

## 1. SCOPE

**1.1 Product** – These specifications describe a Truck Mounted Attenuator (TMA) which is mounted to a shadow vehicle for purposes of protecting the work crew in front of the shadow vehicle and protecting the motorist that might drive into the lane closed off by the shadow vehicle. Shadow vehicles should be trucks in a weight range of 16,000 lbs. to 20,000 lbs. and preferably 20,000 lbs., which is the weight of the truck tested for certification.

The Traffix Scorpion TMA 10,000 is available in three basic models. Model A is a TL-2 device tested at 70 km/hr., fig's 1, 2 & 3, for use on trucks needing low speed protection or as a replacement cartridge for trucks already equipped with a TL-2 attenuator cartridge. Model B is a TL-3 device tested at 100 km/hr for use on trucks needing high speed protection. The Model B uses a strut section in addition to the TL-2 cartridge section to achieve a higher speed device, figs. 4, 5 & 6. The rear cartridge section has a hinged hydraulic coupling with fluid on both sides of the cylinders and solenoid valve lockouts. The rear cartridge can be raised to 90° where a scissors lock engages to lock the cartridge in the 90° position. An operator's switch has an up and down button and the down button releases the lockout and lowers the cartridge. The release of the up or down button stops the cartridge at that angle. The Model B has a 10° tilt at the strut to allow clearance at driveways, fig. 6. During construction when the shadow vehicle truck has to drive in and out of sloped areas such as the drainage median or a driveway, the strut can be temporarily raised 10° to travel over this terrain. In the normal transport mode the rear cartridge is elevated and locked at 90° for the Model B. The Model C uses a 90° hydraulic tilt attached to the strut, fig. 7. This allows the Model C system to raise the strut to the vertical position with the cartridge in a horizontal position over the top of the truck for the normal transport mode.

The Scorpion TMA 10,000 is mounted to a truck at a road clearance height of 12" ±1". In the deployed mode shown in fig. 8, the system extends 13' to the rear of the truck.

## 2. PRODUCT SPECIFICATIONS

**2.1 Construction** – The Scorpion TMA 10,000 consists of three basic components. A steel back-up is attached to the rear of the truck with an all-steel support structure, figs. 11, 12 & 13. An all aluminum tube frame extends out 13' from the back-up. Inside the tube frame is a series of four aluminum boxes filled with energy absorbing aluminum honeycomb, fig. 10.

**2.2 Materials** – The back-up support structure uses all steel angles, plates, and C-channels welded using wire feed mig welding. The tube frame construction uses all aluminum tube and plate construction welded using wire feed mig welding on both sides of the tube/plate interface. The aluminum boxes use closed end sealing rivets for joining the sheet metal. The aluminum honeycomb is joined to the aluminum face sheets using oven cured epoxy resin.

Aluminum tubing – 6063 Aluminum T4

Aluminum plate – 5052 Aluminum 0.250"

Aluminum sheet – 5052 Aluminum 0.062"

Aluminum honeycomb – Commercial Grade 1" and ½" cell size

Aluminum rivets – 3/16" Sealed

Back up bolts – 1" and 3/4" bolts grade #5