



A-dec Service Guide

2003 Edition

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2601 Crestview Drive, Newberg, OR 97132, USA
Printed in USA.

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Product Identification Symbols



Recognized by Underwriters Laboratories Inc.® with respect to electric shock, fire and mechanical hazards only in accordance with UL 2601-1. Recognized with respect to electric shock, fire, mechanical and other specified hazards only in accordance with CAN/CSA C22.2, No. 601.1.



UL listed to US (UL 544) and Canadian (CAN/CSA C22.2, No. 125) safety standards.



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Conforms to European Directives (refer to Declaration Statement).



Protective earth (ground).



Functional earth (ground).



Attention, consult accompanying documents.



TYPE B APPLIED PART.



Class II equipment.

Classification of Equipment (EN 60601-1)

Types of Shock Protection

Class I Equipment
(Dental Chairs, Dental Lights, & Power Supplies)

Class II Equipment
(Chair, Wall, & Cart-Mounted Delivery Systems)

Degree of Shock Protection

Type B Applied Part (Delivery Systems Only)

Degree of Protection From Water Ingress

Degree of protection against water ingress:

Ordinary Equipment (All products)

Mode of Operation

Continuous Operation (All models except Dental Chairs)

Continuous Operation With Intermittent Loading (Dental Chairs)

Environmental

Storage Temperature: -40°C to 70°C (-40°F to 158°F)

Relative Humidity: 95% maximum

Operating Temperature: 10°C to 40°C (50°F to 104°F)

Relative Humidity: 95% maximum

Electromagnetic Compatibility

This equipment has been tested and found to comply with the limits for medical devices in EN60601-1-2. These limits are designed to provide reasonable protection against harmful interference in a typical medical installation. Contact A-dec customer service if you have any questions.

Flammable Gasses

Not suitable for use in the presence of a flammable anesthetic mixture with air, oxygen, or nitrous oxide.

Warranty

A-dec warrants its products and A-dec/W&H handpieces against defects in material or workmanship for one year from time of delivery. A-dec's sole obligation under the warranty is to provide parts for the repair, or at its option, to provide the replacement product (excluding labor). The buyer shall have no other remedy. (All special, incidental, and coincidental damages are excluded.)

Written notice of breach of warranty must be given to A-dec within the warranty period. The warranty does not cover damage resulting from improper installation or maintenance, accident or misuse. The warranty does not cover damage resulting from the use of cleaning, disinfecting or sterilization chemicals and processes. The warranty also does not cover light bulbs. Failure to follow instructions provided in A-dec's Operation and Maintenance Instructions (Owner's Guide) may void the warranty.

A-dec warrants A-dec dental chair cylinders, both lift and tilt, for ten years from the date of purchase of the chair or the cylinder. This warranty is retroactive to A-dec chair cylinders already in the field. The warranty covers chair cylinders A-dec finds to have manufacturing related irregularities. Stool cylinders are covered under A-dec's one-year warranty.

No other warranties as to merchantability or otherwise are made.

Return Merchandise

U.S. and Canadian dealers wishing to return overstock (unopened) merchandise to A-dec for credit consideration must include a copy of the original invoice number. A return authorization form from an A-dec territory manager must be included with serial numbered equipment or A-dec/W&H handpieces. A 15% restocking fee will be assessed. Merchandise that cannot be returned for credit includes parts assembled to the dental unit, chair, light, or cabinet; obsolete parts; and specials. Preference Collection dental furniture cannot be returned for credit.

In the case of a defective warranty item, a copy of the replacement invoice, serial number of the unit under which it was replaced, and a description of the symptoms of the defect must be returned with the part to: A-dec Inc., 2601 Crestview Drive, Newberg, Oregon 97132, USA.

About this Service Guide

Welcome

Welcome to the 2003 edition of the *A-dec Service Guide*. This guide provides an easy to use source of technical information for servicing and maintaining A-dec products.

Intended Audience

This guide is intended for both newly trained and seasoned service technicians responsible for the installation and maintenance of A-dec products. We assume you understand the operation of dental equipment, know how to follow flow diagrams, and have performed basic maintenance on dental or medical equipment.

