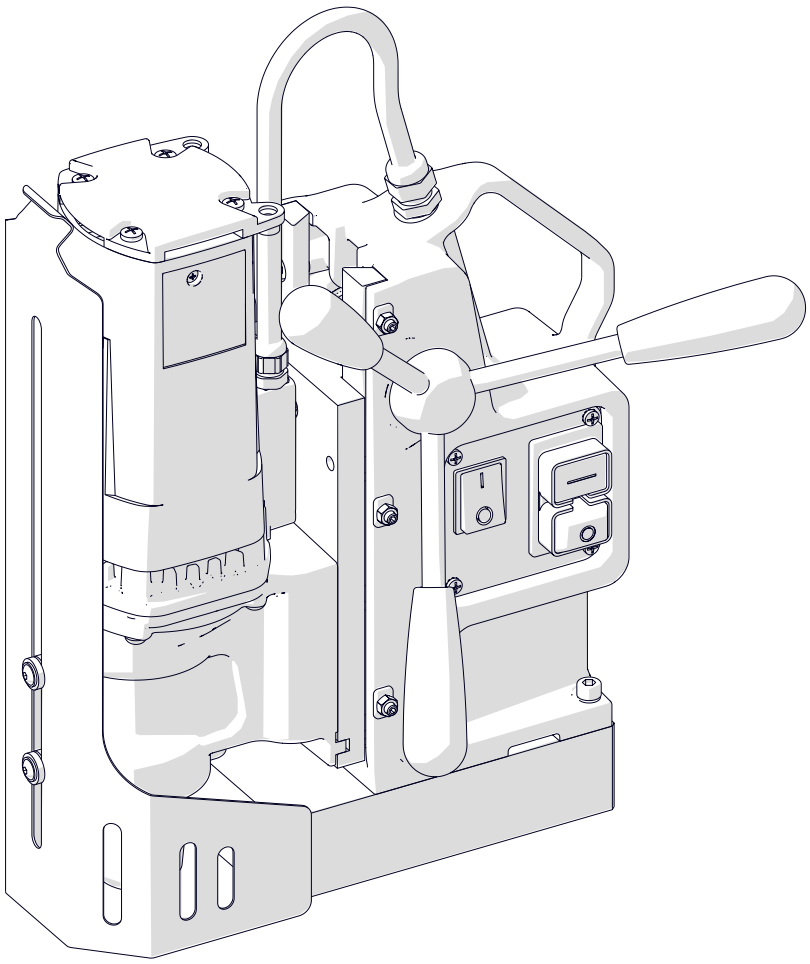
The tools of innovation.

OPERATOR'S MANUAL

DRILLING MACHINE
WITH ELECTROMAGNETIC BASE

D1 Pro-X



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Contents

1. GENERAL INFORMATION

1.1. Application

The D1 Pro-X is a drilling machine designed to drill holes with diameters of up to 1.57″ (40 mm) by using annular cutters. The machine can also drill holes with diameters of up to 0.63″ (16 mm) by using twist drill bits. It also allows machining holes with diameters of up to 1.57″ (40 mm) by using countersinks.

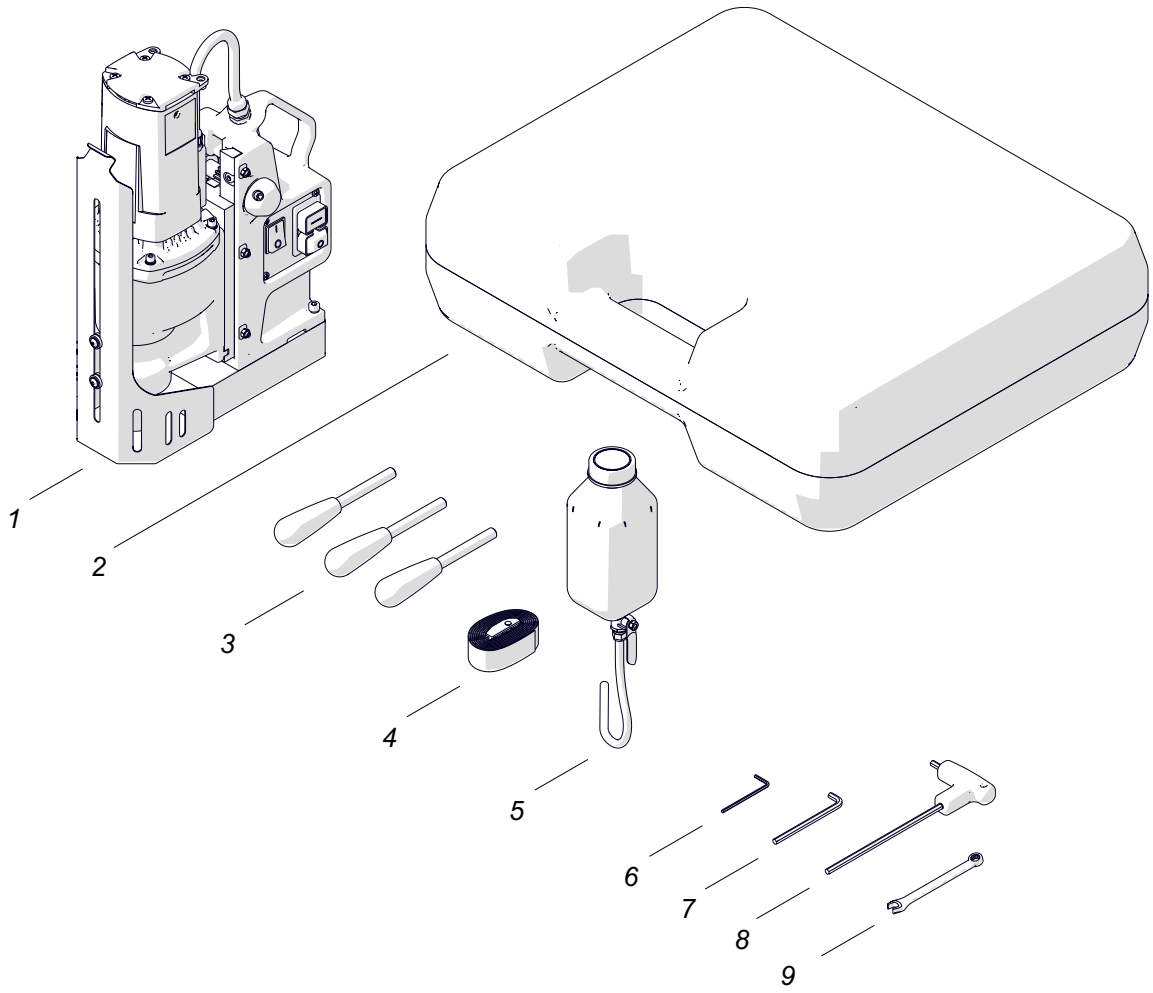
The electromagnetic base clamps the machine to ferromagnetic surfaces. This makes sure that the operator is safe and the machine works correctly. A safety strap protects the machine from falling in case of a clamping loss.

Accessories allow you to drill in pipes and clamp the machine to flat non-ferromagnetic surfaces.

1.2. Technical data

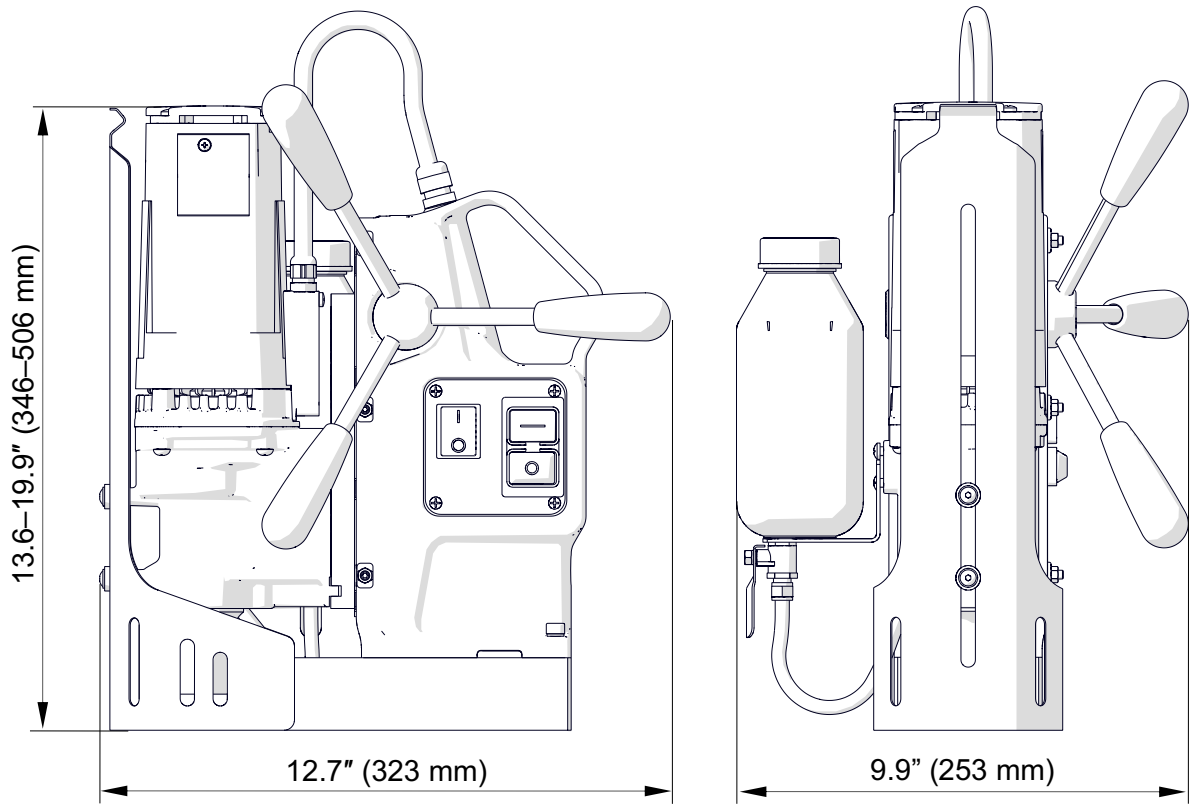
Voltage	1~ 110–120 V, 50–60 Hz 1~ 220–240 V, 50–60 Hz
Power	1100 W
Spindle shank	3/4″ (19 mm) Weldon
Tool holder	3/4″ (19 mm) Weldon
Maximum drilling diameter with an annular cutter	1.57″ (40 mm)
Maximum drilling diameter with a twist drill bit	0.63” (16 mm)
Maximum diameter of a hole to be machined with a countersink	1.57″ (40 mm)
Maximum drilling depth	1.97″ (50 mm)
Clamping force (surface with the thickness of 25 mm and roughness R_a = 1.25)	9900 N
Electromagnetic base dimensions	3.3″ × 6.6″ × 1.6″ (84 mm ×168 mm ×41.5 mm)
Stroke	160 mm (6.3″)
Rotational speed with load	440 rpm
Minimum workpiece thickness	0.375″ (10 mm)
Protection class	I
Protection level	IP 20
Noise level	More than 70 dB
Required ambient temperature	32–104°F (0-40°C)
Weight	28.7 lbs (13 kg)

