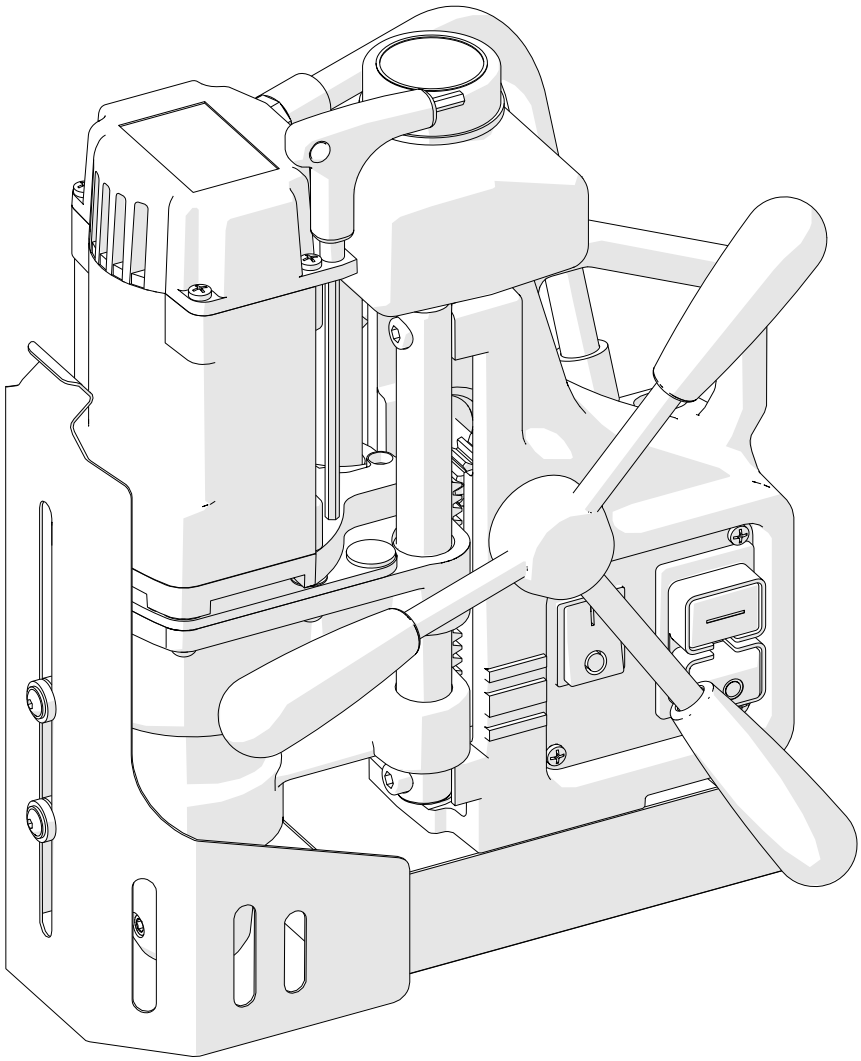
The tools of innovation.

OPERATOR'S MANUAL

DRILLING MACHINE
WITH ELECTROMAGNETIC BASE

D1



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Contents

1. GENERAL INFORMATION

1.1. Application

The D1 is a drilling machine designed to drill holes with diameters of up to 1.42” (36 mm) to a depth of up to 2” (51 mm) by using annular cutters.

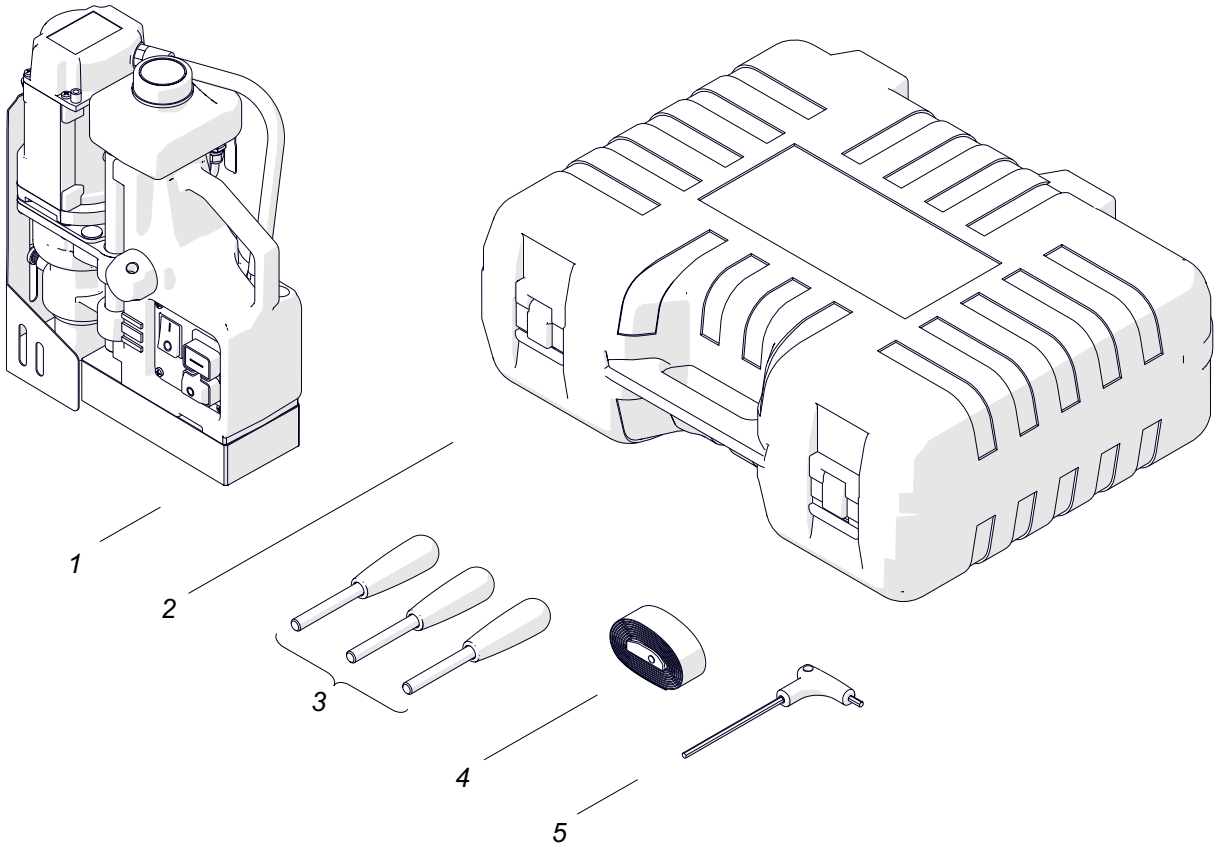
The electromagnetic base clamps the machine to ferromagnetic surfaces. This makes sure that the operator is safe and the machine works correctly. A safety strap protects the machine from falling in case of a clamping loss.

An optional vacuum pad allows you to clamp the machine to non-ferromagnetic surfaces.

