

# Scorpion<sup>®</sup>

Different by Design



**TraFix  
Devices Inc.**



# Scorpion Truck Mounted Attenuator (TMA) From TrafFix Devices

The Scorpion TMA has been tested and PASSED ALL optional and mandatory requirements suggested in the NCHRP-350 Report for TL-3 evaluation criteria-for speeds up to 62.5 mph (100 km/h)



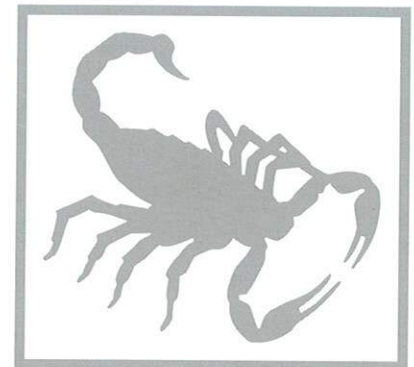
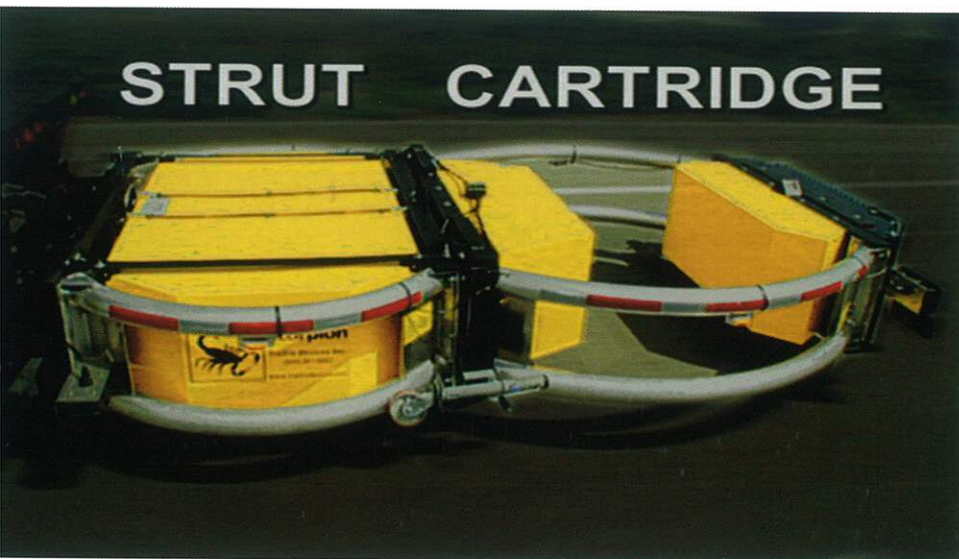
*The Scorpion TMA is hydraulically powered and measures 13 feet long when fully extended, making it ideal for stationary and mobile construction zones.*

The Scorpion is a Truck Mounted Attenuator (TMA) that is truly “different by design”.

The Scorpion TMA consists of strut and cartridge sections that are linked together on a support frame. The curved side rails are made from corrosion resistant aluminum tubes, which offer full width impact protection along the entire length of the TMA. The side rails were designed to re-direct errant vehicles away from the rear of the truck (coffin corner). Other manufacturers TMA models have little or no side-angle impact protection.

The aluminum boxes are filled with a moisture proof, aluminum honeycomb material. The boxes, together with the curved side rails, absorb the energy from an impacting vehicle.

The aluminum boxes are painted with a bright yellow powder-coated finish, for lasting durability.

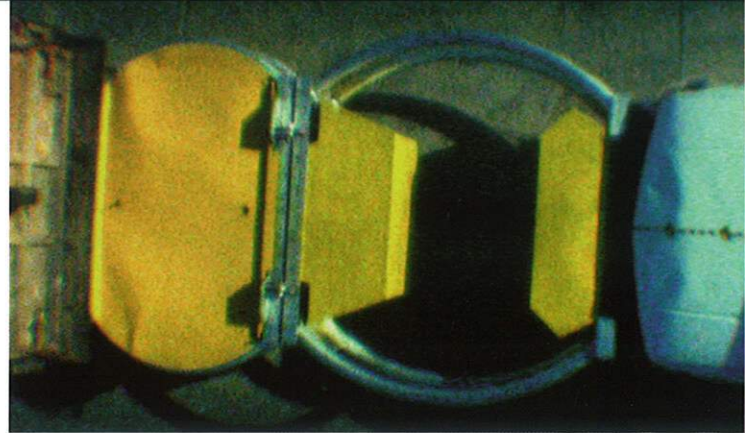


*The Scorpion TMA consists of strut and cartridge sections that are linked together on a support frame.*

