

- 24-hour Telephone Number: (937) 847-3200
- Use for urgent or emergency needs for technical support, service and/or replacement parts
- Routine Technical Inquiries: techsupport@motoman.com
Allow up to 36 hours for response

MOTOMAN-GP12 SUPPLEMENTAL INSTRUCTIONS

TYPE:**YR-1-06VXH12-F00****(FOR FOOD GRADE GREASE)**

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

MOTOMAN INSTRUCTIONS

MOTOMAN-GP12 INSTRUCTIONS

YRC1000 INSTRUCTIONS

YRC1000 OPERATOR'S MANUAL (GENERAL) (SUBJECT SPECIFIC)

YRC1000 MAINTENANCE MANUAL

YRC1000 ALARM CODES (MAJOR ALARMS) (MINOR ALARMS)

Please have the following information available when contacting Yaskawa Customer Support:

- System
- Primary Application
- Software Version (*Located on Programming Pendant by selecting: {Main Menu} - {System Info} - {Version}*)
Robot Serial Number (*Located on robot data plate*)
Robot Sales Order Number (*Located on controller data plate*)

Part Number: 186433-1CD
Revision: 0

Introduction

This supplemental instruction manual describes how YR-1-06VXH12-F00 is different from YR-1-06VXH12-C00.

Point of Difference

The YR-1-06VXH12-F00 is different from the YR-1-06VXH12-C00 in the following point:

- Food grade grease specification
 - Application (GP: Handling application only)
-
- 3.4 Location
 - 5.1 Basic Specifications
 - 9.1 Inspection Schedule
 - 9.4 Grease Replenishment Procedures
 - 10 Recommended Spare Parts

The differences are described based on “MOTOMAN-GP12 INSTRUCTIONS (DRIP-PROOF SPECIFICATION)” (Manual No. HW1485830). Read this manual thoroughly replacing the subject matters for changes with this supplementary instruction manual.



- For this specification, grease only differs from the drip-proof specification.
- Before using the specific applications, the user must perform sufficient risk assessment with the system integrator.

3	Installation
3.4	Location

3.4 Location

When installing a manipulator, it is necessary to satisfy the following environmental conditions:

- Ambient temperature: 15 to + 45°C
- Humidity: 20 to 80%RH
- Free from dust, soot, or oil
- Free from corrosive gas or liquid, or explosive gas or liquid
- Free from excessive vibration (Vibration acceleration: 4.9 m/s^2 [0.5 G] or less)
- Free from large electrical noise (plasma)
- Free from the strong magnetic field
- Altitude: 1000 m or less
- Flatness for installation: 0.5 mm or less



When the operation is started after the manipulator has been out of operation and left in the low temperature (almost 15°C) for a long period, the alarm may occur since the friction torque of the drive unit is large. Break in the R-axis at 50% of the maximum speed for about 5 minutes until it is warmed up before the actual operation.

5	Basic Specifications
5.1	Basic Specifications

5 Basic Specifications

5.1 Basic Specifications

Table 5-1: Basic Specifications¹⁾

Item	Model	YR-1-06VXH12-F00
Structure		Vertically Articulated
Degree of freedom		6
Payload	Wrist part	12 kg
	U-arm ²⁾	10 kg
Repeatability ³⁾		±0.06 mm
Range of Motion	S-Axis (turning) ⁴⁾	-170° - +170° (Wall-mounted way: -30° - +30°)
	L-Axis (lower arm)	-90° - +155°
	U-Axis (upper arm)	-85° - +150°
	R-Axis (wrist roll)	-200° - +200°
	B-Axis (wrist pitch/yaw)	-150° - +150°
	T-Axis (wrist twist)	-455° - +455°
Maximum Speed	S-Axis	4.53 rad/s, 260° /s
	L-Axis	4.01 rad/s, 230° /s
	U-Axis	4.53 rad/s, 260° /s
	R-Axis	8.20 rad/s, 470° /s
	B-Axis	8.20 rad/s, 470° /s
	T-Axis	12.2 rad/s, 700° /s
Allowable Moment ⁵⁾	R-Axis	22 N•m (2.2 kgf•m)
	B-Axis	22 N•m (2.2 kgf•m)
	T-Axis	9.8 N•m (1.0 kgf•m)
Allowable Inertia ⁵⁾ (GD ² 4)	R-Axis	0.65 kg•m ²
	B-Axis	0.65 kg•m ²
	T-Axis	0.17 kg•m ²
Approx. Mass		155 kg
Protective enclosure		Body: IP65 Wrist part: IP67
Mounting method ⁴⁾		Floor-, wall-, tilt-, ceiling-mounted
Ambient Conditions	Temperature	15 to 45°C
	Humidity	20 to 80% RH
	Vibration	4.9 m/s ² (0.5G) or less
	Altitude	1000 m or less
	Others	Free from corrosive gas or liquid, or explosive gas Free from excessive electrical noise (plasma) Free from strong magnetic field
Power Capacity		1.5 kVA
Applicable controller		YRC1000
Equivalent continuous sound pressure level ⁶⁾		73 dB or less

1 SI units are used in this table. However, gravitational unit is used in ()

2 The load applied on the U-arm will vary depending on the load mass of the wrist part. For details, refer to *chapter 7.1.1 "Allowable Load"*.

3 Conformed to ISO9283

4 For the tilt-, and the wall-mounted ways, S-axis has the limited operating range. For details, refer to *chapter 3.3.1 "S-Axis Operating Range"*.

