HOLEMAKER HMPRO200A

Holemaker Portable Magnetic Drilling Machine

OPERATOR'S MANUAL

⚠ WARNING!

BEFORE USE, ENSURE EVERYONE USING THIS MACHINE READS AND UNDERSTANDS ALL SAFETY AND OPERATING INSTRUCTIONS IN THIS MANUAL .

EYE PROTECTION REQUIRED

HEARING PROTECTION REQUIRED

NEVER PLACE FINGERS NEAR CUTTING AREA OR MACHINE ARBOR

LINE VOLTAGE PRESENT

BEWARE OF ROTATING MACHINE PARTS

Serial # _____ Date of Purchase _____

Ver: 1.1 25/01/2024

LIMITED WARRANTY

Industrial Tool & Machinery Sales (hereinafter refered to as ITMS) will, within twelve (12) months from the original date of purchase, repair or replace any goods found to be defective in materials or workmanship.
This warranty is void if the item has been damaged by accident, neglect, improper service or other causes not arising out of defects in materials or workmanship. This warranty does not apply to machines and/or components which have been altered, changed, or modified in any way, or subjected to overloading or use beyond recommended capacities and specifications. Worn componentry due to normal wear and tear is not a warranty claim. Goods returned defective shall be returned prepaid freight to ITMS or agreed repair agent, which shall be the buyer's sole and exclusive remedy for defective goods. ITMS accepts no additional liability pursuant to this guarantee for the costs of travelling or transportation of the product or parts to and from ITMS or the service agent or dealer, such costs are not included in this warranty.

Our goods come with guarantees which cannot be excluded under the Australian Consumer Law. You are entitled to replacement or refund for a major failure and to compensation for other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

THE MANUFACTURER RESERVES THE RIGHT TO MAKE IMPROVEMENTS AND MODIFICATIONS TO DESIGN WITHOUT PRIOR NOTICE.

PRODUCTS IMPORTED AND DISTRIBUTED NATIONALLY BY:
INDUSTRIAL TOOL & MACHINERY SALES
11 EASTERN SERVICE ROAD, STAPYLTON QLD 4207
T: 07 3287 1114 E: sales@itmtools.com.au
F: 07 3287 1115 W: www.itmtools.com.au

CONTENTS

BEFORE YOU START WORK WITH THE MACHINE, PLEASE READ THESE INSTRUCTIONS CAREFULLY AND USE ALL RECOMMENDATIONS.

The PRO 200-A ATEX is supplied including the following elements.

Drilling machine	1 unit
MT5 arbor	1 unit
Spoke handle	3 units
Cooling system 5L	1 unit
MT3 drift	1 unit
4 mm hex wrench	1 unit
5 mm hex wrench	1 unit
6 mm hex wrench	1 unit
8 mm hex wrench	1 unit
10 mm hex wrench	1 unit
13 mm combination wrench	1 unit
Tool can	1 unit
Operator's Manual	1 unit

1. GENERAL INFORMATION

Drilling machine must not be used when:

1. The operator has not read the Operator's Manual.
2. The work to be done is not in agreement with the recommendations in this Manual.
3. Drilling machine is not complete or has been repaired with non-original parts.
4. Power supply parameters do not conform to those stated on the motor's plate.
5. Machines operator has not checked condition of the drilling machine, condition of air hose, control panel or cutting tool.
6. Machine is not secured with safety chain as a protection from falling down especially when used at heights or in vertical or upside-down positions.
7. Bystanders are present in the immediate vicinity of machine.

Important rules of safe use of drilling machine

1. Before attempting to work with the machine check condition of air hose and coupling.
2. Make sure that the drill is supplied with purified air and oiled.
3. Machine can be used outdoors, but is not weatherproof. Do not expose to rain, snow or frost.
4. Machine should not be used on: rusty surfaces, steel plates covered with paint, uneven surfaces, or steel plate which is being welded on.
5. In all cases always use a safety chain/strap.
6. Do not use the machine in explosion hazard zones.
7. Do not start work if the machine has excessive play on guide slides.
8. Always wear safety goggles and ear protection.
9. Do not remove metal chips with bare hands, always use gloves.
10. Do not touch the spindle and cutting tool during work.
11. Cutting Tools must be fastened firmly.
12. Do not drill with blunt of damaged cutting tools.
13. Do not use annular cutters without a pilot pin, and arbors without an ejection spring.

⚠ Do not touch or replace the cutting tool with power source on

14. After use, always clean drilling machine from metal chips and cutting fluid.
15. Any maintenance and repair should be performed only when the machine is disconnected from the air supply.
16. Before each use the machine should be checked for the presence of damage. Check whether any of the parts are broken and all the that all parts are fasten properly.
17. In the case that the machine falls on a hard surface, from a height, is wet or is subjected to other unfortunate events that could affect its technical state - work should be terminated immediately and the machine should be sent to service for inspection as soon as possible.

This machine is not recommended to be used to drill on steel thinner than 10mm (3/8"). On thin steel less than 10mm (3/8") magnet's adhesive power would be significantly reduced which can cause machines failure or personal injury.

The pneumatic motor used in Holemaker HMPRO200A drilling machine is ATEX II2 G/D C IIC T6;T4 certified, which is required for usage in explosion risk zones.

⚠ CAUTION: Never carry the drill by the motor's air supply hose!

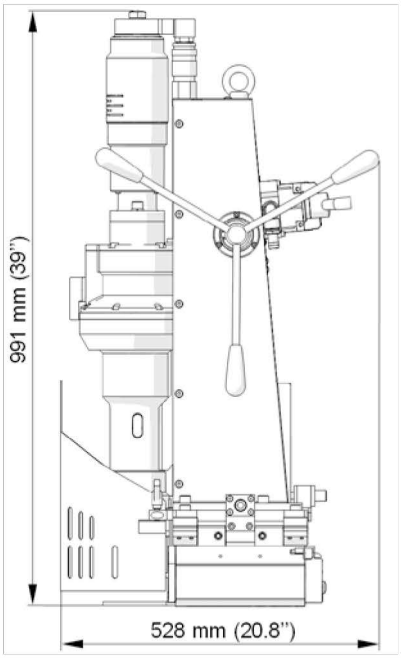
1.1 Application

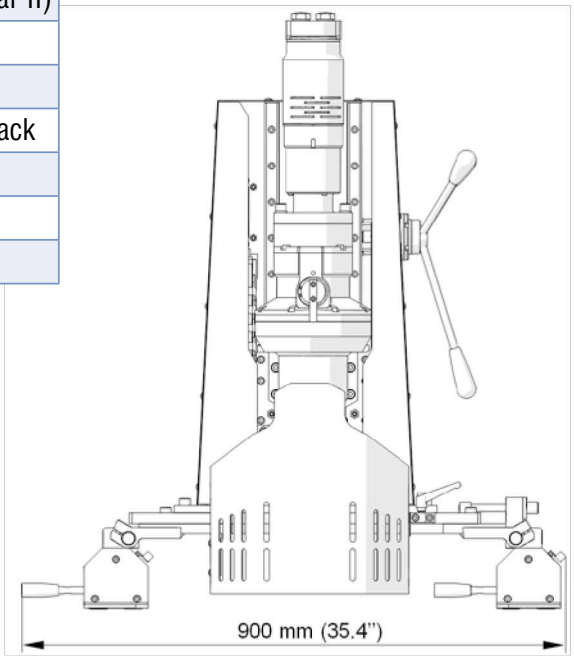
The PRO 200-A ATEX is an air drilling machine designed to drill holes either with diameters of 75–200 mm (2.95–7.87") to a depth of up to 100 mm (4") using annular cutters or with diameters of 12–45 mm (0.47–1.77") to a depth of up to 100 mm (4") using twist drill bits. In addition, it is capable to change the rotation direction to allow direct tapping or tapping by using a tap chuck with axial compensation. The machine is ATEX II 2 G/D c IIC T6/T4 certified to allow working in explosive environments.

Magnets allow the drilling machine to be fixed to ferromagnetic surfaces with a force that ensures operator safety and proper machine operation.

