

Orientalmotor



New**m**otion

VOL. 63

11/2022



Robot Control

with Motors and Drivers from Oriental Motor

Automation

with the Robot Controller **MRC01**

Many companies want to automate processes to reduce costs. Mechanical limitations of standard robots can complicate the on-site installation. Therefore, there are more and more requests from companies that want to build their own robot. Catering to these needs Oriental Motor is introducing the new robot controller **MRC01**.

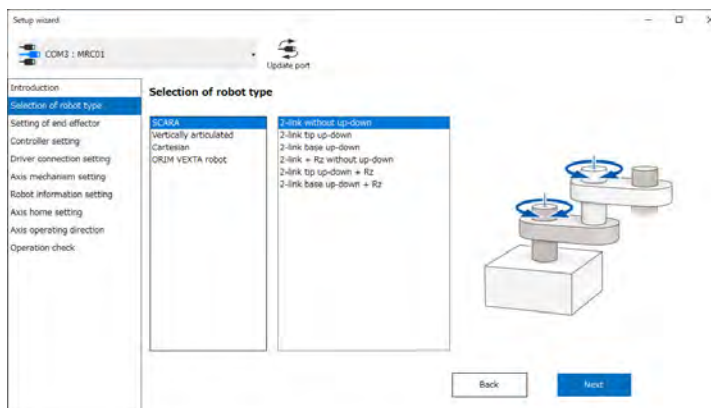


Advantages of „Custom-Built” Robots

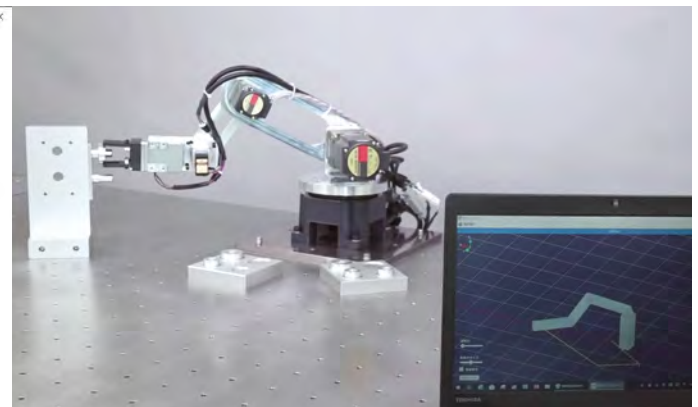
- Cost-effective
- Compact Design and Light Weight due to optimised Mechanics
- Own Maintenance possible

Simple Robot Setup via the new **MRC Studio** Software:

Robot Type Selection and Definition of Framework conditions:



Optimisation by 3D Simulation:



Automation

with Robot Technology

„Custom-Built” Robot for Oriental Motor Production Equipment

As part of a study, a team of employees was tasked with automating a production plant. The aim of the project was to optimise production processes while ensuring consistent quality.

The assigned Task

1. Increasing Productivity and Quality

1. While increasing productivity and maintaining quality, manufacturing processes must be optimised to counteract the shortage of specialised workers.
2. In order to be able to redesign a line configuration depending on the situation, modular production equipment is required. Each unit must be designed to be compact and lightweight.



Modular production plant

2. Definition of the Individual Robot

Among the available transport options, such as a conveyor belt, an articulated arm robot and a Cartesian robot, the decision fell on a horizontal articulated arm robot (SCARA).

The reason behind this decision was that the available installation space can be used most efficiently by the SCARA robot.



„Custom-Built” SCARA robot that uses the limited space under the arm of the industrial robot

Automation with Robot Technology

3. Determining the Framework Conditions

The dimensions of the robot arm, the distance between the axes, the load information, the operating conditions, etc. were compiled. This defined the optimal robot for the application.



4. Programming the Robot with the MRC Studio Software

Setting up a ladder program in a PLC would be a major challenge for someone with little experience with robot controllers. By using a robot controller **MRC01**, a robot can be programmed easily and intuitively using the **MRC Studio** programming software.