5 Refer to *chapter 6.1 "Allowable Wrist Load"* for details on the allowable inertia.

6 Conformed to equivalent continuous A-weighted sound pressure level measured in accordance with ISO11201(EN31201).

1, Measurement is carried out when the maximum load is mounted to the manipulator and operated in the maximum speed.

2, Measurement is carried out:

-between 1.2m and 1.5m above the ground.

-400mm away from the P-point maximum envelope.

9 Maintenance and Inspection
 9.1 Inspection Schedule

Table 9-1: Inspection Items (Sheet 1 of 2)

Items ¹⁾	Schedule					Method	Operation	Inspection Charge		
	Daily	1000HCycle	1200HCycle	18000H	24000H			Specified Personnel	Licensee	Service Company
1	Alignment mark	●				Visual	Check alignment mark accordance at the home position. Check for damage. Check for misalignment of the position at the check point.	●	●	●
2	Working area and manipulator	●				Visual	Check for seeped oil. (Wipe it off if any.) Clean the work area if dust, spatter or seeped oil is present. Check for damage and outside cracks.	●	●	●
3	Baseplate mounting bolts		●			Spanner Wrench	Tighten loose bolts. Replace if necessary.	●	●	●
4	Connector for manipulator cable		●			Manual	Check for loose connectors.	●	●	●
5	Drain plug		●			Wrench	Discharge water content due to dew condensation in the manipulator.	●	●	●
6	Timing belts for B- and T-axes			●		Manual Visual	Check for belt tension and the condition. (Replace if failure of tooth, swelling, or abnormal abrasion occurs.)	●	●	●
7	Wire harness in manipulator (Lead for the SLU-axes wires) (Power supply board included)	●		●		Visual Manual Visual	Check for damage. Clean this part if it is dirty. Check the condition of flexible hose. (Replace if any crack or abnormal abrasion)	●	●	●
8	Wire harness in manipulator (Lead for the BT-axis wires)					Visual	Replace Check the condition of the fixed part.			●
9	Battery pack in manipulator						Replace Replace the battery pack when the battery alarm occurs or the manipulator drove for 24000H.			●
10	S, L, U, R-axis motor						Check for grease leakage.	●	●	●
11	S, L, U-axis speed reducer					Grease Gun	Check for malfunction. (Replace if necessary.) Replace grease ²⁾ (12000H cycle).	●	●	●

9 Maintenance and Inspection
 9.1 Inspection Schedule

Table 9-1: Inspection Items (Sheet 2 of 2)

Items ¹⁾	Schedule				Method	Operation	Inspection Charge		
	Daily	1000HCycle	1200HCycle	1800H 2400H			Specified Personnel	Licensee	Service Company
12 R, B-axis speed reducer			●		Hand Pump Injection Syringe	Check for malfunction. (Replace if necessary.) Supply grease ²⁾ (12000H cycle).		●	●
13 R, T-axis gear			●		Hand Pump Injection Syringe	Check for malfunction. (Replace if necessary.) Supply grease ²⁾ (12000H cycle).		●	●
14 Overhaul				●					●

1 Inspection No. correspond to the numbers in fig. 9-1 "Inspection Items".

2 For the grease, refer to table 9-2 "Inspection Parts and Grease Used".

Table 9-2: Inspection Parts and Grease Used

No.	Grease Used	Inspected Parts
11	CASSIDA grease EPS00	S-, L- and U-axes speed reducers
12,13	Harmonic Grease HFL-1	R- and B-axes speed reducers, R, T-axes gear

- 9 Maintenance and Inspection
 - 9.4 Notes on Grease Replenishment/Exchange Procedures
-

9.4 Notes on Grease Replenishment/Exchange Procedures

Interpret the corresponding grease type as follows.

S-, L-, and U-axes

RV grease LB No.00 → CASSIDA grease EPS00

R-, B-, and T-axes

Harmonic Grease SK-1A → Harmonic Grease HFL-1

10 Recommended Spare Parts

It is recommended to keep the parts and components in the following table in stock as spare parts for the YR-1-06VXH25-C00.

To purchase lead wires of the wire harness or etc., check the order/ manufacture no. and contact YASKAWA representative.

Product performance cannot be guaranteed when using spare parts from any company other than YASKAWA. The spare parts are ranked as follows:

- Rank A: Expendable and frequently replaced parts.
- Rank B: Parts for which replacement may be necessary as a result of frequent operation.
- Rank C: Drive unit.



For replacing parts in Rank B or Rank C, contact your YASKAWA representative.

Table 10-1: Spare Parts for the YR-1-06VXH12-F00

Rank	Parts No.	Name	Type	Manufacturer	Qty	Qty per Unit	Remarks
A	1	Grease	CASSIDA Grease EPS00	YASKAWA Electric Corporation	19 kg	-	
A	2	Grease	Harmonic Grease HFL-1	YASKAWA Electric Corporation	2.5 kg	-	
A	3 4	Grease	CASSIDA Grease EPS02	YASKAWA Electric Corporation	19 kg	-	
B	21	Replacement Kit for R-Axis Speed Reducer ^{a)}	HW1485908-A	YASKAWA Electric Corporation	1	1	Speed Reducer: HW1382521-C Set Gear: HW1484046-A
B	22	Replacement Kit for B-Axis Speed Reducer ^{a)}	HW1485909-A	YASKAWA Electric Corporation	1	1	Speed Reducer: HW1382522-C
B	24	Wrist Unit	HW1173820-B	YASKAWA Electric Corporation	1	1	

^a The replacement kit for speed reducer includes the speed reducer and gear described in the remarks column. For details on the speed reducer replacement kit, contact your YASKAWA representative.

MOTOMAN-GP12

SUPPLEMENTAL INSTRUCTIONS

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