Ke-M2-F4300 Hemosynthetic Interior Insert

The Ke-M2-F4300 Hemosynthetic Insert is a component of the Ke-M2-4 Series "Mindy" Armor that was updated in early YE 43. It is the successor of the Ke-M2-F3801 Hemosynthetic Interior Insert. The design refresh was designed by Dr.Shinichiro Tomoko, a hemosynthologist at Ketsurui Zaibatsu.

History and Background

The warm, soft, biosynthetic musculature and flesh inside of power armors have been with the Ke-M2 "Mindy" Series of Power Armor since its beginning in YE 38. The design has the most relevance to Nekovalkyrja pilots, but some of the benefits of the insert are experienced by all pilots. The experience of being enrobed in the soft, warm biosynthetic flesh is part of what makes being inside of the Ke-M2-4 Series "Mindy" Armor comfortable for the pilot. The insert plays a key role in the life support system of the armor, and its reliability and robust nature are important factors in maintaining a functional and healthy pilot.

In the previous designs, the insert was generally grown in a Hemosynthetic Reconstruction Tube connected to the Hemosynthetic Conduit System. Now, in YE 43 and forwards, the inserts due to the safety of the new Nodal Liquid Conduit System, can be grown directly inside of the Ke-M2-4 Series "Mindy" Armor. The racks that the armors and hung on when in storage are connected to the Nodal Liquid Conduit System of their host ship or facility to take full advantage of the system's resources.

Hemosynthetic Insert	
Year of Creation	YE 43
Designer	Shinichiro Tomoko, Ketsurui Zaibatsu
Nomenclature	Ke-M2-F4300
Alt. Nomenclature	None
Manufacturer	Ketsurui Zaibatsu
Fielded by	Star Army of Yamatai
Availability	Mass Production
Price	350 KS

Hemosynthetic Flesh Update

In the previous Hemosynthetic Conduit System design, HSCS-3 the specialized hemosynth responsible for recycling and breaking down organic waste was dangerous and could not be exposed to organic flesh. It meant the use of uncomfortable catheter systems to collect urine and a lot of the benefit of an insert was lost due to the hostility of the substance. In the Nodal Liquid Conduit System the use of free-flowing harmless femtomachinery that could be specialized and controlled by the Armor Integrated Electronics System (AIES) meant the system could be used to its full potential.

The flesh insert no longer has to be separated by the traditional black fabric insert and catheters are no

longer tied into the waste handing function of the design. The comfortable, warm, soft biosynthetic flesh enrobes the pilot in security and comfort and can provide the life-sustaining function to a greater capacity than ever before.

The hemosynthetic musculature is still responsible for the armor's additional strength. The flesh still continues to function with massage and stimulation to increase pilot comfort and health during deployment.

The Mindy can support a pilot for up to 15 days before replenishment is needed, or up to 10 years in stasis. If needed, the Mindy can filter outside air to replenish its supply (not usually done until absolutely necessary, though).

Moisture Handling and Waste Recycling

The hemosynthetic flesh has a high concentration of hemosynth that flows through its tissues. When the Armor Integrated Electronics System (AIES) detects moisture from perspiration or the excretion of waste, the hemosynth femtomachinery is instantly programmed to draw the moisture into the tissues and away from the pilot. This uses osmotic programming where the femtomachinery flows along concentration gradients and programmed pathways in a simple program-driven towards creating a level of homeostasis in the system. The hemosynth then receive updated programming once the moisture is collected, it activates the recycling function of the fluid which then breaks down waste into its molecular components and flushes them from the armor, water purified in hemosynthetic filters is then transferred back to the reservoir and is made available for consumption. Solid waste is encapsulated and handled in a similar manner.

Air purification systems also utilize the hemosynthetic filters created by the insert and the electrolysis of water is performed to produce a fresh breathable atmosphere for the pilot.

Temperature Regulation

Temperature regulation is handled by the movement of hemosynth though non-mechanical heat sinks that dump excess heat or pull heat from the armor's propulsion systems. Flows from hot to cold are regulated by the Armor Integrated Electronics System (AIES) for the maintenance of a comfortable and adjustable interior temperature.

Power

The power used by the femtomachinery in the hemosynthetic flesh insert is pulled from the power systems of the Ke-M2-4 Series "Mindy" Armor. The transfer is conducted by a cross-membrane draw from aether plasma. The femtomachinery inside of the armor are programmed by the Armor Integrated Electronics System (AIES) to serve as low-level biosynthetic capacitors to help maintain life support during low power or no power emergencies to maintain the critical and most basic life support functions for the pilot.

Healing and Repair

Like all hemosynth its medical applications tend to be geared towards Nekovalkyrja, but it can assist with healing in other species as well. The healing function of hemosynth is controlled by femtomechanical programming and energy-matter conversion ordered by the Armor Integrated Electronics System (AIES). It is limited however due to the supply of hemosynth, but it is adequate for the healing of minor cuts, abrasions, and punctures. It can also be used for the treatment of minor radiation exposure through the delivery of Star Army Medication Anti-Radiation to Nekovalkyrja.

In emergencies the repair functions of hemosynth can be used to make minor, temporary repairs to seal some punctures and breaches in the armor. It simply uses the osmotic function to have hemosynth flow from higher concentration in the insert to lower concentration and uses the energy to matter conversion to create scab-like coagulation to seal breaches.

Notes to Technicians

A note to the Star Army Technician, it is advisable that hemosynthetic inserts in the Ke-M2-4 Series "Mindy" Armor are inspected frequently. Minor repairs can be done in the armor while it is on the rack by control of Isolated Computer Pad. In the event of major damage or catastrophic failure, the insert should be removed, recycled, and fabricated again. Remember the system is vital to the life of the pilot and shortcuts in the procedure should not be taken.

Other Documentation

Seek out other documentation:

- Hemosynthetics
- Technicians Guide To Hemosynthetics
- Nodal Liquid Conduit System
- Universal Hemosynthetic Fabrication System Type 43

OOC Notes

Andrew created this article on 2021/01/22 13:22.

- It was approved by Wes in this thread.

Star Army Logistics	
Supply Classification	Class E - PARTS AND COMPONENTS