Kawasaki Robotics

Standard specifications

BX165NFE02

1st Edition : October 31, 2016
2nd Edition : May 10, 2018

KAWASAKI HEAVY INDUSTRIES, LTD.

ROBOT DIVISION

Specification :	90101-2498DEB
(Arm) :	90151-0166DEB
(Controller) :	90152-0005DEA

1. Specification of Robot

[1] Robot Arm

1. Model	BX165N-C
2. Type	Articulated robot
3. Degree of freedom	6 axes (Option 7 axes)

4. Axis specification

Operating axis		Max. operating range	Max. speed
Arm rotation	(JT1)	+160 ° ～−160 °	105 °/s
Arm out-in	(JT2)	+76 ° ～−60 °	130 °/s
Arm up-down	(JT3)	+90 ° ～−75 °	130 °/s
Wrist swivel	(JT4)	+210 ° ～−210 °	120 °/s
Wrist bend	(JT5)	+125 ° ～−125 °	160 °/s
Wrist twist	(JT6)	+210 ° ～−210 °	300 °/s

5. Repeatability	±0.06 mm (at the tool mounting surface)
6. Max. payload	165 kg
7. Max. linear interpolation speed	5000 mm/s

8. Load capacity of wrist

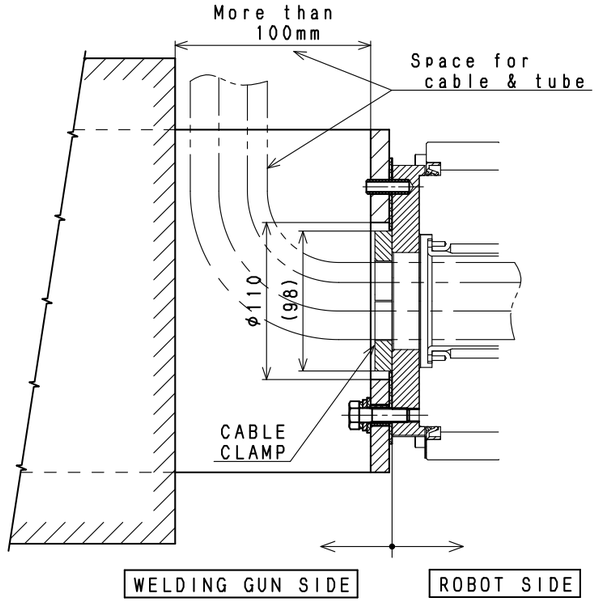
	Max. torque	Moment of inertia*
JT4	930 N·m	99 kg·m^2
JT5	930 N·m	99 kg·m^2
JT6	490 N·m	49.5 kg·m^2

Note* Each value in this table shows allowable moment of inertia of JT4/JT5/JT6 when max. allowed torque is applied to each axis. If more detailed data is required for your application, please contact Kawasaki.

9. Driving motor	Brushless AC Servomotor
10. Working range	See attached drawing
11. Mass	875 kg (without options)
12. Color	Munsell 10GY9/1 equivalent
13. Installation	Floor mounting
14. Environment cond.	(Temperature) 0 ～ 45 °C, (Humidity) 35 ～ 85 %, no dew, nor frost allowed
15. Dressing	Cable length between flange and tool is 1.5m. Consult Kawasaki when non-standard dressing will be applied.
16. Options	Adjustable mechanical stoppers JT1/JT2/JT3
	Adapter bracket for tool
17. Others	Consult Kawasaki about maintenance parts and spare parts.

