

Manual

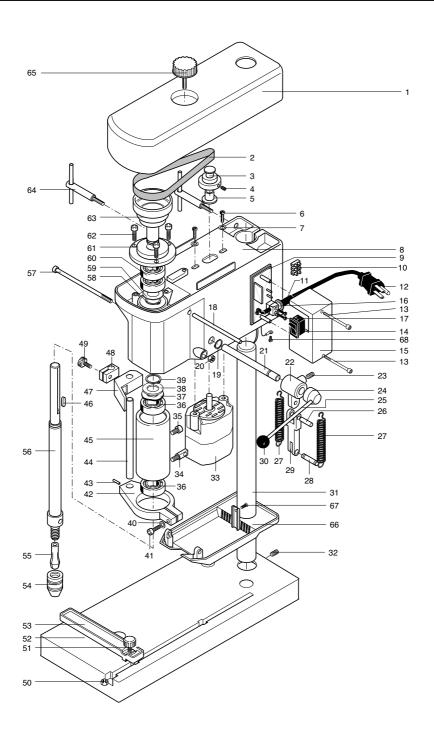
Spare parts list

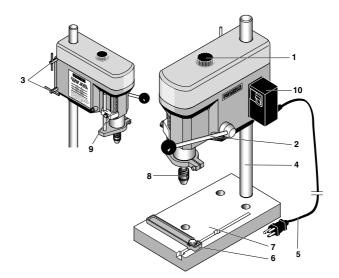
Please order spare parts in writing from PROXXON Service Center (address on back of instruction manual)

Bench drill machine TBM 115

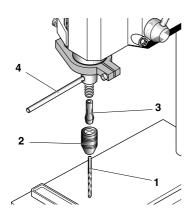
Part No.:	Designation	Part No.:	Designation
28 128-01	Cover	28 128-35	Screw
28 128-02	Drive belt	28 128-36	Ball bearing
28 128-03	Motor belt pulley	28 128-37	Corrugated washer
28 128-04	Set screw	28 128-38	Pulley
28 128-05	Flange sleeve	28 128-39	Circlip
28 128-06	Motor mounting screw	28 128-40	Washer
28 128-07	Washer	28 128-41	Screw
28 128-08	Machine housing	28 128-42	Flange
28 128-09	Switch housing base	28 128-43	Pin
28 128-10	Connecting clamp	28 128-44	Rod
28 128-11	Anti-kink grommet	28 128-45	Sleeve
38 128-12	Connection cable	28 128-46	Feather key
28 128-13	Fastening screw	28 128-47	Scale pointer
28 128-14	Machine switch	28 128-48	Clamp
28 128-15	Connection box	28 128-49	Knurled screw
28 128-16	Strain relief	28 128-50	Nut
28 128-17	Screw	28 128-51	Knurled screw
28 128-18	Rod	28 128-52	Drill table
28 128-19	Circlip	28 128-53	Stop
28 128-20	Nut	28 128-54	Spigot nut
28 128-21	Feed shaft	28 128-55	Drill chuck
28 128-22	Feed lever	28 128-56	Drill spindle
28 128-23	Set screw	28 128-57	Clamping screw
28 128-24	Connection	28 128-58	Circlip
28 128-25	Drill lever	28 128-59	Pulley
28 128-26	Pin	28 128-60	Ball bearing
28 128-27	Spring	28 128-61	Flange
28 128-28	Pin	28 128-62	Fastening screw
28 128-29	Fork	28 128-63	Belt pulley, drill spindle
28 128-30	Ball head	28 128-64	Toggle screw
28 128-31	Steel column	28 128-65	Knurled screw
28 128-32	Set screw	28 128-66	Lower housing cover
38 128-33	Motor	28 128-67	Screw
28 128-34	Retaining screw	28 128-99	Operating Instructions

