



# LPX SERIES *Constant Potential Portable X-Ray*

## Specifications

Equipment: X-Ray Tubehead - Constant potential, end-grounded anode, air or liquid cooled versions available

X-ray Control unit - Digital Microcomputer based

Liquid cooling unit

Input line

Requirements: Automatic adapts to input line voltage  
100-130 VAC, 50/60HZ  
20 Amperes maximum

200-250 VAC, 50/60HZ  
10 Amperes maximum

May also be portable-generator powered

Anode

Cooling: Liquid coolant solution closed loop between x-ray tube anode and cooling unit, or fan-forced air cooling (LPX 300 Liquid Cooled only)

Duty Cycle: 100% - liquid or air cooled

Effective Focal Spot: 0.060 in. sq. (1.5mm. sq.)

Ambient Temp: 100% duty cycle @ 120° F (49°C)

Storage Temp: -30°F (-35°C) to 160°F (71°C)

Safety Devices:

- Tubehead Pressure Relief Valve
- Tubehead Thermal Cut-Out
- Tubehead Pressure Gauge
- Tubehead Low Pressure Cut-Out (25psi)
- Coolant Flow Sensor (liquid cooled only)
- Control Unit Safety Keyswitch
- Microcomputer-based Self-diagnostics
- Continuous Exposure Parameter Display

Leakage Radiation: Less than 0.8 Roentgens per hour at 1 meter from the x-ray tube target. 2.0 for LPX300

## Physical Specifications:

Tubehead:	Diameter	Length	Weight
160kV	7.25"	28.5" (W/C) 30.5" (A/C)	29lbs (W/C) 33lbs (A/C)
200 kV	8.38"	26.5"(W/C) 30.0"(A/C)	37lbs (W/C) 41lbs (A/C)
300 kV	12"	43.0"(W/C)	98lbs (W/C)

Control Unit:	Height	Depth	Length	Weight
	12.7"	10.5"	17.5"	34lbs(appr)

Cooling Unit:	Height	Depth	Length	Weight
	12.7"	15.5"	15.7"	54lbs(appr)

## Standard Accessories:

- Operation and maintenance manual
- Tubehead carrying case
- Tubehead Cable- 100' with strain relief
- Extra key (1) for Control Unit Safety Lock
- Power cable - 25' with strain relief
- Coolant hose - twin, 50' with self-sealing terminations (water-cooled only)
- Cooling/Fan Cable

## Optional Accessories:

- Tripod-style Tubehead Stand - LPX160/200
- LaserPointer
- Hydraulic Tubehead Stand - LPX300

LPX160: X-Ray Output: 5 to 160 kV, 0.1 to 5.0 mA constant potential

X-Ray Tube Window: Beryllium .8 mm (Directional), Nickel .6 mm (Panoramic)

Radiation Coverage: 40° (360° Panoramic tube available)

Radiation Output: 14R/min @ 50 cm filtered with .5 inches aluminum @ 160kV, 5 mA

LPX200: X-Ray Output: 10 to 200 kV, 0.1 to 10.0 mA constant potential, (900 watts max)

X-Ray Tube Window: Beryllium 1.0 mm

Radiation Coverage: 40° x 60° (360° Panoramic tube available)

Radiation Output: 21R/min @ 50 cm filtered with .5 inches aluminum @ 200 kV, 4.5 mA

LPX300: X-Ray Output: 10 to 300 kV, 0.1 to 10.0 mA constant potential, (900 watts max)

X-Ray Tube Window: Beryllium 1.0 mm

Radiation Coverage: 40° x 60°

Radiation Output: 30R/min @ 50 cm filtered with .5 inches aluminum @ 300 kV, 4.5 mA

# LPX SERIES Constant Potential

*State-Of-The-Art Industrial X-Ray Systems for Aerospace, Industry and Defense*

*advanced...*

*accurate...*

*reliable*



# ***LORAD Portable X-Ray systems are the most advanced, most accurate, most reliable industrial x-ray systems available.***

