

## Mini ROBO Cylinder

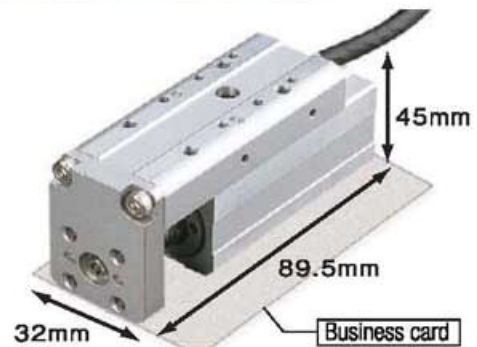
Next-generation Cylinders,  
Small is the New Big  
**Mini-RoboCylinder**

**ROBO  
CYLINDER**



### Space Saving

Incorporating a newly developed motor, the new RoboCylinder has achieved smaller size with significantly reduced overall length, width and height which are comparable to air cylinders. Systems that could only use air cylinders previously due to size constraints, can now benefit from IAI's electromechanical solution.



The tabletop type RCA2-TC3N has a footprint smaller than a business card.

### Shaped Like an Air Cylinder and Easy to Use

The new RoboCylinder is available in shapes similar to that of air cylinders. Users who are comfortable with the handling and operation of pneumatic systems are now able to switch to RoboCylinder effortlessly.









# Mini ROBO Cylinder

Mini Slider Type																									
Motor Unit	Type Description	Type Name		Encoder Type	Motor		Drive Method	Lead (mm)	Rated Thrust (N)	Max. Load Capacity (kg)		Max. Speed (mm/s)	Stroke (mm)	Repeatability (mm)	Width (mm)										
		Series	Type		Motor Drive	Motor Type				Horizontal	Vertical														
Separate Motor (Removable)	Tiny Slider Type	RCP3	SA2AD	Incremental	Pulse Motor	20□	Slider Screw	4	—	0.25	—	200	25-100 (25-mm step)	±0.05	22										
			2					—	0.5	—	100														
		1	—					1	—	50															
		6	—					0.25	—	300															
	Tiny Slider Motor-reversing Type	RCP3	SA2BC					Incremental	Pulse Motor	20□	Slider Screw	4	—		0.5	—	200	25-150 (25-mm step)	±0.05	28					
			2									—	1		—	100									
		RCP3	SA2AR									RCP3	SA2BR		20□	Slider Screw	4	—		0.25	—	200	25-100 (25-mm step)	±0.05	58
			2														—	0.5		—	100				
		RCP3	SA2BR									RCP3	SA2BR		20□	Slider Screw	4	—		0.25	—	300	25-150 (25-mm step)	±0.05	59.5
																	2	—		1	—	100			

