The final piece in the full-motorization puzzle

ELECYLINDER® Wire Cylinder

POINT 01

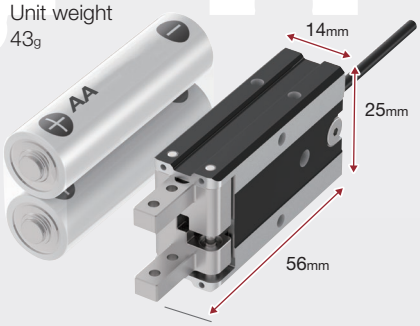
Motorized and yet tiny

We want motorized equipment, but it's so big...

Created based on customer requests like this

Rod Type
Unit weight
10 stroke: 32g
20 stroke: 48g

Gripper Type
Unit weight
43g



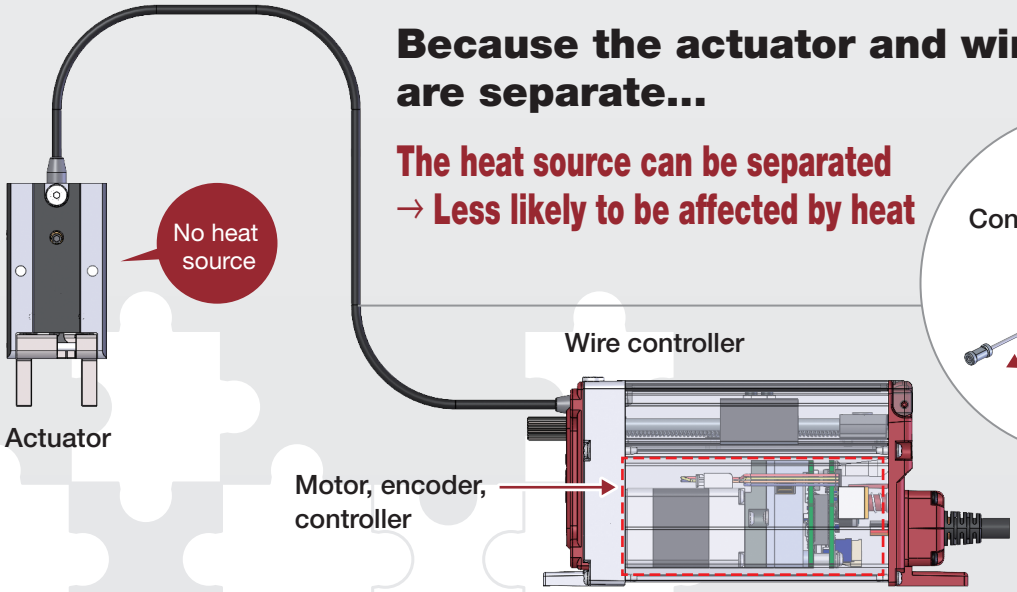
Size/specs equivalent to small-diameter air cylinder (cylinder I.D. Ø6 ~ 8)

No speed controller, switch, or air tube required, **saving even more space**

ELECYLINDER/Wire Cylinder

POINT 02

An industry first! New drive system Patented

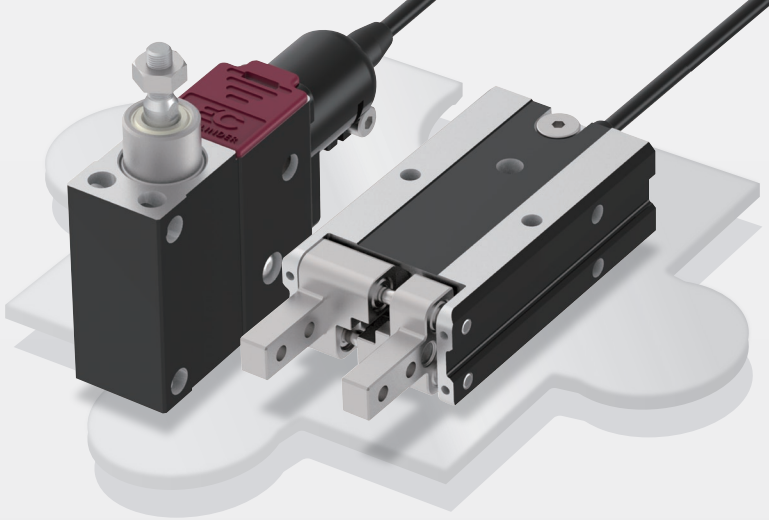


Because the actuator and wire controller are separate...