Only LORAD systems have this unique combination of features

- End-grounded x-ray tubes
- 5-160 kV, 5mA constant potential output
- 10-200 kV, 10mA constant potential output
- 10-300 kV, 10mA constant potential output
- 100% duty cycle
- Beryllium window x-ray tube
- Lightweight, gas insulated portable x-ray tubeheads
- LORAD's exclusive LaserPointer for pinpoint central x-ray beam targeting
- Water and air-cooled models available
- Warmup program, test data display, self-diagnostics and status display
- Automatic adaption to input voltage
- Quick and easy maintenance via plug-in printed circuit boards
- 100 feet of cable for remote operation
- Plugs into standard outlet or portable generator



## *Specify the power of digital control.*

All LORAD systems are equipped with LORAD's exclusive microprocessor-driven control unit that brings powerful digital capabilities to industrial x-ray.

- Automatic warm-up in five operator selectable modes
- Units of exposure in seconds or mAs
- Precise kV and mA indication
- Alphanumeric display of operating status
- Self-diagnostic circuitry
- Accurate setting for exact repeatability
- Displays are readable in direct sunlight
- Store/Recall of 250 exposure techniques



## Introducing an innovative new vision in industrial imaging.

LORAD, a Hologic Company, has brought the state of industrial imaging to a new high with its portable, constant potential x-ray units, the LPX 160, and LPX 200, and LPX 300.

The LPX series x-ray units are so advanced, they will set new NDT standards in Aerospace, Industry, Defense and anywhere it is critical to pinpoint the tiniest fault before it becomes a dangerous and expensive problem.

Available in either liquid or air cooled versions, the digital LPX series x-ray units will produce variable outputs from 5 to 300kV, 0.1 to 10mA (900 watt max) to produce

unparalleled resolution imaging in a wide variety of materials. All LORAD industrial x-ray systems operate on a 100% duty cycle for cost-efficient continuous operation.

### End-Grounded Anode

The LPX series x-ray units are end grounded to allow for easier and more flexible positioning of the tubehead assembly. The end grounded x-ray tubes have a focal spot size of 1.5mm sq. The tube port is built with a low-absorption beryllium window that allows the radiographer to utilize the full spectrum of x-ray energy. This configuration permits shorter exposure times with high output for high resolution imaging of materials as diverse as thin composites and honeycomb structure to various metals with differing thicknesses.

### Constant Potential Output for the Best Discrimination

The Lorad LPX series x-ray units have been engineered to produce the sharpest images in industrial x-ray. The high radiation output of the Lorad LPX systems allow for lower kV per exposure and increased film contrast for superior radiographic imaging.

The unique design of the LPX series x-ray units allows for unmatched repeatability by monitoring both the kV and the mA directly at the tubehead, not at the high voltage power supply input like other systems.

