

Low Speed Cylinders

Slow, smooth, and stable operation!

- Enable stable operation from 1mm/s [0.04in./sec.].^{Note}
- Smooth operation without stick-slips.
- Suitable for low speed transfer of fragile workpieces.
- Cylinder's outer dimensions are the same as the standard product.
- Wide range of cylinders are available: 6 types and 10 bore sizes.
- Speed controllers for low speed cylinders are also available.

Note : Excluding Jig cylinders with guides.



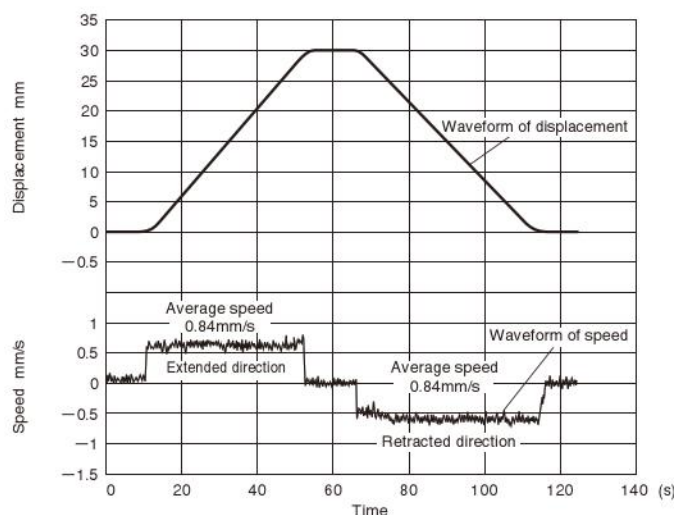
Slow and smooth



CAUTION

Always wash your hands thoroughly whenever you happen to touch the grease used in the Low Speed Cylinders. If you light a cigarette with greasy hands, the grease adhered to the cigarette could release toxic gases as it burns. (While the grease used in the Low Speed Cylinder is very stable in chemical terms at room temperature, it would release toxic gases if heated to 250°C [482°F] or higher.)

Waveform of Speed and Displacement

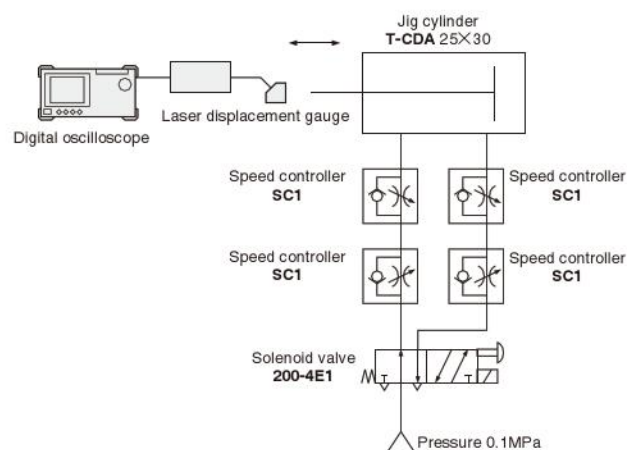


Remarks 1 : The average speed is obtained by dividing the stroke by the time required to travel the stroke. The above average speed values were obtained by tests undertaken at Koganei. They do not imply guaranteed values of the product.

