

Magnetic Drilling Machine

MAGPRO 40/1S

MAGPRO 40/1S ADJUST SWIVEL OPERATOR'S MANUAL



JEPSON POWER GMBH
ERNST-ABBE-STRASSE 5
D-52249 ESCHWEILER

Tel: (+49) (0) 2403 64 55 0
E-mail: info@jepson.de
Website: www.drycutter.com

CONTENTS OF THE £££MANUAL

| | | Page |
|-----|---|------|
| [1] | SPECIFICATIONS OF JEPSON POWER MAGNETIC DRILLING MACHINE | 5 |
| [2] | SAFETY PROCEDURES | 6 |
| [3] | OPERATING INSTRUCTIONS | 8 |
| [4] | EXTENSION CABLE SELECTION | 9 |
| [5] | MOUNTING OF CUTTERS | 10 |
| [6] | REMEDIES FOR HOLE MAKING PROBLEMS | 11 |
| [7] | CIRCUIT | 13 |
| [8] | PART LIST | 14 |

| | List of Contents with Magnetic Drill Unit | Check List |
|---|---|---------------|
| 1 | Operator's Manual | YES/NO |
| 2 | Coolant Bottle | YES/NO |
| 3 | Pilot Pin for 25 mm cutters | YES/NO |
| 4 | Pilot Pin for 50 mm cutters | YES/NO |
| 5 | 5 mm Hexagon Key | YES/NO |
| 6 | 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);

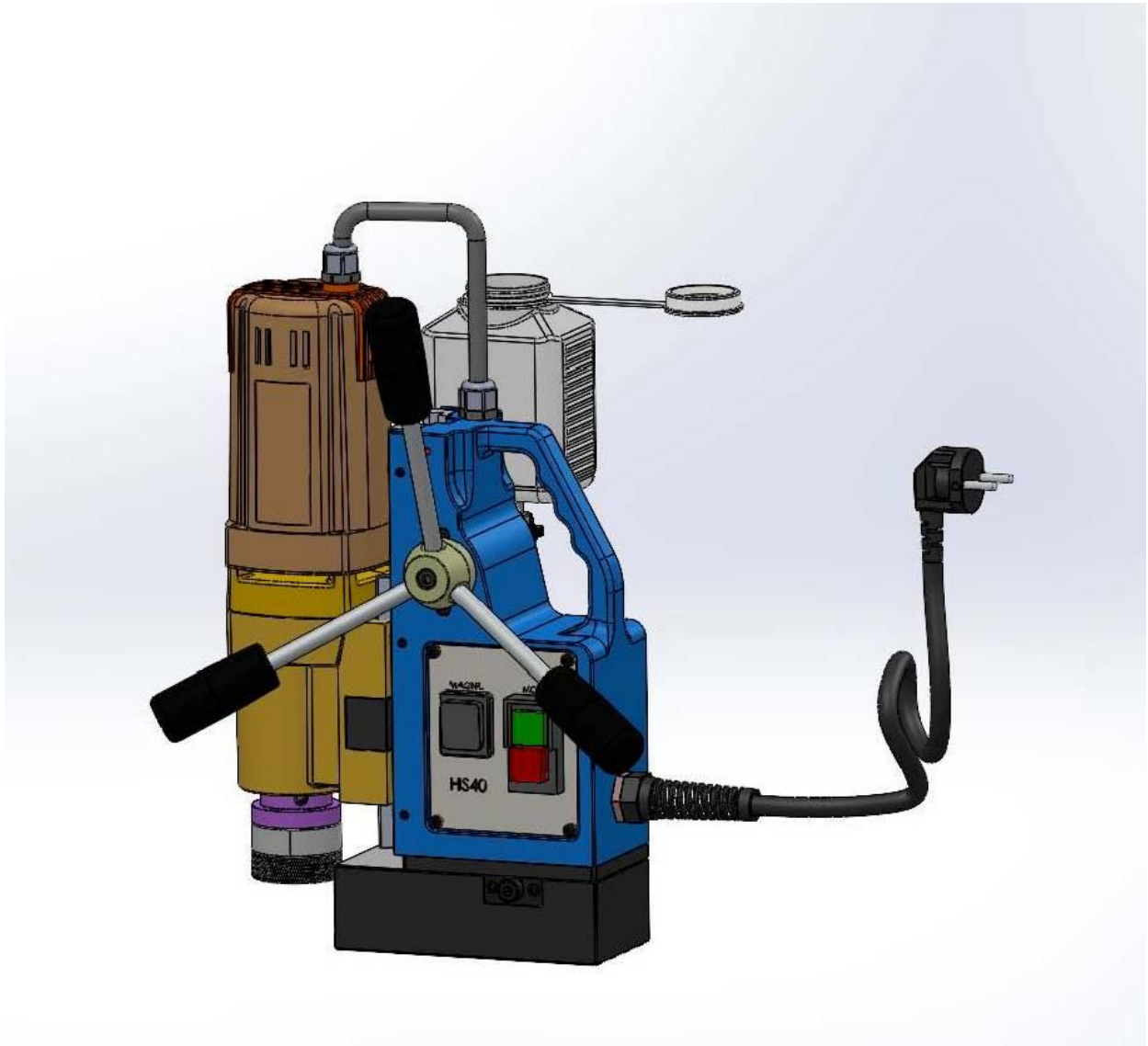
2006/42/EC Directive on the approximation of the laws of Member States relating to
machinery (OJ L157 Jun, 9, 2006)