[2] Controller			
1. Model		E02	
2. Enclosure		Enclosed structure / Indirect cooling system	
3. Dimensions		See attached drawing	
4. Number of controlled axes		Max.9 axes (standard 7 axes, option 2 axes)	
5. Servo control and drive system		Full Digital Servo System	
6. Type of control		Teach mode	Joint, Base, Tool, Fixed Tool (option) operation mode
		Repeat mode	Joint, Linear, Circular (option) interpolation
7. Teaching method		Teaching or AS language programming	
8. Memory capacity		8 MB	
9. External operation signals		External Emergency stop, External Hold, etc.	
10. Number of IO slots		3 slots	
11. Operation panel		Teach/Repeat SW, Emergency Stop SW, Control power lamp	
12. Communication I/F		Ethernet(100BASE-TX) , USB, RS-232C each 2port (1port on panel, 1port inside controller)	
13. Mass		See attached drawing	
14. Power requirement		AC200 V - AC220 V±10%, 50/60 Hz, 3 phases, Max. 7.5 kVA	
15. Ground		Less than 100 Ω (robot dedicated ground) Leakage current: max. 100 mA	
16. Ambient temperature		0 - 45℃	
17. Relative humidity		35 - 85 % (non-condensation)	
18. Color		Munsell: 10GY9/1 equivalent	
19. Teach Pendant		TFT color display (5.7 inch LCD) with touch panel Emergency Stop SW, Teach Lock SW and Enable SW	
20. Safety Circuit		Category: 4, Performance Level: e (EN ISO13849-1) ★	
21. Standard Options			
	General purpose IO board	IN:32 OUT:32 NPN(sink) type or PNP(source) type	
	TP sheet language	English or Japanese or Chinese	
	I/O connector	D-SUB 37pin(male, female) with cover	
	Power/Signal cable	5m, 10m, 15m	
	Teach Pendant cable	5m, 10m, 15m	
	Transformer unit	AC380V-415V / AC440V-480V by tap selection	
22. Other Options			
	Additional IO board	IN:64/96 OUT:64/96 NPN(sink) type or PNP(source) type	
	Motor brake release	Manual brake release switch BOX	
	PC cable (RS-232C)	1.5 m, 3 m	
	External axes control	Additional amplifier and harnesses for external axes	
	Extended safety functions	Cubic-S(Motion area monitoring, Joint monitoring, Speed monitoring etc.)	
	Teach Pendant option	Connector for TP less	
	Fast check mode	Fast check mode Switch	
	Others	Field BUS, Software PLC, Analog input/output, Conveyor Synchronization	
23. Others		Consult Kawasaki about maintenance parts and spare parts.	

★ Category and Performance level (PL) are determined by the whole system and conditions.
The safety circuit of this controller is available in the system of category: up to 4, PL: up to e.

