

# Product specification

## Linear Axis

Power and productivity  
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## **Product specification**

### **IRB 6620LX-150/1.9**

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**Revision: K**

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# Overview of this specification

## About this product specification

This product specification describes the performance of the Linear Axis in terms of:

- The structure and dimensional prints
- The fulfilment of standards, safety and operating requirements
- The motion and reach
- The specification of variants and options available

## Usage

Product specifications are used to find data and performance about the product, for example to decide which product to buy. How to handle the product is described in the product manual.

## Users

This specification is intended for:

- Product managers and product personnel
- Sales and marketing personnel
- Order and customer service personnel

## References

Reference	Document ID
<i>Product specification - Controller IRC5</i> IRC5 with main computer DSQC1000.	3HAC047400-001
<i>Product specification - Controller software IRC5</i> IRC5 with main computer DSQC1000 and RobotWare 5.6x.	3HAC048264-001
<i>Product specification - Controller software IRC5</i> IRC5 with main computer DSQC1000 and RobotWare 6.	3HAC050945-001
<i>Product specification - IRB 6620</i>	3HAC025861-001
<i>Product manual - IRB 6620LX</i>	3HAC035737-001
<i>Product specification - Robot user documentation, IRC5 with RobotWare 6</i>	3HAC052355-001

## Revisions

Revision	Description
-	New product specification
A	New document structure
B	Text for Standards updated, corrections
C	Option Double Carriage added, minor corrections
D	<ul style="list-style-type: none"> <li>• Table for ambient temperature adjusted</li> <li>• Minor corrections</li> </ul>
E	<ul style="list-style-type: none"> <li>• Machinery directive updated</li> </ul>

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Revision	Description
F	<ul style="list-style-type: none"><li>• General updates/corrections</li><li>• Information regarding location of controller connection at Double carriage</li></ul>
G	<ul style="list-style-type: none"><li>• Information regarding warranty added</li><li>• Measures for mounting the frame support added</li></ul>
H	<ul style="list-style-type: none"><li>• New standard color added</li><li>• Minor corrections/update</li></ul>
J	<ul style="list-style-type: none"><li>• Information regarding performance for double carriages added</li></ul>
K	<ul style="list-style-type: none"><li>• Minor corrections/update</li></ul>



# 1 Description

## 1.1 Structure

### 1.1.1 Introduction to the structure

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**General**

The IRB 6620LX-150/1.9 combines a linear axis 1 with a five axes articulated manipulator. Complex operations and handling tasks can be solved more flexible, and cost efficient with an articulated robot on a linear axis compared with a customized linear handling system.

Typical usage can be tending of machine tool, injection moulding, die cast, assembly lines, and process applications.

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**IRC5 and RobotWare**

The robot is equipped with the IRC5 controller and robot control software RobotWare, that supports every aspect of the robot system, such as motion control, development and execution of application programs, communication, etc. See *Product specification - Controller IRC5 with FlexPendant* and *Product specification - Controller software IRC5*.

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**Safety**

Safety standards require that the IRB 6620LX is connected to the robot system.

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**Additional functionality**

For additional functionality, the IRB 6620LX can be equipped with optional software for motion coordination and application support.

For example *MultiMove Coordinated*, see *Product specification - Controller software IRC5*.

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**Warranty**

Warranty valid for the Linear Axis is the same as the warranty selected for the 5-axis manipulator, on the specification form for IRB 6620.

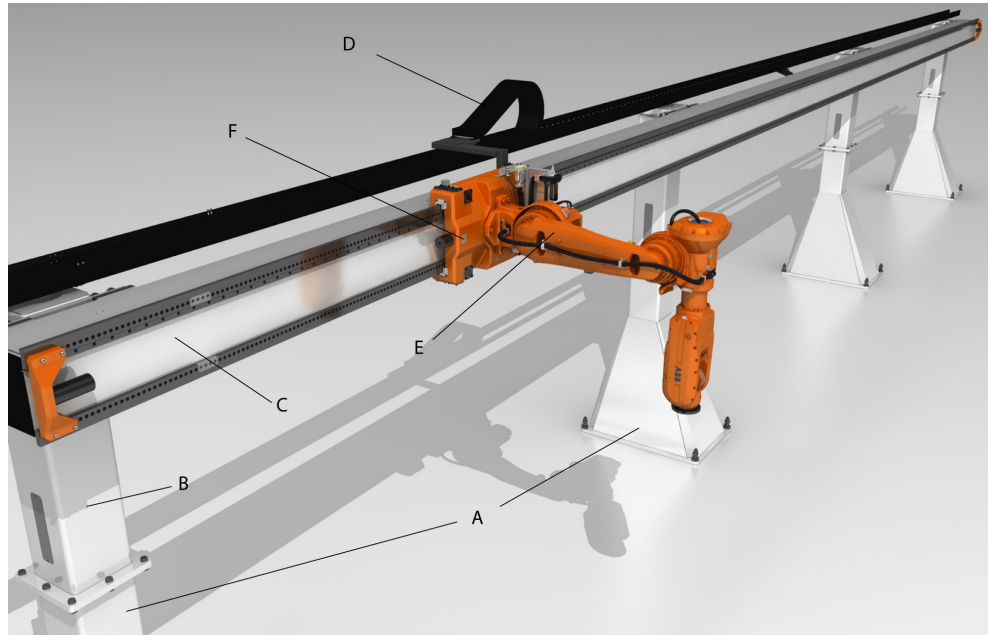
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# 1 Description

## 1.1.1 Introduction to the structure

*Continued*

### IRB 6620LX-150/1.9



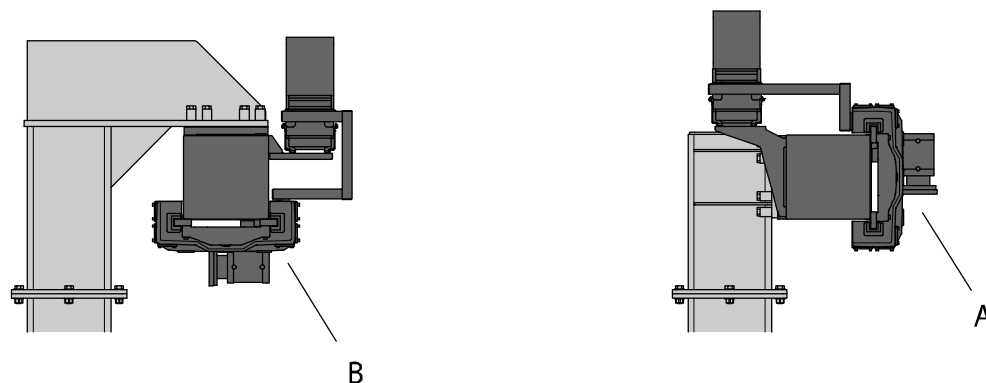
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Pos	Description	Pos	Description
A	Lower Leg	D	Cable chain
B	Upper Leg	E	5 axis manipulator
C	Beam	F	Carriage, axis 1

## 1.1.2 The IRB 6620LX robot

### Introduction

The IRB 6620LX-150/1.9 is available in two configurations, for side or inverted installed manipulator (see figure below) and with travel length between 1.8 and 33.0 meters and height between 2.5 and 4.0 meters.



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Pos	Description
A	Side mounted manipulator
B	Inverted mounted manipulator

### Weight

Below is the weight of the different parts of the robot system specified.

Part	Description	Weight
Manipulator	Axes 2 - 6	610 kg
Linear axis 1	Min travel length 1.8 m + carriage	860 kg
Beam	Weight per each extra 1 m travel length	250 kg/m
Upper leg		530 kg
Lower leg	Max height	1300 kg

### Other technical data

Data	Description	Note
Airborne noise level	The sound pressure level outside the working space	< 74 dB (A) Leq / 1m (acc. to Machinery directive 2006/42/EG).

