



AMB-ELEKTRIK GMBH

Hechinger Str. 48

D-72406 Bisingen

Telefon: +49 (0)7476 / 87-0

E-Mail: info@amb-elektrik.de

www.amb-elektrik.de

Powered by



AMB[®]
ELEKTRIK



Originalbetriebsanleitung "Fräs- und Schleifmotor"
Original instructions "Milling and grinding motor"
Mode d'emploi original "Moteur de fraisage et de meulage"



made in Germany

Garantie

1. Dieses Elektrowerkzeug wurde sorgfältig geprüft, getestet und wurde einer strengen Qualitätskontrolle unterzogen.
2. Wir garantieren die kostenlose Beseitigung von Mängel am Elektrowerkzeug, die innerhalb von 24 Monaten ab Verkaufsdatum beim Endverbraucher aufgetreten sind und auf einen Material- oder Herstellungsfehler zurück zu führen sind. Für einige Länder gelten individuelle Sonderregelungen hinsichtlich der Garantiebedingungen. Wir behalten uns vor, defekte Teile auszubessern oder durch neue zu ersetzen. Ausgetauschte Teile gehen in unser Eigentum über.
3. Unsachgemäße Verwendung oder Behandlung sowie die Öffnung des Gerätes durch nicht autorisierte Reparaturstellen führen zum Erlöschen der Garantie. Von der Garantie ausgeschlossen sind: Mechanische Beschädigungen durch Sturz etc., Beschädigungen durch Eindringen von Wasser oder sonstigen Flüssigkeiten, abgeschnittene und beschädigte Kabel, Motorschäden und mechanische Schäden durch unsachgemäße Überlastung, Verschleißteile z.B. Kohlebürsten, Bohrfutter, Bohrfutterschlüssel, Bohrspindeln bei Abnutzung, Motoren, Netzkabel, Akkus, Sägeblätter, Schleifteller, Staubsäcke, Zubehör allgemein (Bohrer, Meißel etc.). Einzelheiten zu den verschiedenen Geräte-Verschleißteilen erfahren Sie unter <http://www.amb-elektrik.de> oder von einer unserer Servicestellen.
4. Garantieansprüche können nur bei unverzüglicher Meldung von Mängeln (auch bei Transportschäden) anerkannt werden. Durch Ausführung von Garantieleistungen wird die Garantiezeit nicht verlängert.
5. Sollten Sie die Garantie einmal in Anspruch nehmen, so senden Sie bitte den Originalkaufbeleg, zusammen mit dem Gerät an uns oder die zuständige Servicestelle.
6. Durch die von uns übernommenen Garantie-Verpflichtungen werden alle weitergehenden Ansprüche des Käufers - insbesondere das Recht auf Wandelung, Minderung oder Geltendmachung von Schadenersatzansprüchen - ausgeschlossen.
7. Dem Käufer steht jedoch nach seiner Wahl das Recht auf Minderung (Herabsetzung des Kaufpreises) oder Wandelung (Rückgängigmachung des Kaufvertrages) zu, falls es uns nicht gelingt, evtl. auftretende Mängel innerhalb einer angemessenen Frist zu beseitigen.
8. Nicht ausgeschlossen sind die Schadensersatzansprüche nach den §§ 463, 480 Abs. 2, 635 BGB wegen Fehlens zugesicherter Eigenschaften.
9. Die Bestimmungen nach Punkt 7 und 8 gelten nur für den Bereich der Bundesrepublik Deutschland.



Technische Änderungen vorbehalten!

1. Symbols and abbreviations

The symbols used in these instructions and, if applicable, on the power tool serve to bring your attention to potential dangers when working with this power tool. You must understand the significance of these symbols/notes and comply with them in order to make its use more efficient and safer.

The safety warnings, notes and symbols are not a substitute for regulation measures for accident prevention.

Symbols



Especially important note for safety. Always follow this note, otherwise it could result in severe injury.



Warning of dangerous electrical voltage



Warning of hot surfaces

-WARNING-

For a potentially dangerous situation which could lead to physical injury or material damage.

