

Appendix (1)

Table 2.2 Specific features of high dose rate after loading devices

Manufacturer or vender	Varisource200 series(Varian Medical system Inc.USA)	Microselctron HDR (Nucletron. Netherlands)	GammaMed 12i(Varian Medical system Inc .USA)	GammaMed Plus (Varian Medical System Inc(USA)	Multisource Bebig Germany
1.(a) No of sources and container max storage activity	1x 44 mGy .hr ⁻¹ @ 1m	1x40 mGy.h ⁻¹ @ 1m	1x80 mGy.h ⁻¹ @1m	1x60mGy.h ⁻¹ @1m	1x100mGy.h ⁻¹ @1 m for Ir-192 1x25mGy.h ⁻¹ @1 m for Co-60
(b) Physical size OD=outer diameter L=outer lengths 2. Smallest outside diameter of applicators	0.59mm OD 5 mm l o.81 mm	1.1mmOD 5 mm l 1.4 mm	1.1 mm OD 5 mm l 1.6 mm	0.9mm OD 4.5 mm l 1.4 mm	1mm OD 5 mm l 1.7 mm
3. Methods of source attachment	Imbedded in (Nickel titanium) source drive wire.	Laser welded to drive cable	Welded to steel drive cable	Laser welded to drive cable	Laser welded to drive cable
4. Max source extension 5. No of applicator channels	1.5 mm 20	1.5 mm 18	1.25 mm 24	1.3 mm 24	1.5 mm 20
6. Methods of source movement	Step-back 20 steps 2-99 mm step size in 1 mm increment	Step-forward 48 steps of 2.5 mm over 12 cm 5 mm over 24 cm	Step-back 40 steps to 40 cm 1 mm to 10 mm steps	Step-back 60 steps 1-10 step size in 1 mm increment	Step-back 100 steps step size as required in 1 mm increment
7. Source arrangement and dose calculation	Stepping source 0.1-999.9 s dwell times in 0.1 s increment	Stepping source at 48 positions dwell times to 99 s in 0.1 s increment	Stepping source and dwell times to 999 s in 1 s increment	Stepping source 0.1-999.9 s dwell times in 0.1 s increment	Stepping source 3600 s max dwell time in 0.001 s increment
8. Methods of source retraction in even of failure	Backup motor and independent backup drive assembly. Backup battery and additional backup hand crank	Dual monitors and backup battery emergency hand crank	Hand crank backup battery	Backup motor powered by backup battery .additional backup hand crank.	Backup retraction drive system .additional hand crank and backup battery system.
9. Control unit and treatment planning system	Separate control unit and treatment planning system	Separate control unit and treatment planning system	Integrated control unit and treatment planning system	Separate control unit and treatment planning system	Separate control unit and treatment planning system
10. Dose optimization	Yes different optimization techniques	Yes 300 optimization points	Yes 60 optimization points	Yes different optimization techniques	Yes different optimization techniques
11. Special features.	Small source wire allows use of 21 G 10.84 mm needles	Memory storage 99 standard treatment data base of all treated patients	Memory storage of all planned and treated patient	Fixed length treatment distance and length check eliminates errors due to	Automated calibration and guild tube verification .data base for applicator s and patients Co-60 or Ir-192

Appendix 2

Component of Gamma Med 12i units:-

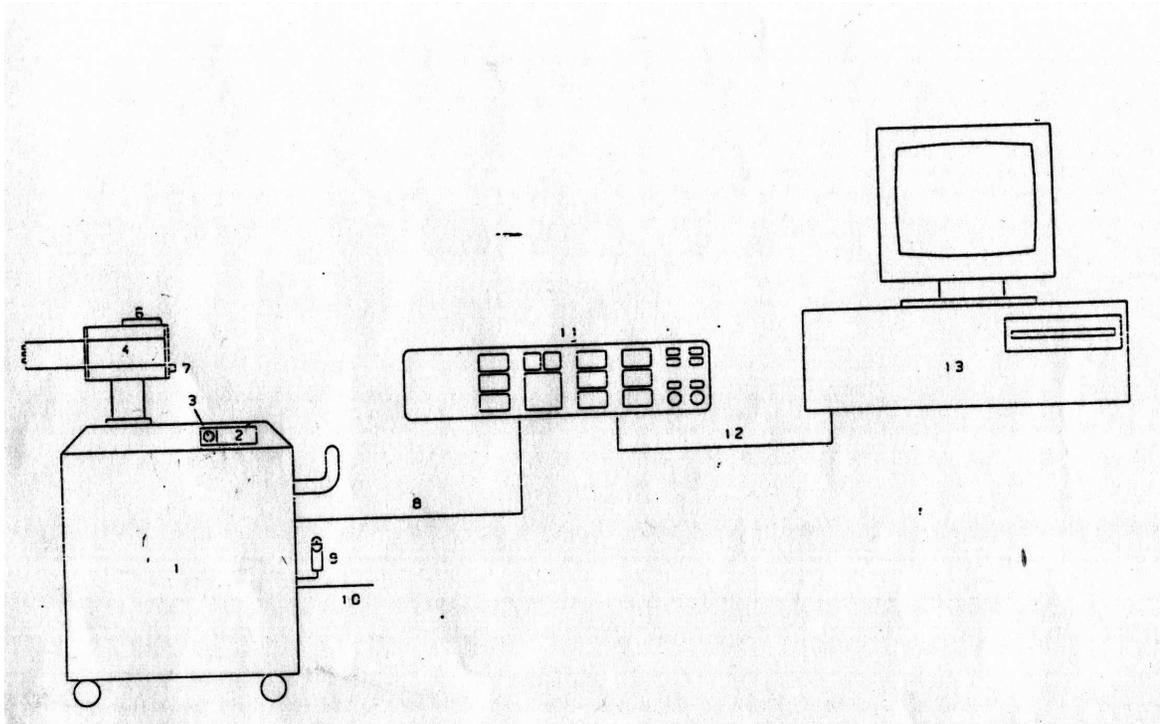


Fig (2-4) shows the component of Gamma Med 12i unit

- 1- Trolley
- 2- Membrane key board
- 3- Emergency key
- 4- Source head
- 5- Probe connection
- 6- Emergency crank
- 7- Key switch

8- Connection cable

9- Manual dummy control

10-Power cable

11-Console

12-RS 232connection cable

13-Personal computer (PC)