### Power consumption at max load

Type of movement	IRB 6620LX-150/1.9
ISO Cube	3.0 kW

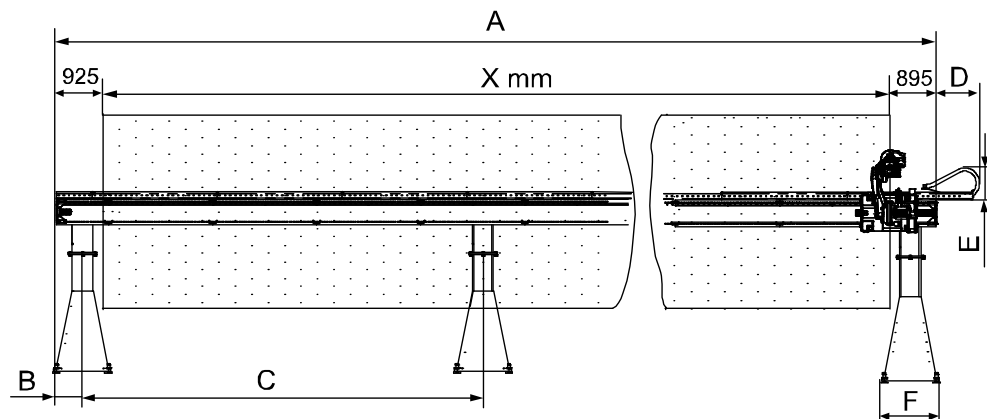
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# 1 Description

## 1.1.2 The IRB 6620LX robot

*Continued*

### Dimensions

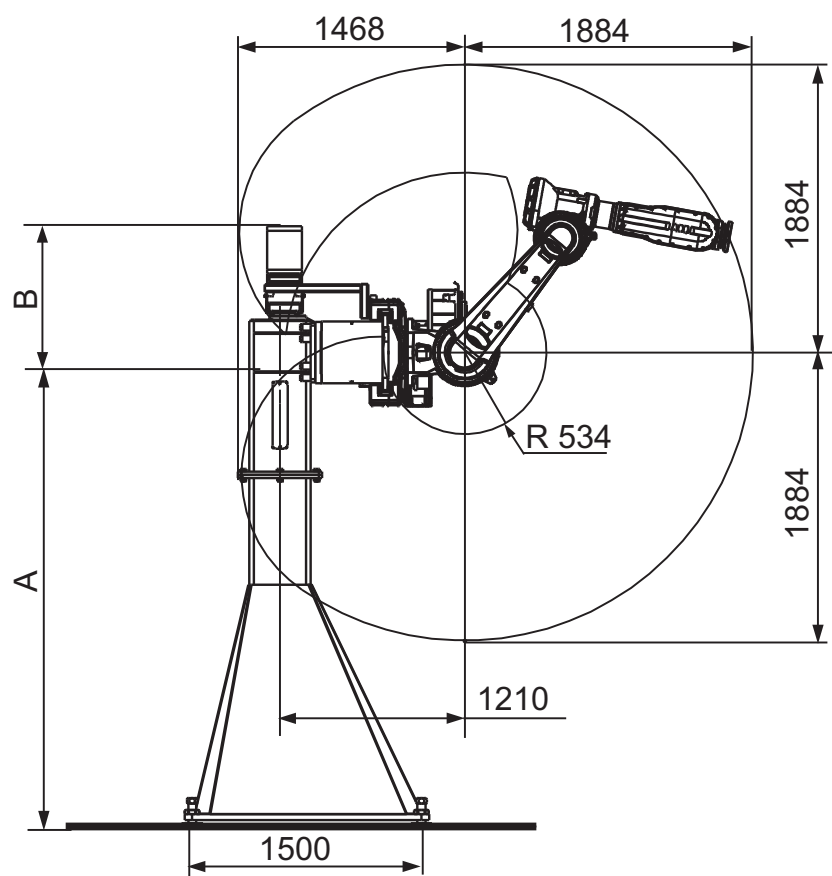


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Pos	Description
A	Total beam length = Selected travel length X (1800 to 33000) <sup>i</sup> + 1800 mm.
B	550 to 2750 mm (in steps of 100 mm)
C	Distance between 1500 to 8000 mm (in steps of 100 mm) as standard. Up to 12000 mm possible but risk that performance may be affected.
D	Max 800 mm (valid for both sides for double carriage)
E	Max 500 mm
F	1100 mm

<sup>i</sup> Actual travel length is 20 mm shorter than specified.

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Pos	Description
A	Selected height 2500 to 4000 mm (in steps of 100 mm).
B	Max 500 mm (cable chain)



### Note

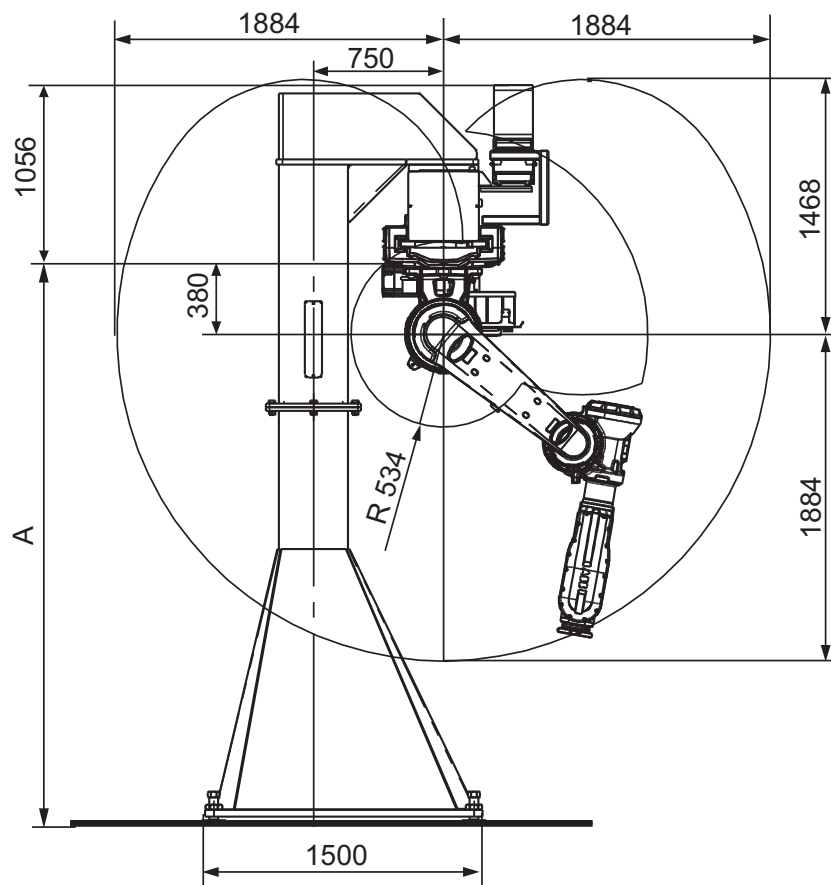
Height is defined differently depending on manipulator installation.

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# 1 Description

## 1.1.2 The IRB 6620LX robot

Continued



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Pos	Description
A	Selected height 2500 to 4000 mm (in steps of 100 mm).

## 1.2 Standards and safety

### 1.2.1 Applicable safety standards

#### Standards, EN ISO

The robot system is designed in accordance with the requirements of:

Standard	Description
EN ISO 12100	Safety of machinery - General principles for design - Risk assessment and risk reduction
EN ISO 13849-1	Safety of machinery, safety related parts of control systems - Part 1: General principles for design
EN ISO 13850	Safety of machinery - Emergency stop - Principles for design
EN ISO 10218-1	Robots for industrial environments - Safety requirements - Part 1 Robot
EN ISO 9787	Robots and robotic devices -- Coordinate systems and motion nomenclatures
EN ISO 9283	Manipulating industrial robots, performance criteria, and related test methods
EN ISO 14644-1 <sup>i</sup>	Classification of air cleanliness
EN ISO 13732-1	Ergonomics of the thermal environment - Part 1
EN IEC 61000-6-4 (option 129-1)	EMC, Generic emission
EN IEC 61000-6-2	EMC, Generic immunity
EN IEC 60974-1 <sup>ii</sup>	Arc welding equipment - Part 1: Welding power sources
EN IEC 60974-10 <sup>ii</sup>	Arc welding equipment - Part 10: EMC requirements
EN IEC 60204-1	Safety of machinery - Electrical equipment of machines - Part 1 General requirements
IEC 60529	Degrees of protection provided by enclosures (IP code)

<sup>i</sup> Only robots with protection Clean Room.

<sup>ii</sup> Only valid for arc welding robots. Replaces EN IEC 61000-6-4 for arc welding robots.

#### European standards

Standard	Description
EN 614-1	Safety of machinery - Ergonomic design principles - Part 1: Terminology and general principles
EN 574	Safety of machinery - Two-hand control devices - Functional aspects - Principles for design
EN 953	Safety of machinery - General requirements for the design and construction of fixed and movable guards

#### Other standards

Standard	Description
ANSI/RIA R15.06	Safety requirements for industrial robots and robot systems

*Continues on next page*

## 1 Description

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### 1.2.1 Applicable safety standards

*Continued*

Standard	Description
ANSI/UL 1740 (option 429-1)	Safety standard for robots and robotic equipment
CAN/CSA Z 434-03 (option 429-1)	Industrial robots and robot Systems - General safety requirements



## 1.3 Installation

### 1.3.1 Introduction to installation

---

#### Introduction

The linear axis and the 5 axes manipulator are delivered separately and must be installed and assembled together on site. The linear axis is intended for floor mounting on therefore designed legs or mounted onto already existing stands. Detailed information regarding mechanical installation can be found in the product manual.

