2006/42/EC Directive on the approximation of the laws of Member States relating to machinery (OJ L157 Jun, 9, 2006)

2006/95/EC Directive on the laws of Member States relating to electrical equipment designed for use with certain voltage limits (OJ L374 27.12.2006)

Pierre Michiels, Managing Director
Name, Position

Eschweiler, 01.02.2024

[1] SPECIFICATIONS OF JEPSON POWER MAGNETIC DRILLING MACHINE

Motor Unit		**MP60/2S**	**MP60M20**
Voltages		220/240V (100/110V), 50/60Hz	
Power (input)		1,550 W	
Magnet Size		178 x 94 x 44 mm	
Magnet Force		15,300N (on 20 mm thick plate)	
Overall Dimensions (H x W x L)		620(430) x 200 x 260 mm	
Stroke		190 (240) mm	
RPM (No LOAD)		1st 240	240/190/140
		2nd 565	565/445/330
Net Weight		16.5 kg	
Packing Weight		25.0 kg	
Hole capa.	Drilling	23 mm	23 mm
	Cutting	60 mm	60 mm
	Tapping		M20

Maximum hand/arm vibration magnitude: 0.82 m/s²
(measured at handle during operation in accordance with ISO5349, using a 22 mm cutter through 13 mm MS plate).

Average noise level during cutting at operators ear position.: 90dB (A).

READ BEFORE USING THE MACHINE

[2] SAFETY PROCEDURES

- When using electrical tools, basic safety precautions should always be followed to reduce the risk of electric shock, fire, and personal injury.

- Do **NOT** use in wet or damp conditions. Failure to do so may result in personal injury.

- Do **NOT** use in the presence of flammable liquids or gases. Failure to do so may result in personal injury.

- ALWAYS SECURE THE MACHINE WITH THE SAFETY CHAIN WHEN WORKING VERTICALLY OR OVERHEAD BEFORE STARTING TO OPERATE.

- Always wear approved eye and ear protection when the equipment is in operation. Failure to do so may result in personal injury.

- Disconnect from the power source when changing cutters or working on the machine.
- When changing cutters, or removing swarf, ALWAYS wear approved gloves.

- ALWAYS ENSURE CUTTER RETAINING SCREWS ARE SECURE – they sometimes vibrate loose when the machine is in continuous use.

- Regularly clear the work area and machine of swarf and dirt, paying particular attention to the underside of the magnet base.

- With a gloved hand, and after switching off, remove any swarf which might have gathered around the cutter and arbor before proceeding with the next hole.

- Before operating the machine, always remove tie, rings, watches and any loose adornments which might entangle with the rotating machinery.

- Should the cutter become 'fast' in the workpiece, stop the motor immediately to prevent personal injury. Disconnect from the power source and turn arbor to and fro. DO NOT ATTEMPT TO FREE THE CUTTER BY SWITCHING THE MOTOR ON AND OFF.

- If the machine is accidentally dropped, always thoroughly examine the machine for signs of damage and check that it functions correctly before trying to drill a hole.

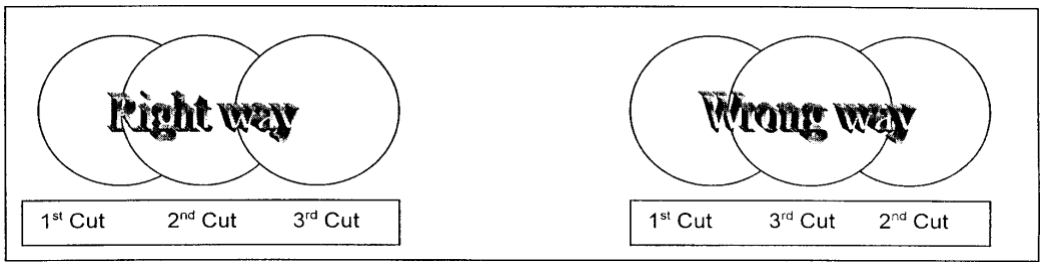
- Regularly inspect the machine and check that nuts and screws are tight.

- Always ensure when using the machine in an inverted position that only the minimum amount of coolant is used and that care is taken to ensure that coolant does not drip on to the motor unit.

