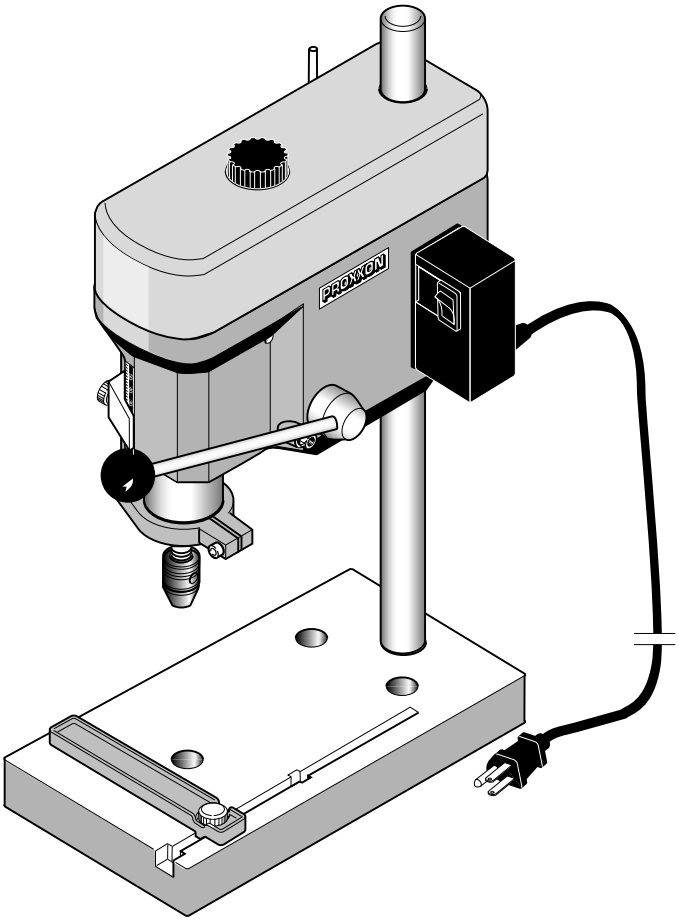
PROXXON

TBM 115



Manual

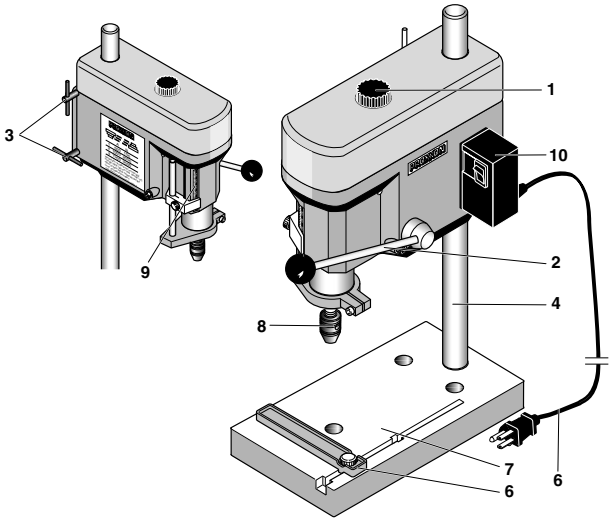


Fig. 1

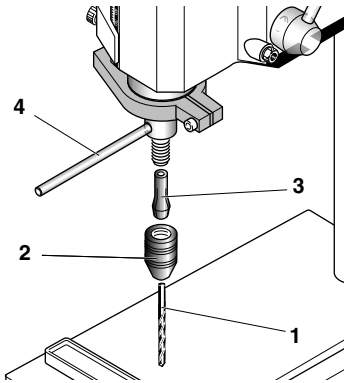


Fig. 2

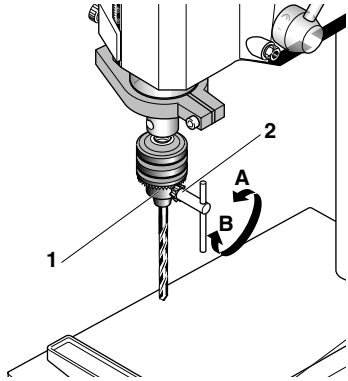


Fig. 3

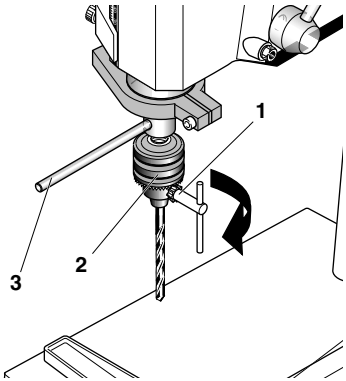


Fig. 4

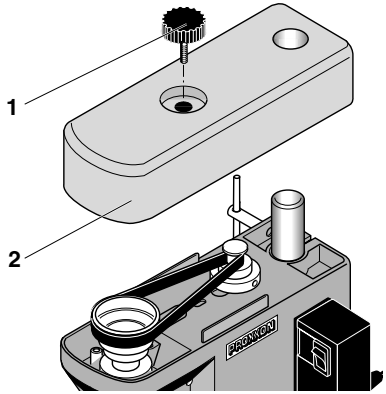


Fig. 5

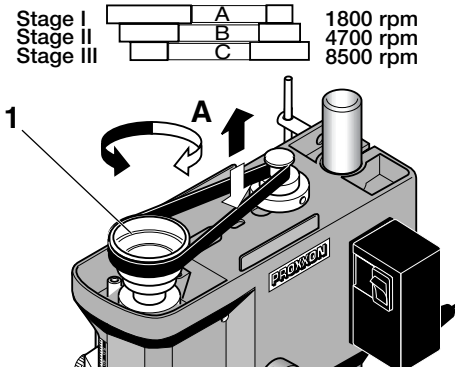


Fig. 6

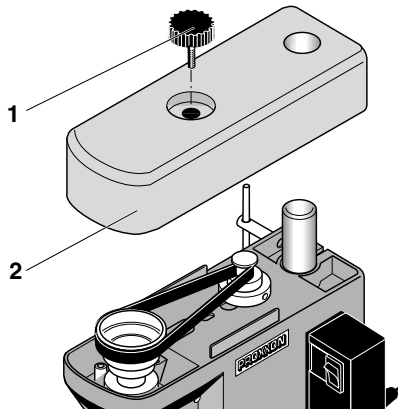


Fig. 7

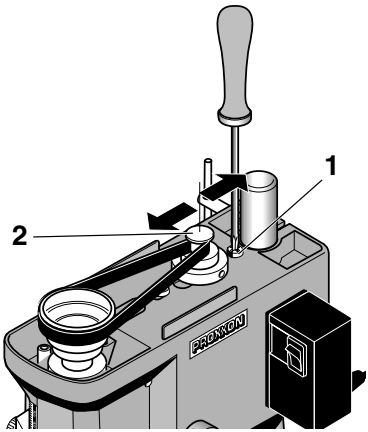


Fig. 8

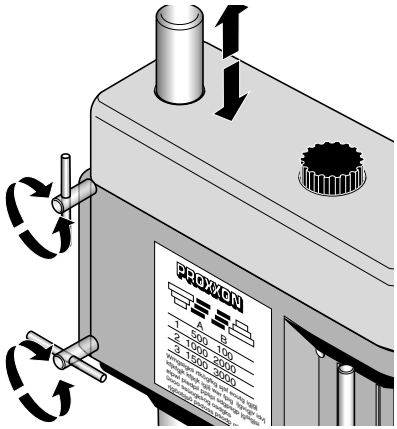


Fig. 9

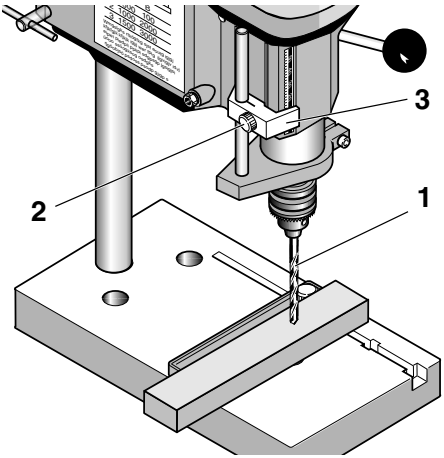


Fig. 10

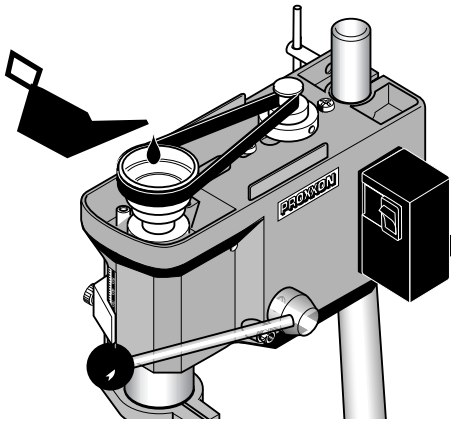


Fig. 11

Foreword

Dear customer!
The PROXXON Bench drill press TBM 115 is a precisely working and powerful machine.

This instruction manual covers:

- safety regulations
- operation and maintenance
- spare parts list

Please read carefully!

Using this instruction manual will

- **make it easier for you** to get used to the machine,
- **help prevent** faults occurring due to improper use and
- **increase** the service life of your machine.

Keep this instruction manual in an easily accessible place. Only operate this machine if you are qualified to do so and follow the guidelines in this instruction manual.

PROXXON does not accept responsibility for the safe functioning of the machine

- if it is handled in a manner which constitutes improper use,
- if it is used for other purposes which are not specified in the instruction manual,
- if the safety regulations are not observed.