About this Guide

This service guide contains

- Part number information on serviceable parts
- Flow diagrams for the routing of tubing and wiring
- Exploded part illustrations showing sequence of assembly
- Step-by-step instructions for troubleshooting common problems, and
- Adjustments and product maintenance information.

Conventions

A number of items and instructions appear throughout this document. The formatting conventions are designed to make it quick and easy to find and understand information.

- References to sections appear in italic type, e.g., *Identifying HVEs*
- Names of documents appear in italic type e.g., *Genuine A-dec Service Parts Catalog*
- Important supplemental information about the current topic appears as a note, e.g.,
NOTE: Low voltage from duplex receptacle...

Information Sources

There are a number of other related documents in the A-dec documentation set.

Genuine A-dec Service Parts Catalog

The *Genuine A-dec Service Parts Catalog* (85.5000.00) provides part number and ordering information for A-dec serviceable parts. This catalog details service parts for current products and products which are no longer manufactured, but still in use. Refer to this catalog for additional details on parts highlighted in this guide.

Preference Collection Technical Packet

The *Preference Collection Technical Packet* (86.0142.00) contains information specifically related to Preference Collection dental furniture. The content is intended to assist you in specifying required plumbing, utilities, framing and construction requirements and installation for Preference Collection units.

Tech Talk

The *Tech Talk* newsletter provides information relating to A-dec products including documentation changes, product changes, product enhancements, issues and resolutions.

A-dec Illustrated Parts Breakdown

The *A-dec Illustrated Parts Breakdown (IPB)* contains illustrated, exploded views of assemblies with part numbers and descriptions for associated parts.

Electronic Documentation

Electronic versions (PDF files) of our documentation (installation instructions, service guide, technical information) can be viewed or downloaded from the *Partner Resources* section of the A-dec website. Check this location for current detail on products and technical information.

OrderNet

OrderNet is a simple, convenient online ordering system that is available 24 hours-a-day. OrderNet can be used to place quick orders for service parts or used to configure product and prepare proposals. Order acknowledgements are e-mailed as soon as you place your order.

Getting Support

Contacting Customer Service

If you have a question that has not been addressed in this document, please contact the customer service number for your area. Contact information for each customer service region is as follows:

U.S. and Canada

Customer service for the U.S. and Canada is available from 5 a.m. to 5 p.m. Pacific Standard Time (PST) to answer any questions you may have about A-dec equipment. Peak business hours are between 8 a.m. and 2 p.m. PST.

2601 Crestview Drive, Newberg, Oregon 97132, USA

Telephone: 1 (800) 547-1883

FAX: 1 (503) 538-0276

Partner Resources Website www.a-dec.biz General Website www.a-dec.com

International

2601 Crestview Drive, Newberg, Oregon 97132 USA

Telephone: (503) 538-9471

FAX: (503) 538-5911

Partner Resources Website www.a-dec.biz General Website www.a-dec.com

Getting Support

A-dec Dental U.K., Ltd.

Austin House

11 Liberty Way

Nuneaton, Warwickshire, England CV11 6RZ

Telephone: 0800 ADEC UK (2332-85) Within UK

44 24 7635 0901 Outside UK

FAX: 44 24 7634 5106

Partner Resources Website www.a-dec.biz General Website www.a-dec.com

A-dec Australia

41-43 Bowden Street

Alexandria, NSW 2015, Australia

Telephone: 61 (0)2 9699 4600

FAX: 61 (0)2 9699 4700

Partner Resources Website www.a-dec.biz General Website: www.a-dec.com.au

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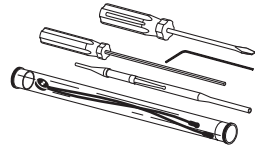
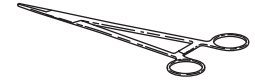


Identifying Tools and Service Parts

This section details the tools that make servicing or installing A-dec equipment faster and easier. For more information on A-dec recommended tools, refer to the *Genuine A-dec Service Parts Catalog*, P/N 85.5000.00.