1.2. Technical data

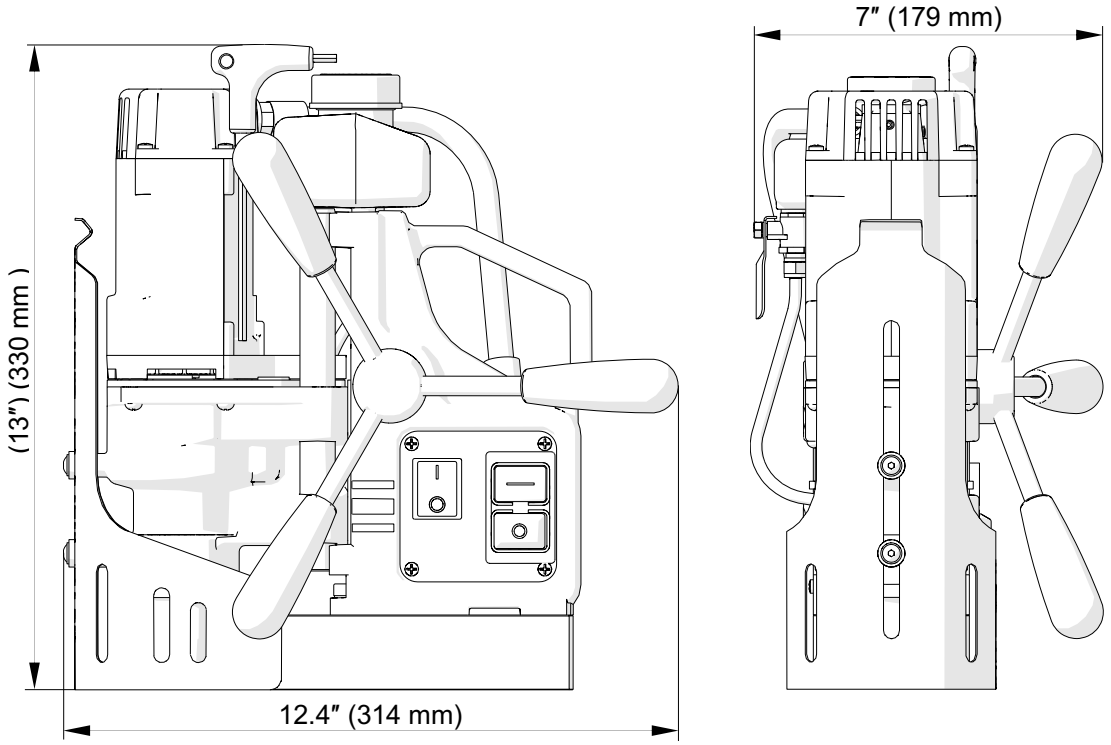
Voltage	1~ 110–120 V, 50–60 Hz 1~ 220–240 V, 50–60 Hz
Power	1020 W
Tool holder	3/4″ 19 mm Weldon
Maximum drilling diameter	1.42″ (36 mm)
Maximum drilling depth	2” (51 mm)
Clamping force (surface with the thickness of 25 mm and roughness R_a = 1.25)	9 000 N (2000 lbs)
Electromagnetic base dimensions	80 mm × 160 mm × 38 mm 3.1″ × 6.3″ × 1.5″
Stroke	2.76″ (70 mm)
Rotational speed with load	350 rpm
Minimum workpiece thickness	0.24″ (6 mm)
Protection class	I
Protection level	IP 20
Noise level	More than 85 dB
Required ambient temperature	32–104°F (0–40°C)
Weight	22 lbs (10 kg)

1.3. Equipment included

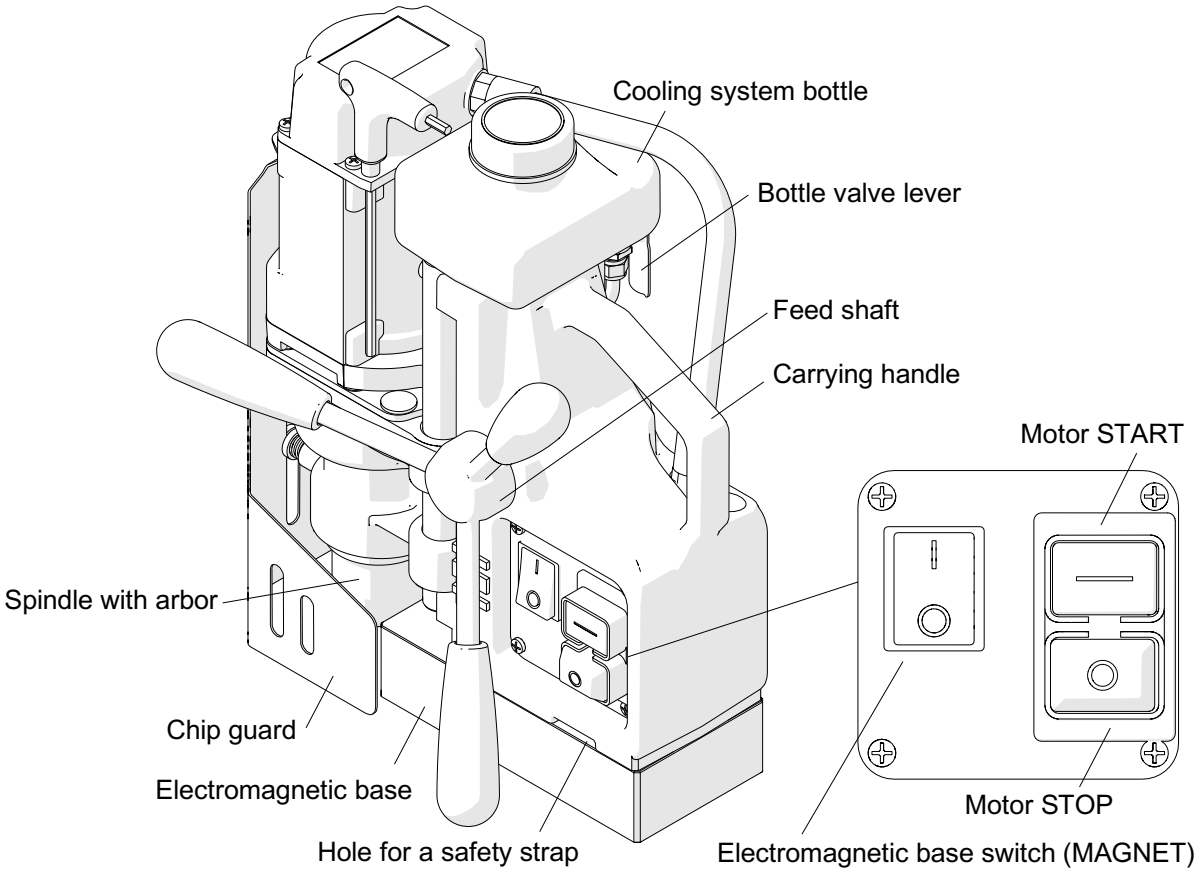


1	Drilling machine with a cooling system bottle and a chip guard	1 unit
2	Plastic box	1 unit
3	Handle	3 units
4	Safety strap	1 unit
5	4 mm hex wrench with a handle	1 unit
–	Operator’s manual	1 unit

1.4. Dimensions



1.5. Design



2. SAFETY PRECAUTIONS

1. Before use, read this operator's manual and complete a training in occupational safety and health.
2. Use only in applications specified in this operator's manual.
3. Make sure that the machine has all parts and they are genuine and not damaged.
4. Make sure that the specifications of the power source are the same as those specified on the rating plate.
5. Connect the machine to a correctly grounded power source. Protect the power source with a 16 A fuse for 230 V or a 32 A fuse for 115 V. If you are going to work on building sites, supply the machine through an isolation transformer with class II protection only.
6. Do not carry the machine by the power cord and do not pull the cord. This can cause damage and electric shock.
7. Set the MAGNET switch to 'O' before you move the machine. Use carrying handle to move the machine.
8. Keep untrained bystanders away from the machine.
9. Before each use, ensure the correct condition of the machine, power source, power cord, plug, control panel, and tools.
10. Before each use, make sure that no part is cracked or loose. Make sure to maintain correct conditions that can have an effect on the operation of the machine.
11. Keep the machine dry. Do not expose the machine to rain, snow, or frost.
12. Do not stay below the machine that is put at heights.
13. Keep the work area well-lit, clean, and free of obstacles.
14. Make sure that the tool is correctly attached. Remove wrenches from the work area before you connect the machine to the power source.
15. Do not use tools that are dull or damaged.
16. Unplug the power cord before you install and remove tools. Use protective gloves to install and remove tools.
17. Use annular cutters without the pilot pin only when you drill incomplete through holes.
18. Do not drill holes whose diameter or depth differ from those specified in the technical data.
19. Do not use in explosive environments or near flammable materials.

