



## Product

## Speed Reducers and Bevel Gear Sets

## Application

## HUMVEE Turret Drives

## Highlights

- Modified RA10 design
- Gear ratio: 1.85:1
- Hollow output shaft
- Custom bevel gear sets

Boston Gear was selected to provide a gearing solution for use on the U.S. Army's High Mobility Multipurpose Wheeled Vehicle (HUMMWW), better known as the Humvee. Initially designed for use behind the front lines, the original version of the Humvee did not have any armor. Eventually the vehicle began to be used in more direct combat areas which required later models to be up-armored for additional occupant protection.

While various Humvee configurations were manufactured, the most common model features a roof-mounted turret which houses a .50 caliber machine gun. The gunner sits within the turret and uses a push button-controlled, battery-powered drive to rotate the turret. A hand crank mechanism is also installed which allows the gunner to control the turret's rotational positioning in case of battery power loss.

To meet the OEM specifications for the up-armored vehicles, Boston Gear engineers developed a modified RA10 spiral bevel gear drive for the back-up hand crank mechanism. The special right angle gearbox features an internal gearing re-design which increases torque capacity by more than 75%, a ratio of 1.85:1, and a hollow output shaft.

Boston Gear also designed and manufactured a 36" pitch diameter internal ring gear and pinion set for the turret. The latest version of the turret's battery-powered pinion drive gearmotor utilizes a customized bevel gear set manufactured by Boston Gear.

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