

ROBOTICS

Product manual, spare parts

IRB 1100



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Product manual, spare parts IRB 1100-4/0.475 IRB 1100-4/0.58

OmniCore

Document ID: 3HAC064994-001

Revision: K

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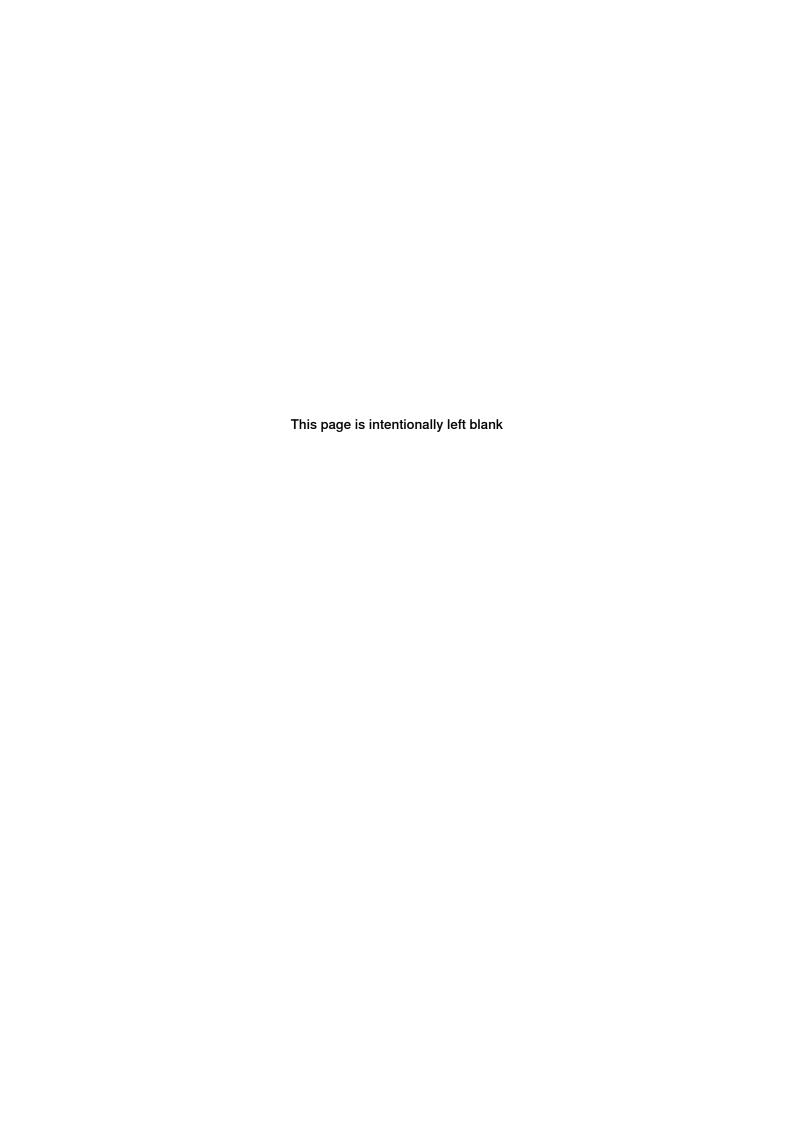
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Original instructions.

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Overview of this manual

About this manual

This manual contains spare parts for:

· IRB 1100 and all its variants.

Usage

This manual shall be used as a complement to the product manual for IRB 1100 during:

- · maintenance work
- repair work.

Who should read this manual?

This manual is intended for:

- · maintenance personnel
- repair personnel.

Prerequisites

Maintenance/repair/installation personnel working with an ABB Robot must:

 be trained by ABB and have the required knowledge of mechanical and electrical installation/repair/maintenance work.

Organization of chapters

The manual is organized in the following chapters:

Chapter	Contents
	Complete spare part list and complete list of robot components shown in exploded views.

References

Reference	Document ID
Product manual - IRB 1100	3HAC064992-001
Circuit diagram - IRB 1100	3HAC066314-009

Revisions

Revision	Description
Α	First edition.
В	Published in release 19D. The following updates are done in this revision: Corrected the robot type.
С	Published in release 20A. The following updates are done in this revision: Added spare part O-rings that are on axis-2, -3, and -4 gearboxes.
D	 Published in release 20B. The following updates are done in this revision: Removed spare part O-rings that are on axis-2, -3, and -4 gear-boxes because they are not used for protection class IP40. Supported controller OmniCore C90XT is added.