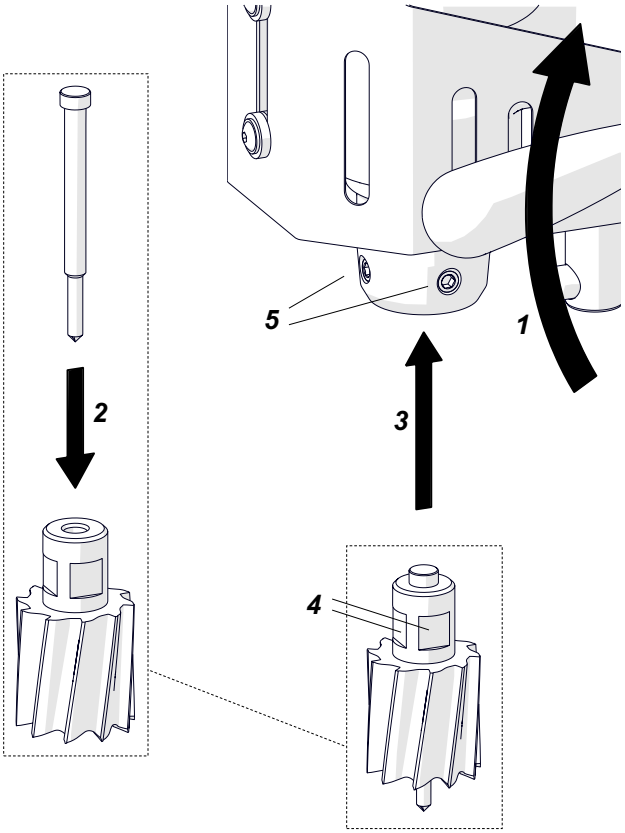
20. Do not use on surfaces that are rough, not flat, not rigid, or have rust, paint, chips, or dirt.
21. Use the safety strap to attach the machine to a stable structure. Put the strap through the hole in the machine body. In the horizontal position, attach the strap to the carrying handle. Do not put the strap into the buckle from the front.
22. Use eye and ear protection and protective clothing. The clothing must not be loose.
23. Be careful when drilling in plates thinner than 0.4″ (10 mm). The clamping force depends on plate thickness and is much lower for thin plates.
24. Each time before you put the machine on the workpiece, rub the workpiece with coarse-grained sandpaper. Make sure that the full bottom of the base touches the surface.
25. Do not touch chips or moving parts. Do not let anything catch in moving parts.
26. After use, clean the machine and the tool. Do not remove chips with bare hands.
27. Unplug the power cord before you do maintenance or install/remove parts.
28. Repair only in a service center appointed by the seller.
29. If the machine falls, is wet, or has any damage, stop the work and immediately send the machine to the service center for check and repair.
30. Do not leave the machine when it operates.
31. If you are not going to use the machine, remove the cutter and the pilot pin from the holder. Then, remove the machine from the work area and keep it in a safe and dry place.
32. If you are not going to use the machine for an extended period, put anti-corrosion material on the steel parts.

3. STARTUP AND OPERATION

3.1. Installing and removing the annular cutter

Unplug the power cord. Turn the handles to the right (*1*) to lift the motor. Use gloves to put the correct pilot pin into the cutter (*2*). Use a dry cloth to clean the spindle and the cutter. Put the cutter into the spindle (*3*) so that the flat surfaces (*4*) align with the screws (*5*). Use the 4 mm hex wrench to tighten the screws.

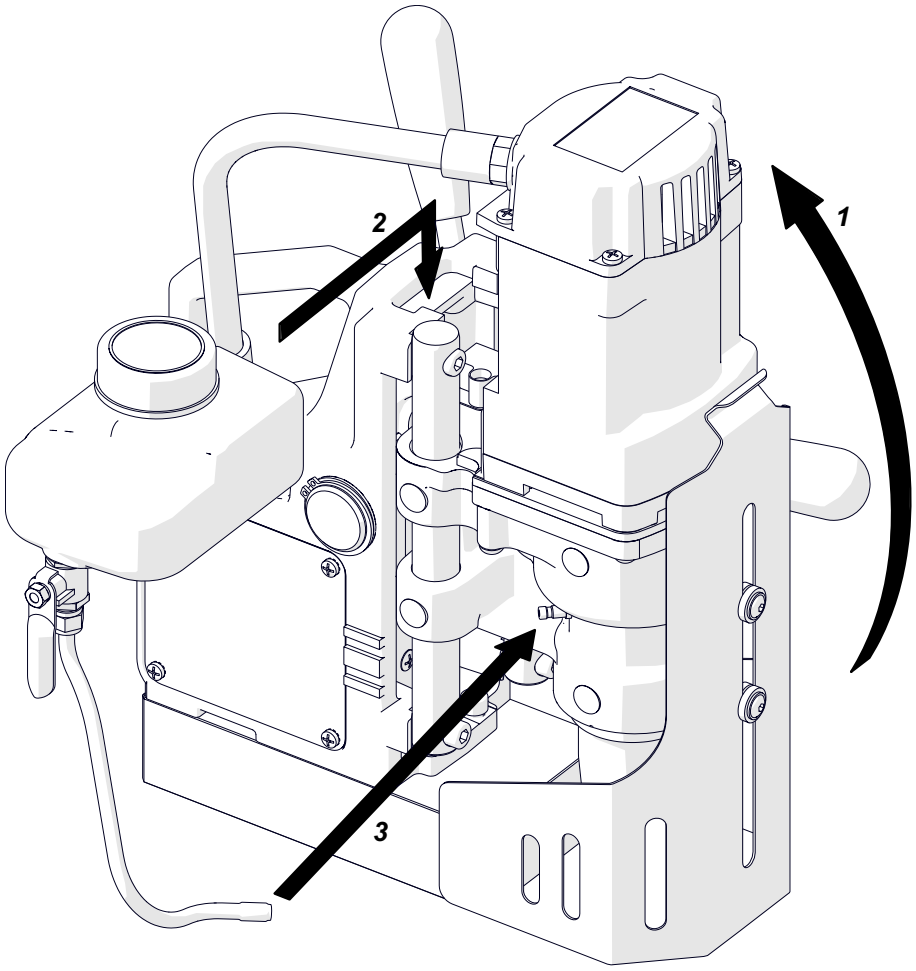
To remove the cutter, loosen the screws (*5*) with the 4 mm hex wrench.