-NOTE-

Modification notes and other useful information.

2. Safety rules

General safety instructions for power tools



WARNING!

Read all safety warnings and all instructions.



Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.



Save all warnings and instructions for future reference.

The term "power tool" in warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

Work area safety

Keep work area clean and well lit.

Cluttered and dark areas invite to accidents.

Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.

Power tools create sparks which may ignite dust or fumes.



Keep children and bystanders away while operating a power tool.

Distractions can cause you to lose control.

Electrical safety

Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.

Unmodified plugs and matching outlets will reduce risk of electric shock.

Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators.

There is an increased risk of electric shock if your body is grounded.



Do not expose power tools to rain or wet conditions.

Water entering a power tool will increase the risk of electric shock.

Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.

Damaged or entangled cords increase the risk of electric shock.

When operating a power tool outdoors, use an extension cord suitable for outdoor use.

Use of a cord suitable for outdoor use reduces the risk of electric shock.

If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) protected supply.

Use of an RCD reduces the risk of electric shock.

Personal safety

EN

Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.
A moment of inattention while operating power tools may result in serious personal injury.



Use safety equipment. Always wear eye protection.



Safety equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.



Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool.

Carrying power tools with your finger on the switch or energising power tools that have the switch on invites accidents.

Remove any adjusting key or wrench before turning the power tool on.

A wrench or a key left attached to a rotating part of the power tool may result in personal injury.

Do not overreach. Keep proper footing and balance at all times.

This enables better control of the power tool in unexpected situations.

Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing and gloves away from moving parts.

Loose clothes, jewellery or long hair can be caught in moving parts.

If devices are provided for connecting dust extraction and collection facilities, ensure these are connected and properly used.

Use of these devices can reduce dust related hazards.

Power tool use and care

Do not force the power tool. Use the correct power tool for your application.

The correct power tool will do the job better and safer at the rate for which it was designed.

Do not use the power tool if the switch does not turn on and off.

Any power tool that cannot be controlled with the switch is dangerous and must be repaired.



Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools.

Such preventive safety measures reduce the risk of starting the power tool accidentally.

Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.
Power tools are dangerous in the hands of untrained users.

Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tools operation. If damaged, have the power tool repaired before use.

Many accidents are caused by poorly maintained power tools.

Keep cutting tools sharp and clean.

Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.

Use the power tool, accessories and tool bits etc. in accordance with these instructions and in the manner intended for the particular type of power tool, taking into account the working conditions and the work to be performed.

Use of the power tool for operations different from those intended could result in a hazardous situation.

Service



Have your power tool serviced by a qualified repair person using only original spare parts.

This will ensure that the safety of the power tool is maintained.

Machine-specific Safety Warnings



Wear hearing protection.

The effects of noise can cause loss of hearing capacity.



Secure the workpiece.
A workpiece clamped with clamping devices or in a vice is held more secure than by hand.

The rated speed of cutting tools must be at least equal to the maximum speed marked on the power tool.

Cutting discs or other cutting tools running with overspeed can fly apart and cause injuries.

Do not use blunt or damaged router bits.

Blunt or damaged router bits cause increased friction, can become jammed and lead to imbalance.

Apply the machine to the workpiece only when switched on.

Otherwise there is danger of kickback when the cutting tool jams in the workpiece.

Never cut over metal objects, nails or screws.

The router bit can become damaged and lead to increased vibrations.

Do not work materials containing asbestos.

Asbestos is considered carcinogenic.

Take protective measures if there is danger of formation of combustible or explosive dust during operation that can be hazardous to health.

Example: Some dusts can be carcinogenic. Wear a dust mask and work with a dust/chip extraction unit, if possible to connect.

Always wait until the machine has come to a complete stop before placing it down.

The tool insert can jam and lead to loss of control over the power tool.

During operation, always ensure that the mains and extension cable is to the rear away from the device.

This prevents anyone from tripping over the cable while working.

Do not carry the machine by the cable.

Move the switch to the "OFF" position before removing the plug from the plug socket.

When the tool is reconnected to the mains accidental starting of the machine is avoided, thus reducing the risk of accidents.