Schematics

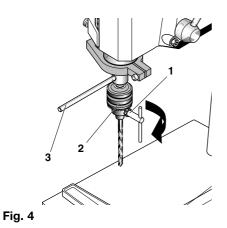












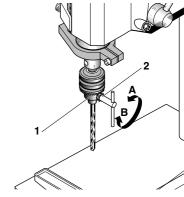
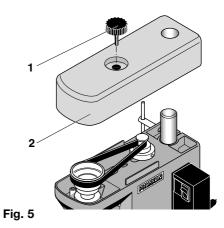
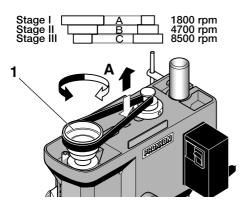


Fig. 3







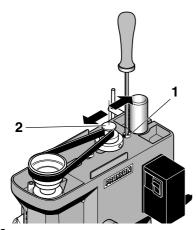


Fig. 8

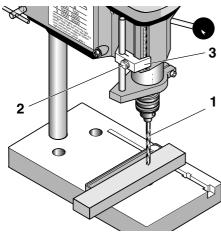


Fig. 10

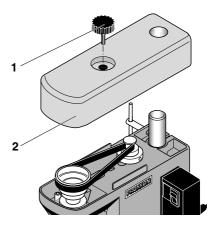
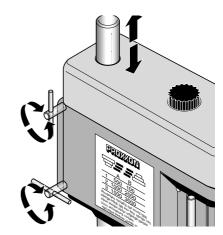


Fig. 7





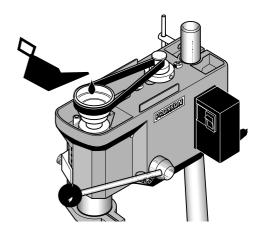


Fig. 11

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.
- 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.

- 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.
- 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.
- 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.
- REDUCE THE RISK OF UNINTENTIONAL STARTING. Make sure switch is in "off"-position before plugging in.
- USE RECOMMENDED ACCESSORIES. Consult the owner's manual for recommended accessories. The use of improper accessories may cause risk of injury to persons.
- 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 equipmentgrounding 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

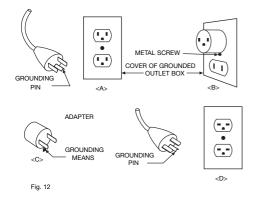


Table 1 Minimum gage for cord

Ampere Rating		Volts Total length of cord in feet				
		120 V	25 ft.	50 ft.	100 ft.	150 ft.
More Than	Not More Than			AW	G	
0	6		18	16	16	14

Legend

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

Description of the machine

The unit offers a high quality machined work table of ribbed die-cast aluminum (worktable size 8 21/32" x 4 23/32" (220 x 120 mm) providing an adjustable fence with scale. The solid, hard-chromed steel column is 11" high (280 mm) and has a diameter of 3/4" (20 mm).

The 110-120V/85W motor, which runs very quiet and has a long life expectancy is built in to the super stable die-cast head of the machine.

The power transmission by 3-step aluminum pulleys and flat belt provides 3 spindle speeds of 1,800, 4,700 and 8,500 rpm allowing triple torgue at low speeds.

The chrome feed lever has an adjustable depth scale.

The spindle is essentially free of play as a result of the 3 high quality ball bearing assemblies. For the insertion of MICROMOT steel collets it is recessed, but also threaded for attaching drill chucks with 3/8" thread (for this option see below the Roehm drill chuck, which we offer as an accessory). The spindle has an extremely high rotational accuracy and a 1³/₁₆" (30 mm) feed.

The quill diameter is 1 1/4" (32 mm) with return spring, the throat depth (column to drill spindle) 5 1/2" (140 mm). The unit provides quick coarse height adjustment of headstock via clamp lever. The max, height (worktable surface to spindle end) is 5 1/2" (140 mm).

Warning!

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

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:	1.800, 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.