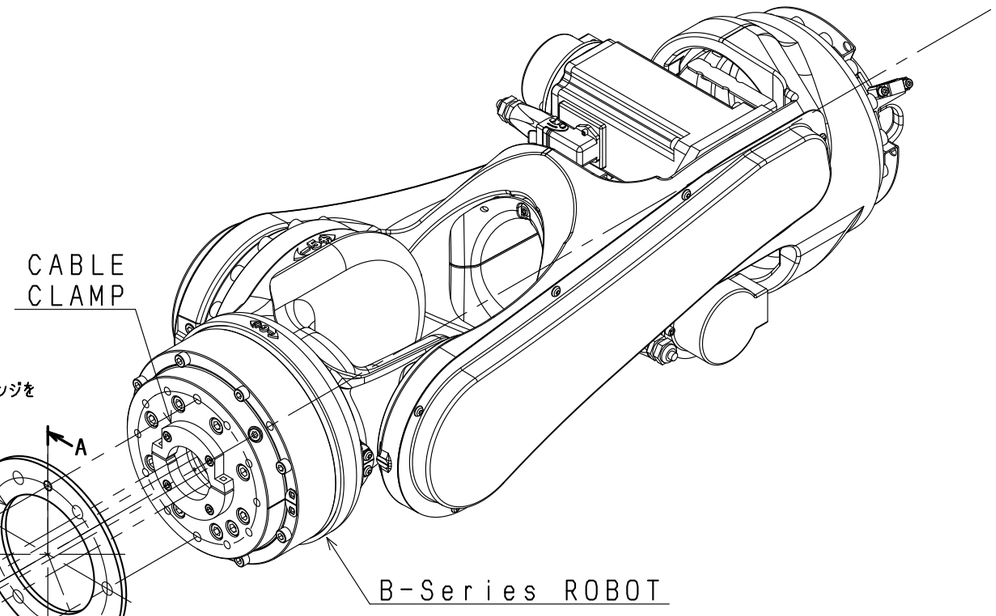


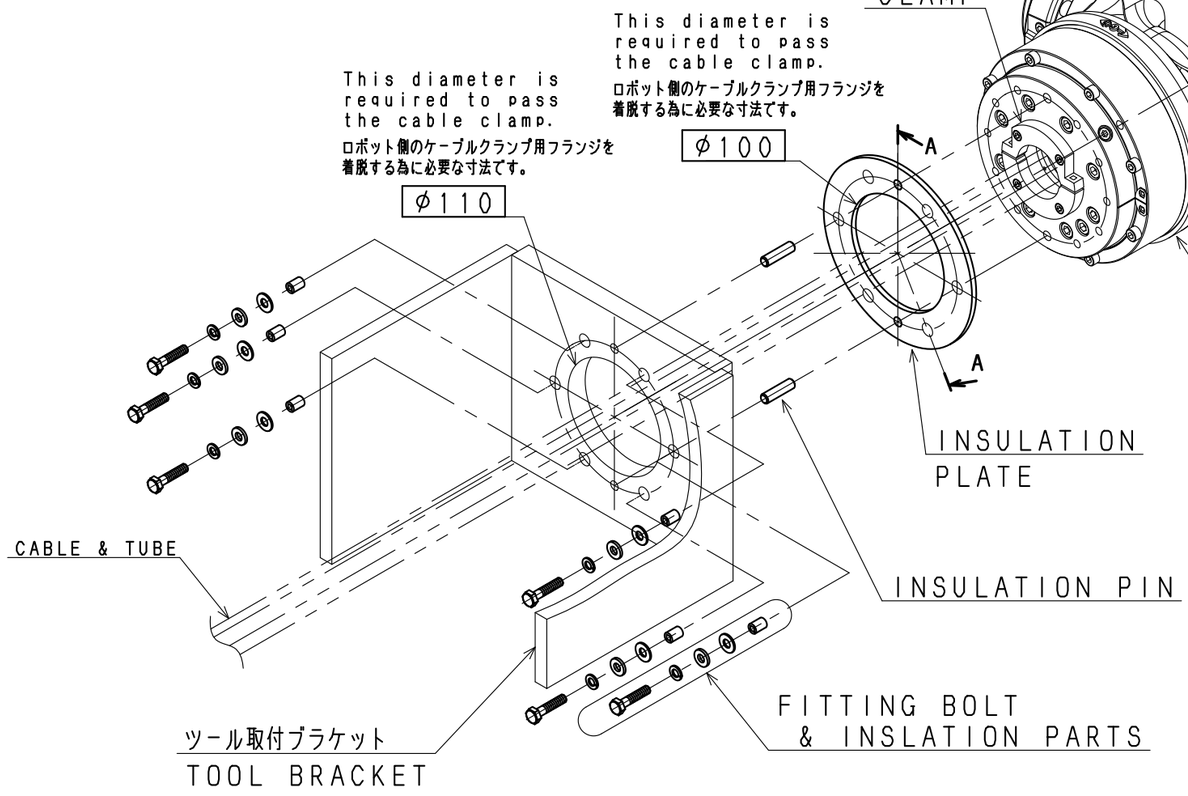
SECTION：A-A

CABLE & TUBE

NULL POSITION OF THE ROBOT