# 1 Description

## 1.3.2 Operating requirements

### 1.3.2 Operating requirements

#### Protection standards

Protection	Description	Class
Standard	Axis 1 (linear axis)	IP66 (connectors IP67)
Standard	Axis 2-6 (articulated manipulator)	IP54
Foundry Plus 2	Axis 2-6 (articulated manipulator)	IP67

#### Explosive environments

The IRB 6620LX must not be located or operated in an explosive environment.

#### Ambient temperature

Description	Standard/Option	Temperature
During operation	Standard	+ 5 °C <sup>i</sup> (41 °F) to + 50 °C (122 °F)
During transportation and storage	Standard	- 25 °C (-13 °F) to + 55 °C (131 °F)
For short periods (not exceeding 24 hours)	Standard	up to + 70 °C (158 °F)

<sup>i</sup> At low environmental temperature < 10 °C is, as with any other machine, a warm-up phase recommended to be run with the robot. Otherwise there is a risk that the robot stops or run with lower performance due to temperature dependent oil- and grease viscosity.

#### Relative humidity

Description	Relative humidity
Complete unit during transportation and storage	Max. 95% at constant temperature
Complete unit during operation	Max. 95% at constant temperature

## 1.3.3 Forces

**CAUTION**

If two IRB 6620LX are mounted on the same linear axis, then they may influence each other causing vibrations. Therefore, is the securing of the frame support extra important for applications where even small vibrations can cause disturbances.

**Forces, side mounted robot**

Robot loads	Endurance load in operation	Max. load at Emergency stop
Force X	11.5 ±3.5 kN	11.5 ±11.3 kN
Force Y	5.2 kN	7.7 kN
Force Z	5.6 kN	13.5 kN
Torque X	8.3 kNm	17.8 kNm
Torque Y	14.8 kNm	29.5 kNm
Torque Z	6.5 kNm	9 kNm

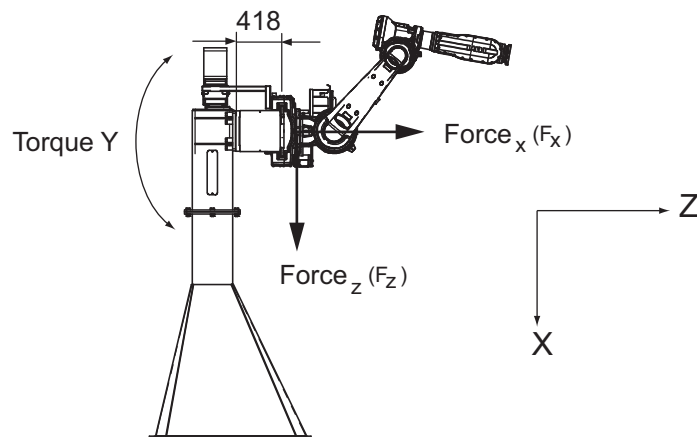
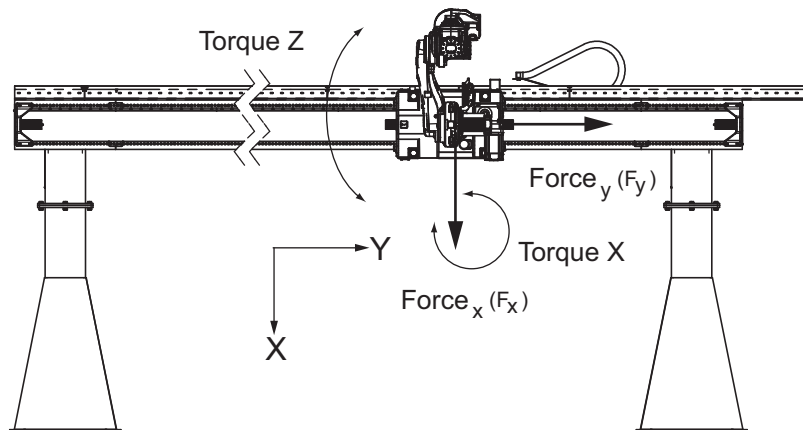
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# 1 Description

## 1.3.3 Forces

Continued

Other loads: Beam mass =  $(1.8 + \text{travel length}) \times 250\text{kg/m}$



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Above forces are forces from the robot acting on the beam. For leg dimensioning, the beam mass needs to be added. Recommendation is to dimension each leg with 100% of the robot force + beam mass according to table below:

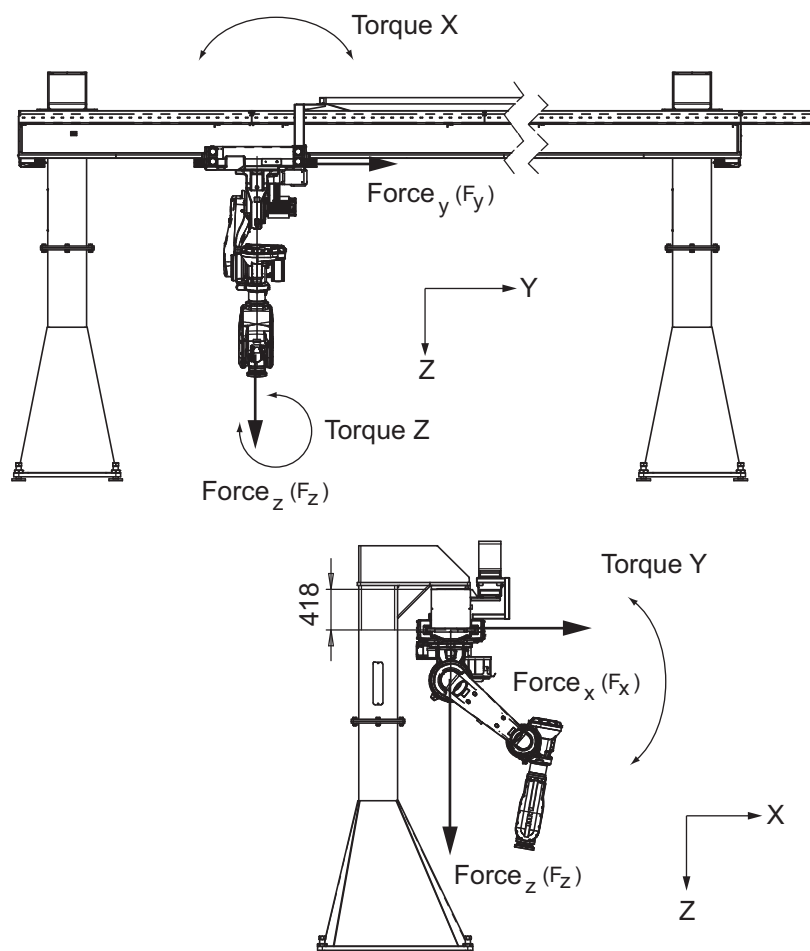
No. of legs	Beam mass distribution						
	Leg 1	Leg 2	Leg 3	Leg 4	Leg 5	Leg 6	Leg 7
2	Mass <sup>a</sup> /2	Mass/2	-	-	-	-	-
3	Mass/2	Mass/2	Mass/2	-	-	-	-
4	Mass/3	Mass/3	Mass/3	Mass/3	-	-	-
5	Mass/4	Mass/4	Mass/4	Mass/4	Mass/4	-	-
6	Mass/5	Mass/5	Mass/5	Mass/5	Mass/5	Mass/5	-
7	Mass/6	Mass/6	Mass/6	Mass/6	Mass/6	Mass/6	Mass/6

a. Mass in table above = Beam mass, 250 kg/m

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### Forces, inverted mounted robot

Robot loads	Endurance load in operation	Max. load at Emergency stop
Force X	4.9 kN	13.4 kN
Force X	5.2 kN	7.7 kN
Force X	11.5 ±3.5 kN	11.5 ±11.3 kN
Torque X	8.5 kNm	18.5 kNm
Torque X	11.2 kNm	21.5 kNm
Torque X	6.1 kNm	9.1 kNm



xx1000000055

Above forces are forces from the robot acting on the beam. For leg dimensioning, the beam mass needs to be added. Recommendation is to dimension each leg with 100% of the robot force + beam mass according to table below:

No. of legs	Beam mass distribution						
	Leg 1	Leg 2	Leg 3	Leg 4	Leg 5	Leg 6	Leg 7
2	Mass <sup>i</sup> /2	Mass/2	-	-	-	-	-
3	Mass/2	Mass/2	Mass/2	-	-	-	-
4	Mass/3	Mass/3	Mass/3	Mass/3	-	-	-

