

Compact Linear Actuators DRLII Series

For details on this product please refer to our website.
www.orientalmotor.com/catalog



● For detailed information about regulations and standards, please see the Oriental Motor website.



Type with a Guide
Built-in Controller

Type without a Guide
Pulse Input



View Expanded Product Information, Specifications, CAD, Accessories & more online. Visit www.orientalmotor.com/catalog or use the QR code and select "DRLII Series".

This product features a stepper motor integrated with a ball screw. It is a suitable actuator for pushing and pulling loads and fine-tuning applications.

- High Positioning Accuracy
- Significantly Fewer Parts and Required Assembly Time
- Compact and Lightweight

What is FLEX?

FLEX is the collective name for products that support I/O control, Modbus (RTU) control, and FA network control via network converters.

These products enable simple connection and simple control, shortening the total lead time for system construction.

Features

High Positioning Accuracy

A ball screw nut is joined to a hollow rotor.

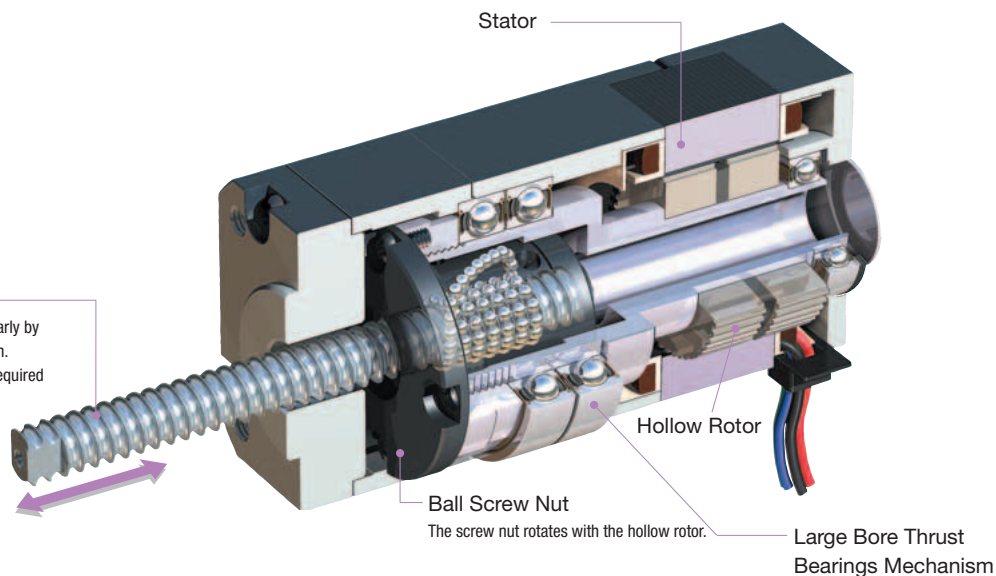
By combining components with coupling rigidity, etc., the backlash effect is reduced and highly accurate positioning can be achieved.

[Repetitive Positioning Accuracy]

Ground ball screw: ± 0.003 mm (0.00012 in.) Rolled ball screw: ± 0.01 mm (0.00039 in.)

Ball Screw Shaft

The ball screw shaft moves linearly by an external anti-spin mechanism. Anti-spin mechanisms are not required for types with a guide.



Significantly Fewer Parts and Required Assembly Time

The compact body houses the entire linear motion mechanism. Some of the conventional parts have been eliminated, so the time required for equipment design and product selection is shortened. Furthermore, the number of man-hours required for assembly and the adjustment of installation accuracy can be reduced, contributing to higher productivity.

