YASKAWA

MOTOMAN-MA1400 INSTRUCTIONS

SUPPLEMENTARY FOR TYPE: YR-MA01400-A40
(S-AXIS ZONE L.S. SPECIFICATIONS)

Upon receipt of the product and prior to initial operation, read these instructions thoroughly, and retain for future reference.

MOTOMAN INSTRUCTIONS

MOTOMAN-MA1400 INSTRUCTIONS
DX100 INSTRUCTIONS
DX100 OPERATOR'S MANUAL
DX100 MAINTENANCE MANUAL

The DX100 operator's manual above corresponds to specific usage.
Be sure to use the appropriate manual.

Part Number: 164668-1CD
Revision: 0

YASKAWA
MOTOMAN ROBOTICS

MANUAL NO.
HW1481740◈

Introduction

This is a supplementary instruction for MOTOMAN-MA1400 (YR-MA01400-A40).
Read this manual thoroughly together with the following manual:

- YR-MA01400-A00 (Standard) "INSTRUCTIONS"
  (Manual No. 155557-1CD)

Differences

YR-MA01400-A40 differs from the YR-MA01400-A00 (Standard) in the following points:

(1) Basic Specifications
(Dimensions and P-point Maximum Envelope)

(2) S-axis Zone L.S. Specifications

The differences are described based on "MOTOMAN-MA1400 INSTRUCTIONS" (Manual No. 155557-1CD). Read this manual thoroughly replacing the subject matters for changes with this supplementary instruction manual.

5 Basic Specifications

5.1 Basic Specifications (5-1 page)

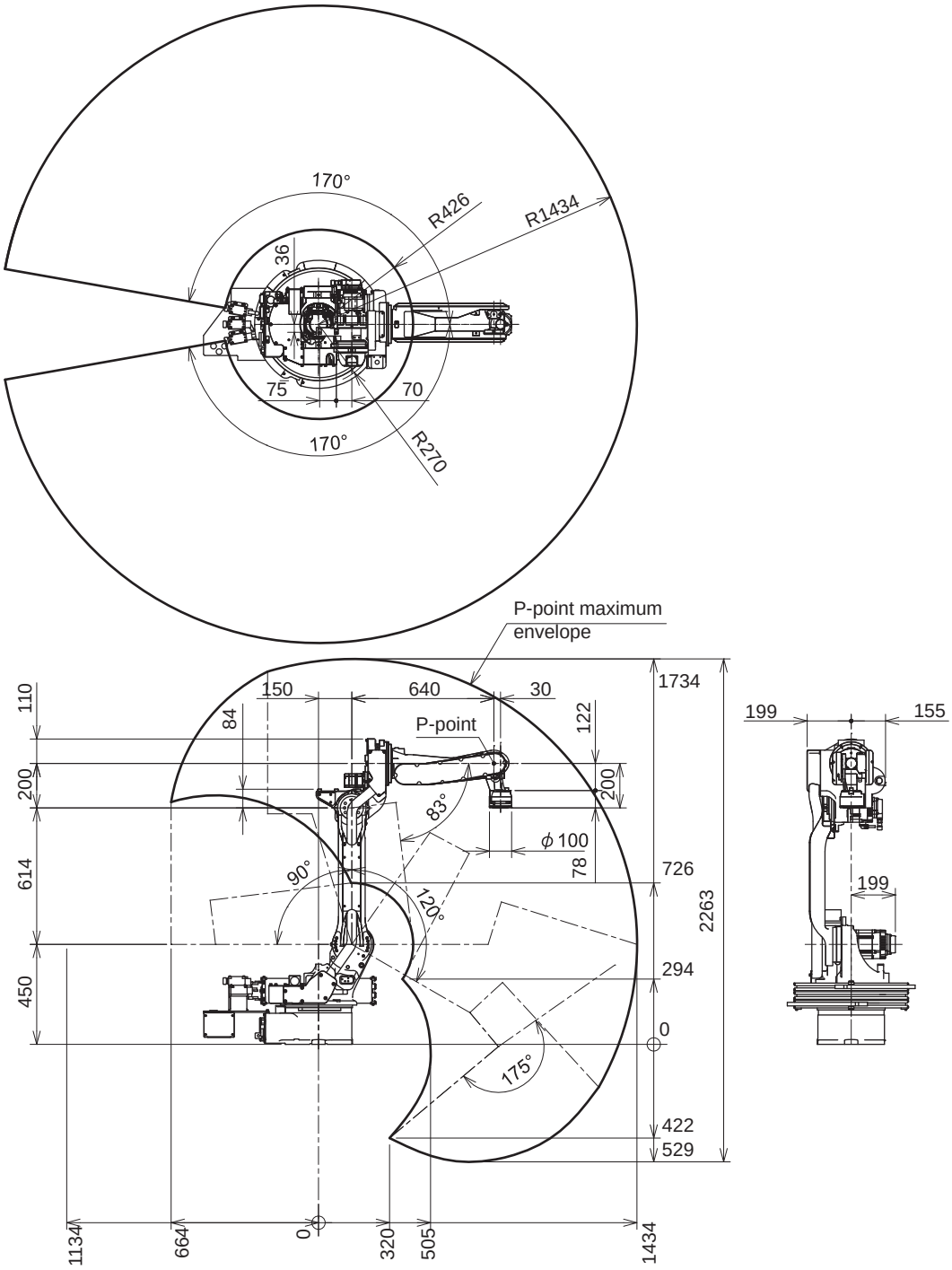
Table 5-1: Basic Specifications [a)]