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## 1 Description

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### 1.3.3 Forces

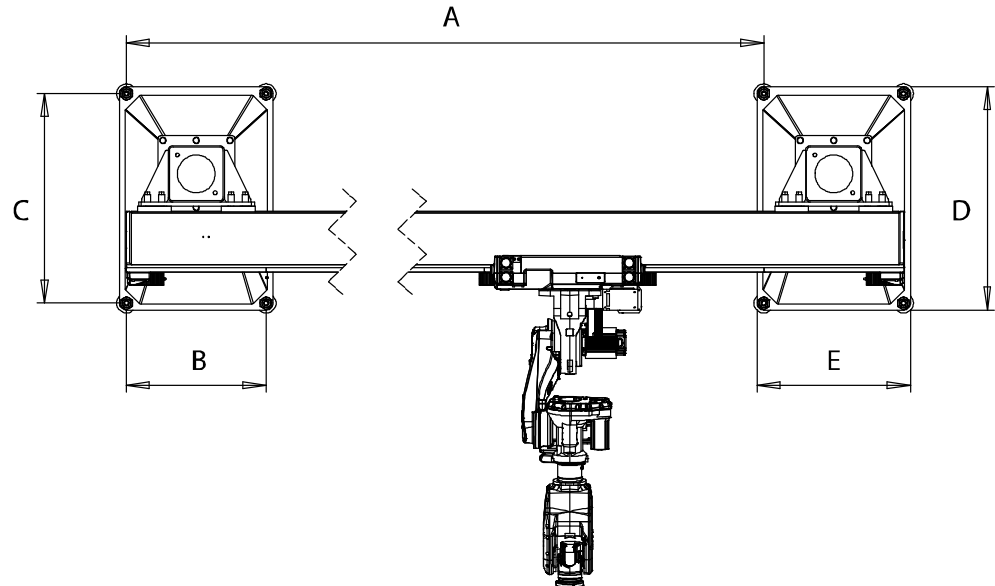
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	Beam mass distribution						
No. of legs	Leg 1	Leg 2	Leg 3	Leg 4	Leg 5	Leg 6	Leg 7
5	Mass/4	Mass/4	Mass/4	Mass/4	Mass/4	-	-
6	Mass/5	Mass/5	Mass/5	Mass/5	Mass/5	Mass/5	-
7	Mass/6	Mass/6	Mass/6	Mass/6	Mass/6	Mass/6	Mass/6

<sup>i</sup> Mass in table above = Beam mass, 250 kg/m

### 1.3.4 Hole configuration

#### Hole configuration for two legs



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Pos	Description
A	Hole distance 1500 to 8000 mm (depending on selection, in steps of 100 mm). This applies for all selected legs. Up to 12,000 is possible but there is a risk that performance may be affected.
B	Hole distance 1000 mm
C	Hole distance 1500 mm
D	Support/framework 1600 mm
E	Support/framework 1100 mm

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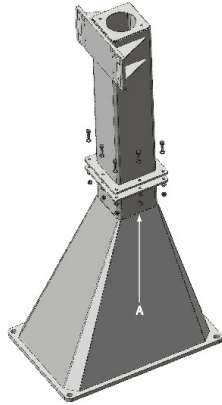
# 1 Description

## 1.3.4 Hole configuration

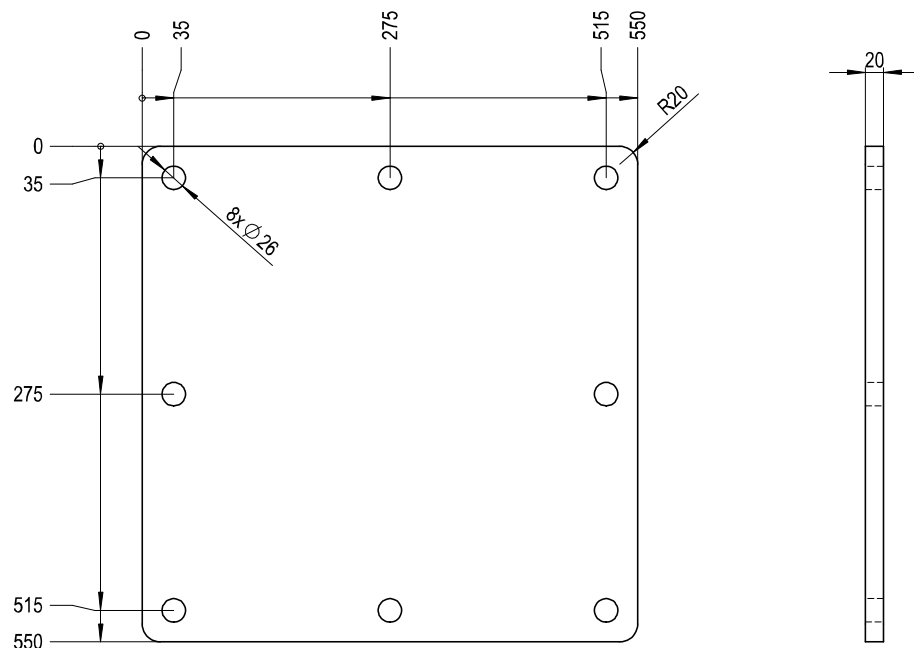
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### Upper leg dimensions

The illustration below shows the dimensions of the upper leg, from below, if lower legs are designed at site.



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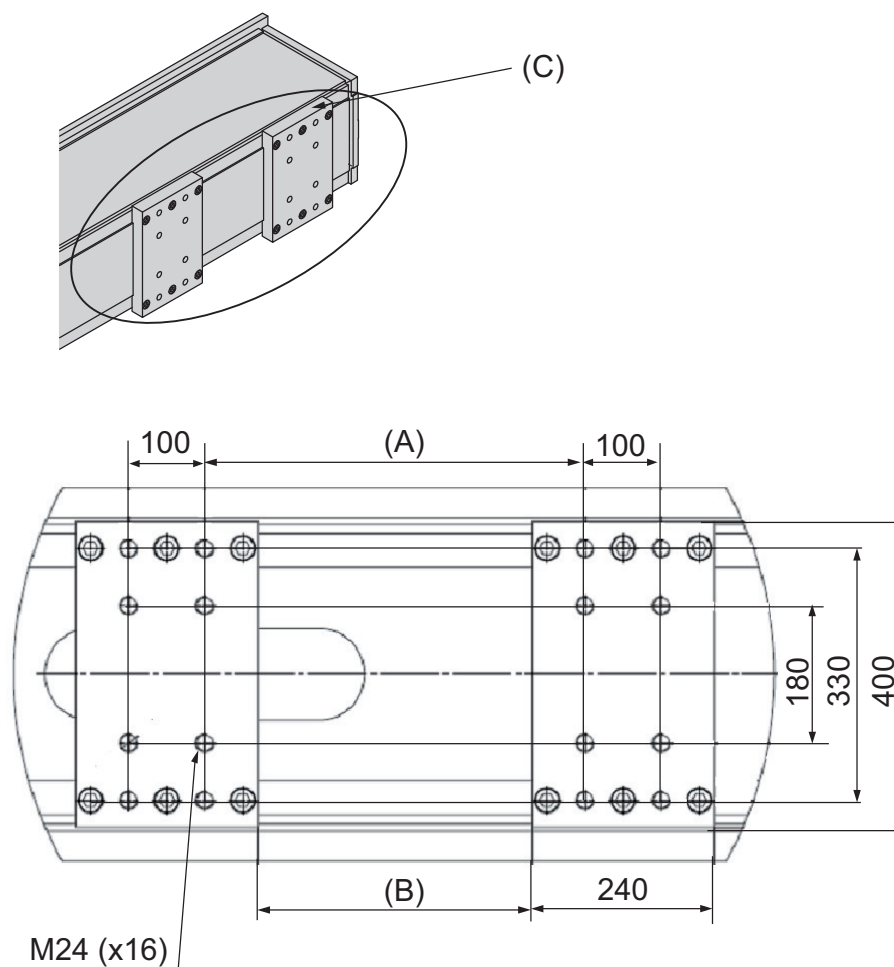
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### Mounting plates

Hole configuration for mounting plates, when no upper legs are selected.