- Warranty claims are invalid if the machine is incorrectly operated, or the machine has not been sufficiently maintained.

In the interests of your safety, please always observe the safety regulations.
Only use genuine PROXXON spare parts.
We reserve the right to make further alterations for the purpose of technical progress.

We wish you every success with your machine.

General safety instructions

Read and become familiar with this entire instructions manual. Learn the tool`s applications, limitations and possible hazards.

1. KEEP GUARDS IN PLACE and in working order.
2. REMOVE ADJUSTING KEYS AND WRENCHES. Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
3. KEEP WORK AREA CLEAN. Cluttered areas and drill press es invite accidents.
4. DON'T USE IN DANGEROUS ENVIRONMENT. Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.
5. KEEP CHILDREN AWAY. All visitors should be kept in safe distance from work area.
6. MAKE WORKSHOP KID PROOF with padlocks, master switches, or by removing starter keys.
7. DON'T FORCE TOOL. It will do the job better and safer at the rate for which it was designed.
8. USE RIGHT TOOL. Don't force tool or attachment to do a job for which it was not designed.
9. USE PROPER EXTENSION CORD. Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Table 1 shows the correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gage. The smaller the gage number, the heavier the cord.
   Exception No. 1: The reference to the table and the table itself may be omitted if a statement indicating the appropriate gage and length is incorporated into the instruction.