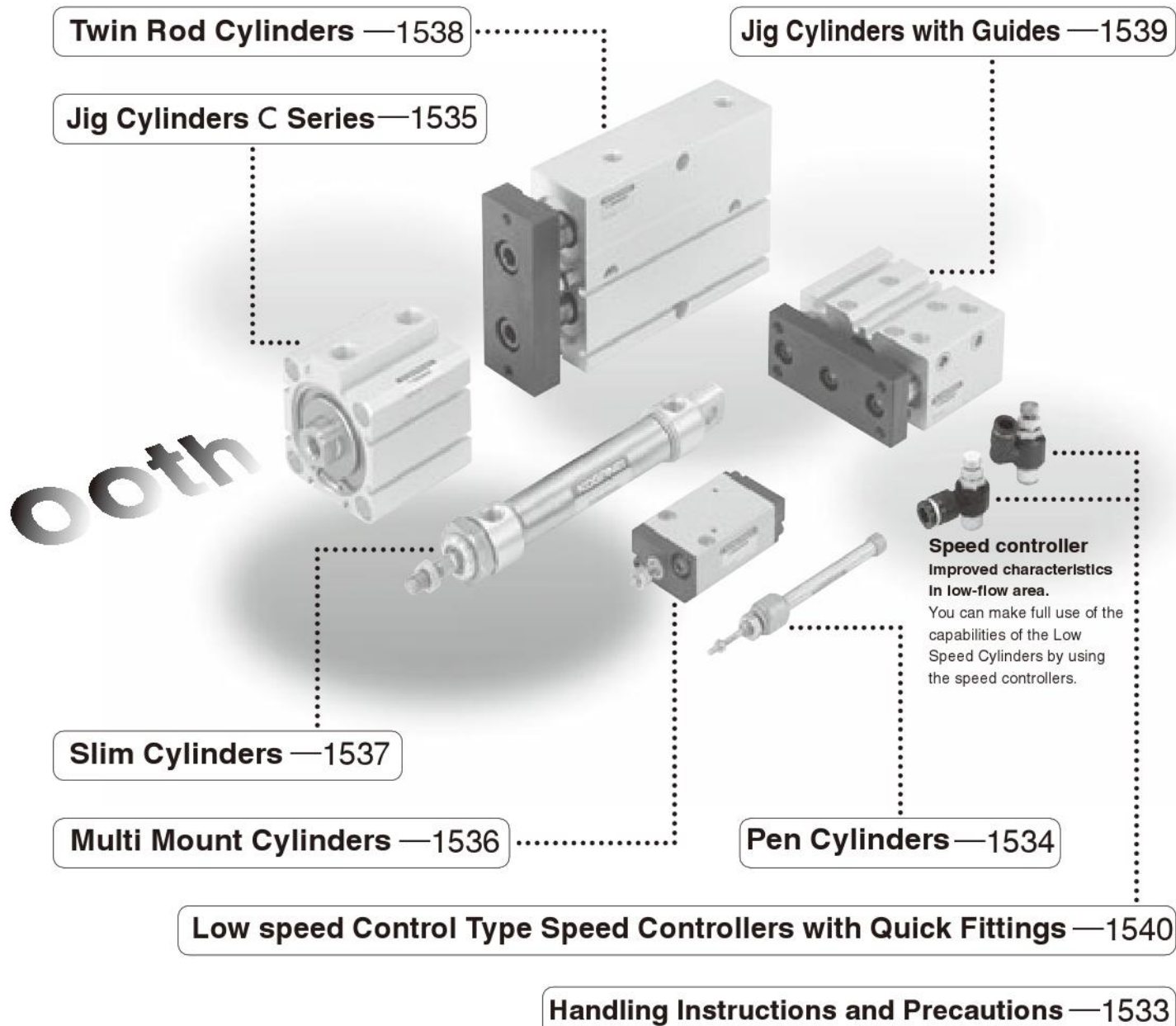
2 : The speed value reads positive when the cylinder is extended.

1mm/s = 0.03944in./sec. 1mm = 0.0394in.

Measurement method

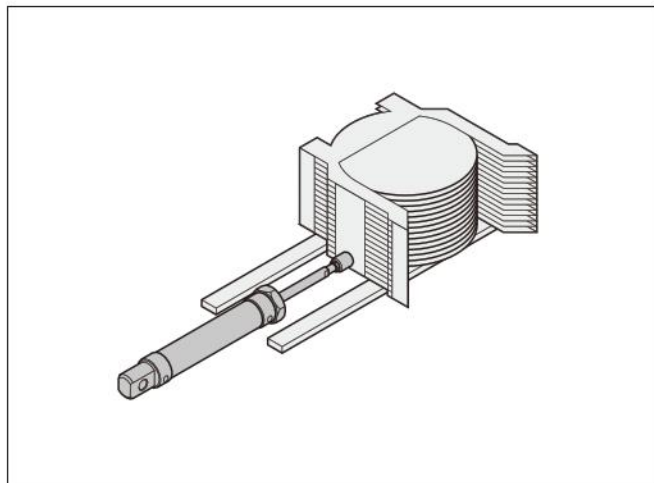


Low Speed Cylinder Variations

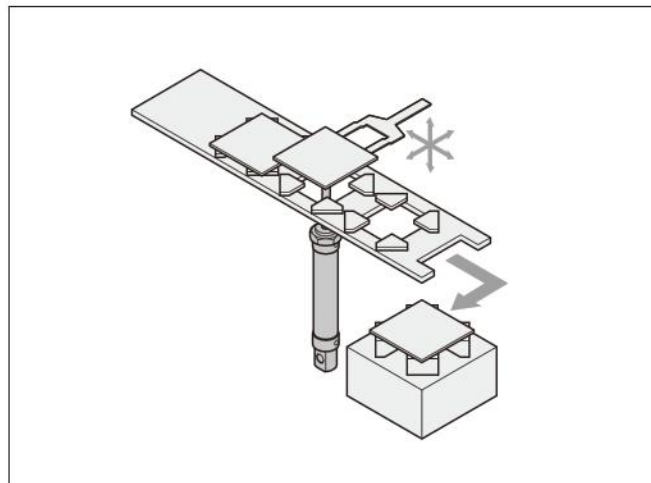


Application Examples

●Positioning a wafer stacker



●Transfer of a liquid crystal display panel





General precautions

1. Always thoroughly blow off (use compressed air) the tubing before piping. Entering metal chips, sealing tape, rust, etc., generated during piping work could result in air leaks or other defective operation.
2. Use air for the media. For the use of any other media, consult us.
3. Air used for the cylinder should be clean air that contains no deteriorated compressor oil, etc. Install an air filter (filtration of a minimum 40 μm) near the cylinder or valve to remove collected liquid or dust. In addition, drain the air filter periodically.
Collected liquid or dust entering the cylinder may cause improper operation.