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Pos	Description
A	500 mm for side mounting 300 mm for inverted mounting
B	360 mm for side mounting 160 mm for inverted mounting
C	Thickness of plates = 35 mm

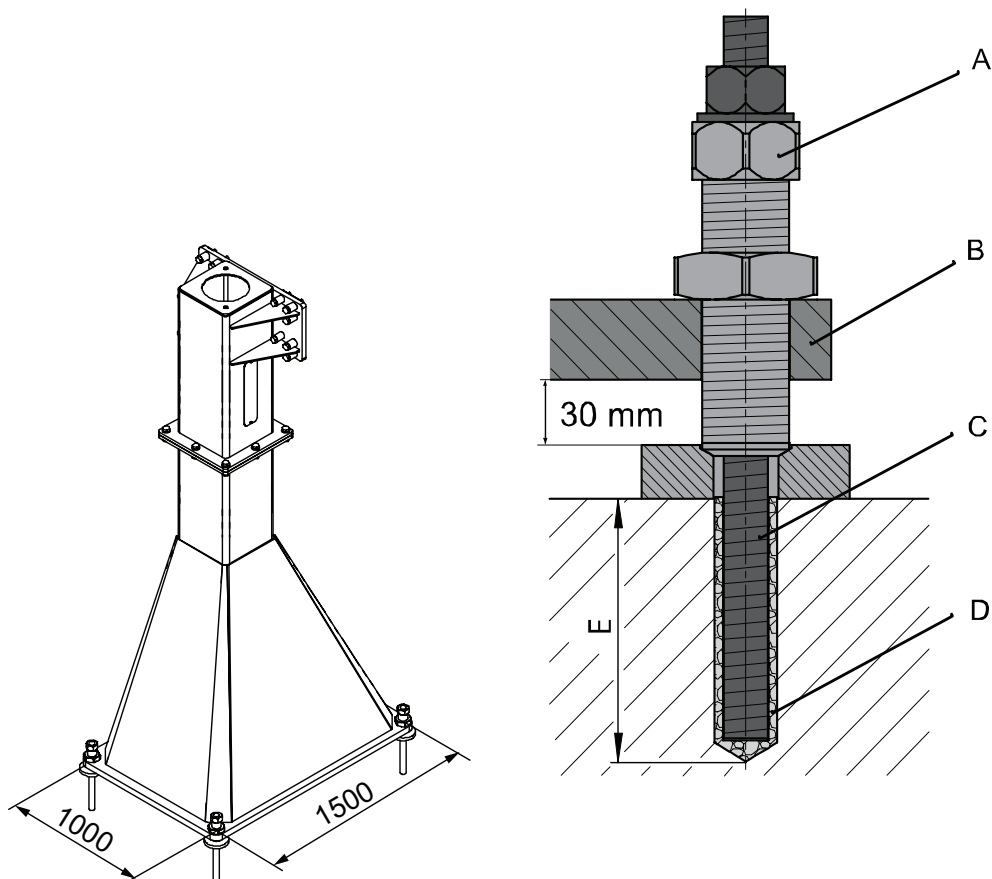
## 1 Description

### 1.3.5 Securing the frame support

### 1.3.5 Securing the frame support

#### Concrete floor > 340

For concrete floor with a depth of more than 340 mm is option 1161-1 recommended.



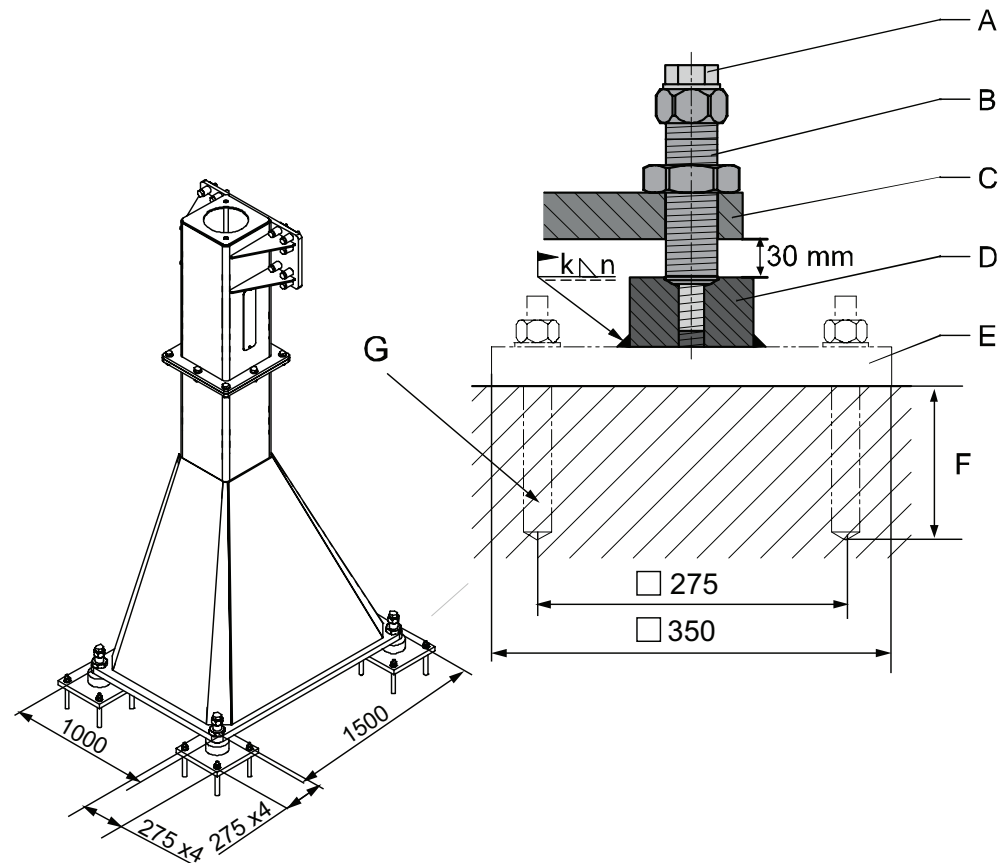
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A	Ground levelling screw, M56x3
B	Support/framework
C	Anchor bolt, M30x270
D	Chemical anchor cartridge
E	Drill depth 270 mm

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### Concrete floor > 220

For concrete floor with a depth of more than 220 mm is option 1160-1 recommended. After that the support stands are positioned they are welded to the base plate by the weld nuts.



xx1000000054

A	Screw
B	Ground levelling screw, M56x3
C	Support/framework
D	Weld nut Height = 80 mm
E	Base plate Thickness = 30 mm
F	Drill depth 170 mm
G	Anchor bolt, M20
k	Weld thickness a 5 mm
n	Seam length 330 mm

# 1 Description

## 1.4.1 Motion

## 1.4 Motion

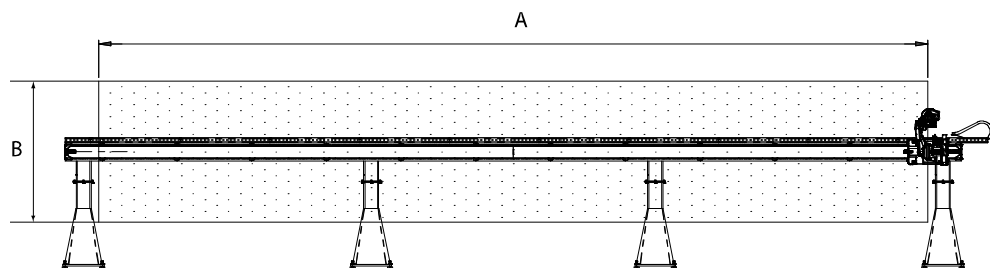
### 1.4.1 Motion

#### Type of motion

Axis	Type of motion	Range of motion
		IRB 6620LX-150/1.9
1	Linear motion	1.8 to 33.0 m
2	Arm motion	+ 125° to - 125°
3	Arm motion	+ 70° to - 180°
4	Wrist motion	+ 300° to - 300°
5	Bend motion	+ 130° to - 130°
6	Turn motion	+ 300° to - 300° default $\pm 96$ Revolutions <sup>i</sup>

<sup>i</sup> The default working range for axis 6 can be extended by changing parameter values in the software. Option 610-1 "Independent axis" can be used for resetting the revolution counter after the axis has been rotated (no need for "rewinding" the axis).

#### IRB 6620LX-150/1.9



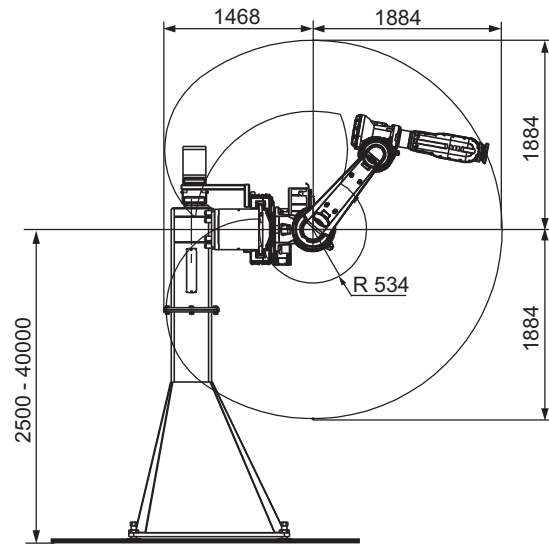
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Pos	Description
A	Travel length 1.8 to 33.0 m (in steps of 400 mm) <sup>i</sup>
B	For side mounted version max. 3768 mm For inverted mounted version max. 3352 mm

<sup>i</sup> Actual travel length is 20 mm shorter than specified.

