No. IV-210117/2010-Prov-I
Government of India
Ministry of Home Affairs

26, Man Singh Road, Jantar Mantar House,
New Delhi, 1.7.2010

To

The DO's/Assam Rifles/BSF/CISF/CRPF/ITBP/NSG/SSB/BPR&D

Subject: - Specifications of various Medical/Hospital Equipments -regarding

Sir,

The Specifications for the following Medical/Hospital Equipments have been accepted and approved by the Competent Authority in MHA and the same are enclosed for information and Record:

1) Glycosylated Hb Automatic Reader-Annex-A
2) Infant Open Care System-Annex-B
3) Refractometer Unit-Annex-C
4) Auto Refractor-Annex-D
5) Embolizing Machine-Annex-E
6) Oxygen Concentrator-Annex-F
7) Automated S. Electrolyte Reader-Annex-G
8) Dental Chair-Annex-H
9) Anaesthesia Work Station-Annex-I

2. Henceforth, all the CPMFs should procure the above items required by them strictly as per the laid down Specifications.

Yours Faithfully,

[Signature]

Under Secretary to the Govt. of India

Ends: as above

Copy to:-
DD(Procurement), MHA

Copy for information to:-
PS to JS(PM), MHA
TECHNICAL SPECIFICATIONS OF DENTAL CHAIR

GENERAL DESCRIPTION:
- Chair mount Dental Unit complete with all restraints which should allow left to right and vice-versa for left or right handed Dentist.
- Should be fully physiological body contoured, completely motorized hydraulically driven Chair with absolutely smooth non-jerky, soft-start and soft-stop movements.
- Dental chair should be programmable with at least four programmes of which two programmes for patient entry, one for rinse and one for patient exit, for two dentists AsN. One of the four programmes should be to set head low position in case of medical emergencies. Chair should have synchronized movement that when head rest goes down in supine or head low position the foot end of the chair board should raise. The chair should be programmable with a touch of a button.
- Chair should have possibilities of swivel left and right from base unit more than 30°
- Arm-rests should be multi-functional and easily adjustable with at least one arm which rotates out of way to streamline patient entry/exit.
- Multi-purpose, adjustable head-rest for comfortable support of head, which should also be adjustable for pediatric & handicapped patients for exact adaption to the back of the head.
- Touch pad control system should be multi-functional for Chair and Unit Master on/off, Halogen light on/off, with variable intensity. Handpiece, Tumbler fill, full chair function manual and programmable positioning.
- It should have functions for light cure unit, intra oral camera, micro motor with endo function. All in built.
- In-built Anti-retraction valves and flush valve system for infection control.
- Multifunction, easy to use foot-switch. It should provide all chair movements, adjustable and programmable position.
- Integrated 17 inches LCD/TV monitor should be provided for RVG (hand should be mentioned).

Operating light
- Should have an optically designed multi-surface glass reflector having three intensity controls and with Kempee device and shadow less.
Light Head should have three axial movements i.e. horizontal, vertical and axial diagonal adjustment at least 30 degree tilt on either side.
- Should be quartz halogen Xenon bulb with spare bulb and holder located at light head area for quick maintenance.
- Should have feathered-edge, balanced, intensity light pattern with three position intensity switch with high, medium and low settings.

Suction and Syringes
- Should have high and low volume motorized suction system with separating tank and automatic self-cleaning separating particles collector and amalgam separators.
- Should have swivel vitreous china bowl with adjustable cup full and bowl rinse tilters.
- Should have clean water bottle system.
- Should have autoclavable saliva ejectors, autoclavable high volume evacuator and autoclavable six-way syringe.

Ceramic spittoon and tumbler with water connection and auto start.

Foot control:
Multifunctional, easy-to-use foot control. It should provide all chair movements, adjustable and programmable position.

Dental working stool for dentist as well as for assistant:
- Should have cast-aluminium base with 5 castors.
- Should have adjustable lumbar support.
- Integral hydraulic system for height adjustment.

Modular - overhead delivery system with cushioned, arms (Continental delivery system) on pneumatic brake arm:
- Two terminals of fiberoptic head air rotor handpieces.
- One short head and one stand head air rotor handpieces with spray and non-retraction valve.
- One micro motor (40,000 RPM) with fiberoptic straight and contra handpieces and one endo hand piece.
- Ultrasonic endo dontoic handpiece: One complete set of Ultrasonic endo dontoic tips and files.
- All hand-piece tubing should be of vinyl material.

Unit block should be of pneumatic.
- No solenoid or wing valves.

\[\text{Signature}\]
All water line tubings should be made of PPH/PFR material. Tubing should have silver particle ionization to protect water line.

The following accessories will part of the equipment to be supplied:

**Light curing unit (LED-based with protective shield):**
- It should be attached with chair unit.
- Noise less & without fan
- Should be able to cure to a depth of 3-6 mm
- Should have microprocessor with three modes: fast, pulse, and ramping.
- Should be without infra-red
- Light intensity should be able to generate optical power up to 3,200 mw/cm²
- Wavelength range: 420-480nm

**Piezo electric scalpel:**
- It should also be provided in overhead delivery module.
- It should have automatic protection control for maximum safety
- Ultra-sound frequency ranging from at least 21,000-33,000 Hz
- Should be provided with frequency tuning.
- Should have an intelligent control system of amplitude according to the resistance encountered by the tip and the setting mode selected.

**Instrument table:**
- Stainless Steel removable instrument trays (quantity - 2 nos.).
- Must have swing-arm with wide divel.
- Size not less than 20' x 30'
- With height adjustment and locking facility.