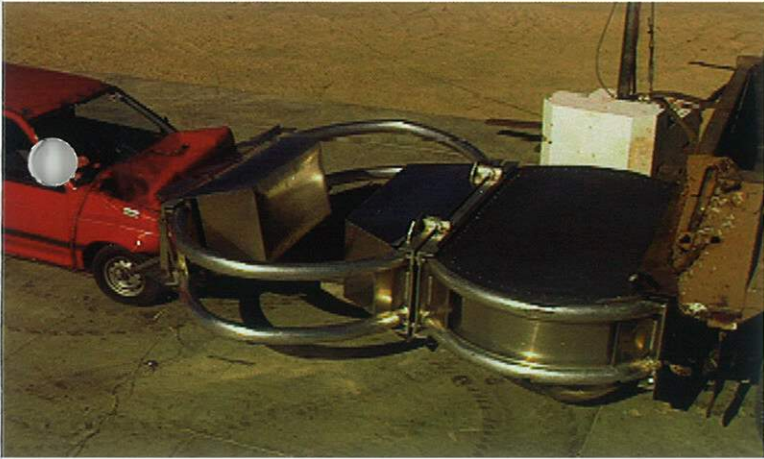
# Scorpion's Modular Design-Creates an Unbeatable Standard of Performance

Upon impact, the Scorpion TMA crushes in progressive stages. When hit by a lighter vehicle weighing approximately 1,807 lbs., or (820 k.g.), traveling at speeds up to 62.5 mph (100 km/h), the impact will crush the cartridge section of the Scorpion. When hit by a heavier vehicle, such as a pick-up truck or SUV weighing approximately 4,409 lbs., or (2,000 k.g.), traveling at speeds up to 62.5 mph (100 km/h), both the strut and cartridge sections will crush, absorbing the energy from the impact.

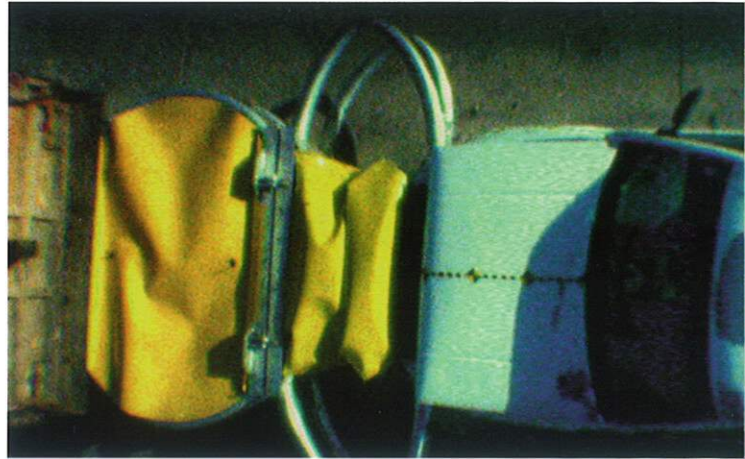
Incidental damage sometimes occurs during backing-up or turning corners. With Scorpion's modular design and construction, only the portions of the TMA that are damaged need to be replaced.



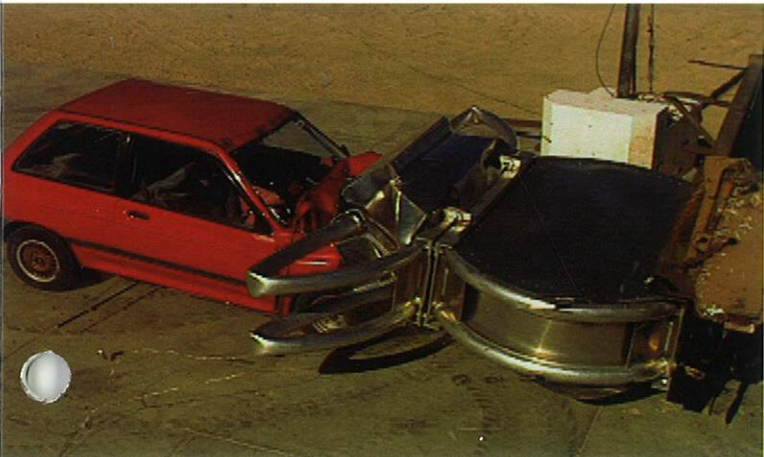
*(Figure 1) Pick-up truck beginning to hit Scorpion TMA.*



