

# Dental Air Polisher Buying Guide

## 2026 edition

An independent, brand-neutral guide for dental clinics evaluating air polishing equipment. EMS, NSK, Woodpecker, Acteon, Mectron and Cavitron — covered side by side with cost-of-ownership data.

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# About this guide

DentalAirPolisher.com is an independent dental equipment information website. We do not manufacture, sell or distribute any product. We aggregate publicly available information, compare systems neutrally, and route quote enquiries to authorised distributors in each clinic's country.

This guide is designed to help dentists, hygienists, practice managers and procurement teams shortlist the right air polishing system for their case mix and budget. It assumes no prior technical knowledge. Every product reference is based on publicly available manufacturer documentation; nothing in this guide is invented or extrapolated from confidential sources.

Pricing throughout is ex-VAT and varies materially by country, distributor and configuration. Always request itemised quotes from at least two suppliers.

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# 1. What is a dental air polisher

A dental air polisher projects a controlled jet of compressed air, water and fine powder onto the tooth surface and surrounding tissues to remove biofilm, soft deposits and surface staining. Modern devices replace or complement the traditional rubber-cup polishing step in a prophylaxis appointment.

Compared with rotary polishing, air polishing is:

- **Less abrasive** on enamel, dentine and restorative margins when erythritol or glycine powders are used
- **More efficient** at biofilm removal in occlusal pits and interproximal spaces
- **Safer** on dental implants, ceramic restorations and orthodontic appliances when matched to an appropriate powder
- **Capable of subgingival use** with dedicated handpieces (Perioflow, Perio-Mate) reaching pocket depths of 4 mm and beyond

Air polishing is part of structured prophylaxis protocols such as Guided Biofilm Therapy (GBT, EMS), Minimally Invasive Therapy (MIT, NSK) and the ABC Protocol (Woodpecker). See section 8 for protocol details.

## 2. How air polishing works

A dental air polisher mixes three streams at the handpiece nozzle: compressed air, water and a fine abrasive powder. The mixture impacts the tooth surface at a controlled angle and pressure, abrading soft deposits without removing tooth structure when the appropriate powder is selected.

Three operating parameters determine clinical safety and efficacy:

- **Powder type** — abrasiveness ranges from low (erythritol, glycine) to high (sodium bicarbonate, calcium carbonate)
- **Distance and angle** — 3–5 mm from the tooth surface at a 30–60° angle for supragingival use
- **Stroke pattern** — sweeping movement, not stationary; pauses on a single point can cause damage

Subgingival air polishing uses a special nozzle (Perioflow tip on EMS systems, Perio-Mate on NSK) that delivers powder into the periodontal pocket via a horizontal stream. The pressure is lower than supragingival use and only low-abrasive powders are clinically validated.

### 3. Powder types compared

Powder choice is the single most important clinical decision. Each system is engineered for a specific powder range; using an off-label powder voids warranty and can damage the unit.

Powder	Abrasion	Subgingival use	Implants	Notes
Erythritol	Very low	Yes (validated)	Yes	EMS holds EU patent; only available on EMS units in Europe
Glycine	Low	Yes (validated)	Yes	Universal alternative across all brands
Sodium bicarbonate	High	No	No (avoid)	Removes heavy staining; aggressive on enamel
Calcium carbonate	Medium-high	No	No	Used in some legacy units; less common today
Aluminium trihydroxide	High	No	No	Specific to certain Woodpecker / Asian units

*Always verify powder compatibility with the unit's IFU before purchase. Erythritol is the clinical reference for full Guided Biofilm Therapy.*

## 4. The four main brands

The international air polishing market is dominated by four manufacturers. Each has a distinct positioning, price tier and powder ecosystem.

### 4.1 EMS — premium, GBT-integrated

Swiss manufacturer; the only system that integrates the full Guided Biofilm Therapy protocol natively. Current model is the **GBT Machine**, launched at IDS 2025; predecessor **Airflow Prophylaxis Master** continues in markets where the GBT Machine has not rolled out. Erythritol powders (Airflow PLUS) are exclusive to EMS in the EU. Subgingival via **Perioflow** handpiece. Premium price tier; structured training through the Swiss Dental Academy.