1.2 Technical Data

Pressure	6.5 bar (94 psi)
Air connection	G1/2'' external thread
Power	3650 W
Air consumption	3500 l/min (125 CFM)
Spindle shank	MT5
Tool holder	31.75 mm Weldon (1-1/4'')
Drilling diameter with annular cutter	75–200 mm (2.95–7.87'')
Drilling diameter with twist drill bit	12–45 mm (0.47–1.77'')
Maximum drilling depth	100 mm (4'')
Maximum tap size	M48 (G1-3/4'')
Holding force of the magnets (surface with the thickness of 22 mm and roughness Ra = 1.25)	2 × 15 000 N
Stroke	400 mm (15.75'')
Rotational speed under load	20 rpm (gear I) 80 rpm (gear II)
Minimum workpiece thickness	13 mm (0.5'')
Minimum pipe diameter	950 mm (37.4'')
Base plate adjustment range	0–44 mm (0–1.73'') front-back
Noise level	More than 85 dB
Required ambient temperature	0–40°C (32–104°F)
Weight	130 kg (290 lbs)





1.3. Design

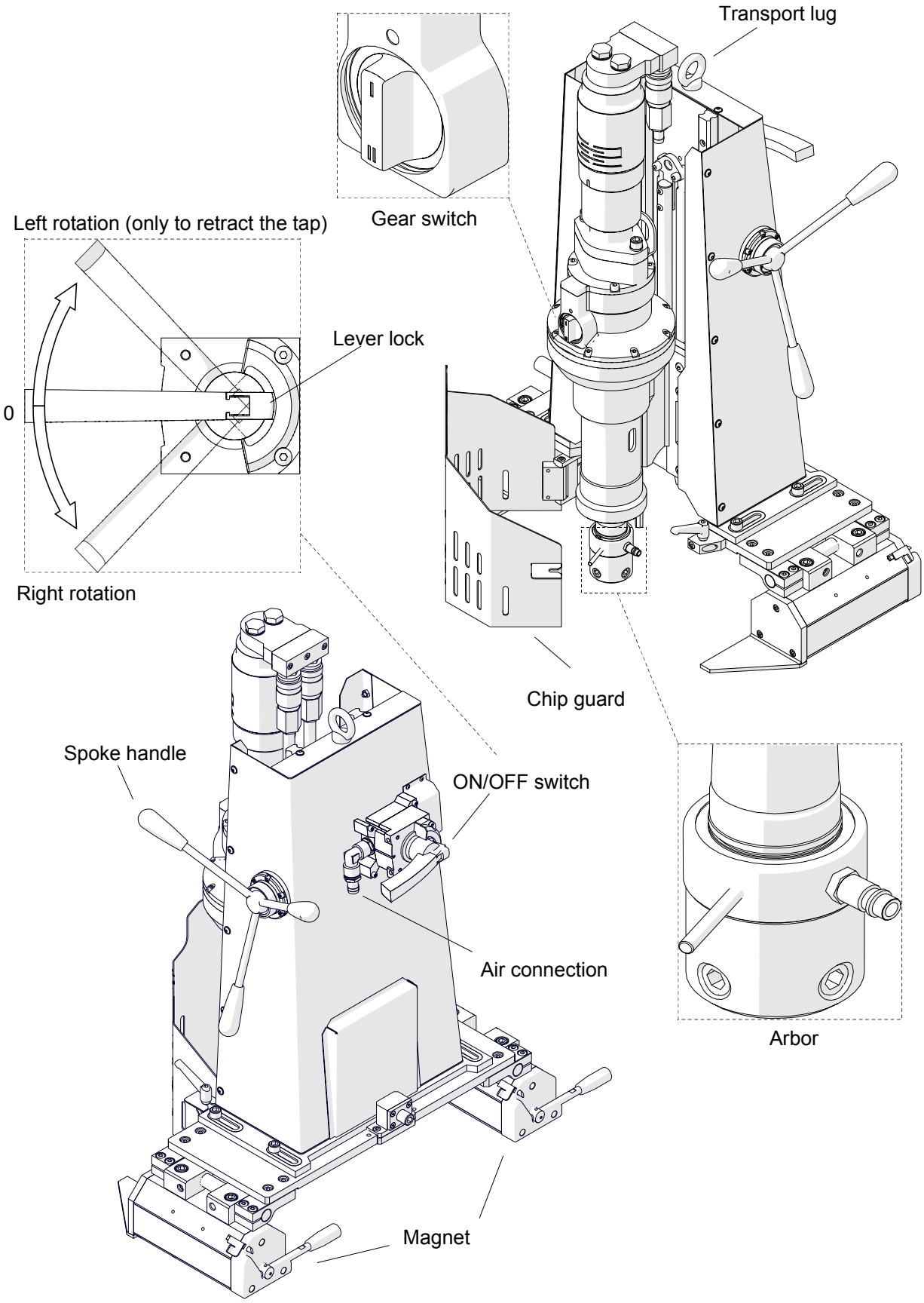


Fig. 1. View of the PRO 200-A ATEX

2. START UP AND OPERATION

2.1. Disassembling the machine into parts

Disconnect two quick couplings (1, Fig. 2), use the 6 mm hex wrench to unscrew the drive (2), and then use the 5 mm and 10 mm hex wrenches to unscrew the body (3).

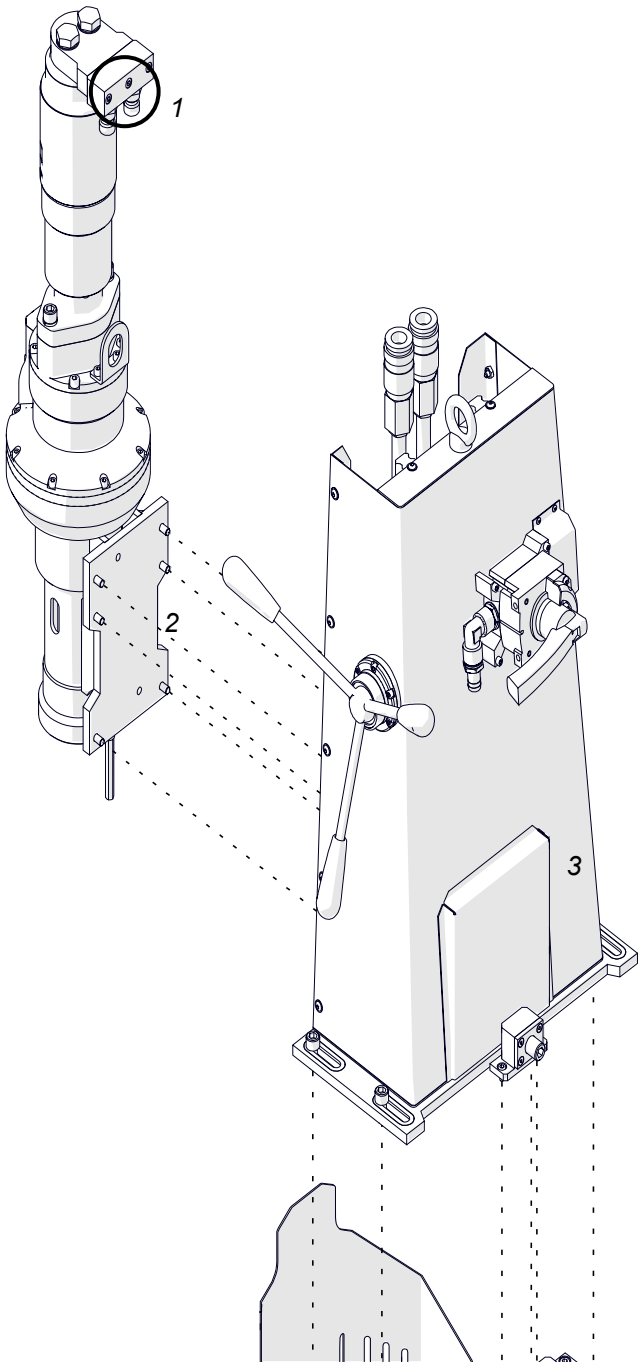


Fig. 2. Disassembling the machine into parts

2.2. Installing and removing the arbor, twist drill bit, or screw tap chuck

Unplug the machine from the air source, and then rotate the spoke handles to the right (1, Fig. 3) to raise the motor. Use a clean and dry cloth to wipe the spindle and arbor (twist drill bit, screw tap chuck with axial compensation). Next, wear protective gloves and insert the arbor (drill bit, tap chuck) into the spindle (2). Make sure that the vertical rod is not located between the hose fitting and the horizontal rod (3).

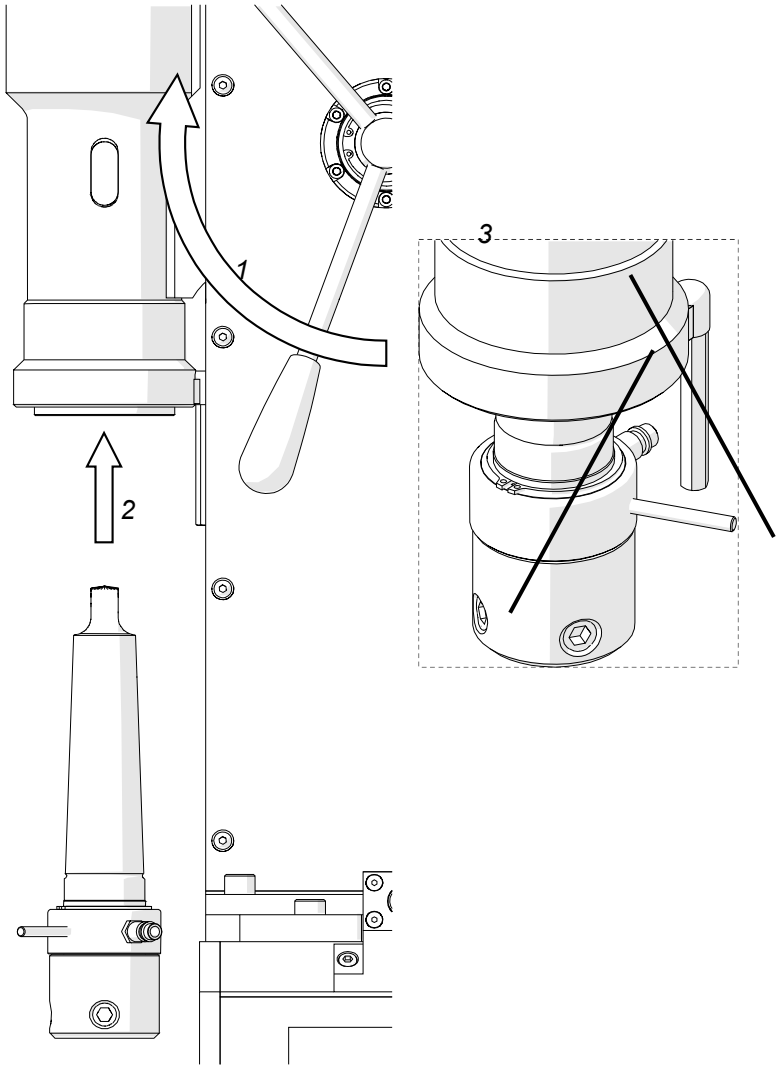


Fig. 3. Installing the arbor, drill bit, or tap chuck

To remove the arbor (drill bit, tap chuck), raise the motor, and then rotate the spindle (1, Fig. 4) in such a way to align the openings in the spindle and gearbox (2). Next, insert the MT3 drift (3) into the opening, and tap the drift using a mallet (4).

