



## X-Ray Calibration Systems

Gemini have designed, manufactured and commissioned a significant number of Gamma, Neutron, and X-ray Calibration Systems. As well as numerous upgrades, to both mechanical and control systems.

### Control Unit

The Exposure unit is controlled via a Windows based software system, its main features include:

- Full control of X, Y, Z and rotational axes.
- Full control of rotary neutron source cassette.
- Certificate issued for each instrument calibrated.
- In-cell control of video equipment and screen grab display of camera in top corner of monitor.
- Radiological status supplied on monitor screen; full control of warning lights, audible alarm and e-stops.

### Video Systems

- Multi zoom camera lens for clear visual image of calibration instrument.
- Pan/tilt unit attached to colour camera for accurate positioning.
- Adjustable stand.
- In-cell LCD mini monitor attached to trolley.
- Controller unit situated in control room to fully control pan/tilt, zoom and focus of camera.



### X-Ray Exposure unit

The X-ray set is made up of a shielded enclosure, containing, an X-ray tube, Filter wheel, and X-ray shutter. The X-ray tube produces a beam of X-rays centred along the X axis. The filter wheel is located within the shielding for automatically selecting the different strengths of exposure. The X-ray shutter mechanism is fail-safe and will automatically drop and return to a safe position if the power is lost or one of the safety interlocks is activated.

### Track & Trolley unit

- Al Alloy construction using channel, angle and ground plate.
- Precision linear rails and bearings used on X, Y and Z axes.
- X axis driven via a linear actuator using a stepper motor/gearbox arrangement.
- Y axis driven via a lead screw using a stepper motor.
- Z axis raised and lowered via a screw jack using a stepper motor/gearbox arrangement.
- The rotational axis is driven via a precision rotary table.
- Energy chain used on X and Y axes for tidy/stress free transportation of cables.
- Lengths, widths and heights can be modified to meet the requirements of the customer.