   Exception No. 2: The information regarding extension cords need not be provided for a permanently connected tool.
10. WEAR PROPER APPAREL. Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Non-slip footwear is recommended.
    Wear protective hair covering to contain long hair.
    Exception: The reference to gloves may be omitted from the instructions for a grinder.
11. ALWAYS USE SAFETY GLASSES. Also use face or dust mask if cutting operation is dusty. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.
12. SECURE WORK. Use clamps or a vise to hold work when practical. It's safer than using your hand and it frees both hands to operate tool.
13. DON'T OVERREACH. Keep proper footing and balance at all times.
14. MAINTAIN TOOLS WITH CARE. Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
15. DISCONNECT TOOLS before servicing; when changing accessories, such as blades, bits, cutters, and the like.
16. REDUCE THE RISK OF UNINTENTIONAL STARTING. Make sure switch is in „off“-position before plugging in.
17. USE RECOMMENDED ACCESSORIES. Consult the owner‘s manual for recommended accessories. The use of improper accessories may cause risk of injury to persons.
18. NEVER STAND ON TOOL. Serious injury could occur if the tool is tipped or if the cutting tool is unintentionally contacted.
19. CHECK DAMAGED PARTS. Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
20. DIRECTION OF FEED. Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.
21. NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF. Don't leave tool until it comes to a complete stop.