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### IRB 6620LX-150/1.9 Side version



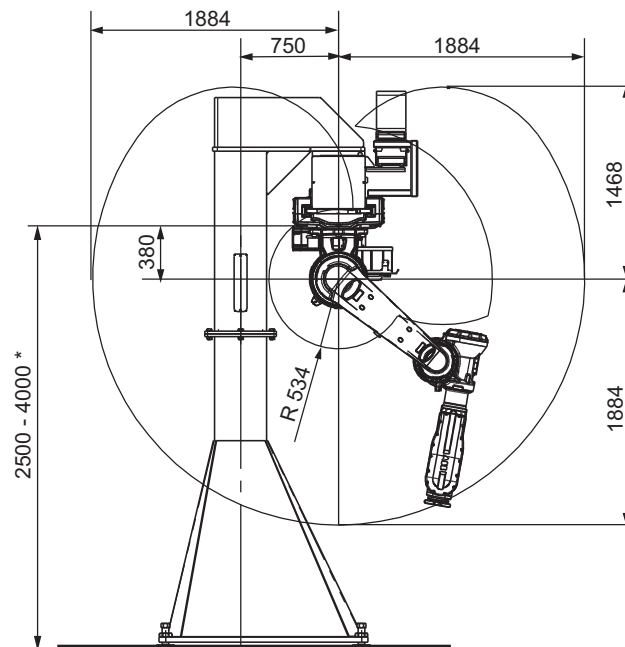
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#### Note

Height is defined differently depending on manipulator installation.

### IRB 6620LX-150/1.9 Inverted version



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\* To base of manipulator.

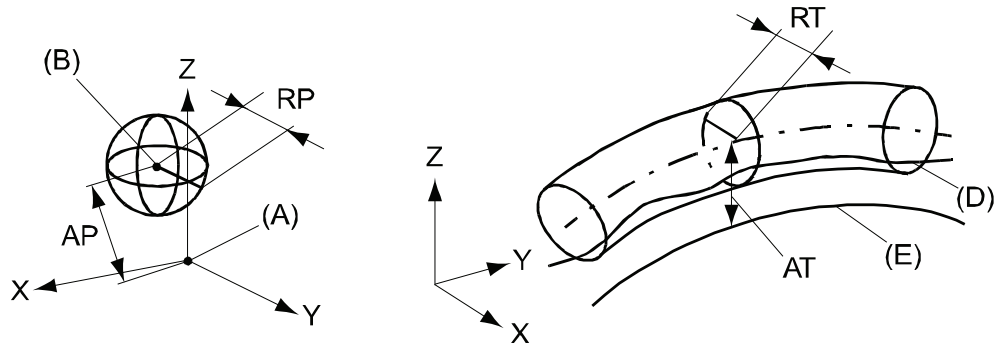
# 1 Description

## 1.4.2 Performance according to ISO 9283

### 1.4.2 Performance according to ISO 9283

#### General

At rated maximum load, maximum offset and 1.6 m/s velocity on the inclined ISO test plane, 1 m cube with all axes in motion. Performance may differ slightly depending on hardware configuration of the linear axis. The data is measured with a side mounted manipulator, linear axis height 2.5 m and a leg distance of 6 m. The ISO-cube test is done in the middle between the legs.



xx0800000424

Pos	Description	Pos	Description
A	Programmed position	E	Programmed path
B	Mean position at program execution	D	Actual path at program execution
AP	Mean distance from programmed position	AT	Max deviation from E
RP	Tolerance of position B at repeated positioning	RT	Tolerance of the path at repeated program execution

IRB 6620LX-150/1.9	Performance <sup>i</sup>
Pose repeatability, RP (mm)	0.05
Pose accuracy, AP <sup>ii</sup> (mm)	0.04
Path accuracy, AT (mm)	3.89
Path repeatability, RT (mm)	0.77
Pose stabilization time, PSt (s)	0.15

<sup>i</sup> Performance may differ slightly depending on hardware configuration. The data is measured with a side mounted manipulator, linear axis height 2.5 m and a leg distance of 6 m. The ISO-cube running is done in the middle between the legs.

<sup>ii</sup> AP according to the ISO test above, is the difference between the taught position (position manually modified in the cell) and the average position obtained during program execution.



#### Note

Performance values for IRB 6620LX are not all valid to be used as indicators for double carriage systems.

**1.4.3 Velocity**

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**Maximum axis speed**

Robot Type	Axis 1	Axis 2	Axis 3	Axis 4	Axis 5	Axis 6
IRB 6620LX-150/1.9	3.3 m/s	90 °/s	90 °/s	150 °/s	120 °/s	190 °/s

---

**Axis Resolution**

0.001° to 0.005°.

## 1 Description

### 1.4.4 Stopping distance/time

### 1.4.4 Stopping distance/time

#### General

Stopping distance/time for emergency stop (category 0) and program stop (category 1) at max speed and max load, categories according to EN 60204-1.

Robot type		Category 0		Category 1		Main power failure	
	Axis	A	B	A	B	A	B
IRB 6620LX	1 <sup>i</sup>	0.950	0.54	1.35	0.76	1.11	0.59
	2	16	0.4	40	0.9	22	0.4
	3	11	0.2	20	0.4	17	0.3

<sup>i</sup> The stopping distance for linear axis 1 is measured in m.

	Description
A	Stopping distance in degrees (except for linear axis 1)
B	Stop time (s)



## **1.5 Maintenance and troubleshooting**

### **1.5.1 Maintenance and Troubleshooting**

---

**General**

The IRB 6620LX requires only minimum maintenance during operation. It has been designed to make it as easy to service as possible:

- Maintenance-free AC motor is used.
- Oil is used for the gear boxes.
- The cabling is routed for longevity, and in the unlikely event of a failure, its modular design makes it easy to change.

---

**Maintenance**

The maintenance intervals depend on the use of the IRB 6620LX. For detailed information on maintenance procedures, see Maintenance section in the Product Manual.

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## 2 Specification of variants and options

### 2.1 Introduction to variants and options

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#### Information

The different variants and options for the IRB 6620LX are described below. The same numbers are used here as in the specification form.

---

#### Related information

For IRB 6620LX (articulated manipulator, axes 2-6) options, see *Product specification - IRB 6620*.

For the controller see *Product specification - Controller IRC5 with FlexPendant*.

For the software options see *Product specification - Controller software IRC5*.

## 2 Specification of variants and options

### 2.2 IRB 6620LX-150/1.9

### 2.2 IRB 6620LX-150/1.9

#### Valid for product

Option	IRB Type	Note
1086-7	IRB 6620LX-150/1.9	Linear Axis for IRB 6620LX-150/1.9.

#### Manipulator color

The option enable selection of color of the carriage only. Manipulator color is specified on Specification Form for IRB 6620(LX).

Option	Description	Note
209-1	ABB orange standard	
209-2	ABB white standard	
209-202	ABB Graphite White standard	Standard color
209-	RAL code should be specified	



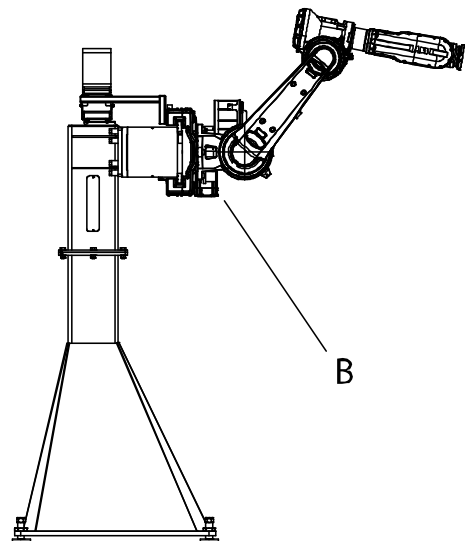
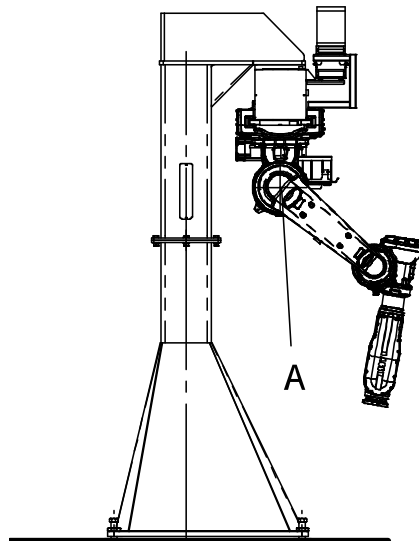
#### Note

Notice that delivery time for painted spare parts will increase for none standard colors.

#### Manipulator mounting

The manipulator can be mounted in two ways on the linear axis 1.