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)

A blue ink handwritten signature, appearing to be 'Pierre Michiels', written over a horizontal line.

Pierre Michiels, Managing Director
Name, Position

Eschweiler, 01.02.2023



MP40/1S

[40/1S ADJUST SWIVEL]

1. SPECIFICATIONS OF JEPSON POWER MAGNETIC DRILLING MACHINE

[MODEL 40/1S ADJUST SWIVEL]

| Motor Unit | | |
|---------------------------------------|------------------------------|-------|
| Voltages | 220/240V (100/110V), 50/60Hz | |
| Power (input) | 1,150 W | |
| Magnet Size | 155 x 78 x 45 mm | |
| Magnet Force | 420kgf at drilling point | |
| Overall Dimensions (H x W x L) | 485 (345) x 170 x 230 mm | |
| Stroke | 140 mm | |
| RPM (No LOAD) | 480 | |
| Net Weight | 12.0 kgs | |
| Packing Weight | | |
| Hole capa. | Drilling | 13 mm |
| | Cutting | 40 mm |

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.

READ BEFORE USING THE MACHINE

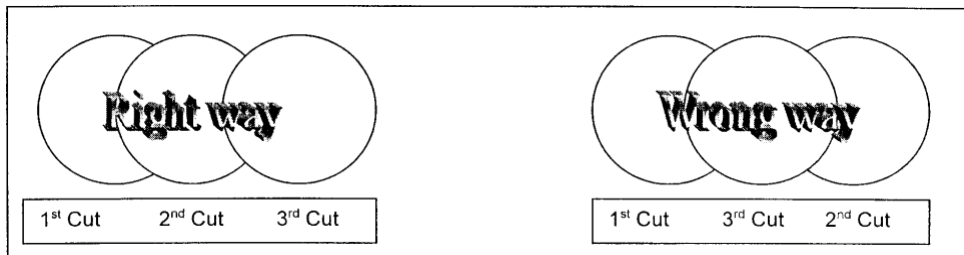
2. SAFETY PROCEDURES

- 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 of the cutter.
- Ensure that the coolant bottle contains sufficient cutting oil to complete the required 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 by depressing 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 not increase the speed of penetration.
- Always ensure that the slug has been ejected from the previous hole before commencing to cut the next.



(Right)

(Wrong)

- Always cut overlapping holes as illustrated above – do not use excessive pressure and 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 fitting slide. (Refer to routine maintenance instructions).

4. EXTENSION CABLE SELECTION

The machines are factory fitted with a 2 meter 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, mm ² |
| 10 | 1.25 |
| 15 | 2.00 |
| 25 | 2.50 |

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

5. MOUNTING OF CUTTERS

The machine has normal weldon shank, 3/4".

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.