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Revision	Description
E	 Published in release 20C. The following updates are done in this revision: Spare parts of protection class IP67 (option 3350-670) and protection type Clean Room (option 3351-4) added.
F	Published in release 20D. The following updates are done in this revision: Updated figures.
G	Published in release 21A. The following updates are done in this revision: • Updated spare part article number of axis-1 radial sealing from 3HAB3701-41 to 3HAC070148-005.
	 Updated spare part list table of axis-5 and -6 motors.
Н	Published in release 21C. The following updates are done in this revision: Added spare part parallel pin on extender unit.
J	Published in release 22C. The following updates are done in this revision: Updated spare part numbers for axes 1-6 motors.
К	Published in release 23B. The following updates are done in this revision: Updated spare part list of swing parts.

Product documentation

Categories for user documentation from ABB Robotics

The user documentation from ABB Robotics is divided into a number of categories. This listing is based on the type of information in the documents, regardless of whether the products are standard or optional.



Tip

All documents can be found via myABB Business Portal, www.abb.com/myABB.

Product manuals

Manipulators, controllers, DressPack/SpotPack, and most other hardware is delivered with a **Product manual** that generally contains:

- · Safety information.
- Installation and commissioning (descriptions of mechanical installation or electrical connections).
- Maintenance (descriptions of all required preventive maintenance procedures including intervals and expected life time of parts).
- Repair (descriptions of all recommended repair procedures including spare parts).
- · Calibration.
- · Troubleshooting.
- · Decommissioning.
- Reference information (safety standards, unit conversions, screw joints, lists of tools).
- Spare parts list with corresponding figures (or references to separate spare parts lists).
- References to circuit diagrams.

Technical reference manuals

The technical reference manuals describe reference information for robotics products, for example lubrication, the RAPID language, and system parameters.

Application manuals

Specific applications (for example software or hardware options) are described in **Application manuals**. An application manual can describe one or several applications.

An application manual generally contains information about:

- The purpose of the application (what it does and when it is useful).
- What is included (for example cables, I/O boards, RAPID instructions, system parameters, software).
- How to install included or required hardware.
- How to use the application.

Continues on next page

Product documentation

Continued

• Examples of how to use the application.

Operating manuals

The operating manuals describe hands-on handling of the products. The manuals are aimed at those having first-hand operational contact with the product, that is production cell operators, programmers, and troubleshooters.

1 Spare parts and exploded views

Spare part level

ABB spare parts are categorized into two levels, L1 and L2. Always check the part level before conducting a service work on a spare part.

· L1 spare parts

The L1 parts can be replaced in the field. The maintenance and replacement instructions given in the related product manuals must be strictly followed. If there are any problems, contact your local ABB for support.

L2 spare parts

To replace the L2 parts require specialized training and might need special tools. Only ABB field service personnel or qualified personnel trained by ABB can replace L2 parts.

