

PMF 180 E Multi



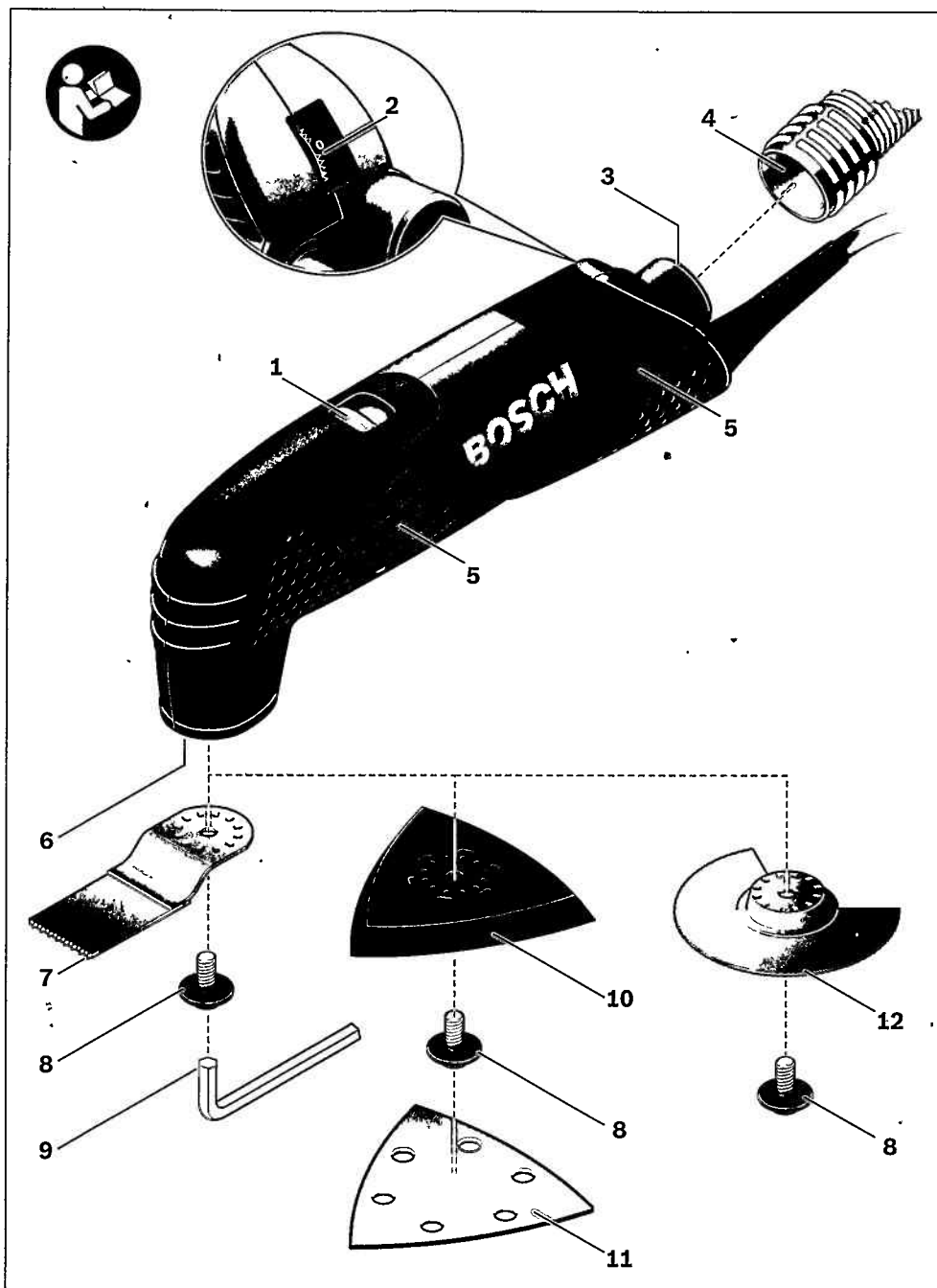
BOSCH

de Originalbetriebsanleitung
en Original instructions
fr Notice originale
es Manual original
pt Manual original
it Istruzioni originali
nl Oorspronkelijke gebruiksaanwijzing

da Original brugsanvisning
sv Bruksanvisning i original
no Original driftsinstruks
fi Alkuperäiset ohjeet
el Πρωτότυπο οδηγίων χρήσης
tr Orijinal işletme talimatı



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Safety Notes

General Power Tool Safety Warnings

⚠ 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 the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

1) Work area safety

- a) **Keep work area clean and well lit.** Cluttered or dark areas invite accidents.
- b) **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 the dust or fumes.
- c) **Keep children and bystanders away while operating a power tool.** Distractions can cause you to lose control.

