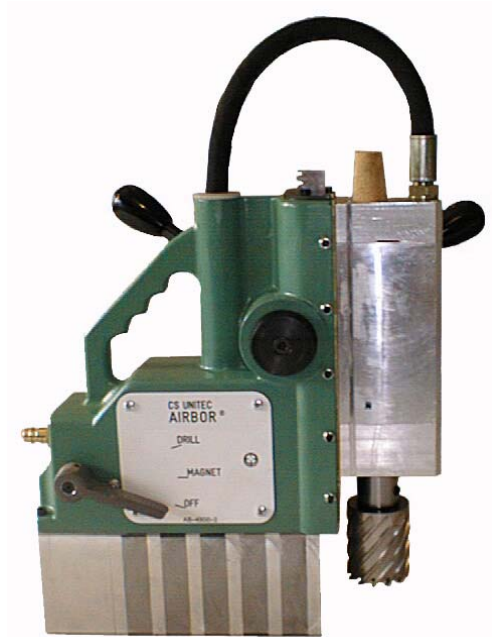


OPERATING MANUAL



AB-4300-2

AirBor[®] Magnetic Drill



Manufactured by: SPITZNAS GmbH, POSTFACH 11 02 09, 42530 VELBERT, GERMANY

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GENERAL INSTRUCTIONS

Before using the machine, please read these instructions

Remove the unit from its case along with the accessories and check that all parts are included; the box should contain:

- Drilling unit
- Accessory pack containing:
 - Safety chain & carbine hook
 - allen key SW 2,5 for wear strip adjustment
 - allen key SW 4 for arbor. (This is for fitting cutters)
- Oil bottle with plastic hose
- This operating instructions

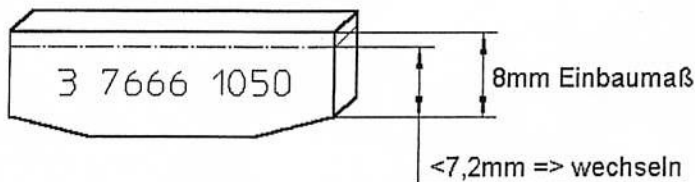
This pneumatic machine is designed for an operating pressure of 4 to 6 bar (60 to 90 PSI). Service life and performance of the machine are determined by:

- **Degree of air purity**
- **Lubrication and maintenance**

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.

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", "Kilfrost" or "Kompranol N74" should be used.

Replace wear parts –in particular the vanes- when necessary. The vanes are considered worn if their width is less 7,2 mm.



SAFETY INSTRUCTIONS

Any power tool can be dangerous. Please follow these simple safety procedures – they are for your protection.

- Regular maintenance is essential – check nuts, screws etc. for tightness
- Check air line for damage
- Make sure the unit is lubricated
- Never use blunt cutters
- Wear goggles and gloves
- Secure the unit with the safety chain before drilling
- Always disconnect air when changing cutters or working on the machine
- Remove rings, watches, ties etc. that could tangle in the moving parts
- Keep the unit and workpiece as clear of dirt and swarf as possible

WARNING! Never use the flexible hose as a lifting handle!

Your safety is in your hands! Keep these instructions!

PREPARATION

1. Insertion of pilot pin

The pilot pin is used to both center the cutter and to eject the slug on completion of the cut. It has a flat side to allow the coolant to run down to reach the center of the cut where the heat is greatest. Slide the pin through the hole in the center of the cutter shank.

2. Fitting the cutter

Lay the machine on its side, ensuring the set screws are accessible. Loosen both screws to permit shank of the cutter to slide home in the arbor with the two flats aligned with the set screws. Tighten the set screws in turn until the cutter is locked. Do not over-tighten the screws. If a pilot pin is used, ensure that it slides freely in the cutter.

3. Clean any dirt or swarf from the base of the magnet and the workpiece with a gloved hand. Mark the position of the hole by a center-punch. Place unit in correct position for drilling.
4. Place unit in correct position for drilling with the pilot over the center-punch. The magnet will hold on all ferrous materials from a minimum of 6 mm (1/4") thickness.
5. Attach safety chain by looping it through the handle of the unit and around the workpiece or other suitable anchor point, take up any slack in the chain and clip the hook through a convenient link in the free end of the chain.
6. Check the air connection with a suitable supply (6 bar/90PSI, 64 SCFM/1,8 m³/min)
7. Connect the free end of the lubrication hose to the adapter of the motor.