### Digital Microprocessor Control

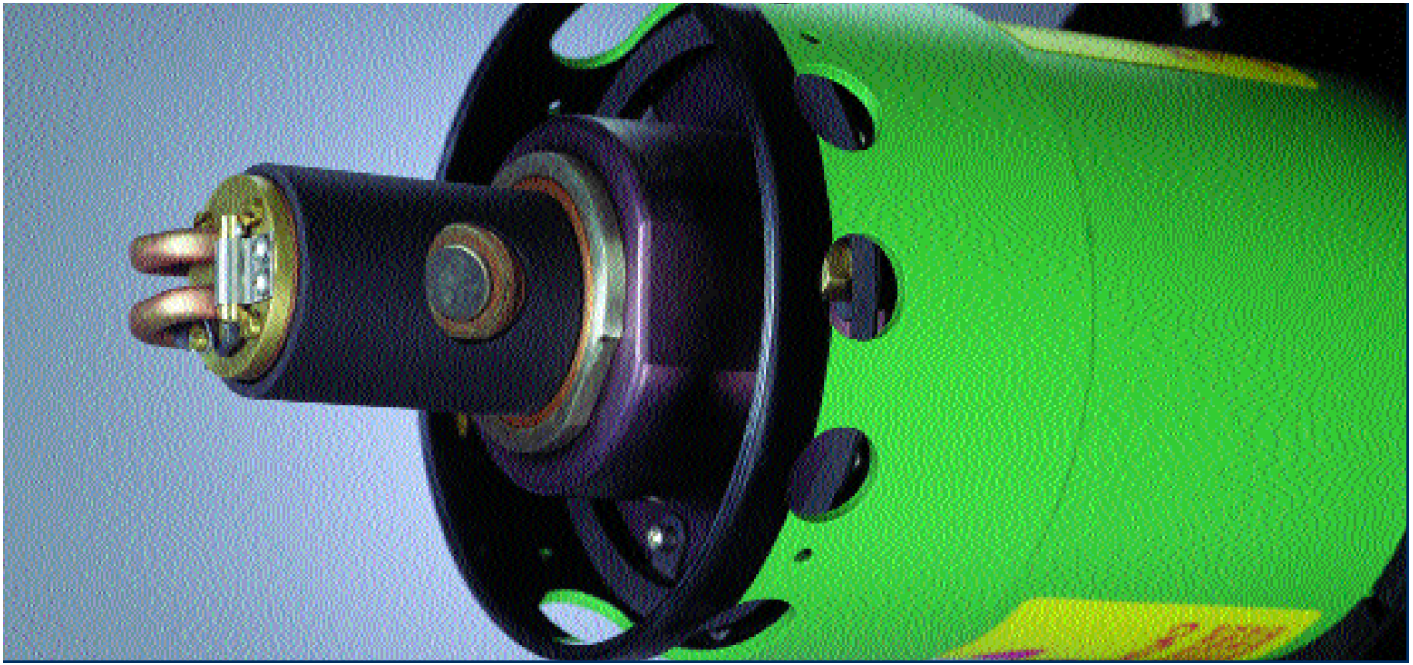
All Lorad LPX systems come standard with Lorad's exclusive microprocessor-driven control. In addition to automatic warm-up and self-diagnostic circuitry, the

*When you work with flaws...*



*...you have to be perfect.*





LPX series x-ray units, have memory to store and recall up to 250 exposure techniques and will retain the last set of exposure parameters present before powering down.

With LPX series x-ray units kV is adjustable in 1kV increments and mA in 0.1 mA increments. Exposure duration can be set anywhere from 0 min 0 seconds to 99 min 59 seconds in 1 second increments; mAs is variable from 0 to 29995 mAs.

### **Automatic Adaption to Input Line Voltage**

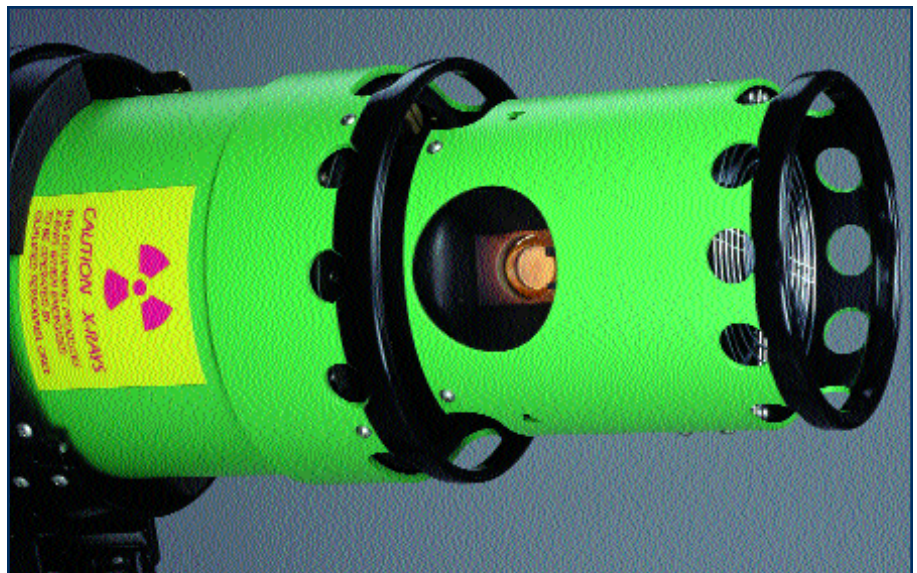
The LPX series x-ray units are perfectly suited to today's demanding NDT inspection requirements. The LPX series are rugged, yet easy to transport and economical to maintain and can be powered by either line power or portable generator to permit all day inspection under extreme conditions. All systems automatically adapt to standard input line voltage of 100-130 or 200-250 VAC or they can be powered by a portable generator so they can be used virtually anywhere.

