

# MANTIS

## Heavy Duty Manual Tire Shredder



- Positive one-way traffic control
- Heavy duty maintenance-free steel construction
- NO springs or levers to wear or break
- Modular installation
- Individual units may be combined for wider roadways

### Description

MANTIS presents a new concept for heavy duty tire shredders, designed to high traffic security applications. Typical tire shredders are designed for parking lot and low level security applications. The tire shredder spikes are short and usually held in place with springs. The spikes are depressed by the vehicle tires in one direction, but remain upright and damage tires in the opposite direction. When these units are utilized in roadway applications, the higher speed vehicle traffic and the requirement for stopping vehicles fleeing law enforcement cause equipment damage and shorten equipment life. Furthermore, the typically shorter tire shredder spikes do not cause sufficient tire damage to quickly stop a determined absconder. The MANTIS origin is a very heavy duty design made for the U.S. Border Patrol at a very high traffic location after having other manual tire shredder systems fail due to high traffic. MANTIS features ½ inch (13mm) thick steel roadway plate material and ½ inch (13mm) thick steel shredder spikes that present a 4-inch (102mm) high tire slashing mechanism to vehicles approaching in the wrong direction. MANTIS has no torsion bars or springs to fail during high use. Each tire shredder spike is a weighted independent blade assembly, each with its own sealed roller bearing.

The MANTIS is modular. Each tire shredder section is assembled from independent tire shredder modules, each having 5 spikes on 3¾ inch (95.25mm) spacing. In this way, the tire shredder system can extend across a roadway, regardless of width. Each module is completely independent of all others. The heavy duty enclosure is available in several widths to meet the roadway width needs. An optional blade lowering feature allows the user to open an access door and temporarily lower all blades in one section to allow a temporary crossing in the opposite direction.

### Installation

MANTIS is a flush in-ground installation that provides no speed bump to traffic moving in the normal direction. A solid concrete base is required to spread the weight of the high volume traffic. The typical concrete base is a 6 inch (152mm) thick by 24 inch (610mm) wide steel reinforced concrete slab installed over a crushed rock compacted base which provides solid support and suitable drainage. Connection to a local storm drain system is

## Specifications

The concrete slab is installed approximately 8 ½ inches (215.9mm) below the roadway surface. The MANTIS enclosures are bolted to the concrete foundation, shimmed to the roadway surface height if necessary, then the roadway surface is grouted to the enclosure. Following construction clean up the MANTIS modules are installed by sliding into the capture channel and the final module bolted in place. The installation is complete.

For servicing or cleaning, each tire shredder module can be accessed or removed by sliding within the capture channel.

### Base Enclosure:

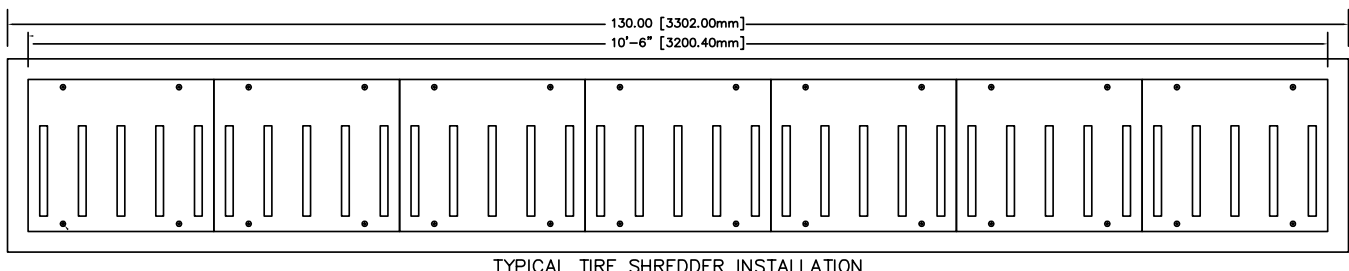
18 inches (457.2mm) wide by 8 ½ inches (215.9mm) deep, by requested length  
 Standard lengths available: 9'0", 10'6" and 12'0".  
 Custom lengths are available upon request.

### Weight per enclosure:

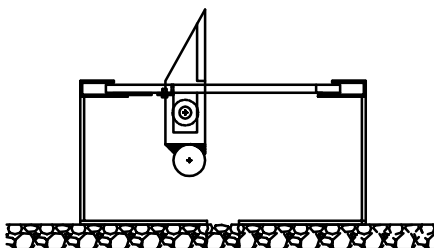
9'0" (2743mm) length – 125 lbs. (56.7 kilo)  
 10'6" (3230mm) length – 147 lbs. (66.7 kilo)  
 12'0" (3657mm) length – 170 lbs. (77.1 kilo)

### Heavy Duty Shredder Module:

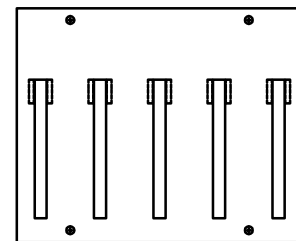
18 inches (457.2mm) long by 14.75 inches (374.6mm) wide by 9 inches (228.6mm) deep (blades fully extended)  
 Blades per module: 5 (Modules with access door have 3 blades)  
 Blade extension above surface: 4 inches (101.6mm)  
 Module Weight (including blades): 55 lbs. (24.9 kilo)



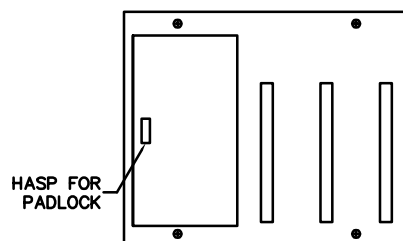
TYPICAL TIRE SHREDDER INSTALLATION



TIRE SHREDDER ELEVATION



STANDARD TIRE SHREDDER MODULE



ALTERNATE MODULE FOR  
 BLADE LOWERING FUNCTION