ロボット標準姿勢





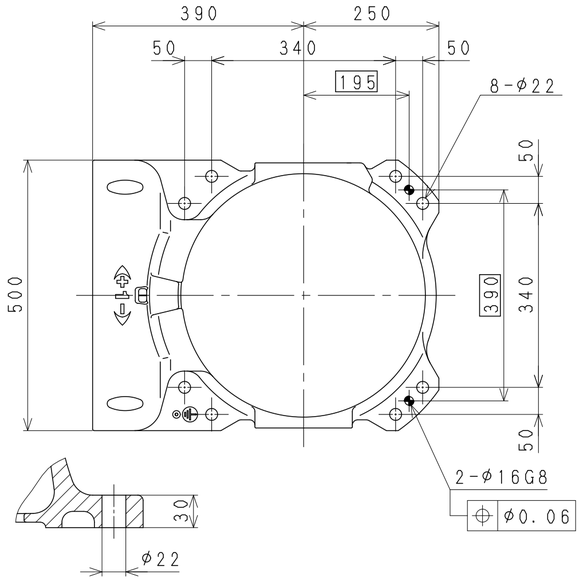
注記

1. 本図は、一例としてロボット手首へのツール
の取付要領を示します。

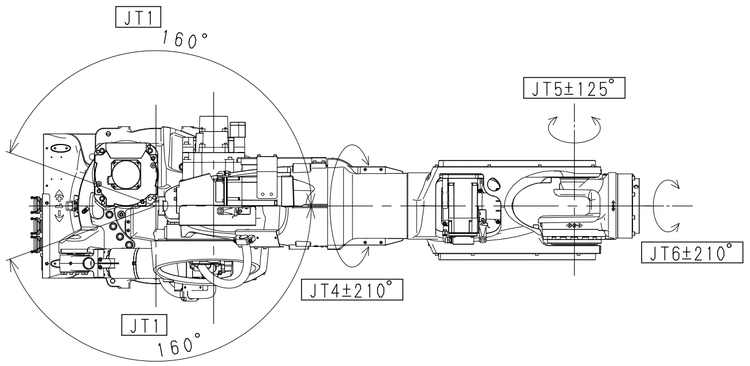