2) Electrical safety

- a) **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.
- b) **Avoid body contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is earthed or grounded.
- c) **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
- d) **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 and moving parts.** Damaged or entangled cords increase the risk of electric shock.

- e) **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.
- f) **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.

3) Personal safety

- a) **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.
- b) **Use personal protective equipment. Always wear eye protection.** Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
- c) **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.
- d) **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.
- e) **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.
- f) **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.
- g) **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of dust collection can reduce dust-related hazards.

4) Power tool use and care

- a) **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.
- b) **Do not use the power tool if the switch does not turn it on and off.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
- c) **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.
- d) **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.
- e) **Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use.** Many accidents are caused by poorly maintained power tools.
- f) **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- g) **Use the power tool, accessories and tool bits etc. in accordance with these instructions, 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.

5) Service

- a) **Have your power tool serviced by a qualified repair person using only identical replacement parts.** This will ensure that the safety of the power tool is maintained.

Safety Warnings for Multi-function Tools

- **Hold power tool by insulated gripping surfaces, when performing an operation where the cutting accessory may contact hidden wiring or its own cord.** Cutting accessory contacting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.
- **Use the machine only for dry sanding.** Penetration of water into the machine increases the risk of an electric shock.
- **Keep hands away from the sawing range. Do not reach under the workpiece.** Contact with the saw blade can lead to injuries.
- **Use suitable detectors to determine if utility lines are hidden in the work area or call the local utility company for assistance.** Contact with electric lines can lead to fire and electric shock. Damaging a gas line can lead to explosion. Penetrating a water line causes property damage or may cause an electric shock.
- **When working with the machine, always hold it firmly with both hands and provide for a secure stance.** The power tool is guided more secure with both hands.
- **Secure the workpiece.** A workpiece clamped with clamping devices or in a vice is held more secure than by hand.
- **Keep your workplace clean.** Blends of materials are particularly dangerous. Dust from light alloys can burn or explode.
- **Never use the machine with a damaged cable. Do not touch the damaged cable and pull the mains plug when the cable is damaged while working.** Damaged cables increase the risk of an electric shock.
- **Wear protective gloves when changing application tools/accessories.** Application tools/accessories become hot after prolonged usage.
- **Do not scrape wetted materials (e.g. wallpaper) or on moist surfaces.** Penetration of water into the machine increases the risk of an electric shock.

▶ **Do not treat the surface to be worked with solvent-containing fluids.** Materials being warmed up by the scraping can cause toxic vapours to develop.

▶ **Exercise extreme caution when handling the scraper.** The accessory is very sharp; danger of injury.

▶ **Products sold in GB only:** Your product is fitted with an BS 1363/A approved electric plug with internal fuse (ASTA approved to BS 1362).

If the plug is not suitable for your socket outlets, it should be cut off and an appropriate plug fitted in its place by an authorised customer service agent. The replacement plug should have the same fuse rating as the original plug.

The severed plug must be disposed of to avoid a possible shock hazard and should never be inserted into a mains socket elsewhere.

Products sold in AUS and NZ only: Use a residual current device (RCD) with a rated residual current of 30 mA or less.

Functional Description



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

Intended Use

The machine is intended for sawing and cutting wooden materials, plastic, gypsum, non-ferrous metals and fastening elements (e.g. nails, staples). It is also suitable for working soft wall tiles as well as for dry sanding and scraping of small surfaces. It is especially suitable for working close to edges and for flush cutting. The power tool must be used with Bosch accessories only.

Product Features

The numbering of the product features refers to the illustration of the machine on the graphics page.

- 1 On/Off switch
- 2 Thumbwheel for orbit frequency preselection
- 3 Vacuum connection
- 4 Vacuum hose*
- 5 Venting slots
- 6 Tool holder
- 7 Plunge saw blade
- 8 Clamping bolt with washer
- 9 Allen key
- 10 Sanding plate
- 11 Sanding sheet
- 12 Segment saw blade

*Accessories shown or described are not part of the standard delivery scope of the product. A complete overview of accessories can be found in our accessories program.