### **Exclusive LaserPointer**

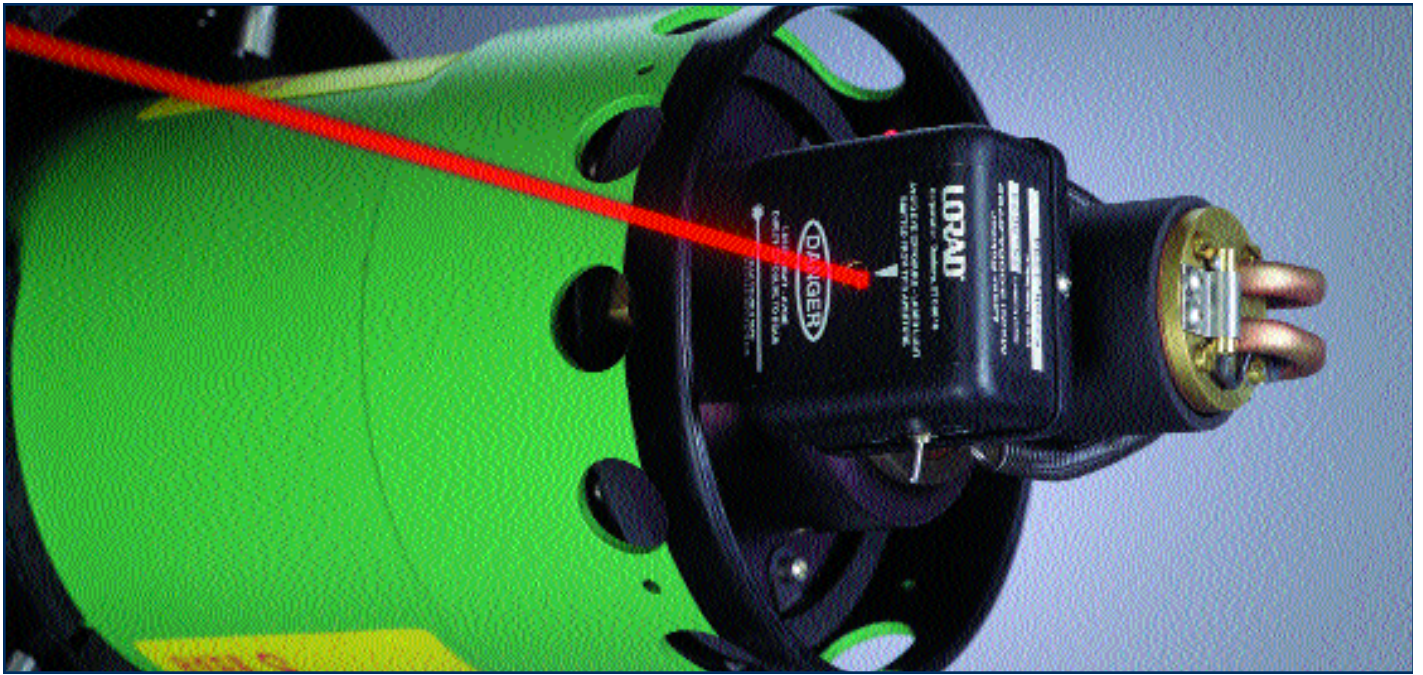
Only Lorad LPX portable x-ray systems allow pinpoint image area targeting via Lorad's exclusive LaserPointer laser sighting system. Lorad's LaserPointer projects a highly visible reference laser beam from the tubehead to surfaces as far as 75 feet away from the tubehead to show precisely where the central x-ray beam will be located. Unique in industrial x-ray, the LaserPointer permits unmatched accuracy for greater efficiency and reduced set-up times.

