

Description of Functions

E-ROBO CYLINDER
R.C.P.3

Perform Various Functions Through Easy Operations

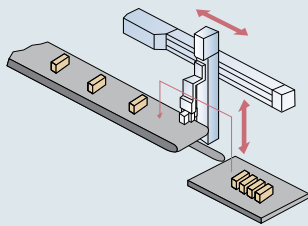
3 Types of Motion Patterns

Switch between three motion patterns depending on the equipment.

[Positioning Motion]

Objects attached to the axis slider and rod can be moved to be positioned with a positioning repeatability of $\pm 0.02\text{mm}$.

<Application> Transporting workpiece, positioning camera

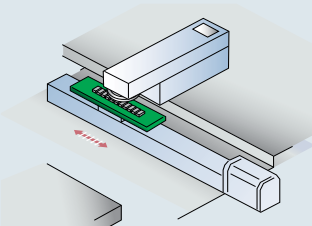


Used in a pick-and-place unit

[Pitch Feed Motion]

Instead of positioning by specifying coordinates from the home position, the object is moved over a specified distance from the current position.

<Application> Raising/lowering stacker, moving pallet

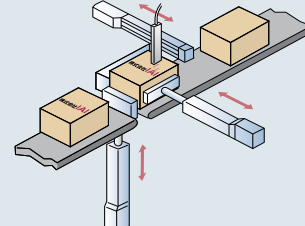


Used for sending workpieces in a marking process

[Pushing Motion]

Similar to an air cylinder, a rod can be used to push on a workpiece continuously.

<Application> Press-fitting workpiece, clamping



Used for pushing workpieces

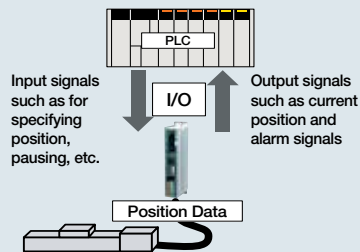
3 Methods of Positioning

Select from 3 types of I/O between the upper-level machine and the controller.

[Position Movement]

As with the solenoid valve, movement to preset positions is possible with just an ON/OFF signal.

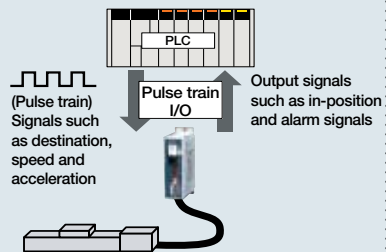
- Operated by I/O control with the PLC



[Pulse Train Input]

The destination, speed and acceleration can be freely controlled without inputting the destination beforehand.

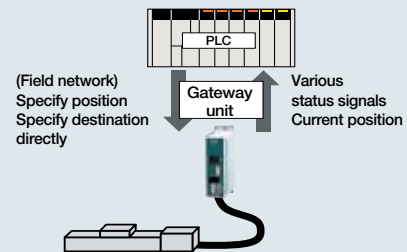
- Operated by pulse trains from the PLC and I/O control



[Field Network]

Movement can be instructed via a network, such as DeviceNet and CC-Link. Workpieces can be moved by specifying the position, or by directly specifying the coordinates.

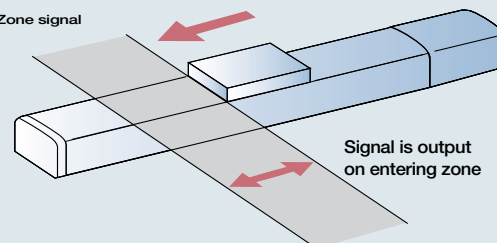
- Operated from the PLC via network



No Sensor Necessary with Zone Signal

You can set any zone within the stroke, and when the slider enters the zone, the signal is output. This is effective for outputting signals at a specific position, such as in painting, for example, (Up to 2 zones can be specified). In addition, as a new feature, P-Zone signals can be set per position. Although the output signal is the same, a zone range of up to 256 points can be set.

