

Djahet Artificial Muscle System

Artificial muscles were developed to enhance a armor's speed, and physical strength beyond a normal [Sahaadi's](#) capabilities. They were developed as part of Project Azimujahid a 'super-soldier' program to increase combat performances of standard Sahaad forces. Military and Government funding essentially gave them carte blanche over how they went about it. Eventually it was a lab assistant who came up with a simple, yet effective idea. Through the use of two systems a complete system could be achieved.

Smart Metal Springs

Essentially a thermal induced memory retention metal, the springs themselves expand and contract according to being either hot, or cold. When combined with a temperature control system they can be used within an exoskeletal suit. The springs themselves when in use have an efficiency far surpassing that of a normal human being by upwards to a theoretical maximum of five hundred times the upper limits of human strength. While it is possible it is not done out of fear and current material science drawbacks as a user could be grievously injured. Suits using them typically have software and hardware governors built in to regulate output. The typical upper limit of allowable increment increase is about one to two metric tonnes with three being the maximum in strength performance. However to reach a three tonne max the suit is required to have the exoskeleton to be reinforced, or an alternate specially designed unit to be utilized.

Carbon Nanotube Sheets

While the springs provide the strength, the most obvious addition was speed and reflexes. These comes from a layered carbon nanotube sheet. Carbon Nanotubes are capable of carrying an electric current density that is a thousand times greater then copper. When used in this specific application, a electrostatic charge is run through the sheet which causes them to expand and contract rapidly. While not too efficient to increase strength, they are capable of increases speed and reflexes. To prevent harm to a user, the same type of hardware and software governors are utilized but modified to better suit this particular system. To further protect users an insulating layer is added in during construction to prevent electrical shocks from harming an individual. A preventive measure against energy weapons or electrical surges was added near the end of the designing process, a grounder is usually added in the soles of each suit with an intricate series of conduits throughout the suit used to both power the suit, and release excess energy into the ground through the feet.

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