Option	Description	Note
1145-1	Side mounted	
1145-2	Inverted mounted	



xx1000000058

Pos	Description
A	Inverted mounted manipulator

*Continues on next page*

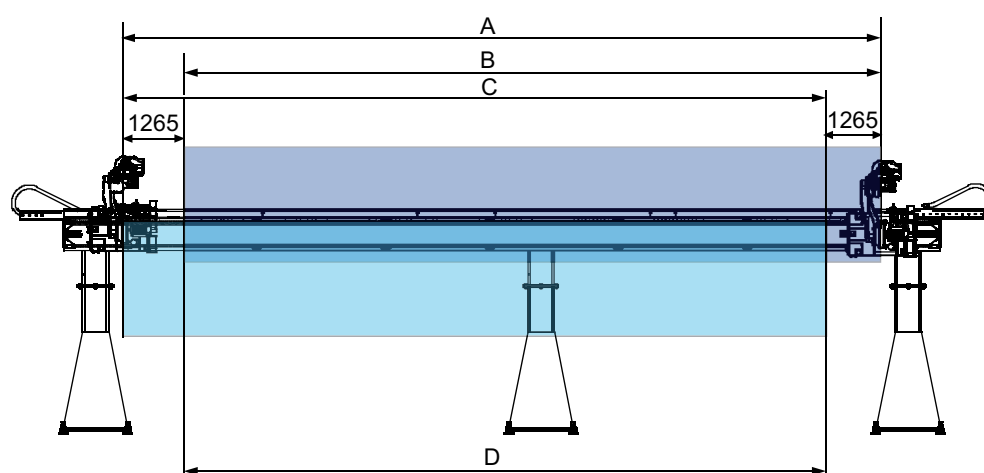
Pos	Description
B	Side mounted manipulator

### Type of carriage

The Linear Axis can be ordered with a second carriage. Options for Controller connection, Lubrication and Communication will be the same for both carriages. The stroke for each robot is the longest possible. The second manipulator must be ordered on a Specification Form for IRB 6620.

Specified travel length, A, is done with option 1141-1.

Option	Description	Note
1088-2	Double carriage	



xx1100000042

Pos	Description
A	Specified travel length, option 1141-1. (Beam length - 1800 mm)
B	Axis 1 stroke, robot 2
C	Axis 1 stroke, robot 1
D	Overlap = Axis 1 stroke - 1265 mm

Axis 1 stroke Robot 1	= Specified travel length - 1265 mm
Axis 1 stroke Robot 2	= Specified travel length - 1265 mm



#### Note

There is no hardware limitation preventing carriage collision. This must be arranged by software programming or using the EPS functionality.



#### Note

The controller connection will be located on the middle leg at odd numbers of legs. At even number of legs must one of the two middle legs be selected.

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## 2 Specification of variants and options

### 2.2 IRB 6620LX-150/1.9

Continued

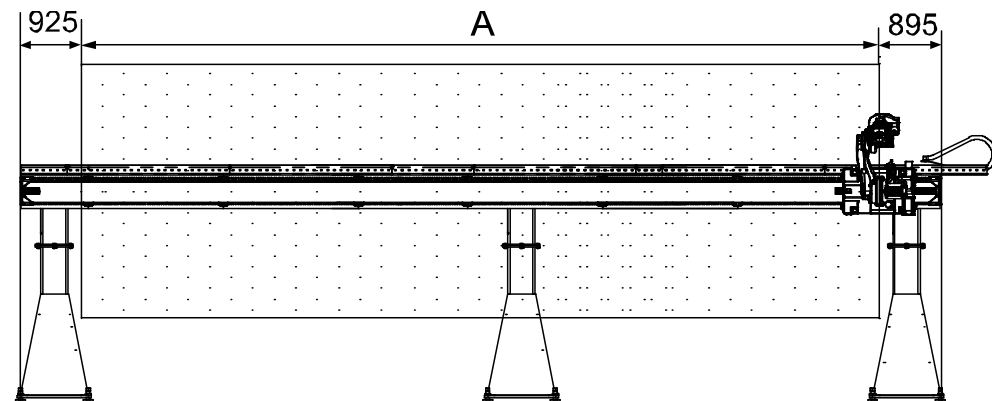
#### Travel length

The linear axis is divided in sections, depending on the required travel length. Max delivered beam length sections are 12 meter.

Max 33000 mm travel length with 7 m floor cable.

Max 24600 mm travel length with 15 m floor cable.

Option	Description	Note
1141-1	(1800 - 33000) Travel length	Chose travel length in millimeter. Travel length in steps of 400 mm/step.



xx1000000071

Pos	Description
A	Travel length <sup>a</sup>

a. Actual travel length 20 mm shorter than specified.

#### Number of upper legs

Minimum number of recommended upper legs are two. Max distance between two legs is 12000 mm, but recommended distance is 8000 mm, to avoid risk of lower performance. Min distance between two legs is 1500 mm.

Option	Description	Note
1142-1	(2-7) Chose quantity	See figure below.

#### Mounting plates

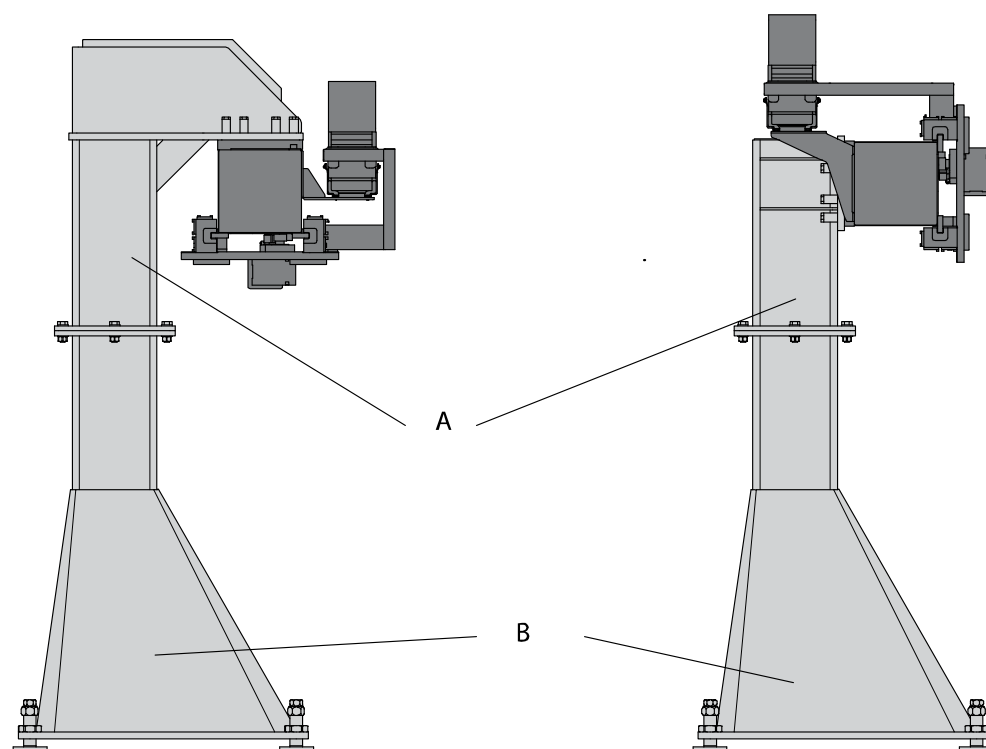
Plates located on the beam to be used for mounting of customer developed legs. For hole configuration of mounting plates see [Mounting plates on page 25](#)

Option	Description	Note
1164-1	(2-7) Chose quantity	Only selectable when no upper legs are selected [1142-1].

#### Number of lower legs

Option	Description	Note
1143-1	(1-7) Select quantity	See figure below

Continues on next page



xx1000000060

Pos	Description
A	Upper legs
B	Lower legs

If no lower legs are required, do not select this option. In this case will the manipulator connection be delivered with a free cable with connection point, reaching to one of the outer upper legs.