1.3. Equipment included

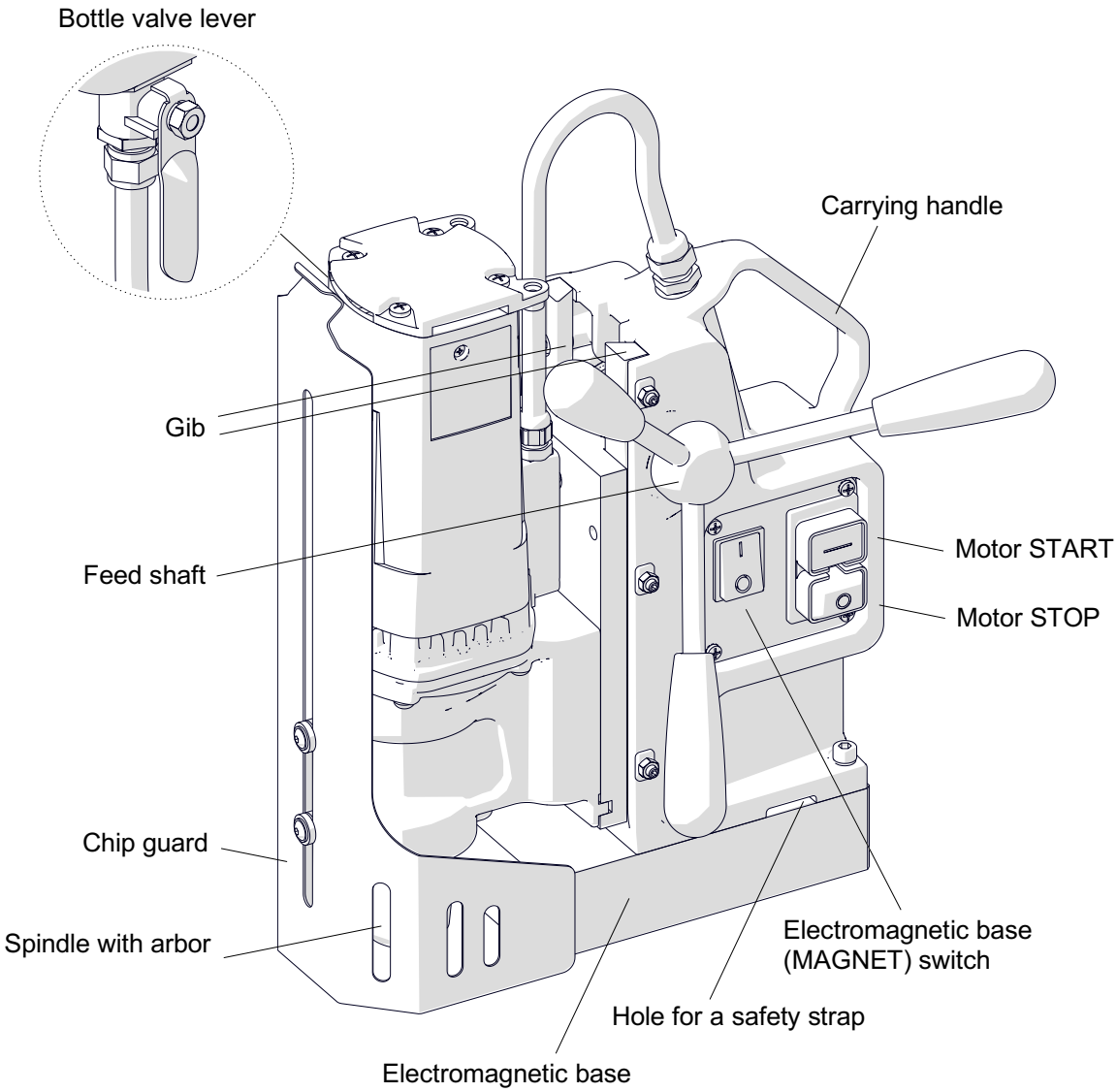


1	Drilling machine	1 unit
2	Plastic box	1 unit
3	Handle	3 units
4	Safety strap	1 unit
5	Cooling system	1 unit
6	2.5 mm hex wrench	1 unit
7	5 mm hex wrench	1 unit
8	5 mm hex wrench with a handle	1 unit
9	8 mm combination wrench	1 unit
–	Operator's manual	1 unit

1.4. Dimensions



1.5. Design


Bottle valve lever
Carrying handle
Gib
Feed shaft
Motor START
Motor STOP
Chip guard
Spindle with arbor
Electromagnetic base
(MAGNET) switch
Hole for a safety strap
Electromagnetic base

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. Set the MAGNET switch to 'O' before you move the machine. Use carrying handle to move the machine.
7. Do not carry the machine by the power cord and do not pull the cord. This can cause damage and electric shock.
8. Keep untrained persons away from the machine.
9. Before each use, ensure the operating condition of the machine, power source, power cord, plug, control panel, and tools.
10. Before each use, make sure that no part is damaged or loose. Make sure to maintain correct conditions that will effect 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 when it positioned 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. Unplug the power cord before you manually turn the spindle.
18. Use annular cutters without the pilot pin only when you drill incomplete through holes.
19. Do not drill/machine holes whose diameter or depth differ from those specified in the technical data.
20. Do not use in explosive environments or near flammable materials.

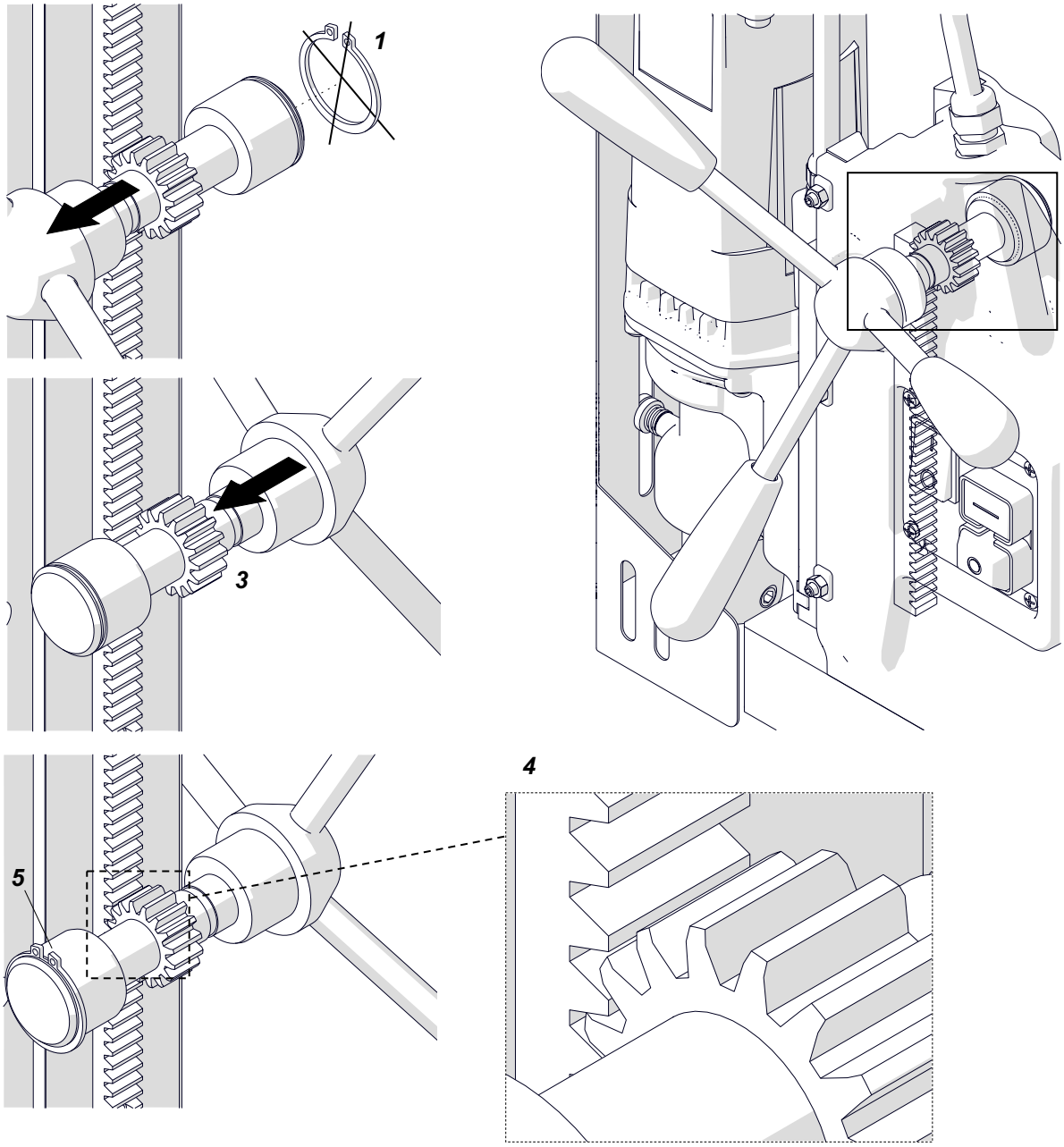
21. Do not use on surfaces that are rough, not flat, not rigid, or have rust, paint, chips, or dirt.
22. Do not use if the gibs are adjusted incorrectly.
23. Do not use if there is no grease on the gibs.
24. Use the safety strap to attach the machine to a stable structure. Put the strap through the hole 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.
25. Use eye and ear protection and protective clothing. The clothing must not be loose.
26. We do not recommend work on workpieces thinner than 10 mm (0.375″). The clamping force depends on the workpiece thickness and is much lower for thin plates.
27. 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 workpiece.
28. Do not touch chips or moving parts. Be careful not to catch loose items in moving parts.
29. After use, clean the machine and the tool. Do not remove chips with bare hands.
30. Unplug the power cord before you do maintenance or install/remove parts.
31. Repair only in a service center appointed by the seller.
32. 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.
33. Do not leave the machine when it operates.
34. If you are not going to use the machine, remove the tool from the holder. Then, remove the machine from the work area and keep it in a safe and dry place.
35. 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 the handles