- On completion of the cut, a slug will be ejected. DO NOT operate the machine if the ejected slug may cause injury.

[3] OPERATING INSTRUCTIONS

- Keep the inside of the cutter clear of swarf. It restricts the operating depth ofthe cutter.
- Ensure that the coolant bottle contains sufficient cutting oil to complete therequired operating duration. Refill as required.
- Occasionally depress the pilot to ensure cutting fluid is being correctly metered.
- To start the machine, first switch on the magnet. And then start the motor bydepressing the GREEN start button.
- Apply light pressure when commencing to cut a hole until the cutter is introduced into the work surface. Excessive pressure is undesirable, it does notincrease the speed of penetration.
- Always ensure that the slug has been ejected from the previous hole beforecommencing to cut the next.



(Right) (Wrong)

- Always cut overlapping holes as illustrated above –do not use excessive pressureand ensure cutting fluid is reaching teeth of the cutter.
- If the slug sticks in the cutter, move the machine to a flat surface, switch on the magnet and gently bring the cutter down to make contact with the surface.This will usually straighten a cocked slug and allow it to eject normally.
- Cutter breakage is usually caused by insecure anchorage and a loosely fittingslide.(Refer to routine maintenance instructions).

[4] EXTENSION CABLE SELECTION

The machines are factory fitted with a 2 metre length of cable having three conductors 1.5mm² LIVE, NEUTRAL and EARTH.

If it becomes necessary to fit an extension cable from the power source, care must be taken in using a cable of adequate capacity. Failure to do so will result in a loss of traction by the magnet and a reduction of power from the motor.

Assuming a normal AC supply of the correct voltage, it is recommended that the following extension lengths shall not be exceeded:

Extension Cord	
Max. Length, M	Thickness of each Core, mm²
10	1.25
15	2.00
25	2.50

ALWAYS DISCONNECT THE MACHINE FROM THE POWER SOURCE WHEN CHANGING CUTTERS.

[5] REMEDIES FOR HOLE MAKING PROBLEMS

Problem	Cause	Remedy
1) Magnetic base won't hold effectively	Material being cut may be too thin for efficient holding of magnet	Attach an additional piece of metal under work-piece wheremagnet will be located, or mechanically clamp magneticbase to work-piece
	Swarf or dirt under magnet	Clean magnet
	Irregularity on magnet face or work-piece	Use extreme care, file only imperfections flush to surface
	Insufficient current goingto magnet during drilling cycle	Confirm power supply andoutput from control unit
2) Excessive drilling pressure required	Incorrectly re-sharpened, worn or chipped cutter	Re-sharpen or replace
	Gibs out of adjustment or lack of lubrication	Lubricate gib and/or adjust grub screws
	Swarf accumulated (packed) inside cutter	Clear cutter
	Incorrect speed selection	Select appropriate speed

Problem	Cause	Remedy
3) Excessive cutter breakage	Incorrectly resharpened, worn or chipped cutter	Remove cutter, clean part thoroughly and replace
	The concentricity of the machine spindle is not accurate	**Adjust the concentricity of machine**
	Slide-ways need adjustment	Tighten slide-way
	Cutter not attachedtightly to arbor	Retighten
	Insufficient use of cutting oil or unsuitable type of oil	Fill arbor with an oil of light viscosity and check to be sureoil is being metered into cutter when pilot is depressed
	Incorrect speed selection	Select appropriate speed
4) Slide base easily slips or drops.	Gibs out of adjustment	Tighten handle adjustment bolt. Adjust the gib more tightened
5) Arbor tang broken easily	The coupling of the arbor and spindle is not accurately formed	After removing the arbor, reassemble it and verify that the arbor does not move
6) Machine doesn't run after the jump	Switch contact undesirable	Repair and change switch
	Brush and commutator poor contact	Repair or replace the electric brush
	Armature or stator coil burn out	Repair or replace the armature or stator
	Pcb is down or Fuse is tripped	Repair or replace the pcb, Replace the fuse

[6] MOUNTING OF CUTTERS

The machine has normal MT2 shank, 3/4" Bore.

The following procedure is to be used when mounting cutters.