Item \ Model		MOTOMAN-MA1400-A40
Operation Mode		Vertically Articulated
Degree of Freedom		6
Payload		3 kg
Repetitive Positioning Accuracy [b)]		±0.08 mm
Working Range	S-axis (turning)	-180° - + 180°
	L-axis (lower arm)	-110° - + 140°
	U-axis (upper arm)	-156° - + 220°
	R-axis (wrist roll)	-150° - + 150°
	B-axis (wrist pitch/yaw)	-45° - + 180°
	T-axis (wrist twist)	-200° - + 200°
Maximum Speed	S-axis	3.84 rad/s, 220°/s
	L-axis	3.49 rad/s, 200°/s
	U-axis	3.84 rad/s, 220°/s
	R-axis	7.16 rad/s, 410°/s
	B-axis	7.16 rad/s, 410°/s
	T-axis	10.65 rad/s, 610°/s
Allowable Moment	R-axis	8.8 N•m (0.9 kgf•m)
	B-axis	8.8 N•m (0.9 kgf•m)
	T-axis	2.9 N•m (0.3 kgf•m)
Allowable Moment of Inertia ($GD^2/4$)	R-axis	0.27 kg•m^2
	B-axis	0.27 kg•m^2
	T-axis	0.03 kg•m^2
Mass		130 kg
Ambient Conditions	Temperature	0C° to 45C°
	Humidity	20 to 80% RH (non-condensing)
	Vibration	Less than 4.9 m/s^2 (0.5 G)
	Others	• Free from corrosive gasses or liquids, or explosive gasses • Free from exposure to water, oil, or dust • Free from excessive electrical noise (plasma)
Power Capacity		1.5 kVA

a SI units are used in this table. However, gravitational unit is used in ( ).
b Conformed to ISO9283.

5.4 Dimensions and P-point Maximum Envelope (5-3 page)

Fig. 5-3: Dimensions and P-point Maximum Envelope



8.3 Allocation for S-axis Zone L.S.

This section is a supplemental instruction regarding the descriptions which are not mentioned in the instructions of MOTOMAN-MA1400 with zone limit switches.

Read this manual thoroughly together with the “MOTOMAN-MA1400 INSTRUCTIONS".

