

10th revised Edition

Program Overview

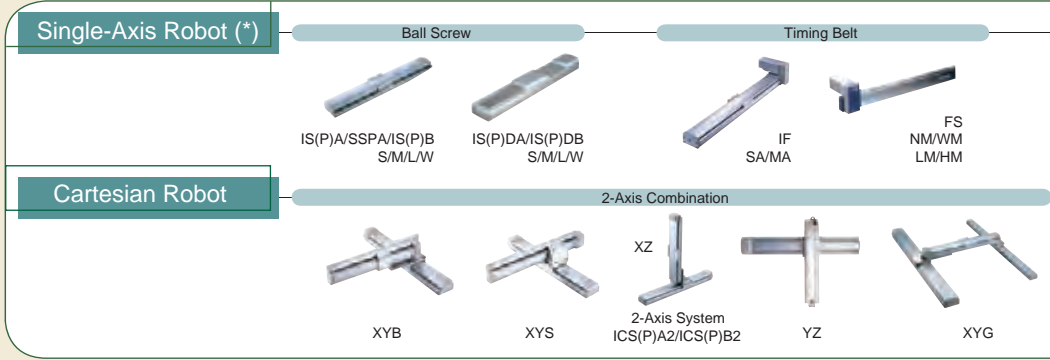


The factory automation can be permanently further developed by using small industrial robots

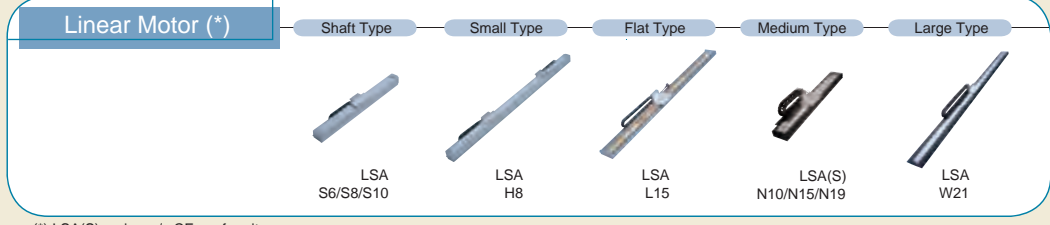
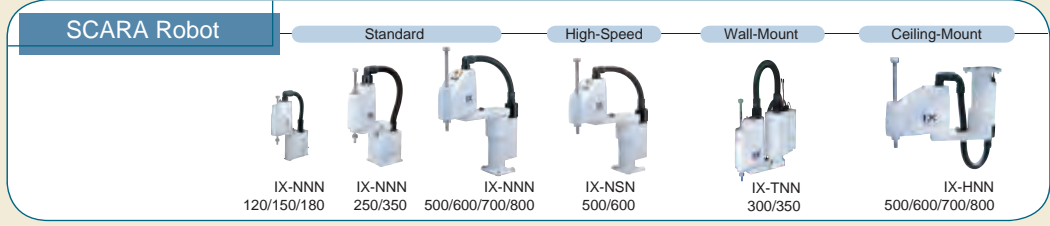
High precision, high speed, high rigidity, ecological and above all very easy-programming



(*) RCL series w/o CE conformity.



(*) ZR series w/o CE conformity.



(*) LSA(S) series w/o CE conformity.

RCP3 (24 V Pulse Motor with separate Motor Unit)

Rod Type: Straight Type RA4/RA6

Slider Type: Straight or Folded Motor Type SA2(R)/SA3(R)/SA4(R)/SA5(R)/SA6(R)

Table Type: Straight or Folded Motor Type TA3(R)/TA4(R)/TA5(R)/TA6(R)/TA7(R)

Rod Type: Straight or Folded Motor Miniature Type RA2(R)

RCP5 (24 V High-end Pulse Motor with battery-less Absolute Encoder)

Rod Type: Straight Type RA2/RA3/RA4/RA6

Gripper: Single or Double Guide RGD3/RGS(GD)/4/RGS(GD)6

Rotary Axis: 2-/3-Finger Type GR(L/S)/GR(M/H)/GRST/GR3L(S)/GR3L(S)M

Slider Type: Horizontal or Vertical Type RTB(S/B)/RTC(S/B)

Rod Type: Straight Type SA4/SA6/SA7

Rod Type: Straight or Folded Motor Type RA4/RA6/RA7/RA8(R)/RA10(R)

RCS3 (230 V High-end Servo Motor)

Arm Type: Miniature Type (also with guide) RN(RP)(GS)(GD)(SD)5

Gripper: Folded Motor Type A4R/A5R/A6R

Rotary Axis: 2-Finger Type GR8

Slider Type: Straight, Folded Motor or Hollow Type RT6(R)/RT7R/RTC8/RTC10/RTC12

Rod Type: Straight or Folded Motor Type SA8(R)/SS8(R)

RCA2 (24 V Servo Motor with separate Motor Unit)

Slider Type: Straight or Folded Motor Type SA2(R)SA3(R)/SA4(R)/SA5(R)/SA6(R)

Table Type: Straight or Folded Motor Type TA4(R)/TA5(R)/TA6(R)/TA7(R)

Rod Type: Miniature Type (built-in Motor) TC(TW)(TF)3/TC(TW)(TF)4

Rod Type: Straight or Folded Motor Miniature Type RA2(R)

Rod Type: Miniature Type (also with guide) RN/RP/GS/GD/SD3 RN/RP/GS/GD/SD4

Micro Cylinder (*)

RCL (24 V Linear Motor)

Slider Type: Straight Type (Single or Double Slider) SA1/SA2/SA3/SA(M)4/SA(M)5/SA(M)6

Rod Type: Straight Type RA1/RA2/RA3

RCD (24 V BLDC Motor)

Rod Type: Straight Type RA1/RA2/RA3

Gripper: 2-Finger Type GRSN

WINDOWS- Compatible Programming Software

Controller

P-CON-CA/CFA, P-SEP, P-MEC
RCP2/RCP3/RCP4 Controller (24/230 V)
1-Axis-Positioning

A-CON-CA, A-SEP
RCA/RCA2/RCL Controller (24 V)
1-Axis-Positioning

D-CON-CA, D-SEP
RCD Controller (24 V)
1-Axis-Positioning

S-CON-CA
RSC2/RCS3/
ISA/SSPA/
ISB/LSPA/
NS/FS/IF
Controller (230 V)
1-Axis-Positioning