3.2. Installing and removing the cooling system

Turn the handles to lift the motor (*1*). Put the bottle on the machine (*2*). Attach the hose to the fitting (*3*).

To remove the bottle, first detach the hose and lift the motor.



3.3. Monitoring system of the clamping force

The drilling machine has a system that monitors the clamping force of the electromagnetic base. The force will be lower if there is rust, paint, chips, or dirt. The force will be lower also if the surface is thin, rough, not flat, not rigid, the voltage is lower than required, or the bottom of the base is worn.

If the clamping force is too low, the system will not allow the machine to operate. Then, after you release the green MOTOR button, the motor stops. This occurs on a surface thinner than 0.2″ (5 mm). The clamping force is then only about 25% of the force that you can get on a flat plate that is 1″ (25 mm) thick. To drill on thin plates then, press and hold the green MOTOR button.

3.4. Preparing

Before use, clean steel parts, including the spindle, from anti-corrosion material used to preserve the machine for storage and transport.

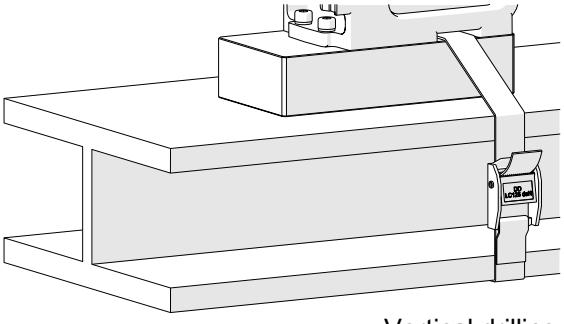
Attach the handles to the feed shaft. The machine can help the work of a left-handed person or in hard-to-reach places. To do this, install the feed shaft so that the handles are on the opposite side of the machine.

Select the cutter or drill bit that matches the required hole diameter. Use a dry cloth to clean the spindle and the cutter. Then, install the cutter as described before.

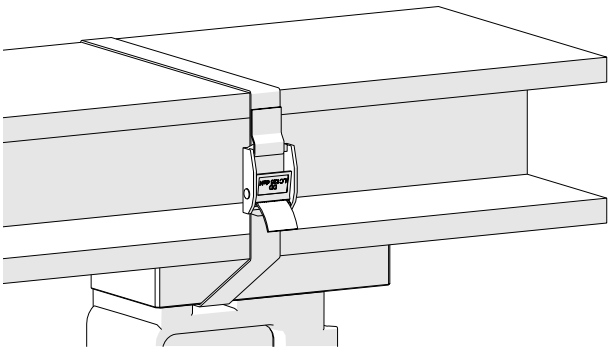
Put the machine on a flat ferromagnetic surface that is at least 0.24″ (6 mm) thick.

Connect the machine to the power source. Set the MAGNET switch to 'I' to turn on the clamping. Some types of steel (non-ferromagnetic) do not conduct magnetic flux so the machine cannot clamp onto them.

Use the safety strap to prevent fall and injury if the machine loses the clamping. Attach the machine to a stable structure by putting the strap through the hole in the machine body. In the horizontal position, attach the strap to the carrying handle. Make sure that the strap is tight and not twisted. If the machine comes loose from the workpiece and hangs on the strap, replace the strap. Do not put the strap into the buckle from the front.

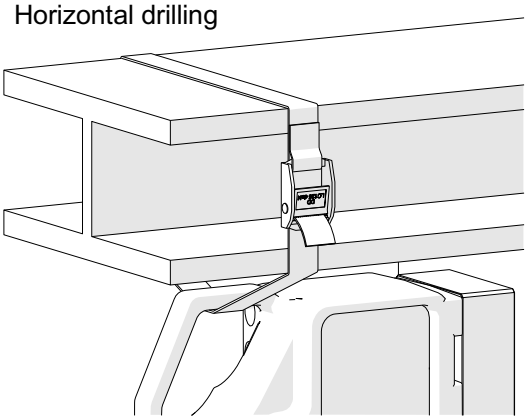


Vertical drilling



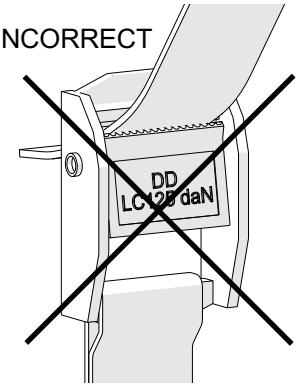
Inverted drilling

Horizontal drilling



CORRECT ✓

INCORRECT



Turn the handles to the left to put the cutter above the workpiece.

For vertical drilling, fill the cooling system bottle with coolant. Do not use only water as the coolant. But you can mix water and drilling oil. Then, make sure that the cooling system works correctly. To do this, lightly loosen the bottle cap and use the lever to open the bottle valve. Then, turn the handles to the left to apply a light pressure on the pilot pin. The coolant should fill the system and start flowing from the cutter.

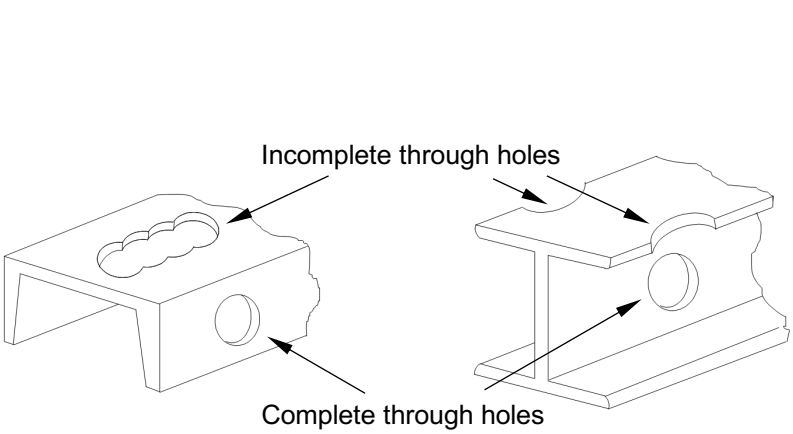
The cooling system works by gravity. Thus, in the inverted or horizontal position, use coolants under pressure or in the form of spray or paste.

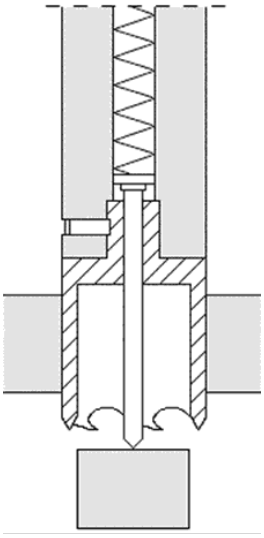
3.5. Drilling

Press the green MOTOR button to start the motor. Turn the handles to the left to put the cutter into the workpiece.

When the cutter goes through the workpiece, the slug core is pushed out with a large force.

Drill only through holes. For incomplete through holes do not use the pilot pin.





Keep the machine in the same position until the hole is made.

After you get to the depth of 1.6″ (40 mm), remove the cutter from the workpiece as often as possible. Then, manually apply the coolant from the bottle into the drilling area.

After drilling the hole, remove the cutter from the workpiece. Then, press the red MOTOR button to turn off the motor. Before you move the machine, set the MAGNET switch to ‘O’ to turn off the base.