Compact and Lightweight

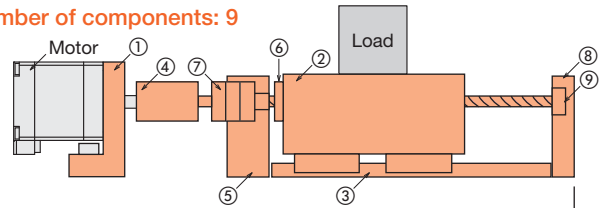
In this structure, the rotor is hollowed out and the ball screw is housed within it. Some customer-supplied parts, such as couplings and ball screw bearings are no longer required, resulting in a more compact and lightweight design.

● Comparison of the Number of Components

Configuration examples of cases where the load is driven by the same stroke

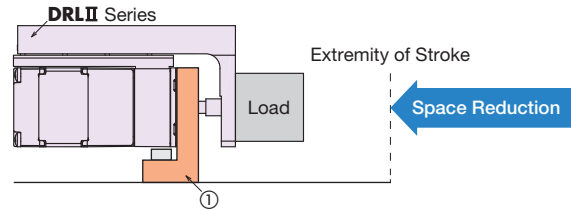
◇ Using off the Self Components

Number of components: 9



◇ DRLII Series, Using the Guide Type

Number of components: 1

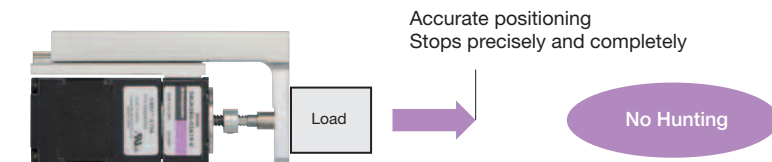


- [Parts Used] ① Installation plate ② Transportation table
 ③ Linear guide ④ Coupling ⑤ Fixed-side block
 ⑥ Ball screw ⑦ Fixed-side bearing
 ⑧ Support-side block ⑨ Support-side bearing

Uses Stepper Motors that Stop Precisely

The **DRLII** Series uses stepper motors.

The positioning accuracy of a single step increment of a stepper motor is very accurate, and it can move forward or backward with precision. Also, because there is no hunting with a stepper motor, stopping accuracy and quick moves can be done more precisely.



Overview, Product Series

Electric Linear Slides

αSTEP AR EAS

Electric Cylinders

αSTEP AR EAC



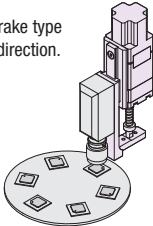
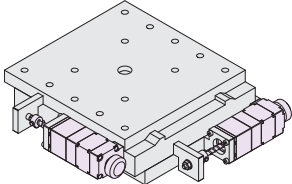
DRLII

Hollow Rotary Actuators

αSTEP AR DGII

Accessories

Choose from 2 Types to Suit the Application

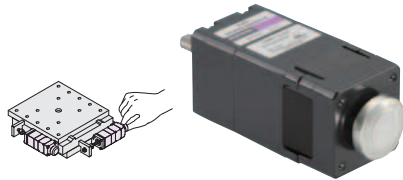
Type	Type with a Guide	Type without a Guide
External View	 With this product, the actuator is equipped with a guide to receive the load. Directly installing the load is easy.	 This product can be incorporated directly into the customer's equipment, or it can be used as a compact thrust force axis in the equipment's load transportation guide.
Stroke mm (in.)	25~50 (0.98~1.97)	25~50 (0.98~1.97)
Thrust Force N (lb.)	15~300 (3.3~67)	15~300 (3.3~67)
List Price*	\$830.00~	\$647.00~
Typical Applications For other applications, refer to page E-111.	[Camera focus drive] * Use the electromagnetic brake type when driving in a vertical direction. 	[X-Y table] 

*Set price is for actuator and driver.

● Additional Functions

The type without a guide and the type with a guide are available with an electromagnetic brake or adjusting knob as additional functions.