Attach the handles to the feed shaft. You can install the shaft so that the handles are on the opposite side of the machine. To do this, continue in the sequence that follows.

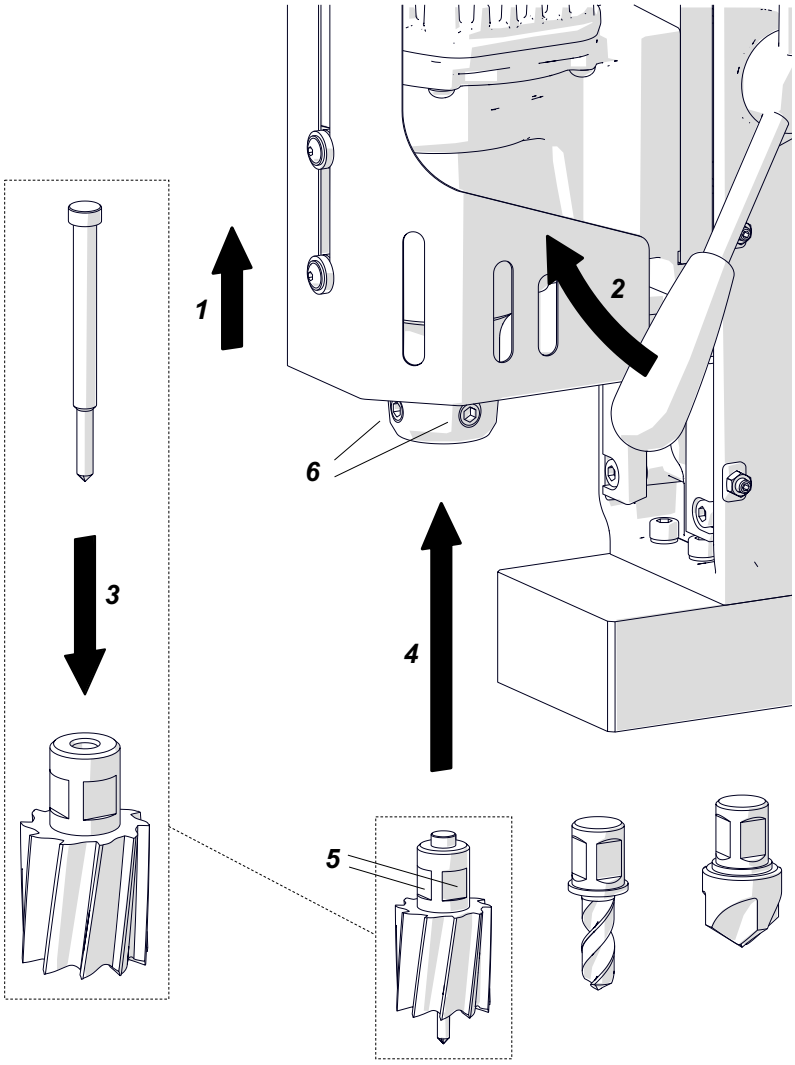
⚠ Make sure that the shaft is engaged with the rack (*4*).



3.2. Installing the tools

Unplug the power cord and lift the chip guard (*1*). Turn the handles to the right (*2*) to lift the motor. Use gloves to put the correct pilot pin into the annular cutter (*3*). Use a dry cloth to clean the spindle and the cutter. Put the cutter (twist drill bit or countersink) into the spindle (*4*) so that the flat surfaces (*5*) align with the screws (*6*). Use the 5 mm hex wrench to tighten the screws.

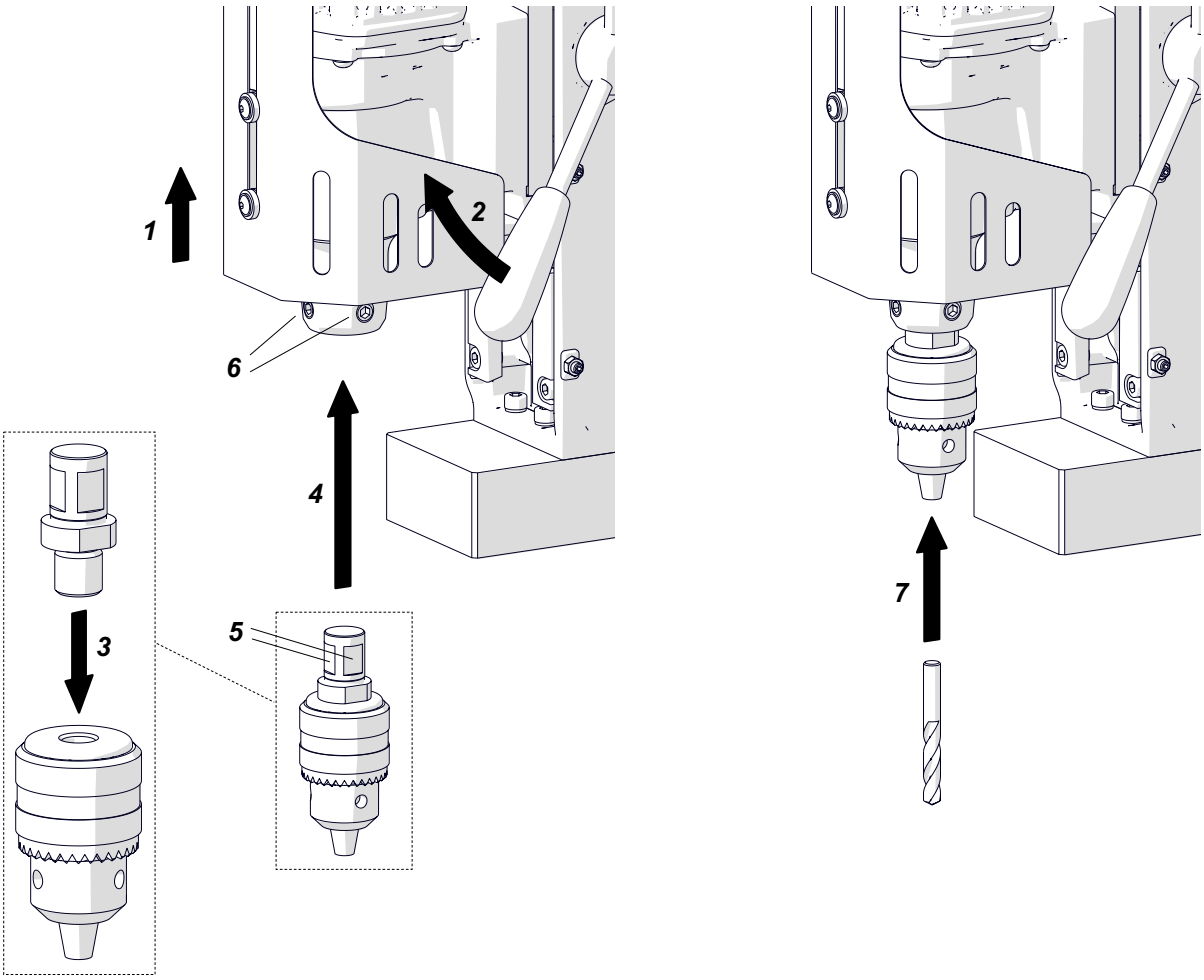
To remove the tool, loosen the screws (*5*) with the 5 mm hex wrench.



3.3. Installing and removing the drilling chuck (option)

Unplug the power cord and lift the chip guard (*1*). Turn the handles to the right (*2*) to lift the motor. Attach the adapter to the drilling chuck (*3*). Use a dry cloth to clean the spindle and the chuck. Then, put the chuck into the spindle (*4*) so that the flat surfaces (*5*) align with the screws (*6*). Use the 5 mm hex wrench to tighten the screws. Put the twist drill bit into the chuck (*7*).