P-SEL, A-SEL, S-SEL (230 V)
1-/2-Axis-Programming

X-SEL-P/Q/QX (230/380 V) 1-6-Axis-Programming

X-SEL-KE/KET/KETX (230 V) 1-4-Axis-Programming

M-SEP
RCP2/RCP3/RCP4/
RCA/RCA2/RCL
Controller (24 V)
1-8-Axis-Positioning

M-S-CON
RCS2/RCS3/ISA/SSPA/
ISB/IF/FS/NS/LSA
Controller (230 V)
1-6-Axis-Positioning

P-/A-CON-ABU,
SEP-ABU
Absolute Unit for
RCP2/RCP3/RCA/
RCA2/RCL Cylinder

RCM-GW-PR/DV/CC
Profibus/DeviceNet/
CC-Link Gateway

TableTop Robot

Rotating Nut: Single Slider NS S/ML, Double Slider

Rotary Axis: RS 30/60, ZR S/M

TableTop Robot: Canti-lever TTA-C2G/C3G/C4G, 2-/3-/4-Axis System TTA-A2G/A3G/A4G, Gantry

3-Axis Combination: XYB+Z, 3-Axis System ICS(P)A3/ICS(P)B3, XZ+Y

4-Axis Combination: XYB+Z+RS, 4-Axis System ICS(P)A4

6-Axis Combination: XY1Y2+Z1Z2, 6-Axis System ICSPA6

Dust-/Waterproof Types

Protection Grade IP50/54/65/67




IP67 RCP2W, IP65 RCP4W, IP65/67 RCP2W, IP67 RCP4W, IP50 RCP2W, IP54 RCP2W, IP65 ISWA/ISPPWA, IP65 IX-NNW

Cleanroom Types

ISO Cleanliness Class 4

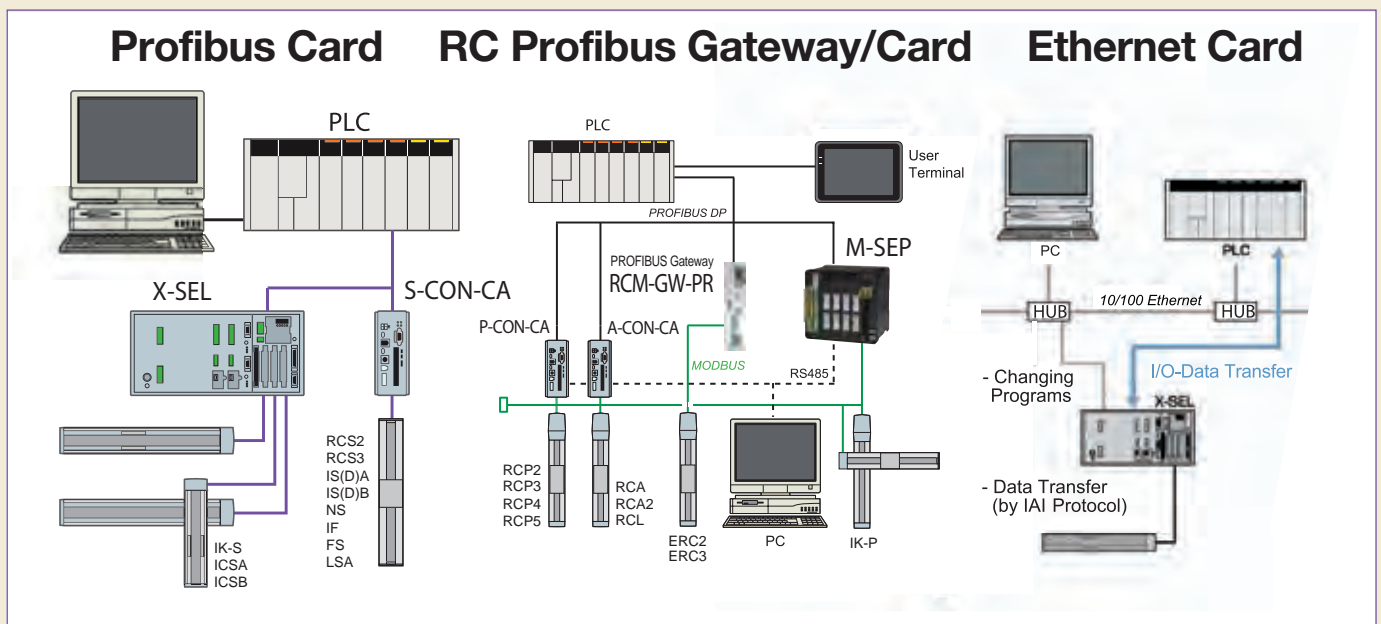
RCP2CR, RCACR, RCS2CR/RCS3(P)CR, IS(P)DACR/SSPDACR/IS(P)DBCR, IX-NNC

Whether you require simple positioning or advance interpolated motion, IAI has a RoboCylinder, an Integrated Combination System, or a high-speed SCARA to suit your needs.

	Application	Advantage	Characteristics
 <p>ROBO CYLINDER</p> <p>Electrical cylinder that employs ball or slider screw, linear guide and stepper, servo or linear motor</p>	<p>Transfer Positioning Clamp Press-Fit</p>	<p>High precision Long service life Simple Ecological Low Cost</p>	<ul style="list-style-type: none"> • Best suited for replacing pneumatic cylinders • High rigidity with integrated linear guide • Constant speed control at maximum payload • Simple positioning operation up to 768 positions • Environment-friendly (no air contamination) • Profibus, DeviceNet, CC-Link, Profinet, Ethernet/IP, EtherCAT option • Only 1/10 of energy consumption compared with compressor-required pneumatic cylinders
 <p>INTELLIGENT ACTUATOR</p> <p>Intelligent robot with electrical actuators and programmable controller</p>	<p>Linear, 2D- or 3D transfer and positioning Assembly Dispensing</p>	<p>High Precision System solution More Intelligence Clean room compliant</p>	<ul style="list-style-type: none"> • Repeatability up to +/-0.005mm (ISPB) • Maximum 3000 mm stroke with ballscrew with mid-support mechanism or 3000 mm with timing belt • Various combination possibilities with slide, arm and rotary actuators. • Multi-tasking capability up to 16 programs. • Profibus, DeviceNet, CC-Link, Profinet, Ethernet(IP), EtherCAT option • Clean room Type (ISO class 4 compliant) available
 <p>IX INTELLIGENT ACTUATOR</p> <p>SCARA Robot capable of versatile control using userfriendly SEL language</p>	<p>3-D transfer transfer Pick & Place Product Insertion Palletising Dispensing Assembly</p>	<p>Less manual operation Higher product quality Cost reduction Clean room compliant</p>	<ul style="list-style-type: none"> • Versatile control possible with extensive I/O commands • Simple multi-task programming possible by SEL language • Ultra-high precision of multi-axis positioning using 32bit RISC CPU • Robot control, I/O handling (PLC function) and HMI via serial can be operated simultaneously • Clean room Type (ISO class 4 compliant) available • High speed, high payload and high precision

Network capability for less wiring and data communication

Open network systems are widely used for less wiring and data communication. ERC, P-MEC, P-/A-/D-SEP, M-SEP, P-/A-/S-CON, MS-CON, P-/A-/S-SEL and X-SEL controllers can accommodate themselves to field network systems like Profibus as a slave I/O unit, while Ethernet option makes X-SEL data editing possible.