- Take appropriate pilot and place through hole in shank of cutter.
- Insert shank of cutter into 3/4" dia. bore of arbor, ensuring alignment of two drive flats with socket screws.
- Tighten both screws using hexagon key.

[7] SPEED SELECTION—Speed Adjustable with volume switch

1. Method of Gear Change

The machines are equipped with a mechanical four-speed gearbox.

Please just turn the lever to the right or left to change gear.

It is not necessary to set the gear in neutral to change gear. (patented)

2. Gear Selection

	MP60/2S	MP60M20
	**1st 240**	**240/190/140**
	**2nd 565**	**565/445/330**

--NO LOAD RPM of each gear--

[9] CIRCUIT

1. MP60/2S

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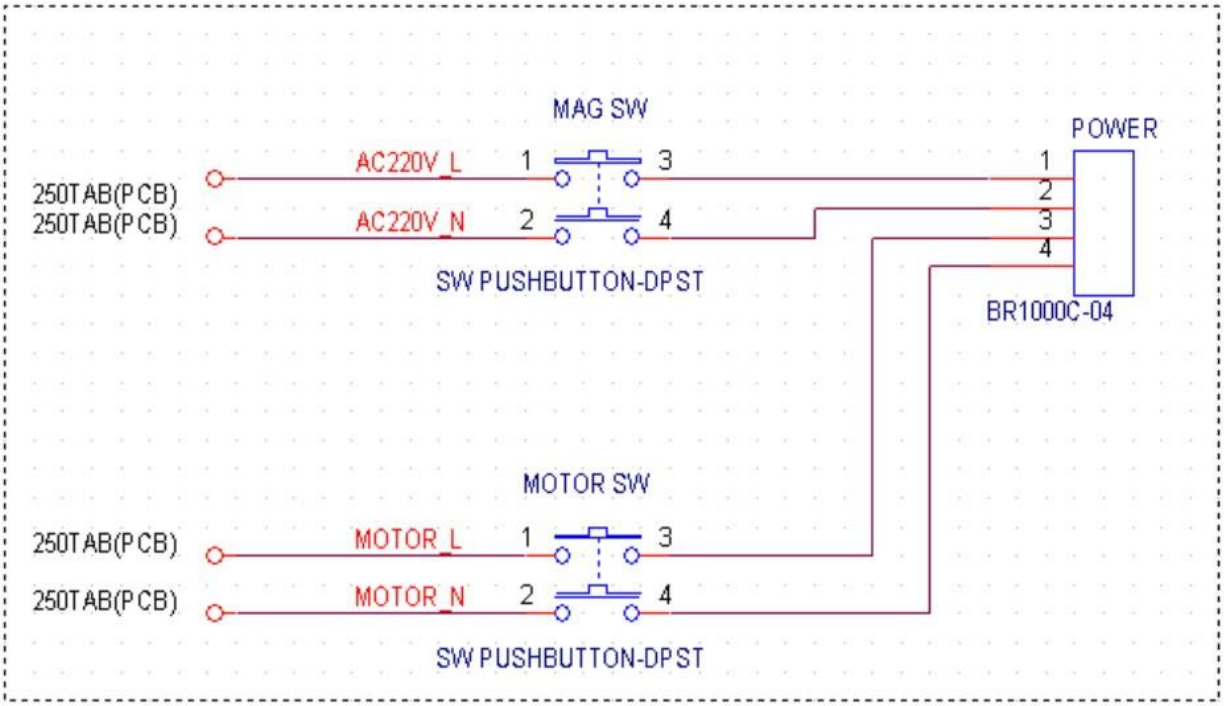
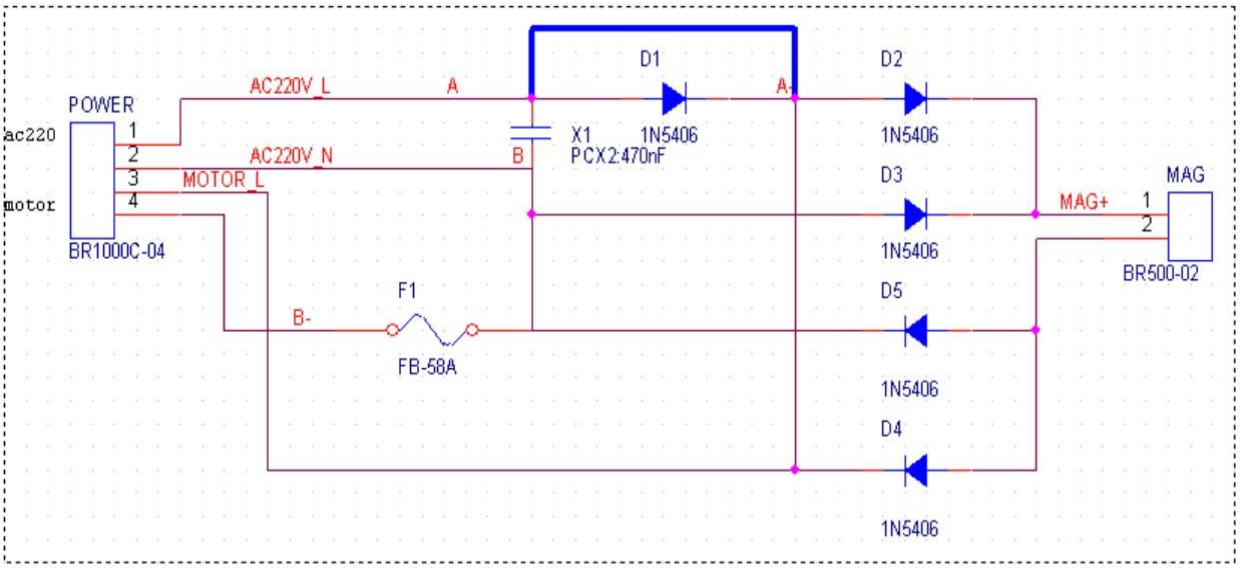
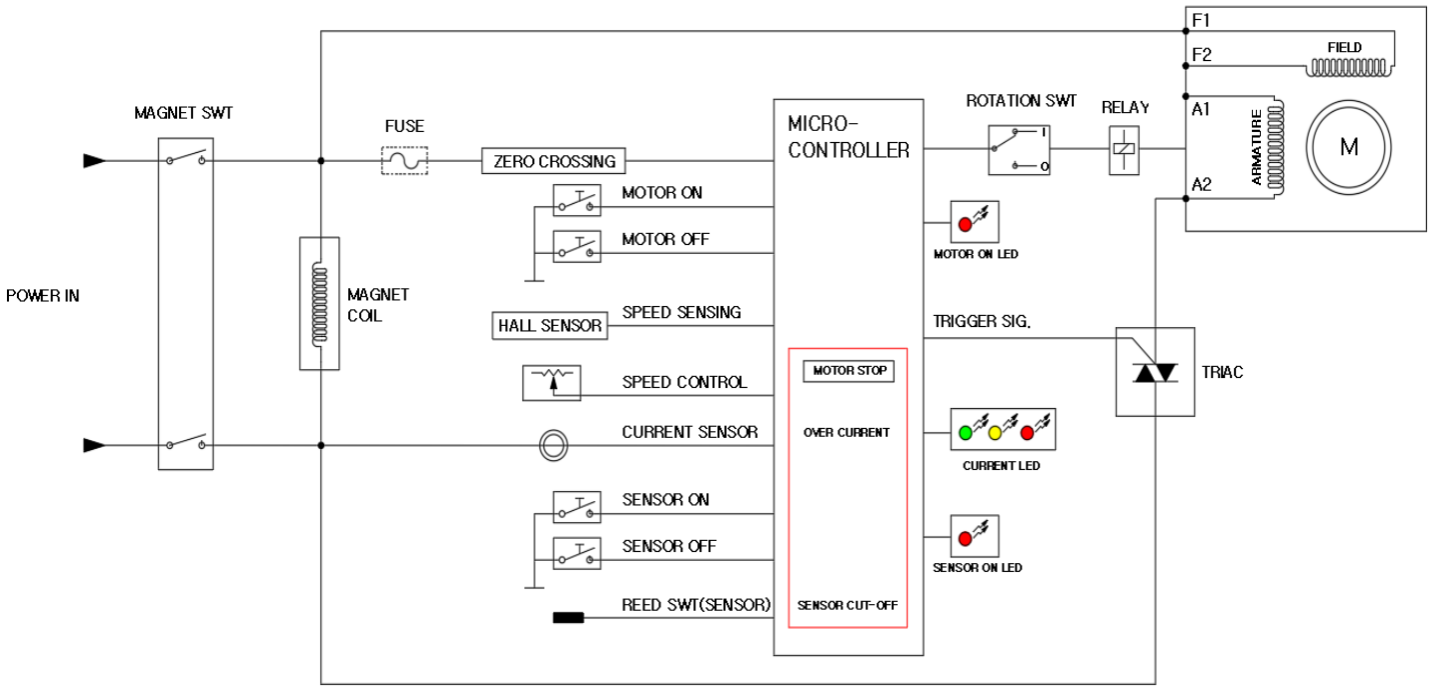
CABLE