While other suppliers may offer parts for A-dec equipment, these parts might not provide the function and reliability you and your customers expect. We recommend using only A-dec service parts when replacing parts on A-dec equipment. This ensures the best performance possible.

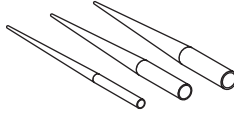


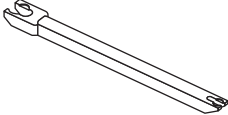
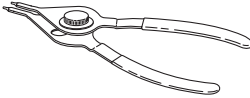
Tools

The table below describes tools, their function, and part number.

| Use this tool... | When... | | Part Number |
|-----------------------------------|---|---|---|
| Fiber-optic Installation Tool Kit | installing dual voltage intra-oral light source and adjusting voltage |  | 90.0383.00 |
| Hemostat | troubleshooting or repairing a unit to stop air/water flow through tubing |  | 009.008.00 |
| Hex Key Set | servicing or installing A-dec equipment (plastic case included) |  | 009.018.00 |
| Loctite | installing threaded fasteners to prevent loosening |  | 060.001.00 (Red 271) 060.002.00 (Blue 242) |




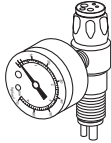
General Information

Tools and Parts

| Use this tool... | When... | | Part Number |
|---|--|---|-------------|
| O-ring Tools | providing quick field repairs, these tools fit the four smallest o-ring sizes used in A-dec equipment |  | 009.013.00 |
| Panel Mount Gauge | checking air/water pressure valves |  | 026.118.00 |
| Silicone Lubricant (high quality silicone base grease, pkg of 6) | lubricating internal moving parts such as o-rings, oral evacuator valves, and bushings |  | 98.0090.01 |
| Sleeve Tool | securing 1/4" tubing sleeves and 1/8" uni-clamps |  | 98.0072.00 |
| Snap Ring Tool | installing and removing internal and external snap rings — fits all snap rings used in A-dec equipment |  | 009.007.00 |

General Information

Tools and Parts

| Use this tool... | When... | | Part Number |
|--------------------------|--|--|-------------|
| Tubing Stripper | installing handpiece tubing used to separate the extruded air and water lines |  | 009.035.00 |
| Umbilical Stringer | stringing additional tubing or wiring into existing umbilical assemblies (12' stringer with threading holes on both ends) |  | 009.015.00 |
| Valve Test Syringe | making quick tests of pilot operated valves use to apply a static pressure of 5 - 75 psi |  | 98.0050.01 |
| Drive Air Pressure Gauge | adjusting handpiece drive air pressure, 0-60 psi. Will not fit the Borden 3-hole coupler. |  | 50.0271.00 |

Identifying A-dec Tubing

This section identifies the tubing type used when servicing A-dec products. Allow adequate length when installing to avoid crimping or bending of tubing. The use of the appropriate tools can improve the ease of tubing installation or replacement (see *Identifying Tools and Service Parts*).

Using Suggested Fittings

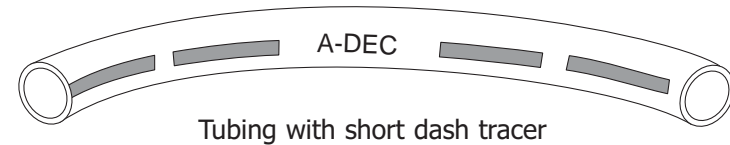
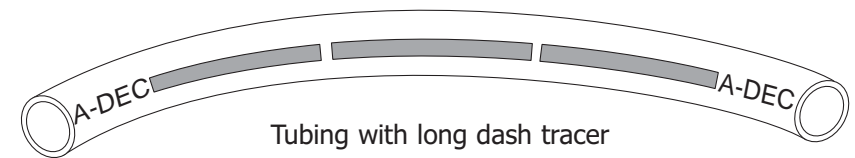
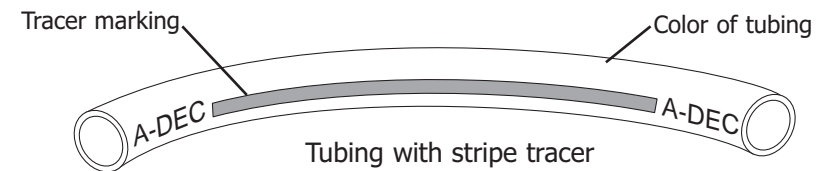
Unit-clamps or tubing sleeves must be used to ensure a good seal and to prevent tubing from coming off barbs.