Selection by Specification

	Series	Type	Mechanism	Repeatability (mm)	Stroke (mm)	Horizontal Payload (kg)	Maximum Speed (mm/sec)	Characteristics
	ERC2/ERC3	Slider Type	Ball Screw	±0.02/ ±0.03	50-800	2-45	1200	Built-in guides ensure excellent linearity; controller integrated; low cost
		Rod Type			50-300	2-55	800	A chuck or other device is installed at the tip of the rod; built-in controller; low cost
	RCP2/RCP3/RCP4/RCP5	Slider Type	Ball Screw/ Timing Belt	±0.02/ ±0.03/ ±0.1	50-1200	1-55	1500	Light-weight, compact aluminium base, suitable for transfer or positioning
		Rod Type	Ball Screw	±0.02/ ±0.05	20-800	2-300	1120	Push function similar to pneumatic cylinder to clamp or press, also as high-thrust type for push forces up to 6000 N
		Tiny Mini Separate Motor Rod Type	Slider Screw	±0.02	25-150	0.25-1	300	Miniature Cylinder with easy-maintenance motor unit with widths from 22 mm
		Separate Motor Slider Type	Ball Screw	±0.02/ ±0.03	25-800	0.25-19	1000	RCP3 pulse motor axis with easy-maintenance motor unit, only 1 connector cable, tiny type SA2 with widths from 22 mm
		Separate Motor Table Type		±0.02/ ±0.05	20-200	0.8-10	600	RCP3 pulse motor axis with easy-maintenance motor unit, only 1 connector cable, high moment loads, pneumatic cylinder design
	RCD	Micro Brushless Motor Rod Type	Slider Screw	±0.05	10-30	0.7	300	Micro Cylinder with brushless servo motor (24 V) with width of 12 mm
	RCA/RCA2	Slider Type	Ball Screw	±0.02/ ±0.03	50-600	4-18	1300	Slider type similar to RCP2 series, but with servo motor instead of pulse motor (24 V)
				±0.02/ ±0.05	20-300	3-35	600	Mounting form similar to pneumatic cylinder for smooth change; also available as short type SRA4R with length from 125 mm
		Short Mini Rod Type	Ball Screw/ Slider Screw	±0.02/ ±0.05	25-75	0.25-6	300	Miniature Cylinder with pneumatic cylinder design, also available with single or (double-sided) double guide; widths from 28 mm
		Separate Motor Slider Type	Ball Screw	±0.02/ ±0.03	50-800	3-10	1000	RCA2 servo motor axis with easy-maintenance motor unit, only 1 cable connector
±0.02/ ±0.05				20-200	0.8-8	600	RCA2 servo motor axis with easy-maintenance motor unit, only 1 cable connector, high moment loads, pneumatic cylinder design	
Slim Mini Table Type		Ball Screw/ Slider Screw	±0.02/ ±0.05	30	0.25-6	270	Miniature Cylinder with pneumatic cylinder design, available as small, wide and flat type; widths from 32 mm	
Arm Type		Ball Screw	±0.02	50-200	(only vertical) 2-6	400	With extending arm from cover	
RCS2/RCS3(P)	Slider Type	Ball Screw	±0.02 (P: ±0.01)	50-1100	4-80	1800	High-speed slider type suitable for positioning or transfer	
	Rod Type		±0.02	20-300	2.5-60	800	Variety of axis type for different mounting spaces	
	Short Mini Rod Type		±0.02	50/75	20	380 (vertical 330)	Miniature Cylinder with pneumatic cylinder design, also available with single or (double-sided) double guide; widths from 46 mm	
	Slim Mini Table Type						Miniature Cylinder with pneumatic cylinder design, available as small, wide and flat type; widths from 48 mm	
	Arm Type		±0.02	50-300	(only vertical) 2-18	800	With extending arm from cover	
RCL (*)	Micro Linear Motor Slider Type	Direct Drive	±0.1	30-288	0.5-3.2	1600	Micro Slider with 6 widths (20-58 mm); with single- or double-slider; acceleration up to 2 G	
	Micro Linear Motor Rod Type			25-40	0.5-2	450	Mikro Cylinder with 3 widths (ø 16/20/25 mm); acceleration up to 2 G	
IK	Pulse Motor Multi-Axis System	Ball Screw	±0.02	X: 50-1000 Y: 50-400 Z: 50-200	XY: 1.5-16 XYZ: 1-4	600	2- and 3-Axis System of RCP2 slider type axes	
					XY: 1.5-24 XYZ: 1-4	1000	2- and 3-Axis System of RCS2 slider type axes	
NS/LSA(S) (*)/IS(P)A/SSPA/IS(P)B/IF/FS/RS	NS	High-speed Axis	non-rotating Ball Screw	±0.02	200-3000 (vertical 200-1000)	15-80 (vertical 3-16)	2400 (vertical 1000)	Slider with integrated servo motor; with single- or double-slider; speed and acceleration nearly as same as linear motor
	LSA(S) (*)	Linear Motor Axis	Direct Drive	±0.005	40-4155	3-120	2500	Linear motor with 8 widths (60-210 mm); with single- or double-slider; acceleration up to 3 G; medium type with quasi-absolute encoder
	IS(P)A/SSPA/IS(P)B	Standard Type P: high Precision	Ball Screw	±0.02±0.01 (P: ±0.01/ ±0.005)	100-2500	12-150	2500	Maximum Stroke of 2500 mm with ball screw; various sizes; SSPA with stainless steel base; also available as dust shield version (IP30/IP40)
	IF	Combinable High-strength Axis	Timing Belt	±0.08	1000-2500	5-40	1750	Belt-driven axis with high rigidity and high speed; with single- or double-slider
	FS	High-flexible Modular-Axis System			300-3000	2-60	2000	Slim body of drive modules suits various mounting spaces; with single- or double-slider
RS	Rotary Axis	Reduction Gear	±0.028	360°	-	360°/s	Can be combined with single-axis or cartesian robot	
ZR (*)	Vertical Rotary Axis	Z/Rotary-Axis Combination just like Scara-Robot	R: ±0.005 Z: ±0.01	R: 360° Z: 150-200	(only vertical) 3-6	R: 2200°/s Z: 1256	Can be combined with single-axis or cartesian robot	
IC(S)P(A)/IC(S)P(B)	Multi-Axis System	Ball Screw	±0.02±0.01 (P: ±0.01/ ±0.005)	X: 100-2500 Y: 100-1200 Z: 100-600	XY: 40/78 XYZ: 19/36	X: 1000/2500 Y: 1000/2400 Z: 1000/1200	2-, 3-Axis system with IS(P)A/B axes; IC(S)P(A) also available as high-speed 2-, 3-, 4-, 6-Axis system with X-Axis of NS/LSA series	
	TTA	2-/3-/4-Axis TableTop Robot	Ball Screw	±0.02	X: 200-500 Y: 150-500 Z: 100-150	X: 20 Y: 10 Z: 6	800	Available as gantry or cantilever type; built-in X-SEL controller
IX	Horizontal Articulated Robot	Reduction Gear	±0.01	120 • 150 • 180 250 • 350 • 500 600 • 700 • 800	20	7586	SCARA robot, also available as High-speed, IP65, Wallmount and Ceilingmount type	