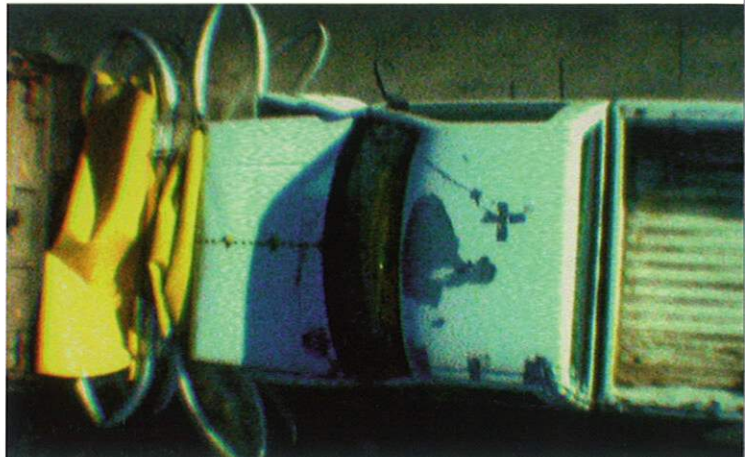
*(Figure 1) Car beginning to hit Scorpion TMA.*



*(Figure 2) Pick-up truck at mid impact.*



*(Figure 2) Car impacting at 62.5 mph (100 km/h).*

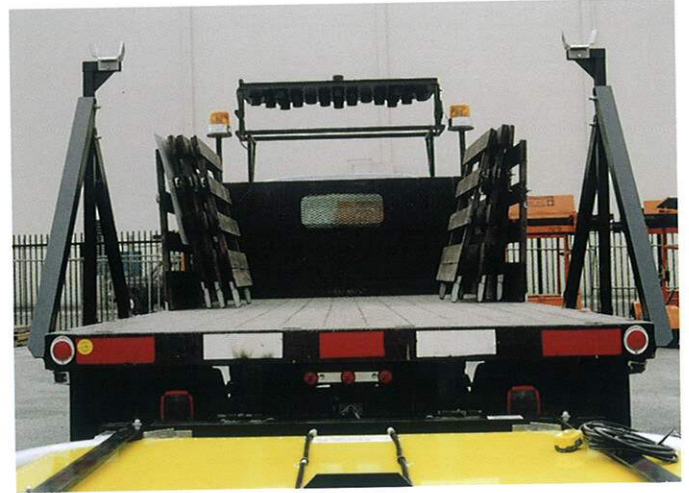


*(Figure 3) Pick-up truck impacting at 62.5 mph (100 km/h).*

# Smart, Safe and User Friendly



*Dump truck with Dual Side Brackets.*



*Stake-bed truck with Dual Side Brackets.*

The Scorpion TMA Model C was designed to conveniently fold up and over the truck bed during transport and storage.

The strut section folds to a vertical position adjacent to the truck bed, while the cartridge section folds to a horizontal position parallel to the bed.

The Scorpion is hydraulically powered down to lock into the support brackets for high-speed travel. This feature also keeps the Scorpion TMA from vibrating during transport, minimizing wear and tear on pins, hinge joints and loosening of mechanical fasteners.

The Scorpion is also hydraulically powered down when in the “work mode”, decreasing the chance of an impacting vehicle going underneath the TMA.

Scorpion’s low profile and open tubular design are beneficial in minimizing wind resistance and drag, enabling you to drive at freeway speeds safely, as well as, increasing rear visibility and gas mileage.

Scorpion’s compact design when folded, creates very little overhang beyond the rear of the truck (3’ overhang), unlike other manufacturers models.

Scorpion’s weight and mass is distributed at the rear and over the truck axle. This significant feature prevents scraping and “bottoming out” on exit ramps, driveways, or other inclined surfaces. It also eliminates the need to ballast the front and bed of the truck to keep it from lifting due to excessive overhanging weight. The Scorpion TMA is the smart, safe and user friendly choice.



*Flat-bed truck with Center Post Bracket.*



*Scorpion’s compact design and minimal 3’ rear overhang, reduces the chance of hitting fences, signposts and other objects while backing-up or turning corners.*

# Presenting a Revolutionary Innovation Exclusively from TraFFix Devices



*Notice how the message panel is securely mounted between the body of the truck and the Scorpion TMA, for added safety and convenience.*



*Rear view of the Scorpion TMA fully extended along with the message panel in the down storage position.*

TraFFix Devices has designed and engineered a new hydraulic Vertical Panel Lift System. This innovative system enables you to incorporate a flashing arrow or message panel in conjunction with the TL-3 approved Scorpion TMA. This value-added accessory affords you the option to mount a 4'x 8' arrow or message panel between the truck's tailgate and the Scorpion TMA. The panel can be easily raised and lowered hydraulically, with the use of the in-cab or outside mounted controller. The same controller and hydraulic pump is used to sequentially raise and lower the Scorpion TMA.