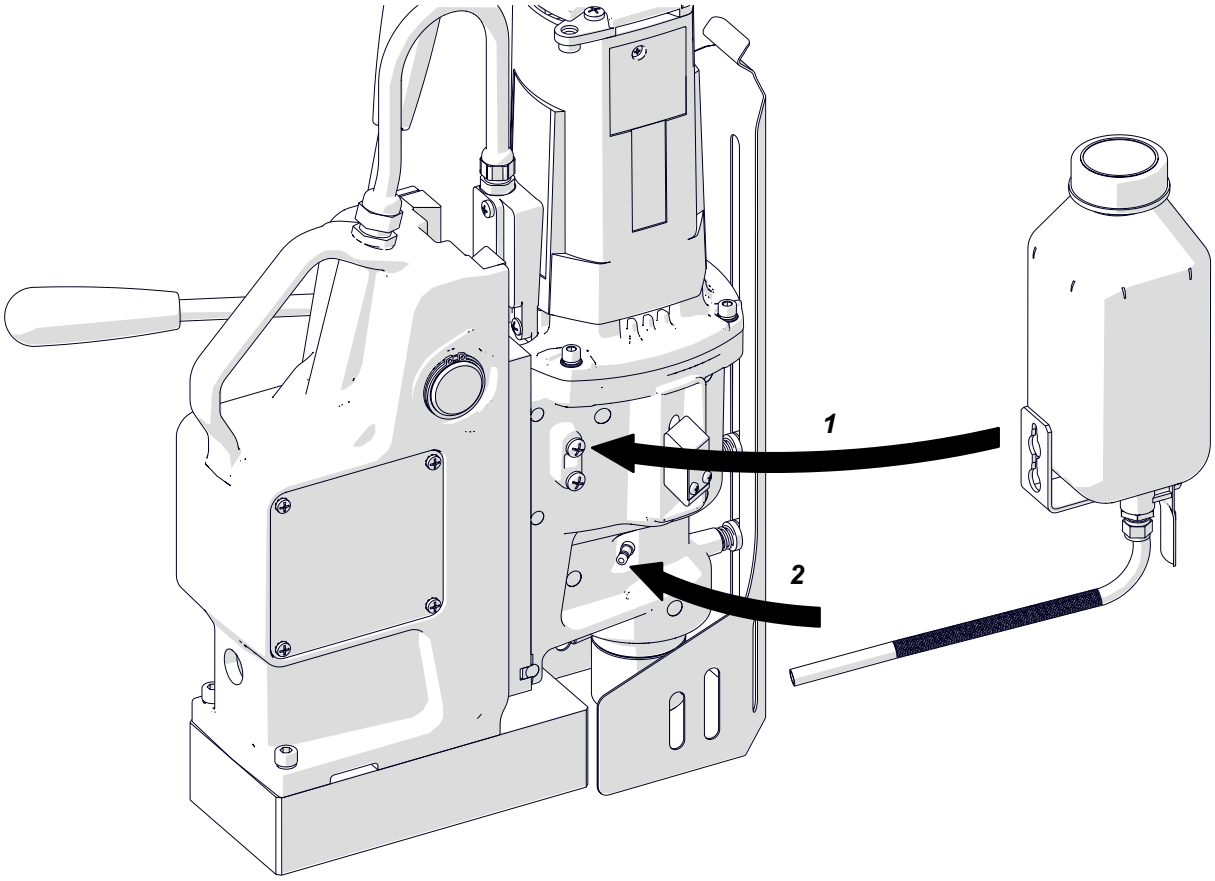
To remove the chuck, loosen the screws (*6*) with the 5 mm hex wrench.



3.4. Installing and removing the cooling system

Put the bottle on the screws (*1*). Attach the hose to the fitting (*2*).

To remove the bottle, continue in reverse sequence.



3.5. 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 happens on a surface thinner than 0.314″ (8 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.

3.6. 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. You can install the shaft so that the handles are on the opposite side of the machine.

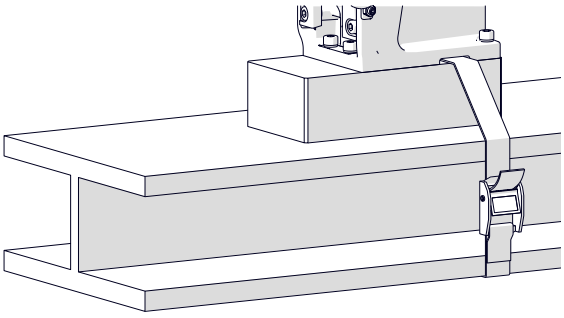
Apply a thin layer of grease to the gibs.

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

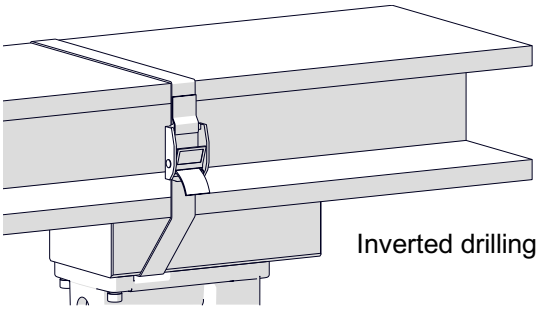
Put the machine on a flat ferromagnetic surface with the thickness of at least 0.375″ (10 mm). Make sure that there is no rust, paint, chips, or dirt. They decrease the clamping force. The force will be lower also if the surface is thin, rough, not flat, not rigid, the voltage is lower than required, or the bottom of the base is worn.

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.

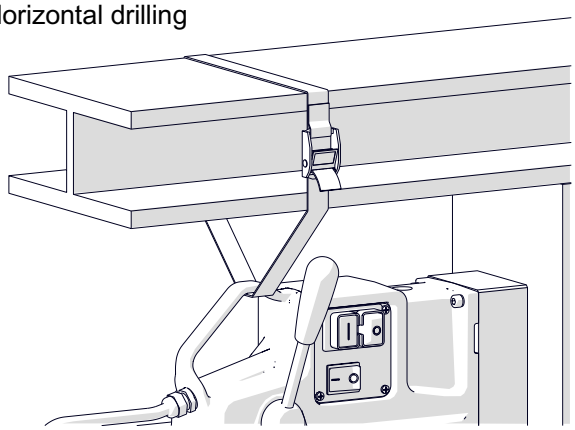


Vertical drilling

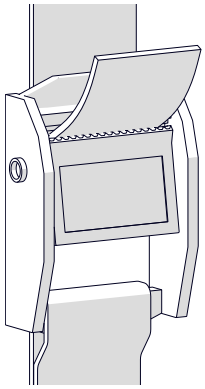


Inverted drilling

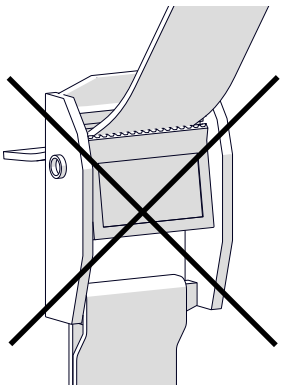
Horizontal drilling



CORRECT ✓



INCORRECT



Turn the handles to the left to put the tool tip above the workpiece.

For vertical drilling with an annular cutter, install the cooling system and fill it 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 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.

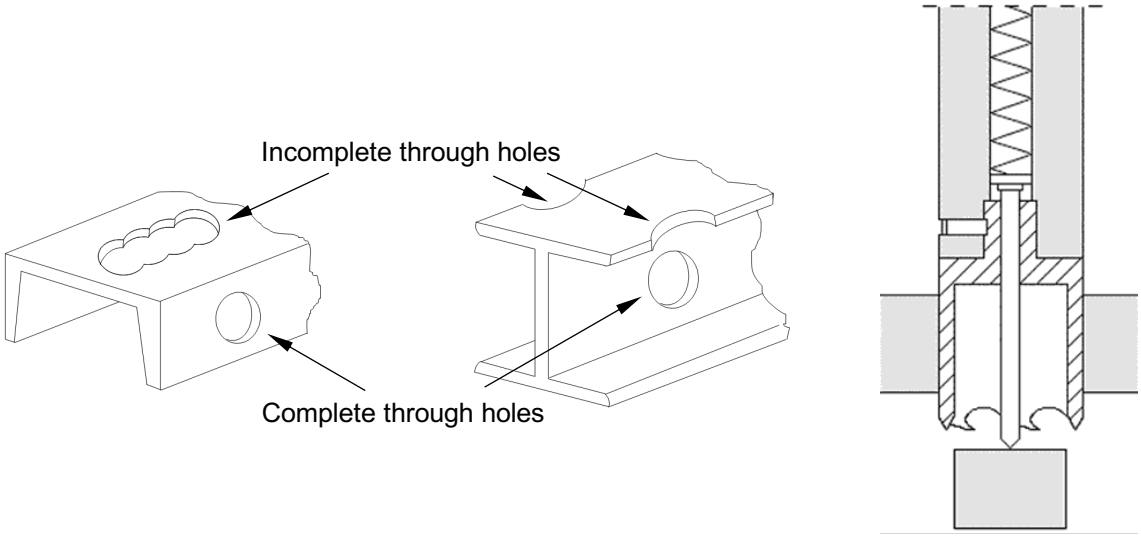
The cooling system works by gravity. Thus, in the horizontal position, turn the bottle. In the inverted position, use coolants under pressure or in the form of spray or paste.

3.7. Drilling

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

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

When you use an annular cutter, 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), retract the tool from the workpiece as often as possible. Then, manually apply the coolant from the bottle into the drilling area.

After the hole is made, retract the tool from the workpiece, and 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.

