

PART II - PRIMARY SYSTEMS INFORMATION

4. Medical Gas System

1. Operation

a. System Description:

(1) System Composition: The Medical Gas System consists of a complete installation of medical gas equipment to provide the required functions for this facility. Included in the medical gas systems are Dental Compressed Air (DCA) and Dental Low Vacuum (DLV). Each of the systems are centrally piped from pumps or manifolds to the appropriate rooms within the facility. A further description of each of the individual gas systems are listed below.

(2) Dental Compressed Air (DCA): The Dental Compressed Air system consists of a duplex air compressor with dryers located in the first floor Mechanical Room 1E-15. The air intake for the compressor is piped from an intake on the roof above Room 1E-16, BMET Work Station. The air compressor for this system is an oil free compressor as required by Criteria. Care should be taken to ensure that future replacement compressors are also oil free. Compressed air at 620 kPa (90 psig) is piped from the compressor, above the ceiling of the first floor to room outlets. See Sheet PART II-Page 4-1e-7. DCA air is provided to wall outlets in the General DTR, Rooms 2C-06, 2C-09 and 2C-14 and to floor boxes in the remainder of the Dental Treatment Rooms. In addition to the Dental Clinic, the DCA system also provides lab air to wall outlets in Rooms 2C-16, Ceramics, 2C-17, Prosth. Lab, 2C-12, DICP Clean and 2C-10, DICP Decon. See Table 2-4-1 for a listing of rooms with dental compressed air outlets.

(3) Dental Low Vacuum (DLV): The Dental Low Vacuum System, also commonly referred to as the Oral Evacuation System, originates from two dental vacuum turbines located in the first floor mechanical Room 1E-16. The DLV piping runs above the ceiling of the first floor to floor boxes located in the Dental Treatment Rooms of the second floor. See Table 2-4-1 for rooms that are served from the DLV system.

The Dental Low Vacuum system is installed to provide scavenging, collection and disposal of liquids, solids and aerosols from dental procedures. This is a wet system with liquids and solids transported from the collection point to a separator tank. The separator tank is located near the vacuum producers in the Mechanical Room. The DLV system operates at a vacuum of 27 kPa of mercury (8 inches of mercury).

The piping system for the DLV system consists of ASTM D 1785, Schedule 40 PVC piping. The joints are joined with PVC solvent cement with a PVC primer.

(4) Control Panel: A Dental Gas Control Panel is provided to monitor and manually start and stop the DLV Unit and the DCA Unit. This control panel is located in corridor 1EC-1 adjacent to the first floor Mechanical Room. The panel contains a vacuum gauge for the DLV

system and a pressure gauge for the DCA system. On/off switches are mounted on this panel to manually start and stop each DLV and DCA Unit.

(5) Alarms: Pressure switches are installed on the DCA and DLV to alarm the building direct digital control system (DDC) if low pressures in systems are sensed.

(6) Valves: A system of isolation valves are installed in accordance with current codes and criteria. Source shut off valves are provided at both the medical air manifold and the oxygen manifold. Main line shut off valves for the oxygen and medical compressed air systems are located in the ceiling area of the General Storage Room 1E01. Zone valves for oxygen, medical vacuum and compressed medical air are located as shown on Table 2-6-2. Valves for isolating the dental compressed air and the dental low vacuum are located at the dental air compressor and dental low vacuum pump.

TABLE 2-4-1

MEDICAL GAS OUTLET TABLE					
Room No.	Room Name	Dental Compressed Air			Dental Low Vacuum Floor Box D7090
		Floor Box D7090	Quick Conn. Wall D9056	9058	
1E-16	BMET Work Station	-	6	-	-
2A-05	OH DTR #1	1	-	-	1
2A-06	OH DTR #2	1	-	-	1
2A-07	OH DTR #3	1	-	-	1
2A-08	Gen. DTR #4	1	-	-	1
2A-09	Gen. DTR #5	1	-	-	1
2C-02	Gen. DTR #6	1	-	-	1
2C-04	Gen. DTR #7	1	-	-	1
2C-06	Gen. DTR #8	1	1	-	1
2C09	Gen. DTR #9	1	1	-	1
2C-14	Gen. DTR #10	1	1	-	1
2C-16	Ceramics Lab	-	1	-	-
2C-17	Prosth. Lab	-	10	-	-
2C-12	DICP Clean	-	-	1	-
2C-10	DICP Decont.	-	-	1	-