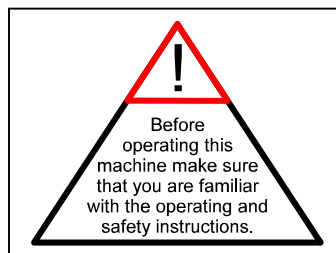


MODEL 2 1333 0010 & 2 1335 0010 PNEUMATIC CORE DRILLS



OPERATING MANUAL



- **Safety Instructions**

Define the safety markers used in the operating instructions and draw attention to the warning labels on the machine.

- **Operating Instructions**

Explain how to handle the device and how to change drilling tools.

- **Maintenance and Mounting Instructions**

Deal with the basics of pneumatic tools, technical data, maintenance instructions, wear, and mounting and dismounting procedures.

- **Spare Parts Catalogue**

Consists of parts lists, sectional drawings and exploded views.

- **Supplement**

Information on maintenance of pneumatic tools.
Information on oiler adjustment.

Safety Instructions

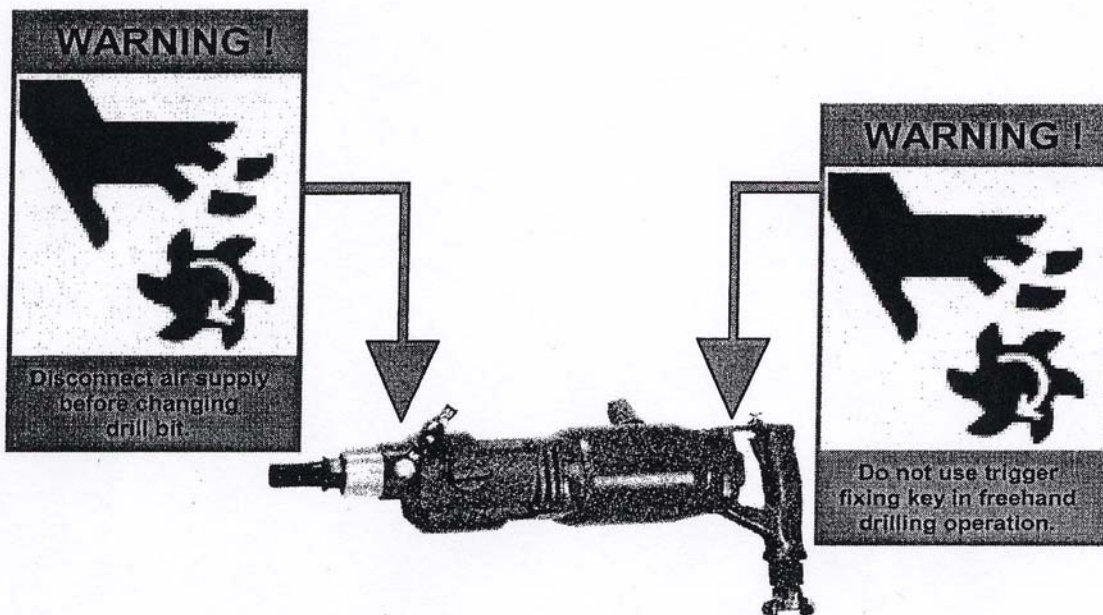
Read Operating Instructions carefully. Familiarize yourself with the following safety markers used in the operating instructions to draw your attention to potential risks when handling or operating the tool:

WARNING! – indicates risk of severe personal injury or accidents.

CAUTION! – indicates risk of material damage.

IMPORTANT! – indicates risk of malfunction.

Before you proceed to operate the tool, make sure that all warning labels are attached to the device. Notify the manufacturer immediately in case that any of the warning labels shown in the illustration below is missing.



Operating Instructions

General

The tool comes along with a set of accessories which may be customized for each specific purchaser, so as to facilitate performance of all works occurring within the scope of his specific application situation. The full scope of supplies includes also tools needed for mounting and dismounting, including

- single-head wrench SW 24
- single-head wrench SW 32
- single-head wrench SW 41
- hex head socket wrench SW 5

Basically, we differentiate between "**freehand drilling**" and "**stand-aided drilling**". The operating procedures to be adhered to for the two different operating modes are described below.

