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Contact: Al Avila, 765-364-4561  
[aavila@raybestosclutch.com](mailto:aavila@raybestosclutch.com)

## **INNOVATIVE SINGLE-SIDED CLUTCH PLATE DESIGN OUTPERFORMS CURRENT OE**

*Raybestos Develops and Patents Z Pak™ Design with X-32™ Material*

(CRAWFORDSVILLE, IN) -- Raybestos has introduced a new, patented single-sided design clutch pack system with a revolutionary friction material that outperforms both single-sided and double-sided original equipment clutch assemblies in torque and heat capacity.

The Raybestos Z Pak™ (patent pending) has several benefits over double-sided plates. For new OEM platforms, it can reduce the overall size of the clutch pack for a smaller, lighter assembly with greater thermal capacity, but without the loss of torque capacity. On existing designs, the single-sided plate can increase torque capacity and reduce core temperatures for a significant reduction in hot spotting and greater clutch life.

The single-sided design of a multi-disk clutch assembly has long been an accepted alternative to the more common double-sided design. In the single-sided clutch, each disk faces the same direction and has a single layer of friction material bonded to one side, resulting in an increase in clutch pack thermal capacity through efficient use of the steel components. Unlike other single-sided plates that have a tendency to cone under high-stress conditions, design improvements developed and patented by Raybestos significantly reduce maximum temperature and thermal stresses and eliminate the coning problem.

The benefits of a single-sided clutch pack include reduction of the total thickness of the pack without affecting maximum temperatures, which is particularly beneficial in modern, compact transmissions. On the other hand, maximum temperatures can be reduced and torque capacities increased by using single-sided disks with the same total thickness in place of double-sided ones. The Z Pak system goes a step further in both uses by effectively reducing the single-sided plate's tendency to cone under high-stress conditions.

Raybestos recently announced development of X-32™, a remarkable, state-of-the-art friction material that measurably increases clutch pack durability. When used with this revolutionary X-32 friction material, the Z Pak outperforms OE by as much as 20%.

Raybestos is dedicated to advancing product development for the aftermarket with products like the Z Pak, the X-32 material and the new SW Carbon™ torque converter wafers.

Look for a variety of these new and improved clutch systems designed for high-failure/high-stress applications, coming soon.

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