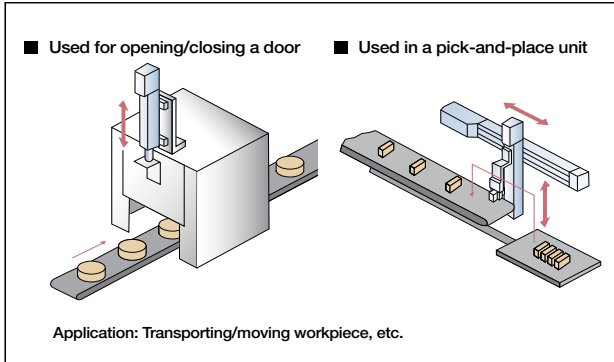
- Zone signal



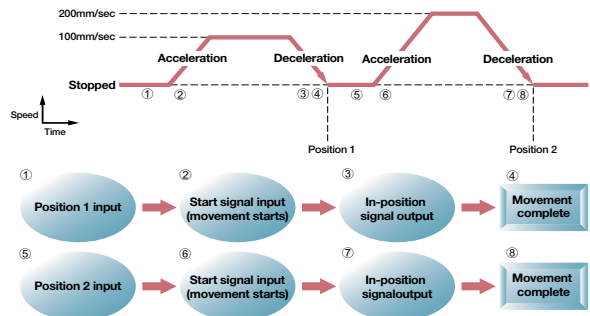
Signal is output on entering zone

Positioning Motion

Objects attached to the axis slider and rod can be moved to be positioned with a positioning repeatability of $\pm 0.02\text{mm}$.



Motion Example



[Features]

- Capable of positioning up to 512 points.
- Set speed and acceleration/deceleration per position.
- The in-position signal can be output at any position ahead of the specified position, depending on the positioning band setting.
- Acceleration and deceleration can be set separately.
- Speed can be changed in transit without stopping.

Position Data Table

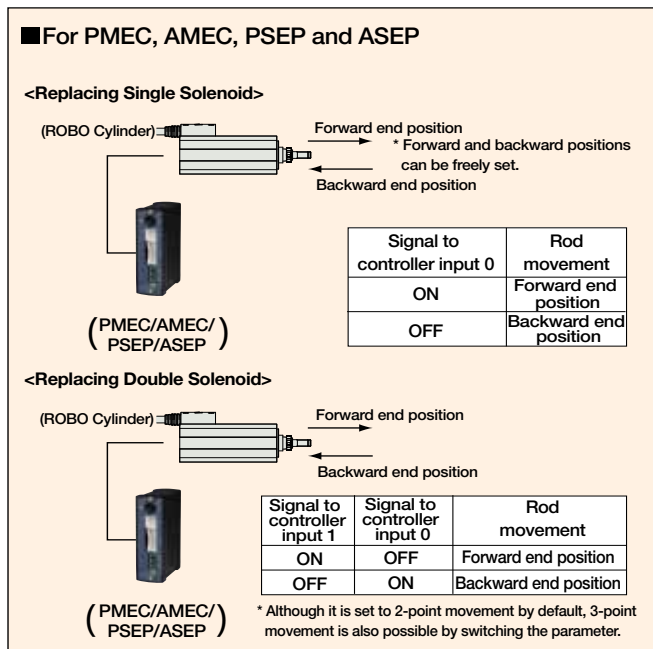
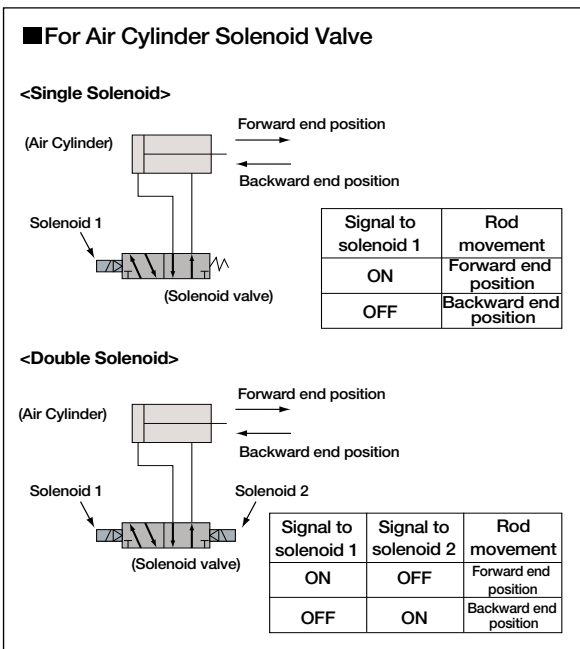
(set by the teaching pendant or PC software)