1.1.1 Manipulator cable harness

1.1 Spare parts - electrical parts

1.1.1 Manipulator cable harness

Spare part list

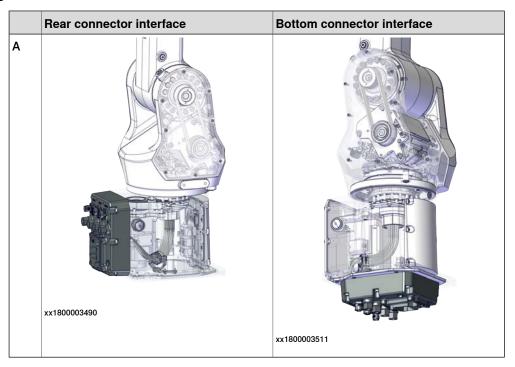
	Spare part number	Description	Stand- ard (IP40)	IP67	Clean Room	Spare part level
Α	3HAC075521-001	Lower cable harness, basic	Х	Х		L2
	3HAC075522-001	Lower cable harness (CP/CS and air hose, without Ethernet)	X	X		L2
	3HAC075523-001	Lower cable harness (CP/CS and air hose, with Ethernet)	X	X		L2
	3HAC075514-001	Lower cable harness, basic, Clean Room			X	L2
	3HAC075515-001	Lower cable harness, Clean Room (CP/CS and air hose, without Ethernet)			X	L2
	3HAC075581-001	Lower cable harness, Clean Room (CP/CS and air hose, with Ethernet)			X	L2
В	3HAC060419-001	Upper cable harness, basic Used with IRB 1100-4/0.475.	X	X	X	L2
	3HAC060419-002	Upper cable harness (CP/CS and air hose, without Ethernet) Used with IRB 1100-4/0.475.	Х	Х	Х	L2
	3HAC060419-003	Upper cable harness (CP/CS and air hose, with Ethernet) Used with IRB 1100-4/0.475.	х	X	X	L2
С	3HAC060416-001	Extension upper cable harness, basic Used with IRB 1100-4/0.58.	X	X	X	L2
	3HAC060416-002	Extension upper cable harness (CP/CS and air hose, without Ethernet) Used with IRB 1100-4/0.58.	Х	X	X	L2
	3HAC060416-003	Extension upper cable harness (CP/CS and air hose, with Ethernet) Used with IRB 1100-4/0.58.	Х	Х	X	L2
D	3HAC069094-001	Process hub, basic	Х	Х		L2
	3HAC069095-001	Process hub (CP/CS and air hose, without Ethernet)	X	X		L2
	3HAC069096-001	Process hub (CP/CS and air hose, with Ethernet)	Х	Х		L2
	3HAC075509-001	Process hub, basic, Clean Room			Х	L2
	3HAC075510-001	Process hub, Clean Room (CP/CS and air hose, without Ethernet)			X	L2
	3HAC075511-001	Process hub, Clean Room (CP/CS and air hose, with Ethernet)			X	L2
E	3HAC065352-001	Gasket for process hub		Х	X	L1

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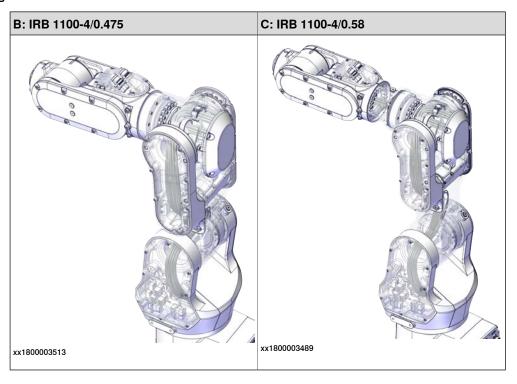
1.1.1 Manipulator cable harness Continued

Spare part illustration

Lower cable harness



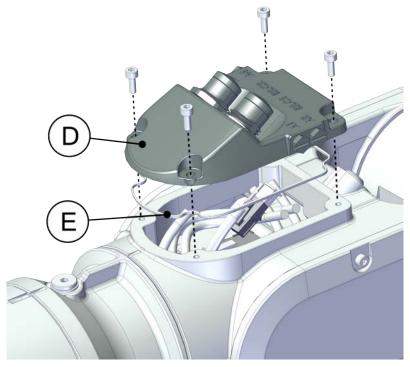
Upper cable harness



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1.1.1 Manipulator cable harness *Continued*

Process hub



xx1800003491

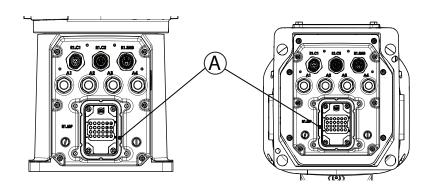
1.1.2 Manipulator cable harness parts

1.1.2 Manipulator cable harness parts

Spare part list

	Spare part number	Description	Standard (IP40)	IP67	Clean Room	Spare part level
Α	3HAB3772-19	O-ring		х	Х	L2
-	3HAC044906-001	One-way valve		Х	Х	L2
-	3HAC066098-001	M12 CPCS Male straight connector kits	Х	х	Х	L1
-	3HAC066099-001	M12 CPCS Male angled connector kits	Х	Х	Х	L1
-	3HAC067413-001	M12 Ethernet Cat5e Male straight connector kits	Х	Х	Х	L1
-	3HAC067414-001	M12 Ethernet Cat5e Male angled connector kits	Х	Х	Х	L1