This section describes the usage method of the S-axis zone limit switch. (Hereinafter, the zone limit switch is referred as the zone L.S..)

8.3.1 Allocation for S-axis Zone L.S.

Refer to for the mounting position for S-axis zone L.S..

Fig. 8-4(a): Allocation for S-axis Zone L.S. (MOTOMAN-MA1400)

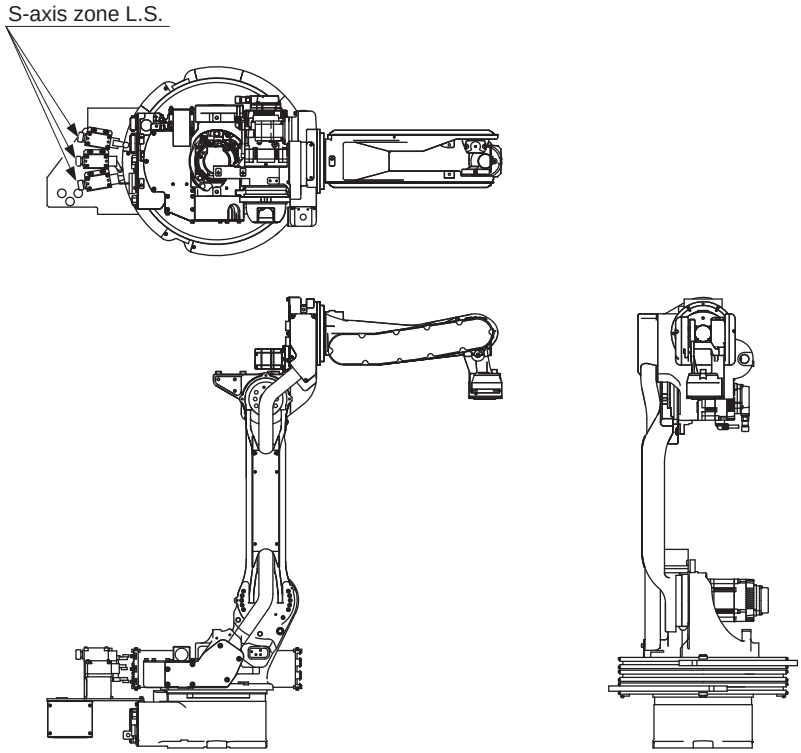
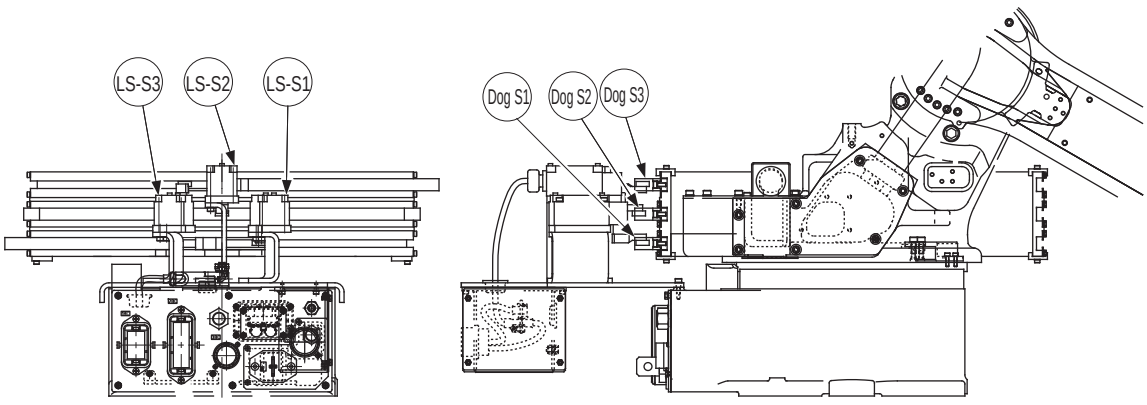


Fig. 8-4(b): Allocation for S-axis Zone L.S.