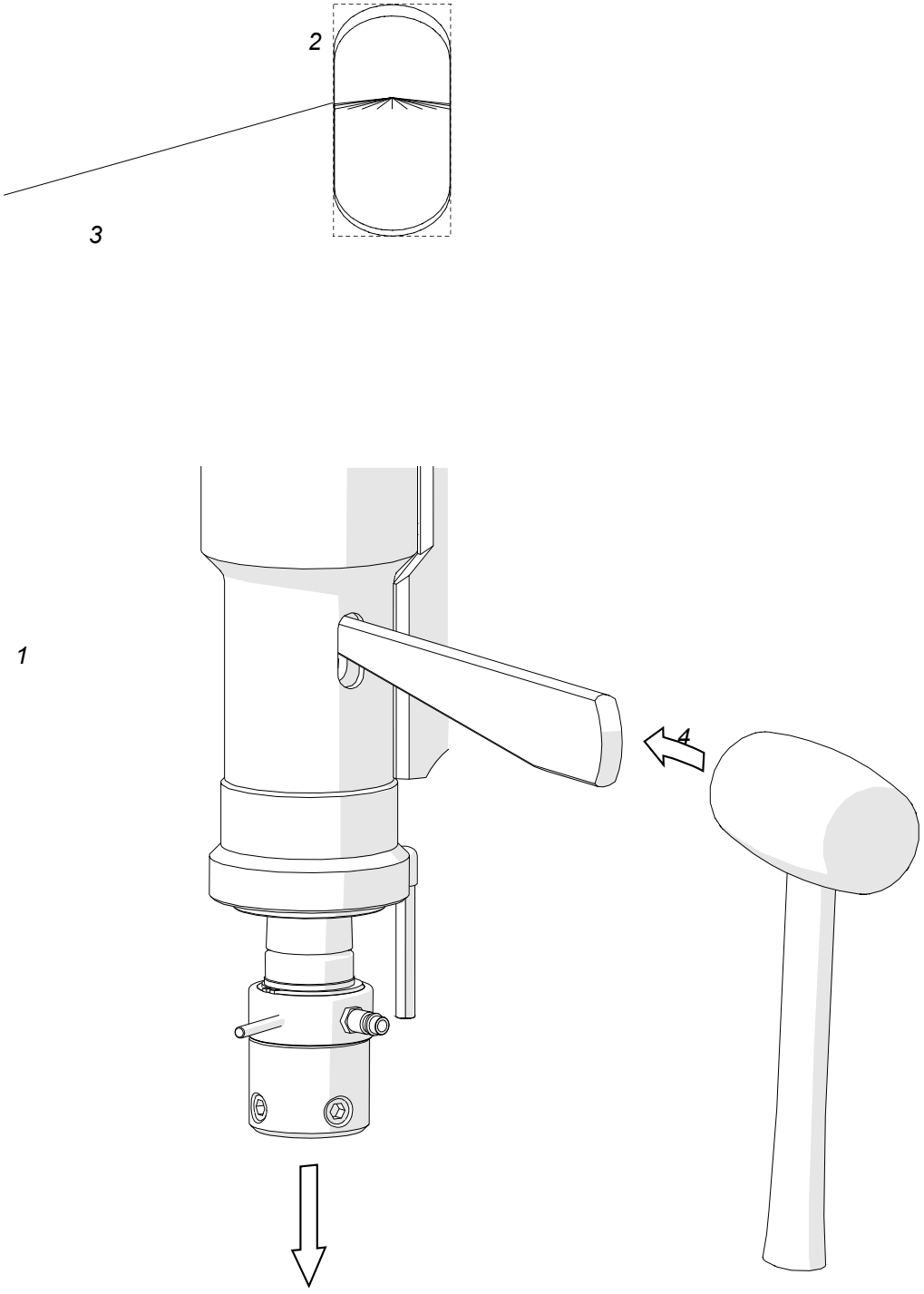


Fig. 4. Removing the arbor, drill bit, or tap chuck

2.3. Installing, removing, and operating the annular cutter

Install the arbor as described before, wear protective gloves, and then insert the proper pilot pin into the annular cutter (1, Fig. 5). Use a clean and dry cloth to wipe the cutter. Next, place the cutter into the arbor (2) in such a way to align the flats 3 with the set screws 4, and then use the 8 mm hex wrench to tighten both set screws.

To remove the cutter, loosen the screws 4 using the 8 mm hex wrench.

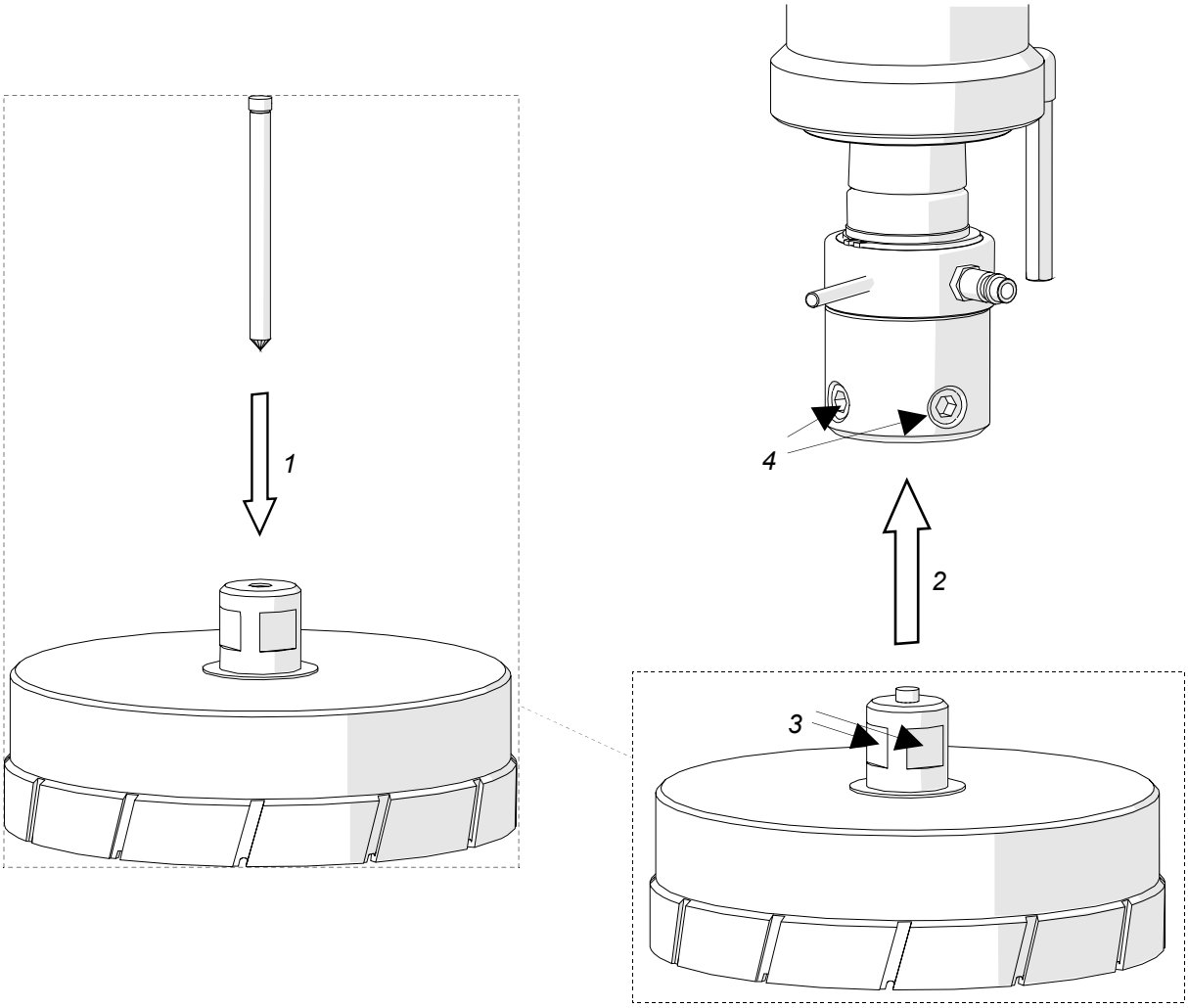


Fig. 5. Installing the annular cutter

Fig. 6 shows how annular cutters operate. As the cutter penetrates the workpiece, the pilot pin recesses into the arbor and tightens the spring. As a result, after the cutter goes through the entire thickness, the slug core is expelled from the cutter. When pressed, the pilot pin also allows application of coolant to the inner surface of the annular cutter.