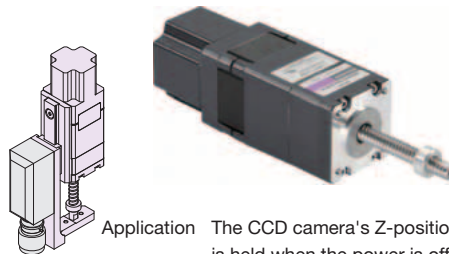
◇ With Adjusting Knob



Application The X-Y stage position can finely adjusted or moved

The load position can be adjusted manually when the power is off.
This function is useful during equipment servicing.

◇ With Electromagnetic Brake

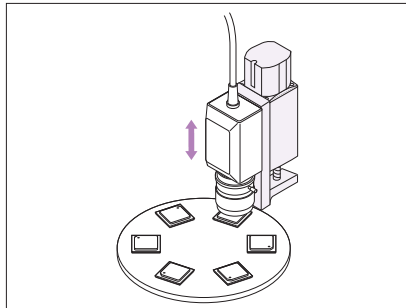


Application The CCD camera's Z-position is held when the power is off

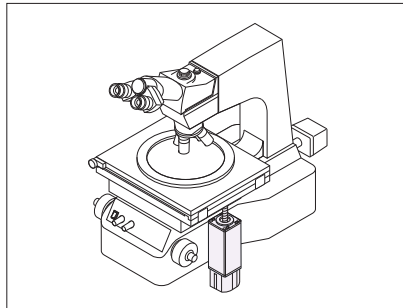
The load position can be held when the power is off.
Since the work will not fall in the event of power failure or disconnection, it can safely be used in a vertical application.

Applications

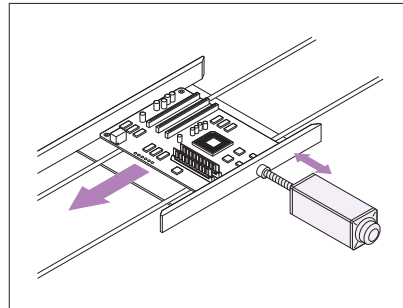
Focusing of a CCD Camera



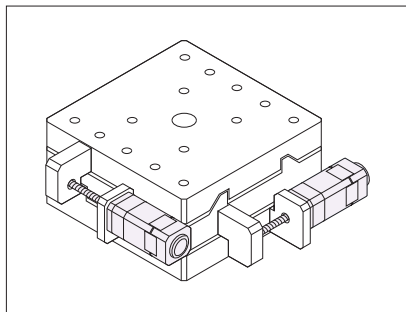
Vertical Fine-Tuning of Table Position



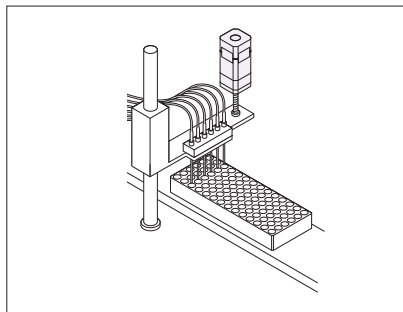
Centering of a Board



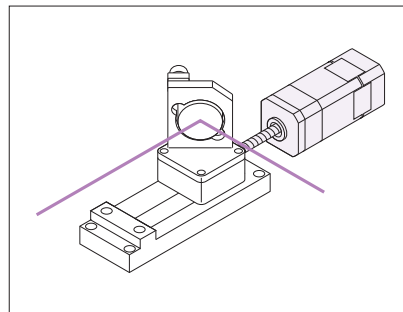
Driving of a Micrometer Head X-Y Stage
(Automation of micrometer head)