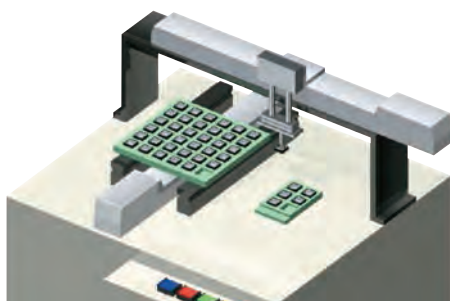
Cleanroom or dust-/splash-proof types are also available of series RCP2, RCP4, RCA, RCS2, RCS3(P), IS(P)DA, SSPA, IS(P)DB and IX (see page 9/10).

ROBO CYLINDER

Electrical Cylinder

Pick&Place

Low-cost pick&place unit using RoboCylinder for X and Y axes



Advantage:

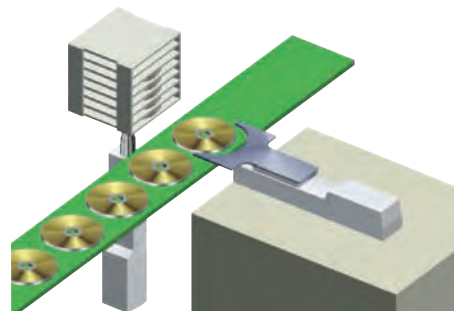
- Precise pick&place by multiple positioning of maximum 1500 points and +/-0.02mm repeatability
- Energy-saving for small work pick&place at frequent interval in comparison with pneumatic cylinder



System Configuration 2 x RCA-SA5
Controller A-SEL

Indexing and Loading

„Pitch Increment“ function to raise or lower the magazine feed, acceleration/deceleration“ function to load discs smoothly.



Advantage:

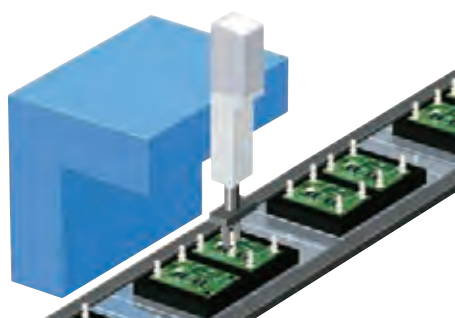
- No abrupt but smooth start of movement to prevent any damage on disc
- „Pitch Increment“ to lift and lower the magazine at even distance



System Configuration RCP2-RA6
RCP2-SA6
2 x Controller P-CON

Spacer Insertion

„Push“ function to insert spacers into printed circuit boards



Advantage:

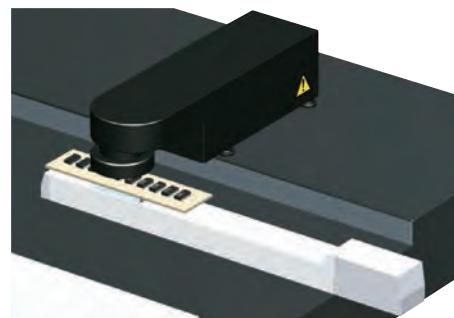
- Maximum of 800N push ensures proper spacer insertion
- Push power can be adjusted



System Configuration RCP2-RA6
RCP2-GRS
Controller P-SEL

Marking

„Pitch Increment“ to transfer work in process of laser marking.



Advantage:

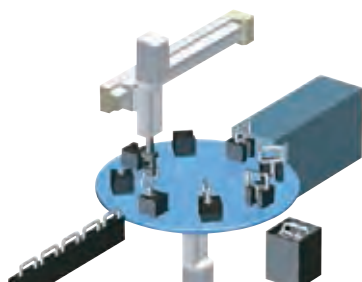
- „Pitch Increment“ function makes more than 64 positions possible



System Configuration ERC2-SA6
(Integrated Controller)

Parts Inspection

„Positioning“ function of rotary axis to rotate the index table,
„Soft Grip“ function of gripper axis to grip work



Advantage:

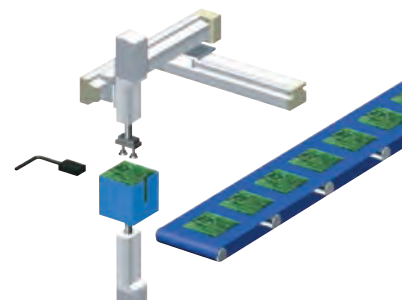
- RC Rotary up to 20000 positions
- RC Rotary to prevent abrupt start/stop
- RC Gripper to transfer fragile work by adjusting gripping force.



System Configuration RCS2-SS8, RCP2-RA6, RCP2-GRM
RCS2-RT6
Controller P-SEL, S-SEL

Pick&Place

„Pitch Increment“ to raise work; short type RP5 for lack of space in vertical direction



Advantage:

- Suitable for thin work such as wafer or glass plate
- RP5 is so short as pneumatic cylinder

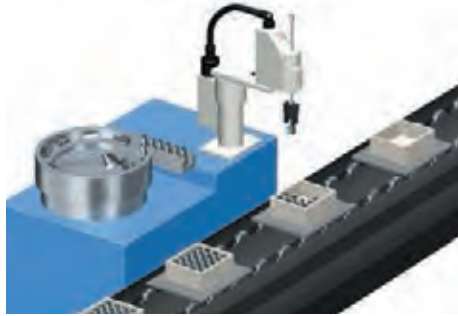


System Configuration IK2-SXB, RCP2-RA6
RCS2-RP5
Controller S-SEL, S-CON, P-CON



Palletising

IX SCARA robot picks work from the feeder and deposit into a pallet. The pallet is carried away by conveyor once became full.



