

Attachment 7; Table 4 - Particle Accelerators [Ref. 3]

Accelerator Type	Particle Accelerated	Energy Level
Electrostatic Accelerators:		
Tandetron	p, d, α , & heavy ions	to 3 MV
Cockcroft-Walton	p, d, α , , e, & heavy ions	to 4 MV
Dynamitron	p, d, α , , e, & heavy ions	to 4 MV
Tandem Van de Graaff	p, d, α , , e, & heavy ions	to 20 MV
Tandem pelletron	p, d, α , , e, & heavy ions	to 26 MV
Vivitron	p, d, α , , e, & heavy ions	to 35 MV
Time-Varying Field Accelerators:		
Microtron	e^-	to 200 MeV
Sector or isochronous cyclotron	p, d, & α heavy ions	to 590 MeV (p) to 90 MeV/amu
Superconducting cyclotron	heavy ions	200 MeV/amu
Synchrotron (weak focusing)	p, e heavy ions	1-6 Ge (p) 2 GeV/amu
Alternating-gradient synchrotron	p, e^+ heavy ions; mass 12-197 heavy ions; mass 12-208	10-900 GeV (p) 11.4 GeV/amu 160 GeV/amu
Linear Accelerators:		
Heavy ion linear accelerator	p, d, α , & heavy ions	to 30 MeV/amu
Linear accelerator	p	50-800 MeV
CEBAF recirculating superconducting linear accelerator	e^-	0.5-4 GeV
Electron linear accelerator	e^+ , e^-	6 MeV - 50 GeV
Colliding-Beam Storage Rings:		
Electron storage ring	e^+ , e^-	0.3-100 GeV (CM)
Proton storage ring	pp	14 TeV (CM)
Proton-antiproton storage ring collider	(pp^{-1})	1.8TeV (CM)

Note:

p = proton; d = deuterium; α = alpha particle; e^- = electron; e^+ = positron;
amu = atomic mass unit;

pp = two proton beams; (pp^{-1}) = proton & antiproton beam; CM = center of mass