PCB



2. MP60M20



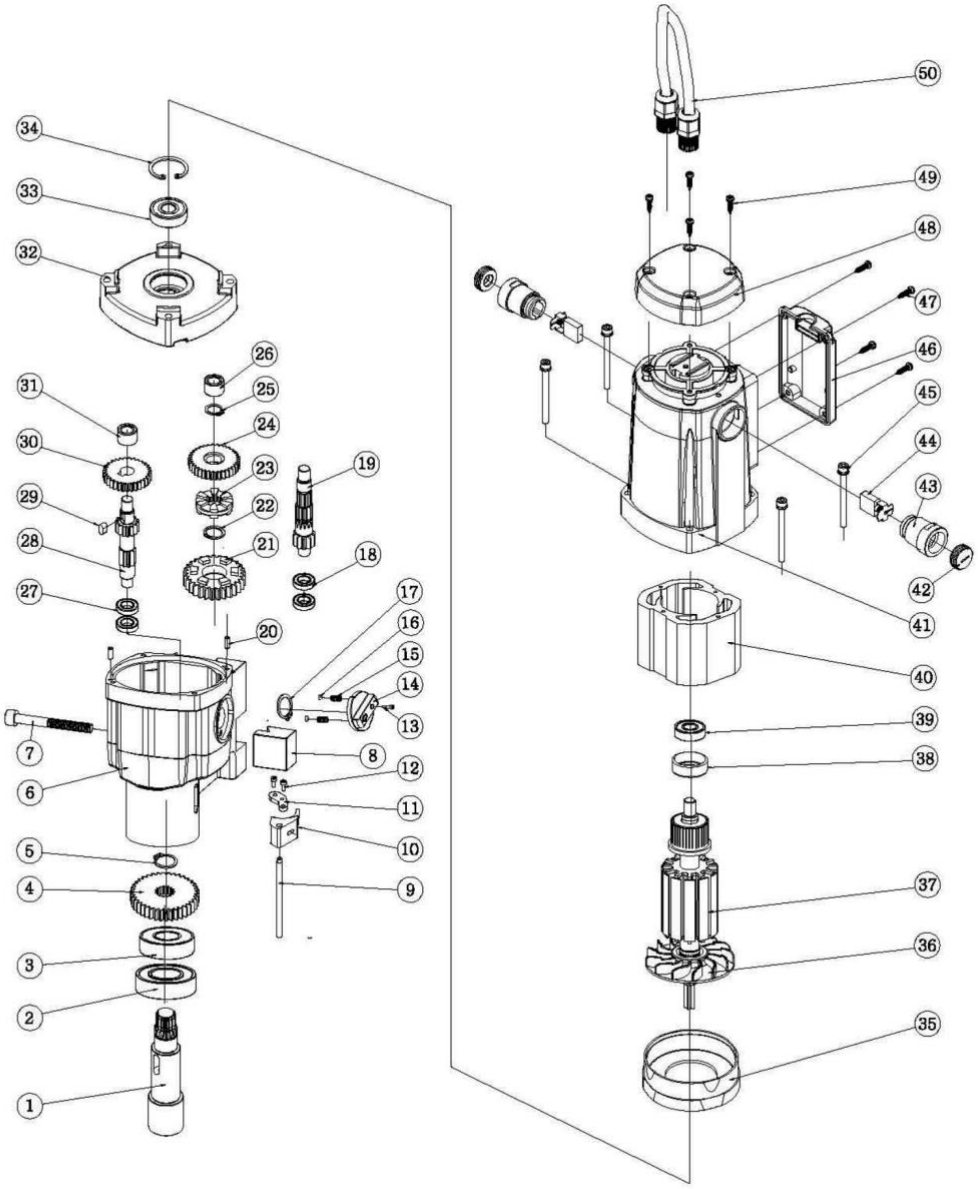
WARNING – THIS APPLICATION MUST BE EARTHED!