- Advantage:**
- Palletise work with the repeatability of +/-0.01mm
 - PLC functionality makes peripheral control possible

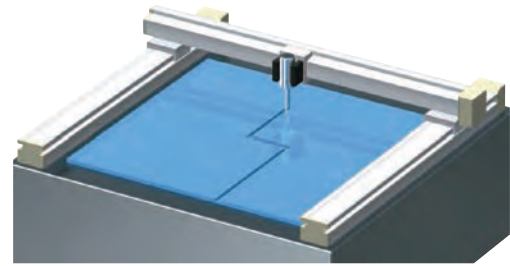


System Configuration IX-NNN5020
Controller X-SEL-KETX

Single-Axis Robot / Cartesian Robot / SCARA Robot

Cutting

Glass and others are cut in XY dimensions.



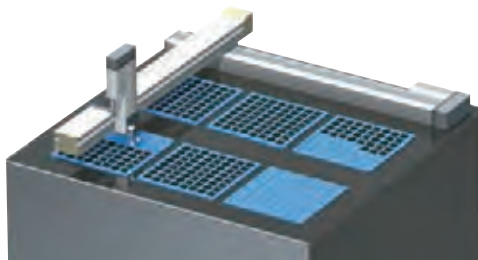
- Advantage:**
- Synchronised motion function by X-SEL can make working area bigger



System Configuration ICSA2-G 2-Axis-Gantry-Combination
Controller S-SEL

Parts Transfer

Transfer small work from one pallet to another according to product Type



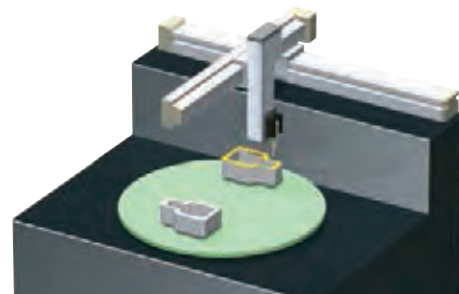
- Advantage:**
- High repeatability of +/-0.02mm
 - Maximum 20000 positions



System Configuration ICSA2-B 2-Axis-Combination
RCS2-A5R
Controller X-SEL-P

Dispensing

Dispense adhesive on the 3-dimensional surface



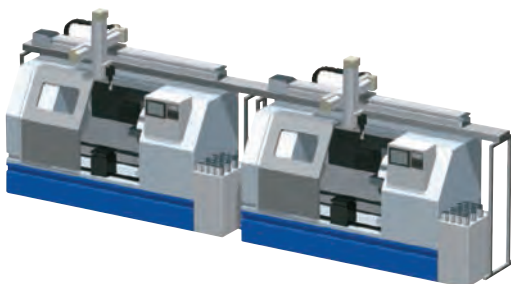
- Advantage:**
- High locus accuracy and speed consistency achieve fast and precise sealing



System Configuration ICSA3-B 3-Axis-Combination
RCS2-RT6R
Controller X-SEL-KE

Pick and Place

Cartesian robots mounted on 2 NC milling machines supply and retrieve work



- Advantage:**
- Maximum 3000mm stroke possible
 - More universal than exclusive loading robot



System Configuration 2 x FS Belt Drive Axis
2 x ICSA2-S 2-Axis-Combination
Controller X-SEL-P

Screwdriving

Screws supplied by the feeder are brought on the exact spot of work and screwed.



- Advantage:**
- Reduce tact time by maximum 2400mm/sec speed and 1G acceleration
 - Precise positioning with +/-0.01mm repeatability



System Configuration ICSA2-B 2-Axis-Combination
Controller S-SEL

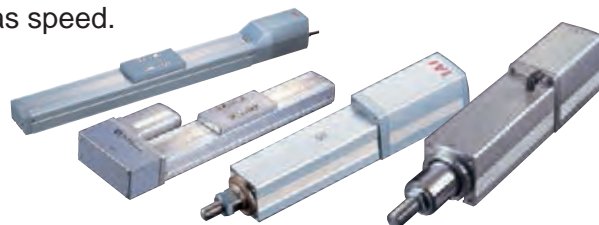


Electrical Cylinder

High Accuracy, High Rigidity and Attractive Price; Moreover, Save up to 67% in Operating Costs over Pneumatic Cylinders!

RoboCylinder is a motorised cylinder equipped with ballscrew, linear guide and stepper/servo motor. In comparison with pneumatic cylinders, it is capable of multiple of positioning, programmable control over acceleration/deceleration as well as speed. Environment-friendly (less oil mist) and energy-saving.

- High standard repeatability of +/- 0.02mm
- Built-in linear guide for slider type, external guide option for rod type
- No programming required, only position and speed to be input
- Maximum 512 positions with positioning controller (P-/A-/S-CON)
- Iron base types (SS7/SS8) can be also mounted as X-axis for 2-/3-axes systems (IK series: cartesian cylinders)



Low-Cost and Easy to Use

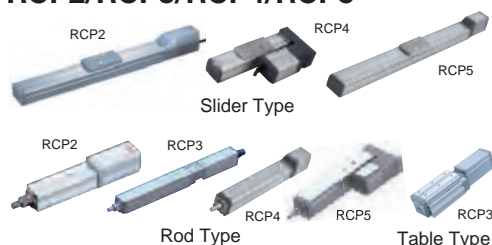
ERC2/ERC3



	Slider Type				Rod Type			
	Standard Type (ERC2)		High-end Motor Type (ERC3)		Standard Type (ERC2)		High-end Motor Type (ERC3)	
Model	SA6	SA7	SA5	SA7	RA6	RA7	RA4	RA6
max. Stroke (mm)	600	600	800	800	300	300	300	300
max. Horizontal Payload (kg)	12	20	20	45	40	55	40	70
max. Vertical Payload (kg)	6	10	12	22	18	25	18	25
max. Speed (mm/sec)	600	450	1120	1200	600	450	800	800

High Thrust, ideal for Pushing

RCP2/RCP3/RCP4/RCP5



	Slider Type										Rod Type					Table Type (RCP3)
	Separate Motor Unit Type (RCP3)			Standard/High-end Motor Type (RCP2/RCP4/RCP5)							RCP3	RCP2/RCP4/RCP5		RCP2/RCP4/RCP5		
Model	SA2	SA3	SA4	SA5	SA6	SA5	SA6	SS/SA7	SS/HS8		RA2	RA2	RA3	RA4/SRA4	RA5/6/7/8/10	TA3/4/5/6/7
max. Stroke (mm)	150	300	500	800	800	800	800	800	1000		150	100	300	410	520	200
max. Horizontal Payload (kg)	1	3	11	19	19	20	25	45	55		1	7	36	40	300	10
max. Vertical Payload (kg)	-	1.5	8	10	10	12	12	25	20		0.5	2.5	10	19	150	4
max. Speed (mm/sec)	300	300	500	1000	1000	1440	1440	1200	1200		300	25	1120	1120	1120	600