Unlike other manufacturers TMA's, the Vertical Panel Lift, and Scorpion TMA, are securely mounted to the truck's frame as a single unit, not to the tailgate. The Scorpion TMA can be quickly and easily removed-in less than ten minutes, freeing up the truck to be used for other purposes.

The Scorpion TMA and Vertical Panel Lift System weighs approximately 2,500 lbs. Because of its weight, it is unsafe to mount this system directly to a dump truck's tailgate. TraFFix Devices recommends mounting the assembly only to a truck's rear frame.

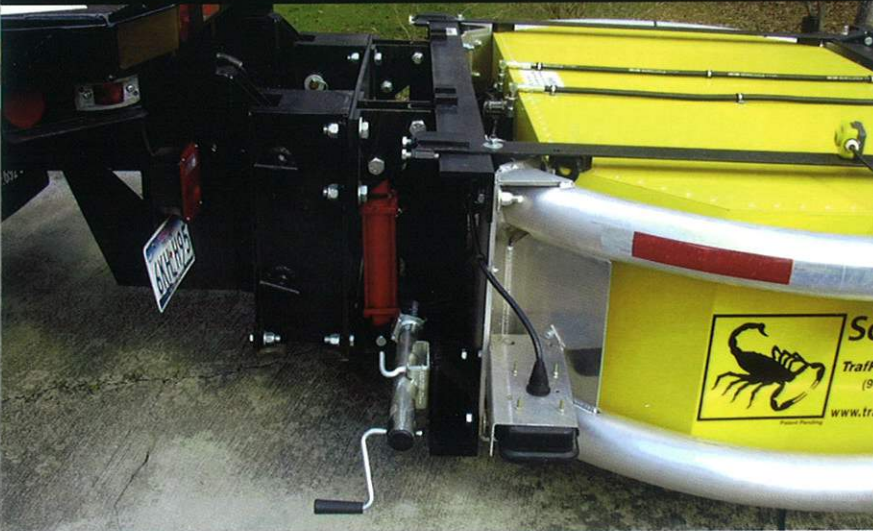


*The Scorpion TMA is fully extended, with the changeable message panel in the travel or storage position.*



*Rear view of the Scorpion TMA with message panel in the raised position, ready for use on the job site. The bottom of the message panel when elevated, is 7' above the surface of the roadway, in full compliance with Federal Standards.*

# Easy-to-Mount Accessories

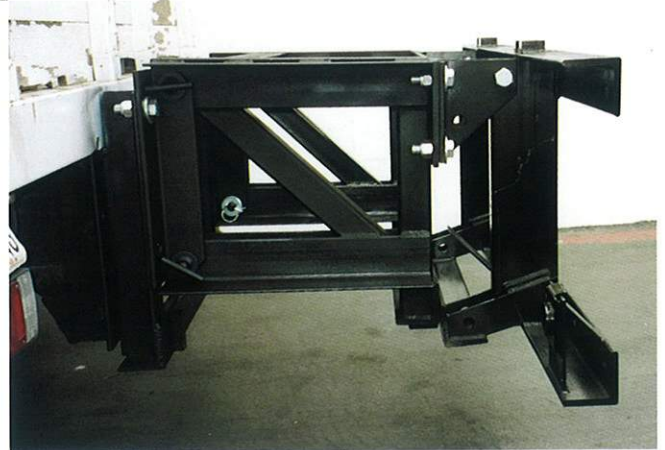
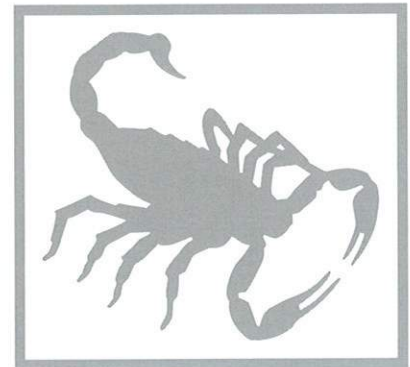


*Scorpion TMA attached to a truck using a 12" Extension Frame and Back-up Assembly.*

The Scorpion TMA can be easily mounted directly to the frame of most trucks. In order to accommodate a variety of truck models, TraFFix Devices has designed various brackets and extension frames. These easy-to-mount accessories, allow the Scorpion TMA to adapt to a wide range of truck frames and body styles.

