

Name, links and pictures	Location	Operating	Aspect ratio	Major radius (m)	TF (tesla)	IP (MA)	ECH (MW)	ICH (MW)	NBI (MW)	LH (MW)	Notes and special features
ACST (Alternating Current Spherical Tokamak)	S Korea, Seoul	2000-2002	2	0.06	0.02	0.0005	-	-	-	-	AC operation. Helicon plasma discharge.
Asperator T-3	Japan, Tohoku	1974	1.6	0.27	?	0.1	-	-	-	-	
BATORM (BABY TORoidal of Masoud)	Egypt, Cairo	1998	2	0.06	?	?	-	-	-	-	A very small tokamak used for materials testing and tokamak physics studies.
CDX-U, (Current Drive Experiment)	USA Princeton	1993-2004	1.4	0.3	0.23	0.03	-	-	-	-	FW heating. Now resurrected as the Lithium Tokamak Experiment, LTX.
CPD Compact Plasma wall interaction Device	Japan Kasuga City	Approx. 2007	1.5	0.3	0.3	0.15	0.2	-	-	-	New spherical tokamak at Kyushu University. Only four TF coils, but they are large enough to give a tolerable ripple (8% at r = 0.5m). Includes a thermal lithium beam diagnostic for 2-D density. Also studying non-inductive start-up using ECRH.
ETE (Experimento Tokamak Esférico)	Brazil INPE	2000	1.5	0.3	0.6	0.4	-	-	-	-	Limiter machine
GLAST (Glass Spherical Tokamak)	Pakistan, Islamabad		1.7	15	0.4	0.05	-	-	-	-	MHP model validation and plasma-wall interactions
Globus-M	Russia IOFFE	2002	1.5	0.36	0.62	0.5	-	1	1.5	-	0.3 second pulses
GUTTA (at IOFFE)	IOFFE	1980-1985	2	0.16	1.5	0.15	0.03				Russia's first spherical tokamak.
GUTTA (at St Petersburg University)	Russia St Petersburg State Univ.	2004	2	0.16	1.5	0.15	0.03				Formerly operated at IOFFE Institute. Operations restarted 2004 in St Petersburg State University. Start-up and ECRH studies.
HIST	Japan Himeji	1998	1.3	0.3	0.2	0.1	-	-	-	-	
HIT2 (Helicity Injected Torus)	USA Seattle	1997-2004	1.5	0.3	0.5	0.225	-	-	-	-	Limiter / single null divertor machine to study Coaxial Helicity Injection (CHI).
HSE (Heidelberg Spheromak Experiment)	Germany, Heidelberg	1986 - 1987	1.1	0.08	0.25	0.1	-	-	-	-	Heidelberg Spheromak Experiment was converted with an axial conductor to a Spherical Tokamak, and operated in this configuration for only a short time, 1986-7. This was the first spherical tokamak experiment at the several kG and 100 kA level. (Spheromak generated by theta-z-pinch method (equipped with axial conductor. Full diameter of plasma: 0.3m, length of discharge vessel: 1m, Formation of plasma: ~14-20 microseconds, lifetime of plasma after formation: ~40-50 microseconds, magnetic energy content (in plasma ring): 600 J, electron temperature estimate: 15-20 eV.) Thanks to Hardo Bruhns for this information.
KTM, (Kazakh Tokamak for Material studies)	Kazakhstan, Kurchatov	2011	2	0.9	1	0.75		5			Low aspect ratio spherical tokamak for material testing. Will be able to exchange the divertor plates without breaking vacuum. 20 single turn TF coils. Thanks to Alexey Kirilenko for recent information.
LATE (Low Aspect ratio Torus Experiment)	Japan, Kyoto Univ.	2000	1.25	0.25	0.12	0.004	0.2				
LTX (Lithium Tokamak Experiment)	USA, Princeton	2005	1.5	0.4	0.4	0.4	-	-	-	-	Liquid lithium walls. FW heating.
MAST Mega Amp Spherical Tokamak	UK Culham	1999	1.4	0.85	0.5	1.4	1	-	4	-	Merging compression technique to drive plasma current, saving solenoid flux.
MEDUSA (Madison EDUcational Small Aspect ratio)	USA, Madison	c 1994 - ?	1.5	0.12	0.45	0.04	-	-	-	-	Test bed for educational purposes and studies leading to the construction of PEGASUS.
NSST (Next Step Spherical Torus)	USA, Princeton	?	?	1.5	2.7	5 to 10	?	?	?	?	Proposed as the step between today's spherical tokamaks and a large Component Test Facility (CTF). Possibly to use the site that was previously used for TFTR.
NSTX	US Princeton	1999	1.4	0.85	0.6	1.4	?	3 HHFW	4.7	?	1 second + pulses