**Oil free compressor:**
- It should be compact and silent with internal anti-corrosive reservoir.
- It should be one cylinder made up of cast iron, oil-free with dry oil system.
- It should have tank capacity of at least 20 litres.
- It should have auto cut-off switch.
- Pressure range: 5.5 - 8.0 bar.
- Should have suction capacity of 100 to 120 litres per minute at least.

**X-ray viewer:** For viewing OPG x-ray must be in-built with the unit.

**RVG unit including intra-oral X-ray machine, computer, USB cam (high resolution digital intra-oral camera).**
Intra-oral X-ray machine, micro-processor controlled, compatible to

- Tube current: 70 kV
- Focal spot: 0.6 mm
- Focus to skin distance: standard 70 cm
- Firing cycle: At least 110%, i.e. waiting time between two exposures for cooling of X-ray tube (10-20 sec at least)
- Times settings: Child/adult selection, upper/lower jaw selection, also filtering & collimation function
- Exposure timer: range from 0.02 to 3.2 sec at least
- Low-dose setting for digital receptor
- Facility of remote operation should be provided
- Automatic correction facility for mains fluctuations
- Hand switch timer with at least 3 mtr coiled cord
- Hygienic touch buttons
- Radiation safety apron should be provided
- Double pantographic arm with vertical & horizontal smooth movements, floor mount, mobile or castors.
- The system should comply with national quality certification / International standards for radiation safety including CR/BBC/ABDC certified

Digital intra-oral camera should have following specification:
- Should be portable, light weight, convenient and user friendly
- Should be cord free & should have USB cable connectivity
- Should have focus free optics & fog free

O V & S E N S O R & S O F T W A R E

- Theoretical resolution: more than 25 lines per mm.
- Actual true resolution: more than 50 lines per mm.
- Gray shades that can be resolved: 400 minimum
- Number of pixels in sensor: 1.8 pixel minimum
- The product should be totally mobile and connected to PC through USB
- Sensor should have smooth surface with rounded corners & edges for patient comfort
- Should have image sharpness filters
- It should have interface features like direct integration with other devices like intra-oral camera, panoramic systems, scanners, etc.
- Conversion/upgradation of the software should be available
- Length of sensor wire should be minimum 2 metres
- Sensor should be provided with software facility to enhance zoom, colorize, invert & rotate the image.
- Sensor life >400,000 exposures
- Should have auto-take feature - no need to reset between exposures
- Should be DICOM compatible, user-friendly and powerful program that acquires processes and archives images.
• Should have cables detection software.
• Should be supplied with sensor holder.
• COMPUTER with latest configuration (256 GB HDD, 2 GB RAM, Intel core2 duo processor @2.5 GHz, with windows 7 OS).
• 17" TFT screen (one mounted on chair and another on desk) & colour printer with appropriate cabinet for computer and printer.

Endodontic micro motor with built in apex locator:
• Electronically controlled, endodontic micro motor with built in apex locator.
• Should start automatically once file enters the canal & stop automatically once it reaches preset position near apex.
• Should stop reverse if the file clogs in canal.
• Should negotiate curved canal.
• Should have high, low & manual speed modes with auto-torque detection.
• Autoclavable hand piece, mini contra-head for easy access viewing.

Glass bead sterilizer (BSI certified) for disinfecting endodontic files with appropriate ratings.

Digital - Electronically Controlled steam autoclave table top type:
• Micro-processor controlled electronics.
• Patented steam generation system.
• Capacity 15-20 litres at least.
• Customized vacuum drying.
• Wide range of sterilization programmes.
• Also should have an option of emergency sterilization program of at least 10 minutes lesser than this is desirable.
• Integrated water filling & draining tanks.
• Electronic-controlled locking system for additional safety.

STERILIZER:
• High quality, BSI certified, with appropriate ratings for above operator.

HAND PIECE STERILIZER:
• UV hand piece sterilizer system with automatic 35 seconds maintenance programme for cleaning and lubrication of all types of hand pieces.

Dental Ultrasonic Cleaning Unit Bench Top:
• Bench top cleaner with electronic timer, water resistant construction, stainless steel tank, with 2 to 3 litres capacity.

Instrument cabinet:
• One sterile UV light storage cabinet for autoclaved instruments.
one dental instrument stackable cabinet having wash basin, top made of artificial marble/granite, durable, easy to clean, with at least 3-4 separate drawer compartments, with inbuilt power supply socket to use small equipments.

One mobile stackable cabinet should also be provided.

System configuration accessories, spaces and consumables:
- All consumables for installation/standardization of the system should be given free of cost
- Complete installation of the system including water inlet and drainage has to be installed

Standards and safety:
The accessories of the dental unit should carry appropriate certifications like ISO/CE/BSA/ISO/ IEC/IEC, whichever applicable. Make & model of all accessories/attachments should be specified

Documentation:
- Certificate of calibration and inspection
- User/technical/maintenance manuals to be supplied
- List of accessories with their number and costing
- Log book with instructions for maintenance purpose.

DR. N.K. Bhambri
IG (Medical)
PO

Dr. Bhushan Kumar
2IC (Medical) SSB
MEMBER-I

Dr. Amit Bhatia
CMO BSF
MEMBER-II

Dr. Sandhya Thapliyal
Specialist MODC/ITBP
MEMBER-III

Dr. K. Kumar Sahu
MO CRPF
MEMBER-IV

Dr. Shridhar
AC DENTIST, ITBP
CO-OPTED MEMBER

TECH. APPROVED

DR. R.S. Rathore
ADG (MEDICAL)