High Constant Speed and Precision (230 VAC)

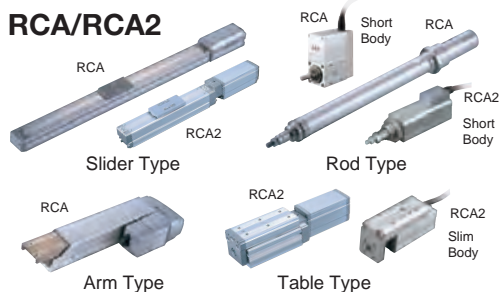
RCS2/RCS3



	Slider Type							Rod Type			Arm Type	Table Type	
	Standard Type (RCS2)				High-end Motor Type (RCS3)			Standard Type					
Model	SA4	SA5	SA6	SS/SA7	SS8	SS/SA8	CT8	RA7/SRA7	RA4	RA5	A4R/5R/6R	TC5/TW5/TF5	F5D
max. Stroke (mm)	300	500	600	800	1000	1100	500	300	300	300	200	75	300
max. Horizontal Payload (kg)	8	12	18	40	60	80	5	55	18	60	-	20	-
max. Vertical Payload (kg)	4.5	4	6	12	12	16	-	22.5	6.5	18	6	6	18
max. Speed (mm/sec)	665	1300	1300	800	1000	1800	2500	800	600	800	400	380	800

High Constant Speed and Precision (24 VDC)

RCA/RCA2



	Slider Type							Rod Type					Arm Type (RCA)	Table Type (RCA2)
	Separate Motor Unit Type (RCA2)			Standard Type (RCA)				RCA2		RCA				
Model	SA2	SA3	SA4	SA5/SA6	SA4	SA5	SA6	RA2	RN3/4/ RP3/4	RA3/RA4/SRA4	A4R/5R/6R	TC3/4/TW3/4/TF3/4	TA4/5/6/7	
max. Stroke (mm)	100	300	500	800	400	500	600	100	50	300	200	50	200	
max. Horizontal Payload (kg)	2	3	6	10	8	12	18	2	6	18	-	6	8	
max. Vertical Payload (kg)	1	1.5	3	4	4.5	4	6	1	1.5	6.5	6	1.5	4	
max. Speed (mm/sec)	200	300	500	1000	665	1300	1300	200	270	600	400	270	600	



Single-axis Robot

IAI's Intelligent Actuators are designed to provide you with the largest array of choices for high precision performance and exceptional reliability

Customers who used to build their own actuators using component parts from a variety of manufacturers are realising the benefits of purchasing a fully-integrated system from one manufacturer. The vast experience of IAI ensures the system will work first time.

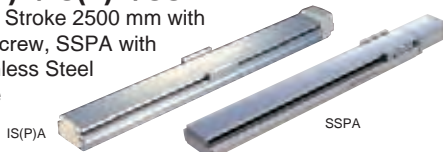
- High repeatability up to +/-0.005 mm (SSPA, ISPB)
- Long stroke of 2500 mm (ISA, ISB, IF) or 3000 mm (NS, FS) thanks to own developments of unique mid-support mechanism or rotating nut on fixed ballscrew
- Variety of models suitable for ISO class 4 cleanroom or dump room (IP30, IP40, IP 65) environment
- Strong, light, compact at affordable cost



Intelligent Actuator with Excellent Value for Money Single-Axis Robot

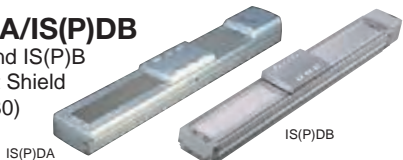
IS(P)A/IS(P)B/SSPA

Max. Stroke 2500 mm with Ballscrew, SSPA with Stainless Steel Base



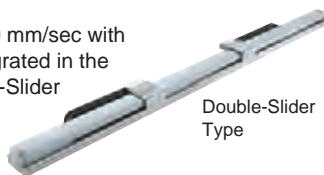
IS(P)DA/IS(P)DB

IS(P)A and IS(P)B with Dust Shield (IP40/IP30)



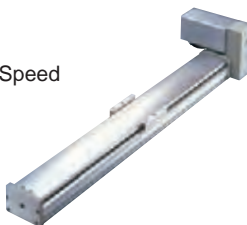
NS

Max. Speed 2400 mm/sec with Servo Motor integrated in the Single- or Double-Slider



IF

Belt Driven ideal for High Speed Longstroke Transfer



FS

Belt Driven up to 3000 mm stroke, can be combined to multi-axes systems



RS & ZR (*)

(*) ZR series w/o CE conformity.

High Precision Rotary Positioning with ±0.028/0.005 mm (RS/ZR), ZR with extra Vertical Translation



IS(P)A - IS(P)B - SSPA - IS(P)DA - IS(P)DB

Model	Standard Type						Dust-Proof Type						
	IS(P)A-S	IS(P)B [SSPA]-S	IS(P)A-M	IS(P)B [SSPA]-M	IS(P)A-L	IS(P)B [SSPA]-L	IS(P)A-W	IS(P)DA-S	IS(P)DB-S	IS(P)DA-M	IS(P)DB-M	IS(P)DA-L	IS(P)DA-L
max. Stroke (mm)	600	900 [1100]	1000	2000 [1300]	1200	2500 [1500]	2500	600	800	1600	1600	1600	1600
max. Horizontal Payload (kg)	50	55 [90]	80	110 [120]	80	120 [120]	150	50	55	80	110	80	120
max. Vertical Payload (kg)	14	14 [12]	19	40 [25]	39	40 [25]	60	14	14	19	40	19	40
max. Speed (mm/sec)	960	960 [1800]	1800	1800 [2400]	2400	2400 [2500]	2400	800	960	1000	1800	1000	1800

NS

Model	Horizontal Type			Vertical Type		
	NS-SX	NS-MX	NS-LX	NS-SZ	NS-MZ	NS-LZ
max. Stroke (mm)	800	2200	3000	800	800	1000
max. Horizontal Payload (kg)	15	40	80	-	-	-
max. Vertical Payload (kg)	-	-	-	3	6	16
max. Speed (mm/sec)	720	1800	2400	600	1000	1000

IF - FS - RS - ZR

Model	Belt Driven Type		Rotary Axis	
	IF	FS	RS	ZR
max. Stroke (mm)	2500	3000	360°	±360° / 200 vert.
max. Horizontal Payload (kg)	40	60	11.1 Nm	3.8 Nm
max. Vertical Payload (kg)	-	-	-	6
max. Speed (mm/sec)	1750	2000	360°/s	2200°/s / 1256 vert.