NUCTE-ST	Japan, Nihon Univ.	1998	1.2	0.062	0.45	0.34	-	-	-	-	High elongation machine (10)
<u>PEGASUS</u>	USA Madison	1996	1.1 - 1.2	0.2 - 0.45	0.18	0.1 - 0.3		2			Extremely low aspect ratio tokamak. Double null divertor. EBW heating.
<u>Proto-SPHERA</u>	Italy Frascati	Soon	1.2 - 1.3	0.35	?	0.24	?	?	?	?	Uses START vacuum vessel.
<u>QUEST</u> ( <u>Q-shu University Experiment with steady-state Spherical Tokamak</u> )	Japan, Kyushu Univ., Kasuga City	Soon 2008?	1.7	0.68	0.25	0.02					New spherical tokamak replacing TRIAM-1M. Mission to study issues related to steady-state operation within the All-Japan ST Research Program. In particular, to develop a fully non-inductive current drive scheme that is effective in ST plasmas with high beta and high dielectric constant; to perform integrated studies of recycling and advanced PWI control in steady state, by active control of wall temperature and divertor pumping, and compatibility with high plasma performance; to develop a divertor in ST magnetic configuration which can handle power and particle fluxes in steady state.
ROTAMAK	Australia Lucas Heights	1987-1997	1.1	0.07	0.02	0.003					Rotamak with central rod.
ROTAMAK	Australia Flinders	1998-2002	1.6	0.1	0.016	0.012					Rotamak with central rod.
SPHEX	UK Manchester	1991	1.05	0.23	0.045	0.2					Spheromak, fitted with TF rod in 1991.
<u>START</u>	UK Culham	1991-1998	1.25	0.3	0.5	0.31	-	-	1	-	First 'hot' ST, achieved world record $\beta_{T=40\%}$ . To ENEA Frascati June 2004 for use in Proto-Sphera
STPC-EX	Turkey, Ankara		1.5	0.084	0.12	0.0065	-	-	-	-	
<u>SUNIST</u> ( <u>Sino UNited Spherical Tokamak</u> )	China, Beijing	2003	1.3	0.3	0.15	0.05	-	-	-	-	Double null divertor / limiter. 0.2MW of EBW heating. ECRH heating system mainly used for pre-ionisation. Currently installing a 0.5 to 1MHz, 100kW, power supply and antenna for Alfvén Wave heating and current drive.
TS-3	Japan Tokyo	1986	1.4	0.2	0.2	0.3	-	-	-	-	Limiter machine
TS-4	Japan Tokyo	2000	1.2	0.55	0.5	0.08	-	-	-	-	Limiter machine
TST-M	Japan Tokyo										
<u>TST-2</u> ( <u>Tokyo Spherical Tokamak</u> )	Japan Tokyo	1999	1.5	0.38	0.4	0.2	0.2	-	-	-	Major upgrade of TST-M. Double null divertor / limiter. 0.2 sec pulses. Studying plasma turbulence. Upgrades to heating and current drive systems planned soon.

Key to colour code
Currently operating
Under construction
Planned
Currently not operating
Unknown status
Decommissioned or 'dead'

**Conventional Tokamaks**  
are covered in a separate table.  
Follow the link at [www.tokamak.info](http://www.tokamak.info).

Key to Abbreviations
DNB: Diagnostic Neutral Beam. ECH: Electron Cyclotron Resonance Heating. FW: Fast Wave. IB: Ion Bernstein Wave. ICH: Ion Cyclotron heating. IP: Max plasma current. LH: Lower Hybrid Current Drive. NBI: Neutral Beam Injection. SC: Superconducting. TF: Toroidal Field. "y" means yes, but that no details have been obtained.
<b>Blank boxes mean that I simply don't know!</b>