Drill Bit Change

WARNING! Before you start changing the drill bit, make sure that the tool is disconnected from compressed air supply in order to avoid unintentional operation of the tool and injury.

Use a single-head wrench SW 24 (small drill bit) or SW 41 (large drill bits) and a single-head wrench SW 32 to manually unscrew the drill bit to be removed and to screw on the new one. There is no need to use any additional tools.

Freehand Drilling

- Mount the spot-drilling aid onto the centering collar to ensure precise pointing.
- Screw on the desired drill bit (up to max. \varnothing 80 mm – approx. 3 inches). Manual tightening is sufficient because the drill bit will automatically fasten further during drilling.
- Connect the tool to water supply. For this purpose the device comes with a 10 liter pump barrel, which has to be pressurized first. You may alternatively connect the device to a water tap, using "Gardena" hose couplings.
- Finally connect the tool to compressed air supply.
- With the so prepared drill, you may now proceed to carry out your work.

CAUTION! Never switch into gear #1 in freehand drilling operation (great torque)!

- To operate the drill, regulate check valve to adjust the water supply flow as desired.
- Put the drill in drilling position and actuate air valve trigger to switch on the motor.

WARNING! To avoid injury, do not use the valve trigger fixing key in freehand drilling operation! Use valve trigger fixing key in stand-aided drilling operation only!

The handle and the spot-drilling aid enable controlled manual operation of the drill without any problems.

IMPORTANT! Monitor continuously the water supply to ensure that sufficient water is supplied to the cut surface to avoid unnecessary wear of drilling equipment.

- To change drill bits, proceed as described above. Adhere to safety instructions!
- For dismantling the drill upon completion of drilling work, follow the mounting instructions in reverse order.

Stand-Aided Drilling

- First, fix the stand at the point where you wish to drill the opening or hole. To do so, drill a hole matching the size of the corresponding plug and screw the stand onto the surface. Align the stand such that the drill bit will make contact with the surface precisely at the point where you want to drill the opening or hole.
- Insert the drill from above into the corresponding seat and fasten the core drill by means of the hex head socket wrench SW 5.
- Now, manually screw the corresponding drill bit from below onto the drill bit adaptor. Manual tightening is sufficient because the drill bit will automatically fasten further during drilling operation.
- If necessary to attain an angled drill hole, adjust the stand position by swivelling the arm of the stand.
- Connect the tool to water supply. For this purpose the device comes with a 10 liter pump barrel, which has to be pressurized first. You may alternatively connect the device to a water tap, using "Gardena" hose couplings.
- Finally connect the tool to compressed air supply.
- With the so prepared drill, you may now proceed to carry out your work.
- To operate the drill, regulate check valve to adjust the water supply flow as desired.
- Actuate air valve trigger to switch on the motor and press valve trigger fixing key to ensure comfortable working.

IMPORTANT! Monitor continuously the water supply to ensure that sufficient water is supplied to the cut surface to avoid unnecessary wear of drilling equipment.

- You may continuously control the advance motion of the drill by adjusting the star knob at the side of the drilling stand.
- To switch off the machine, unlock the valve trigger fixing key. Then, shut off the water supply.
- To change drill bits, proceed as described above. Adhere to safety instructions!
- For dismantling the drill upon completion of drilling work, follow the mounting instructions in reverse order.

MAINTENANCE AND ASSEMBLY INSTRUCTION

Our Pneumatic Machines are designed for an operating pressure of 4 to 6 bar (60 - 90 PSI).

Service life and performance of the machines are determined by

- a) Degree of Air Purity
- b) Lubrication and Maintenance

To a) Blow the air hose clear before connecting it to the machine.
Install dirt and water separator upstream of the machine, if it is not possible to prevent the formation of rust and water condensation in the air distribution lines.

To b) Use always acid- and resin-free SAE 5 W to SAE 10 W oil. Thick flowing oil will clog the vanes and affect the start-up and performance of the machine.
Only proper maintenance can ensure constant performance, reduction in wear and thus, a decrease in operating costs and an increase in service life.
We therefore highly recommend to install service units upstream of the machine.

