

EQUIPMENT: BATTERY OPERATED ORTHOPEDIC SURGICAL DRILL SYSTEM

1. General Requirements

- The system should be a **battery-operated cordless orthopedic surgical power system** suitable for trauma, reconstructive, and general orthopedic surgeries.
- The offered system should be a latest-generation model from a reputed manufacturer with international market presence.
- The system should be modular, lightweight, ergonomically designed, and autoclavable.
- Should support drilling, reaming, K-wire insertion, screw fixation and bone cutting procedures
- The equipment should be supplied complete with all standard accessories required for immediate clinical use.

2. Handpiece

- Battery-operated, brushless electric motor.
- Lightweight ergonomic design.
- Balanced hand grip for prolonged surgical use.
- Handpiece should be fully autoclavable.
- Quick-connect attachment mechanism.
- Trigger shall provide variable speed control.
- Forward and reverse rotation.
- Locking mechanism to prevent accidental activation.
- The Handpiece should be constructed from durable, corrosion-resistant materials suitable for repeated sterilization and reprocessing.

3. Drill and Reamer Performance

- Maximum speed:
 - High-speed mode: Minimum **1,000–1,200 RPM**
 - Low-speed mode: Minimum **250–350 RPM**
- High torque suitable for orthopedic drilling., Minimum 15 Nm or higher
- Stable speed under load.
- Low vibration.
- Low operating noise.

Note: The device should have a clear and user-friendly attachment identification system to enable quick and accurate selection of accessories.

4. Oscillating Saw Attachment

- Oscillation angle approximately **45°**.
- Oscillation speed not less than **14,000 OPM**.
- Compatible with standard orthopedic saw blades.
- Tool-free blade installation.

5. Sagittal Saw Attachment

- Speed not less than **14,000–16,000 CPM**.
- Quick blade locking mechanism.
- Compatible with standard sagittal blades.
- Autoclavable.

6. Reaming Attachment

- Suitable for intramedullary reaming.
- High torque output.
- Forward and reverse function.
- Compatible with flexible reaming shafts.

7. Wire Driver Attachment

- Compatible with:
 - K-wires
 - Steinmann pins
 - Guide wires
- Wire capacity approximately **0.6–4.0 mm**.
- Keyless chuck preferred.

8. Jacobs Chuck (Drill Attachments)

- Stainless steel chuck.
- Drill attachment large Jacobs chuck (0.5 – 7.4 mm)
- Drill attachment small Jacobs chuck (0.5 – 4.0 mm)
- Keyless preferred.
- Fully autoclavable.

9. Battery System

- Rechargeable Lithium-ion batteries.
- Sterilizable battery casing.
- Battery shall allow uninterrupted orthopedic procedures.
- Minimum **4 batteries** shall be supplied.
- Battery charging time less than **90 minutes**.
- Battery life indicator.

10. Battery Charger

- Fast charger.
- Simultaneous charging of minimum **2 batteries**.
- Automatic charging management.
- LED charging status indicators.
- Input power: **220–240 V AC, 50 Hz**.

11. Sterilization

- All handpieces and attachments shall withstand repeated steam sterilization.
- Compatible with **134°C steam autoclave**.
- Sterilization containers/trays should be supplied.

12. Accessories

The system should include at least:

- 1 Main handpiece
- 1 High-speed drill attachment
- 1 Reaming attachment
- 1 Wire driver attachment (0.6 – 4.0 mm)
- 1 Oscillating saw attachment
- 1 Reciprocating saw attachment
- 1 Sagittal saw attachment

Jacobs chuck

- Drill attachment keyless Jacobs chuck (0.3 – 7.4 mm)
- Drill attachment large Jacobs chuck (0.5 – 7.4 mm)
- Drill attachment AO-small
- Reamer attachment large Jacobs chuck (0.5 – 7.4 mm)
- Intramedullary reamer attachment AO-large
- Reamer attachment AO-large
- Reamer attachment Hudson/ Zimmer
- 4 Rechargeable batteries
- 1 Dual battery charger
- 2 Sterilization trays/containers
- Standard maintenance tools
- User manual
- Service manual

13. Construction

- Medical-grade stainless steel and high-strength TITANIUM construction.
- Corrosion-resistant.
- Shock-resistant.
- Fully sealed design.

14. Safety Features

- Overheating protection.
- Battery overcharge protection.
- Motor overload protection.
- Lock-off trigger.
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15. Electrical Requirements

- Power supply:
 1. 220–240 VAC
 2. 50 Hz
- Hospital-grade plug.

16. Standards, Safety and Training

- Should be FDA approved product (**Document must be provided**)
- Manufacturer should have ISO certification for quality standards.
- Installation must be carried out in the hospital FOC.
- Application training must be given to hospital staff FOC
- Manufacturer certified biomedical technical training must be given to In-house Biomedical Engineers within 12 months of installation.

Preferred Country of Origin: USA, GERMANY, SWITZERLAND, IRELAND, JAPAN

Warranty:

The minimum warranty period Must be **three (03) years** from the date of installation and commissioning. Furthermore, the bidder/manufacturer shall ensure the availability of authorized distribution, supply, spare parts, and technical service support for the offered product in the Maldives for a minimum period of **eight (08) years** after installation, to facilitate hassle-free future procurement of consumables, spare parts, accessories, and maintenance services.

The **warranty commitment** and **long-term service support** confirmation must be provided in an **official company letter** and submitted along with the bid documents.

Special Note:

The final award of the contract shall be determined based on a comprehensive evaluation of multiple factors, including but not limited to the offered price, compliance with the required technical specifications, product quality, completeness and validity of submitted documentation, manufacturer reputation, market presence, proven experience in supplying similar equipment, and the availability of **reliable after-sales service and technical support**.

The bidder shall submit relevant **end-user recommendation letters, performance certificates, or customer references from healthcare institutions** where the same or equivalent product has been successfully installed and commissioned, as evidence of product reliability and service capability.