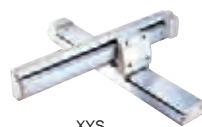
2-/3-/4-/6-axis Systems

Drastically Reduce Your Engineering Time & Costs!

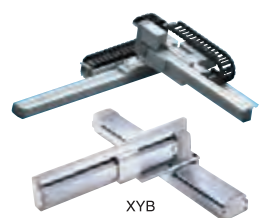
Cartesian Cylinder & Robot

IK2 & ICS(P)A2/B2

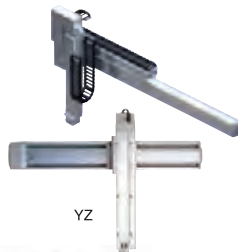
Quickly applicable 2-axes combination



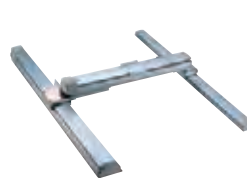
XYS



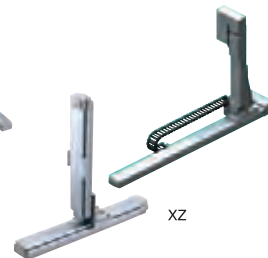
XYB



YZ



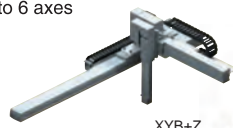
XYG



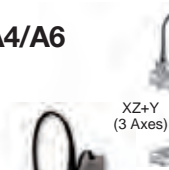
XZ

IK3 & ICS(P)A3/B3/A4/A6

Multi-axes system up to 6 axes



XYB+Z (3 Axes)



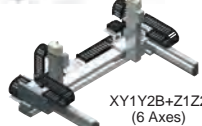
XZ+Y (3 Axes)



XYG+Z (3 Axes)



XY1Y2B (4 Axes)



XY1Y2B+Z1Z2 (6 Axes)

Series	IK	ICS(P)A [ICS(P)B]	ICS(P)A-BN* [ICS(P)A-BL]
max. Stroke X/Y (mm)	1000/400	2500/1200 [2500/1200]	3000/700 [4155/400]
max. Payload 2-/3-Axis-System (kg)	24/4	40/19 [78,6/36,4]	40/19 [21/11]
max. Speed X/Y (mm/sec)	1000/1000	1200/1200 [2500/2400]	2400/1200 [2500/1200]

* High-speed 2-/3-/4-/6-axis systems ICS(P)A-BN or -BL with X-axis of NS series (see p.8) or LSA series (w/o CE conformity, see p.10) are alternatively available to the standard x-axis.



Horizontal Articulated Robot

Complex and Demanding Operations can be Programmed Easily Using SEL Language

SCARA Robot

IX

4 Types and 9 overall sizes of SCARA Robots, suitable for Conveyor Tracking



120/150/180



250/350



500/600/700/800

Arm Length (mm)	120/150/180	250	350	500	600	700	800
Z-Axis / Stroke (mm)	50	150		200/300		200/400	
rated/max. Payload (kg)	0.2/1	1/3		2/10		5/20	
max. Speed (mm/sec)	2555	3191	4042	6381	7232	7010	7586
Type	- Standard Type	- Standard Type - Wall-Mount Type		- Standard Type - High-Speed Type - Ceiling-Mount Type		- Standard Type - Ceiling-Mount Type	



Clean Room Compliant

Clean Room Compliant Type from Single Axis to Horizontal Articulated Robot (ISO Cleanliness Class 4)

Clean Room Compliant

IS(P)DA-CR/SSPDACR/IS(P)DB-CR

Iron-base or dust-proof axis (IP40/IP30), also with electrostatics protection



RCP2CR-SA/SS & RCP4CR-SA

Slider axis with 24 VDC pulse motor



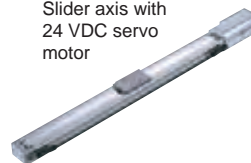
RCP2CR-GR

Gripper with 24 VDC pulse motor



RCACR-SA

Slider axis with 24 VDC servo motor



RCS2CR-SA/SS & RCS3(P)CR-SA/SS

Slider axis with 230 VAC servo motor



IX-NNC

SCARA for ISO Class 4 Environment



120/150/180



250/350



500/600/700/800

Series	RCP2CR-SA/SS	RCP4CR-SA	RCP2CR-GR	RCACR-SA	RCS2CR-SA/SS	RCS3(P)CR-SA/SS	IS(P)DACR	SSPDACR	IS(P)DBCR	IX-NNC
max. Stroke (mm)	1000	800	8	600	1000	1100	2500	1500	2500	(Arm Length) 120/150/180/ 250/350/500 600/700/800
max. Payload (kg)	55	45	-	18	60	80	150	120	120	20
max. Speed (mm/sec)	1200	1440	78	1300	1300	1800	2000	1600	1800	7586



Dump Room Compliant

Dust-/ Waterproof Axes and Robots

Dump Room Compliant



IX-NNW

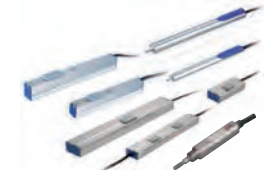


Type	RCP2W-SA16	RCP4W-SA5/6/7	RCP2W-RA4/6	RCP2W-RA10	RCP2W-GR	RCP4W-RA6/7	RCS2W/RCAW-RA	IS(P)WA	IX-NNW
max. Stroke (mm)	600	700	300	300	8	500	300	1200	(Arm Length) 250/350/500 600/700/800
max. Payload (kg)	35	20	55	300	-	70	18	70	20
max. Speed (mm/sec)	180	530	450	250	78	560	600	1000	7586



(*) RCL series w/o CE conformity.

Mikro Cylinder Series RCL & RCD with 24 VDC Linear or Brushless Servo Motor (*)



- Max. Acceleration up to 2 G for low Thrusts up to 10 N
- RCL Long-stroke Type with Single (SA) or Double Slider (SM) specification

Type	RCL-SA1/2/3	RCL-SA/SM4/5/6	RCL-RA1/2/3	RCD-RA1
Stroke (mm)	40-64	30-288	25-40	10-30
max. Payload (kg)	0.5-2	0.8-3.2	0.5-2	0.7
max. Speed (mm/sec)	420-600	1200-1600	300-450	300



(*) LSA series w/o CE conformity.