8.3.2 Specifications

8.3.2.1 S-axis Zone L.S.

1. S-axis zone L.S. indicates the real range of S-axis motion of the manipulator electrically.
2. Divides the range of S-axis into several segments. The information about the operating zone L.S. sends the electronic signals to the controller. The cables of the zone L.S. are allocated in the BOX as shown in "*Fig. 8-4(a)*". And the wiring harness of the zone is shown on the " *Fig. 8-5(a)* ".
3. S-axis zone L.S. consists of the L.S., the dog, the support and the plate as shown in "*Fig. 8-5(b)*". The plate is fixed on the ring which is mounted in the manipulator rotation part, and the plate must be tightened with the support and the dog.

Fig. 8-5(a): Zone L.S. Wiring Harness Connection for S-axis

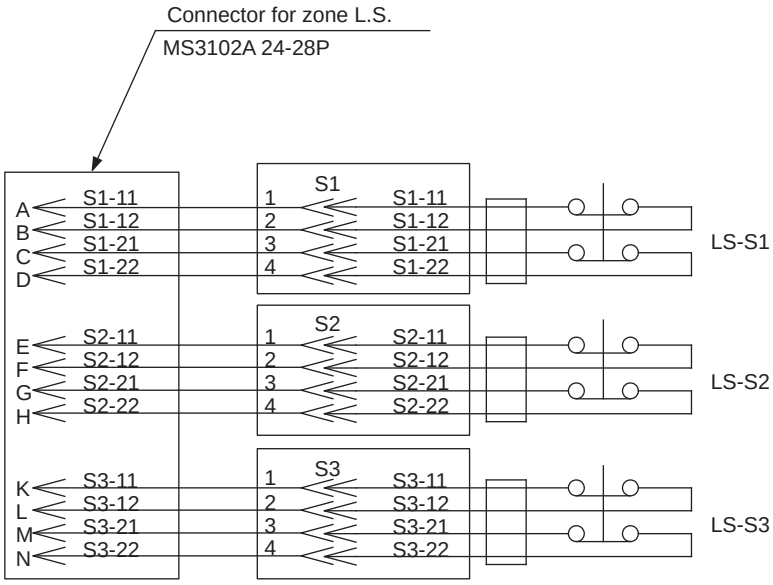
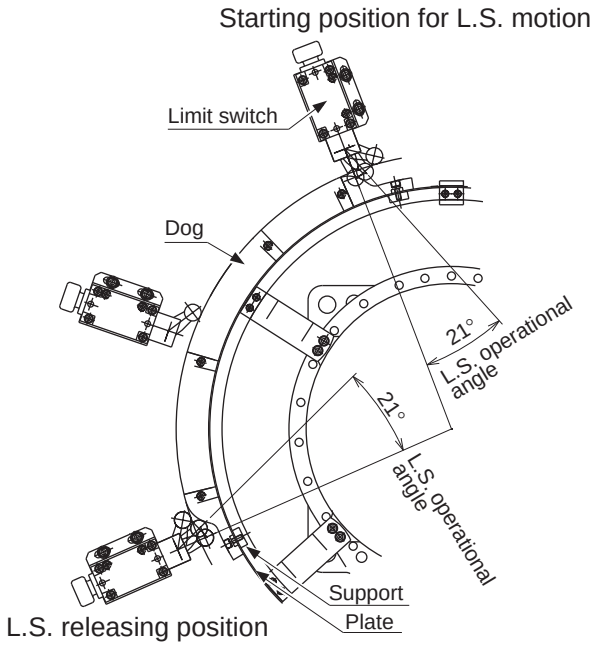


Fig. 8-5(b): L.S. Configuration for S-axis Zone



MOTOMAN-MA1400
INSTRUCTIONS

SUPPLEMENTARY FOR TYPE: YR-MA01400-A40

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