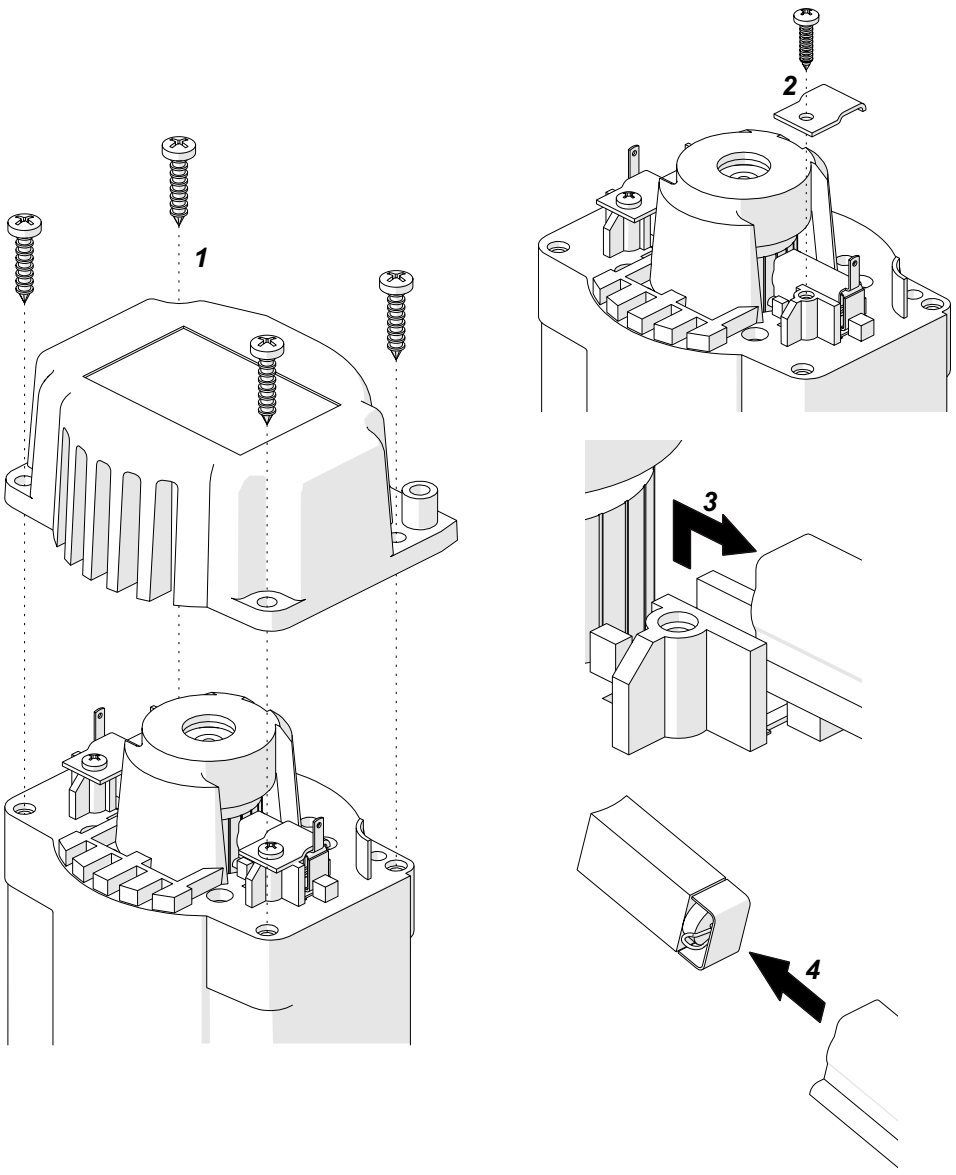
After use, turn off the motor and the base, and then unplug the power cord. Clean the machine and the cutter, and then remove the machine from the work area.

Tighten the bottle cap, close the valve, and then press the pilot pin to remove the coolant that remains in the cooling system. Use gloves to remove the cutter and the pilot pin from the arbor, and then put the machine into the box.

3.6. Replacing the brushes

At intervals of 100 work hours, check the condition of the brushes. To do this, unplug the power cord and remove the cover (*1*). Next, remove the pressing plate (*2*), and then remove the brush holder (*3*) and the brush (*4*). If the brush is shorter than 0.2″ (5 mm), replace the two brushes with new ones.

Install in reverse sequence. Then, let the motor operate with no load for 20 minutes.

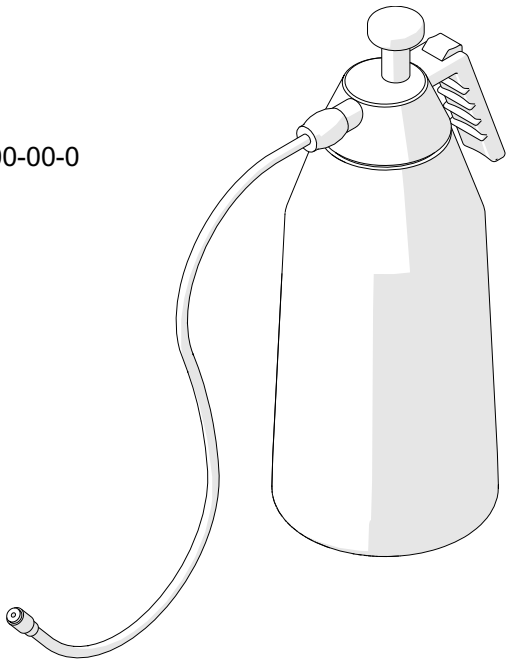


4. ACCESSORIES

4.1. Pressure cooling system

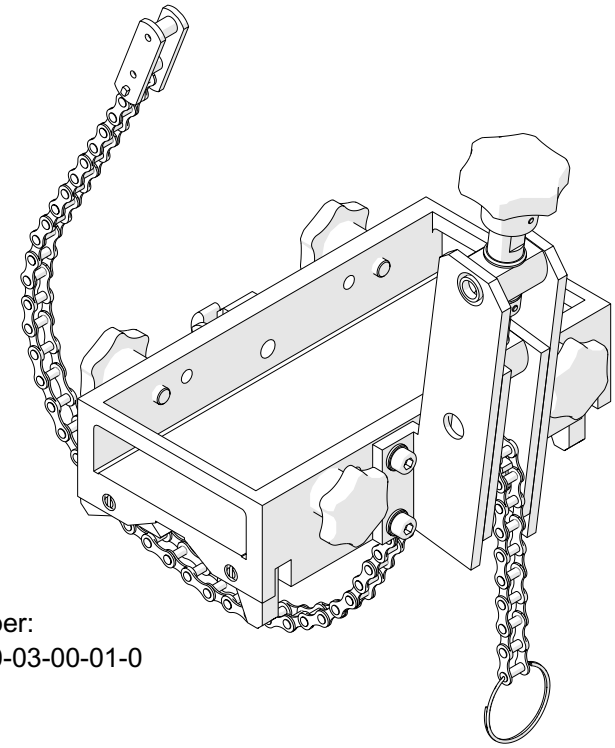
Capacity of 2 liters.

