

DENTAL AIR MOTOR

L30-M4

L30 Air Motor

USER MANUAL

For your safety and the safety of your patients please read this user manual carefully before use and file for future reference.

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L30 Rev. V2.3 © Precision Plus

1. Indication for Use

- This air motor is intended to operate/drive dental handpiece attachments for dental applications.
- To be used for dental treatments by trained dental professionals.

2. Precautions for Handling and Operation

- Devices are only to be used for the purpose specified in Intended for Use.
- All precautions should be read and understood before use.
- Instructions are provided in order to prevent the risk of personal injury or damage to the dental handpiece.



WARNING: Indicates a hazard that may result in serious injury/device damage if instructions are not correctly followed.



CAUTION: Indicates a hazard that may result in mild to moderate injury / device damage if instructions are not correctly followed.

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3. Contraindications

Should be used with caution on infants, pregnant women, hemophiliacs and patients with heart problems.

4. Adverse Reactions

- Patients may feel tense, uncomfortable or experience pain during use of the device.
- Patients hearing may be affected during use of the device.

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CAUTION

- Users are required to protect themselves, the patient and third parties from danger.
- Users are responsible for correct and intended usage, regular maintenance and continual inspection of the air motor.
- Avoid impact or contamination of air motor.
- Do not disassemble or alter the air motor except as recommended in our user instructions.
- Correct eye, face and personal protection must be used by operator, assisting staff and patient whilst air motor is being used.
- If the air motor begins operating abnormally, immediately stop use and contact your authorized Precision Plus dealer.
- Air motor is supplied in a non-sterile state and must be autoclaved before use.
- Air motor should be carefully tested for vibration, noise or overheating prior to use, if it has not been used for a long time.

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5. Specifications

Model	L30-M4 (4 holes)
Hose Connection Type	ISO 9168 Type 2 (Midwest 4 holes)
Handpiece Connection Type	ISO 3964
Air Supply Pressure	3 kg/cm ² (42 p.s.i.)
Positive Rotating Speed of Motor (3 kg/cm ²)	20,000 r.p.m. ±10%
Negative Rotating Speed of Motor (3 kg/cm ²)	20,000 r.p.m. ±10%
Maximum Speed	20,000 r.p.m. ±10%
Air Consumption (3 kg/cm ²)	< 66NL/min
Rated Torque	> 0.0005N.m (at 3 kg/cm ²)
Gear Ratio	1:1

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6. Air Supply Pressure Setting

Air supply pressure must be tested and set to comply with specified values in the table 5. Specifications.



WARNING: Do not exceed the specified air supply pressure values in table 5. Specifications.



CAUTION: Air supply must be free of dust, moisture and oil.

7. Connection & Disconnection of Handpiece to Air Motor

7.1 Connection

1. Connect handpiece to air motor until it locks into place. (Fig.1)
2. Pull on handpiece to make sure it is securely attached to air motor.

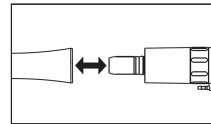


Fig. 1

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7.2 Disconnection

1. Hold air motor and handpiece attachment separately and pull the handpiece attachment off in an axial direction.(Fig.1)



CAUTION: Motor must have completely stopped rotating before connecting / disconnecting.

8. Test Prior to Use

Once handpiece is correctly connected to air motor, check for unusual vibration, noise or overheating. If there are any abnormalities, see troubleshooting chart or contact your authorized Precision Plus dealers. if problem persists.

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9. Forward/Reverse Rotation

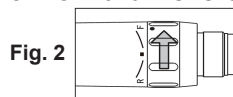


Fig. 2

1. Forward Rotation: Turn FWD/REV regulating sleeve to "F".(Fig 2)
F: Forward Rotation.

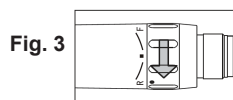


Fig. 3

2. Reverse Rotation: Turn FWD/REV regulating sleeve to "R". (Fig 3)
R: Reverse Rotation.

10. Post-Use Maintenance



CAUTION: Do not use strong/highly acidic water, strong acid/alkaline chemicals, chlorine containing solutions or solvents such as benzene or thinner to wipe, immerse or clean the device.

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Do not use ultrasonic bath during the cleaning process.

10.1 Preparation

1. Use correct eye, face and personal protection to avoid possible infection.
2. Disconnect handpiece from air motor.
3. Remove air motor from air supply hose.

10.2 Cleaning

10.2.1 Preparation at the Point of Use:

Disconnect the air motor from the tube. Remove gross soiling of the instrument with cold water (<40°C) immediately after use. Don't use a fixating detergent or hot water (>40°C) as this can cause the fixation of residuals which may influence the result of the reprocessing process. Store the instruments in a humid surrounding. Safe storage and transportation to the reprocessing area to avoid any damage and contamination to the environment.

10.2.2 Pre-cleaning

Do a manual pre-cleaning, until the air motor is visually clean. Submerge the air motor in a cleaning solution and flush the lumens with a water jet pistol with cold tap water for at least 10 seconds. Clean the surfaces with a soft bristle brush.

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10.2.3 Automated Cleaning:

Use a washer-disinfector meeting the requirements of the ISO 15883 series.