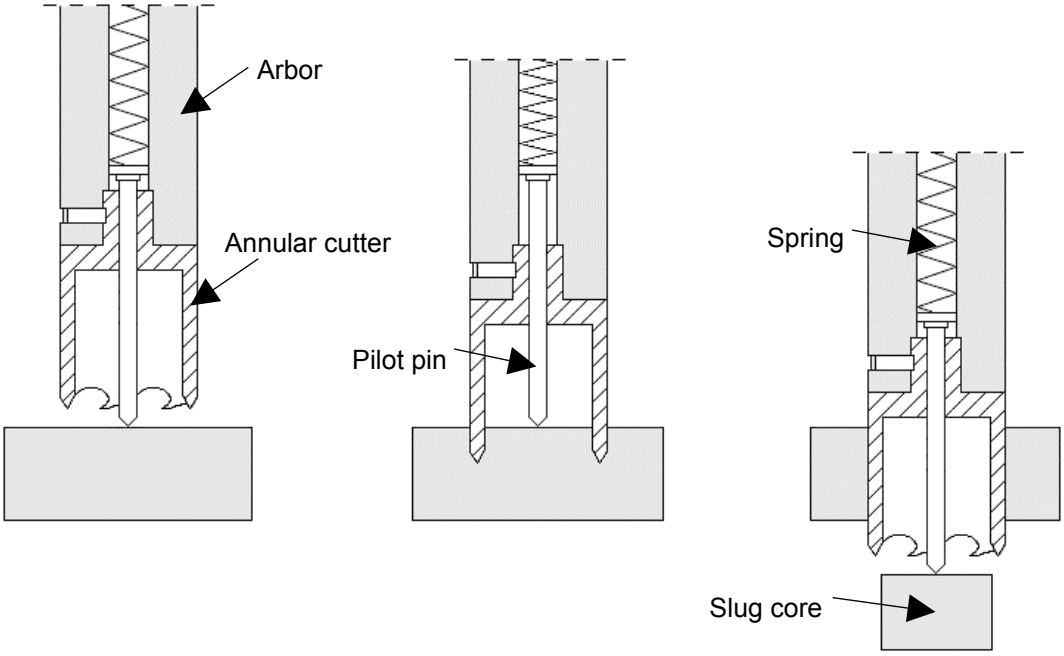


Fig. 6. Annular cutters operation

Annular cutters are designed to make only through holes shown in Fig. 7. When drilling incomplete through holes the pilot pin must not be used.

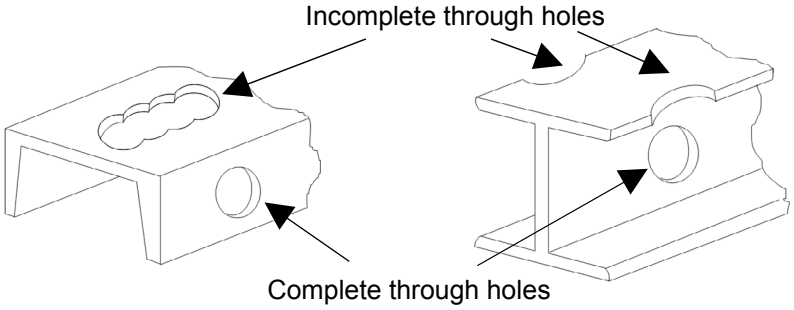


Fig. 7. Types of holes to make with annular cutters

2.4. Installing and removing the screw tap

Install the screw tap chuck with axial compensation as described before. Next, insert the entering tap (tap no. 1) into the proper adapter (1, Fig. 8), and then install the adapter into the tap chuck (2).

To remove the screw tap, unlock it and remove from the adapter.

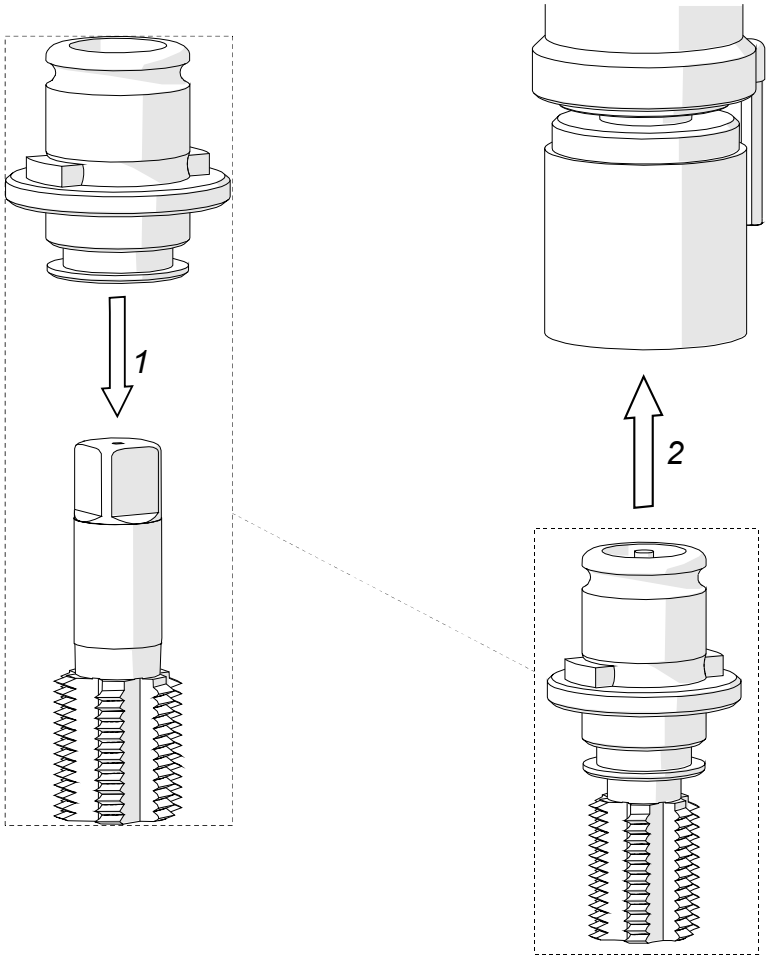


Fig. 8. Installing the screw tap

2.5. Preparing

Before beginning, clean steel parts, including the MT5 shank, from anti-corrosion coating used to preserve the machine for storage and transport. Then, use the transport lug (1, Fig. 9) to transport the machine to the worksite.

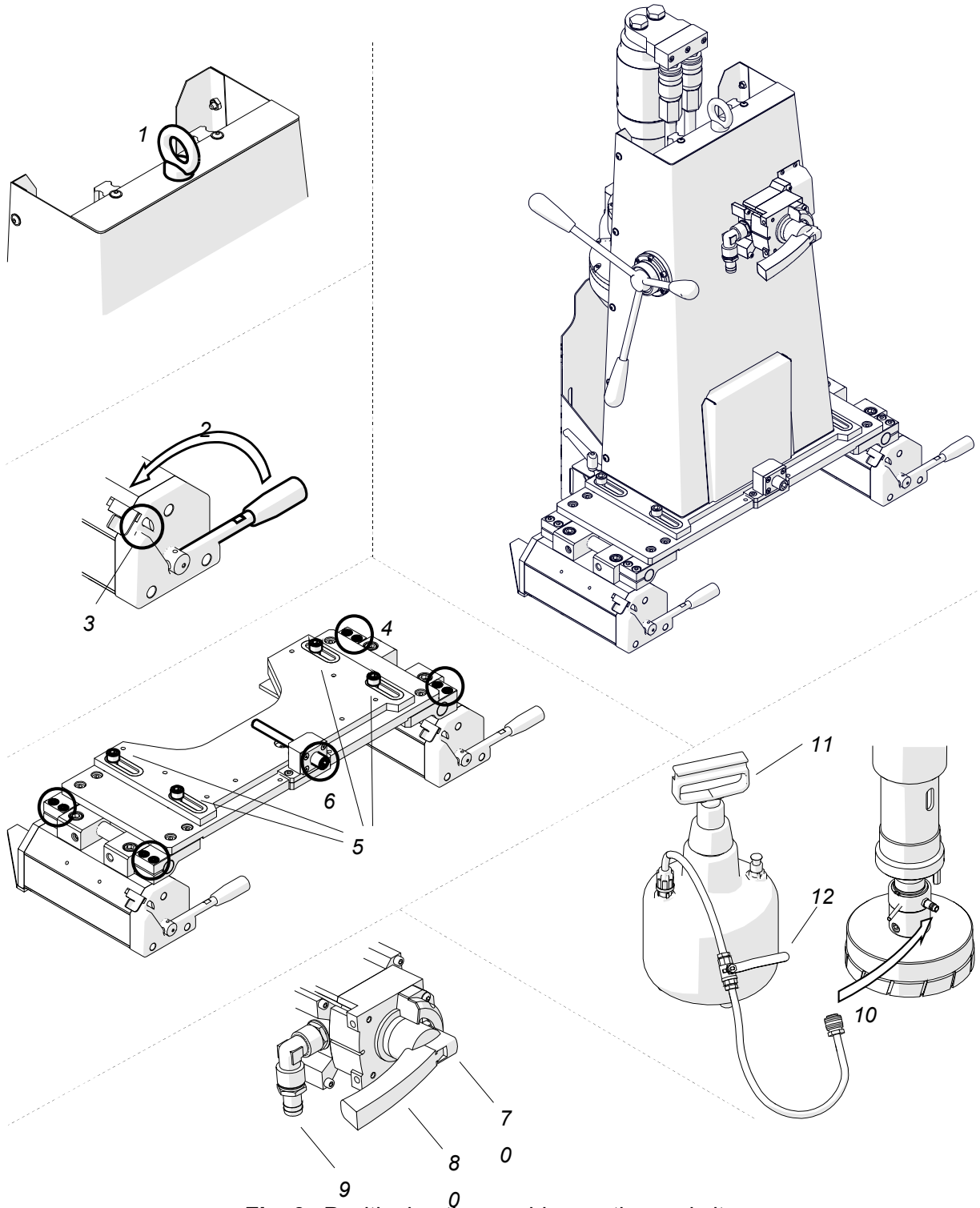


Fig. 9. Positioning the machine on the worksite

Select the proper annular cutter, drill bit, or screw tap based on the hole size desired. Next, use a clean and dry cloth to wipe the spindle, arbor (drill bit, tap chuck), and cutter, and then install the arbor (and then the cutter), drill bit, or tap chuck (and then the screw tap with adapter) as described before.

