

# ***Servicing Private Practice X-Ray Systems: CPI CMP200 & Quantum Odyssey HF***



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## **Introduction**

Private Practice X-ray Systems course focuses on systems that are found in many different settings including Veterinarians, Chiropractors, satellite clinics and many other privately owned facilities. Although these systems will vary widely in regards to their peripherals, (IE: OTS, Wall Stands Collimators, User controls) many of them will share common generators including CPI, Sedecal, Del, Summit, Quantum, and Continental. The service professional will be taught the skills necessary for mechanical and electronic maintenance of multiple generators that these Private Practice X-Ray Systems use. Different systems and their respective generators will be thoroughly analyzed.

## **Prerequisites**

To attend this course, the service professional must have a good understanding of the principles gained through attending Phase II, or four years equivalent experience. The service professional must also possess a good mechanical aptitude.

## **Objectives**

At the conclusion of this course participants will be able to:

- Evaluate overall system performance
- Troubleshoot mechanical and electronic problems in generator

- Perform a complete and thorough preventive maintenance inspection
- Follow circuit operations of system
- Isolate optional components from the generator, including power
- Perform configurations and calibrations using applicable service software.

## **Course Outline**

### ***Day 1***

- Private Practice X-Ray Industry Overview:
  - o Room OEM's
    - Continental/Bennett/Trex
    - Del/UMG (Universal)
    - Quantum (owned by Carestream, 2010)
    - Sedecal
    - Summit
  - o Generator OEM's
    - Continental/Bennett/Trex
    - CPI
    - Del/UMG (Universal)
    - Quantum (owned by Carestream, 2010)
    - Sedecal
    - Summit
  - o Configurations
    - Generator
    - Console
    - Wallstand
    - OTS
    - Trolley/Floor Mount TS
    - U-Arm
    - Table
    - Collimator

- X-Ray Tube
- Bucky
- Detector
- o General Theory
  - High Frequency
  - Three Phase
  - Single Phase
    - kV
    - mA
    - Rotor
    - AEC
- o Lab safety & procedures
  - General Safety
  - Interlocks
  - Power safety and power isolation

### ***Day 2***

- Generator 1: CPI CMP200
  - o Overview
  - o Generator Models
  - o Documentation
    - Documentation availability
  - o Terms & Acronyms
  - o Specifications
    - KW Ratings
    - Input power requirements
  - o Covers & Panels
  - o Lab Activities
    - Component Identification
    - Tube change
    - Collimator change
    - Power Supplies
  - o Configuration/Setup/Options
    - Generator
    - X-Ray Tube
    - OTS/FS
    - Wallstand
    - Collimator
    - Digital Detectors

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## ***Day 3***

- o Functional Checks
- o Service
  - Required Tools & Test Equipment
  - Service Software
    - GenWare
  - Usernames & passwords
- Lab Activities
  - o Calibrations & Adjustments
  - o System Backup & Restore
  - o Protocols
    - Backup & Restore
- Schematics & Test Points
  - o kV
  - o mA
  - o AEC
  - o Rotor
- PM
- Troubleshooting
- Diagnostics
- Error Logs

## ***Day 4***

- Generator 2: Quantum Odyssey HF
  - o Overview
  - o Generator Models
  - o Documentation
    - Documentation availability
  - o Terms & Acronyms
  - o Specifications
    - KW Ratings
    - Input power requirements
  - o Covers & Panels
  - o Lab Activities
    - Component Identification
    - Tube change
    - Collimator change

- Power Supplies
- o Configuration/Setup/Options
  - Generator
  - X-Ray Tube
  - OTS/FS
  - Wallstand
  - Collimator
  - Digital Detectors

## ***Day 5***

- o Functional Checks
- o Service
  - Required Tools & Test Equipment
  - Service Software
    - Q-Vision/Q-Ware
  - Usernames & passwords
- Lab Activities
  - o Calibrations & Adjustments
  - o System Backup & Restore
  - o Protocols
    - Backup & Restore
- Schematics & Test Points
  - o kV
  - o mA
  - o AEC
  - o Rotor
- PM
- Troubleshooting
- Diagnostics
- Error Logs
- Course review
- Final exam
- Course evaluation