

Advanced Entrenching Tool

The Advanced Entrenching Tool is an earth moving device for the modern age, allowing infantry the capacity to modify the terrain rapidly to suit their needs. Typically the tool used for moving quantities of earth and stone. The tool is a public product sold by the [United Manufacturing Cooperative](#) starting in [YE 38](#).

About

- Manufacturer: [United Manufacturing Cooperative](#)
- Nomenclature: UMC-H6-AET-01B
- Class: Advanced Entrenching Tool
- Designers: [Hyacintho Vulpes Ingenium^{1\)}](#), [United Manufacturing Cooperative](#)
- **Price:** See [pricing](#)

Designed primarily for infantry applications, the tool uses a combination of anti-gravity technology, molecular destabilization, and electrostatic containment to allow a user to carve a 1m cube of material and manipulate it within 4m in three dimensional space. This process works more quickly depending on the properties of the targeted cube of material is. For example a cube of soil would take only a few seconds to cut out and remove. Stone would take slightly longer.

When a cube of material has been removed from its surroundings, the user has the option to have the device automatically attempt to compress the material applying a unidirectional pressure equivalent to approximately 5000psi in order to compress any loose materials that may not remain cohesive when placed, as well as to form more durable forms of cover.

It is important to note that the presence of water in soil, or sand do not have any notable effect on the function of the tool. During the compression of materials any water present is typically forced to the outer extremities of the produced 'block' of material, often as steam.

Metals, and materials typically used in armor applications due to the strong molecular bonds valued for keeping objects or people safe, hinder the operation of the device. This hindrance is to the point that even a single application generally takes upward of five minutes, making the tool ineffective as a breaching implement, let alone as a weapon.

A limitation of the technology is that while the device can be scaled upward in size and capability making it more effective for use by power armors, or vehicles. It does not speed up the cutting process, only the volume which can be manipulated at one time, effectively limiting the application of technology as a tool rather than a weapon.

Operation

A simple computer processor preforms the calculations necessary to remove, and contain a section of

material, making the operation of the device analogous to “point and click” operations. This allows a user to with relative ease direct the tool to a chosen volume of material to harvest, and after harvesting the material, the choice to either compress or place the material is also as simple as a button press or digital command.

While lacking a traditional physical interface, the sensors on the device monitor finger movements, interpreting trigger like motions of the index finger as a command to pick up, or place a cube of material, while a motion of the thumb analogous to pressing a button on a joystick is interpreted as an activation of the compression systems. Due to the minimal intelligence of the device it is encouraged that users familiarize themselves before operation around others due to the potential for mishap as a result of end user carelessness.

Description

At its simplest, the tool consists of a rubberized handle between a 25cm and 2m long, that terminates in polygonal ellipsoid 15cm in length, and 7cm in diameter. At the far end of the ellipsoid are an octet of sensors and projection units that are used by the tool to interface with matter as directed by the user. At the opposite end are simple micro-cameras, and volumetric projectors used to display the selection and status information for the operator, typically in a colour of their choice.

At the opposite end of the shaft is a smaller cylindrical structure that is user to house the power cell, while also balancing the tool increasing ease of use.

Aftermarket options are available including material shovel, saw, or pickaxe heads allowing the device to potentially be used as a traditional earth moving or forestry tool assuming it runs out of charge, or should the user desire a more hands on experience. These are however largely considered novelties.

History

A pet project developed by [Hyacintho Vulpes Ingenium](#) during an exploration of projected field technologies available on the market, the device was initially created as a proof of concept, intended initially to merely see whether it could be done. After a brief period of consideration it was determined that while fairly simple in function and form, that there might be a potential market for the device.

After a period of research looking into the manufacturing entities in local space, the [United Manufacturing Cooperative](#) was approached due to having standing policies allowing for the distribution, and sale of products created by outside parties. After a brief period of negotiation the schematics for the device were turned over to the UMC with nothing beyond the standard terms aside from a request for anonymity.

Following this transfer, the UMC proceeded to make minor modifications to streamline the device for mass production before preparing it for the mass market, where hopefully it would find a niche within the landscaping, Private Military Contractors, and possibly professional military sectors.

Technical information

The device is composed almost entirely of generic parts that can be cheaply produced and replaced. This was chosen in order to take advantage of the prolific abundance of processing hardware, volumetric displays, radio frequency communications, anti-gravity technologies, as well as field projector technologies in order to reduce the price as well as the time required to produce the item.

Beyond the technical components the device is designed to be rugged, featuring shockproof design choices, durable simple materials and components, waterproofing, and temperature tolerance. These features are designed to provide a durability that is intended to outlast their user so long as they remain properly charged.

The only unique component of the device is typically the power source a role that is filled by a [QNC](#), providing approximately a year's worth of constant use, two years of regular use, and up to half a decade of infrequent use. Alternatively for applications where the lifespan of a charge is less important, a rechargeable hydrogen fuel cell can be used providing enough energy a month's worth of constant use, that can be replenished at any compatible charging station.²⁾

Pricing

- **QNC Duremium Model:** 2200 KS
- **QNC Durandium Model:** 2000 KS
- **Hydrogen Cell Duremium Model:** 1200 KS
- **Hydrogen Cell Durandium Model:** 1000 KS

Replaceable Components

- **Power Source:**
 - [QNC](#)³⁾ 1000 KS
 - Hydrogen Cell (Rechargeable)⁴⁾ 80KS
- **Handle:**
 - Rubberized durandium shock absorbent handle 50 KS
 - Rubberized duremium absorbent handle 100 KS
- **Casing:**
 - Shock absorbent durandium casing 25 KS
 - Shock absorbent duremium casing 45 KS
- **Computation and UI:**
 - Processor 25 KS
 - Volumetric display 50 KS
 - RF Transmitter 10 KS
- **Field Projectors**
 - Gravitic 200 KS
 - Electromagnetic 150 KS
 - Disruption 300 KS
- **Manual Tool Attachments:**

- Durandium shovel head 30 KS
- Duremium shovel head 60 KS
- Durandium pickaxe head 45 KS
- Duremium pickaxe head 80 KS
- Durandium saw attachment 30 KS
- Duremium saw attachment 45 KS

OOO Notes

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1)

This information is not publicly disclosed

2)

For the purposes of this example assume that constant use is a 10 hour day every day for the specified duration representing the upper end of industrial or military use.

3)

Provides 3650 hours of power

4)

Provides 300 hours of power, charges in 6 hours

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