Position the machine on a flat ferromagnetic workpiece with a thickness of at least 13 mm (0.5"). The workpiece must be clean, without rust or paint that decrease the holding force of the magnets. Some types of steel are non-ferromagnetic (do not conduct magnetic flux) and the magnets are not capable to clamp onto them.

Clamp the magnets by rotating their levers to the left (2) as far as possible, and then lock the levers in this position with the lock pin 3. The maximum holding force is achieved when the bottom of each magnet is in full contact with the workpiece.

When working on pipes, use the 6 mm hex wrench to loosen eight screws 4, set the magnets at the desired angle, position the machine on the pipe, tighten the screws, and clamp the magnets.

Use the 10 mm hex wrench to loosen four screws 5, and then adjust the position of the machine using adjustment screw 6.

Press the lever lock 7 and set the lever 8 in the horizontal ('0') position, and then connect the machine to a correctly prepared air source of sufficient purity using the air fitting 9 and a hose with the inner diameter of at least 20 mm (0.8"; and 18 mm (0.7") for fittings). The air source must be equipped with an air preparation unit: a filter, regulator, and lubricator. The flow capacity of the air preparation unit must not be less than 4000 l/min.

Rotate the spoke handles to the left to place the tool above the workpiece.

When using the annular cutter, install the cooling system by attaching the bottle hose to the fitting (10), and then fill the bottle with a cutting fluid. Do not use pure water as the cutting fluid. However, using emulsions formed from mixing water and drilling oil is satisfactory. Next, rotate the handle 11, and move it up-down several times to build a pressure inside the bottle. Then, check the operation of the cooling system. To do this, open the valve 12, and then rotate the spoke handles to the left to initially apply pressure on the pilot pin, which should result in the fluid filling the system and flowing from the inside of the cutter.

2.6. Drilling

Set the second gear, and then press the lever lock and set the lever to the lower position to start the motor. Slowly rotate the spoke handles to the left to bring the tool close to the workpiece, and begin drilling.

When using annular cutters, drill holes in one pass.

⚠ When the annular cutter goes through the material, the slug core is expelled from the cutter with a significant force.

When using drill bits, drill large holes in two passes. Drill a first hole using a drill bit with a diameter smaller than the diameter of the hole size desired, and then drill again using the bit with diameter equal to the hole size desired.

When drilling holes deeper than 50 mm (2"), retract the tool above the workpiece

as often as possible to allow chips to be removed from the hole. If the grooves of the tool are clogged, stop the motor and use a brush to clean them. After the drilling depth exceeds 40 mm (1.6''), apply the cutting fluid manually into the drilling area.

After the hole is made, retract the tool from the workpiece, and then press the lever lock and set the lever to the horizontal ('0') position to stop the motor.

To move the machine to another drilling spot, first release the magnets by rotating their levers as far as possible to the right, and then either use a crane for transport or disassemble the machine as described before and reassemble it in another location. Releasing the magnets from thin or round workpieces results in the magnet lever acting as a spring. In such a case it is extremely important to hold the lever tightly when rotating it to the right or else the lever may hit the magnet with significant force and permanently damage the magnet.

After the work is finished and the motor stopped, set the first gear, and then run the machine for a while without load, which will improve lubricity. Next, stop the motor, clean chips and excess coolant from the machine and tool, close the valve of the cooling system, and then press the pilot pin to expel the coolant remaining within the system. Finally, release the magnets, and then unplug the machine from the supply, and remove it from the worksite.

2.7. Tapping

With the entering tap (tap no. 1) installed, set the first gear. Next, rotate the spoke handles to the left to place the tap above a hole with diameter appropriate for the tap used. If the diameter of the hole is too small, tapping may be impossible due to excessive milling resistance and insufficient motor power.

Spread tap oil on the cutting part of the screw tap to prevent seizure and extend durability. Next, press the lever lock and set the ON/OFF lever to the lower position to start the motor, and then slowly rotate the spoke handles to the left to bring the screw tap close to the workpiece, and begin tapping. After tapping with the entering tap (tap no. 1) is finished, press the lever lock and set the ON/OFF lever to the horizontal ('0') position to stop the motor, and then set the ON/OFF lever to the upper position and rotate the spoke handles to the right to retract the tap from the hole.

Press the lever lock and set the ON/OFF lever to the horizontal ('0') position to stop the motor, replace the entering tap (tap no. 1) with the bottoming tap (tap no. 3), and then tap again, proceeding as described before.

After the work is finished and the motor stopped, set the second gear, and then run the machine for a while without load, which will improve lubricity.

2.8. Maintaining the air preparation unit

Maintain the air preparation unit as required to keep the water trap drained, filter cleaned, and the oil reservoir filled so that there are 12 drops of oil per minute. Use only oil whose ignition temperature exceeds 260°C (500°F). If the machine is to be left idle for at least 24 hours after the work is finished, increase the delivery of oil and run the motor for 2–3 seconds, which will prevent rusting and degrading of the rotor vanes.

2.9. Adjusting the gib clearance

Every 50 operation hours, or more often, check the gib clearance because it greatly influences the quality of drilled holes. The clearance is inappropriate if the motor does not slide smoothly or if it raises without any action from the operator.

To adjust the clearance, use the 13 mm combination wrench to loosen four nuts (1, Fig. 10), and then use the 4 mm hex wrench to tighten two set screws 2. If the motor slides smoothly and not raises automatically, retighten the nuts 1.

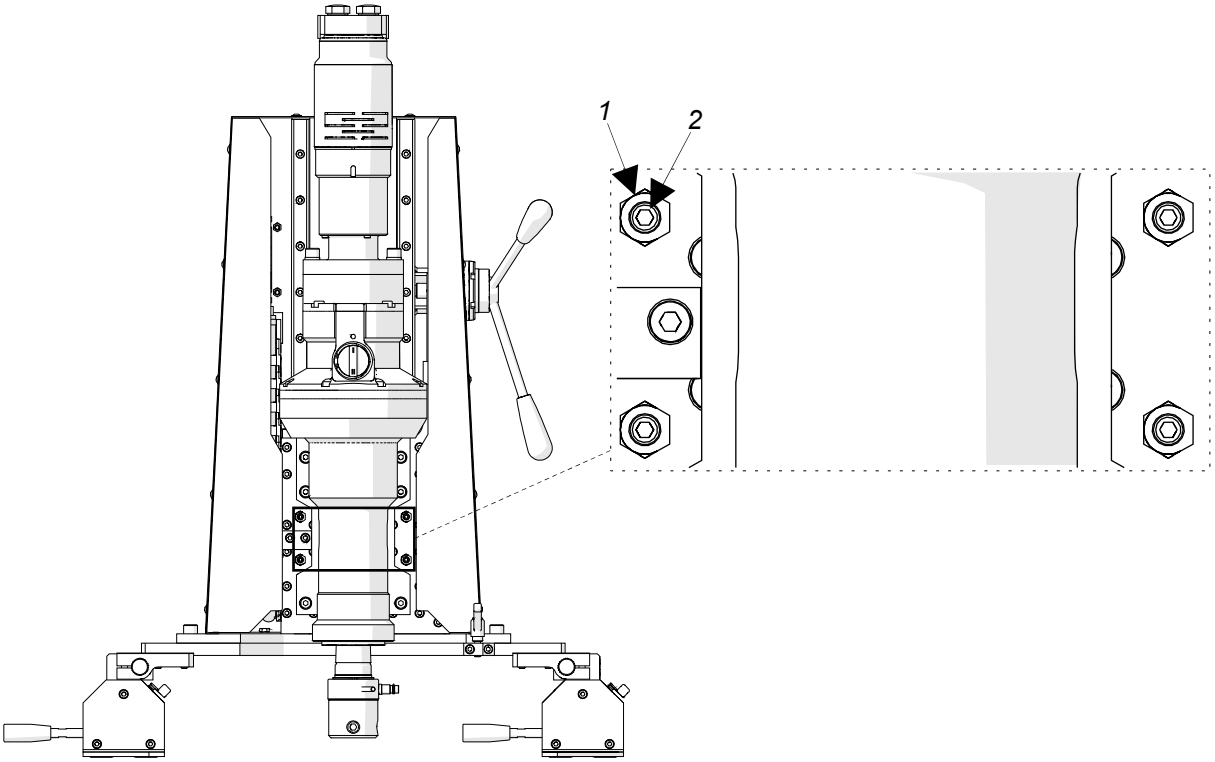


Fig. 10. Adjusting the gib clearance

3. ACCESORIES

QUICK CHANGE CHUCK MASTER HOLDER

- Quick change chuck master holder for use on vertical drilling and boring machines with right and left hand spindle rotation. Used with quick change adaptors for drilling (KD Adaptor) and for tapping (KTX Adaptor)
- Sliding the outer sleeve towards the spindle unlocks the adaptor and sliding away from the spindle locks it