The heat source can be separated
→ Less likely to be affected by heat

Wire controllers enable adjustment of

Position | **Speed** | **Acceleration/Deceleration** | **Push force/Grip force**



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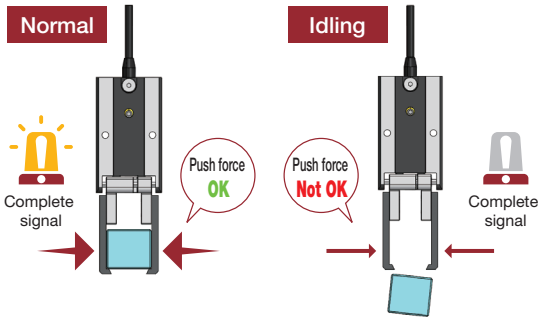
EC-WER1
EC-WEGR2

POINT **03** What motorization can do

Numerical setting is possible: **Simple & Accurate**

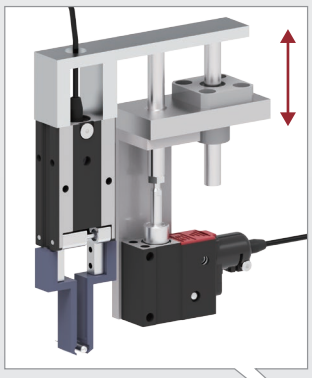
Wireless/wired teaching pendant TB-03

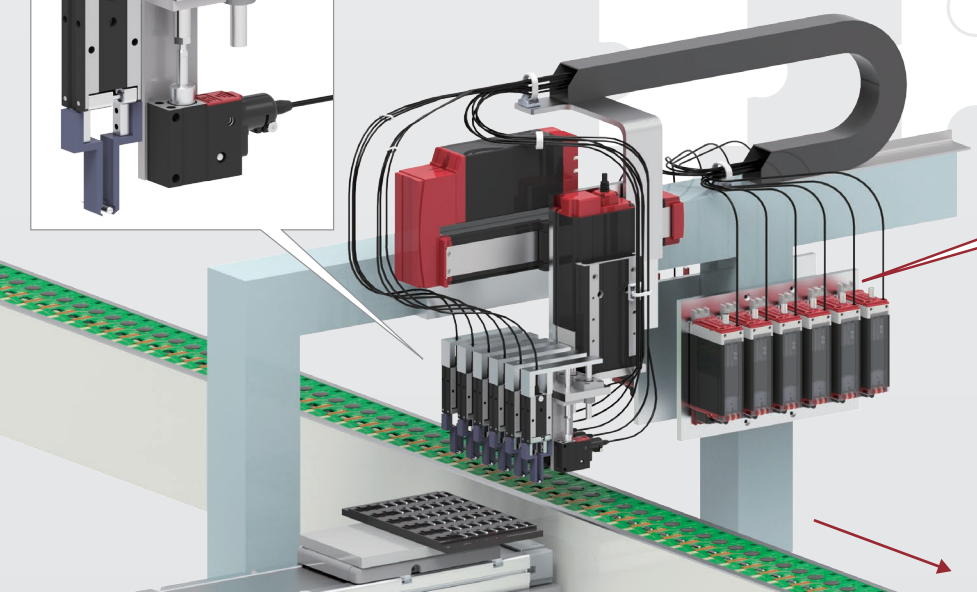
Setting the push terminal position **enables push (grip) complete / idling decision**



Application Examples | Watch circuit board assembly process

Small and lightweight, multiple axes can be installed together at a robot tip





[Operation description]

Rod type raise/lower motion and gripper type grip motion are combined to pick & place parts (quartz).

Up to 16 wire controllers can also be installed in close proximity

Video here ▶

intelligentactuator.com/wire-cylinder-video1

Model Specification Items

ELECYLINDER® Wire Cylinder

NPN specification is standard. PNP option is available.