### **LPX Series Unique Combination of Features**

Lorad's LPX series x-ray units are the most advanced, most accurate and most reliable industrial x-ray systems available anywhere. All Lorad systems feature end-grounded x-ray tubes, 100% duty cycle, beryllium windows, gas insulated tubeheads, digital control and more. Key features include retention of the last set of exposure parameters and the storage and recall of up to 250 exposure techniques.







## The Lorad Team

Lorad has established a reputation as the industry leader with its state of the art technology. Lorad, with its team of highly dedicated personnel are acknowledged experts at problem solving in the field of industrial x-ray. The Lorad Team is available to insure that wherever Lorad LPX x-ray systems are in use throughout the world, they are accompanied by high quality service and excellent communication between Lorad and the customer.

## Model 1620 X-Ray Tubehead Stand

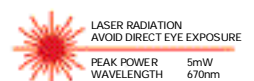
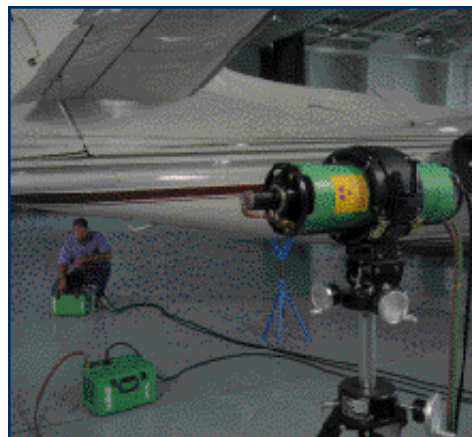
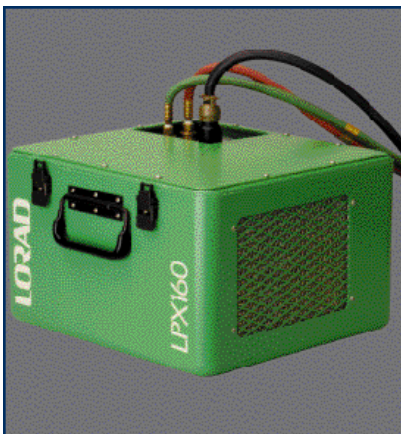
LORAD'S model 1620 Tubehead Stand has been designed to set up quickly and provide rigid support for optimal image quality and flexible, three-axis positioning for LORAD'S LPX160 and LPX 200 industrial tubeheads.

The stand incorporates two-segment telescoping legs, a handwheel-driven variable height adjustment and a gearhead which provides lockable handwheel control of tubehead tilt and horizontal rotation.

The tubehead cradle is cushioned for secure mounting and vibration damping, yet allows easy, quick tubehead mounting and interchangeability. The cradle accommodates both the 160kV and 200kV tubeheads.

