

INDUSTRIAL ROBOT SYSTEM

MOVEMASTER SUPER SERIES

RV-E2/RV-E2M/RV-E3J/RV-E3JM

FOR DOWNSIZING AUTOMATION



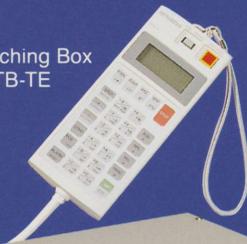
 **MITSUBISHI**

MOVEMASTER SUPER



Robot Arm
RV-E2

Teaching Box
P6TB-TE



Controller
CR-E116



Robot Arm
RV-E3J

High Speed and High Precision

Movemaster represents a major improvement in performance over conventional industrial robots, boasting a maximum resultant speed of 3500mm/sec and a position repeatability of ± 0.04 mm. That means Movemaster can handle a wide range of real-world industrial applications. What's more, trajectory accuracy which is essential for jobs such as sealing, has been improved 2 to 3 times through the use of a 32-bit microprocessor and a high-performance servo-amplifier.

Expandable Compact Controller

The compact CR-E116 controller can either be set on the floor or mounted on a rack. It is also equipped with slots for installation of up to three optional interface boards so the system can easily be expanded to handle larger I/O signal bits or additional functions. (One parallel I/O board is included with the controller.)

A Versatile Range of Models Backed by a Wealth of Options

The Model RV-E2 is a compact vertically articulated robot with 6 joints. This clever robot can handle jobs beyond the capabilities of a 5-joint robot, including diagonal insertion operations and horizontal movement with the wrist maintained in a forward orientation. These capabilities make it easier to set up jigs and to lay out equipment. The Movemaster line also includes many options, such as motor-operated hands and pneumatic hands, and even features models (RV-E3JM, RV-E2M) suited to oil-mist environments, as well as wall or ceiling mounted models.

Improved Reliability and Easier Maintenance

Movemaster uses AC servo-motors, thus eliminating the troublesome chore of replacing brushes which is the case with DC motors. Maintenance has also been simplified and reliability improved through the use of dust-proof oil seals and grease nipples for all joints.

Easy to Use

Movemaster uses an absolute encoder, which eliminates the need to return to the origin when power is turned on. This also solves the problem of interference by peripheral devices during origin setting, and contact by the robot arm hand attachment with the body of the robot. Thus, the robot can be used as soon as it is turned on. In addition, Movemaster is equipped with a teaching box complete with LCD display. That means it can be operated not only by using programs input from a personal computer, but also by means of a teaching playback method, allowing programs to be created at the work site.

Attractive Designs and Safe Operation

Movemaster robots have a pleasant design and color which allows them to smoothly integrate into the work place. And because all wiring and piping has been installed inside the robots, they have a simple external form with no protruding parts. Movemaster robots are also equipped with various protection functions that ensure worry-free operation.