Also, TraFFix Devices offers a Quick-Disconnect System that allows you to remove the Scorpion TMA from a truck in less than ten minutes.

TraFFix Devices' knowledgeable and trained sales and engineering staff can assist you with any installation or technical questions you may have.



*24" Extension Frame with Back-up Assembly attached to a truck.*



*TraFFix Cone Basket mounted onto the frame of a truck.*

TraFFix Devices offers an optional Cone Basket that mounts directly to the frame of a truck. This versatile steel Cone Basket gives you the option of working from either side when placing cones or other traffic products on the road. The Scorpion TMA can mount directly to the Cone Basket, providing additional impact protection for the worker.

# Versatility and Flexibility—TrafFix Devices Offers Three Different Scorpion TMA Models



## MODEL A

The Scorpion TMA Model A utilizes only the cartridge section providing impact protection up to 45 mph (70 km/h). It incorporates a modular design, which can be upgraded to a Model B or Model C (to meet NCHRP-350, TL-3 requirements), by simply adding the strut section.



## MODEL B

The Scorpion TMA Model B folds just past the 90-degree position (when folding over the truck bed is not desired). This feature allows for easy transit in the upright position. The rear strut is raised 10-degrees for added mobility and ground clearance, making it ideal for safely clearing exit ramps, driveways and other inclined surfaces in the stored or travel position. The Scorpion TMA Model B provides impact protection up to 62.5 mph (100 km/h).



## MODEL C

The Scorpion TMA Model C folds over the bed of flat bed, stake bed or dump trucks. The Model C with its compact design and balanced weight distribution makes it ideal for high-speed travel. The Scorpion TMA Model C provides impact protection up to 62.5 mph (100 km/h). Side mounts are also available.

## SPECIFICATIONS

### MODEL A

(NCHRP-350, TL-2)  
Weight 760 lbs. (346 kgs.)  
Length (from back of vehicle)  
Travel/Storage 3' (1 m)  
Deployed 8' 8" (2.65 m)  
Width 8' (2.45 m)  
Height (from ground)  
Travel/Storage 11' (3.35 m)  
Deployed (ground clearance) 1' (.3 m)  
Tests Successfully Passed  
2-50, 2-51

### MODEL B

(NCHRP-350, TL-3)  
Weight 1,975 lbs. (900 kgs.)  
Length (from back of vehicle)  
Travel/Storage 7' 9" (2.3m)  
Deployed 13' 10" (4.21 m)  
Width 8' (2.45 m)  
Height (from ground)  
Travel/Storage 12' (3.65 m)  
Deployed (ground clearance) 1' (.3m)  
Tests Successfully Passed\*  
3-50, 3-51, 3-52, 3-53

### MODEL C

(NCHRP-350, TL-3)  
Weight 1,975 lbs. (900 kgs.)  
Length (from back of vehicle)  
Travel/Storage 2' 5" (.74 m)  
Deployed 13' 10" (4.21 m)  
Width 8' (2.45 m)  
Height (from ground)  
Travel/Storage 10' (3.05 m)  
Deployed (ground clearance) 1' (.3m)  
Tests Successfully Passed\*  
3-50, 3-51, 3-52, 3-53

\*TrafFix Devices' Scorpion TMA has been tested and also PASSED a "worse case" side angle re-directive impact test, that goes beyond all governmental testing requirements. Full details are available upon request.

# Testing and Certification

TraFFix Devices has used an independent testing laboratory to conduct a series of crash, vibration and endurance tests on the Scorpion TMA.

The Scorpion TMA has PASSED all the mandatory test requirements to be approved for NCHRP-350, test Level-3 certification. TraFFix Devices conducted three additional offset crash tests with varying angles of impact, successfully PASSING all three.

The Scorpion TMA has set the benchmark for increased performance and safety and is truly "different by design."



*The Scorpion TMA, being driven over a variety of curbs, bumps, risers and drop-offs.*

The Scorpion TMA was designed and built to last. Extensive vibration tests and analysis were performed on a special test track, simulating thousands of grueling miles under the harshest real world conditions. The Scorpion TMA was subjected to several rigorous tests including driving over 600 curbs, risers and drop-offs. TraFFix Devices has gone above and beyond the normal standards of testing, by conducting its own more severe vibration and impact tests.

Scorpion's durability and overall performance is our foremost objective, because your safety and satisfaction is our #1 priority.

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Other Patents Pending



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