Part number:
UKL-0440-16-00-00-0



4.2. Pipe attachment DMP 251

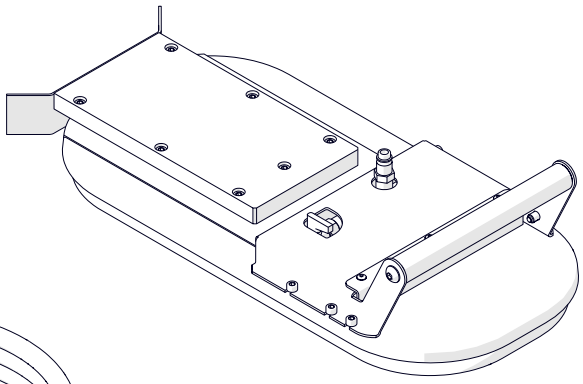
For pipes with diameters of 80–250 mm (3–10″). Internal dimensions: 95×211 mm (3.74″ × 8.31″).



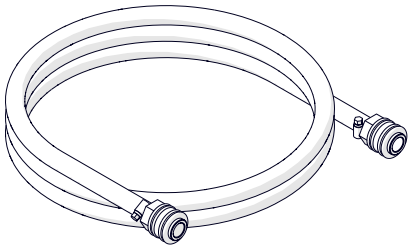
Part number:
PDS-0110-03-00-01-0

4.3. Vacuum pad

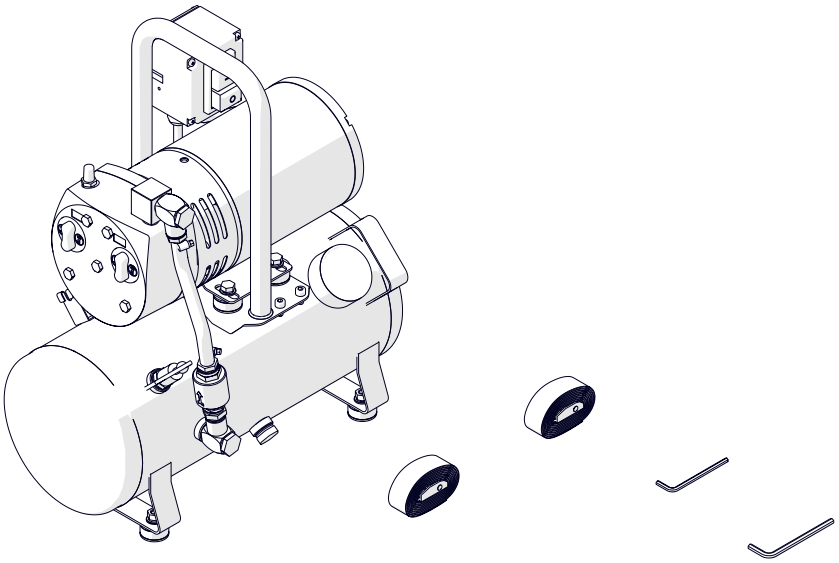
Allows you to clamp the machine to non-ferromagnetic surfaces. Can be supplied from an ejector with the compressed air or from a vacuum pump.



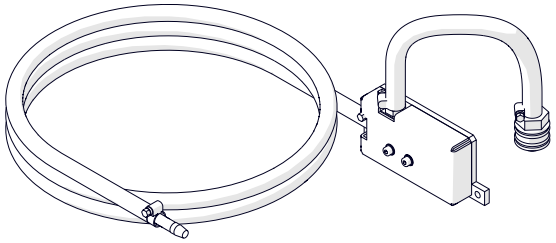
Part number (vacuum pad, supply hose):
PDS-0587-00-00-00-0



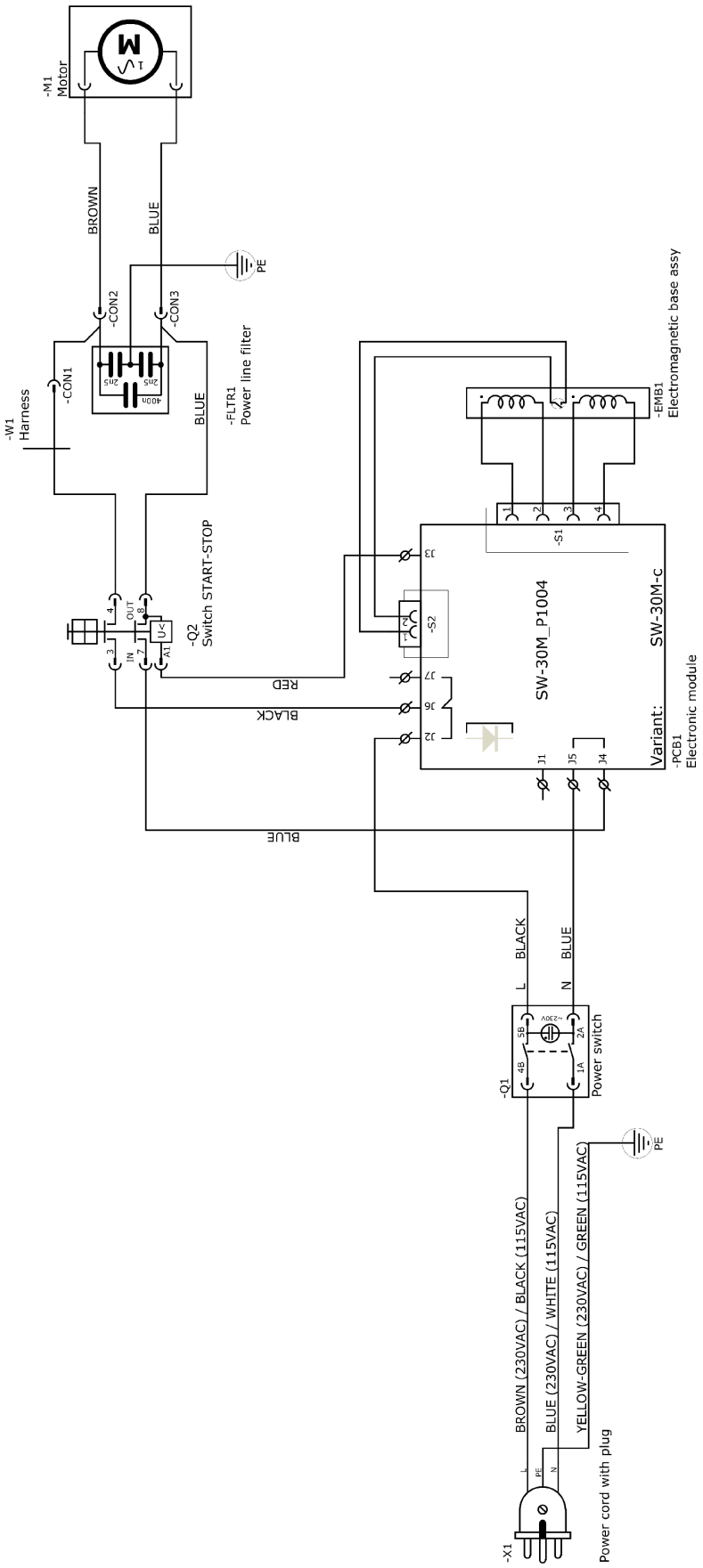
Part number (vacuum pump with safety reservoir):
AGR-0541-10-20-00-0 (230 V CEE)