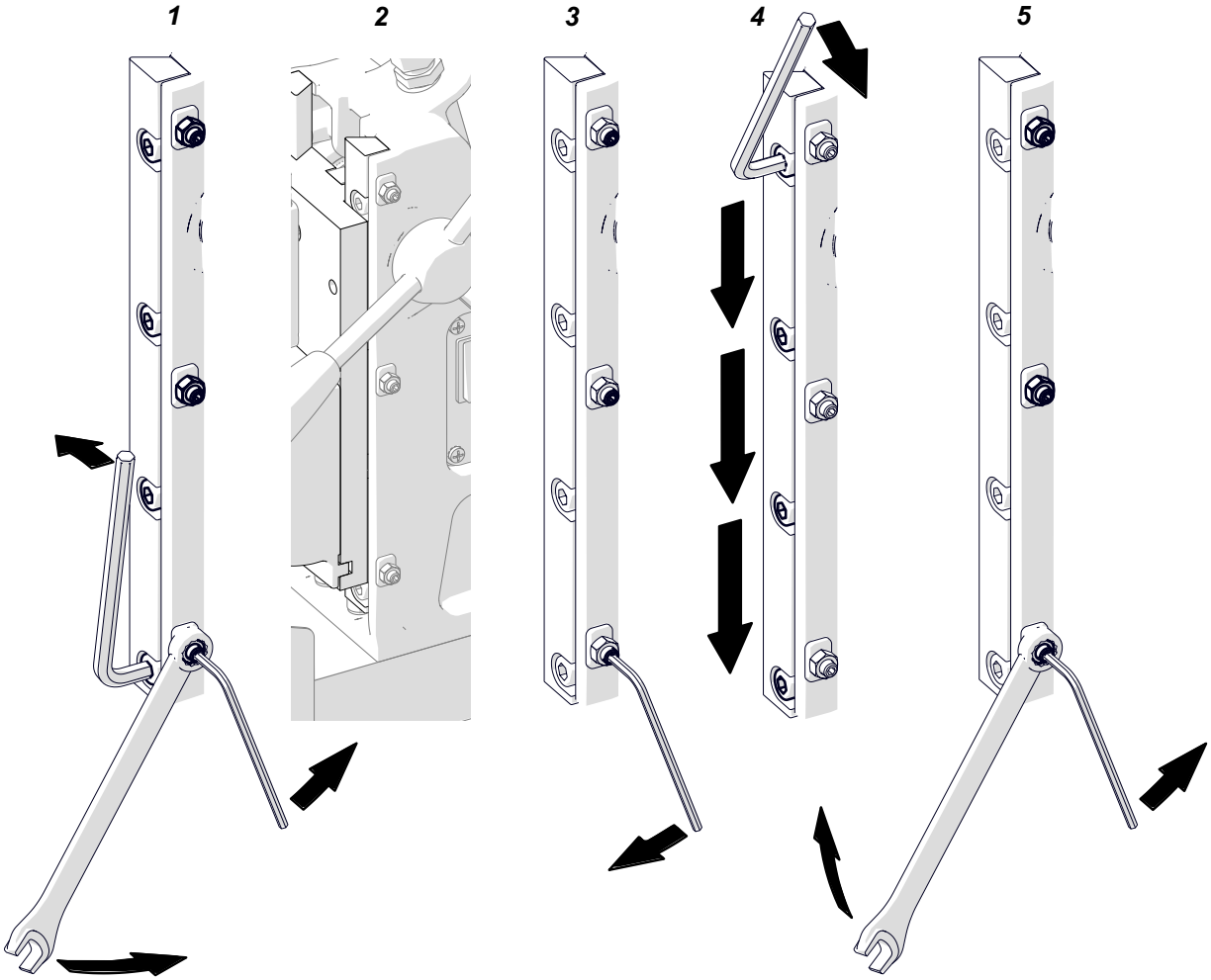
After use, turn off the motor and the base, and then unplug the power cord. Clean the machine and the tool, and then remove the machine from the work area.

Tighten the bottle cap, close the valve, and then press the pilot pin to remove the coolant that remains in the cooling system. Before you put the machine into the box, remove the bottle, and use gloves to remove the tool from the holder.

3.8. Adjusting the gibs

Every 50 work hours, make sure that the gibs are correctly adjusted. To do this, move the motor up and down and make sure that it moves smoothly.

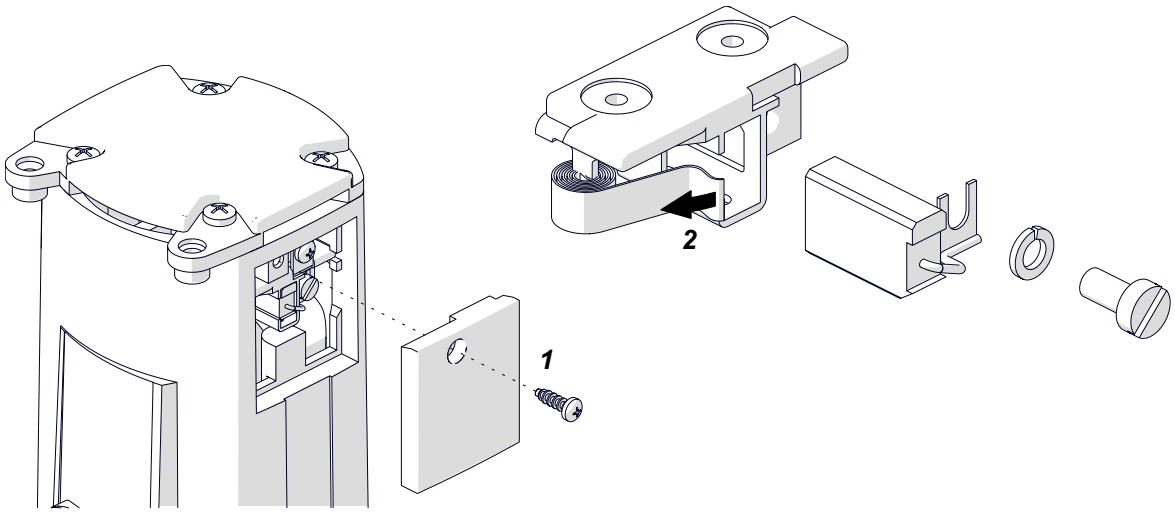
To adjust the gibs, apply a thin layer of grease on them. Then, use the 8 mm combination wrench, the 2.5 mm hex wrench, and the 5 mm hex wrench to loosen the nuts and screws (*1*). Put the motor so that the slider is in the center of the gibs (*2*). Then, lightly tighten the screws (*3*) so that they touch the gib. Move the motor up and down and adjust the screws (*3*) so that the travel is smooth. Next, tighten the screws (*4*) and then tighten the nuts (*5*).



3.9. Replacing the brushes

Every 100 work hours, check the condition of the brushes. To do this, unplug the power cord and remove the cover (*1*). Lift the spring (*2*) and remove the brush. 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.

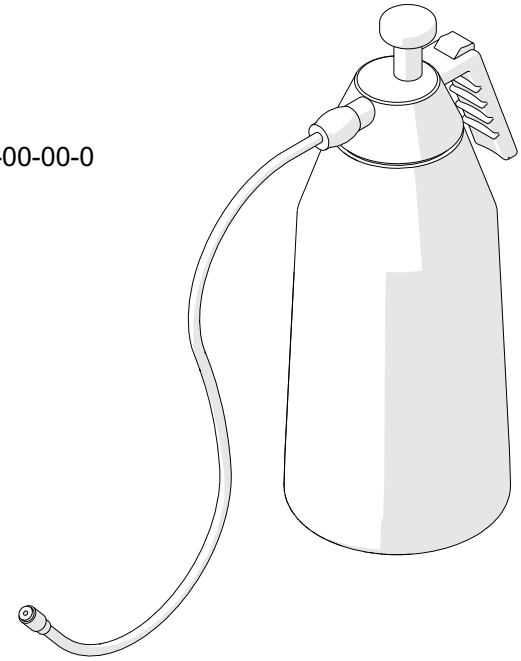


4. ACCESSORIES

4.1. Pressure cooling system

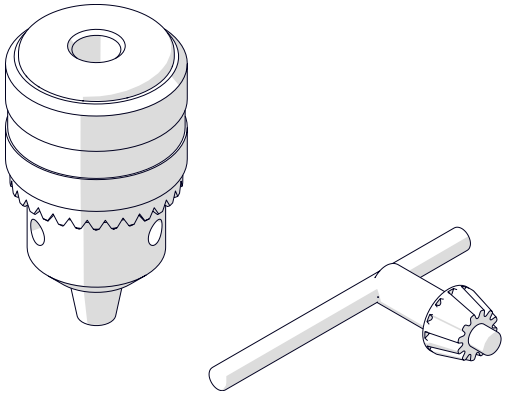
Capacity of 2 liters.