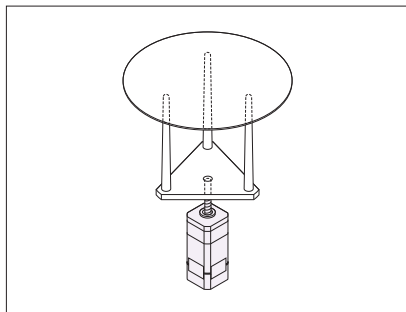
Automatic Micro-Plate Dispenser



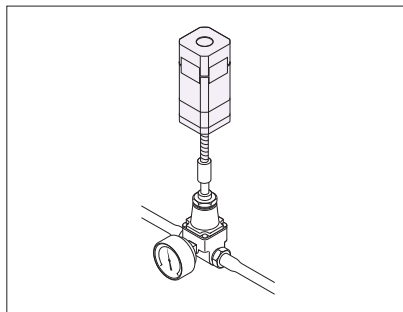
Adjustment of Mirror Position



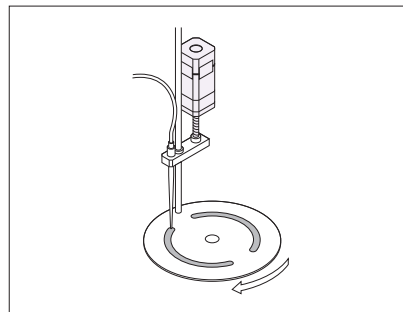
Pin Lifter



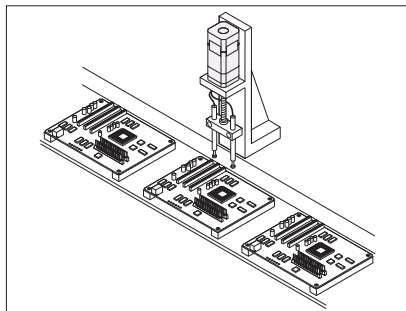
Fine-Tuning of Flow-Rate Regulator Valve
Setting