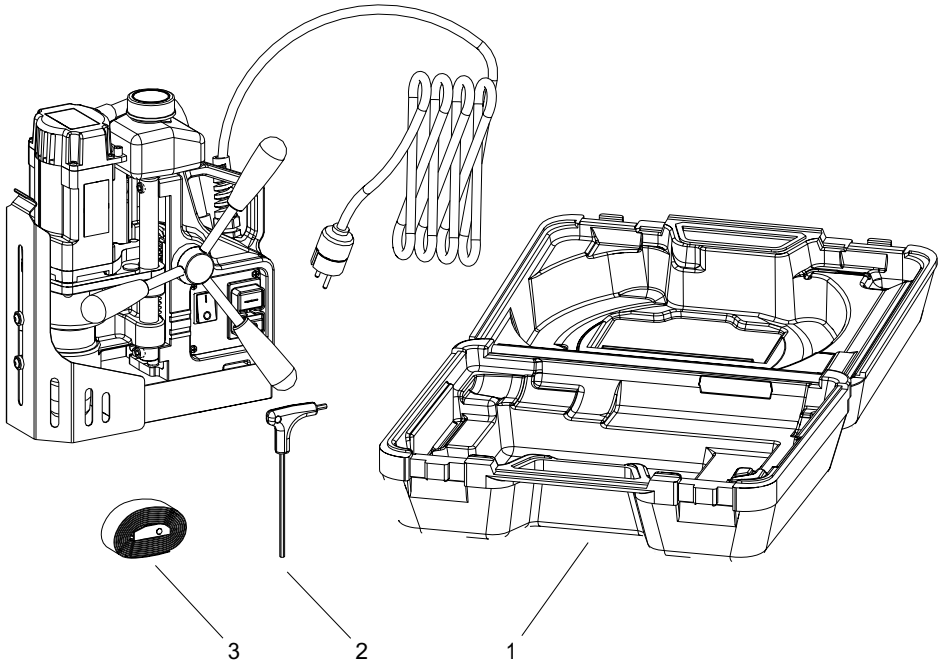
Part number (ejector):
ZSP-0587-11-00-00-0