NOTES

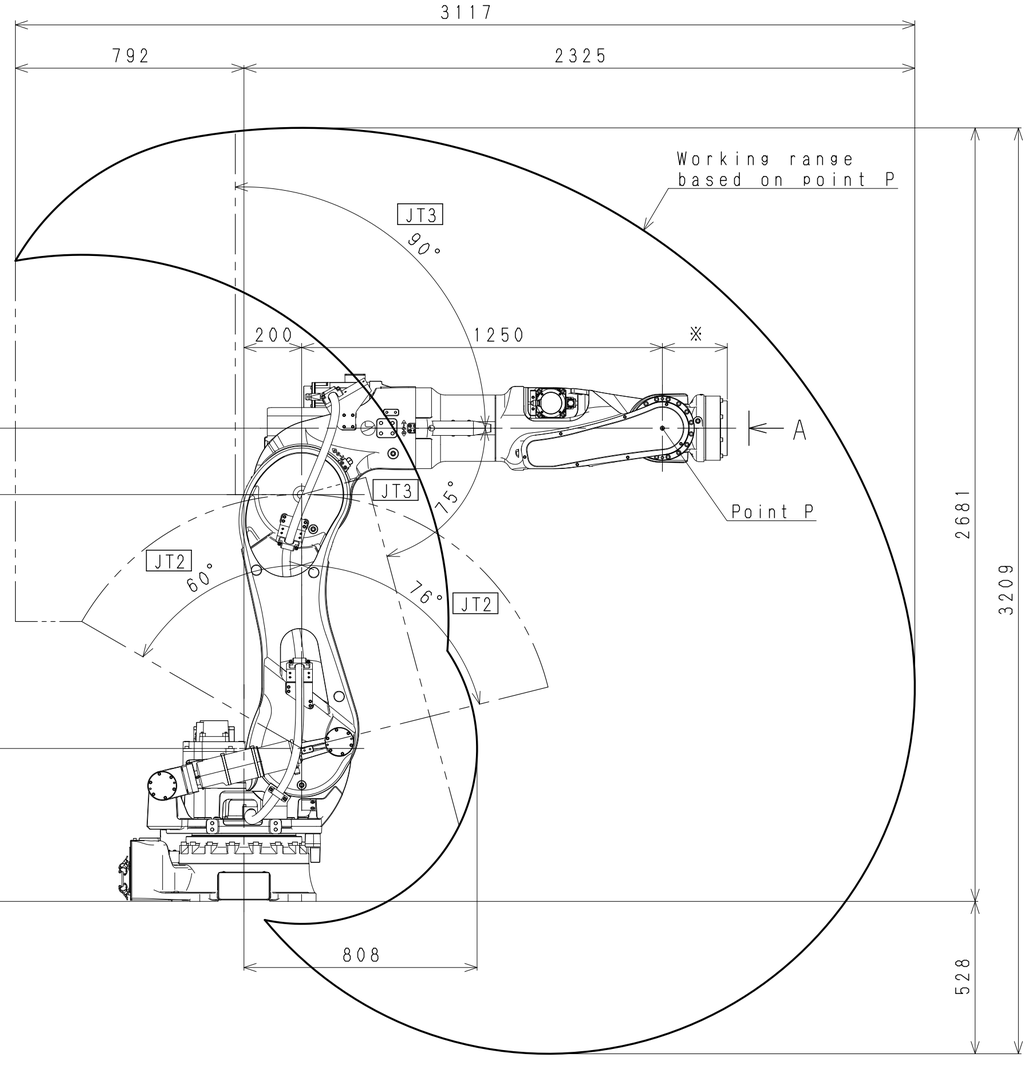
1. This figure shows
as an example how to
install a tool to
the robot wrist.

