



**IS 7620(Part 1) : 1986 Specification for Diagnostic Medical X-ray Equipment:**  
**Part 1 General and Safety Requirements (First Revision)**

**Diagnostic Medical X-ray Equipment** refers to devices that generate X-rays for medical imaging. It includes an X-ray tube, high-tension generator, control mechanisms, and structures for positioning the patient and tube. These devices enable the visualization of internal structures through radiographs or real-time fluoroscopic images, aiding in diagnosis and monitoring. The equipment is available in portable, mobile, and stationary types, suited to specific clinical needs.

The Indian Standard IS 7620 (Part 1): 1986 specifies general and safety requirements for diagnostic medical X-ray equipment with a capacity of up to 500 mA and 150 kV. The standard applies to equipment operated on single-phase supply or phase converters and includes single-tank tube heads housing the X-ray tube and generator. It ensures safety, reliability, and performance.

The standard emphasizes mechanical and electrical safety, requiring equipment to withstand normal use without increasing fire hazards or risking structural failure. High-voltage parts must be enclosed in metal casings with proper earthing to prevent contact and ensure operator safety. Additional safeguards prevent unintended voltage changes, overheating, or live component exposure. Provisions for visual aids like collimators help define the irradiated area without activating the X-ray beam.

The standard also requires rigorous performance evaluations, including insulation resistance tests, leakage current tests, and temperature rise tests, to confirm the equipment's safe operation. Overcurrent and overload protection devices must function effectively to prevent hazards.

The standard mandates that the X-ray equipment must bear legible markings, including manufacturer details, type designation, and voltage rating. Documentation including operation manuals, maintenance instructions, parts lists, and circuit diagrams shall be provided to ensure safe use and maintenance while providing traceability.

Construction and testing requirements included in the standard ensure secure wiring, adequate insulation, and resistance to moisture. Both type and routine tests are mandated to verify compliance with safety standards. Mobile and portable units must meet additional leakage current and stability requirements.