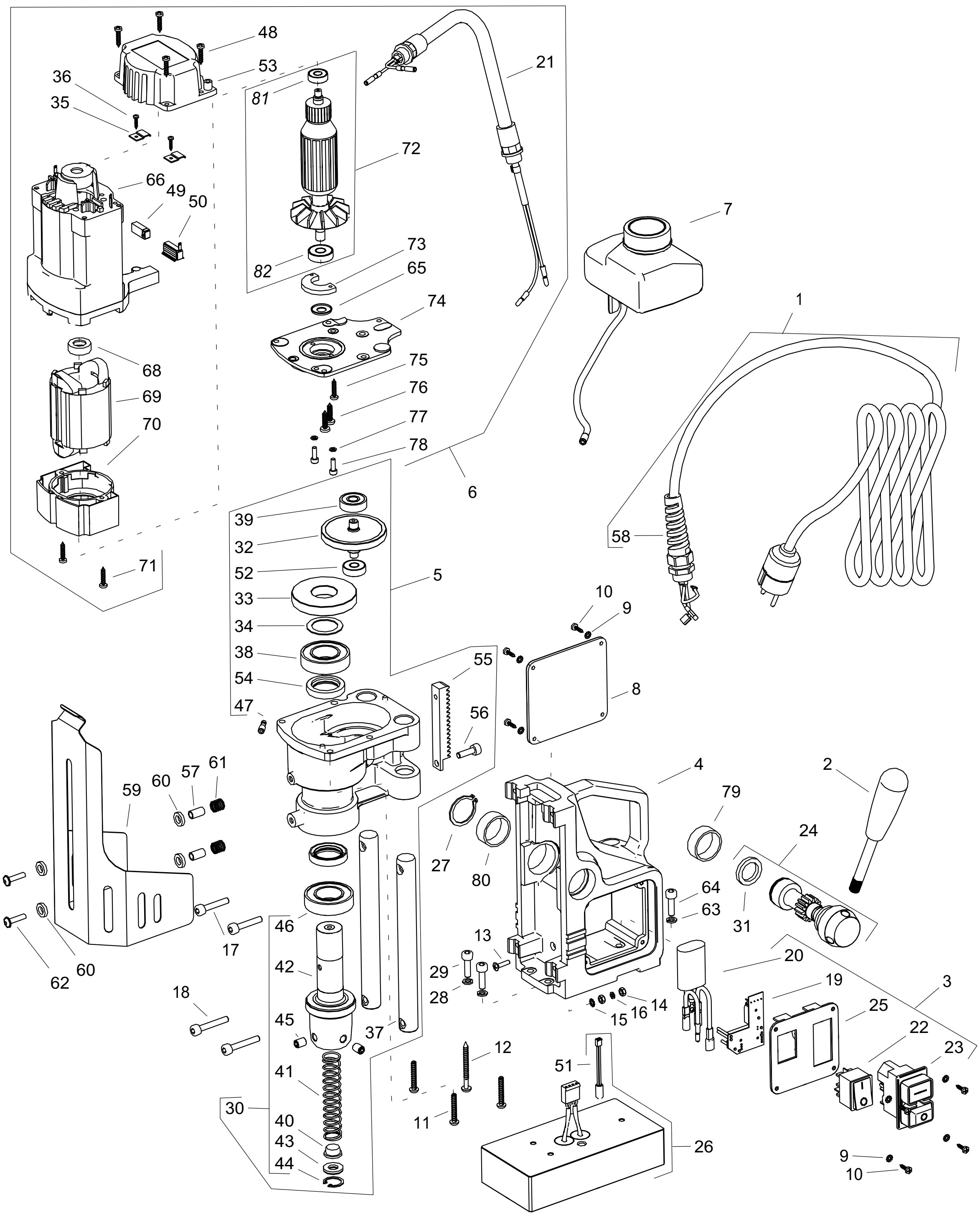
5. WIRING DIAGRAM



6. EXPLODED VIEWS AND PARTS LIST



ITEM	PART NUMBER	DESCRIPTION	Q-TY
1	SKR-000010	PLASTIC BOX	1
2	KLC-000036	4 MM HEX WRENCH WITH HANDLE	1
3	PAS-000007	SAFETY STRAP 250	1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ITEM	PART NUMBER	DESCRIPTION	Q-TY
1	SZN-0212-10-02-00-2	POWER CORD 230V 3x1.5 WITH STRAIN RELIEF ASSY (EU)	1
1	SZN-0212-10-02-00-1	POWER CORD 230V 3x1 WITH STRAIN RELIEF ASSY (AU)	1
1	SZN-0075-00-51-00-5	POWER CORD 120V 3x2.08 WITH STRAIN RELIEF ASSY (US)	1
1	PWD-0212-10-02-00-6	POWER CORD 230V 3x1.5 WITH STRAIN RELIEF ASSY (INDIA)	1
2	DZW-0212-12-00-00-0	SPOKE HANDLE WITH KNOB ASSY	3
3	PNL-0440-27-00-00-1	CONTROL PANEL ASSY 230V	1
3	PNL-0440-27-00-00-0	CONTROL PANEL ASSY 120V	1
4	KRP-0440-01-01-00-3	BODY ASSY	1
5	RDK-0440-02-00-00-3	GEARBOX ASSY	1
6	SLN-0440-03-00-00-5	MOTOR ASSY 230V	1
6	SLN-0440-03-00-00-3	MOTOR ASSY 120V	1
7	UKL-0440-05-00-00-1	COOLANT BOTTLE ASSY	1
8	SCN-0440-07-00-00-0	BODY COVER	1
9	PDK-000161	EXTERNAL TOOTH LOCK WASHER 3.7	8
10	WKR-000415	CROSS RECESSED PAN HEAD SELF-TAPPING SCREW 3.5x13	8
11	WKR-000302	SELF-TAPPING SCREW 5x30	3
12	WKR-000237	SELF-TAPPING SCREW 5x50	1
13	WKR-000112	CROSS RECESSED OVAL COUNTERSUNK HEAD SCREW M4x16	1
14	NKR-000013	HEX NUT M4	2
15	PDK-000060	EXTERNAL TOOTH LOCK WASHER 4.3	1
16	PDK-000043	SPRING WASHER 4.1	1
17	SRB-000118	HEX SOCKET HEAD CAP SCREW M6x30	2
18	SRB-000123	HEX SOCKET HEAD CAP SCREW M6x35	2
19*	STR-0257-04-03-00-9	ELECTRONIC CONTROLLER SW 30M-C 230V	1
19*	STR-0257-04-03-00-8	ELECTRONIC CONTROLLER SW 30M-C 120V	1
20*	FLT-0257-04-12-00-0	INTERFERENCE ELIMINATOR	1
21	PWD-0440-03-01-00-0	MOTOR CORD ASSY	1
22	PNK-000013	MAGNET SWITCH	1
23	WLC-000007	START-STOP SWITCH 230V	1
23	WLC-000005	START-STOP SWITCH 120V	1
24	WLK-0271-01-02-00-1	PINION SHAFT ASSY	1
25	MSK-0300-04-01-00-1	PANEL PLATE ASSY	1
26	PDS-0440-06-00-00-0	ELECTROMAGNETIC BASE	1
27	PRS-000019	EXTERNAL RETAINING RING 28z	1
28	PDK-000046	SPRING WASHER 6.1	2
29	SRB-000114	HEX SOCKET HEAD CAP SCREW M6x20	2
30*	WRZ-0272-02-02-00-0	SPINDLE ASSY	1
31	PRS-0440-11-02-00-0	BRAKE RING 20x28x3,9	1
32	WLK-0271-02-03-00-1	PINION SHAFT ASSY	1
33*	KOL-0271-02-05-00-3	GEAR z52	1
34*	PDK-000264	DISTANCE RING	1
35	PLY-0271-03-07-00-0	BRUSH HOLDER PRESSURE PLATE	2
36	WKR-000326	CROSS RECESSED COUNTERSUNK HEAD SHEET METAL SCREW 2.9x13	2
37	PRT-0440-02-02-00-1	GUIDE	2
38*	LOZ-000047	BALL BEARING 25x47x12	1
39	LOZ-000072	BALL BEARING 9x26x8	1
40	WYP-0139-00-02-00-1	PLUNGER	1
41	SPR-0271-02-02-03-0	SPRING	1
42*	KRP-0272-02-02-01-0	SPINDLE BODY	1
43	USZ-0279-02-01-06-0	SEAL	1
44	PRS-000009	INTERNAL RETAINING RING 19w	1

ITEM	PART NUMBER	DESCRIPTION	Q-TY
45	WKR-000059	HEX SOCKET SET SCREW WITH FLAT POINT M8x10	2
46*	LOZ-000048	BALL BEARING 25x47x12	1
47	KNC-0234-00-10-00-0	HOSE FITTING	1
48	WKR-000241	SELF-TAPPING SCREW 4x20	4
49	SCZ-000008	MOTOR BRUSH 6x9x17	2
50	SCT-0271-03-06-00-0	BRUSH HOLDER	2
51	WZK-0242-04-00-00-0	REED RELAY WIRE SET ASSY	1
52	LOZ-000053	BALL BEARING 8x22x7	1
53	PKR-0440-03-02-00-1	MOTOR COVER	1
54*	PRS-000070	SEAL 25x37x7	2
55	LST-0271-02-01-02-1	GEAR RACK	1
56	SRB-000111	HEX SOCKET HEAD CAP SCREW M6x18	1
57	TLJ-0399-06-00-00-0	BOTTOM SLEEVE	2
58	DLW-000007	CABLE GLAND WITH STRAIN RELIEF PG11	1
59	OSL-0440-04-00-00-2	CHIP GUARD ASSY	1
60	PDK-000151	NYLON WASHER 8.1x14x3	4
61	SPR-000030	PUSH SPRING	2
62	WKR-000395	HEX SOCKET ROUND HEAD SCREW WITH FLANGE M5x20	2
63	PDK-000176	EXTERNAL TOOTH LOCK WASHER 6.3	1
64	SRB-000113	HEX SOCKET HEAD CAP SCREW M6x20	1
65	USZ-000055	SEAL	1
66	OBD-0272-03-01-01-3	FILED FRAME	1
68	WKL-000001	BEARING INSERT 19x7.5	1
69	STN-000004	STATOR 220V	1
69	STN-000002	STATOR 120V	1
70	OSL-0271-03-01-02-1	FAN COVER	1
71	WKR-000241	SCREW FOR PLASTIC 4x20	1
72	WRN-0440-99-02-00-1	ROTOR 220V	1
72	WRN-0440-99-02-00-0	ROTOR 120V	1
73	PRS-0271-03-02-02-1	GEARBOX COVER RING	1
74	PKR-0440-03-03-00-1	GEARBOX COVER	1
75	WKR-000083	CROSS RECESSED PAN HEAD TAPPING SCREW	1
76	WKR-000301	CROSS RECESSED PAN HEAD SELF-TAPPING SCREW 5x14	2
77	PDK-000042	SPRING WASHER 4.1	2
78	SRB-000062	HEX SOCKET HEAD CAP SCREW M4x12	2
79	TLJ-0440-99-00-00-0	SLIDE BUSHING WITH BEVEL 28x32x12	1
80	TLJ-000034	SLIDE BUSHING 28x32x12	1
81	LOZ-000210	BALL BEARING 7x16x6	1
82	LOZ-000209	BALL BEARING 9x24x7	1
–	Lubiplate GR-132	RECOMMENDED GREASE IF NEEDED	2-3 oz
–*	PWD-271-04-06-00-0	CONNECTING CABLE	1

* before you order read the service manual

7. DECLARATION OF CONFORMITY

Declaration of Conformity

PROMOTECH sp. z o.o.
ul. Elewatorska 23/1
15-620 Białystok
Poland

We declare with full responsibility that:

D1 Drilling Machine with Electromagnetic Base

is manufactured in accordance with the following standards:

- EN 60745-1
- EN 55014
- EN ISO 12100

and satisfies the regulations of the guidelines: 2004/108/EC, 2006/95/EC, 2006/42/EC.

Person authorized to compile the technical file:
Wiktor Marek Siergiej, ul. Elewatorska 23/1, 15-620 Białystok, Poland

Białystok, 11 March 2016

Wiktor Marek Siergiej
CEO

8. WARRANTY CARD

WARRANTY CARD No.....

…….. in the name of Manufacturer warrants the D1 drilling machine to be free of defects in material and workmanship under normal use for a period of 12 months from the date of sale.

This warranty does not cover tools as well as damage or wear that arise from misuse, accident, tampering or any other causes not related to defects in workmanship or material.

Serial number .....

Date of sale .....

Signature and stamp of the seller.....

1.09 / 5 May 2021

WE RESERVE THE RIGHT TO MAKE CHANGES IN THIS MANUAL WITHOUT NOTICE