

# FOREDOM® T-35A

## Air Turbine Instructions

### General Information

The Foredom T-35A Air Turbine Handpiece is capable of generating 350,000 RPM's (revolutions per minute) Rotation is accomplished by forcing air at a maximum rate of 40 P.S.I.– (pounds per square inch) across an impeller or turbine which holds the collet.

The unit generates substantial speed, but little torque, making it ideally suited for operations such as cutting, carving, engraving, texturing, and fine detailing with carbide or diamond points on materials such as metal, bone, stone, porcelain, plastics, glass, and hard woods.

Use a delicate touch on softer material and woods, or the bur will bury itself and stall the handpiece, as is the case when too heavy a cut is attempted.

Filtered and regulated air is fed into the handpiece through an on/off foot pedal, or the air flow can be turned off and on at the regulator. Clean, dry air is an absolute requirement to run this machine efficiently, as any foreign particles generated by or from the air source (compressor) will be thrown into the turbine and eventually clog and/or damage it.

With proper use and maintenance, the Foredom T-35A Air Turbine can give a lifetime of use. However, if a few basics are not observed, like any fine instrument or machine, the unit will eventually develop problems that will worsen if not corrected. **Be sure that the tubing used to connect the handpiece to the air source is rated for the output pressure of the compressor. The unit**

**requires a minimum of 1.5 C.F.M.–cubic feet per minute (42.5 liters per minute) of air at 40 P.S.I. (2.76 bar) which is also the recommended operating pressure. A 1/4 HP or larger compressor is required to generate this air pressure on a continuous basis. If you have purchased a handpiece only, you must install an industrial filter in the air line. As air is being compressed in the compressor, heat is generated that causes a temperature differential between raw air and compressed air introducing moisture into the system which, in turn, is forced with the air into the air line feeding the handpiece. Without an in-line separator/ filter, impurities such as moisture or dirt are carried with the air and forced against the turbine impeller in the handpiece and will damage the turbine.**

### Safe Operation

- Always wear proper eye protection when using this and other power tools.
- Never operate the handpiece without a bur in the collet.
- Always use 1/16" (1.6mm) shank friction grip burs rated for 350,000 RPM.
- Tie back long hair, and avoid wearing jewelry or loose clothing that could get caught in a bur.
- Use a suitable dust collection system that will remove not only larger dust particles, but also airborne dust from the work area.
- Develop a light, but sensitive and controlled touch as bur makes contact with material.
- For accuracy, dexterity, and comfort, hold the handpiece loosely, but with enough pressure to maintain control.

- Wear a respirator to prevent the inhalation of dust particles.
- Do not cover exhaust port at the rear of handpiece during use.
- Keep the work area clean and organized.
- Keep children out of the work area and away from any operating or moving machinery.
- Keep the foot pedal out of the way to avoid accidental starts.

### Changing Burs

To insert a bur, push the collet release plunger and insert the bur into the collet. Make sure that the bur is fully inserted into the collet before releasing the collet release plunger. Bur removal is easy: press the collet release plunger and pull the bur out.

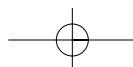
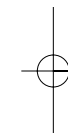
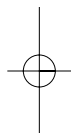
### Service

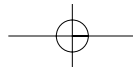
Factory service is available by sending your T-35A Air Turbine Handpiece with a note stating the problem to:

**The Foredom Electric Company**  
16 Stony Hill Road, Bethel, CT 06801 USA  
Attn.: Service Department

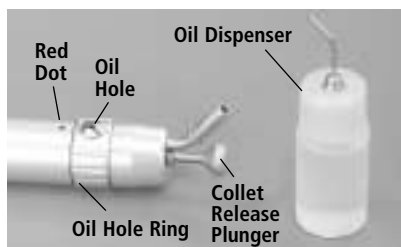
### Replacement Parts

Item Description	Part No
Turbine Cartridge with Collet	HP90038
Lubricant in Dispenser	HP93514
Nose Cap	HP93533
Spanner Wrench	HP93513





## Lubricating the T-35A Handpiece



Oil daily prior to use with 2 drops of Freedom Handpiece Lubricant in dispenser.

1. Turn Oil Hole Ring so that oil hole aligns with red dot on handpiece housing.
2. Squeeze 2 small drops of oil into hole using oil dispenser.
3. Turn oil ring about 1/4 turn to cover hole.
4. Run handpiece briefly to spread oil while covering rear exhaust ports with a cloth or paper towel to catch any excess oil that may blow out.

**Caution: Never clean the turbine's head with compressed air— it can damage the bearings.**

## Maintenance of Air Filter

If you ever notice an accumulation of liquid in the air filter container, press the evacuation valve upwards to evacuate the liquid. Check your air source's filter.

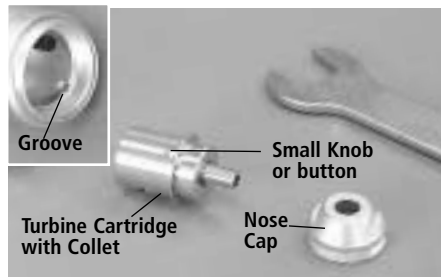
## Installing/Replacing the Turbine Cartridge with Collet

To remove a Turbine Cartridge follow these instructions:

1. Remove the Nose Cap using the small end (8mm) of the spanner wrench, and turn it counterclockwise.
2. Remove Turbine Cartridge by pulling it out with fingertips.

To insert a new cartridge or to re-insert one, be sure to follow these steps:

1. Line up the small knob or button on the Turbine Cartridge (see below) with the Groove inside the front part of the Handpiece Housing (at left below) while inserting the Turbine Cartridge. This is necessary for the cartridge to seat correctly with the air ports in proper alignment.



2. When Turbine Cartridge with Collet is inserted into position, screw on nose cap. Tighten firmly with small end of spanner wrench. Insert a bur and run handpiece briefly to be sure that it is functioning properly.

## The Freedom T-350K<sup>2</sup> Air Turbine Kit Contains:

T-35A Handpiece with hose adapter and instructions

Air Filter/Regulator in stand/wall mount

Push fittings

3 Assorted Carbide Burs

Owner's Manual

2– 6' lengths of Air Hose (The hose connecting compressor to filter/regulator is not supplied.)

On/Off Foot Pedal

### LIMITED WARRANTY

Freedom warrants the T-35A Air Turbine handpiece to be free of defects in material or workmanship for a period of 1 year after purchase. This warranty does not cover damage caused in transit or by accident, misuse, or ordinary wear. Repair or replacement will be made at our option if the product is returned post-paid to the address on reverse. All warranty repairs must be done at the factory. This warranty only covers the original purchaser of the product.