Technical Data

Multi-function tool		PMF 180 E
Article number		3 603 A00 0..
Preselection of orbital stroke rate		●
Rated power input	W	180
Output power	W	74
No-load speed n_0	min^{-1}	15000–21000
Oscillation angle, left/right	°	1.4
Weight according to EPTA-Procedure 01/2003	kg	1.2
Protection class		□/II

The values given are valid for nominal voltages [U] of 230/240 V. For lower voltage and models for specific countries, these values can vary.

Please observe the article number on the type plate of your machine. The trade names of the individual machines may vary.

Noise/Vibration Information

Measured values determined according to EN 60745.

Typically the A-weighted noise levels of the product are: Sound pressure level 85 dB(A); Sound power level 96 dB(A). Uncertainty $K < 1.5$ dB.

Wear hearing protection!

Vibration total values (triax vector sum) determined according to EN 60745:

Sanding: Vibration emission value $a_h = 6.4$ m/s², uncertainty $K < 2.0$ m/s²

Cutting with plunge cut saw blade: Vibration emission value $a_h = 9.9$ m/s², uncertainty $K < 1.5$ m/s²

Cutting with segmental saw blade: Vibration emission value $a_h = 5.0$ m/s², uncertainty $K < 1.5$ m/s²

Scraping: Vibration emission value $a_h = 11.4$ m/s², uncertainty $K = 2.2$ m/s².

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. It may be used for a preliminary assessment of exposure.

The declared vibration emission level represents the main applications of the tool. However if the tool is used for different applications, with different accessories or poorly maintained, the vibration emission may differ. This may significantly increase the exposure level over the total working period.

An estimation of the level of exposure to vibration should also take into account the times when the tool is switched off or when it is running but not actually 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 the accessories, keep the hands warm, organisation of work patterns.

Declaration of Conformity

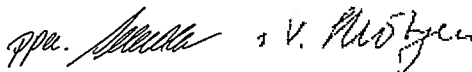
We declare under our sole responsibility that the product described under "Technical Data" is in conformity with the following standards or standardization documents: EN 60745 according to the provisions of the directives 2004/108/EC, 98/37/EC (until 28 Dec 2009), 2006/42/EC (from 29 Dec 2009).

Technical file at:

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Leinfelden, 24.06.2008


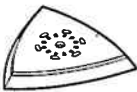




Assembly



Changing the Tool

- **Before any work on the machine itself, pull the mains plug.**
- **Wear protective gloves when changing application tools/accessories.** Contact with the application tool/accessory can lead to injuries.

Selecting the Application Tool/Accessory

The following table shows examples for application tools. Further application tools can be found in the extensive Bosch accessories program.

Accessory	Material	Application
 BIM segment saw blade	Wooden materials, plastic, non-ferrous metals	Separating and plunge cuts; also for sawing close to edges, in corners and hard to reach areas; Example: shortening already installed bottom rails or door hinges, plunge cuts for adjusting floor panels
 Base plate for sanding, series Delta 93 mm	Depends on sanding sheet	Sanding surfaces close to edges, in corners or hard to reach areas; Depending on the sanding sheet for, e.g., sanding wood, paint, varnish, stone
 HCS plunge cut saw blade, wood	Wooden materials, soft plastics	Separating and deep plunge cuts; also for sawing close to edges, in corners and hard to reach areas; Example: narrow plunge cut in solid wood for installing a ventilation grid
 HCS plunge cut saw blades, wood	Wooden materials, soft plastics	Smaller separating and plunge cuts; Example: Cut-outs in furniture for cable connections
 BIM plunge cut saw blades, metal	Metal (e.g., nails, screws, small profiles), non-ferrous metals	Smaller separating and plunge cuts; Example: Shortening narrow profiles, cutting fastening elements such as staples
 HM-Riff segment saw blade	Grouting joints, soft wall tiles, glass-fibre reinforces plastic and other abrasive materials	Cutting and separating close to edges, in corners or hard to reach areas; Example: Removing grouting joints between wall tiles for repair work, cutting openings in tiles, gypsum boards or plastic

Accessory	Material	Application
	HM-Riff delta plate Mortar, concrete remainders, wood, abrasive materials	Rasping and sanding on hard surfaces; Example: Removing mortar or tile adhesive (e.g. when replacing damaged tiles)
	Scraper, rigid Carpets, coverings	Scraping on hard surfaces; Example: Removing carpet and tile adhesive

Mounting/Replacing the Application Tool/Accessory

If required, remove an already mounted application tool/accessory.