The unit comes with six triple slit MICROMOT precision steel collets for shaft sizes ranging from 1/32", 1/16", 5/64", 3/32", 7/64" and 1/8" (1.0, 1.5, 2.0, 2.4, 3.0, 3.2 mm).

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 collet.

- 1. Insert the pin **4** (Fig. 2) into the bore and block the spindle.
- 2. Unscrew the spigot nut (2).
- 3. Insert the required collet (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 steel collets.

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 \emptyset = high speed big drill \emptyset = 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

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.
- 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. 0.1" to 0.2".
- 3. Retighten the clamping screws.

Adjusting the depth stop

Note:

The working stroke of the quill is max. 1,2". 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. 1,2 ") 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 quill 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 or visit our website www.proxxon.com.

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, pccards 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, semiprecious 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)

MICRO compound table KT 70 (NO 27 100):

Made of surface treated solid aluminum and fitted with adjustable dovetail slides and three T-slots manufactured to the MICROMOT standard (12 x 6 x 5 mm, approx. $^{15}/_{xe}$ " x $^{15}/_{xe}$ " x $^{13}/_{e}$ "). The clamps and securing bolts are included.

LIMITED WARRANTY OF PROXXON POWER TOOLS FOR HOME USE

Prox-Tech, Inc., ("Seller") warrants to the original purchaser only, that all PROXXON consumer power tools will be free from defects in material or workmanship for a period of two years from the date of purchase. Seller's sole obligation and your exclusive remedy under this limited warranty and, to the extent permitted by law, any warranty or condition implied by law, shall be the repair or replacement of parts, without charge, which are defective in material or workmanship and which have not been misused, carelessly handled, or misrepaired by persons other than Seller or Authorized Service Station. In the event of a failure of a product to conform to this written warranty, please refer to the Service and Repair section on the back of this manual and take action accordingly. This Limited Warranty does not apply to accessory items such as circular saw blades, drill bits, router bits, jigsaw blades, sanding belts, grinding wheels and other related items. Damage to the product resulting from tampering, accident, abuse, negligence, unauthorized repairs or Some states in the U.S. and some Canadian provinces do alterations, unapproved

attachments or other causes unrelated to problems with material or workmanship are not covered by this warranty. Anv implied warranties shall be limited in duration to two years from date of purchase. Not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. In no event shall seller be liable for any incidental or consequential damages (including but not limited to liability for loss of profits) arising from the sale or use of this product. Some states in the U.S. and some Canadian provinces do not allow the exclusion or limitation of incidental or consequential damages; so the above limitation or exclusion may not apply to you. This limited warranty gives you specific legal rights, and you may also have other rights, which vary from state to state in the U.S., province to province in Canada and from country to country. This limited warranty applies only to PROXXON power tools sold within the United States of America. Canada, the commonwealth of Puerto Rico and Mexico. For warranty coverage within other countries contact your local PROXXON Importer.

PROXXON

SERVICE AND REPAIR

Your device does not work properly? Please read the operating instructions again carefully. If the unit is in fact defective, please send it to:

Prox-Tech, Inc. Attn.: PROXXON Service Center 2555 Tate Blvd. S.E. Hickory, NC 28601

Please make sure, that your tool is **carefully packaged** and include a copy of your **dated proof of purchase**. You will help us to react even quicker, if you describe the problem in short and please **don't forget to include your name, address and daytime telephone number**. We will respond in a prompt and reliable manner.

Spare Parts

You can also order any necessary **spare parts** from our Service Center at the above address. Please check the **article-number** of the tool concerned on the nameplate of the tool and define the part needed by using the **explosion drawing** in the manual that came with the tool. **Every part has a specific number** (5 digit-XX). Please provide us with this number when ordering.

For any further information call us toll free at **1-877-PROXXON** (1-877-776 9966) or visit us on the web at <u>www.proxxon.com/us.</u>

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