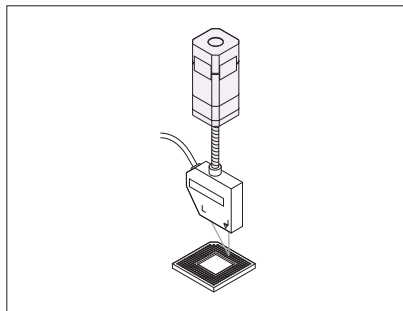
Fine-Tuning of Nozzle Position



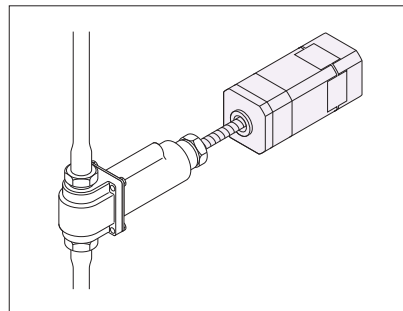
Vertical Movement of Probes



Fine-Tuning of Sensor Position



Driving a Pump Actuator Device



Overview,
Product
Series

Electric
Linear
Slides

**αSTEP AR
EAS**

Electric
Cylinders

**αSTEP AR
EAC**

DRLII

Hollow
Rotary
Actuators

**αSTEP AR
DGII**

Accessories

System Configuration

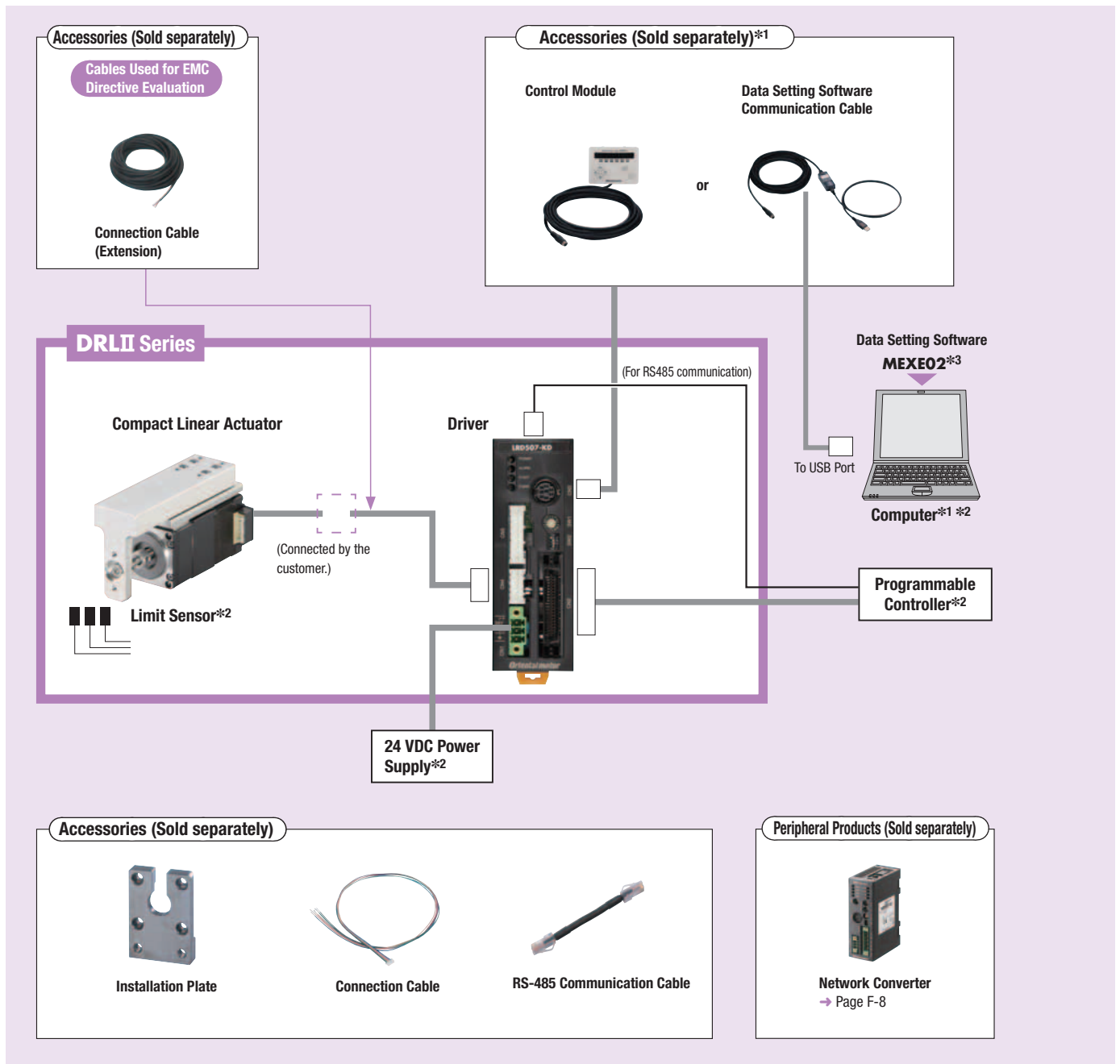
Built-in Controller Type

An example of a configuration using I/O control or RS-485 communication is shown below.

*1 Required for I/O control drive.

