

**CPC****COOPERATIVE PATENT CLASSIFICATION****H05G**

**X-RAY TECHNIQUE** (apparatus for radiation diagnosis [A61B 6/00](#); X-ray therapy [A61N](#) ; testing by X-rays [G01N](#) ; apparatus for X-ray photography [G03B](#) ; filters, conversion screens, microscopes [G21K](#) ; X-ray tubes [H01J 35/00](#); TV systems having X-ray input [H04N 5/321](#))

**WARNING**

The following IPC group is not used in the CPC scheme. [H05G 1/61](#) covered by [H05G 1/60](#)

**Guidance heading:****H05G 1/00****X-ray apparatus involving X-ray tubes; circuits therefor**[H05G 1/02](#)

. Constructional details

[H05G 1/025](#)

.. { Means for cooling the X-ray tube or the generator }

[H05G 1/04](#)

.. Mounting the X-ray tube within a closed housing

[H05G 1/06](#)

... X-ray tube and at least part of the power supply apparatus being mounted within the same housing

[H05G 1/08](#)

. Electrical details

[H05G 1/085](#)

.. { Circuit arrangements particularly adapted for X-ray tubes having a control grid }

[H05G 1/10](#)

.. Power supply arrangements for feeding the X-ray tube {supply circuits with converters in general [H02M](#) ; supply circuits for emitters and amplifiers [H04B 1/16](#) to [H04B 1/1623](#) }

[H05G 1/12](#)

... with dc or rectified single-phase ac {or double-phase }

[H05G 1/14](#)

... with single-phase low-frequency ac {also when a rectifier element is in series with the X-ray tube }

[H05G 1/16](#)

.... Reducing the peak-inverse voltage

[H05G 1/18](#)

... with polyphase ac of low frequency {rectified }

[H05G 1/20](#)

... with high-frequency ac; with pulse trains { (pulse generators in general [H03K 3/00](#), [H03K 4/00](#) ) }

[H05G 1/22](#)

... with single pulses

[H05G 1/24](#)

.... Obtaining pulses by using energy storage devices (pulse generators [H03K](#) ) {current and voltage pulse generators [H03K 3/53](#) }

[H05G 1/26](#)

.. Measuring, controlling, protecting (measuring electric values [G01R](#) ; measuring X-ray intensity [G01T](#) )

[H05G 1/265](#)

... { Measurements of current, voltage or power }

[H05G 1/28](#)

... Measuring or recording actual exposure time; Counting number of exposures; Measuring required exposure time

[H05G 1/30](#)

... Controlling

[H05G 1/32](#)

.... supply voltage of the X-ray apparatus or tube (regulating supply without reference to operating characteristics of the apparatus [G05F](#) ) {voltage regulation in general [G05F](#) }

- H05G 1/34 . . . . anode current, heater current, heater voltage of X-ray tube (regulating supply without reference to operating characteristics of the apparatus [G05F](#) ) {current regulation in general [G05F](#) }
- H05G 1/36 . . . . temperature of anode; brightness of image {power (electrical temperature regulating in general [G05D 23/19](#) ) }
- H05G 1/38 . . . . exposure time {time switches in general [H01H 43/00](#) and subgroups }
- H05G 1/40 . . . . . using adjustable time-switch
- H05G 1/42 . . . . . using arrangements for switching when a predetermined dose of radiation has been applied, e.g. in which the switching instant is determined by measuring the electrical energy supplied to the tube
- H05G 1/44 . . . . . in which the switching instant is determined by measuring the amount of radiation directly {dosimetry in general [G01T 1/02](#) }
- H05G 1/46 . . . . Combined control of different quantities, e.g. exposure time as well as voltage or current
- H05G 1/48 . . . . Compensating the voltage drop occurring at the instant of switching-on of the apparatus (regulating supply without reference to the operating characteristics of the apparatus [G05F](#) ) {voltage regulation in general [G05F](#) }
- H05G 1/50 . . . . Passing the tube current only during a restricted portion of the voltage waveform
- H05G 1/52 . . . . target size or shape; direction of electron beam, e.g. in tubes with one anode and more than one cathode
- H05G 1/54 . . . . Protecting { or lifetime prediction } (overload protection combined with control [H05G 1/46](#))
- H05G 1/56 . . . Switching-on; Switching-off
- H05G 1/58 . . . Switching arrangements for changing-over from one mode of operation to another, e.g. from radioscopy to radiography, from radioscopy to irradiation { or from one tube voltage to an other }
- H05G 1/60 . . . Circuit arrangements for obtaining a series of X-ray photographs or for X-ray cinematography
- H05G 1/62 . . . Circuit arrangements for obtaining X-ray photography at predetermined instants in the movement of an object, e.g. X-ray stroboscopy
- H05G 1/64 . . . Circuit arrangements for X-ray apparatus incorporating image intensifiers

### **WARNING**

Material provisionally in 97DP27; image intensifiers [H01J 31/00](#)

- H05G 1/66 . . . Circuit arrangement for X-ray tubes with target movable relatively to the anode
- H05G 1/68 . . . Circuit arrangements for Lillienfeld tubes; Circuit arrangements for gas-filled X-ray tubes
- H05G 1/70 . . . Circuit arrangements for X-ray tubes with more than one anode; Circuit arrangements for apparatus comprising more than one X ray tube { or more than one cathode ([H05G 1/58](#) takes precedence) }

### **H05G 2/00 Apparatus or processes specially adapted for producing X-rays, not involving X-ray tubes, e.g. involving generation of a plasma (X-ray lasers [H01S 4/00](#); plasma technique in general [H05H](#) )**

- H05G 2/001 . . { X-ray radiation generated from plasma (plasma for generation of electrons to be accelerated towards an anode [H01J 35/00](#) ) }
- H05G 2/003 . . . { being produced from a liquid or gas }

- H05G 2/005 . . . { containing a metal as principal radiation generating component }
- H05G 2/006 . . . { details of the ejection system, e.g. constructional details of the nozzle }
- H05G 2/008 . . { involving a beam of energy, e.g. laser or electron beam in the process of exciting the plasma }