### Leg height

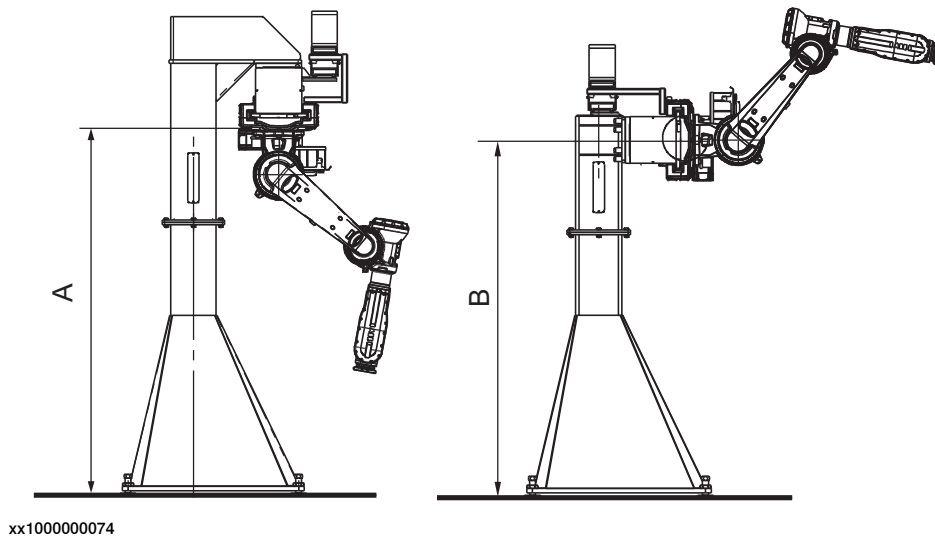
Option	Description	Note
1144-1	(2500-4000) Leg height	Chose leg height in millimeter. Leg height in steps of 100 mm/step. A=side mounting B=inverted mounting

*Continues on next page*

## 2 Specification of variants and options

### 2.2 IRB 6620LX-150/1.9

*Continued*



Pos	Description
A	Distance from floor to surface for base of robot (2500 to 4000 mm)
B	Distance from floor to centre of robot base (2500 to 4000 mm)



#### Note

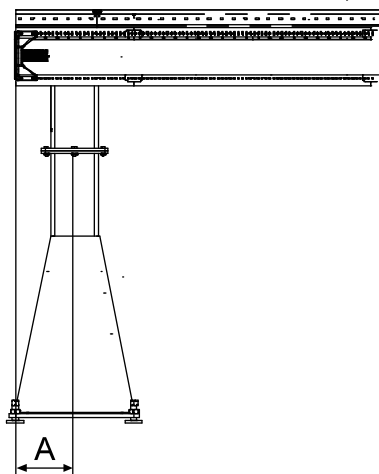
The height for the linear axis is specified differently depending on manipulator mounting position.



## 2.3 Leg distances

## Leg distance 0-1

Option	Description	Note
1146-1	(550-2750) Chose length	Distance to first leg or mounting plate, min. 550 mm and max 2750 mm from start of beam. See figure below.



xx1000000072

Pos	Description
A	Min 550, max 2750 mm (in steps of 100 mm).

**Note**

The max and min free length of beam, is also valid at last leg at the other end of the unit.

First leg is calculated from left, looking at the robot from the front.

*Continues on next page*

## 2 Specification of variants and options

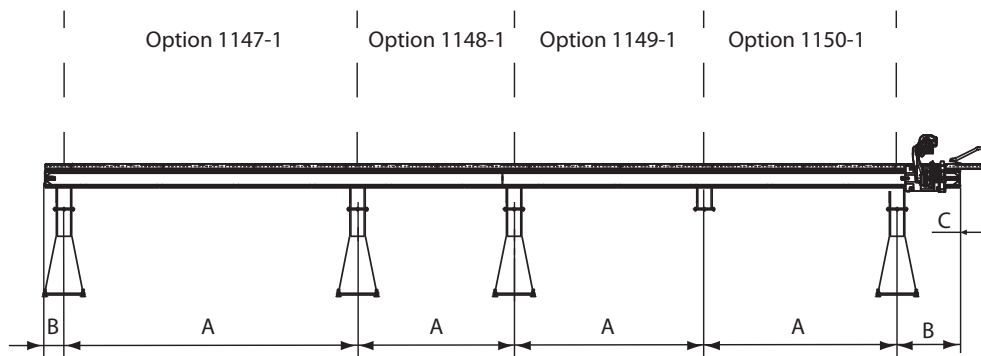
### 2.3 Leg distances

Continued

#### Leg distance 1-2

Leg distance over 8000 mm and up to 12000 mm may affect the performance.

Option	Description	Note
1147-1	(1500-12000) Chose length	Distance between leg (or mounting plate) 1 and 2. See figure Leg distance. Example shows selection of five legs (one with only upper leg).



xx1000000059

Pos	Description
A	Distance between legs, 1500 to 12000 mm. Applies for all legs.
B	Max distance 2750 mm and min. 550 mm.
C	Max 800 mm (vary with the position of carriage)

#### Other leg distances

Leg distance over 8000 mm and up to 12000 mm may affect the performance.

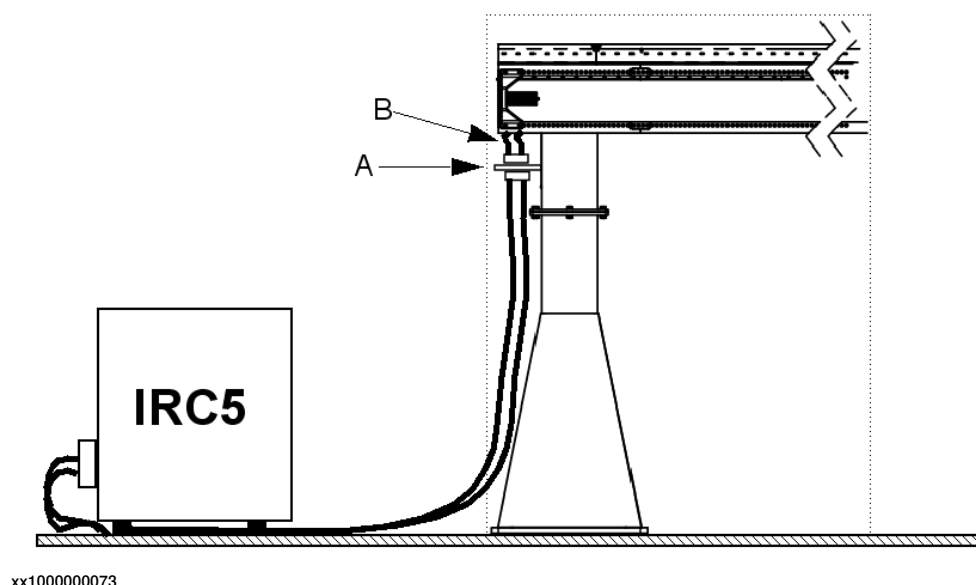
Option	Leg distance	Description	Note
1148-1	2-3	(1500-12000) Chose length	Distance between leg (or mounting plate) 2 and 3. See figure Leg distance. Example shows selection of five legs (one with only upper leg).
1149-1	3-4	(1500-12000) Chose length	Distance between leg (or mounting plate) 3 and 4. See figure Leg distance. Example shows selection of five legs (one with only upper leg).
1150-1	4-5	(1500-12000) Chose length	Distance between leg (or mounting plate) 4 and 5. See figure Leg distance. Example shows selection of five legs (one with only upper leg).
1151-1	5-6	(1500-12000) Chose length	Distance between leg (or mounting plate) 5 and 6. See figure Leg distance. Example shows selection of five legs (one with only upper leg).
1152-1	6-7	(1500-12000) Chose length	Distance between leg (or mounting plate) 6 and 7. See figure Leg distance. Example shows selection of five legs (one with only upper leg).

Continues on next page

#### Controller connection

If option 1088-2, Double carriage, is selected the controller connection will be located at the middle leg if odd number of legs. At even number of legs must one of the two middle legs be selected.

Option	Description	Note
1159-1	Leg 1	The connection point for floor cables will be mounted on selected upper leg (1 to 7), see Figure below.
1159-2-6	Leg 2-6	
1159-7	Leg 7	



Pos	Description
A	Connection point for controller floor cables.
B	Cables from cable chain on linear axis 1.

First leg is calculated from the left when looking at the robot from the front.

#### Leveling and anchors

See chapter Securing the frame support for detailed information.

Option	Description	Note
1160-1	(1-7) Chose quantityAnchor plates > 220	To be used for concrete floor with a concrete depth of > 220 mm. See <a href="#">Securing the frame support on page 26</a> .
1161-1	(1-7) Chose quantityAnchor plates > 340	To be used for concrete floor with a concrete depth of > 340 mm. See <a href="#">Securing the frame support on page 26</a> .

Continues on next page

## 2 Specification of variants and options

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### 2.3 Leg distances

*Continued*

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#### Lubrication

Lubrication system for the linear axis 1 motion.

Option	Description	Note
1005-4	Cable version	Lubrication system powered and controlled by external source. Connectors for power and control cable located at cable connection on selected upper leg.
1005-5	Battery version	Lubrication system powered by battery, lubrication intervals controlled by a timer.

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#### Signs on manipulator

Option	Description	Note
334-1	ABB	ABB signs on the linear axis.
334-3	NONE	No signs on the linear axis.

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#### Communication

Selection of communication must correspond to selections made in Specification Form for IRB 6620.

Option	Description	Note
455-4	Parallel and Bus Comm.	DeviceNet or Profibus and Parallel communication for Linear Axis.
455-8	Parallel and EtherNet	PROFINET or EtherNet/IP and Parallel communication for Linear Axis.

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