Part No.	Morse Taper	Suitable Adaptors	Shank Length	ØD	ØD1
SPTH105-TF5	#5 MT	Size 5	130.5mm	100	60

KD MORSE TAPER TOOLING ADAPTORS

- For use with any Morse Taper tooling, fits directly into Quick Change Chuck Master Holder
- Increases speed of changing from hole drilling tooling to tapping tooling

Part No.	Female MT	Suitable Chuck	ØD1	ØD3	Length (L)
SPTH105-KD5-2	#2 MT	SPTH105-TF5	60mm	73mm	25mm
SPTH105-KD5-3	#3 MT	SPTH105-TF5	60mm	73mm	25mm
SPTH105-KD5-4	#4 MT	SPTH105-TF5	60mm	73mm	31mm

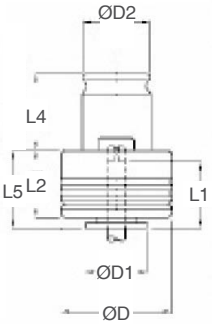
KTX TAP ADAPTORS

- Fits directly into Quick Change Chuck Master Holder (pg 20)
- For use with QASB tap collets (see below)

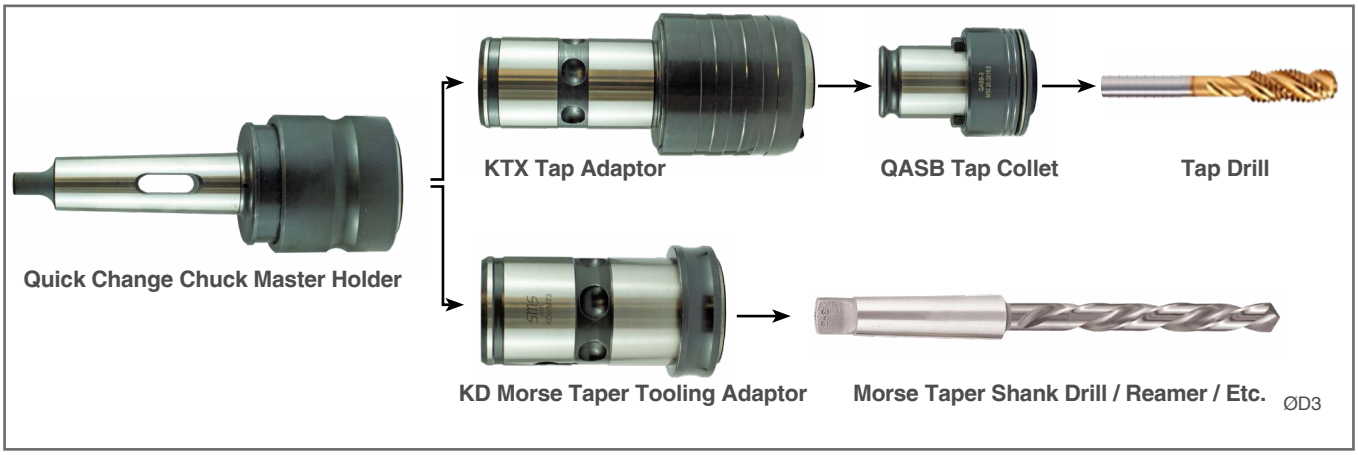
Part No.	Adaptor Size	Tapping Range	ØD1	ØD	d	Length (L)
SPTH103-KTX3/2	QASB2	M8 - M20	34mm	50mm	31mm	61mm
SPTH105-KTX5/2	QASB2	M8 - M20	60mm	50mm	31mm	61mm
SPTH105-KTX5/3	QASB3	M14 - M33	-	72mm	48mm	90mm
SPTH105-KTX5/4	QASB4	M22 - M52	-	95mm	60mm	110mm

QASB TAP COLLET

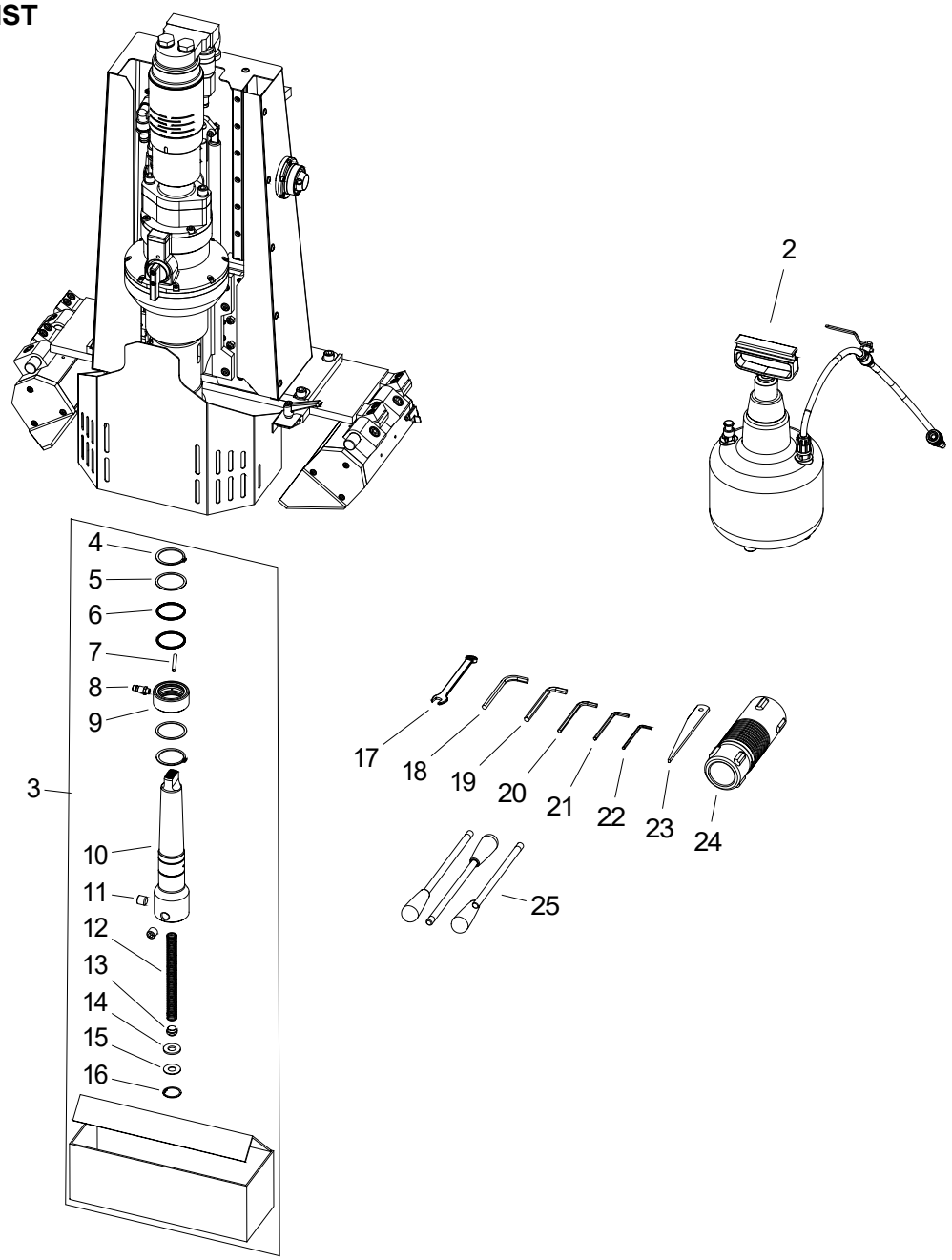
- Fits directly into KTX tap adaptors
- Safety clutch protects the tap from breakage