Tools not in use must be locked away safely in a dry place out of the reach of children.



To mark the machine, do not drill into the housing.

The protective insulation would be bridged. Use stickers.



Never use the machine with a damaged cable. Do not touch the damaged cable and pull the mains plug when the cable gets damaged during operation.

Damaged cables increase the risk of electric shock.

Residual risk. Although this information sheet and the operating manuals for our electrical tools contain extensive instructions on safe working with electrical tools, every electrical tool involves certain residual risks that cannot be completely prevented through safety mechanisms. Therefore, electrical tools must always be operated with the necessary caution.

3. Device description

EN



Read all the warnings and instructions before using the equipment.

Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

While reading the operating instructions, unfold the graphics page for the machine and leave it open.

Device components

- 1 Locknut
- 2 Collet chuck
- 3 Spindle
- 4 Locking button
- 5 On/off switch
- 6 Speed governor turning wheel
- 7 Mains cable module
- 8 Locking for mains cable module



Illustrated or described accessories are not necessarily included in the scope of delivery

Scope of supply

See packaging

Specified Conditions of Use

The fitted milling and grinding motor is designed for milling wood and plastics and for grinding wood, plastic, steel and aluminium. **The motor must not be guided by hand without appropriate milling attachments.**

Requirements for the user

The tool must only be operated, maintained and serviced by authorised trained personnel. The personnel must be made aware of the relevant dangers.

Technical data

| Milling and grinding motor | | 530FM |
|----------------------------|-------------------|--------|
| Input power | Watt | 530 |
| Output power | Watt | 270 |
| Idle speed | min ⁻¹ | 29.000 |
| Speed for rated load | min ⁻¹ | 14.300 |

| | | |
|--|----|--------|
| Tool fitting with collet chuck \varnothing | mm | 22 |
| Grinding tool \varnothing , max. | mm | 40 |
| Milling- \varnothing | mm | 30 |
| Dimension | mm | 240x73 |
| Weight | kg | 1,3 |
| Protection class | | II |

Milling and grinding motor 800FME/800FME-Q

| | | |
|----------------------|-------------------|---------------|
| Input power | Watt | 800 |
| Output power | Watt | 420 |
| Idle speed | min ⁻¹ | 10.000-29.000 |
| Speed for rated load | min ⁻¹ | 25.000 |

| | | |
|--|----|--------|
| Tool fitting with collet chuck \varnothing | mm | 8 |
| Grinding tool \varnothing , max. | mm | 40 |
| Milling- \varnothing | mm | 36 |
| Dimension | mm | 262x73 |
| Weight | kg | 1,4 |
| Protection class | | II |

Milling and grinding motor 1050FME/1050FME-1/1050FME-P

| | | |
|--------------|------|------|
| Input power | Watt | 1050 |
| Output power | Watt | 600 |

| | | |
|----------------------|-------------------|---------------|
| Idle speed: | | |
| 1050FME | min ⁻¹ | 10.000-29.000 |
| 1050FME-1/1050FME-P | min ⁻¹ | 5.000-25.000 |
| Speed for rated load | min ⁻¹ | 24.800 |

| | | |
|---|----|--------|
| 1050FME/1050FME-1 | | |
| Tool holding fixture with collet \varnothing | mm | 8 |
| 1050FME-P | | |
| Tool holding fixture with collet ER16 \varnothing | mm | 8 |
| Grinding tool \varnothing , max. | mm | 40 |
| Milling- \varnothing | mm | 36 |
| Dimension | mm | 289x73 |
| Weight | kg | 1,7 |
| Protection class | | II |



Your power tool is doubly insulated in compliance with EN 60745; there is thus no need for an earth wire.

The machine is radio and TV interference-free in accordance with EN 55014-1 and interference-proof in accordance with EN 55014-2.

Noise and Vibration Information

Noise levels

Measurement values determined according to EN 60 745.

The A-weighted noise level of the device is typically:

Sound pressure level (L_{pA}) 78 dB(A)

Sound power level (L_{WA}) 89 dB(A)

Measurement uncertainty $K = 3$ dB



The noise level can exceed 85 dB(A) during operation.

