Eliminate Adapters. Simplify Motion. Choose the Right Guided Cylinder

A typical design sequence goes like this:

You need to move a part from Point A to Point B.
You spec a cylinder.
Then you add a rail to handle side load.
Then you add a plate to connect them.
Then another bracket so you can mount the next axis.

By the time the system is assembled, you've added hardware, weight, tolerance stack-up, and alignment risk, all just to make linear motion stable.

.....NOW, you're troubleshooting repeatability.

Your easy solution is the **Compact Automation** BSC Series ball and pneumatic slides, which were built to solve.

There are two versions of the **versatile Compact air cylinder** (BSC 1000 series and BSC 2000 series). Let's dive in to see how they simplify guided motion and the entire design process.

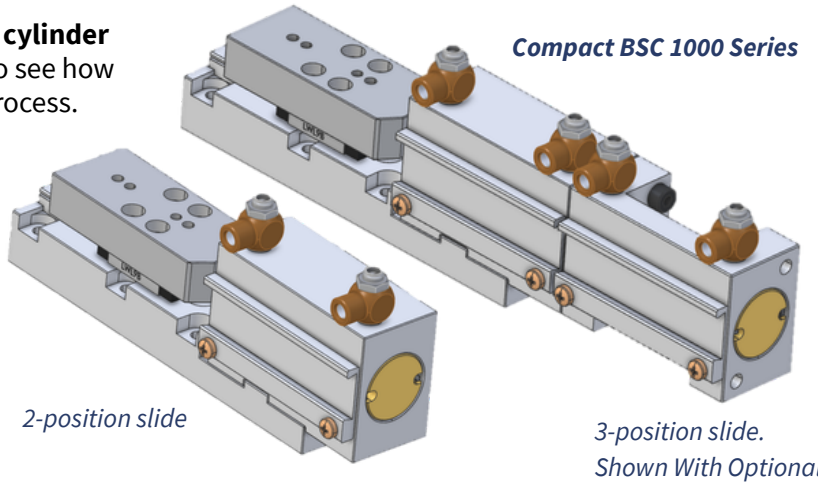
BSC 1000 Series

Complete Cylinder & Linear Rail with tooling plate assembly.

The BSC 1000 platform integrates:

- High-performance compact cylinder
- Recirculating ball slide carriage
- Fixed slide rail
- Machined tooling plate
- Factory-matched alignment

Compact BSC 1000 Series



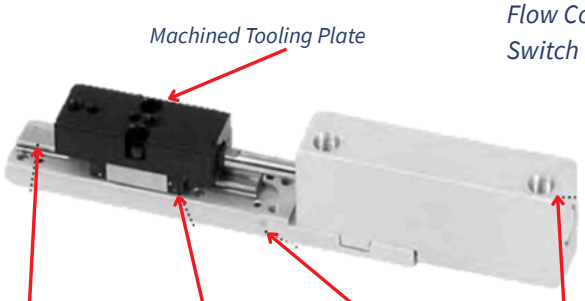
2-position slide

3-position slide. Shown With Optional Flow Controls and Switch Track.

You are not aligning a cylinder to a rail.
You are installing a finished motion platform.

Key Specifications

- Bore sizes: 8–40mm
- Stroke lengths: 2.5–200mm
- 2-position and 3-position versions
- **Specify flow controls and switch track in one catalog part number!**



The BSC 1000 is engineered for:

- Single-axis guided applications
- Direct tooling mounting
- Two- or three-position movement
- Compact automation layouts

Use the BSC 1000 When:

- Motion is linear and standalone
- You need guided precision without stacking axes
- The system does not require multi-axis pick-and-place

It eliminates rail alignment work, while keeping the architecture simple.

BSC 2000 Series

COMPACT® AUTOMATION PRODUCTS

The No-Adapter Pick-and-Place Platform
The BSC 2000 expands the same integrated ball slide architecture for multi-axis systems, and is engineered to build pick-and-place assemblies with no transition plates required.