Part No.	Use Tap Adaptor	Suit Tap	ØD	ØD1	ØD2	L1	L3	L4	L5
SPTH105-QASB2-M8	QASB2	M8, 5/16" UNC/UNF/BSW, 1/8" BSP	50	30	31	30	31	35	34
SPTH105-QASB2-M10	QASB2	M10, 3/8" UNC/UNF/BSW, 1/4" BSP	50	30	31	30	31	35	34
SPTH105-QASB2-M12	QASB2	M12, 1/2" UNC/UNF/BSW	50	30	31	30	31	35	34
SPTH105-QASB2-M14	QASB2	M14, 9/16" UNC/UNF/BSW	50	30	31	30	31	35	34
SPTH105-QASB2-M16	QASB2	M16, 5/8" UNC/UNF/BSW, 3/4" BSP	50	30	31	30	31	35	34
SPTH105-QASB2-M20	QASB2	M18, M20, 3/4" UNC/UNF/BSW	50	30	31	30	31	35	34
SPTH105-QASB3-M14	QASB3	M14, 9/16" UNC/UNF/BSW	72	48	48	44	41	55.5	45
SPTH105-QASB3-M16	QASB3	M16, 5/8" UNC/UNF/BSW, 3/4" BSP	72	48	48	44	41	55.5	45
SPTH105-QASB3-M20	QASB3	M18, M20, 3/4" UNC/UNF/BSW	72	48	48	44	41	55.5	45
SPTH105-QASB3-M22	QASB3	M22, 7/8" UNC/UNF/BSW, 1/2" BSP	72	48	48	44	41	55.5	45
SPTH105-QASB3-M24	QASB3	M24, 1" UNC/UNF/BSW, 5/8" BSP	72	48	48	44	41	55.5	45
SPTH105-QASB3-M30	QASB3	M27, M30, 1-1/8" UNC/UNF/BSW, 3/4" BSP	72	48	48	44	41	55.5	45
SPTH105-QASB3-M33	QASB3	M33, 1-1/4" UNC/UNF/BSW, 7/8" BSP	72	48	48	44	41	55.5	45
SPTH105-QASB4-M22	QASB4	M22, 7/8" UNC/UNF/BSW, 1/2" BSP	95	60	60	71	61	63	68
SPTH105-QASB4-M24	QASB4	M24, 1" UNC/UNF/BSW, 5/8" BSP	95	60	60	71	61	63	68
SPTH105-QASB4-M27	QASB4	M27, M30, 1-1/8" UNC/UNF/BSW, 3/4" BSP	95	60	60	71	61	63	68
SPTH105-QASB4-M33	QASB4	M33, 1-1/4" UNC/UNF/BSW, 7/8" BSP	95	60	60	71	61	63	68
SPTH105-QASB4-M36	QASB4	M36, 1" BSP	95	60	60	71	61	63	68
SPTH105-QASB4-M39	QASB4	M39, M40, M42, 1-1/2" UNC/UNF/BSW	95	60	60	71	61	63	68
SPTH105-QASB4-M48	QASB4	M45, M48, 1-3/4" BSW, 1-1/4" BSP	95	60	60	71	61	63	68
SPTH105-QASB4-M52	QASB4	M52, 2" BSW, 1-1/2" BSP, 1-3/4" BSP	95	60	60	71	61	63	68

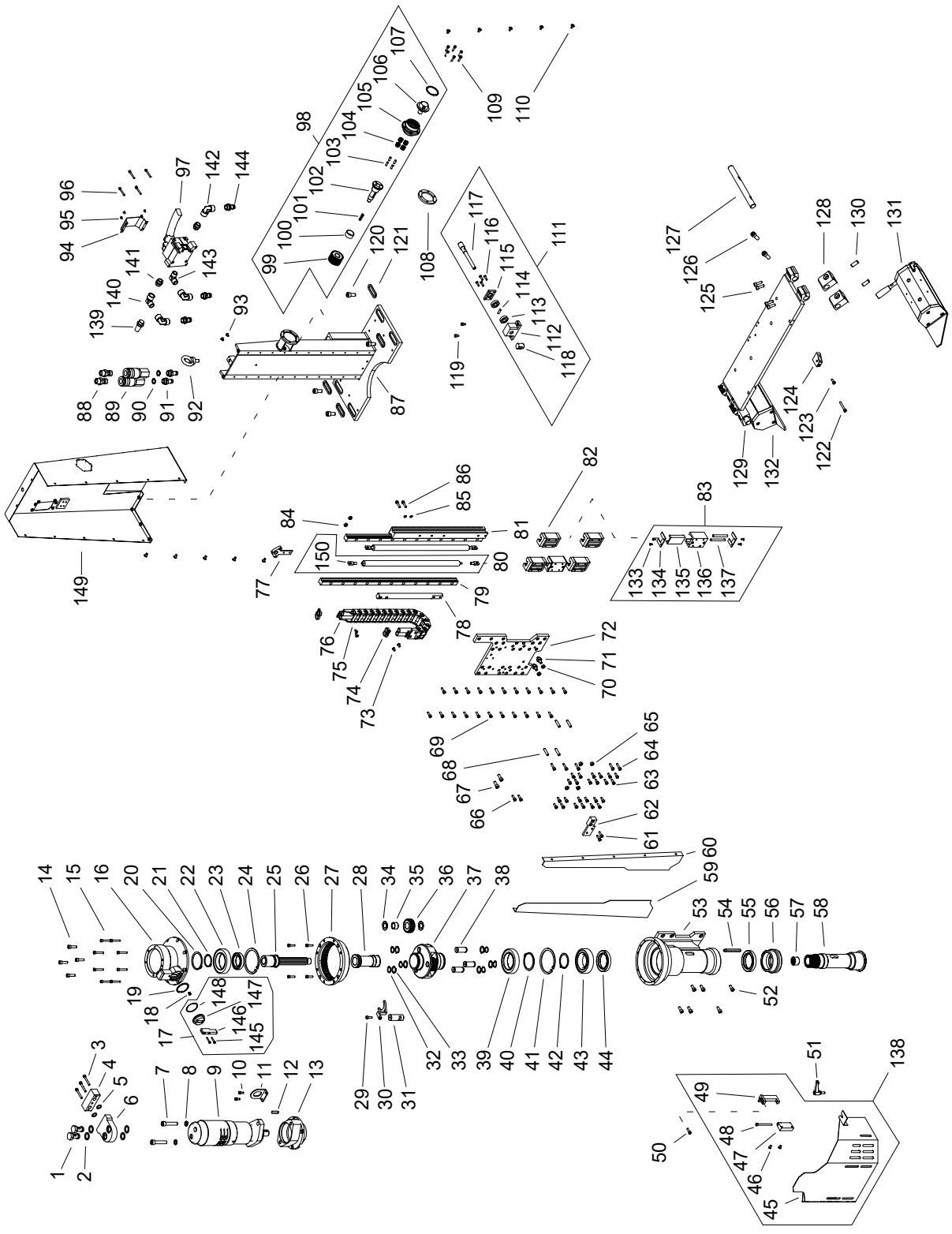


PARTS LIST



ITEM	PART NUMBER	DESCRIPTION	Q-TY
2	UKL-0490-17-00-00-0	COOLANT BOOTLE ASSY	1
3	UCW-0490-04-00-00-0	ARBOR AMT5-C32 4-4	1
4	PRS-000315	EXTERNAL RETAINING RING 48z	2
5	PDK-0490-04-07-00-0	WASHER	2
6	PRS-000316	SEAL O-RING 47.63x3.53	2
7	PRT-0151-06-13-00-6	ROD L=50	1
8	KRC-000004	CONNECTOR 1/8"	1
9	TLJ-0490-04-06-01-0	COOLANT RING	1
10	KRP-0490-04-01-00-0	ARBOR BODY	1
11	WKR-000493	HEX SOCKET SET SCREW WITH FLAT POINT M16x1.5x16	2
12	SPR-0490-04-02-00-0	SPRING	1
13	WYP-0490-04-03-00-0	PLUNGER	1

ITEM	PART NUMBER	DESCRIPTION	Q-TY
14	USZ-0490-04-05-00-0	SEAL	1
15	PDK-0490-04-04-00-0	WASHER	1
16	PRS-000022	INTERNAL RETAINING RING 32w	1
17	KLC-000002	13 MM FLAT WRENCH	1
18	KLC-000004	10 MM HEX WRENCH	1
19	KLC-000011	8 MM HEX WRENCH	1
20	KLC-000009	6 MM HEX WRENCH	1
21	KLC-000008	5 MM HEX WRENCH	1
22	KLC-000007	4 MM HEX WRENCH	1
23	KLN-0103-00-00-00-0	WEDGE MT3	1
24	OPK-000001	TOOL CAN	1
25	DZW-0490-27-00-00-0	SPOKE HANDLE WITH KNOB	3