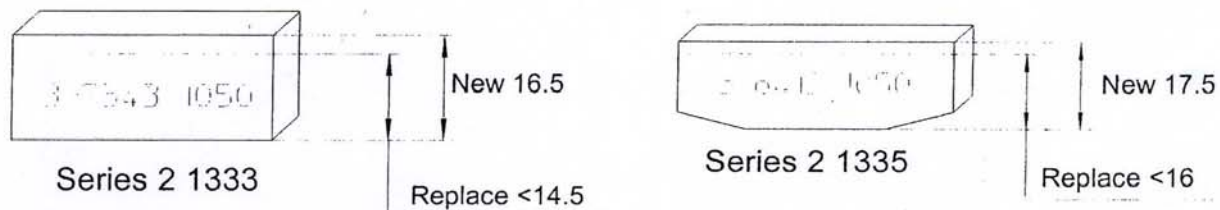
Observe the comments in the information sheet

„Maintenance of Pneumatic Tools“

In winter or when using very moist air, an antifreeze lubricant, such as **BP Energol AX 10**, **Kilfrost** or **Kompranol N 74** should be used.

Replace wear parts - in particular the vanes - when necessary.

Vaness are considered worn if their width is less 14,5 mm (series 2 1333) and less 16 mm (series 2 1335).



DISASSEMBLY AND REASSEMBLY

Refer to the sectional drawing and spare parts list when disassembling and reassembling.

Disassembly

Disassemble into main components **1. Handle, 2. Motor, 3. Gearbox**

Remove complete handle after loosening screw item 31.

Remove screws item 120 and separate gearbox from motor.

Continue to disassemble.

1. Handle

Remove quick coupling or reducing nipple from connecting nipple item 29 and screw connecting nipple out of handle item 22. Pull out compression spring item 28, ball item 27 and valve pin item 25. Seal item 26 is lightly stuck on and will be replaced only when necessary. Knock out the double-notched pin item 24 and take out the valve lever item 23. Unscrew complete valve lever locking assembly items 40-43.

2. Motor

2.1 Motor 2 1313 (1.6 kW)

Remove motor cover item 19 from motor housing item 1 after loosening screws item 20.

Pull out inner motor parts and carry on to disassemble.

If necessary, draw off adapter sleeve item 5 from motor housing item 1 and take out sound absorber item 4.

2.2 Motor 2 1315 (2.8 kW)

Lift off motor cover item 19 from motor housing item 1 after loosening screws item 20. Remove shaft item 36 with pinion assembly item 51 if they are still sitting on the shaft butt of rotor item 13. Loosen screws item 34 and take bearing housing item 33 with bearing item 35 out of motor. Remove feather key item 32. Pull out inner motor parts and carry on to disassemble. If necessary, draw off adapter sleeve item 5 from motor housing item 1 and take out sound absorber item 4.

3. GEARBOX

Unscrew complete water connection items 211-217. Loosen screws item 429 and remove bearing housing item 401 from housing item 417. If necessary, disassemble inner gearbox parts. After removing snap ring item 433 draw off gearshift lever item 431. Remove counter shaft assembly items 403-433. Take off snap rings items 427 and 425 and pull out spur gear item 406, notched wheel item 405, feather key item 426, ball item 418 and compression spring item 419 as well as spur gear item 404. Take out washer item 422 and press out radial shaft sealings items 435 and 436. If spur gear item 407 has to be exchanged unscrew hexagonal nut item 410. After that remove gauge rings, belleville springs, thrust washer, sprocket and washers items 407-411.

Pay attention to torque adjustment!

If necessary, pull needle bearings items 415 out of housings items 401 and 417.

REASSEMBLY

Before starting reassembly check all parts for wear and replace them if necessary. Wear parts are in particular vanes, radial shaft sealings, O-rings and end plates.

1. Handle

Reassembly is performed essentially the same as disassembly, but in reverse order. If the gasket item 26 is replaced, fix it with adhesive (Loctite 415). Make functional gauging of valve lever and of the valve.

2. Motors

Reassembly is done essentially in reverse order.
Remove any oil and resin residue from the rotor slots. The new vanes should fit easily into the slots. When assembling the inner motor parts ensure correct spacing. The axial play between rotor item 13 and end plates items 7 and 15 should be approx. 0.04 mm per side. The chamfered edges of the spacers items 10 and 18 should point towards the centre of the rotor. Direction of rotation of motor: counter-clockwise looking at driven side (shaft butt / pinion).