For 1/4" polyurethane tubing, use 1/4" barbs with sleeves and 1/4" Poly-Flo fittings.

For 3/8" Polyurethane tubing, use 3/8" Poly-Flo fittings.

Identifying Tubing Detail

When identifying tubing, the body color of the tubing is the "tubing color". The line and/or the A-dec name printed on the tubing are the "tracer markings". These two details will identify the type of tubing you will need and its use.








Tubing Identification Details







General Information

Identifying Tubing Functions

When installing or replacing tubing, allow enough length to avoid crimping or bending. Uni-clamps or tubing sleeves must be used to ensure a good seal and to prevent tubing from coming off barbs. The following table lists the different types of tubing and their function.








| Tubing Function | Description | Tubing Color | Part Number |
|----------------------|---|---|-------------|
| Unregulated Air | Continuous, filtered, unregulated air — 1/8" OD from the air regulator to On/Off toggle |  | 036.013.03 |
| Pilot Air | Filtered unregulated air controlled by master On/Off toggle — 1/8" OD |  | 036.009.04 |
| Regulated Air Supply | Continuous, filtered, regulated air — 1/8" OD |  | 036.003.03 |
| Regulated Air Supply | Regulated air — 1/4" OD |  | 036.032.02 |
| Regulated Air Supply | Regulated air — 3/8" OD |  | 036.031.02 |

General Information






| Tubing Function | Description | Tubing Color | Part Number |
|------------------------|--|---|-------------|
| Pilot Air | Pilot air tubing used only on early Performer I units — 1/4" OD |  | 036.105.00 |
| Regulated Air (40 psi) | Regulated air at 40 psi — 1/8" OD |  | 036.044.03 |
| Drive Air | Drive air for pressure gauge — 1/8" OD |  | 036.010.03 |
| Drive Air | Drive air for foot control — 1/4" OD |  | 036.052.03 |
| Drive Air | Handpiece drive air (clear) — 1/4" OD |  | 036.066.03 |
| Chip Blower Air | Air for chip blower — 1/8" OD |  | 036.014.02 |

General Information

Tubing

| Tubing Function | Description | Tubing Color | Part Number |
|---------------------------|---|---|-------------|
| Signal Air, Coolant Air | Signal air/air coolant from foot control, signal air for cuspidor cup filler and vacuum actuator — 1/8" OD |  | 036.006.03 |
| Signal Air, Water Coolant | Signal air/water coolant from foot control, signal air for cuspidor bowl rinse — 1/8" OD Signal |  | 036.018.03 |
| Air, Coolant Air | Coolant — 1/4" OD |  | 036.056.03 |
| Unregulated Air | Unregulated air to flexarm brake — 1/8" OD |  | 036.020.03 |
| Signal Air, Coolant Water | Signal air (clear) from foot control relay to wet/dry toggle — 1/8" OD |  | 024.015.04 |
| Water Supply | Coolant water supply, flush water — 1/8" OD |  | 036.004.03 |
| Oral Cavity Water | Oral cavity water, with/without water heater — 1/8" OD |  | 036.005.03 |

General Information

| Tubing Function | Description | Tubing Color | Part Number |
|-------------------------|--|--|-------------|
| Water Supply | Regulated water, water to bowl rinse — 1/4" OD |  | 036.053.03 |
| Water Supply | Unregulated water — 3/8" OD |  | 036.054.03 |
| Return Water | Return water, tank water heater, water to gravity drain drip tube from syringes — 1/8" OD |  | 036.011.03 |
| Miscellaneous | Miscellaneous line (white) for use with A-dec authorized accessories — 1/8" OD |  | 036.019.03 |
| Hydraulic System Supply | Low pressure hydraulic system supply for chair (clear) — 3/8" OD |  | 036.035.00 |