

• **መሆኑን ለማረጋገጥ የሚያስፈልጉትን ሰነዶች ለማቅረብ ይዘጋጁ፡-**

1. ለሰነድ ማረጋገጥ የሚያስፈልጉትን ሰነዶች ለማቅረብ ይዘጋጁ፡-
ሰነድ ማረጋገጥ ሰነድ፡-

2. ለሰነድ ማረጋገጥ የሚያስፈልጉትን ሰነዶች ለማቅረብ ይዘጋጁ፡-
ሰነድ ማረጋገጥ ሰነድ፡-

3. ለሰነድ ማረጋገጥ የሚያስፈልጉትን ሰነዶች ለማቅረብ ይዘጋጁ፡-
ሰነድ ማረጋገጥ ሰነድ፡-

4. ለሰነድ ማረጋገጥ የሚያስፈልጉትን ሰነዶች ለማቅረብ ይዘጋጁ፡-
ሰነድ ማረጋገጥ ሰነድ፡-

5. ለሰነድ ማረጋገጥ የሚያስፈልጉትን ሰነዶች ለማቅረብ ይዘጋጁ፡-
ሰነድ ማረጋገጥ ሰነድ፡-

6. ለሰነድ ማረጋገጥ የሚያስፈልጉትን ሰነዶች ለማቅረብ ይዘጋጁ፡-
ሰነድ ማረጋገጥ ሰነድ፡-

7. ለሰነድ ማረጋገጥ የሚያስፈልጉትን ሰነዶች ለማቅረብ ይዘጋጁ፡-
ሰነድ ማረጋገጥ ሰነድ፡-



ይህ ሰነድ የተሰጠው በ... ተባብሮ ለ... ሰነድ ማረጋገጥ ነው፡-

| | |
|------------|-------------------------------------|
| <p>2.5</p> | <p>1. ... 2. ... 3. ...</p> |
| <p>2.5</p> | <p>1. ... 2. ...</p> |
| <p>5</p> | <p>1. ... 2. ...</p> |
| <p>5</p> | <p>1. ... 2. ... 3. ...</p> |

5



۱ د سترګو



BIOMEDICAL ENGINEERING UNIT
Regional Atoll Health Services Division
Ministry of Health, Mal'e, Rep of Maldives

MEDICAL EQUIPMENT SPECIFICATION

Basic Dental Setup

GENERAL DESCRIPTION

- The Product shall be used for a dental treatment and operation for patients.
- Stand alone type shall be provided
- The Product shall be completely ready to be used for dental treatment by the dentist adequately when the Installation and Set-up is done
- Electric conditions Shall be AC220V, 50Hz, Single-Phase with BF-Type plug compatible
- Language used for indications on panel and instructions shall be English
- Main units:
 - Dental Chair
 - Dental Xray Unit
 - Dental Xray Digitizer
 - Autoclave
 - Compressor

TECHNICAL SPECIFICATIONS

Dental Chair

(1) Chair

- | | | |
|----------------------------------|---|--|
| (a) Quantity | : | 1set/unit |
| (b) Type | : | Contour seat or separation seat |
| (c) Drive system | : | Electro-Hydraulic system or equivalent |
| (d) Maximum load of patient | : | 135kg or more |
| (e) Seat position control | : | Automatic and manual |
| (f) Automatic position selection | : | Available |
| (g) Seat height range | : | 450 to 700mm or wider |



