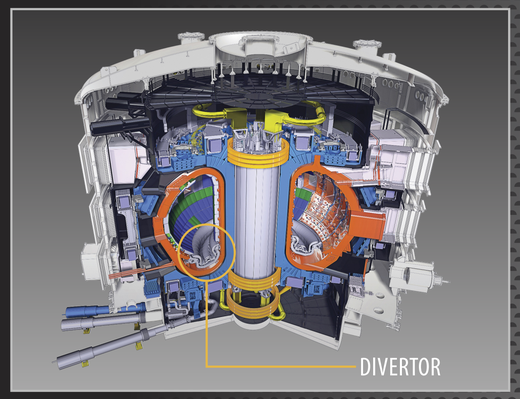
china eu india japan korea russia usa

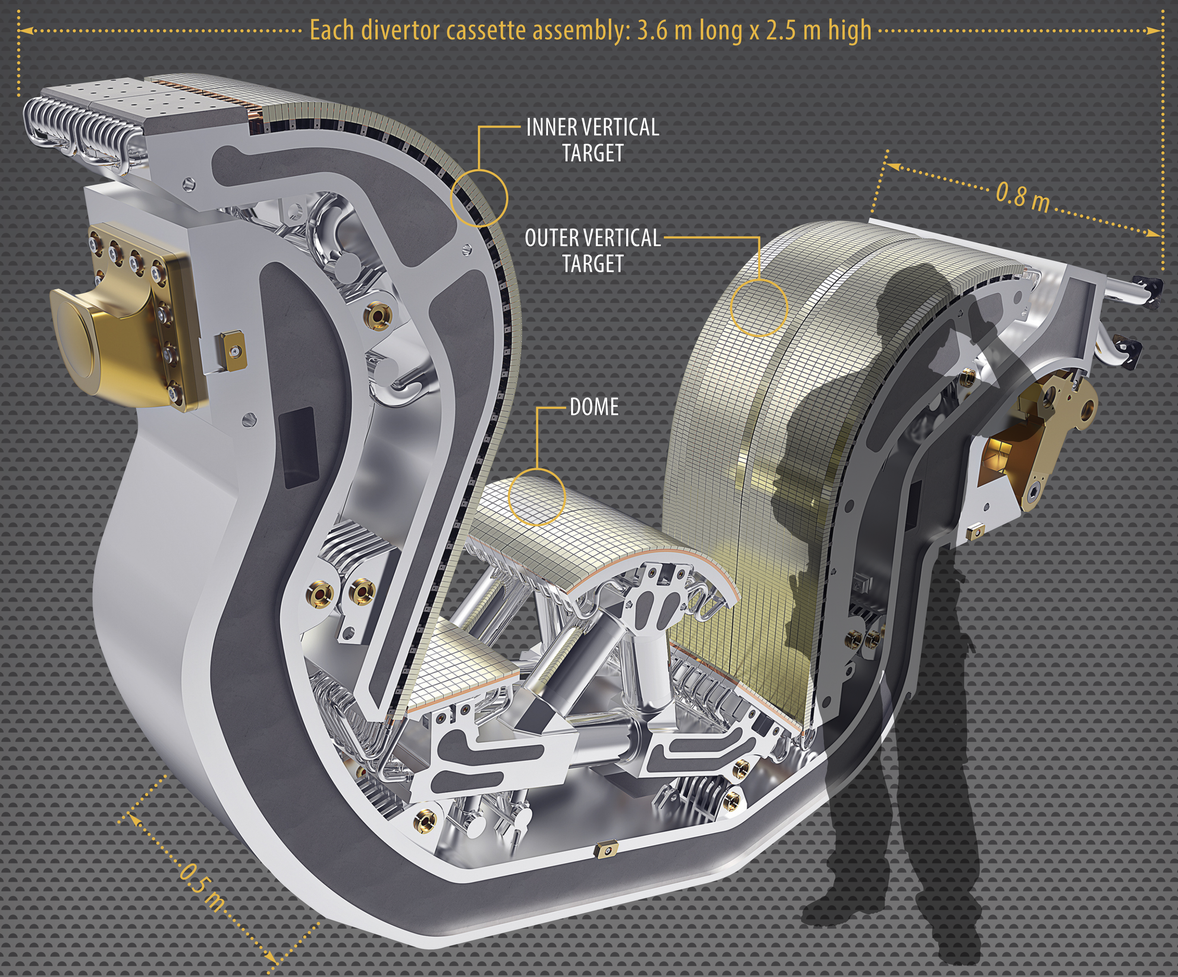
ITER MACHINE
THE DIVERTOR

Positioned at the bottom of the vacuum vessel, the **divertor** controls the exhaust of waste gas and impurities from the reactor and withstands the highest surface heat loads of the ITER machine. The heat flux sustained by the ITER divertor targets is estimated at 10-20 MW/m^2. That's ten times the heat load of a spacecraft re-entering Earth's atmosphere.

At the DTP2 divertor test platform in Finland, Europe has demonstrated the remote handling operations that will be necessary to install (as well as replace) the eight-tonne divertor cassette assemblies. The demonstrations were performed on a full-size mock-up of the cassette multifunctional mover, designed to transport divertor cassettes along a complex trajectory to the installation arena in the plasma chamber.



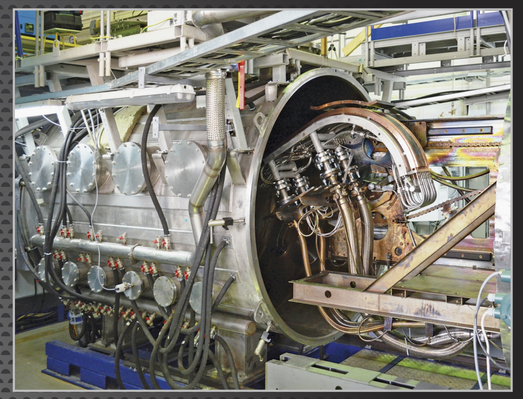
Situated at the bottom of the vacuum vessel, the cassette assemblies each have a supporting structure in stainless steel and three plasma-facing components: the inner and outer vertical targets and the dome. The inner and outer vertical targets are positioned at the intersection of magnetic field lines where particle bombardment will be particularly intense. As the high-energy plasma particles strike the targets, their kinetic energy is transformed into heat and the heat is removed by active water cooling.



FIFTY-FOUR 8-TONNE DIVERTOR CASSETTES WILL BE INSTALLED (AND REPLACED) BY REMOTE HANDLING.

DIVERTOR FACTS

Extracts	heat and ash produced by the fusion reaction
Sustains	the highest heat load of the ITER machine on its tungsten-coated plasma-facing surfaces
Protects	the surrounding structure from thermal and neutronic loads



The plasma-facing components of the ITER divertor will sustain the highest head loads of the ITER machine. In St. Petersburg, Russia, an 800 kW electron injector tests prototypes by subjecting them to ITER-like heat loads.