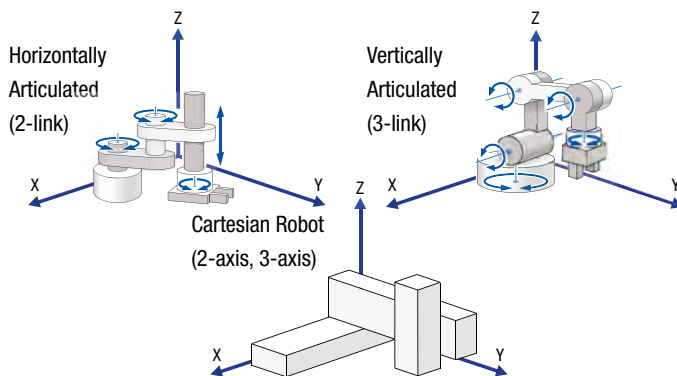
Robot controller **MRC01**



MRC Studio
programming software

Free
download

MRC01-Compatible Robot Types



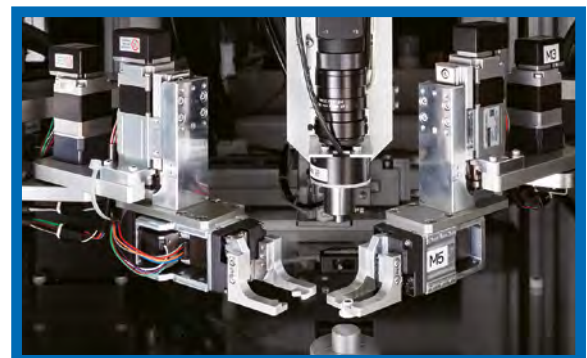
Number of controllable robots	1
Max. number of control axes	6 axes (including end effector)
Host network	EtherNet/IP
Number of program points	64 (128 command sequences per point can be created)



Scan here for
details about the
robot controller
MRC01

5. Complete

„Custom-Built” SCARA robot:
With a simple and compact design, the robot only costs about 8,000.00 € in this case. The robot consists of an **AZ** Series motor, a **DGII** Series rotary actuator, a **DR** Series linear actuator, an **EH** Series electric gripper and the robot controller **MRC01**.



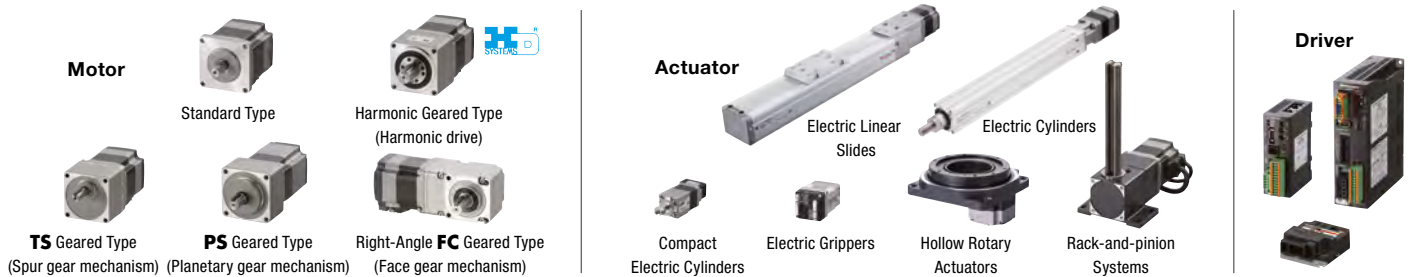
System with two „Custom-Built” SCARA robots

Many Combination Options

with the Robot Controller MRC01

All **AZ** Series Motors can be combined with the Robot Controller

The **AZ** Series motor with an absolute sensor is a stepper motor that has a unique hybrid control. This offers the advantages of both an open-loop control and a closed-loop control.