Insulation Resistance Test

With the magnet switch in the ON position, apply a voltage of 1.5kv between the live connection on the mains plug and the frame of the machine for a duration of 7 Sections. The reading obtained should not fall below infinity. Should a fault be indicated, it must be found and rectified.

[10] PART LIST

[PART A]

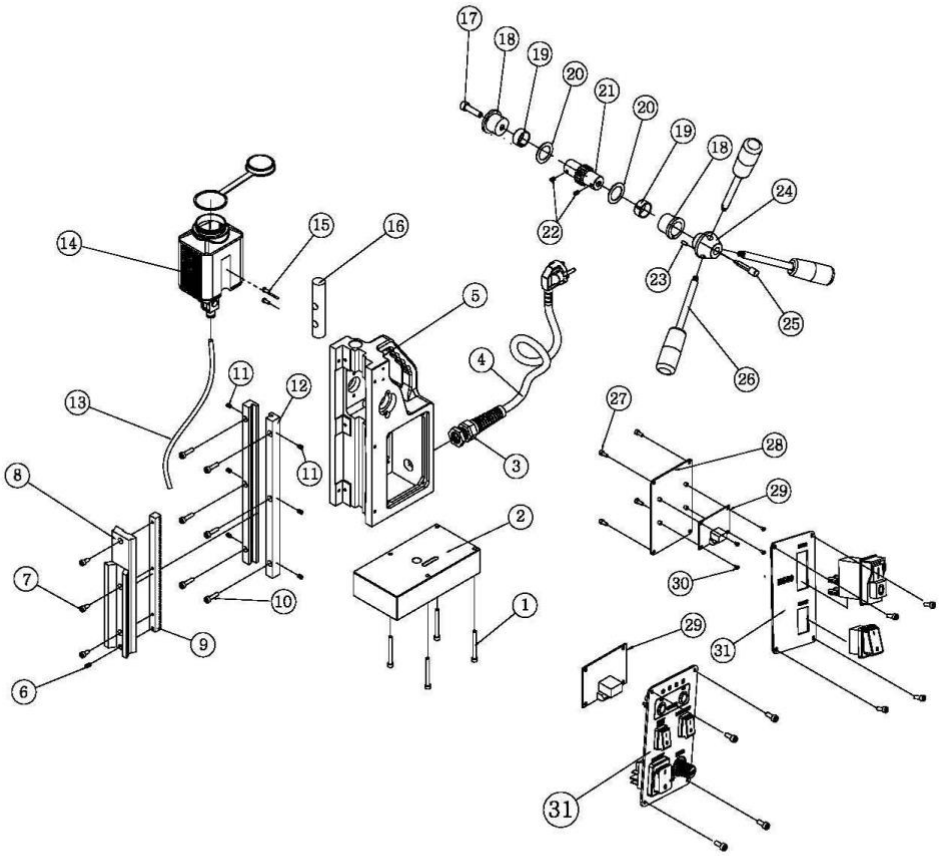


NO	PART NO.	PART NAME	Q'ty
1	A01	SPINDLE	1
2	A02	BALL BEARING, 6205 ZZ	1
3	A03	BALL BEARING, 6204 2RS	1
4	A04	MAIN GEAR	1
5	A05	SNAP RING, STWN17	1
6	A06	GEAR BOX	1
7	A07	HEX WRENCH BOLT, M8*55L	1