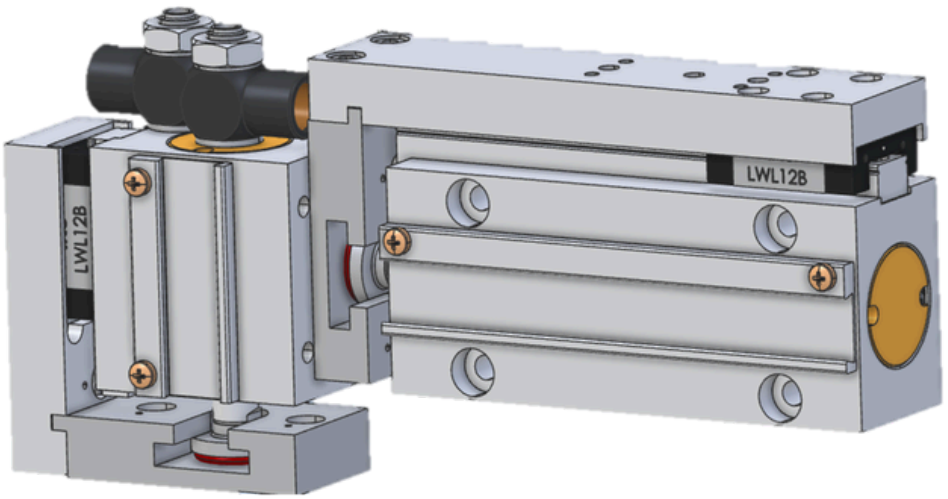
Key Specifications

- Recirculating ball slide, factory matched
- Side or rear porting
- Sensor ready
- Three mounting styles
- Multi-axis applications, no adapters required!
- Bore sizes: 8–40mm
- Stroke lengths: 2.5–200mm
- Multi-position and multi-piston configurations
- Modifications available (larger bores, longer strokes)
- **Able to replace a robot for simple repetitive tasks**

What this means:
Low friction motion. Integrated tooling support. Precision pick-and-place capability without adapters or add-on alignment hardware.

Compact BSC 2000 Series

Compact BSC 2000 Series



The BSC 2000 is engineered to:

- Build complete pick-and-place assemblies
- Stack axes directly
- Eliminate adapter plates
- Support multiple stop positions
- Maintain alignment across axes

Because the cylinder and rail are engineered as one structural system, alignment is handled at the factory, not on your machine floor.

Standard Options

Three Position

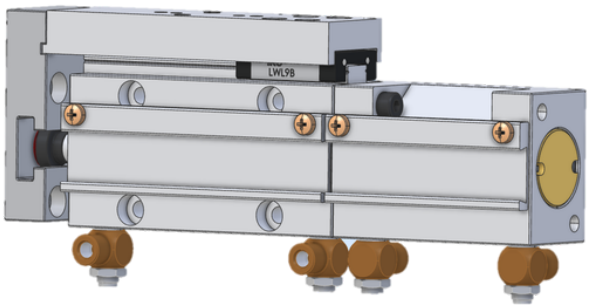
Force Multiplier

Use the BSC 2000 When:

- You are designing a multi-axis pick-and-place system
- Multiple positions are required
- Mounting flexibility is critical
- You want to eliminate transition plates between axes

If your design currently includes “cylinder + rail + adapter plate,” the BSC 2000 removes that extra layer.

Compact BSC 2000 Series



The BSC 1000 simplifies guided linear motion.
The BSC 2000 simplifies pick-and-place architecture.

Both eliminate the need to bolt a separate rail onto a cylinder. Only one eliminates adapters in multi-axis builds.

At Donald Engineering, that’s the difference between supplying components and delivering Partnership Driven Solutions.

The Donald Engineering Difference

At Donald Engineering, we help you choose the right motion architecture. Whether it’s a clean single-axis solution with the BSC 1000 or a true no-adapter pick-and-place build with the BSC 2000, our team works alongside you to simplify the design, eliminate unnecessary hardware, and improve long-term reliability.

That’s what Partnership Driven Solutions looks like in practice.

If you’re designing a guided motion system, let’s talk. Call or email our team and we’ll help you select the right platform the first time.

sales@donaldengineering.com

(616) 538-8340