Specifications

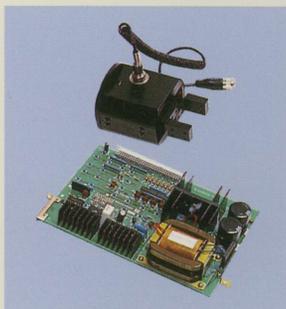
Robot Arm

Type		RV-E2	RV-E2M	RV-E3J	RV-E3JM
Degree of freedom of motion		6		5	
Drive method		AC servomotor			
Drive motor capacity		W.S.E joint: 80W (Brake) T.P.R joint: 40W (Without brakes)		W.S.E joint: 80W (Brake) P.R joint: 40W (Without brakes)	
Location detection method		Absolute encoder			
Operating (Maximum-speed) range Degree (Degree/s)	Waist W	± 160 (150)		± 160 (150)	
	Shoulder S	180 (150)		180 (150)	
	Elbow E	120 (180)		135 (180)	
	Wrist twist T	± 160 (180)		—	
	Wrist pitch P	± 120 (180)		± 120 (180)	
	Wrist roll R	± 200 (250)		± 200 (250)	
Maximum resultant speed	mm/S	3500		3500	
Rated load	N (kgf)	19.6 (2)		29.4 (3)	
Location repetition accuracy	mm	± 0.04		± 0.04	
Ambient temperature	°C	0 ~ 40		0 ~ 40	
Weight	N (kgf)	Approximately 353 (36)	Approximately 363 (37)	Approximately 324 (33)	Approximately 334 (34)
Tool wiring		6 for hand check (It contains 2 lines for power source: 4 signal lines.) 4 spare lines (Stored from a base to a forearm: Size 0.3 SQ)			
Tool pneumatic pipe arrangement		Primary side: $\phi 6 \times 2$ Secondary side: $\phi 4 \times 4$	Primary side: $\phi 6 \times 2$ Secondary side: $\phi 4 \times 6$	Primary side: $\phi 6 \times 2$ Secondary side: $\phi 4 \times 4$	Primary side: $\phi 6 \times 2$ Secondary side: $\phi 4 \times 6$

Controller

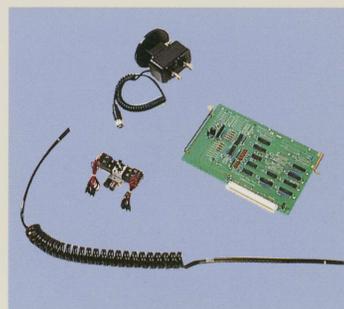
Type		CR-E116	
Path control method		PTP control, CP control	
Control axis number		5 joints or 6 joints.	
CPU		Main CPU (32 bit RISC), Servo CPU (DSP)	
Major function		Joint interpolation, linear interpolation, 3 dimensions circular interpolation, palletizing, interrupt control, conditional branching, subroutine.	
Memory Capacity	Teaching points. Number of program steps.	Teaching Playback: About 2000 steps/program Command: Up to 999 points/program, About 4000 steps/program	
	Number of Programs	Up to 31	
		It depends on the condition. (Total 62k byte)	
Programming methods		Personal computer or teaching box	
Ambient temperature		0-40 °C	
Humidity		45-85% without dew drop	
Power source		Single phase. AC 120V ± 10% 50/60Hz. 3KVA	
Construction		Rack installation is possible with rack anchoring adapter option.	
Outside dimensions		Approximately 422W × 512D × 202H mm	
Weight		About 265N (About 27kgf)	

Options



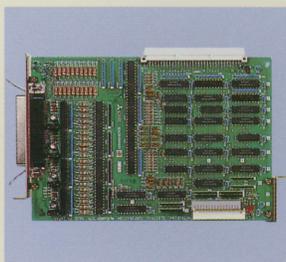
Motor-Operated Hand Set

This motor-operated hand is driven by power supplied from the robot controller. Equipped with gripping force control, this hand is suitable for both hard and soft workpieces. To use with the robot, simply install the motor-operated hand I/F board in the robot controller. (Maximum gripping force: 34.3N (3.5 kgf) with 64 adjustment settings. Weight: 5.8N (590gf)



Pneumatic Hand Set

This set includes a hand with sensors, an electromagnetic valve, a curled tube, and a pneumatic hand I/F board. The electromagnetic valve is installed in the body of the robot, and the pneumatic hand I/F board in the robot controller. (Maximum gripping force with both fingers: 62.7N (6.4 kgf). Weight: 4.4N (450gf)



Parallel I/O Interface

With this interface, up to 60-bit signals can be input (increased from the standard 20), and up to 48-bit signals can be output (increased from the standard 16). Therefore many more work operations can be performed in conjunction with peripheral equipment. (The controller is equipped with one interface board as standard.)

- Options for Pneumatic Hand** ● Hand output cable ● Hand input cable
● Hand curled tube ● Pneumatic solenoid (single- or double-station)
● Pneumatic Hand I/F



Cables

Cables for connecting personal computers and external I/O devices are available. (These cables are suitable for use with all Movemaster models.)