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



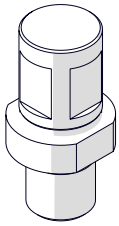
4.2. Drilling chuck 1/2″ 20 UNF x 1.5–13 mm

Part number:
UCW-000059



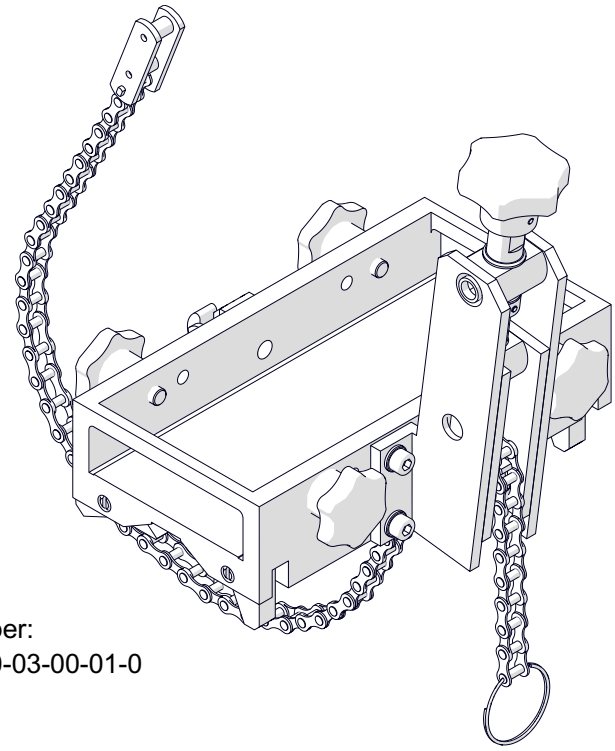
4.3. Adapter 3/4″ x 1/2″ 20 UNF

Part number:
TRZ-000027



4.4. Pipe attachment DMP 251

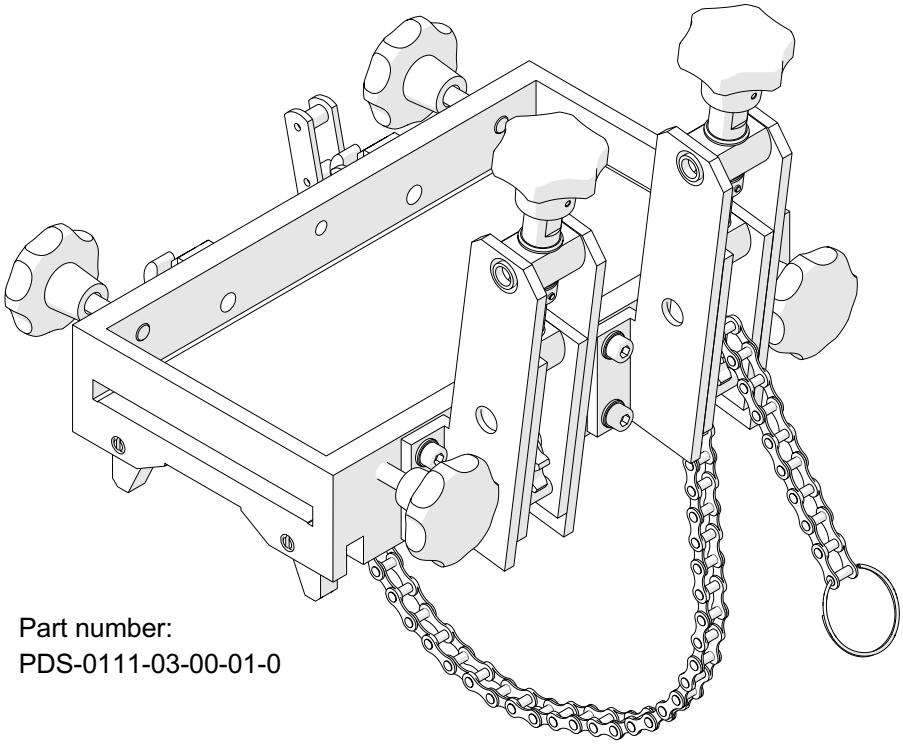
For pipes with diameters of 3–10″ (80-250 mm).



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

4.5. Pipe attachment DMP 501

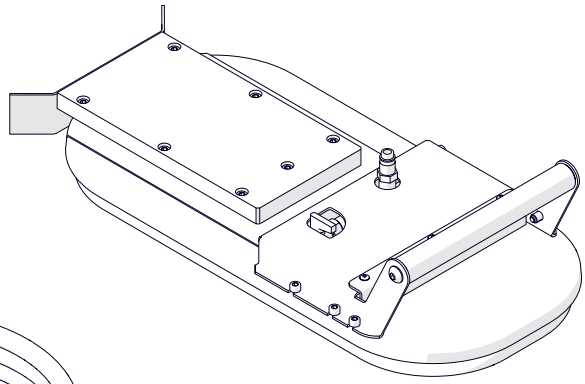
For pipes with diameters of 6–20″ (150–500 mm).



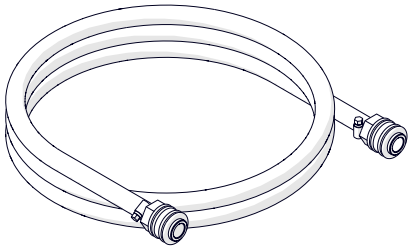
Part number:
PDS-0111-03-00-01-0

4.6. Vacuum pad

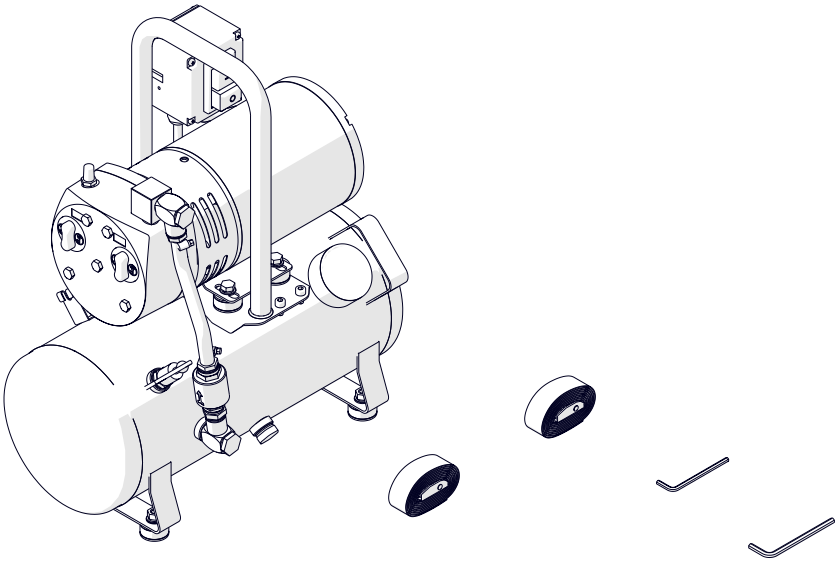
Allows you to clamp the machine to flat non-ferromagnetic surfaces.



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



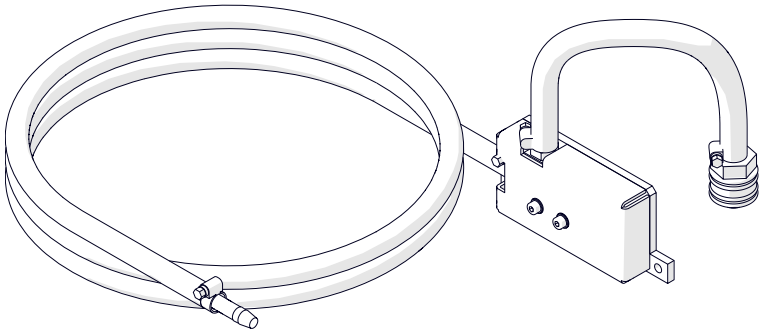
Part number (vacuum pump with safety reservoir):
AGR-0541-01-20-00-0



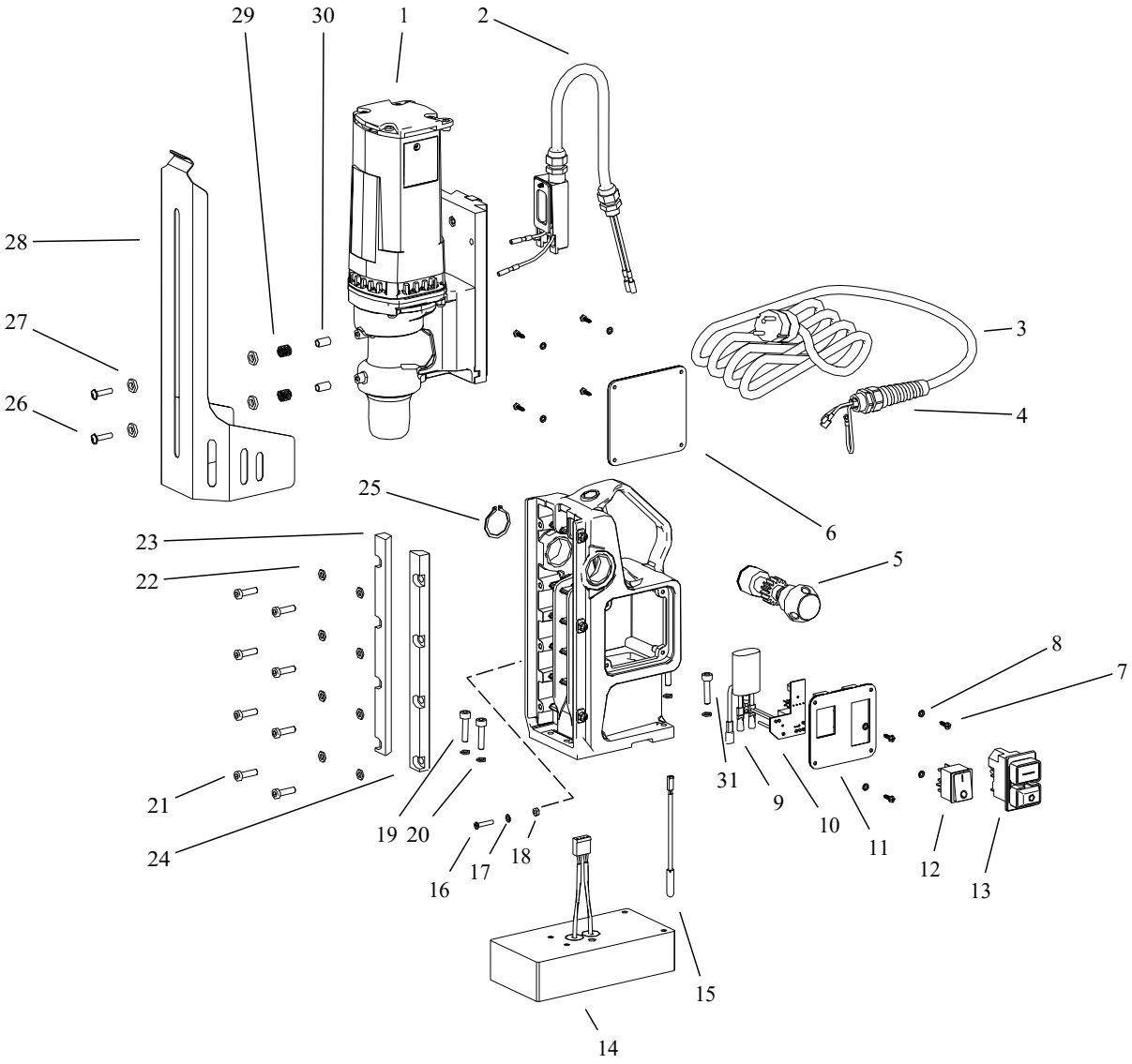
4.7. Ejector

Allows the vacuum pad to be clamped to the surface by using compressed air source.