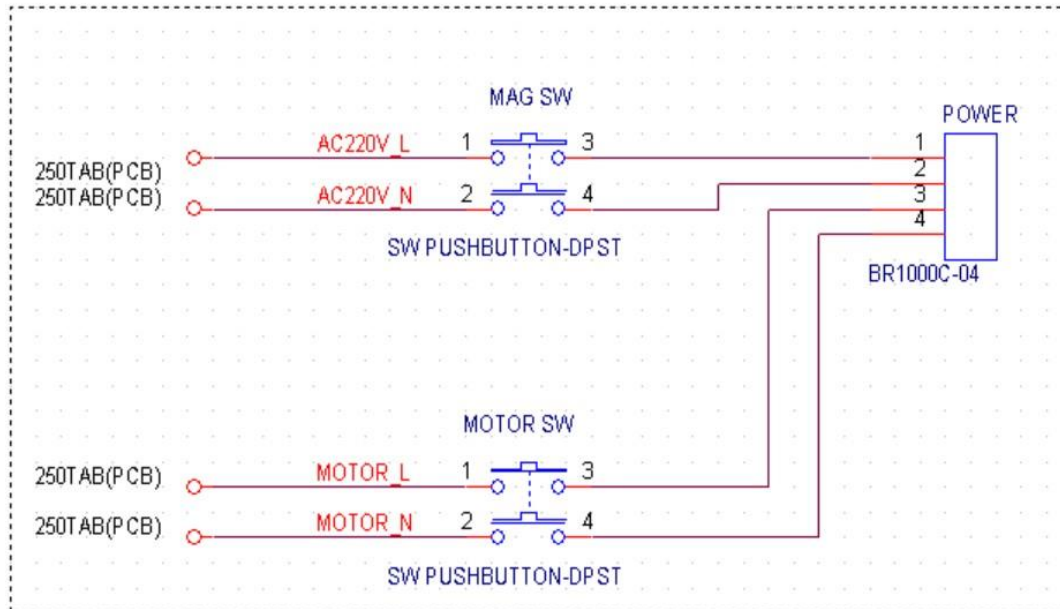
6. REMEDIES FOR HOLE MAKING PROBLEMS

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

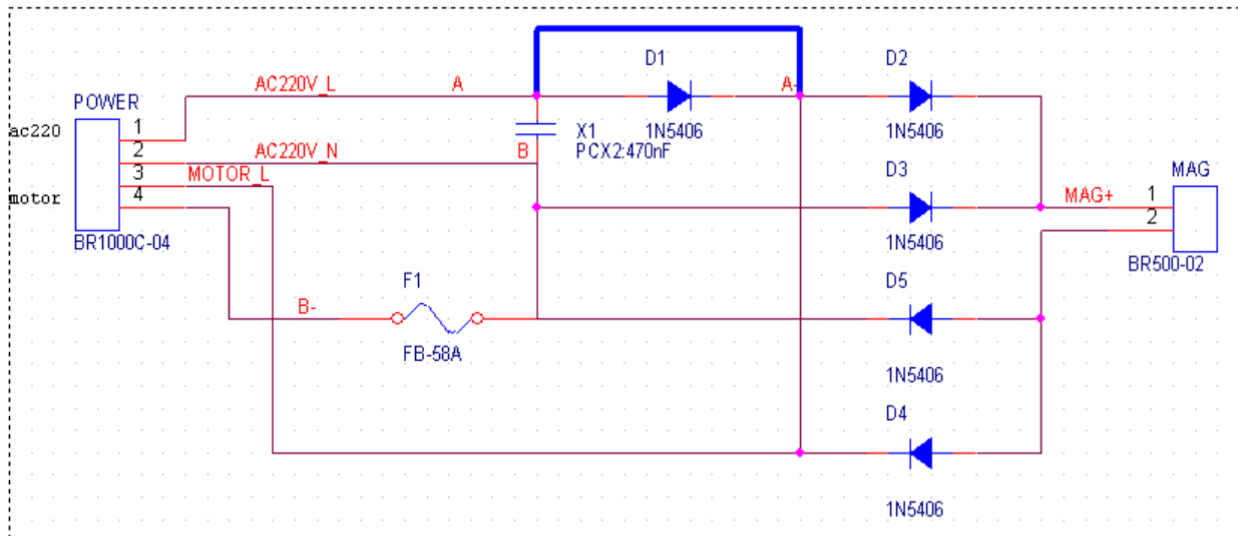
| Problem | Cause | Remedy |
|---------------------------------------|---|---|
| 3) Excessive cutter breakage | <p>Incorrectly resharpened, worn or chipped cutter</p> <p>The concentricity of the machine spindle is not accurate.</p> <p>Slide-ways need adjustment</p> <p>Cutter not attached tightly to arbor</p> <p>Insufficient use of cutting oil or unsuitable type of oil</p> <p>Incorrect speed selection</p> | <p>Remove cutter, clean part thoroughly and replace</p> <p>Adjust the concentricity of machine.</p> <p>Tighten slide-way</p> <p>Retighten</p> <p>Fill arbor with an oil of light viscosity and check to be sure oil is being metered into cutter when pilot is depressed</p> <p>Select appropriate speed</p> |
| 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 | <p>Switch contact undesirable</p> <p>Brush and commutator poor contact</p> <p>Armature or stator coil burn out</p> <p>Pcb is down or Fuse is tripped</p> | <p>Repair and change switch</p> <p>Repair or replace the electric brush</p> <p>Repair or replace the armature or stator</p> <p>Repair or replace the pcb, Replace the fuse</p> |