Wear ear protection!

Vibration

Triaxial vibration emission level determined in accordance with EN 60745.

Milling a_h m/s² 5,0

Measurement uncertainty K m/s² 1,5



The vibration emission level given in this information sheet has been measured in accordance with a standardised test given in EN 60745 and may be used to compare one tool with another.

The vibration emission level will vary because of the ways in which a power tool can be used and may increase above the level given in this information sheet. This could lead to underestimation of vibration when the tool is used regularly in such a manner.

Note: To be accurate, an estimation of the level of exposure to vibration experienced during a given period of work should also take into account the times when the tool is switched off and when it is running but not actually when doing the job.

This may significantly reduce the exposure level over the total working period.

Identify additional safety measures to protect the operator from the effects of vibration such as: maintain the tool and accessories, keep the hands warm, organisation of work patterns.

4. Operation



Before carrying out any work on the machine, pull the mains plug.

Putting into operation



Observe correct main voltage!

Before putting into operation, check that the mains voltage and frequency on the identification plate match the details of your mains supply.

- ▶ Connect mains cable module if necessary

Mains Cable



If the mains cable is damaged while working, pull the mains plug immediately.

Fixed power supply



Fixed power supply

Damaged mains cables must not be used. They must be replaced immediately by an expert technician.

Mains cable module



Mains cable module with Patent Quick Interlock.

Connect the mains cable module 7 to the handle. The plug must snap in.

Use the mains cable module 7 only for AMB electric tools. Do not attempt to operate other machines with the module.

Damaged mains cable modules must not be used. They must be replaced by a new AMB mains cable module immediately.

Push the two unlocking buttons 4 and remove the mains cable module 7 from the handle.

Use only an original AMB mains cable module.

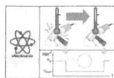
Additional function

EN Continuous electronic control (Option)



The continuous electronic control keeps the speed almost constant under no-load and under load and ensures uniform performance.

Electronic control (Option)



In the event of overload or overheating during continuous operation, the speed is automatically reduced until the machine has cooled sufficiently.

Soft starter

The starting current limitation reduces the starting current. The motor revs up slowly until it reaches the preselected rotational speed. This can extend the service life of the machine.

Electronic overload protection

With a load that is too high, which therefore implies a risk to the motor, the rotational speed of the milling motor is reduced by the integrated monitoring of the motor. The machine must be released (preferably remove it a short distance from the workpiece) to ensure that you can have full capacity again.

Operation



The tool runs on for a short time after it is switched off.

If there is contact between the tool and the support surface, there is a danger of losing control of the machine.

Switching On and Off

To switch on the machine, push the On/Off switch 5 forward and press it down at the front to lock on.

To switch off the machine, press down the On/Off switch 5 at the rear so that the switch springs back to the off position.

Preselect speed (Option)

In devices with a setting dial 6, you can select the speed using the setting dial 6 depending on the area of application.

| | 800 FME/800 FME-Q/ 1050 FME | 1050 FME-1/ 1050 FME-P |
|---|--------------------------------|---------------------------|
| 1 | 10.000 min ⁻¹ | 5.000 min ⁻¹ |
| 2 | 12.600 min ⁻¹ | 7.700 min ⁻¹ |
| 3 | 17.000 min ⁻¹ | 12.500 min ⁻¹ |
| 4 | 21.000 min ⁻¹ | 16.500 min ⁻¹ |
| 5 | 25.000 min ⁻¹ | 21.000 min ⁻¹ |
| 6 | 29.000 min ⁻¹ | 25.000 min ⁻¹ |

Changing the tool



Disconnect the plug from the power source before making any adjustments, changing accessories, or storing power tools.

Such preventive safety measures prevent accidental start of the power tool.



Wear safety gloves for **tool changing**.
The tool insert can become very hot after working for long periods and/or the cutting edges of the tool insert are sharp.