### 4.2 NSK — handpiece-led, scalable

Japanese manufacturer with the broadest product range. Three principal options: **Prophy-Mate neo** (supragingival handpiece, glycine / sodium bicarbonate), **Perio-Mate** (subgingival handpiece, glycine only), and **Varios Combi Pro2** (combined tabletop scaler + air polisher unit). Mid-to-premium tier. M.I.T. (Minimally Invasive Therapy) is NSK's protocol equivalent.

### 4.3 Woodpecker — cost-competitive, global reach

Chinese manufacturer (Guilin Medical Instrument). Significant market share in price-sensitive segments worldwide. Key products: **AP-H** (standalone supragingival), **AP-A** (advanced standalone), **PT-E** (tabletop combined scaler + air polisher), **PT-B** (built-in variant of PT-E). Uses sodium bicarbonate and glycine; cannot use erythritol in the EU. Pricing typically 40–70 % below EMS equivalents. ABC Protocol is Woodpecker's branded workflow approach.

### 4.4 Acteon — entry-level standalone

French manufacturer; established standalone supragingival product (**Air-N-Go** family). Handpiece and bench-top configurations. Compatible with sodium bicarbonate, glycine and Acteon's proprietary blends. Strong in distributor networks across Europe and selected emerging markets. Positioned at the accessible end of the four-brand spectrum.

## 4.5 Other brands in the comparison set

Two additional brands appear regularly in clinic shortlists but do not have the same global footprint:

- **Mectron Combi Touch** — Italian-made combined tabletop unit (ultrasonic scaling + air polishing). Premium positioning in Europe.
- **Dentsply Sirona Cavitron Prophy-Jet** — long-established North American combined unit. Heritage product; many clinics replacing it now consider Woodpecker PT-E, NSK Combi Pro2 or EMS as modern alternatives.

For a full side-by-side specification matrix, see the live comparison page at [dentairpolisher.com/best-dental-air-polisher.html](http://dentairpolisher.com/best-dental-air-polisher.html) (kept current as new models launch).

# 5. Form factor: standalone, combined or handpiece

Air polishers come in three main form factors. The right form factor depends on existing equipment, available chairside footprint and case mix.

Form factor	Typical use	Pros	Cons
Standalone tabletop	Clinic without piezo, or dedicated prophylaxis	Light footprint; modern ultrasonic scaling; less workflow integration	No ultrasonic scaling; less workflow integration
Combined tabletop / Full Guided Biofilm Therapy	Single chairside device for scaling + finishing	Single chairside device for scaling + finishing	High cost; bigger footprint; longer training curve
Handpiece-only	Existing piezo scaler; budget-conscious upgrade	Lowest cost; upgrade existing unit	No subgingival capability on most handpiece-only

## 6. Cost-of-ownership framework

Capital cost is the smallest line item over five years for any clinical air polisher. The hidden costs — consumables, training, maintenance, downtime — typically double the total. Always run a 5-year TCO before comparing quotes.

### Five cost components to model:

- **Capex** — unit price ex-VAT, including starter accessories and installation
- **Consumables** — powder (cost per session × sessions / year × 5), tips, replacement handpieces, water filters
- **Training** — initial certification, ongoing CPD, staff time off the chair
- **Maintenance** — annual service contract, parts (nozzles, seals, valves), tip replacement cycle
- **Downtime** — productive sessions lost when the unit is in service; loaner availability

Indicative 5-year TCO ranges by tier (varies by country; figures rounded):

Tier	5-year TCO range (ex-VAT)	Typical sessions / year
Entry-level standalone	€ 4 000 – € 8 000	1 500 – 2 500
Combined cost-competitive	€ 9 000 – € 16 000	2 000 – 4 000
Combined premium (GBT)	€ 20 000 – € 38 000	3 000 – 6 000+

**Live calculator:** [dentalairpolisher.com/dental-air-polisher-cost-calculator.html](https://dentalairpolisher.com/dental-air-polisher-cost-calculator.html)

## 7. Clinical use cases

Match the device to the clinical workload you actually have today, not the workload you might aspire to in three years. Right-sizing protects ROI and team morale.

### **Routine prophylaxis (high-volume hygiene)**

Standalone tabletop or handpiece-only is usually sufficient. Glycine powder covers most patients without enamel wear concerns. Throughput per chair is the priority.

### **Periodontal maintenance (active patients)**

Subgingival capability becomes essential. EMS Perioflow or NSK Perio-Mate handpieces, paired with glycine or erythritol, are the validated options for pockets 4 mm and beyond. Combined tabletop systems streamline scaling and polishing in a single session.