DRILLING

1. Activate the magnet using the control lever.
2. Check magnet is holding to workpiece. Recheck the pilot is still centered on the hole position – activating the magnet can sometimes cause the unit to move slightly from the center mark, reposition if necessary.
3. Using the pressurized oil bottle add oil to the workpiece. Ensure only the correct cutting oil is used, it has been formulated to speed cutting and enhance tool life.
4. Start the motor. Motor will not run unless magnet is activated. If for any reason the airflow is interrupted, the switching system will leave the magnet on. The unit will switch itself to a drill off position and will need to be switched back to drilling when the supply is re-connected.
5. Advance the cutter to the workpiece using light pressure until the cutter has broken the surface, then increase the pressure until the motor is loaded and maintain even pressure right through the cut. Too much pressure will not speed the cut, it will reduce the life of the cutter and may cause damage to the motor. If the turnings become blue add more oil. At the end of the cut the slug will be ejected, check before commencing the next hole. Make sure that no swarf collects inside the cutter.
6. Stop motor, switch off magnet.

SPECIFICATIONS

Hole capacity with annular drills	Ø 2 1/16" , 2" depth	Ø 52 mm, 50 mm depth
Hole capacity with twist drills	Ø 3/16" to 1/2"	Ø 5 to 13 mm
Arbor size	3/4" I.D.	19 mm I.D.
Air motor	1.6 H.P.	1200 W
Free speed	500 RPM	500 1/min
Load speed	250 RPM	250 1/min
Magnet force	1600 lbs.	8000 N
Air consumption	64 CFM	1,8 m ³ /min
Operating pressure	90 PSI	6 bar
Air connection	G 3/8" Female	R 3/8"
Weight	42 lbs.	19 kg
Height x Width x Length	12 1/4" x 4" x 11 1/2"	301 x 102 x 290 mm

TROUBLESHOOTING

PROBLEM	CAUSE	REMEDY
Magnetic base won't hold effectively	<p>Material being cut may be too thin</p> <p>Swarf or dirt under magnet</p> <p>Irregularity on magnet contact or workpiece</p>	<p>Attach an additional piece of metal under workpiece where magnet will be located or mechanically clamp magnetic base to workpiece</p> <p>Clean</p> <p>Use extreme care, file imperfections flush to surface</p>
Cutter skips out of center-punchmark at initiation of cut	<p>Magnetic base is not holding effectively</p> <p>Too much feed pressure at start of cut</p> <p>Cutter is dull, worn, chipped or incorrectly sharpened</p> <p>Poor center-punchmark</p> <p>Pilot not centered in center-punchmark</p> <p>Worn or bent pilot</p> <p>Loose bolts on main casting or loose slideway adjusting setscrews</p>	<p>See above</p> <p>Light pressure until a groove is cut. The groove then serves as a stabilizer</p> <p>Replace or resharpen</p> <p>Improve center-punch</p> <p>Replace</p> <p>Adjust where necessary</p>
Excessive drilling pressure required	<p>Incorrectly resharpened, worn or chipped cutter</p> <p>Coming down on swarf lying on surface of workpiece</p> <p>Slideway needs adjustment or lubrication</p> <p>Swarf packed inside cutter</p>	<p>Resharpen or replace</p> <p>Take care not to start a cut on swarf</p> <p>Adjust set screws</p> <p>Clear</p>

PROBLEM	CAUSE	REMEDY
Excessive cutter breakage	<p data-bbox="385 154 677 210">Steel swarf or dirt under cutter</p> <p data-bbox="385 247 705 303">Incorrectly resharpened or worn cutter</p> <p data-bbox="385 340 568 370">Cutter skipping</p> <p data-bbox="385 404 577 460">Slideway needs adjustment</p> <p data-bbox="385 493 691 549">Cutter not attached tightly to arbor</p> <p data-bbox="385 586 696 642">Insufficient use of cutting oil or unsuitable type of oil</p>	<p data-bbox="728 154 1177 210">Remove cutter, clean thoroughly and replace</p> <p data-bbox="728 247 993 277">Resharpen or replace</p> <p data-bbox="728 340 861 370">See above</p> <p data-bbox="728 404 810 434">Adjust</p> <p data-bbox="728 493 847 524">Retighten</p>
Excessive cutter wear	<p data-bbox="385 680 513 711">See above</p> <p data-bbox="385 744 664 800">Incorrectly resharpened cutter</p> <p data-bbox="385 834 677 890">Insufficient or spasmodic cutting pressure</p>	<p data-bbox="728 744 989 775">Replace or resharpen</p> <p data-bbox="728 834 1226 924">Use sufficient steady pressure to slow the drill down. This will result in optimum cutting speed</p>