No.	Position (mm)	Speed (mm/sec)	Acceleration (G)	Deceleration (G)	Push (%)	Positioning band (mm)
1	100	100	0.3	0.3	0	10
2	200	200	0.3	0.3	0	20

<PMEC, AMEC, PSEP, and ASEP can be operated with the same signals as the solenoid valve>

Operating Method

PMEC, AMEC, PSEP, and ASEP can be operated with the same signals as the solenoid valve in air cylinders. There are two types of solenoid valves, the single solenoid and the double solenoid; and both are supported.

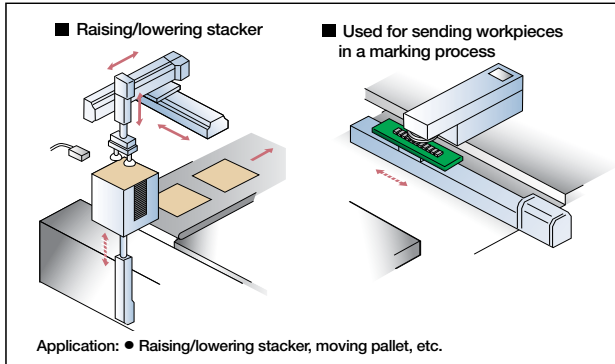


Description of Functions

ER03 ROBO CYLINDER
RCP3

Pitch feed function (incremental function)

In addition to positioning by specifying coordinates from the home position, the workpiece can be moved over a specified distance from the current position.

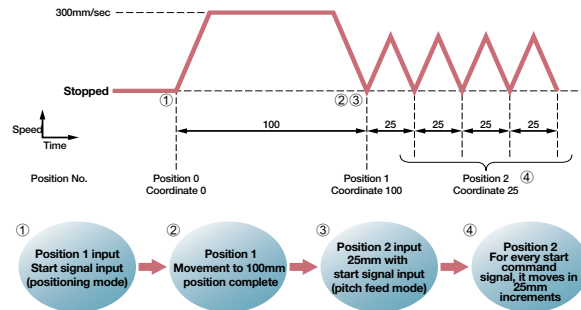


[Features]

- Repeated movements with even spacing can be performed using one position data, instead of setting multiple positions.
- The pitch can be easily set in the position data table.

(Teaching Box)
"=" is displayed in pitch feed mode.

Motion Example



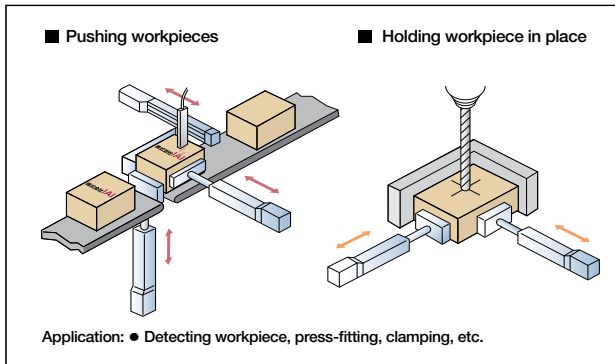
Position Data Table

(set by the teaching pendant or PC software)

No.	Position (mm)	Speed (mm/sec)	Acceleration (G)	Deceleration (G)	Push (%)	Positioning band (mm)
1	100	300	0.3	0.3	0	0.1
2	25	300	0.3	0.3	0	0.1

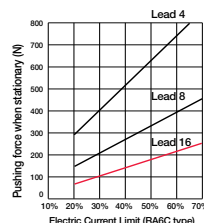
Pushing Motion

Similar to an air cylinder, a rod can be used to push on a workpiece continuously.