News in the α STEP AZ Series

The α STEP AZ Series mini Driver provides...

Compact Design, ideal for limited Installation Space

The dimensions are greatly reduced compared to a standard DC driver.



No External Sensors required

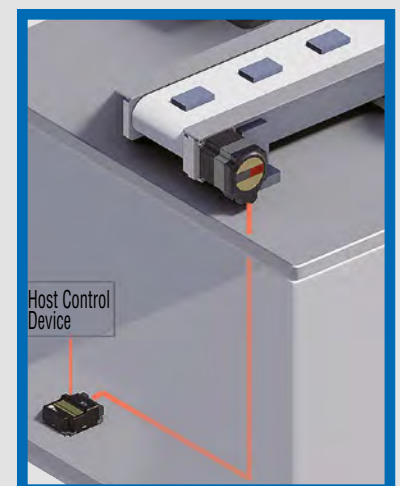
Therefore, the size and weight of the unit can be reduced. In addition, the wiring effort is reduced.

FA Network compatible

Common network protocols are available to reduce programming effort and installation time.

Up to 10.5 m Connection Cable Extension





Connection cables are available in standard and flexible lengths.



Optimisation through Intelligent Drive Technology

News in the BLV-R Series

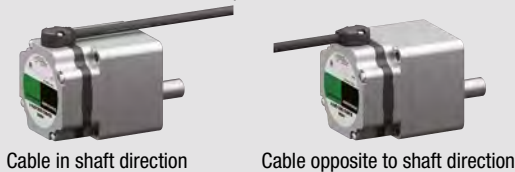
Motors

Output Shaft Type	Output Power [W]	Frame Size [mm]	Gear Ratio	Electromagnetic Brake
	NEW 60	80	5-100	Not Equipped
	100	90	10-100	Equipped/ Not Equipped
	200	110		
	NEW 400		10-50	
	NEW 60	80	5-200	Not Equipped
	100	90	10-200	Equipped/ Not Equipped
	200	104	10-100	
	NEW 400			
	NEW 60	60	5-20	Not Equipped
	Standard Type			
	NEW 60	60	-	Not Equipped
	100	90		Equipped/ Not Equipped
	200			
	NEW 400			


*1 Integrated motor and gearhead. Motor and gearhead combinations cannot be changed.

*2 0.3 m flexible connection cables are not available.

*2 motor cable with different cable pull-out directions are available



Driver

	Power Supply Voltage [VDC]	Output Power [W]
	24-48	60 100 200
	48	400


Connection Cables/Flexible Connection Cables

60 W NEW	Length [m]
	0.3*2, 1, 2, 3

With practical plug connection for the 60 W motor

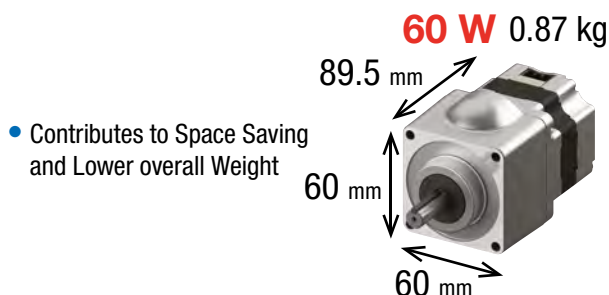
100 W/200 W/400 W	Length [m]
	1, 2, 3

Power Supply Cable

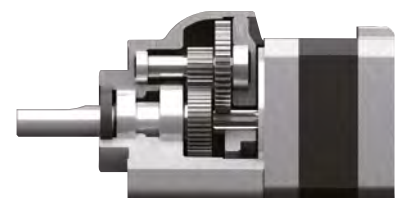
	Length [m]
	0.6

The 60 W BLV-R Series Motor with CS Series Gearbox makes the Unit smaller and lighter

CS gearboxes are characterised by high axial and radial load capacity, high torque and a central shaft.