- (h) Backrest tilting angle adjustment range : 6 degree to 65 degree or wider
- (i) Headrest adjustment : Equipped
- (j) Seat material : Comfortable for patients, water resistant
- (k) Arm rest : Equipped at both sides, adjustable (right side)
- (l) Foot switch : Equipped
- (2) Operating table**
- (a) Quantity : 1unit/unit
- (b) Type : Operating table with instrument holder
- (c) Table supporting system : Support arm (over arm type) or equivalent
- (d) Size of table : W380 x L280mm or wider
- (e) Height of table : 690 to 800mm or wider, adjustable
- (f) Switch (Control) panel : Including Chair operations, Cup filler with simultaneous bowl flush (not required for a sensor type), Instrument light control (in case no on-off switch light is provided under the table), Operating,light (except for sensor touchless light)
- (g) Panorama film viewer : Equipped with LED or halogen lamp or fluorescent lamp
- (h) Instrument holder : 5 (for Air motor or Micromotor (1pc), High speed air turbine (2pcs), Multi syringe (1pc), Scaler (1pc)) or more
- (3) Spittoon stand**
- (a) Quantity : 1unit/unit
- (b) Type : System integrated type
- (c) Basin : Special coating basin, glass basin, or ceramic basin
- (d) Cup filler : Equipped with sensor control
- (e) Assistant instrument holder : Type: Support arm type
- : Number of instrument socket: 3 (for Multi syringe (1pc), Saliva ejector (1pc), Vacuum syringe (1pc)) or more
- (f) Bottle for distilled water : (a) Bottle shall be Equipped , 750cc or more, 1pc/unit
- : (b) Rack/Holder shall be Equipped
- (4) Operating light**
- (a) Quantity : 1unit/unit
- (b) Type : Overhead type
- (c) Light head : Supported by all free angle support arm
- (d) Light source : Halogen bulb or LED
- (e) Light type : Natural illumination or equivalent
- (f) Illuminance : Max. 15000lx or more, adjustable
- (g) Height range of light head : 1650 to 1900mm or wider, adjustable
- (h) Features : Controlled by sensor
- (5) Air motor or Micromotor**
- (a) Quantity : 1pc/unit



- (b) Type : Air motor for air tool or blushless type micromotor
(c) Max.rotation speed : 20000rpm or more
(d) Coupling system : Manufacturer's recommended system
(e) Air hose : Equipped with hose coupling, in case of Air motor
- (6) Handpiece
(Straight type)
- (a) Quantity : 1pc/unit
(b) Type : 1:1 Straight type
(c) Max. rotation speed : 20000rpm or more
(d) Coupling system : To be connected to 8) Air motor or Micromotor
- (7) Handpiece
(Contra-angle type)
- (a) Quantity : 1pc/unit
(b) Form : 1:1 Contra-angle type
(c) Max. rotation speed : 20000rpm or more
(d) Coupling system : To be connected to 8) Air motor or Micromotor
- (8) High speed
air turbine
- (a) Quantity : 2pcs/unit
(b) Type : Cartridge type, ball bearing system
(c) Max. rotation speed : 350000 rpm or more
(d) Light system : LED or halogen light system
(e) Coupling system : Manufacturer's recommended system
(f) Air hose : Equipped
- (9) Other hand
tools
- (a) Scaler : 1pc/unit
Type : Ultrasonic type
Scaling tip : 3types or more (each 6pcs/unit)
(b) Multi syringe (3-way syrunge) : 2pcs/unit
(c) Saliva ejector : 1pc/unit
(d) Vacuum syringe : 1pc/unit
(e) UV Cure Light : 1pc/unit
- (10) Doctor's
stool
- (a) Quantity : 1unit/unit
(b) Type : No arm rests type dental stool
(c) Back rest : Equipped
(d) Seat cushion : Appropriate material for operation (water resistant)
(e) Seat height range : 490 to 540mm or wider, adjustable
(f) Seat rotation : 360 degree
(g) Caster : Equipped



(11) Assistant's stool

- (a) Quantity : 1unit/unit
- (b) Type : No arm rests type dental stool
- (c) Back rest : Equipped
- (d) Seat cushion : Appropriate material for operation (water resistant)
- (e) Seat height range : 490 to 540mm or wider, adjustable
- (f) Seat rotation : 360 degree
- (g) Caster : Equipped

Dental Xray Unit:

- 1) Type : Floor mounted or Wall mounted
- 2) Target : Intra oral area
- 3) Height of head (range) : 866 to 1475mm or wider
- 4) Height of chair (range) : 457 to 630mm or wider
- 5) X-ray generator type : High frequency inverter type
- 6) Nominal focal spot value (IEC60336) : 0.7 or less
- 7) Tube type : DC type
- 8) Tube voltage : including 60kV and 70kV (selectable)
- 9) Tube current : 4mA/7mA selectable or 3mA/6mA selectable or 6mA (constant)
- 10) Total filtration : 2.0mmAL or more at 70kV
- 11) X-ray Shield Screen : 1set/unit
 - a) Type : Mobile type with caster and window
 - b) Size : Approx. W900mm x H1,800mm
 - c) Lead equivalent : 0.25mmPb or more
- 12) X-ray Protective Apron for adult with thyroid guard : 1pc/unit
 - a) Lead equivalent : 0.25mmPb or more
- 13) X-ray Protective Apron for child with thyroid guard : 1pc/unit
 - a) Lead equivalent : 0.25mmPb or more
- 14) X-ray Protective Apron for operator with thyroid guard : 1pc/unit
 - a) Lead equivalent : 0.25mmPb or more



Digital X ray Sensor

| | |
|------------------------------|---|
| Type | : Intra oral |
| Sensor technology: | : CMOS |
| Resolution: | : 20 lp/mm or higer |
| Interface | : USB 2.0 or higher |
| Sensor Dimensions: | : 24.5 x 36.0 mm or comparable to this size |
| Cable length: | : 2m or longer |
| Drivers/ aquisition software | : Shall be provided for Windows 7 |

Autoclave

| | |
|------------------------------------|--|
| 1) System | : Automatic operation from sterilization to drying system |
| 2) Class | : B-class with vacuum/ fractionation in pre and post sterilisation |
| 3) Material of chamber | : SUS304 or equivalent |
| 4) chamber capacity | : more than 15 L |
| 5) Sterilization temperature range | : 134 DegC or more |
| 6) Max. Operating pressure | : 0.20MPa or more |
| 7) Pressure gauge | : Equipped |
| 8) Drying system | : Equipped |
| Sterilizing timer | : Equipped |
| Dry timer | : Equipped |
| 9) Safety system | : |
| Over-pressure relief valve | : Equipped |
| Over-pressure cutoff | : Equipped |
| Interlocking door | : Equipped |
| 13) Accessories | |
| Tray shelf | : 3pcs/unit or more storable |
| Number of trays | : Same as storage capacity of tray shelf |

Air Compressor:

- Oil free air compressor compatible with the dental chair must be supplied with air hose/pipe of length 20ft.



Consumables and others:

- 1) Spare cartridge of handpiece : 5pcs/unit
 - 2) Spare vacuum tip : 10pcs/unit
 - 3) Spare scaling tip : each 1pc/type, 1set/unit
 - 4) Spare light bulb : 3pcs/unit (only for Halogen Type)
 - 5) Spare oil mist filter for turbine : 3pcs/unit
 - 6) Spare water filter : 10pcs/unit
 - 7) Spare water valve : 1pc/unit
 - 8) Spare air valve : 1pc/unit
 - 9) Spare viewer lamp : 5pcs/unit (except for LED type)
 - 10) Spare oil spray for handpiece : 2cans/unit
 - 11) Spare high speed air turbine light bulb : 2pcs/unit
 - 12) Spare X-ray film, 3cm x 4cm : 200films/unit
- Installation manual (English) for Dental chair and Dental X-ray unit : 1set/unit
- Operation manual (English) for Dental chair, Dental X-ray unit, X-ray Sensor, Autoclave : 1set/unit
- Detailed information on pipe laying and, electrical wiring interfaces : 1set/unit

Warranty and maintenance:

- Warranty period should be included in the quotation.
- Advanced maintenance tasks required must be documented and carried out FOC during the warranty period.
- The equipment should have spare parts available for more than 15 years after the purchase dates.



Documentation:

- User, technical and maintenance manual must be supplied in English language.
- List to be provided of equipment and procedures required for and routine maintenances.
- List to be provided of important spares and accessories with their part numbers.
- Contact details of both local supplier and manufacture for service and maintenance and sales must be provided.

Training:

- Application training must be given to the users
- Manufacturer standard technical training on service and maintenance must be given to the biomedical engineers/technicians of Ministry of Health.

Other requirements:

- The system must be FDA approved and CE marked.
- Bidders may inspect installation site prior to bidding their offers.