7. CIRCUIT

CABLE



PCB



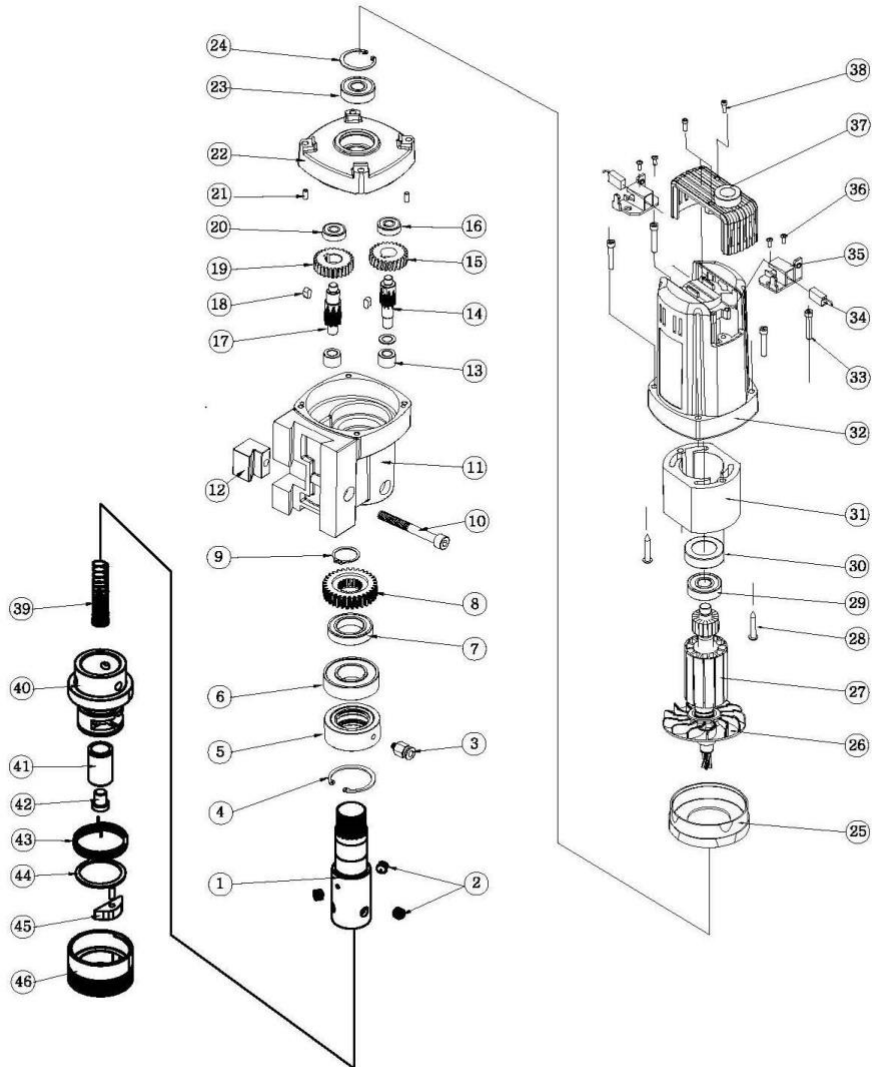
WARNING - THIS APPLIANCE MUST BE EARTHED!