Put the instrument into the machine on a tray. Connect the instrument with the WD by using suitable adapter and start the program:

- 4 min pre-washing with cold water (<40°C);
- emptying
- 5 min washing with a mild alkaline cleaner at 55°C
- emptying
- 3 min neutralising with warm water (>40°C);
- emptying
- 5 min intermediate rinsing with warm water (>40°C)
- Emptying

The automated cleaning processes have been validated by using 0.5% neodisher MediClean forte (Dr. Weigert).

Note: Acc. to EN ISO 17664 no manual reprocessing methods are required for these devices. If a manual reprocessing method has to be used, please validate it prior to use.

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10.2.4 Disinfection:

Automated Thermal Disinfection in washer/disinfector under consideration of national requirements in regards to A0 value (see EN 15883).

A disinfection cycle of 5 min disinfection at 93°C has been validated for this device to achieve an A0 value of 3000.

10.2.5 Drying:

Drying of outside of instrument through drying cycle of washer/disinfector. If needed, additional manual drying can be performed through lint free towel. Insufflate cavities of instruments by using sterile compressed air.



CAUTION: Visual inspection for cleanliness of the air motor. If necessary, perform reprocessing process again until the air motor is visibly clean. Before packaging and autoclaving, make sure that the air motor has been maintained acc. to this instruction.

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10.3 Lubricating

Lubricant must be applied before autoclaving.



Fig. 4

Midwest 4 holes

Spray Lubricant

1. Use a high quality spray lubricant intended for use with dental handpieces / air motors (Not included with device).
2. Insert spray nozzle into drive air tube of air motor (shown in Fig 4). Hold the air motor firmly and spray for approximately 2 to 3 seconds.



Fig. 5

Midwest 4 holes

3. Lubricant should be seen to be expelled from exhaust air tube. (Fig 5) for Midwest 4 holes.

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10.4 Oil Lubrication

1. Apply 1-2 drops of high quality lubricant oil intended for use with dental handpiece / air motor (not included with device) into drive air tube (Fig. 1)
2. Connect air motor to air supply hose. Operate the motor for approximately 10 seconds.



CAUTION

- Always follow the instructions provided by lubricant manufacturer. Be aware of all precautions and warnings.
- Always hold lubricant can in an upright position.
- Hold air motor firmly to avoid it being dislodged due to lubricant spray pressure.

10.5 Sterilization

Air motor should be sterilized after each and every treatment.

1. Air motor should be lubricated as per user manual.
2. Insert the air motor into an autoclave pouch and seal pouch correctly. The autoclave pouch should comply with the requirements of EN ISO 11607.
3. Sterilize at 134 °C for 5 mins. Sterilization of instruments by applying a fractionated pre-vacuum steam sterilization process (according to EN 285/EN 13060/EN ISO

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17665) under consideration of the respective country requirements. Flash sterilization is not allowed on lumen instruments!

4. Air motor should be stored in a sealed pouch in a dry, clean and dust free place out of direct sunlight until required for use.



CAUTION

- Air motor must be cleaned and lubricated before sterilization.
- Any remaining blood on outer surface may become clotted and cause operational failure.
- Do not use autoclaves exceeding 137°C during sterilization.
- Sterilize according to EN13060, class B. Always follow autoclave manufacturer's instructions for use.
- Reprocessed products should be stored, protected from dust in a dry, dark and cool place with minimum exposure to germs.
- Autoclave sterilization is the only agreed method to correctly sterilize this air motor. The validity of other sterilization methods is not confirmed or guaranteed.
- Resistance to reprocessing: 250 cycles (reprocessing cycles include cleaning and sterilization)

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

11. Regular Maintenance Checks

Regular maintenance should be performed every 3 months as per the below chart. If any abnormalities are found, immediately contact your authorized Precision Plus dealer.









Points to check	Process
Rotation	Connect and start Air Motor. Check for abnormal rotation, noise, overheating and vibration.
'O' rings	Make sure all 'O' rings are in correct place and are undamaged.

* See trouble shooting chart if problems are discovered.

12. Symbols

	Sterilizable in a steam sterilizer (autoclave) at the temperature 134°C(273°F)
	Washer-disinfector for thermal disinfection

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	The device has not been subjected to a sterilization process
	Serial number
	Conforms to CE European Directive of "Medical device directive 93/42/EEC"
	Authorized representative in the European Community.
	Batch code
	Manufacturer
	Medical Device
	Consult instructions for use

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13. Troubleshooting

Malfunction	Cause	Solution
High noise, weak torque, stops rotating	Bearing damaged	Replace the bearing
Normal sound but weak torque	Air pressure too low	Check and correct working air pressure

If the device will not work correctly after following above troubleshooting solutions, please contact Precision Plus or an authorized maintenance centre.

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14. Warranty

Precision Plus products are warranted against manufacturing and material defects. Precision Plus reserves the right to analyze and determine the cause of any problem. The Warranty is voided should the product not be used in accordance to the user manual, not for its intended purpose, has not been repaired by Precision Plus or an authorized Precision Plus repairer, or has non genuine Precision Plus parts installed. Replacement parts will be made available for seven years after the date of discontinuation of the model.

15. Disposal of Product

In order to avoid the health risks to operators handling the disposal of medical devices, as well as the risks of environment contamination caused thereof, a surgeon or a dentist is required to confirm the device is sterilized prior to disposal. Ask a specialized firm who is licensed to dispose specially controlled medical wastes, to dispose this product for you. Always follow your country specific laws, directives, standards and guidelines for disposal of medical devices.

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made in China