High Speed Linear Servo Actuator with Linear Motor (*)



- Strong Performance for Low Cost Price
- High Symmetrical Speed
- No Backlash
- Medium Type LSAS-N10/15 also with Quasi-absolute Encoder

Stroke (mm)	Positioning Repeatability	Acceleration/Speed	Payload	Push Force
40-4155 mm	±5 µm	max. 3 G/2500 mm/s	3-120 kg	15-400 N



TableTop Robot with integrated X-SEL Controller



- Gantry or Cantilever Type with 2, 3 or 4 Axes
- 4-axis Model with Rotary Axis ZR

Type	TTA-A2G / TTA-A3G / TTA-A4G	TTA-C2G / TTA-C3G / TTA-C4G
Work Envelope (mm)	X: 200-500 Y: 200-500 Z: 100/150	X: 200-500 Y: 150-500 Z: 100/150

Controller

From Positioner to Intelligent Programmable Controller Capable of Networking with Upper System

Simply and user-friendly SEL language makes complex programming very easy

X-SEL *Type appendix "X": SCARA-Robot Controller



X-SEL-KE/KET(X)*

- Peripheral devices can be operated by user I/O without using PLC
- Multi-Tasking, Multi-Axis Controller up to 4/6/8 Axes (X-SEL-KE/P/R)
- Max. 3000/20000/53332 Positions
- Incremental or Absolute Encoder
- Global-Versions X-SEL-KET/Q/S acc. to safety category 4 (ISO 13489-1)



X-SEL-P/Q(X)*



X-SEL-R/S(X)*

Compact 2-Axes Controller

P-SEL/A-SEL/S-SEL

- Similar functionality like X-SEL, but only controllable up to 2 Axes
- 1500 Positions (S-SEL: 20000 Pos.)
- Interface for Profibus, Ethernet, CC-Link, DeviceNet

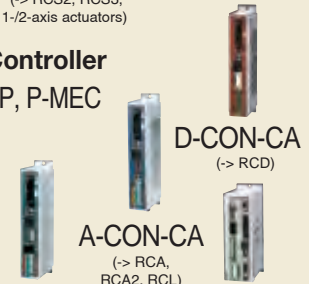


S-SEL (-> RCS2, RCS3, 1-2-axis actuators) P-SEL (-> RCP2, RCP3) A-SEL (-> RCA, RCA2, RCL)

Flexible 1-Axis Positioner Controller

P-/A-/D-/S-CON-CA, P-/A-/D-SEP, P-MEC

- Max. 512 positions, multi-tasking
- 3 controller types selectable: Positioner, Field network, Pulse-train
- Special simple 2 or 3 Point Positioner P-/A-/D-SEP and P-MEC for easy power system change pneumatic to electric (also as IP53 version)



D-CON-CA (-> RCD) A-CON-CA (-> RCA, RCA2, RCL) P-CON-CA (-> RCP2, RCP3, RCP4) S-CON-CA (-> RCS2, RCS3, 1-axis actuators)

Lean Network Controller

M-SCON, M-SEP

- Direct coupling to field network
- Space-saving DIN rail installation
- Max. 256 Positions



M-SCON (-> RCS2, RCS3, 1-6-axis actuators) M-SEP (-> RCP2(3)(4), RCA(2), RCL)

Overview

Selection Guide

Application Examples

RoboCylinder

Intelligent Actuator

Controller

S-/X-SEL

Multi-Axis Controller

S-/X-SEL Controller in Combination with SEL Language Simplifies Complicated Programming Tasks and Improves Performance Even Further!

- ◆ Memory capacity up to 128 programs (9999 steps) and up to 20000/16000 positions for 6/8-axis models
- ◆ Incremental and absolute encoder option available
- ◆ Easy to service
- ◆ 2-axis synchronised control is possible



S-SEL-CS:
up to 2 Axes,
20000 Pos.



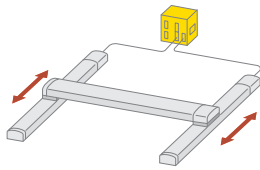
X-SEL-KE/KET:
up to 4 Axes,
3000 Pos.



X-SEL-P/Q:
up to 6 Axes,
20000 Pos.

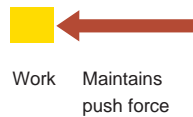


X-SEL-R/S:
up to 8 Axes,
53332 Pos. (1-axis model) till
16000 Pos. (8-axis model)

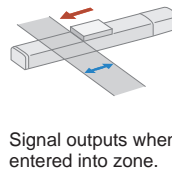


- ◆ Push movement and zone signal are included

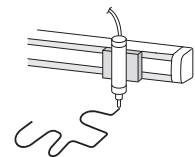
Push Movement



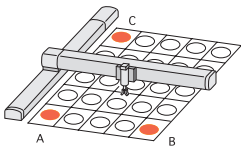
Zone Signal



- ◆ Increased PATH speed and



- ◆ Many new commands for palletising control, arch motion and spline



- ◆ Enhanced safety features and CE certification

- ◆ More variables and symbol definition

- ◆ Debug functionality

S-CON

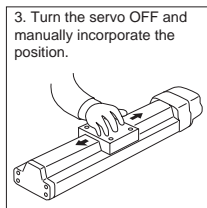
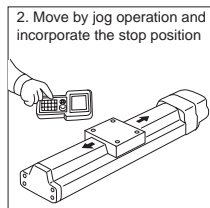
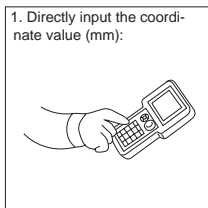
Single Axis Positioner

Economical, Easy to Use, Single-Axis Positioner!

- ◆ Operates RCS2/3, IS(D)A/B, SSPA, IF, FS, NS and LSA Linear Axes (also usable in pulse train mode)

Stroke	Motor Output	Max. Speed	Max. Payload	Max. Payload
50-4155mm	20W-750W	2500mm/sec	Horizontal 150kg	Vertical 60kg

- ◆ Maximum 768 points of positioning via fieldbus network is possible with ease



- ◆ Incremental & absolute options are possible



S-CON-CA:
768 Pos.

- ◆ Multiple functions

S-CON Function Pitch Transfer	S-CON Function Hold	S-CON Function Zone Output	
S-CON Function Acceleration only MAX	S-CON Function Positioning width	S-CON Function Speed change	S-CON Function Serial communication

- ◆ S-CON corresponds to various field networking capabilities like Profibus, Ethernet/IP or EtherCAT



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IAI Program
Overview
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