Part number:
ZSP-0587-11-00-00-0

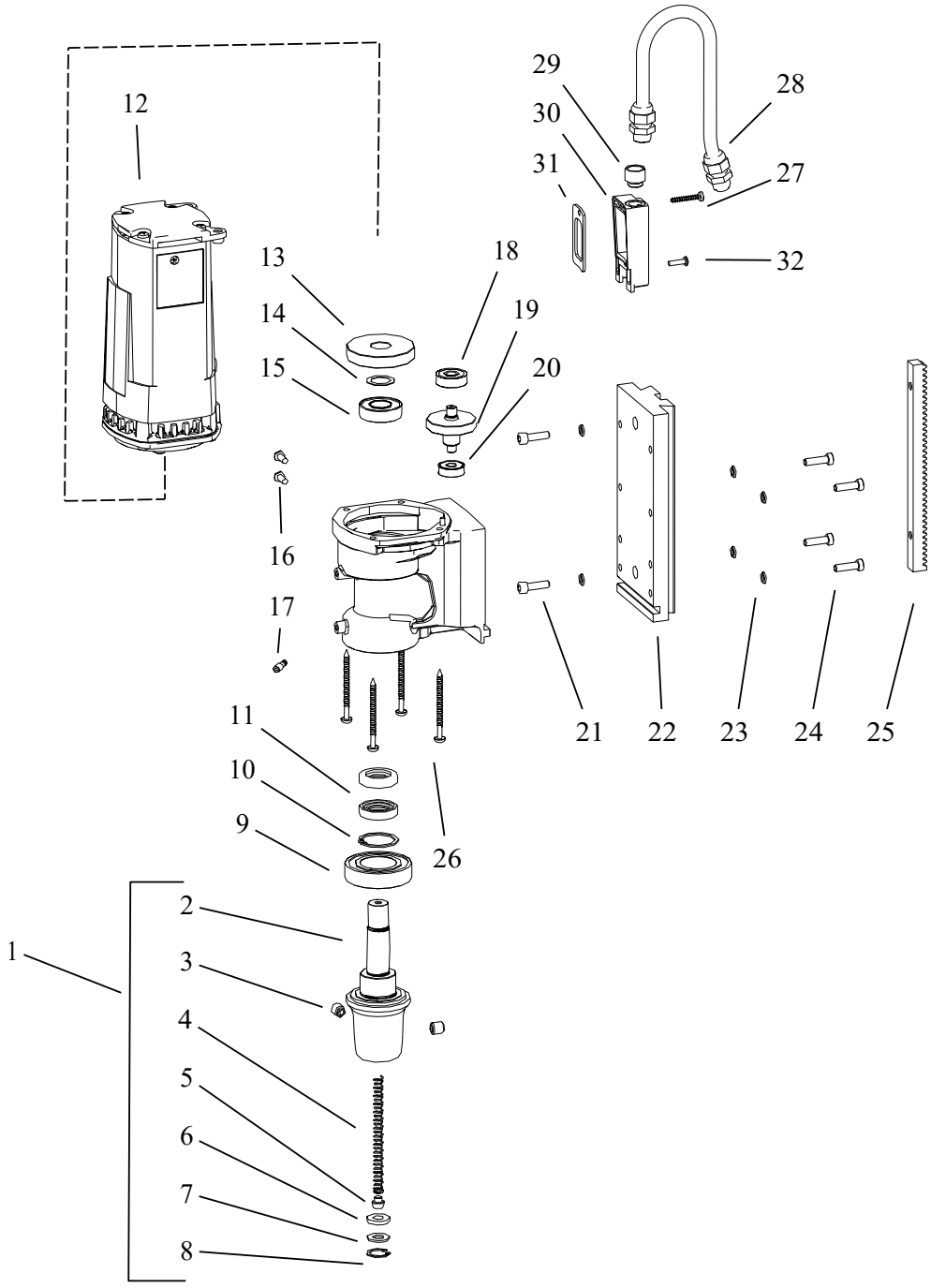


5. EXPLODED VIEWS AND PARTS LISTS



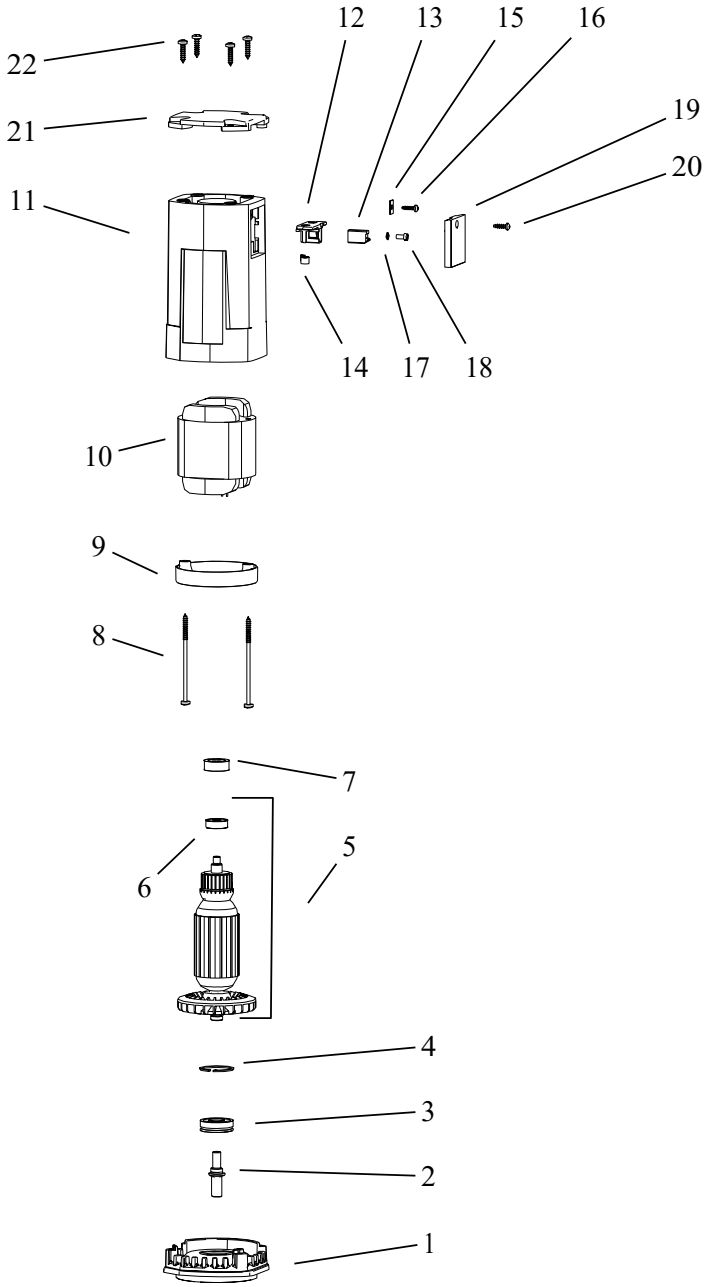
ITEM	PART NUMBER	DESCRIPTION	Q-TY
1	NPD-0723-01-00-00-0	MOTOR ASSY – 230V	1
1	NPD-0723-01-00-00-1	MOTOR ASSY – 115V	1
2	PWD-0684-03-02-00-1	MOTOR WIRE ASSY	1
3	SZN-0212-10-02-00-2	POWER CORD 230V 3x1.5 WITH STRAIN RELIEF ASSY (EU)	1
3	SZN-0075-00-51-00-5	POWER CORD 120V 3x2.08 WITH STRAIN RELIEF ASSY (US)	1
3	SZN-0212-10-02-00-5	POWER CORD 230V 3x1.5 WITH STRAIN RELIEF ASSY (AU)	1
4	DLW-000007	CABLE GLAND WITH STRAIN RELIEF PG11	1
5	WLK-0140-04-01-00-1	PINION SHAFT	1
6	SCN-0723-04-00-00-0	BODY COVER	1
7	WKR-000415	HEX SOCKET ROUND HEAD SCREW WITH FLANGE 3,5x13	8
8	PDK-000161	EXTERNAL TOOTH LOCK WASHER	8
9	FLT-0257-04-12-00-0	INTERFERENCE ELIMINATOR	1
10	STR-0257-04-03-00-5	MODULE - 230V	1
10	STR-0257-04-03-00-2	MODULE - 115V	1
11	MSK-0723-03-01-00-0	PANEL PLATE	1