*2 Not supplied

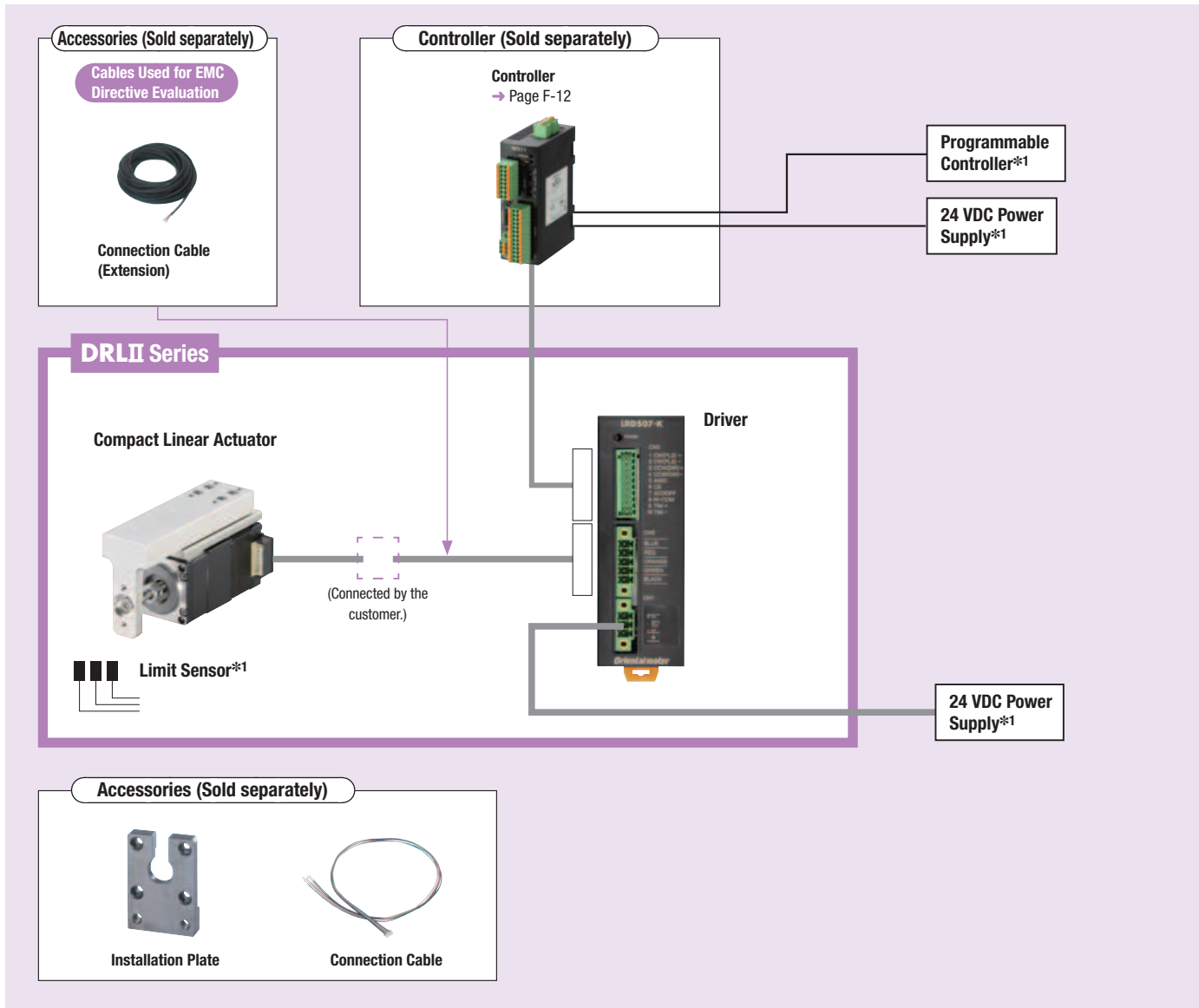
*3 The data setting software can be downloaded from the Oriental Motor website.



● Pulse Input Type

An example of a single-axis system configuration with the **SCX11** controller is shown below.

*1 Not supplied



Overview, Product Series

Electric Linear Slides

αSTEP AR EAS

Electric Cylinders

αSTEP AR EAC

DRLII

Hollow Rotary Actuators

αSTEP AR DGI

Accessories

Product Number

DRL 20 G - 02 B 1 P N - K D

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

①	Series Name	DRL: DRLII Series
②	Frame Size	20: 20 mm (0.79 in.) 28: 28 mm (1.10 in.) 42: 42 mm (1.65 in.) 60: 60 mm (2.36 in.)
③	Configuration	G: Type with a Guide Blank: Type without a Guide
④	Stroke	02~05: 25~50 mm (0.98~1.97 in.)
⑤	Ball Screw Type	A: Rolled Ball Screw B: Ground Ball Screw
⑥	Lead Screw Pitch	1: 1 mm (0.039 in.) 2: 2 mm (0.079 in.) 4: 4 mm (0.157 in.) 8: 8 mm (0.315 in.)
⑦	Motor Type	P: Standard M: High Resolution
⑧	Additional Functions	N: With Adjusting Knob M: With Electromagnetic Brake None: Without Additional Functions
⑨	Power Supply Input	K: 24 VDC
⑩	Driver Type	B: Pulse Input D: Built-in Controller