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150

ITEM	PART NUMBER	DESCRIPTION	Q-TY
1	ZLC-0490-25-00-00-0	MOTOR COUPLING	2
2	USZ-000024	SEAL 1/2	4
3	SRB-000126	HEX SOCKET HEAD CAP SCREW M6x45	3
4	KST-0490-24-00-00-0	BLOCK	1
5	PRS-000233	O-RING 15.3x2.4	2
6	PLY-0490-23-00-00-0	MOTOR PLATE	1
7	SRB-000055	HEX SOCKET HEAD CAP SCREW M12x60	2
8	PDK-000053	SPRING WASHER 12.2	2
9	SLN-000156	MOTOR	1
10	SRB-000105	HEX SOCKET HEAD CAP SCREW M6x14	2
11	ZCZ-0490-01-13-00-0	HOOK	1
12	WPS-000086	KEY 8x7x32	1
13	KLR-0490-01-08-00-0	MOTOR FLANGE	1
14	SRB-000155	HEX SOCKET HEAD CAP SCREW M8x30	4
15	SRB-000124	HEX SOCKET HEAD CAP SCREW M6x40	8
16	PKR-0490-01-07-00-0	GEARBOX COVER	1
17	PKT-0490-01-11-00-0	KNOB ASSY	1
18	ZTR-000001	BALL LOCK 8	1
19	PRS-000031	INTERNAL RETAINING RING 50w	1
20	PRS-000310	EXTERNAL RETAINING RING 65z	1
21	PRS-000029	EXTERNAL RETAINING RING 45z	1
22	LOZ-000148	BALL BEARING 65x100x18	1
23	LOZ-000147	BALL BEARING 45x68x12	1
24	PRS-000001	INTERNAL RETAINING RING 100w	1
25	WLK-0490-01-06-00-0	SELECTOR SHAFT	1
26	SRB-000117	HEX SOCKET HEAD CAP SCREW M6x25	4
27	KOL-0490-01-02-00-0	GEAR z73	1
28	WLK-0490-01-05-00-0	PINION SHAFT z23	1
29	SRB-000114	HEX SOCKET HEAD CAP SCREW M6x20	1
30	WDL-0490-01-10-00-0	SHIFT FORK	1
31	WLK-0490-01-09-00-0	FORK SHAFT	1
32	PRS-000011	EXTERNAL RETAINING RING 20z	6
33	PDK-0490-01-03-04-0	PIVOT WASHER	6
34	PDK-0490-01-03-05-0	WASHER	6
35	LOZ-000149	NEEDLE BEARING 20x26x16	3
36	KOL-0490-01-03-02-0	GEAR z25	3
37	JRZ-0490-01-03-01-0	PLANETARY CARRIER	1
38	SWR-0490-01-03-03-0	MOUNTING PIN	3
39	LOZ-000148	BALL BEARING 65x100x18	1
40	PRS-000310	EXTERNAL RETAINING RING 65z	1
41	PRS-000001	INTERNAL RETAINING RING 100w	1
42	PRS-000308	EXTERNAL RETAINING RING 55z	1
43	LOZ-000146	BALL BEARING 55x100x21	1
44	PRS-000307	SEAL 60x85x12	1
45	OSL-0490-05-01-00-1	COVER ASSY	1
46	WKR-000100	HEX SOCKET BUTTON HEAD SCREW M6x10	2
47	KST-0490-05-03-00-0	COVER BLOCK	1
48	SRB-000137	HEX SOCKET HEAD CAP SCREW M6x70	1
49	WSP-0490-05-02-00-2	COVER SUPPORT	1
50	SRB-000114	HEX SOCKET HEAD CAP SCREW M6x20	1
51	RKJ-000061	HANDLEVER M8-20	1
52	SRB-000145	HEX SOCKET HEAD CAP SCREW M8x18	6

ITEM	PART NUMBER	DESCRIPTION	Q-TY
53	KRP-0490-01-01-00-0	DRIVE BODY ASSY	1
54	PLC-0143-03-06-00-3	STOP ROD	1
55	PRS-000307	SEAL 60x85x12	1
56	LOZ-000145	NEEDLE BEARING 70x96.5x40	1
57	LOZ-000010	NEEDLE BEARING 25x32x20	1
58	WRZ-0490-01-04-00-0	SPINDLE	1
59	OSL-0490-08-01-00-0	RIGHT BODY COVER	1
60	OSL-0490-09-01-00-0	LEFT BODY COVER	1
61	SRB-000114	HEX SOCKET HEAD CAP SCREW M6x20	2
62	WSP-0490-12-00-00-0	FOLLOWER SUPPORT	1
63	SRB-000106	HEX SOCKET HEAD CAP SCREW M6x16	24
64	SRB-000117	HEX SOCKET HEAD CAP SCREW M6x25	5
65	NKR-000020	HEX NUT M8	4
66	SRB-000114	HEX SOCKET HEAD CAP SCREW M6x20	2
67	SRB-000150	HEX SOCKET HEAD CAP SCREW M8x22	2
68	WKR-000494	HEX SOCKET SET SCREW WITH FLAT POINT M8x35	4
69	SRB-000114	HEX SOCKET HEAD CAP SCREW M6x20	22
70	NKR-000020	HEX NUT M8	1
71	SRB-0490-21-00-00-0	BOLT	2
72	PLY-0490-19-01-00-0	FOLLOWING PLATE	1
73	WKR-000100	HEX SOCKET BUTTON HEAD SCREW M6x10	4
74	OPS-000006	HOSE CLAMP 12-22	4
75	PRW-000083	CABLE CARRIER	1
76	WAZ-000030	HOSE	2
77	WSP-0490-22-00-00-0	SPRING SUPPORT	1
78	SLP-0490-20-00-00-0	ROD	1
79	SNA-000036	GUIDE	2
80	SPR-0490-39-00-00-0	GAS SPRING ASSY	2
81	LST-0490-19-02-00-0	GEAR RACK	1
82	PRW-000082	LINEAR GUIDE	4
83	HML-0490-14-00-00-0	BRAKE ASSY	2
84	NKR-000036	LOW HEX NUT M8	2
85	PDK-000046	SPRING WASHER 6.1	2
86	SRB-000117	HEX SOCKET HEAD CAP SCREW M6x25	2
87	KRP-0490-03-00-00-2	BODY ASSY	1
88	KRC-000011	QUICK-COUPLING FITTING G1/2	2
89	SZK-000003	QUICK COUPLING 1/2	2
90	PRS-000241	O-RING 18x2	2
91	KRC-0490-11-00-00-0	HOSE FITTING	2
92	SRB-000168	EYE BOLT	1
93	WKR-000495	HEX SOCKET BUTTON HEAD SCREW M6x8	2
94	OSL-0490-13-00-00-0	COUPLING COVER	1
95	WKR-000292	HEX SOCKET BUTTON HEAD SCREW M4x6	4
96	SRB-000091	HEX SOCKET HEAD CAP SCREW M5x35	4
97	ZWR-0490-26-00-00-0	VALVE	1
98	WLK-0490-10-00-00-0	FEED SHAFT ASSY	1
99	KOL-0490-10-03-00-0	FEED GEAR	1
100	TLJ-000010	SELF-LUBRICATING SLEEVE 28.05x32x16	1
101	WPS-000015	PARALLEL KEY 6x6x32	1
102	WLK-0490-10-02-00-0	FEED SHAFT	1
103	KLK-000135	DOWEL PIN 6x16	4
104	KOL-0281-01-04-00-0	GEAR z14	4

ITEM	PART NUMBER	DESCRIPTION	Q-TY
105	OBD-0490-10-01-00-0	GEARBOX BODY	1
106	WLK-0281-02-03-00-0	INPUT SHAFT M12	1
107	PRS-000031	INTERNAL RETAINING RING 50w	1
108	MSK-0490-18-00-00-0	COVER RING	1
109	SRB-000086	HEX SOCKET HEAD CAP SCREW M5x20	6
110	WKR-000356	HEX SOCKET ROUND HEAD SCREW WITH FLANGE M6x12	10
111	ZSP-0490-16-00-00-0	ADJUSTMENT UNIT ASSY	1
112	WSP-0490-16-01-00-0	SUPPORT	1
113	LOZ-000041	BALL BEARING 15x32x9	2
114	KLK-000060	DOWEL PIN 6n6x20	1
115	PLY-0490-15-03-00-0	PLATE	1
116	WKR-000137	HEX SOCKET COUNTERSUNK HEAD SCREW M5x20	4
117	SRB-0490-16-02-00-0	FEED SCREW	1
118	KMN-0447-01-07-00-0	GUIDING BLOCK	1
119	SRB-000101	HEX SOCKET HEAD CAP SCREW M6x10	2
120	SRB-000213	HEX SOCKET HEAD CAP SCREW M12x25	4
121	WKL-0490-02-05-00-0	BASE PLATE INSERT	4
122	SRB-000126	HEX SOCKET HEAD CAP SCREW M6x45	1
123	SRB-000106	HEX SOCKET HEAD CAP SCREW M6x16	1
124	KST-0490-06-00-00-0	BASE PLATE BLOCK	1
125	SRB-000153	HEX SOCKET HEAD CAP SCREW M8x25	8
126	SRB-000308	HEX SOCKET HEAD CAP SCREW M12x35	4
127	WLK-0490-35-04-00-0	BASE SHAFT	2
128	PLY-0490-35-03-00-0	MAGNETIC CLAMP PLATE	2
129	PLY-0490-35-05-00-0	MAGNETIC CLAMP PLATE II	2
130	WKR-000038	HEX SOCKET SET SCREW WITH FLAT POINT M12x30	4
131	CHW-0490-02-02-00-0	LEFT MAGNETIC CLAMP	1
132	CHW-0490-02-03-00-0	RIGHT MAGNETIC CLAMP	1
133	WKR-000092	HEX SOCKET BUTTON HEAD SCREW M4x10	4
134	NKD-0490-14-04-00-0	BRAKE COVER	2
135	DCS-0490-14-02-00-0	BRAKE HOLDER	1
136	KRP-0490-14-01-00-0	BRAKE BODY	1
137	WKL-0490-14-03-00-0	SLIDE	2
138	OSL-0490-05-00-00-1	COVER ASSY	1
139	TLM-000003	SILENCER	1
140	KLO-000003	INTERNAL/EXTERNAL THREADED ELBOW G1/2	1
141	ZLC-000218	DOUBLE MALE NIPPLE G1/2	2
142	KLO-000001	INTERNAL THREADED ELBOW G1/2	3
143	KLO-000002	EXTERNAL THREADED ELBOW G1/2	1
144	KRC-000012	QUICK-COUPLING FITTING G1/2	3
145	SRB-000235	HEX SOCKET HEAD CAP SCREW M4x25	2
146	DZW-0490-01-11-03-0	LEVER	1
147	TRC-0490-01-11-10-0	KNOB	1
148	PRS-000309	O-RING 46x2	1
149	OSL-0490-03-02-00-1	BODY COVER ASSY	1
150	PLW-000001	GAS SPRING BRACKET	2