Clamping the tools

The spindle 3 of the milling and grinding motor is equipped with a precision collet chuck 2 to hold the tools. A spindle lock enables you to tighten and loosen the locknut 1.

- ▶ To clamp the tool, you lock the spindle 3 by pressing the locking button 4.
- ▶ You tighten the locknut 1 using a SW 17 open-ended spanner.
- ▶ When you unclamp the tool, the spindle 3 in turn is locked.
- ▶ You loosen the locknut 1 by turning the open-ended spanner. You can remove the tool by continually turning the open-ended spanner.



Attention! After you use the insertion tool, perform a test run with an over-speed and make sure that no-one is within reach of the rotating insertion tool. Damaged tools usually break in this test period.

Operating tips

Working with the milling motor

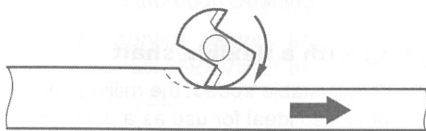


Wear protective glasses and hearing protection.

When you use a drill stand or a mill/drill unit (possibly with a milling table), you must refer to the notes in the instructions for use provided there.

Also note that you must add the alignment fences as far as possible on the milling cutter, the hand deflector (screen) must be set down as tightly as possible on the workpiece surface and, for milling work, you must always use equipment that can guarantee safe use of the tool, for example, alignment fence, auxiliary bearings, automatic feeders or a non-return block for milling work.

The feed direction of the tool must always be the opposite of the circulation direction of the milling cutter (counter direction):



Caution! Always mill in a counter direction!

Grinding work

If the milling and grinding motor is used as a grinder in manual operation, it is important to ensure that the circumferential speed specified by the tool manufacturer is not exceeded.

The peripheral (circumference) speed is calculated as follows:

$$V = \frac{d \times \pi \times n}{60000}$$

V = Peripheral (circumference) speed $\frac{m}{s}$

d = grinding tool \varnothing in mm

$\pi = 3.14$

n = Idling speed of the milling and grinding motor in revolutions/min.

Example: The grinding tool used has a diameter of 25 mm.

$$V = \frac{25 \times \pi \times 30000}{60000} \frac{m}{s} = 39,75 \frac{m}{s}$$

The accepted overspeed is not exceeded.

Make sure that

- ▶ the grinding tool used is bound with ceramic or resin.
- ▶ the grinding tools are stored in such a way that they are not damaged (cracks in the grinding tool, damaged tool shanks and so on, mean that the user's life is in danger).
- ▶ before you use new grinding tools, you must carry out a test run for at least 5 minutes without the device being overloaded.

-NOTE-

Very high rotational speeds result in the tools wearing rapidly and consequently in low service lives for the tools!

-WARNING-

Only use sharp milling tools that are in good condition! Preferably use our original milling tools.

When you use other milling tools, the steady rotational speeds per minute indicated on the manufacturer's rotating tools must not be exceeded!

Routing Procedure



Keep your hands away from the cutting area and the cutting disc. Hold the auxiliary handle with your second hand.

When both hands hold the machine, they cannot be injured by the cutting disc.



Apply the machine to the workpiece only when switched on.

Otherwise there is danger of kickback when the cutting tool jams in the workpiece.

5. Tools and accessories

EN

⚠ Always wear a dust protection mask when working with the power tool.



Do not attach a saw chain woodcarving blade or toothed saw blade.

Such blades create frequent kickback and loss of control over the power tool.



Permissible grinding tools

You can use all grinding tools shown in the illustrated instructions.

Observe the permissible speed and circumferential speed specified on the label of the grinding tool.

The ratings on the type plate of the power tool must not exceed the permissible speed [rpm] and circumferential speed [m/s] of the grinding tools used.

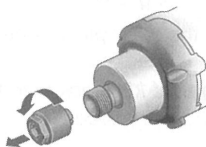
For safety reasons, the grinding tools must not be operated at circumferential speeds exceeding 80 m/s.

⚠ When using grinding tools, always observe the information provided by the grinding tool manufacturer.

Changing the collet

Release the tightening nut **1** and remove the tool using suitable cut protection (Caution - Danger of injury).