ITEM	PART NUMBER	DESCRIPTION	Q-TY
12	PNK-000013	MAGNET SWITCH	1
13	WLC-000007	START-STOP SWITCH - 230V	1
13	WLC-000005	START-STOP SWITCH - 115V	1
14	PDS-0716-03-00-00-0	ELECTROMAGNETIC BASE ASSY	1
15	WZK-0242-05-00-00-0	REED WIRES SET	1
16	WKR-000434	CROSS RECESSED COUNTERSUNK HEAD SCREW M4x20	1
17	PDK-000060	EXTERNAL TOOTH LOCK WASHER 4.3	1
18	NKR-000013	HEX NUT M4	1
19	SRB-000117	HEX SOCKET HEAD CAP SCREW M6X25 Zn	
20	PDK-00004	SPRING WASHER 6,1	4
21	SRB-000304	HEX SOCKET HEAD CAP SCREW M6X20	8
22	PDK-000136	ROUND WASHER 6,4	8
23	LST-0331-01-05-00-0	GIB	1
24	LST-0331-01-04-00-0	ADJUSTABLE GIB	1
25	PRS-000019	EXTERNAL RETAINING RING 28z	1
26	WKR-000395	HEX SOCKET ROUND HEAD SCREW WITH FLANGE	2
27	PDK-000151	NYLON WASHER 8,1X14X3	4
28	OSL-0684-06-00-00-0	GUARD	1
29	SPR-000030	SPRING 8,1X14X3	2
30	TLJ-0399-06-00-00-0	BOTTOM SLEEVE	2
31	SRB-000115	HEX SOCKET HEAD CAP SCREW M6X25	2



ITEM	PART NUMBER	DESCRIPTION	Q-TY
1	WRZ-0723-01-02-00-0	SPINDLE WELDON ASSY	1
2	WRZ-0723-01-02-01-0	SPINDLE Weldon	1
3	WKR-000032	HEX SOCKET SET SCREW WITH FLAT POINT M10X10	2
4	SPR-0723-01-02-02-0	SPRING	1
5	WYP-0203-06-02-00-0	PLUNGER	1
6	USZ-0203-06-03-00-0	SEAL	1
7	PDK-0139-00-04-00-0	WASHER	1
8	PRS-000009	EXTERNAL RETAINING RING 19w	1
9	LOZ-000049	BALL BEARING 30x55x13	1
10	PRS-000022	EXTERNAL RETAINING RING 32w	1

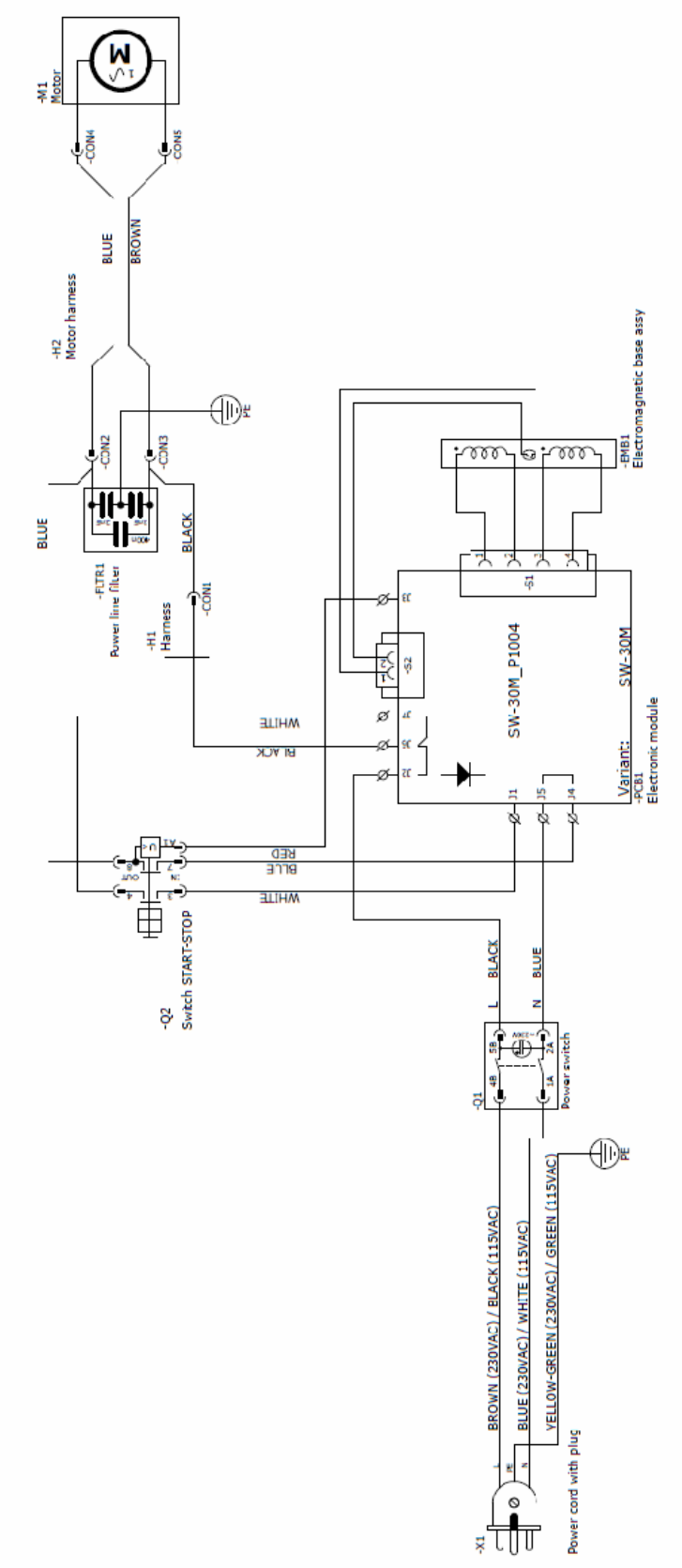
ITEM	PART NUMBER	DESCRIPTION	Q-TY
11	PRS-000066	SEAL 19x32x7	2
12	SLN-0723-02-00-00-0	ENGINE ASSY	1
13	KOL-0279-02-01-03-1	SPINDLE GEAR	1
14	PDK-0279-02-01-04-0	GEAR WASHER 17x05x24	1
15	LOZ-000027	BALL BEARING17x35x10	1
16	WKR-000196	HEX SOCKETROUND HEAD SCREW WITH FLANGE M5x12	2
17	KNC-0234-00-10-00-0	HOSE FITTING	1
18	LOZ-000072	BALL BEARING 9x26x8	1
19	WLK-0279-02-02-00-0	GEAR SHAFT ASSY	1
20	LOZ-000053	BALL BEARING 608 2z 8x22x7	1
21	SRB-000114	HEX SOCKET HEAD CAP SCREW M6x20	2
22	PLY-0716-02-01-02-0	SLIDE PLATE	1
23	PDK-000046	SPRING WASHER 6,1	6
24	SRB-000304	HEX SOCKET LOW HEAD CAP SCREW M6x20	4
25	LST-0129-00-04-00-1	GEAR RACK	1
26	WKR-000297	CROSS RECESSED PAN HEAD SELF- TAPPING SCREW 5x60	4
27	WKR-000514	CROSS RECESSED OVAL PAN HEAD SCREW FOR PLASTIC 4x25	1
28	DLW-000005	CABEL GLAND PG9	1
29	RDC-000016	THREAD REDUCTION PG9/PG7	1
30	PSZ-0291-02-05-00-0	WIRE COVER	1
31	USZ-0279-02-07-00-0	SEAL	1
32	WKR-000186	CROSS RECESSED PAN HEAD SCREW M4 x14	1
	SMR-000001	GREASE	0,045 kg



ITEM	PART NUMBER	DESCRIPTION	Q-TY
1	PKR-0723-02-01-00-1	GEARBOX COVER	1
2	KNC-0279-02-03-03-1	ROTOR END	1
3	LOZ-000086	BALL GEARING 12X32X10	1
4	PRS-000022	EXTERNAL RETAINING RING 32W	1
5	WRN-000019	ROTOR ASSY 230V	1
5	WRN-000020	ROTOR ASSY 120V	1
6	LOZ-000095	BALL BEARING 7X22X7	1
7	WKL-000008	BEARING INSERT12x32x10	1
8	WKR-000357	PAN HEAD SHEET METAL SCREW 4,8X85	2
9	PON-000001	STATOR GUARD	1
10	STN-000041	STATOR 230V	1
10	STN-000042	STATOR 120V	1
11	OBD-0279-02-03-09-0	MOTOR COVER	1
12	SCT-000012	BRUSH HOLDER 6,4x12,5	2

ITEM	PART NUMBER	DESCRIPTION	Q-TY
13	SCZ-000009	BRUSH	2
14	SPR-000020	SPRING 22x9	2
15	PLY-000066	PLATE 8X13	2
16	WKR-000359	SCREW 3,5X13	2
17	PDK-000042	SPRING WASHER 4,1	2
18	WKR-000360	SCREW M4X8	2
19	PKR-000015	BRUSH COVER	2
20	WKR-000359	SCREW 4X13	2
21	PKR-0279-02-06-00-0	STATOR COVER	1
22	WKR-000081	CROSS RECESSED PAN HEAD SELF-TAPING SCRE	4

WIRING DIAGRAM



6. 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 Pro-X Drilling Machine with Electromagnetic Base

is manufactured in accordance with the following standards:

- EN ISO 12100:2010
- EN 62841-1:2015
- EN 55014-1:2017

and satisfies the regulations of the guidelines: 2014/30/EU, 2006/42/EC, 2011/65/EU.

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

Białystok, 28 January 2022

Wiktor Marek Siergiej
CEO

7. WARRANTY CARD

WARRANTY CARD No.....

…….. in the name of Manufacturer warrants the D1 Pro-X Drilling Machine with Electromagnetic Base 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.....

0.01 / 06 September 2022

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