3. Gearbox

After installing new radial shaft sealings into bearing housing item 401, washer item 422 and output shaft item 402 (pre-assembled with bearing item 420) have to be pushed-in and made complete. If countershaft assembly items 403-433 was disassembled, use shims item 414 to get a slip torque of $20 \pm 1,5$ Nm. After tightening hexagonal nut item 410 fix the countershaft assembly in a vice at the spur gear item 407 and check the slip torque with a torque wrench by turning at the hexagonal nut item 410. If the torque is not $20 \pm 1,5$ Nm add ore remove shims item 414.

CAUTION! Never use the tool with slip clutch torque set higher than 22 Nm!

At installing the gearshift lever item 431 take care that positioning is correct.

After inserting the countershaft assembly in the motor housing item 104 pour in approx. 0.2 liter grease lubricating oil and bolt the gearbox housing and motor housing.

Subsequently the assembly of the main components can be done.

Use only ORIGINAL SPITZNAS SPARE PARTS for repairs

Use sodium saponified semi-fluid grease GP 000 M - 30, DIN 51502, approx. 100 g, (e.g. „REMOLIT SO-D 8024“ from Fuchs)

SPECIFICATIONS

Technical Data at an Operating Pressure of 6 bar (90 Psi)

Type	2 1313 0010	2 1313 0020	2 1315 0010	2 1315 0020
Capacity	1.6 kW		2.8 kW	
Free speed	400 RPM		300 RPM	
1st gear	400 RPM		300 RPM	
2nd gear	900 RPM		700 RPM	
3rd gear	1600 RPM		1350 RPM	
Air consumption at p	2.2 m ³ /min		3.5 m ³ /min	
Weight approx.	8.2 kg		9.2 kg	
Air connection	R 3/4"male	NPT 1/2"x14	R 3/4"male	NPT 1/2"x14
ID of Hose	5/8"		3/4"	
Water connection	Gardena System			
Drill bit connection	1 1/4" UNC male / R 1/2" female			
Unit length	540 mm		594 mm	
Outer centring diameter	60 mm		60 mm	
Output torque	49 Nm		90 Nm	
1st gear	49 Nm		90 Nm	
(at nominal 2nd gear	31 Nm		56 Nm	
rating) 3rd gear	16 Nm		29 Nm	

MAINTENANCE OF PNEUMATIC TOOLS

Only proper maintenance can ensure constant performance, reduction in wear and thus, a decrease in operating costs and an increase in service life.

Our pneumatic tools are equipped for an operating pressure of 6 bar. A regulator setting for an operating pressure of 4 bar is possible as well as expedient for grinding machines with a built-in regulator, so as to take full advantage of the speed prescribed for the corresponding grinding wheels.

Pneumatic tools should not run empty, because this results in heat and higher wear. The compressed air should be clean and dry. This is guaranteed by a proper pneumatic system. Blow through the pneumatic hose before connecting it. For the economical use of pneumatic tools, the prescribed air quantities are necessary, i.e., the line, armatures and hoses must have the required cross sections so that the flow pressure remains constant. Proper lubrication is a must; for this reason, our pneumatic tools usually have built-in oilers, which are located between the inlet valve and the motor, and which function in any position. In smaller and lighter hand tools, these oilers must often be left out, because the machines would then be too heavy and not easy to manage. In such cases, lubrication must be carried out by service units or by manual hose oilers. We recommend service units for permanently installed workplaces

(see accessories list). However, where longer hose lines are necessary, line oilers built into the hose lines are more effective. The distance between the tool and oiler should not be more than 5 m.

Most of pneumatic tools have located at the connection a lined-up screen, which is to be regularly checked and cleaned.

After ending a working task, the machines are to be flushed with a thin oil, or protected some other way against corrosion.

