

# Compact by Design

## Microchip Industry

### Tailoring a Custom Cylinder for Testing

#### Application Challenge

A manufacturer of equipment for testing microchip packages needed a smaller cylinder to fit into their design envelope for a new machine while maintaining a very clean environment. Initially using multiple 40mm x 25mm standard cylinders from a competitor, they realized that they required a smaller solution. Compact was asked to supply a cylinder with a similar bore and stroke size in order to save valuable millimeters off of the required installation space.

#### Project Solution

Compact designed a custom multi-bore cylinder assembly, which contains (8) 1-5/8" bore x 1" stroke cylinders in a common body. This assembly is shorter than the multiple standard cylinders, and the common body allows for closer piston rod center-to-center distances. Each cylinder section has dual sensor rails to accommodate flush mount position sensors. Special undersized ports and special mounting holes were included. Bottom boring of the cylinder bore was utilized to enable the addition of magnets to the pistons to avoid an increase in frame length. The combination of special piston rod plating, piston rod bearings and grease is used for cleaner operation.

#### Customer Benefit

This custom solution achieved the customer's objectives for smaller size and a cleaner operation.

#### Insights

- Compact has designed multi-bore actuators for many industries, most notably semiconductor and medical.
- Custom multi-bore actuators minimize size.
- Custom multi-bore actuators can simplify products through common porting.

