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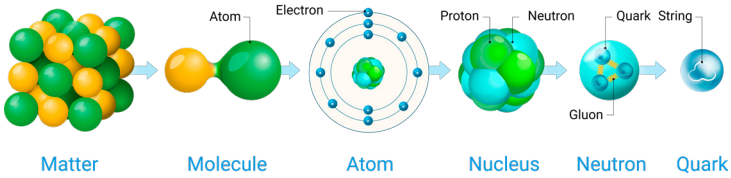
Quick Reference Guide

Vacuum for Particle and Plasma Physics



Why you need vacuum	To avoid plasma and particle beam being disrupted by interaction with ambient gases
Typical vacuum level	From 10^{-8} and 10^{-11} mbar
Typical gases	Light gases as He and H_2
Suitable vacuum technologies	Ion pumps, titanium sublimation combination pumps, turbomolecular pumps, scroll pump, leak detectors
Products	– **Turbomolecular pumps and turbo pumping systems:** TwisTorr 84FS, TwisTorr 305FS, TwisTorr 704FS, Turbo-V 2300, TPS-mobile, TPS-flexy. – **Ion and getter pumps:** VacIon Plus Pumps from 150 to 1000 L/s, Titanium Sublimation Combination Ion Pumps (TSP), Non-Evaporable Getter (NEG) Combination Ion Pumps. – **Leak detection:** Helium Mass Spectrometers HLD. – **Vacuum measurement:** Inverted Magnetron & Bayard Alpert Ion Gauge tubes.
Vacuum solutions	Multiple pumping stations along the vacuum chamber.
Typical requirements	– High Pumping speed for light gases – Pump remote operation (up to 100 m) – Long lifetime – Resistance to mag-field up to 100 Gauss (10 mT) for turbomolecular pumps – Resistance to radiation up to $5x10^5$ Gray for turbomolecular pumps

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