Mini Rod Type																									
Motor Unit	Type Description	Type Name		Encoder Type	Motor		Drive Method	Lead (mm)	Rated Thrust (N)	Max. Load Capacity (kg)		Max. Speed (mm/s)	Stroke (mm)	Repeatability (mm)	Width (mm)										
		Series	Type		Motor Drive	Motor Type				Horizontal	Vertical														
Separate Motor (Removable)	Tiny Rod Type	RCP3	RA2AD	Incremental	Pulse Motor	20□	Slider Screw	4	—	0.25	0.125	200	25-100 (25-mm step)	±0.05	22										
			2					—	0.5	0.25	100														
		1	—					1	0.5	50															
		6	—					0.25	0.125	300															
	Tiny Rod Motor-reversing Type	RCP3	RA2BC					Incremental	Pulse Motor	20□	Slider Screw	4	—		0.5	0.25	200	25-150 (25-mm step)	±0.05	28					
			2									—	1		0.5	100									
		RCP3	RA2AR									RCP3	RA2BR		20□	Slider Screw	4	—		0.25	0.125	200	25-100 (25-mm step)	±0.05	58
			2														—	0.5		0.25	100				
		RCP3	RA2BR									RCP3	RA2BR		20□	Slider Screw	4	—		0.25	0.125	300	25-150 (25-mm step)	±0.05	59.5
																	2	—		1	0.5	100			
Built-in Motor (Direct-coupled)	Short Rod Type with Front Mounting Bracket	RCA2	RN3N	Incremental	Servo Motor	10W	Slider Screw	4	25.1	0.25	0.125	200	30	±0.05	28										
			2					50.3	0.5	0.25	100														
			1					100.5	1.0	0.5	50														
		Short Rod Type	RCA2					RP3N	RP4N	20W	Slider Screw	6	19.9		0.25	0.125	220	30	±0.05	34					
								4				29.8	0.5		0.25	200									
								2				59.7	1.0		0.5	100									
	Short Rod Type with Single-Guide		RCA2				GS3N	GS4N				Ball Screw	Slider Screw	6	33.8	2	0.5	270(220)		30	±0.02	34			
							4							50.7	3	0.75	200								
							2							101.5	6	1.5	100								
		Short Rod Type with Double-Guide	RCA2				GD3N		GD4N	10W	Slider Screw			4	25.1	0.25	0.125	200	30	±0.05		28			
							2							50.3	0.5	0.25	100								
							1							100.5	1.0	0.5	50								
	Short Multi-Rod Type with Double-Guide		RCA2				SD3N	SD4N				20W	Slider Screw	6	19.9	0.25	0.125	220	30		±0.05	34			
							4							29.8	0.5	0.25	200								
							2							59.7	1.0	0.5	100								
		Short Multi-Rod Type with Double-Guide	RCA2				SD3N		SD4N	10W	Slider Screw			4	25.1	0.25	0.125	200	25 50	±0.05		60			
							2							50.3	0.5	0.25	100								
							1							100.5	1.0	0.5	50								
	Short Multi-Rod Type with Double-Guide		RCA2				SD3N	SD4N				20W	Slider Screw	6	19.9	0.25	0.125	300	25 50 75		±0.05	72			
							4							29.8	0.5	0.25	200								
							2							59.7	1.0	0.5	100								
		Short Multi-Rod Type with Double-Guide	RCA2				SD3N		SD4N	Ball Screw	Slider Screw			6	33.8	2	0.5	300	25 50 75	±0.02		72			
							4							50.7	3	0.75	200								
							2							101.5	6	1.5	100								

\* < > : Max. speed of vertical applicator

# Mini ROBO Cylinder

Mini Table Type																	
Motor Unit	Type Description	Type Name		Encoder Type	Motor		Drive Method	Lead (mm)	Rated Thrust (N)	Max. Load Capacity (kg)		Max. Speed (mm/s)	Stroke (mm)	Repeatability (mm)	Width (mm)		
		Series	Type		Motor Drive	Motor Type				Horizontal	Vertical						
Built-in Motor (Direct-coupled)	Slim Small Table Type 	RCA2	TC3N	Incremental	10W	Slider Screw	4	25.1	0.25	0.125	200	30	±0.05	32			
			2				50.3	0.5	0.25	100							
			1				100.5	1.0	0.5	50							
		20W	Slider Screw				6	19.9	0.25	0.125	220						
							4	29.8	0.5	0.25	200						
							2	59.7	1.0	0.5	100						
	Ball Screw	Slider Screw	6		33.8	2	0.5	270(220)									
			4		50.7	3	0.75	200									
			2		101.5	6	1.5	100									
	Slim Wide Table Type 	RCA2	TW3N		Incremental	10W	Slider Screw	4	25.1	0.25	0.125	200	30	±0.05	50		
			2					50.3	0.5	0.25	100						
			1					100.5	1.0	0.5	50						
20W		Slider Screw	6	19.9				0.25	0.125	220							
			4	29.8				0.5	0.25	200							
			2	59.7				1.0	0.5	100							
Ball Screw	Slider Screw	6	33.8	2		0.5	270(220)										
		4	50.7	3		0.75	200										
		2	101.5	6		1.5	100										
Slim Flat Table Type 	RCA2	TF3N	Incremental	10W		Slider Screw	4	25.1	0.25	0.125	200	30	±0.05	61			
		2					50.3	0.5	0.25	100							
		1					100.5	1.0	0.5	50							
	20W	Slider Screw			6		19.9	0.25	0.125	220							
					4		29.8	0.5	0.25	200							
					2		59.7	1.0	0.5	100							
Ball Screw	Slider Screw	6		33.8	2	0.5	270(220)										
		4		50.7	3	0.75	200										
		2		101.5	6	1.5	100										
Separate Motor (Removable)	Compact Table Type 	RCP3		TA3C	Incremental	20□	Ball Screw	-	~0.8	~0.4	300(200)	20~100 (10-mm step)	±0.05	36			
				4				-	~1.5	~0.7	200(133)						
				2				-	~2	~1	100(67)						
		RCA2	TA4C	6				-	~1	~0.5	300						
				4				-	~2	~1	200						
				2				-	~3	~1.5	100						
	Compact Table Motor-reversing Type 	RCP3	TA3R	Incremental		20□	Ball Screw	6	28	1	0.5			300	20~100 (10-mm step)	±0.05	40
			4					43	2	1	200						
			2					85	3	1.5	100						
		RCA2	TA4R					6	-	~0.8	~0.4			300(200)			
								4	-	~1.5	~0.7			200(133)			
								2	-	~2	~1			100(67)			
Servo Motor	20□	Ball Screw	6		-	~1	~0.5	300									
			4		-	~2	~1	200									
			2		-	~3	~1.5	100									
	10W	Ball Screw	6		28	1	0.5	300									
			4		43	2	1	200									
			2		85	3	1.5	100									
Servo Motor	Compact Table Motor-reversing Type 	RCP3	TA3R	Incremental	20□	Ball Screw	6	-	~0.8	~0.4	300(200)	20~100 (10-mm step)	±0.05	72			
			4				-	~1.5	~0.7	200(133)							
			2				-	~2	~1	100(67)							
		RCA2	TA4R				6	-	~1	~0.5	300						
							4	-	~2	~1	200						
							2	-	~3	~1.5	100						
	Servo Motor	20□	Ball Screw		6	28	1	0.5	300								
					4	43	2	1	200								
					2	85	3	1.5	100								
		10W	Ball Screw		6	28	1	0.5	300								
					4	43	2	1	200								
					2	85	3	1.5	100								