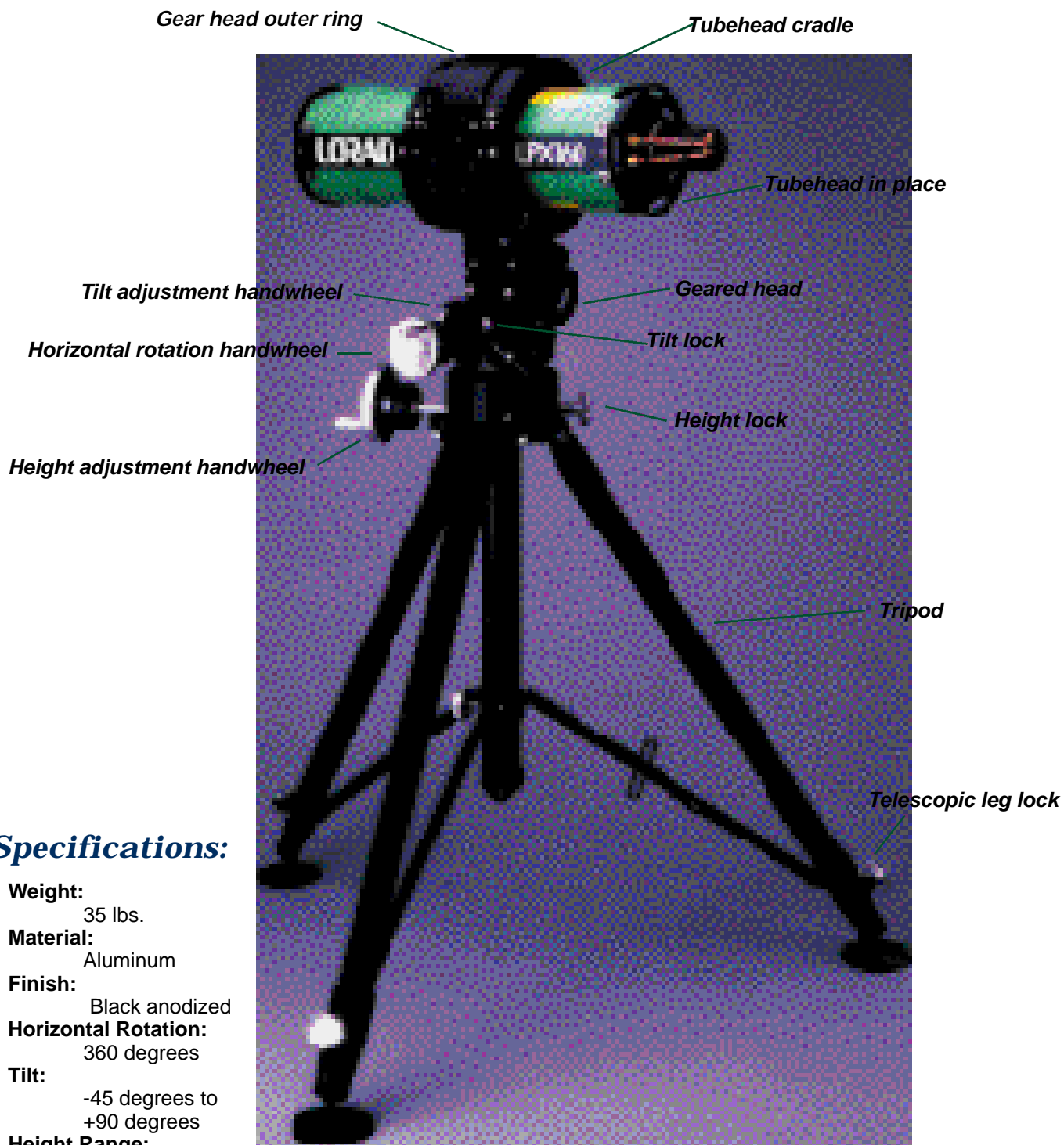
Tubehead positioning is via smooth, precision, lockable handwheel gear drives. The handwheels are equipped with automatic torque limiting devices to prevent damage to the positioning mechanisms.

A bubble-type indicator is included for quick and easy leveling of the tubehead.





# Model 1620 X-Ray Tubehead Stand



## **Specifications:**

- Weight:** 35 lbs.
- Material:** Aluminum
- Finish:** Black anodized
- Horizontal Rotation:** 360 degrees
- Tilt:** -45 degrees to +90 degrees
- Height Range:** 16" to 96"