For removing the application tool/accessory loosen the screw **8** with the allen key **9** and remove the tool.

Mount the application tool/accessory (e.g. plunge cut saw blade **7**) in such a way on the tool holder **6** that the openings of the tool engage into the cams of the tool holder.

For a safe and fatigue-free working position it is possible to position the application tools/accessories in any snap-in positions on the tool holder. Position the tool in such a way that the depressed centre points downwards. (marking on the tool is readable from above, see figure on the graphics page).

Use the screw **8** to fasten the application tool/accessory. Tightly fasten the screw **8** with the allen key **9**.

- **Check the tight seating of the application tool/accessory.** Incorrect or not securely fastened application tools/accessories can come loose during operation and pose a hazard.

Mounting/Replacing a Sanding Sheet on the Sanding Plate

The sanding plate **10** is fitted with Velcro backing for quick and easy fastening of sanding sheets with Velcro adhesion.

Before attaching the sanding sheet **11**, free the Velcro backing of the sanding plate **10** from any debris by tapping against it in order to enable optimum adhesion.

Position the sanding sheet **11** flush alongside one edge of the sanding plate **10**, then lay the sanding sheet onto the sanding plate and press firmly.

To ensure optimum dust extraction, pay attention that the punched holes in the sanding sheet match with the holes in the sanding plate.


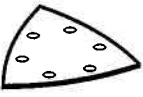
To remove the sanding sheet **11**, grasp it at one of the tips and pull it off from the sanding plate **10**.

You can use all sanding sheets, fleece pads/polishing cloth pads of the Delta 93 mm series of Bosch accessory program.

Sanding accessories, such as fleece pads/polishing cloth pads, are attached to the sanding plate in the same manner.

Selecting the Sanding Sheet

Depending on the material to be worked and the required rate of material removal, different sanding sheets are available:

Sanding disc	Material	Application	Grain size	
 Red quality	– All wooden materials (e.g., hardwood, softwood, chipboard, building board) – Metal materials	For coarse-sanding, e.g. of rough, unplanned beams and boards	coarse	40 60
		For face sanding and planing small irregularities	medium	80 100 120
		For finish and fine sanding of wood	fine	180 240 320 400
 White quality	– Paint – Varnish – Filling compound – Filler	For sanding off paint	coarse	40 60
		For sanding primer (e.g., for removing brush dashes, drops of paint and paint run)	medium	80 100 120
		For final sanding of primers before coating	fine	180 240 320

Dust/Chip Extraction

- ▶ Dusts from materials such as lead-containing coatings, some wood types, minerals and metal can be harmful to one's health. Touching or breathing-in the dusts can cause allergic reactions and/or lead to respiratory infections of the user or bystanders.

Certain dusts, such as oak or beech dust, are considered as carcinogenic, especially in connection with wood-treatment additives (chromate, wood preservative). Materials containing asbestos may only be worked by specialists.

- Use dust extraction whenever possible.
- Provide for good ventilation of the working place.
- It is recommended to wear a P2 filter-class respirator.

Observe the relevant regulations in your country for the materials to be worked.

Connecting the Dust Extraction

For sanding, always connect dust extraction.

Place a vacuum hose **4** (accessory) onto the vacuum connection **3**. Connect the vacuum hose **4** with a vacuum cleaner (accessory). An overview for the connection of various vacuum cleaners can be found at the end of these instructions.

The vacuum cleaner must be suitable for the material being worked.

When vacuuming dry dust that is especially detrimental to health or carcinogenic, use a special vacuum cleaner.

Operation

Starting Operation

- **Observe correct mains voltage! The voltage of the power source must agree with the voltage specified on the nameplate of the machine. Power tools marked with 230 V can also be operated with 220 V.**

Switching On and Off

To **start** the machine, push the On/Off switch **1** forward so that the “**I**” is indicated on the switch.

To **switch off** the machine, push the On/Off switch **1** toward the rear so that the “**0**” is indicated on the switch.

Preselecting the Orbital Stroke Rate

With the thumbwheel for preselection of the orbital stroke rate **2**, you can preselect the required orbital stroke rate, even during operation.

The required stroke rate depends on the material and the working conditions and can be determined through practical testing.