Mini Linear Motor Type																											
Motor Unit	Type Description	Type Name		Encoder Type	Motor		Drive Method	Lead (mm)	Rated Thrust (N)	Max. Load Capacity (kg)		Max. Speed (mm/s)	Stroke (mm)	Repeatability (mm)	Width (mm)												
		Series	Type		Motor Drive	Motor Type				Horizontal	Vertical																
Combined Motor-to-Body System (Micro Slider)	Slim Linear Motor Slider Type 	RCL	SA1L	Incremental	Linear Motor	-	-	-	2	0.5	-	420	40	±0.1	20												
			SA2L													5W	4	1	-	460	48	24					
			SA3L													10W	8	2	-	600	64		28				
			SA4L													2W	-	2.5	0.8	-	1200			30~180	40		
			SM4L														-	-	-	-	1400			30~120		40	
			SA5L														5W	5	1.8	-	1400			36~216			48
	Long-stroke Linear Motor Slider Type 		SM5L												-	-	-	-	-	1400	36~144			48			
			SABL												10W	-	10	3.2	-	1800	48~288	58					
			SM6L												-	-	-	-	-	-	-		58				
			SA6L												2W	-	2.5	0.5	0.1	300	25				ø16		
			SA7L													5W	-	5	1	0.2	340					30	ø20
			SA8L													10W	-	10	2	0.4	450					40	
Combined Motor-to-Body System (Micro Cylinder)	Slim Linear Motor Rod Type 	RCL	RA1L	Incremental	Linear Motor	-	-	-	2.5	0.5	0.1	300	25	±0.1	ø16												
			RA2L													5W	-	5	1	0.2	340	30		ø20			
			RA3L													10W	-	10	2	0.4	450	40	ø25				
			RA4L													2W	-	2.5	0.5	0.1	300	25			ø16		
			RA5L														5W	-	5	1	0.2	340				30	ø20
			RA6L														10W	-	10	2	0.4	450				40	

\* < : Max. speed of vertical application

# Mini ROBO Cylinder

## Operate Using the Same Signals Used for Air Cylinder Solenoid Valves

### Operating Principle of PSEP/ASEP

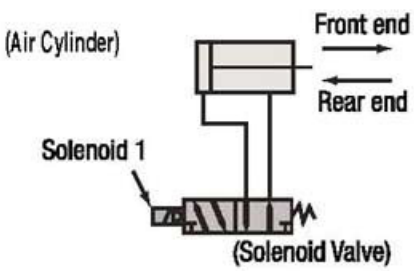
The PSEP/ASEP can be operated with the same signals used for the solenoid signals of air cylinders.

