

SCIENCE . TECHNOLOGY

COLOSSAL MACHINES II

6 × 45' (ENG, GER)

New season, new mechanical beasts. Colossal Machines II explores even more spectacular machines and their fascinating inner workings.

From gigantic, ground-crushing monsters, to lifesavers, to nuclear-powered machines, we pull back the cover and reveal their secret ingredients. We show the biggest and most fascinating machines that humankind has to offer. Using CGI, we take a look inside these technical masterpieces and explain with the help of experts what makes each machine special. We unravel the mystery of their development and show how they actually work.

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1. Crush, Smash, Shred

Mining has historically been a dangerous, labor-intensive and expensive process, but with the help of colossal machines and smart mining engineering, we are now overcoming obstacles that would have been unthinkable just a few years ago. From gearless mill drives to explosives clearing vehicles to giant metal shredders, we unravel the mystery of how they work and how these machines are built. Machines covered: Nordberg MP2500, Kobelco Destroyer SK3500D, Tesmec Rock Hawg, The USM1150, Lynxs Shredder

2. Power of the Atom

Nuclear energy as a blessing? Many may find that hard to believe. But there are startups in the U.S., investors like Bill Gates, who believe in nuclear technologies. Especially in the field of nuclear energy propulsion technology, there is hidden potential that was previously undreamed of. We take a look inside the latest radioisotope generators, which use the decay heat of certain atomic nuclei to generate electricity, usually via thermocouples, and explain their operation in detail. Machines covered: Large Hadron Collider, Mars Rover, Bruce Nuclear Station, Pergaso HD Volumetric CT, New Horizons Space Probe

3. Fire and Rescue

Violent floods, earthquakes and huge forest fires - climate change is causing extreme nature events all over the globe. During catastrophic events like these, emergency forces fight tirelessly against the power of nature and try to save as many lives as they can. We investigate what technological tricks are hidden inside of life-saving machines and examine how they were designed to function reliably even in such extreme situations? Machines covered: Panther 8x8 Fire Engine, CL415 Water Bomber, USNS Mercy, Sikorsky UH-60, Ghe-O Rescue

4. Titan Transports

Freight transport is an important factor in our economy and as globalization progresses. High-performance freight aircraft, offshore vessels and electric trains are set to determine the future of freight transport. We check how these colossal transporters manage to carry such masses and thus make our industry more efficient and hopefully more sustainable. Machines covered: LCAC, Stratolaunch ROC, Tractomas TR 10x10 D100, Ever Ace, Wabtex Flxdrive

5. Next Gen Power

Our world is developing at breakneck speed, creating ever-new challenges for industry and the economy. New technical developments and enhancements are therefore inevitable. From recyclable spacecraft, to futuristic firefighting drones, to unmanned motor vehicles, we examine the latest technology hiding behind the machines of a new generation and uncover their secrets. Machines covered: MQ-4C Triton, Space X Dragon 2, US Navy Sea Hunter, Thermite Firefighting Drone, Komatsu Autonomous Hualage System

6. Speed Demons

A new super class in the world of machines are undoubtedly those in the field of high speed. They have to be higher, go farther and, above all, faster. These machines really step on the gas. From the jet vehicle, that breaks the sound barrier to the 431km/h magnetic levitation train, these machines have it all and we explain why. Machines covered: Bugatti Chiron SuperSport 300+, Thrust SSC, F-15 Eagle, Shanghai Maglev Train, USS Independence