### **Peri-implantitis management**

Air polishing with low-abrasive powders is now standard of care for non-surgical peri-implant biofilm management. Specific handpieces (Perioflow, Perio-Mate) and EFP-aligned protocols apply. See the live page at [dentalairpolisher.com/peri-implantitis-treatment.html](http://dentalairpolisher.com/peri-implantitis-treatment.html) for full detail.

### **Aesthetic / cosmetic clinics**

Pre-bleaching surface cleaning, removal of staining from coffee, tea, tobacco and chlorhexidine. Low-abrasive powders preserve enamel; clinics frequently bundle this as a paid 'fresh teeth' service.

## 8. Training and protocols

Three branded protocols structure air polishing within a broader prophylaxis workflow. They are not interchangeable; each is tied to specific equipment ecosystems and training pathways.

Protocol	Brand	Equipment	Training
GBT — Guided Biofilm Therapy	FMS	GBT Machine or Airflow Prophy-Mate neo + Airflow Prophy-Mate neo	Swiss Dental Academy, GBT certification path
MIT — Minimally Invasive Therapy	NSK	Prophy-Mate neo / Perio-Mate + scaling unit	NSK clinical academy; EFP S3-aligned
ABC Protocol	Woodpecker	PT-E, PT-B or AP-H + Woodpecker scaler	Distributor-led training; aligned to ABC steps

All three protocols include biofilm disclosure, supragingival polishing, patient education and structured recall. The differences are powder choice (GBT uses erythritol; MIT and ABC use glycine / bicarbonate), subgingival step (only GBT and MIT have validated subgingival handpieces), and certification path.

## 9. Buying checklist

Use this 12-point checklist before signing any purchase order. Cross every item with each supplier; differences usually live in items 6–12.

- ■ Case mix: routine prophylaxis, periodontal maintenance, implants, aesthetic?
- ■ Existing chairside equipment: integrate, replace or stand alone?
- ■ Powder compatibility: erythritol (EMS only in EU), glycine, sodium bicarbonate?
- ■ Subgingival need: validated handpiece (Perioflow / Perio-Mate) or supragingival only?
- ■ Capex range and ex-VAT pricing baseline?
- ■ Consumables cost per session (powder + tips); annualised over 5 years?
- ■ Training: included in the quote? In-clinic or off-site? Hours required?
- ■ Maintenance contract: annual cost, response SLA, loaner availability?
- ■ Warranty terms: parts, labour, handpiece-specific exclusions?
- ■ Distributor coverage: response time, service engineer location, parts inventory?
- ■ Country compliance: CE marking, FDA clearance, local registration?
- ■ Trial unit / demo session before commitment?

**Get matched quotes from authorised distributors in your country:**  
[dentalairpolisher.com/request-quote.html](https://dentalairpolisher.com/request-quote.html)

# 10. Glossary

<b>Airflow</b>	EMS supragingival air polishing handpiece (also a brand-level term).
<b>Biofilm</b>	Organised bacterial community on tooth and implant surfaces; the primary target of professional prophylaxis.
<b>Erythritol</b>	Low-abrasive sugar alcohol powder used in Guided Biofilm Therapy. EMS holds the European patent.
<b>GBT</b>	Guided Biofilm Therapy — 8-step prophylaxis protocol developed by EMS.
<b>Glycine</b>	Universal low-abrasive amino acid powder compatible across all brands.
<b>MIT</b>	Minimally Invasive Therapy — NSK's prophylaxis protocol.
<b>Perioflow</b>	EMS subgingival air polishing handpiece for periodontal pockets.
<b>Perio-Mate</b>	NSK subgingival air polishing handpiece.
<b>PT-E / PT-B</b>	Woodpecker combined tabletop (PT-E) and built-in (PT-B) scaler + air polisher units.
<b>Subgingival</b>	Below the gingival margin; clinically relevant for pockets $\geq 4$ mm.
<b>Supragingival</b>	Above the gingival margin; routine prophylaxis territory.
<b>Combi unit</b>	Tabletop device combining ultrasonic scaling and air polishing.
<b>TCO</b>	Total cost of ownership: capex + consumables + training + maintenance + downtime over the unit's useful life.

# Need a quote from a local distributor?

DentalAirPolisher.com routes enquiries directly to authorised distributors in your country. No middlemen, no obligation.

→ [dentalairpolisher.com/request-quote.html](https://dentalairpolisher.com/request-quote.html)

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