There are two types of solenoid valves: Single solenoids and double solenoids.

The PSEP/ASEP can support signals for both types.

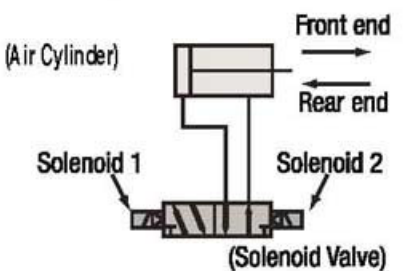
**■ Solenoid Valve of an Air Cylinder**

<Single Solenoid Type>



Signal to Solenoid 1	Rod Movement
ON	Front End
OFF	Rear End

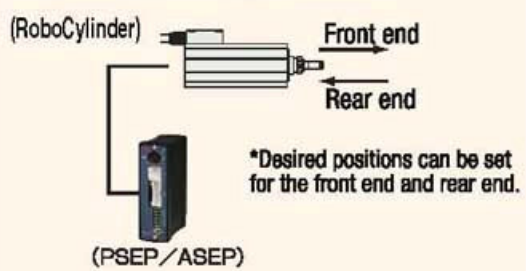
<Double Solenoid Type>



Signal to Solenoid 1	Signal to Solenoid 2	Rod Movement
ON	OFF	Front End
OFF	ON	Rear End

**■ ASEP/PSEP**

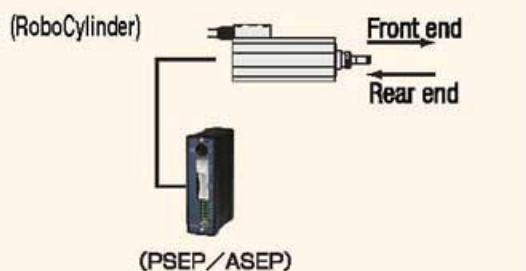
<Replacement of the Single Solenoid>



\*Desired positions can be set for the front end and rear end.

Signal to Controller Input 0	Rod Movement
ON	Front End
OFF	Rear End

<Replacement of the Double Solenoid>



Signal to Controller Input 1	Signal to Controller Input 0	Rod Movement
ON	OFF	Front End
OFF	ON	Rear End

\*The actuator can also be moved among 3 points by switching the parameters

# Mini ROBO Cylinder

## Controller

### Specialized for 2 or 3 positioning: New controller PSEP and ASEP

PSEP/ASEP is a Simple Easy Positioner designed for the application which requires only 2 or 3 points positioning such as air cylinder but not requires several points positioning such as conventional controller.

This controller is suitable for the air cylinder user who wants to reduce positioning time or to stop at 3rd position.

An IP53 type is available, too. It can be equipped near actuator like solenoid valve.

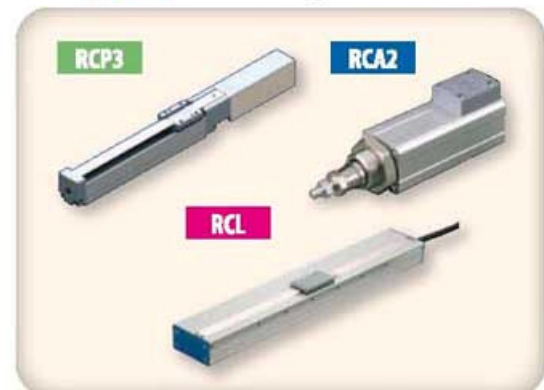


PSEP/ASEP is applicable not only for Mini-RoboCylinder but also for conventional RoboCylinder with P3/A3 encoder. The other way around conventional controller can be used to control RoboCylinder miniature types.

#### Existing RoboCylinder Models



#### New Mini-RoboCylinder Models



P1/A1 Encoder

P3/A3 Encoder

#### PCON/ACON

#### PSEL/ASEL



#### PSEP/ASEP