Working Advice

Note: Do not cover off the venting slots **5** of the machine while working, as this reduces the working life of the machine.

While working with HCS tools make sure that the covering of the tools is undamaged.

Operating Principle

Due to the oscillating drive the application tool/accessory swings up to 21000 times per minute for 2,8°. This allows for precise work in narrow spaces.

Sawing

- **Use undamaged faultless saw blades only.** Deformed, blunt saw blades or saw blades that are otherwise damaged can break.
- **When sawing light building materials, observe the statutory provisions and the recommendations of the material suppliers.**

- **Plunge cuts may only be applied to soft materials, such as wood, gypsum plaster boards, etc.!**

Before sawing with HCS saw blades in wood, particle board, building materials, etc., check these for foreign objects such as nails, screws, or similar. If required, remove foreign objects or use BIM saw blades.

Separating

Note: When separating wall tiles take into consideration that the application tools/accessories wear heavily when used for longer periods of time.

Sanding

The removal rate and the sanding pattern are primarily determined by the choice of sanding sheet, the preset oscillation rate and the applied pressure.

Only flawless sanding sheets achieve good sanding capacity and extend the service life of the machine.

Pay attention to apply uniform sanding pressure; this increases the working life of the sanding sheets.

Intensifying the sanding pressure does not lead to an increase of the sanding capacity, but to increased wear of the machine and the sanding sheet.

For precise on-the-spot sanding of edges, corners and hard to reach areas, it is also possible to work only with the tip or an edge of the sanding plate.

A sanding sheet that has been used for metal should not be used for other materials.

Use only original Bosch sanding accessories.

For sanding, always connect dust extraction.

Scraping

For scraping, select a high oscillation rate.

Work on a soft surface (e.g. wood) at a flat angle, and apply only light pressure. Otherwise the scraper can cut into the surface.

Maintenance and Service

Maintenance and Cleaning

- ▶ **Before any work on the machine itself, pull the mains plug.**
- ▶ **For safe and proper working, always keep the machine and ventilation slots clean.**

Clean Riff application tools (accessory) regularly with a wire brush.

If the machine should fail despite the care taken in manufacturing and testing procedures, repair should be carried out by an after-sales service centre for Bosch power tools.

In all correspondence and spare parts order, please always include the 10-digit article number given on the type plate of the machine.

After-sales Service and Customer Assistance

Our after-sales service responds to your questions concerning maintenance and repair of your product as well as spare parts. Exploded views and information on spare parts can also be found under:

www.bosch-pt.com

Our customer consultants answer your questions concerning best buy, application and adjustment of products and accessories.

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Disposal

The machine, accessories and packaging should be sorted for environmental-friendly recycling.

Only for EC countries:



Do not dispose of power tools into household waste!

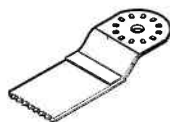
According to the European Guideline 2002/96/EC for Waste Electrical and Electronic Equipment and its implementation into national

right, power tools that are no longer usable must be collected separately and disposed of in an environmentally correct manner.

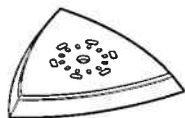
Subject to change without notice.



BIM:
2 609 256 943 (Ø 85 mm)



BIM:
2 609 256 950 (20 x 20 mm)



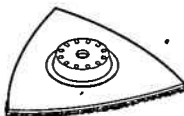
2 609 256 956 (93 mm)



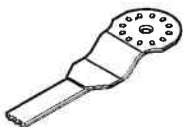
HM:
2 609 256 952 (Ø 85 mm)



HCS:
2 609 256 947 (32 x 40 mm)



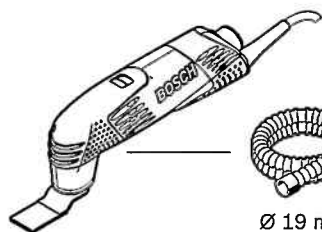
HM:
2 609 256 953 (78 mm)



HCS:
2 609 256 949 (10 x 30 mm)



HCS:
2 609 256 954 (52 x 26 mm)



1 609 390 474

PAS 10-20
PAS 850

Ø 19 mm:
2 600 793 009 (3 m)
1 610 793 002 (5 m)



1 609 200 933

PAS 11-25 F
PAS 11-25
PAS 12-50 F
PAS 12-50

2 607 000 748

PAS 12-27 F
PAS 12-27
PAS 11-21