- Gearbox with Central Shaft



Optimisation

through Intelligent Drive Technology

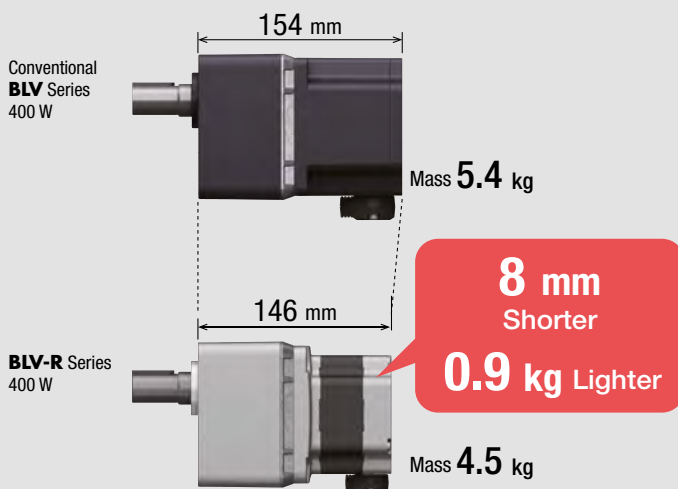
The 400 W **BLV-R** Series Motors

Compact, Lightweight and High Performance

Designed for compact devices

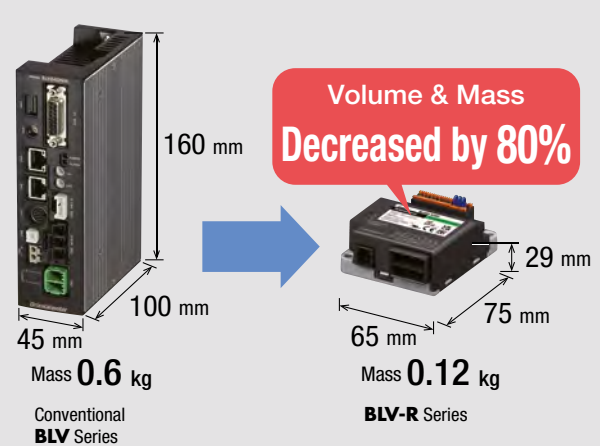
Both the motor and the driver are significantly smaller and lighter. The driver is about 80 % smaller than the previous product and thus saves valuable space in the machine.

● Motor*



*For a 400 W parallel shaft gearhead at a gear ratio of 30

● Driver



Powerful

With the new 400 W motor, larger loads can be transported with a higher moment of inertia compared to the previous product. This also contributes to a compact, powerful unit design.

Example for the design of a transport robot:

● Conditions

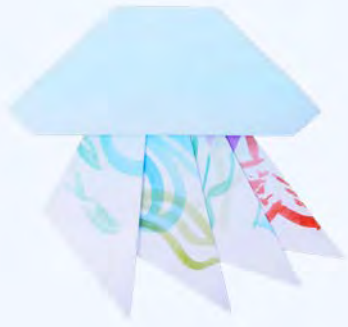
BLV Series R Type Motor	Product Line	Hollow Shaft Flat Gearhead
	Output Power	400 W
	Gear Ratio	30
Driving Conditions	Wheel Diameter	150 mm
	No. of Drive Wheels	2
	Acceleration Time	1 second

● Results

Max. Load Mass (Transportation robot mass + Load mass)	500 kg
Maximum Traveling Speed	0.7 m/sec

*The friction coefficient of the wheels is calculated at 0.1.





ORIGAMI JELLYFISH

Try it yourself!

You can find instructions in the following video:



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WE'RE EXHIBITING 2023

HANNOVER MESSE

Hannover, Germany

17.04. until 21.04.2023



Orientalmotor

IMPRESSUM

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Frequency of publication: Monthly

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Adobe Stock, Freepik, The Noun Project

The information in this brochure is presented as general information. For accurate technical specifications please contact the Oriental Motor (Europa) GmbH office.

This brochure was published in November 2022.