Visible grease nipples are provided for regular lubrication of the gears with a grease gun. Note the following for grease lubrication: Every 60 hours of operation check striking mechanism, friction bearings and antifriction bearings; if necessary, grease them. Every 300 hours of operation grease the gears and antifriction bearings anew. In the case of impact wrenches, use a grease gun to grease the anvil guide before beginning daily work or every 6 to 8 hours. All inner parts must be lubricated before storing for longer periods of time in order to prevent rusting. It is recommend to check the vanes and bearings at regular intervals. Store pneumatic tools in dry rooms only.

Lubricating oils to be used:
Generally SAE 5 W to SAE 10

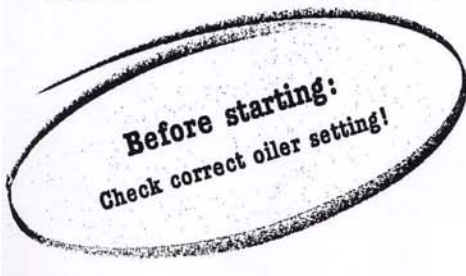
For gearless impact wrenches and small grinders, only SAE 5 W

For damp compressed air, oils are to be used that take up water (without losing the lubricating effect) and that contain anticorrosive additives. At lower temperatures (especially for work outside) it may be necessary to use an antifreeze lubricant (e.g., Killfrost, BP Energol AX 10, Kompranol N 74).

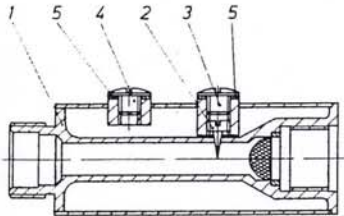
For saw-chain lubrication on chain saws:

Machine oil **with adhesive additive**, viscosity c ST 49-55' (6.5-7.5 E) / 50° C

Greases (free of resins and acids)	Multi-purpose greases for antifriction and friction bearings and gears	Special greases for high-speed miter gears
Designation in accordance with DIN 51502	KL 2 K	G 00 h
Consistency class (DIN 51818)	2	00
Saponification type	lithium	sodium
Dripping point	185° C	145° C
Worked penetration	265 to 295	400 to 410
Temperature range	-25° C to 125° C	-25° C to + 100° C



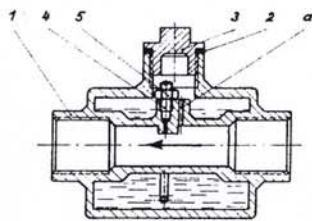
OILER TYPES USED ON OR WITH OUR TOOLS



Oiler to mount on the machine or connect in the hose line

Setting the oiler: The adjustment screw (Item 2) is visible after removing the screw plug (Item 3). The oil supply is decreased by tightening the screw, and by loosening the screw, more oil gets into the machine. In most cases it is sufficient to tighten or loosen the screw by 1/4 or 1/2 of a turn. When plugged, clean borehole (dia. 2 mm) with wire.

Correct setting: When under pressure and with the filler screw (Item 4) open, the oil must bubble slightly. The filling lasts for approx. 8 operating hours.

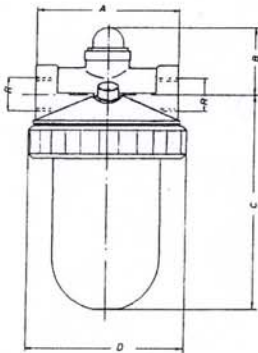


Line oiler

For stationary pneumatic machines and motors, the lubrication is carried out by lined-up oilers for horizontal or vertical installation.

Setting of oilers: Shut off air supply. Open plug (Item 3). Loosen visible lock nut (Item 5) with a socket wrench. Using a screw driver turn back the tightened screw plug (Item 4) by 1/4 to 1/2 of a turn and then lock again. No oil is to get into the borehole "a" when filling. Close plug (Item 3) and open the air supply.

Correct setting: A piece of paper held for a short time in front of the outlet must be coated with oil without drops forming.



Transparent oiler

For installing in permanently equipped workplaces.

(especially for type using service units — see accessories list)

The transparent supply containers allow for good checking as well as for good setting possibility by means of a screw driver via a set screw with visible dripping. (The set screw is above the lateral thread connection — turning to the right for less oil; turning to the left for more oil). The setting (2 to 5 drops per m³/min air consumption) is to be carried out when air is flowing through, i.e., when the machine is running.