Spare part illustration



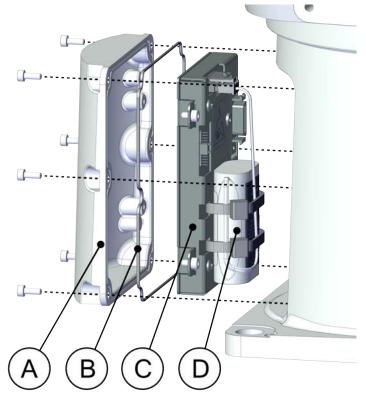
1.1.3 SMB unit

1.1.3 SMB unit

Spare part list

	Spare part number	Description	Standard (IP40)	IP67	Clean Room	Spare part level
Α	3HAC069060-001	SMB cover	Х	Х		L1
	3HAC075506-001	SMB cover, Clean Room			х	L1
В	3HAC065344-001	Gasket for SMB cover		Х	х	L1
С	3HAC063968-001	Serial measurement unit	Х	Х	Х	L2
D	3HAC044075-001	Battery pack	Х	Х	Х	L2

Spare part illustration



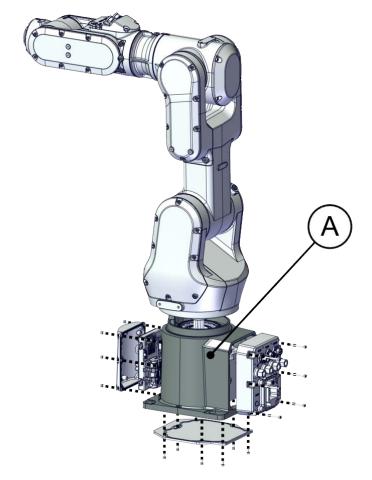
1.2 Spare parts - base

1.2.1 Base

Spare part list

	Spare part number	Description	Standard (IP40)	IP67	Clean Room	Spare part level
Α	3HAC069048-001	Base	Х			L2
	3HAC074270-001	Base with sealing ring		Х		L2
	3HAC075488-001	Base with sealing ring, Clean Room			Х	L2

Spare part illustration



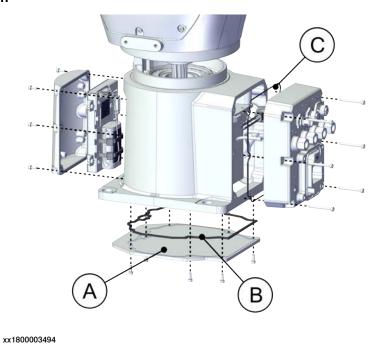
1.2.2 Base parts

1.2.2 Base parts

Spare part list

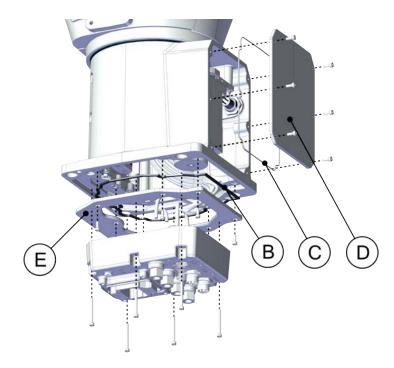
	Spare part number	Description	Standard (IP40)	IP67	Clean Room	Spare part level
Α	3HAC060463-001	Base bottom cover Standard configuration, used for robots with rear connector interface.	X	Х	Х	L1
В	3HAC065345-001	Gasket for base bottom		Х	Х	L1
С	3HAC065350-001	Gasket for base rear		Х	Х	L1
D	3HAC070312-001	Base rear cover Used for robots with bottom connector interface.	Х	Х		L1
	3HAC075513-001	Base rear cover, Clean Room Used for robots with bottom connector interface. Used with protection type Clean Room.			х	L1
E	3HAC070313-001	Base adapter Used for robots with bottom connector interface.	х	Х		L2
	3HAC075793-001	Base adapter, Clean Room Used for robots with bottom connector interface. Used with protection type Clean Room.			х	L2

Spare part illustration



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1.2.2 Base parts Continued



1.3.1 Swing

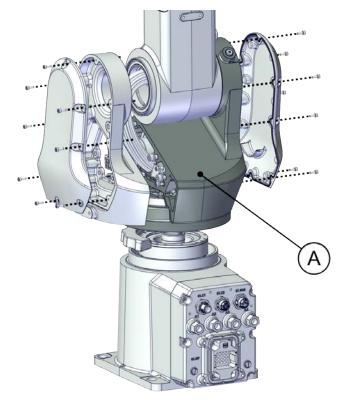
1.3 Spare parts - swing

1.3.1 Swing

Spare part list

	Spare part number	Description	Standard (IP40)	IP67	Clean Room	Spare part level
Α	3HAC069050-001	Swing	Х	Х		L2
	3HAC075497-001	Swing, Clean Room			х	L2