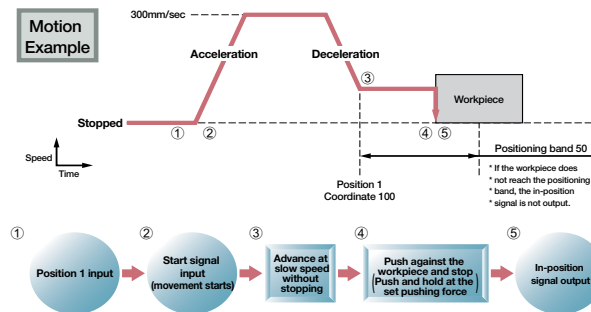


[Features]

- Since the in-position signal is output when the actuator pushes against the workpiece, you can use it with the zone signal to sort workpieces.
- The force against the workpiece (pushing force) can be adjusted by changing the setting in the position data table.



Motion Example



Position Data Table

(set by the teaching pendant or PC software)

No.	Position (mm)	Speed (mm/sec)	Acceleration (G)	Deceleration (G)	Push (%)	Positioning band (mm)
1	100	300	0.3	0.3	50	50

Note: The accuracy of the stationary pushing force is not guaranteed. Please use it only as a rough estimate. Please note that if the pushing force is too small, the pushing motion may not be completed properly due to sliding resistance.

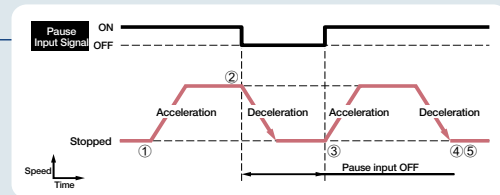
■ Changing Speed During Movement

Since the speed can be changed from any position during the movement, the tact time can be effectively reduced through multi-tasking.

■ Pause Input

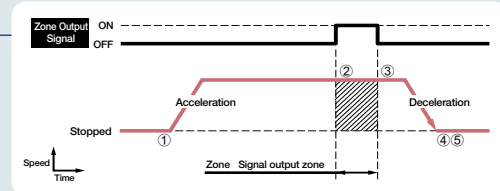
By setting an interlock (to prevent interference) with the peripherals, the slider slows down to a stop when the pause input is cut.

Once the pause input turns ON again, the remaining motion is resumed.



■ Zone Output

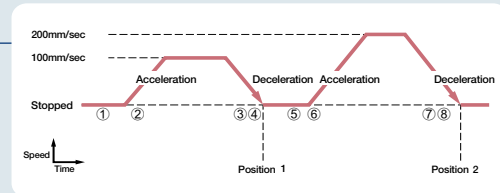
During movement, you can output a signal at an arbitrary position (whose range is set by a parameter). This can be used to set a danger zone or to reduce tact time.



■ Capable of Controlling Speed and Acceleration/Deceleration

Speed and acceleration/deceleration can be set for each position.

By starting and stopping slowly and moving at a high-speed in between, the tact time can be effectively reduced.



■ Complete-Stop and Full-Servo Control Methods

In a pulse motor, you can use the complete-stop method to eliminate vibrations by increasing the current when stationary, or the full-servo method, in which the current is dropped to 1/2 to 1/4 of the complete-stop method to reduce power consumption.

■ Auto Servo OFF Method

After the positioning is complete, servo can be turned OFF automatically after a fixed time has passed.

Since no retention current is output, power consumption can be reduced.

When the move command is received from the PLC, the servo turns ON and the movement starts.

■ Simple Absolute Unit

A simple absolute unit retains the data from the encoder while the power is OFF.

When attaching to PCON, ACON, PSEL, and ROBOTNET, these controllers can be used as simple absolute units to eliminate the need for homing.