Additional safety regulations

IMPORTANT

- Ensure the workplace is tidy.
- Check the unit for damage before use (connection cable, protective devices, etc.), have defective parts replaced by qualified personnel.
- This unit corresponds to the pertinent safety regulations.
- Repairs (e.g., replacement of the power supply lead) may only be performed by a qualified electrician.
- Never work without the safety equipment fitted.
- Do not use electrical power tools in the rain, in damp surroundings or in the vicinity of flammable liquids or gases.
- Only use the tool when the handle is dry and free from grease.
- Avoid contact with earthed components, e.g., pipes, radiators, ovens and refrigerators.
- Protect the connection lead from heat and sharp edges and
- route it so it cannot be damaged.
- Do not remove the plug from the socket by pulling on the cable.
- Do not pick up the unit by the cable.
- Keep children and third parties away from the workplace.
- Keep tools in childsafe locations when not in use.
- Do not overload the tool.
- Do not use the tool to perform operations for which it is not suitable.
- Replace blunt tools in good time.
- Visually inspect application tools to ensure they are in good working order and suitable for the task prior to setting up the job.
- Fasten tools securely.
- Clean the unit thoroughly following all work.
- Disconnect the plug from the power supply when the unit is not in use, before performing maintenance, tool replacement or repair work.
- Only plug the unit in when the unit is switched off.
- Always wear protective goggles (danger of tool breakage).
- If necessary, wear a protective dust mask.
- Only use appropriate working clothes (no loose sleeves, ties, jewelry).
- Wear a hair net if you have long hair.
- Only use accessories and spare parts recommended by PROXXON.
- Observe the max. permitted rotational speed.
- If necessary, use dust extract equipment.
- Do not use the tool when you are tired or under the influence of alcohol.
- Keep fingers away from rotating or fast moving tools (saws, etc.).
- Keep the operation instructions in a safe place.

WARNING

Additional safety instructions for drill presses:

For Your Own Safety Read Instruction Manual Before Operating Bench Drill Press

a) Wear eye protection.
b) Do not wear gloves, necktie, or loose clothing.
c) Clamp workpiece or brace against column to prevent rotation.
d) Use recommended speed for drill accessory and workpiece material.

GROUNDING INSTRUCTIONS:

In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug.

The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances. Do not modify the plug provided – if it will not fit the outlet, have the proper outlet installed by a qualified electrician.

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal. Check with a qualified electrician or service personnel if the grounding instructions are not completely understood,

or if in doubt as to whether the tool is properly grounded.

Use only 3-wire extension cords that have 3prong grounding plugs and 3pole receptacles that accept the tool's plug.

Repair or replace damaged or worn cord immediately.

This tool is intended for use on a circuit that has an outlet that looks like the one illustrated in Sketch A in Figure 12. The tool has a grounding plug that looks like the plug illustrated in Sketch A in Figure 12. A temporary adapter, which looks like the adapter illustrated in Sketches B and C, may be used to connect this plug to a 2-pole receptacle as shown in Sketch B if a properly grounded outlet is not available. The temporary adapter should be used only until a properly grounded outlet can be installed by a qualified electrician. The green-colored rigid ear, lug, and the like, extending from the adapter must be connected to a permanent ground such as a properly grounded outlet box.

Grounding methods

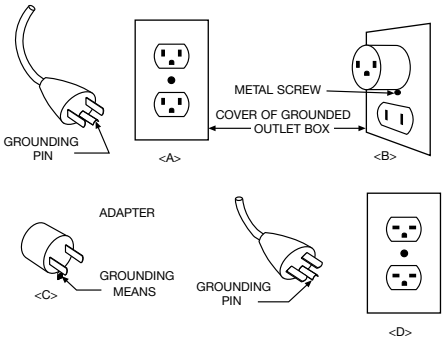


Fig. 12

Table 1

Minimum gage for cord

Effective date for Table 1 changed from November 1, 1995 to November 11, 1996

Ampere Rating		Volts	Total length of cord in feet			
		120 V	25 ft.	50 ft.	100 ft.	150 ft.
		240 V	50 ft.	100 ft.	200 ft.	300 ft.
More Than	Not More Than	AWG				
0	6		18	16	16	14
6	10		18	16	14	12
10	12		16	16	14	12
12	16		14	12	Not Recommended	

Legend

1 Fastening screw for machine cover
2 Drill feed lever
3 Handle screw for height adjustment
4 Drill column
5 Power cable
6 Adjustable stop
7 Drill table
8 Spigot nut
9 Depth scale
10 ON-OFF switch

Description of the machine

Warning!