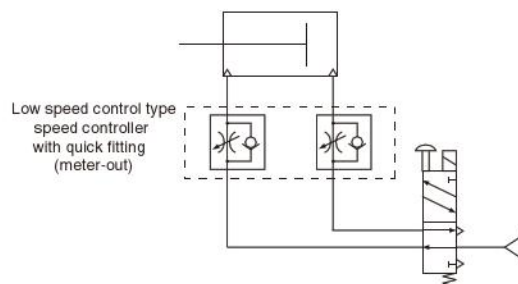
Piping

See the diagrams below for piping with the Low Speed Cylinder.

Recommended circuit

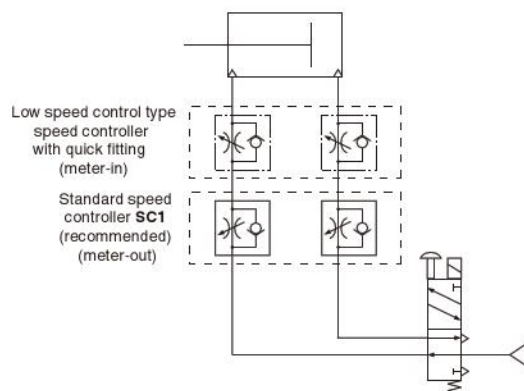
① Basic circuit

Use meter-out speed controllers.



② Jump start prevention circuit

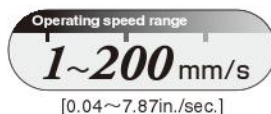
Use in combination with speed controllers, as shown in the diagram below, is effective for low speed control as well as jump start prevention.



Note: Locate the cylinder and speed controller as close to each other as possible.

LOW SPEED CYLINDERS

Slim Cylinders



Order Codes

Function

Blank : Standard type

B : Slim Block Cylinder

Cylinder bore size

16 : $\phi 16$
[0.630in.]

20 : $\phi 20$
[0.787in.]

25 : $\phi 25$
[0.984in.]

32 : $\phi 32$
[1.260in.]

40 : $\phi 40$
[1.575in.]

50 : $\phi 50$
[1.969in.]

63 : $\phi 63$
[2.480in.]

Head cover specifications

Blank : Standard head

A : Short head

Mounting type

Blank : Basic type

1 : Double foot mounting type

3 : Flange mounting type

2 : Side mounting type
(Only for Slim Block Cylinders)

4 : Front mounting type
(Only for Slim Block Cylinders)

Lead wire length

A : 1000mm [39in.]

B : 3000mm [118in.]

Number of sensor switches

1 : With 1 sensor switch

2 : With 2 sensor switches

3 : With 3 sensor switches

n : With n sensor switches

Stroke

Sensor switch

Blank : No sensor switch

ZG530 : 2-lead wire, Solid state type

ZG553 : 3-lead wire, Solid state type

CS3M : With indicator lamp, Reed switch type^{Note}

CS4M : With indicator lamp, Reed switch type^{Note}

CS5M : Without indicator lamp, Reed switch type^{Note}

CS2F : With indicator lamp, Reed switch type^{Note}

CS3F : With indicator lamp, Reed switch type^{Note}

CS4F : With indicator lamp, Reed switch type^{Note}

CS5F : Without indicator lamp, Reed switch type^{Note}

T - DA

Slim Cylinder Double acting type

Low speed type

B	16	×	15, 25, 50, 75, 100	Blank -A	Blank -1 -3 -2 -4	Blank ZG530 ZG553 CS3M CS4M CS5M CS2F CS3F CS4F CS5F	A B	1 2 3 n
	20	×	25, 50, 75, 100, 125, 150					
	25	×	25, 50, 75, 100, 125, 200					
B	32	×	25, 50, 75, 100, 125					
	40	×	150, 200, 250, 300					
	50	×	25, 50, 75, 100, 150, 200, 250, 300					
B	63	×	25, 50, 75, 100, 150, 200, 250, 300					

※ The double rod cylinder and the cylinder for clean systems require special specifications.

For details, consult us.

Note: If using reed-type sensor switches, maintain an operating speed of 30mm/s [1.2in./sec.] or higher.

- Except the items listed below, all outer dimensions, cylinder specifications, sensor switch specifications, and handling instructions are the same as the standard product. For details, see p.312.

1. Operating speed range: 1~200mm/s [0.04~7.87in./sec.]
2. Lubrication prohibited