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 seconds. The reading obtained should not fall below infinity. Should a fault be indicated, **it must be found and rectified.**

8. PART LIST

PART LIST 1

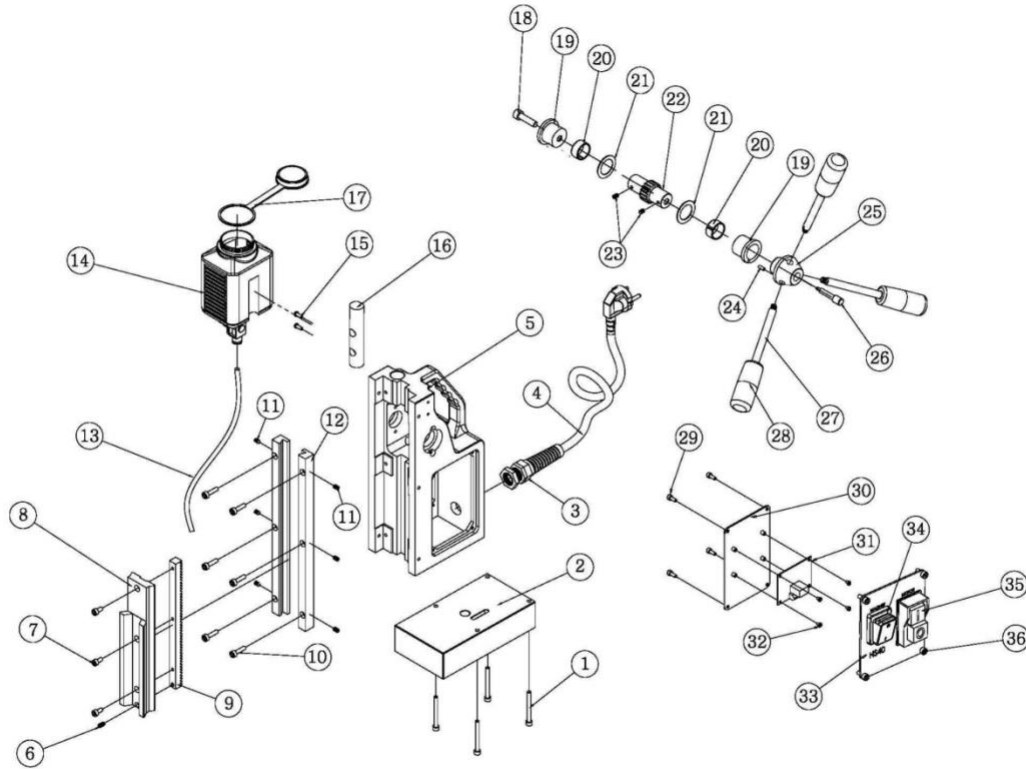


| MP40/1S PART1 | | | |
|----------------------|-----------------|-----------------------------|-------------|
| NO | PART NO. | PART NAME | Q'ty |
| 1 | A01 | KEYLESS SPINDLE | 1 |
| 2 | A02 | SOCKET SET SCREW, M8-L8 | 3 |
| 3 | A03 | NIPPLE 1/8*8 (M6*1.0 Pitch) | 1 |
| 4 | A04 | SNAP RING STW-25 | 1 |
| 5 | A05 | RETAINER ASS'Y | 1 |