Product Line

● Type with a Guide

◇ Rolled Ball Screw

Built-in Controller Type		Pulse Input Type	
Product Name	List Price	Product Name	List Price
DRL28G-03A1P-KD	\$927.00	DRL28G-03A1P-KB	\$927.00
DRL28G-03A1PN-KD	\$964.00	DRL28G-03A1PN-KB	\$964.00
DRL42G-04A2P-KD	\$830.00	DRL42G-04A2P-KB	\$830.00
DRL42G-04A2PN-KD	\$869.00	DRL42G-04A2PN-KB	\$869.00
DRL42G-04A2PM-KD	\$1,049.00	DRL42G-04A2PM-KB	\$1,049.00
DRL42G-04A8P-KD	\$940.00	DRL42G-04A8P-KB	\$940.00
DRL42G-04A8PN-KD	\$979.00	DRL42G-04A8PN-KB	\$979.00
DRL42G-04A8PM-KD	\$1,159.00	DRL42G-04A8PM-KB	\$1,159.00
DRL60G-05A4P-KD	\$988.00	DRL60G-05A4P-KB	\$988.00
DRL60G-05A4PN-KD	\$1,031.00	DRL60G-05A4PN-KB	\$1,031.00
DRL60G-05A4PM-KD	\$1,232.00	DRL60G-05A4PM-KB	\$1,232.00

◇ Ground Ball Screw

Built-in Controller Type		Pulse Input Type	
Product Name	List Price	Product Name	List Price
DRL20G-02B1P-KD	\$1,442.00	DRL20G-02B1P-KB	\$1,442.00
DRL20G-02B1PN-KD	\$1,479.00	DRL20G-02B1PN-KB	\$1,479.00
DRL28G-03B1P-KD	\$1,335.00	DRL28G-03B1P-KB	\$1,335.00
DRL28G-03B1PN-KD	\$1,372.00	DRL28G-03B1PN-KB	\$1,372.00
DRL28G-03B1M-KD	\$1,396.00	DRL28G-03B1M-KB	\$1,396.00
DRL28G-03B1MN-KD	\$1,433.00	DRL28G-03B1MN-KB	\$1,433.00
DRL42G-04B2P-KD	\$1,274.00	DRL42G-04B2P-KB	\$1,274.00
DRL42G-04B2PN-KD	\$1,313.00	DRL42G-04B2PN-KB	\$1,313.00
DRL42G-04B2PM-KD	\$1,494.00	DRL42G-04B2PM-KB	\$1,494.00
DRL42G-04B2M-KD	\$1,335.00	DRL42G-04B2M-KB	\$1,335.00
DRL42G-04B2MN-KD	\$1,374.00	DRL42G-04B2MN-KB	\$1,374.00
DRL42G-04B2MM-KD	\$1,555.00	DRL42G-04B2MM-KB	\$1,555.00
DRL60G-05B4P-KD	\$1,408.00	DRL60G-05B4P-KB	\$1,408.00
DRL60G-05B4PN-KD	\$1,451.00	DRL60G-05B4PN-KB	\$1,451.00
DRL60G-05B4PM-KD	\$1,652.00	DRL60G-05B4PM-KB	\$1,652.00
DRL60G-05B4M-KD	\$1,469.00	DRL60G-05B4M-KB	\$1,469.00
DRL60G-05B4MN-KD	\$1,512.00	DRL60G-05B4MN-KB	\$1,512.00
DRL60G-05B4MM-KD	\$1,713.00	DRL60G-05B4MM-KB	\$1,713.00