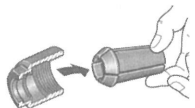
Standard collet



Unscrew the tightening nut **1** with the collet **2**.

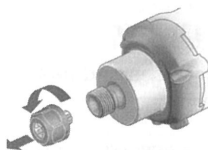


Using your thumb and index finger, press the collet **2** together at the continuous slot.



Tilt the collet **2** off and remove it from the tightening nut **1**.

Collet ER16



Unscrew the tightening nut **1** with the collet **2**.



Tilt the collet **2** first towards the marker on the tightening nut **1** and then out to the side.



Caution! To protect the thread, screw the tightening nut **1** lightly onto the spindle **3**, but never tighten it if no tool is inserted. The collet **2** could be pressed together too tightly and damaged.

Working with a flexible shaft

Due to its adjustable speed, the milling and grinding motor is also ideal for use as a drive motor for flexible shafts.

When using the motor for this purpose, it is important to ensure that the motor does not exceed the maximum permissible speed for the flexible shaft.



Wear protective glasses and hearing protection.

6. Maintenance and Service

Maintenance and Cleaning



Before carrying out any work on the machine, pull the mains plug.

- ▶ Always keep the machine and ventilation slots clean.
- ▶ Regularly wipe off the plastic parts which are accessible from the outside using a cloth without cleaning agent.
- ▶ After each job, blow the dust from the fan. This will increase your machine's service life.

Replacing brushes

Worn carbon brushes should be replaced by an authorised customer service organisation.

Service



After heavy use over a long period, the machine should be taken to an AMB service location for inspection and thorough cleaning.

The relevant service centres are listed in the enclosed appendix "SERVICE" or on the website www.amb-elektrik.de.

Spare parts / exploded view

Exploded views and spare parts lists are available on our home-page <http://www.amb-elektrik.de>

Environmental Protection



Recycle raw materials instead of disposing them as waste. The machine, accessories and packaging should be sorted for environmental-friendly recycling.

The plastic components are labelled for categorised recycling.



Only for EC countries.
Do not dispose of electric tools together with household waste material!

In observance of the European Directive 2002/96/EC for waste electrical and electronic equipment and its implementation in accordance with national law, electric tools that have reached the end of their life must be collected separately and returned to an environmentally compatible recycling facility.

Warranty

1. This power tool has been carefully tested and has been subjected to a strict quality control process.
2. We guarantee the free-of-charge repair of faults in the power tool that arise within 24 months from the date of purchase at the end user's premises and which can be attributed to a material or manufacturing defect. In certain countries there are special regulations concerning the warranty terms. We reserve the right to repair faulty components or to replace them. Replaced items become our property.
3. Inappropriate use or handling and opening up the device by unauthorised repair centres leads to the warranty becoming void. The warranty does not cover: mechanical damage due to falls etc., damage caused by penetration of water or other fluids, cut and damaged cables, motor damage and mechanical damage caused by inappropriate overloading, wear parts e.g. carbon brushes, drill chucks, chuck keys, worn drilling spindles, motors, mains cables, batteries, saw blades, grinding discs, dust bags, accessories in general (drill bits, chisels etc.). Details of the various toll wear parts can be obtained from <http://www.amb-elektrik.de> or from one of our service centres.
4. The warranty may only be enforced when defects are reported without undue delay (including shipping damage). Warranty implementation does not extend the warranty period.
5. If you need to apply the warranty, send the original purchase receipt together with the device to us or to the relevant service centre.
6. The warranty obligations assumed by us shall exclude any further claims on the part of the buyer, in particular the right to cancellation of a sale, reduction and the assertion of damage claims.
7. However, the buyer shall have the right to either a reduction (in the purchase price) or the cancellation of the sales agreement should we fail to eliminate any defects within a reasonable period of time.
8. This does not exclude compensation claims in accordance with §§ 463, 480 Para. 2, 635 BGB caused by the failure of assured properties.

The provisions defined in Items 7 and 8 only apply to the Federal Republic of Germany.



Technical modifications reserved