

65-24 Dental Field Treatment and Operating System (DEFTOS) (Project 01-32) (5/02)

For **UPDATE**, [click here](#).

The Dental Field Treatment and Operating System (DEFTOS) is described as a state-of-the-art field dental unit that uses the most current technology available to meet the demanding needs of the military dentist in an operational environment. The product was developed by the US Army Dental Research Detachment in a cooperative research project with the Bell Dental Company. The system is used to operate electric handpieces and is designed to support a range of dental procedures including oral prophylaxis, restorative procedures, and surgery. The DEFTOS is reported to be totally self contained and lightweight. The base unit includes an oil-less air compressor that stores compressed air in a unique, external, air-storage bladder. Also included in the unit is a dedicated suction system that does not depend on a compressed air source to function. The DEFTOS requires 120 VAC power supply, is 13.25" H x 13.25" L x 15.5" W, and occupies a volume of 1.5 cubic feet. The system supports a variety of standard electric motors and all E-type connected handpieces. The entire system is said to be quickly assembled/disassembled and packs into one molded, water-tight shipping container for transport and storage. The DEFTOS weighs 85 pounds in its shipping container.



Manufacturer:

Bell Dental Products
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Suggested Retail Price:

\$10,995 PortaBell Fiber Optic System (the name of the civilian version of the DEFTOS) includes:

- base unit
- storage pouches
- electric motor with fiber optics
- motor cable
- 1:4 increaser contra-angle handpiece with fiber optics
- three-way syringe
- high-volume evacuator
- saliva ejector
- variable-speed foot switch
- water reservoir
- waste reservoir
- instrument tray
- hand piece holders
- tray support tubes and extension tubes
- power cord
- associated cords, cables, hoses, and plumbing
- polyethylene-molded shipping and storage case

Government Price:

Price is based on the buyer's requested delivery time:

\$10,445.25 (for delivery within 72 hours)

\$10,115.40 (for delivery within 5-7 days)

\$9,895.50 (for extended delivery time)

ADVANTAGES:

- + Easy to set up and operate.
- + Unit functioned reliably during the evaluation.
- + Unit allows clinicians to provide adequate dental care under field conditions.
- + Is small and relatively lightweight.
- + All clinical evaluators were comfortable with the unit to the extent that they would deploy with it.
- + Electrical system meets all safety requirements.
- + Vacuum system meets MPID (Medical Procurement Item Description) requirements.
- + Air storage is provided by a unique, impact-resistant bladder.
- + Compressed air system functioned well by providing adequate pressure.
- + Self-contained water system is easy to set up, use, and maintain.
- + Vacuum system is easy to set up, use, and clean.
- + Vacuum waste container is autoclavable.
- + Instructions are complete and easy to understand.
- + Instruction manual contains helpful schematic diagrams and illustrations.
- + Shipping/storage case meets MILSPEC (Military Specification) requirements.
- + Flexible government pricing is available based on desired delivery time.
- + National Stock Number already has been awarded for DSCP (Defense Supply Center, Philadelphia) purchases.

DISADVANTAGES:

- Electric handpiece may require learning curve.
- Bracket tray assembly is difficult to adjust.
- More specific guidelines for disinfecting the unit's waterlines are needed.

SUMMARY AND CONCLUSION:

The DEFTOS is more compact and lighter than previous mobile/field dental units evaluated by DIS. It was easy to assemble and met all electrical safety requirements. The unit functioned well and enabled dentists to provide adequate care in the field environment. Most notably, the unit's vacuum system easily met all MPID requirements, a problem that plagued earlier mobile dental units evaluated by DIS. Clinical evaluators thought the electric handpieces functioned well, although they required a short learning curve for clinicians who were accustomed to air-turbine handpieces. All ten of the users expressed satisfaction with the unit and said they would enjoy using it during deployments. The **DEFTOS** is rated **Recommended** for use by the federal dental services.

UPDATE DIS evaluated (DIS 65-24) the Dental Field Treatment and Operating System (DEFTOS) and found the unit to provide suction above established military requirements. The DEFTOS unit evaluated during 65-24 consisted of a separate compressor and vacuum components. This original configuration has been changed in the DEFTOS II in that both the compressor and vacuum components are powered from a single electric motor.

Recent field testing of expeditionary dental equipment in Kuwait by DIS and the Navy Institute for Dental and Biomedical Research (NIDBR) during OPERATION SANDMAN included the DEFTOS field dental unit. Testing revealed that three of the four DEFTOS II units produced high-vacuum evacuation (HVE) suction that was consistently below standards and, therefore, inadequate. Simultaneous use of the low-volume evacuation (LVE) with the HVE deteriorated the already insufficient HVE function and resulted in essentially zero LVE function as well. Another finding concerning the DEFTOS vacuum system is that in situations of continuous suction (e.g., finger over HVE orifice) the DEFTOS suction overflow prevention valve locks into place forming a pressure lock situation. This pressure lock is not remedied until the suction system is shut down and suction is released by unscrewing the lid of the suction container.

Until the HVE and LVE suction performance is improved and verified by testing, the DEFTOS is rated Unacceptable for use by the federal dental services.