| NO | PART NO. | PART NAME | Q'ty |
|----|----------|------------------------------|------|
| 6 | A06 | BALL BEARING NTN6205ZZ | 1 |
| 7 | A07 | BALL BEARING NSK6905DD | 1 |
| 8 | A08 | MAIN GEAR | 1 |
| 9 | A09 | SNAP RING STW-21` | 1 |
| 10 | A10 | WRENCH BOLT M8*55L | 1 |
| 11 | A11 | GEAR BOX | 1 |
| 12 | A12 | DOVETAIL GIB | 1 |
| 13 | A13 | NEEDLE BEARING NK0912 | 2 |
| 14 | A14 | FIRST PINION | 1 |
| 15 | A15 | FIRST GEAR | 1 |
| 16 | A16 | BALL BEARING 608 | 2 |
| 17 | A17 | SECOND PINION | 1 |
| 18 | A18 | KEY 5*5*10*2R HEX | 2 |
| 19 | A19 | SECOND GEAR | 1 |
| 20 | A20 | BALL BEARING | 1 |
| 21 | A21 | GUIDE PIN Φ 4 | 2 |
| 22 | A22 | INNER COVER | 1 |
| 23 | A23 | BALL BEARING NSK6201DD | 1 |
| 24 | A24 | SNAP RING RTW-32 | 1 |
| 25 | A25 | FAN GUIDE | 1 |
| 26 | A26 | FAN | 1 |
| 27 | A27 | ARMATURE ASS'Y | 1 |
| 28 | A28 | TRUSS HEAD SCREW T5-L70 | 2 |
| 29 | A29 | BALL BEARING KBC6000ZZ | 1 |
| 30 | A30 | RUBBER BUSHING | 1 |
| 31 | A31 | STATOR | 1 |
| 32 | A32 | HOUSING | 1 |
| 33 | A33 | HEX SOCKET HEAD SCREW M5-L60 | 4 |
| 34 | A34 | CARBON BRUSH | 2 |
| 35 | A35 | CARBON BRUSH HOLDER | 2 |
| 36 | A36 | PAN HEAD SCREW M3-L14 | 4 |
| 37 | A37 | HOUSING CAP | 1 |
| 38 | A38 | HEX SOCKET HEAD SCREW M3-L10 | 2 |
| 39 | A39 | CHUCK SPINDLE SPRING | 1 |
| 40 | A40 | AUTO CHUCK SPINDLE | 1 |

| NO | PART NO. | PART NAME | Q'ty |
|-----------|-----------------|-------------------|-------------|
| 41 | A41 | SLIDE SPINDLE | 1 |
| 42 | A42 | SPRING END CAP | 1 |
| 43 | A43 | AUTO CHUCK SPRING | 1 |
| 44 | A44 | SNAP RING | 1 |
| 45 | A45 | LATCH | 1 |
| 46 | A46 | LATCH SHELL | 1 |

PART LIST 2



| 40/ 1S ADJUST SWIVEL PART 2 | | | |
|-----------------------------|----------|-------------------------|------|
| 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 |
| 11 | B11 | SET SCREW, M5*12L | 6 |
| 12 | B12 | DOVETAIL GUIDE | 2 |

| NO | PART NO. | PART NAME | Q'ty |
|-----------|-----------------|----------------------------------|-------------|
| 13 | B13 | COOLANT HOSE, Ø 6 mm | 1 |
| 14 | B14 | COOLANT TANK (WITH VALVE) | 1 |
| 15 | B15 | HEX-WRENCH BOLT M4 x 10L | 2 |
| 16 | B16 | TANK BRACKET | 1 |
| 17 | B17 | TANK CAP | 1 |
| 18 | B18 | HANDLE TIGHTENING BOLT (M8 *50L) | 1 |
| 19 | B19 | REAR CAP | 2 |
| 20 | B20 | DU BUSHING DU2212 | 2 |
| 21 | B21 | DISK SPRING Ø28*1.8T | 2 |
| 22 | B22 | HANDLE PINION | 1 |
| 23 | B23 | HEADLESS WRENCH BOLT, M5*5L | 2 |
| 24 | B24 | LOCK PIN Ø5*10L | 1 |
| 25 | B25 | HANDLE CAP | 1 |
| 26 | B26 | HANDLE TIGHTENING BOLT (M8 *60L) | 1 |
| 27 | B27 | HANDLE BAR | 3 |
| 28 | B28 | HANDLE | 3 |
| 29 | B29 | HEX WRENCH BOLT M4*10L | 8 |
| 30 | B30 | WIRING PANEL | 1 |
| 31 | B31 | PCB | 1 |
| 32 | B32 | ROUND HEAD SCREW M3*5L | 4 |
| 33 | B33 | CONTROL PANEL | 1 |
| 34 | B34 | ELECTROMAGNET SWITCH | 1 |
| 35 | B35 | MOTOR SWITCH | 1 |
| 36 | B36 | HEX WRENCH BOLT M4*10L | 8 |