EC - [Type] [Drive specifications] - [Stroke] - [Control wire length] - [Actuator cable length] - [Power·I/O cable length] - ([Options])

Series: EC

Type

<Rod Type>

WER1	Wire rod body width 13mm

<Gripper Type>

WEGR2	Wire gripper body width 25mm

Drive specifications

<Rod Type>

SA	Single-action specification

<Gripper Type>

EG	Single-action O.D. grip specification
IG	Single-action I.D. grip specification

Stroke

<Rod Type>

10	10mm
20	20mm

<Gripper Type>

4	4mm (One side 2 mm)

Control wire length

05	0.5m
↓	↓
30	3m

(every 0.5m)

Actuator cable length

1	1m
↓	↓
10	10m

(every 1m)

(Note) When connecting via the interface box, 9m is the maximum.

0	No cable Power·I/O connector included*
(S)1	1m
↓	↓
(S)9	9m

(every 1m)

(S): Cable with 4-way connector

*When selecting RCON-EC connection specification (ACR), select "0." Power·I/O cable and power·I/O connector are not included.

(Note) Make sure that the total length along with the actuator cable is 10m or less.

Power·I/O cable length

Options

Left blank	Incremental encoder specification, NPN specification (connection via interface box), no option
ACR	RCON-EC connection specification*1
CJL	Cable exit direction (left)
CJR	Cable exit direction (right)
CJT	Cable exit direction (top)
MF	3 position mode specification
NFA	Tip adapter (internal thread)*2
PN	PNP specification (connection via interface box)*1
TMD2	Split motor and controller power supply specification (connection via interface box)*1
WA	Battery-less absolute encoder specification
WL	Wireless communication specification (connection via interface box)*3
WL2	Wireless axis operation specification (connection via interface box)*3

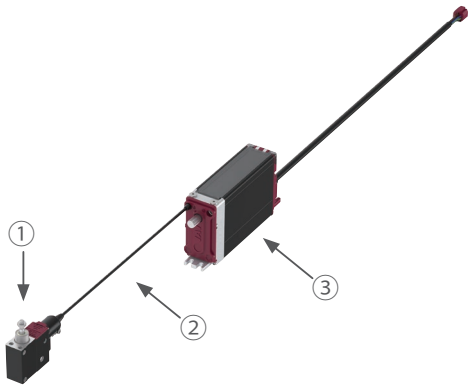
*1 If "ACR" is selected, "PN" and "TMD2" options cannot be selected (I/O for the "ACR" option is NPN only; compatible with split motor and controller power supply as standard)

*2 Only rod type available

*3 Selectable when RCON-EC connection specification "ACR" has not been selected (For wireless communication, refer to P.22)

The model number above is a set model number composed of ① actuator unit, ② control wire, and ③ wire controller. Please refer to P.17 for individual model numbers.

①	Actuator
②	Control wire
③	Wire controller (With actuator cable)



Specification Tables

Wire Rod

Type	Stroke (mm) and max. speed (mm/s) *Length of band = Stroke; *Numbers in band = Maximum speed by stroke		Max. push force (N)	Max. payload (kg)		Reference Page
	Speed	10 / 20		Horizontal	Vertical	
WER1	Set value	100	12.29 *1	0.75	0.25	P.7
	Actual speed	91 / 87				

*1 Reference values with current limit value 100%, stroke end, wire routing length 1m, bending angle 360°, bending radius 25.

Wire Gripper

Type	Stroke (both sides) (mm) and max. speed at approach (mm/s) *Length of band = Stroke; *Numbers in band = Maximum speed		Max. grip force (both sides) (N)	Reference Page
	Speed	4		
WEGR2	Set value	100	10 *2	P.11
	Actual speed	100		

*2 Total values for both fingers with current limit value 100%, open/close stroke center, grip point distance L = 23mm, wire routing length 1m, bending angle 360°, bending radius 25.

Automatic Servo OFF Function

The automatic servo OFF function can be set with the PC teaching software (IA-OS) or teaching pendant (TB-02/03).
When the automatic servo OFF function is set, the servo will turn OFF automatically after positioning complete, after stopping, or after a certain amount of time (lag time).
The servo automatically turns ON when the next movement command is input, executing positioning operation.
Power consumption can be reduced, because there is no holding current when stopped.