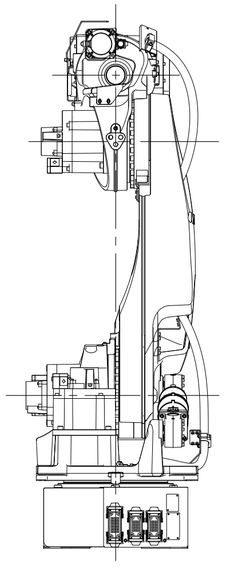
B-Series ROBOT
TOOL INSTALLATION PROCEDURE
（ツール取付要領図）

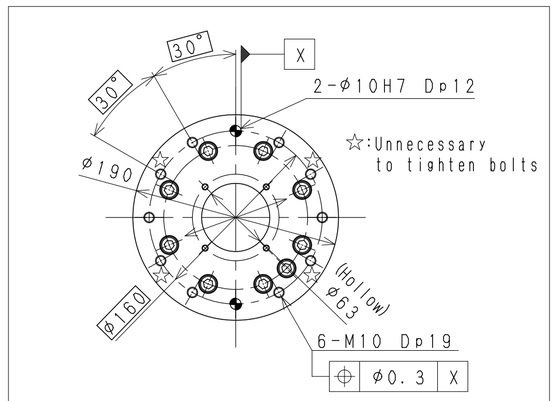


Installation Dimensions



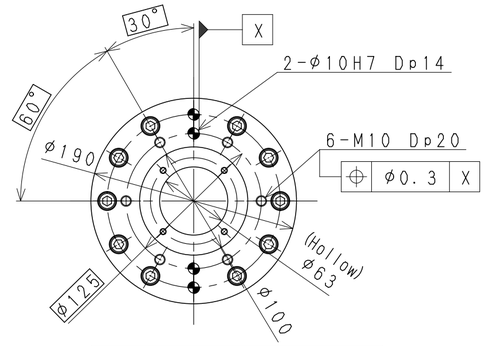






STANDARD FLANGE

※ Dimension:225



OPTION FLANGE

※ Dimension:245

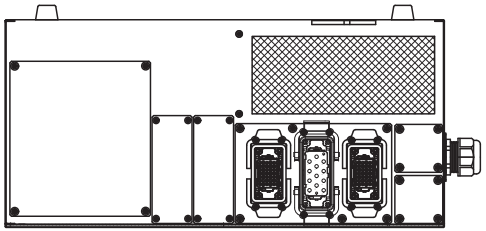
VIEW A

BX165N

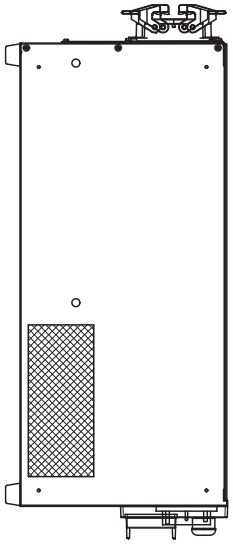
WORKING RANGE

E02 CONTROLLER

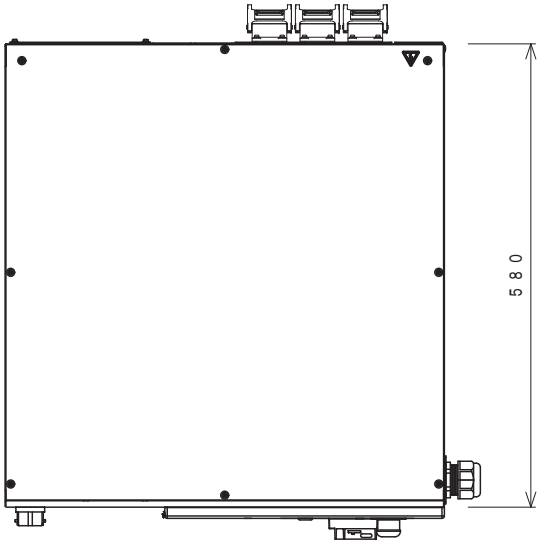
MASS：40Kg



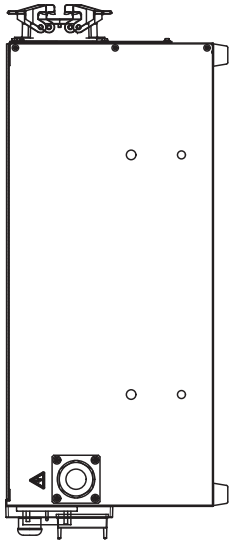
REAR VIEW



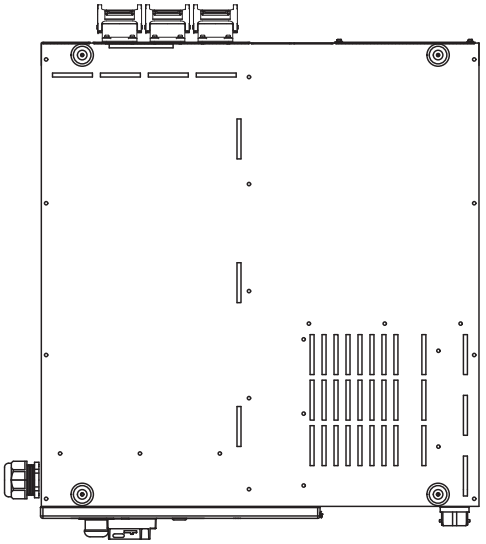
SIDE VIEW



TOP VIEW

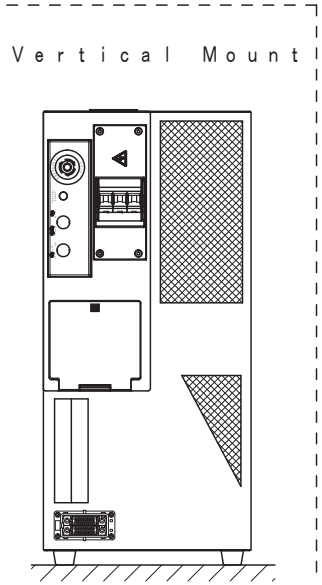


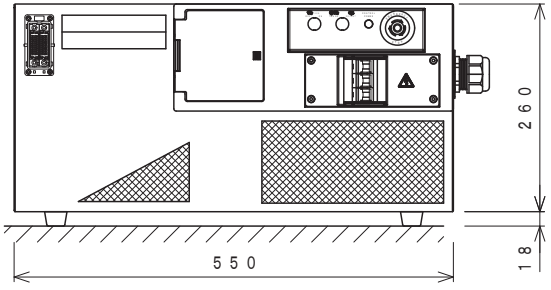
SIDE VIEW



BOTTOM VIEW

Vertical Mount





FRONT VIEW