This Drill press is for indoor use only. Do not expose to rain or use in damp locations.

The PROXXON - Bench drill press TBM 115 is an ideal machine for high precision drilling work.

This machine offers:

- Precisely machined work table made of high quality, aluminum die cast with reinforcement webs.
- Fixed stop with scale.
- Strong, chromium coated steel column.
- Treble torque in the low speed range.
- Drilling spindle running in three high quality precision ball bearings without any clearance.
- Spindle end suitable for clamping jaws or 3/8" drill chuck.

Technical data

Dimensions

Throat (inner face of column to middle of drill chuck)	approx. 5.5" (140 mm)
max. space table surface - spindle end	approx. 5.5" (140 mm)
Quill feed	approx. 1.2" (30 mm)

Motor

Voltage:	115 V, 60 Hz
Power:	1/8 hp (85 Watt)
Idle speed of spindle:	1.900, 4.700, 8.500 rpm
Noise development:	≤70 dB (A)

Accessories

Warning!

For your own safety, use only drills sized and recommended for this drill press . Follow the instructions that accompany the drill press .

Warning!

Use only accessories recommended for this drill press . Follow the instructions that accompany accessories. Use of improper accessories may cause hazards.

Warning!

Do not attempt to modify this tool or create accessories not recommended for use with this tool. Any such alternation or modification is misuse and could result in hazardous condition leading to possible serious injury.

Clamping jaws for 04", 06", 08", 095", 12" and 126" (1,0/1,5/2,0/2,4/3,0 and 3,2 mm) shanks.

Operation

Warning!

To avoid injury from accidental start, make sure the switch is in the OFF position and the plug is not connected to the power source receptacle before changing any parts or drills.

Important!

Safe and precision working practice can only be ensured with the unit properly secured!

Do not leave the unit switched on if unsupervised.

Before operation:

First fasten the machine securely on a strong base.

Warning !

To avoid injury from unexpected starting or electrical shock, do not plug the power cord into a power source receptacle during unpacking and assembly. This cord must remain unplugged whenever you are working on the drill press .

Clamping, changing the tool

Warning !

For your safety, never connect the plug to the power source receptacle until the assembly and adjustment steps are completed, and you have read and understood the safety and operating instructions.

Tightening the spigot nut without inserting a suitable shank will damage the clamping jaw.

1. Insert the pin **4** (Fig. 2) into the bore and block the spindle.
2. Unscrew the spigot nut (2).
3. Insert the required clamping jaw (3) with the appropriate tool (1) and retighten the spigot nut.

Note:

Clamp all tools as short as possible. Extremely protruding shanks will bend and cause eccentric rotation.

Clamping, changing tools with the optional drill chuck (not included)

Attention!

Pull the mains plug out when changing tools.

Warning!

For your own safety, do not plug the tool into the power source receptacle or insert the switch key, until the parts are correctly installed and adjustments have been made.

- Insert the drill chuck key 2 (Fig. 3) into the drill chuck (1).
- Turn the drill chuck key in direction "A" to open the drill chuck.
- Insert the tool into the drill chuck until it bottoms.
- Turn the drill chuck key in direction "B" to close the drill chuck and to clamp the tool.

Removing and installing the drill chuck

Note:

This must be done to install the clamping jaws.

Attention!

Pull the mains plug out beforehand.

1. Insert the pin **3** (Fig. 4) into the bore and block the spindle.
2. Insert the drill chuck key (1) and unscrew or tighten the drill chuck. (2).

Adjusting the spindle speed

Attention!

Pull the mains plug out beforehand.
Do not use the machine without protective covering.

Note:

High performance is not achieved by high feeding speed, but correct and uniform rotary speed.