8	A08	DOVETAIL GIB	1
NO	**PART NO.**	**PART NAME**	**Q'ty**
9	A09	GUIDE PIN , Ø7*56L	1
10	A10	SECOND GEAR CHANGER	1
11	A11	GUIDE BRACKET	1
12	A12	HEX WRENCH BOLT M4 x 10L	2
13	A13	PIN, Ø3*11L	1
14	A14	GEAR CHANGE KNOB	1
15	A15	KNOB SPRING	2
16	A16	BALL, Ø5	2
17	A17	SNAP RING, STEN18	1
18	A18	BALL BEARING, 6800ZZC3	2
19	A19	SECOND PINION	1
20	A20	PIN, Ø4*10L	1
21	A21	SECOND GEAR-L	2
22	A22	SNAP RING, ISTW15	2
23	A23	SECOND CLUTCH	1
24	A24	SECOND GEAR-H	1
25	A25	SNAP RING, STWN12	1
26	A26	NEEDLE BEARING, NK1012	1
27	A27	BALL BEARING, 6800ZZC3	2
28	A28	FIRST PINION	1
29	A29	KEY 5*5*8L	1
30	A30	FIRST GEAR	1
31	A31	NEEDLE BEARING, NK1012	1
32	A32	INNER COVER	1
33	A33	BALL BEARING, 6201 2RSC3	1
34	A34	SNAP RING R32	1
35	A35	FAN GUIDE	1
36	A36	FAN	1
37	A37	ARMATURE ASS'Y	1
38	A38	RUBBER BUSHING	1
39	A39	BALL BEARING, 6000 ZZC3	1
40	A40	STATOR ASS'Y	1

NO	PART NO.	PART NAME	Q'ty
41	A41	MOTOR HOUSING	1
42	A42	CARBON CAP	2
43	A43	CARBON HOLDER	2
44	A44	CARBON BRUSH ASS'Y	2
45	A45	HEX WRENCH BOLT, M5*50L	4
46	A46	WIRE COVER	1
47	A47	TAPPING SCREW, M4*15L	4
48	A48	HOUSING CAP	1
49	A49	TAPPING SCREW, M4*25L	4
50	A50	CABLE ASSY	1

[PART B]



MP60/2S PART B			
NO	**PART NO.**	**PART NAME**	**Q'ty**
1	B01	HEX WRENCH BOLT, M5*50L	1
2	B02	ELECTROMAGNET ASS'Y	1
3	B03	CABLE GRAND, B-PG13.5	1
4	B04	CABLE	1
5	B05	MAIN FRAME	1
6	B06	CABLE SET SCREW, M5*12L	6
7	B07	HEX WRENCH BOLT, M5*10L	3
8	B08	DOVETAIL SLIDE	1
9	B09	RACK GEAR	1

10	B10	HEX WRENCH BOLT, M5*20L	6
NO	**PART NO.**	**PART NAME**	**Q'ty**
11	B11	SET SCREW, M5*12L	6
12	B12	DOVETAIL GUIDE	2
13	B13	COOLANT HOSE, Ø 6mm	1
14	B14	COOLANT TANK(WITH VALVE)	1
15	B15	HEX-WRENCH BOLT M4 x 10L	2
16	B16	TANK BRACKET	1
17	B17	HANDLE TIGHTENING BOLT(M8 *50L)	1
18	B18	REAR CAP	2
19	B19	DU BUSHING DU2212	2
20	B20	DISK SPRING Ø28*1.8T	2
21	B21	HANDLE PINION	1
22	B22	HEADLESS WRENCH BOLT , M5*5L	2
23	B23	LOCK PIN Ø5*10L	1
24	B24	HANDLE CAP	1
25	B25	HANDLE TIGHTENING BOLT(M8 *60L)	1
26	B26	HANDLE	3
27	B27	HEX WRENCH BOLT M4*10L	8
28	B28	WIRING PANEL	1
29	B29	PCB (MP60/2S)	1
		PCB (MP60M20)	1
30	B30	ROUND HEAD SCREW M3*5L	4
31	B31	CONTROL PANEL WITH SWITCHES (MP60/2S)	1
		CONTROL PANEL WITH SWITCHES (MP60M20)	1