

67-14 Osteopower 2i Modular Surgical Handpiece System (Project 01-64) (1/03)



The Osteopower Modular Surgical Handpiece System is an electrically-driven handpiece marketed by the Osteomed Corporation. The Osteopower System consists of the 2i Power Control Console that can sequentially power up to two electrical motor units. Each of the motor units can be used with ten different handpiece attachments (1:1 Straight Drill, 1:1 Contra Angle Drill, 18:1 Contra Angle Drill, 100:1 Contra Angle Drill, Reciprocating Saw, Sagittal Saw, Oscillating Saw, VRO Saw, and Wire/Pin Driver).

The microprocessor-controlled power control console offers six power levels and also powers an optional, integrated irrigation pump that is designed to provide sterile irrigation directly from the handpiece. The Osteopower Modular Motor Unit contains a sealed, brushless motor with a permanently attached power cord. The motor unit is available in two versions: one that is hand-activated and one that is controlled by a foot pedal. The hand-controlled handpiece has touchpad-type pressure controls, which eliminate the need for a traditional control lever. This purportedly improves surgical site access and visibility. Another reported advantage of the handpiece controls is that they allow the user to easily control the speed, direction, and speed percentage of the motor entirely from the handpiece. If operators prefer foot-pedal control, a bi-directional foot switch is available that controls the handpiece speed and permits speed-feathering for delicate procedures.

For exodontic procedures, the 1:1 Straight and Contra Angle Drills offer a speed range of 0-70,000 RPM. For safe operation and control, the power console's microprocessor features specially-designed circuitry that is supposed to brake the speed of the motor from 70,000 to 0 RPM in 0.1 seconds. Osteomed's latest straight drill, the 777, is said to contain an "auto-lock" mechanism that secures the bur in the event that the bur has not been properly locked prior to operation. Furthermore, the 777 is advertised to be the first surgical straight handpiece that functions without a distal bearing assembly, which has been reported to cause burns to patients during surgical procedures.

Manufacturer:

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Suggested Retail Price:

Price (\$)	Item	Part Number
2500	Power Control Console 2i with Irrigation	450-0005
1600	Power Control Console 2i without irrigation	450-0021
1600	Modular Motor Unit and Cord	450-0030
1500	Modular Motor Unit and Cord, foot switch control only	450-0084
1600	Series III Straight Drill	450-0777

1600	1:1 Contra Angle Drill	450-0215
1400	18:1 Contra Angle Drill	450-0222
1500	100:1 Contra Angle Drill	450-0232
2500	Reciprocating Saw	450-0255
2500	Sagittal Saw	450-0255
2500	Oscillating Saw	450-0261
2500	V.R.O. Saw	450-0270
950	Bi-directional Master Foot Switch	450-0390

Government Price:

The Osteomed Corporation is in the process of procuring government contracts and should be contacted directly for government pricing of individual items.

ADVANTAGES:

- + Handpiece system supports a wide range of surgical procedures.
- + Function-specific connectors simplify unit set-up while also preventing improper power cord connections to power console.
- + Allows two surgical handpieces to be operated sequentially.
- + Has integral safety modes designed to prevent inadvertent handpiece activation.
- + Handpiece connection is color-keyed for proper coupling to the power console.
- + Handpiece connectors are positive locked which prevents inadvertent disconnection during use.
- + Allows bi-directional handpiece use.
- + Foot switch controls can be arranged in tandem, allowing control from both sides of an operating room table without requiring that the foot switch be moved.
- + Contra Angle Drill enhances access to surgical site.
- + Contra Angle Drill attachment accepts all standard latch-type dental burs.
- + "777" Straight Drill design does not contain distal bearings which can cause the patient to be burned.
- + "777" Straight Drill features an auto-locking mechanism that safely hold unsecured burs upon motor activation.
- + Meets all electrical safety requirements.
- + Supplied Operating Instructions and Maintenance Manual is easy to read and complete with detailed graphics that emphasize important features.
- + Optional autoclave trays are available to minimize corrosion by allowing quick drainage.
- + One-year warranty on all components, excluding Contra Angle drill and irrigation components.

DISADVANTAGES:

- Straight Drill attachments accepts only proprietary Osteomed burs.
- Osteomed cutting tools are designed for single-use only and are not recommended for sterilization and reuse.
- Irrigation system is difficult to set up and use.
- Proprietary Osteomed irrigation tubing must be used with optional handpiece irrigation feature.
- Use is contraindicated in the presence of flammable gases and anesthetics.
- Manufacturer's recommended usage time (duty-cycle) parameters are unrealistic and impractical.

SUMMARY AND CONCLUSION

The Osteopower Modular Surgical Handpiece System is an electrically-powered handpiece system that can be configured with a variety of components that support a wide range of surgical procedures. The product met all electrical safety standards and was found to be easy to assemble and operate. The system has an intelligent, safety-featured engineering design that allows for efficient operation and control. The sealed, brushless motor unit should tolerate sterilization better than other motor designs and no obvious negative effects of autoclaving were noted during this evaluation. However, a longer track record of clinical use will be required before definitive results regarding this handpiece's tolerance of sterilization will be known. The latest "777" straight handpiece drill attachment design allows function

without requiring a distal bearing, whose failure has been implicated in burns to patients during surgery. Potential users need to be aware that the manufacturer requires annual factory preventive maintenance, and the cost for this service should be programmed into the dental facility budget. In addition, some handpiece time usage parameters as recommended by the manufacturer are unrealistic and impractical. Clinical users were impressed with the control, power, and torque of the handpiece but reported that the integral irrigation system was cumbersome to use. Evaluators found that the versatility of Osteopower system allows the delivery of a wide range of surgical care and unanimously rated it "Excellent." The **Osteopower** Modular Surgical Handpiece System is rated **Recommended** for use by the federal dental services.