Belt position "A" = 1.800 rpm
Belt position "B" = 4.700 rpm
Belt position "C" = 8.500 rpm
small drill Ø = high speed
big drill Ø = low speed.

1. Unscrew the knurled screw **1** (Fig. 5) and lift the cover (2) off.

Attention!

Work careful to avoid damage to the belt.

2. Turn the belt pulley **1** (Fig. 6) in direction "A" and press the belt slightly down (or up) until it comes loose.
3. Place the loose belt first on the required pulley (1) then turn the spindle and force the belt on the corresponding disc on the motor spindle.
4. Reinstall the cover.

Adjusting the belt tension

Adjusting the belt tension

Attention!

Pull the mains plug out beforehand.
Do not use the machine without the protective cover.

1. Unscrew the knurled screw 1 (Fig. 7) and lift the cover (2) off.
2. Loosen both fastening screws 1 (Fig. 8) and displace the motor spindle (2) until the required tension is achieved.
3. Retighten the fastening screws.
4. Reinstall the cover.

Note:

Tighten the belt only so far that the slippage is eliminated. A too tight belt will deform during a longer period of rest, which reduces the power of the motor.

Adjusting the distance between tool and work piece:

Note:

Always adjust the initial position before starting work. Perform this work after clamping work piece and drill.

1. Support the drill head with your hand against slipping down.
2. Loosen both handle screws (Fig. 9) and adjust the height of the drill head until the distance between drill and work piece is approx. .08“ to .02“.
3. Retighten the clamping screws.

Adjusting the depth stop

Note:

The working stroke of the quill is max. 30 mm. With the depth scale it can be limited downwards.

1. Use the drill feed lever to lower the quill until the drill **1** (Fig. 10) touches the work piece.
2. Loosen the clamping screw (2).
3. Adjust the scale pointer (3) to the required drilling depth (max. 30 mm) and retighten the clamping screw.

Maintenance

Warning!

Always disconnect the mains plug prior to cleaning and maintenance operations.

If any part is missing or damaged, do not plug the drill press in until the missing or damaged part is replaced, and assembly is complete. To avoid electrical shock, use only identical replacement parts when servicing double insulated tools.

To avoid fire or toxic reaction, never use gasoline, naphtha, acetone, lacquer thinner, or similar highly volatile solvents to clean the drill press.

Do not allow brake fluids, gasoline, or penetrating oils to come in contact with the plastic parts. They contain chemicals that can damage or destroy plastics.

Turn switch OFF and always remove plug from power source before making any adjustments or repairs.

All electrical or mechanical repairs should be done only by qualified service technicians.

When servicing use only PROXXON replacement parts. Use of any other parts may create a hazard or cause product damage.

Any attempt to repair or replace electrical parts on this drill press may create a hazard unless repair is done by a qualified service technician. Repair service is available at your PROXXON service center (You find the address at address at the back of this manual)

- Lubricate the quille guide (Fig. 11) every 10 operating hours with a few drops of high quality machine oil.
- After working with the machine remove all chips with a suitable hand broom or brush.
- Clean the machine regularly with a cloth from all dirt.
- If the machine is not going to be used for a longer period of time remove the drive belt to avoid deformation and erratic running.

Recommended Accessories:

Warning!

Use only accessories and spare parts resommended by PROXXON. See also our catalog.

HSS-twist drill set (Art. No.: 28874)

Tungsten-vanadium drill bits:
You can get them in different sizes from 0,5 mm diameter (.02“) up to 2,1 mm (.083“).
Ideal for drilling metal, non-ferrous metals, plastic, pc-cards and wood. Operating speed: Hard materials approx. 3000 rpm., soft materials approx. 8000 rpm.

Hard microdrills:
You can get them in different sizes from 1 mm diameter (.04“) up to 2 mm (.08“). Ideal for drilling glas, semi-precious stones, pocelain, ceramics, marble and other hard stones.

Tungsten-carbide milling drills:
For drilling, milling and cutting fiber glass or circuit boards. Also for drilling pearls, etc.

Diamond twist drills:

With natural diamond dust for drilling precious stones (pearls coral, turquoise)