● Type without a Guide

◇ Rolled Ball Screw

Built-in Controller Type		Pulse Input Type	
Product Name	List Price	Product Name	List Price
DRL28-03A1P-KD	\$757.00	DRL28-03A1P-KB	\$757.00
DRL28-03A1PN-KD	\$793.00	DRL28-03A1PN-KB	\$793.00
DRL42-04A2P-KD	\$647.00	DRL42-04A2P-KB	\$647.00
DRL42-04A2PN-KD	\$686.00	DRL42-04A2PN-KB	\$686.00
DRL42-04A2PM-KD	\$866.00	DRL42-04A2PM-KB	\$866.00
DRL42-04A8P-KD	\$757.00	DRL42-04A8P-KB	\$757.00
DRL42-04A8PN-KD	\$796.00	DRL42-04A8PN-KB	\$796.00
DRL42-04A8PM-KD	\$976.00	DRL42-04A8PM-KB	\$976.00
DRL60-05A4P-KD	\$793.00	DRL60-05A4P-KB	\$793.00
DRL60-05A4PN-KD	\$836.00	DRL60-05A4PN-KB	\$836.00
DRL60-05A4PM-KD	\$1,037.00	DRL60-05A4PM-KB	\$1,037.00

◇ Ground Ball Screw

Built-in Controller Type		Pulse Input Type	
Product Name	List Price	Product Name	List Price
DRL20-02B1P-KD	\$1,247.00	DRL20-02B1P-KB	\$1,247.00
DRL20-02B1PN-KD	\$1,284.00	DRL20-02B1PN-KB	\$1,284.00
DRL28-03B1P-KD	\$1,164.00	DRL28-03B1P-KB	\$1,164.00
DRL28-03B1PN-KD	\$1,201.00	DRL28-03B1PN-KB	\$1,201.00
DRL28-03B1M-KD	\$1,225.00	DRL28-03B1M-KB	\$1,225.00
DRL28-03B1MN-KD	\$1,262.00	DRL28-03B1MN-KB	\$1,262.00
DRL42-04B2P-KD	\$1,091.00	DRL42-04B2P-KB	\$1,091.00
DRL42-04B2PN-KD	\$1,130.00	DRL42-04B2PN-KB	\$1,130.00
DRL42-04B2PM-KD	\$1,311.00	DRL42-04B2PM-KB	\$1,311.00
DRL42-04B2M-KD	\$1,152.00	DRL42-04B2M-KB	\$1,152.00
DRL42-04B2MN-KD	\$1,191.00	DRL42-04B2MN-KB	\$1,191.00
DRL42-04B2MM-KD	\$1,372.00	DRL42-04B2MM-KB	\$1,372.00
DRL60-05B4P-KD	\$1,237.00	DRL60-05B4P-KB	\$1,237.00
DRL60-05B4PN-KD	\$1,280.00	DRL60-05B4PN-KB	\$1,280.00
DRL60-05B4PM-KD	\$1,481.00	DRL60-05B4PM-KB	\$1,481.00
DRL60-05B4M-KD	\$1,298.00	DRL60-05B4M-KB	\$1,298.00
DRL60-05B4MN-KD	\$1,341.00	DRL60-05B4MN-KB	\$1,341.00
DRL60-05B4MM-KD	\$1,542.00	DRL60-05B4MM-KB	\$1,542.00

Overview, Product Series

Electric Linear Slides

αSTEP AR EAS

Electric Cylinders

αSTEP AR EAC

DRLII

Hollow Rotary Actuators

αSTEP AR DGII

Accessories



For details (specifications, characteristics, dimensions and others) on these products please refer to either to our website, contact technical support or your nearest Oriental Motor sales office.

www.orientalmotor.com/catalog