Spare part illustration

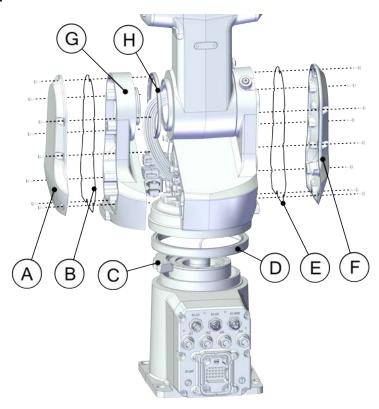


1.3.2 Swing parts

Spare part list

	Spare part number	Description	Standard (IP40)	IP67	Clean Room	Spare part level
Α	3HAC069052-001	Swing support cover	Х	Х		L1
	3HAC075500-001	Swing support cover, Clean Room			Х	L1
В	3HAC065317-001	Gasket for swing support cover		Х	Х	L1
С	3HAC061947-001	Mechanical stop, axis 1	Х	Х	Х	L2
D	3HAC070148-005	Axis-1 radial sealing		Х	Х	L2
Е	3HAC061959-003	Gasket for swing cover		Х	Х	L1
F	3HAC069051-001	Swing cover	Х	Х		L1
	3HAC075498-001	Swing cover, Clean Room			Х	L1
G	3HAC069039-001	Swing support	Х	Х		L2
	3HAC075499-001	Swing support, Clean Room			Х	L2
Н	3HAB3701-70	Axis-2 radial sealing		Х	Х	L2

Spare part illustration



1.4.1 Lower arm

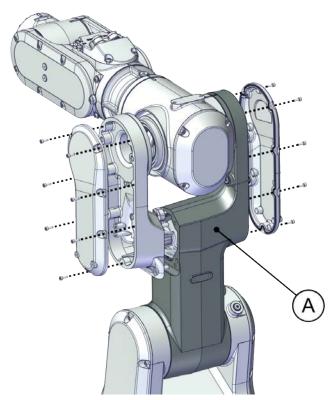
1.4 Spare parts - lower arm

1.4.1 Lower arm

Spare part list

	Spare part number	Description	Standard (IP40)	IP67	Clean Room	Spare part level
Α	3HAC069055-001	Lower arm (IRB 1100-4/0.475)	Х			L2
	3HAC074271-001	Lower arm with sealing ring (IRB 1100-4/0.475)		х		L2
	3HAC075491-001	Lower arm with sealing ring, Clean Room (IRB 1100-4/0.475)			Х	L2
	3HAC069056-001	Lower arm (IRB 1100-4/0.58)	Х			L2
	3HAC074273-001	Lower arm with sealing ring (IRB 1100-4/0.58)		x		L2
	3HAC075490-001	Lower arm with sealing ring, Clean Room (IRB 1100-4/0.58)			Х	L2

Spare part illustration

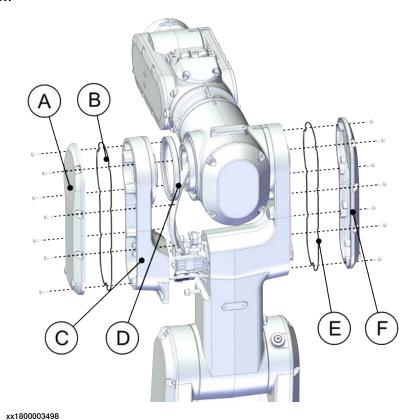


1.4.2 Lower arm parts

Spare part list

	Spare part number	Description	Standard (IP40)	IP67	Clean Room	Spare part level
Α	3HAC069059-001	Lower arm support cover	Х	Х		L1
	3HAC075505-001	Lower arm support cover, Clean Room			Х	L1
В	3HAC065331-001	Gasket for lower arm support cover		Х	Х	L1
С	3HAC069058-001	Lower arm support	Х	Х		L2
	3HAC075504-001	Lower arm support, Clean Room			Х	L2
D	3HAB3701-57	Axis-3 radial sealing		Х	Х	L2
Е	3HAC061959-006	Gasket for lower arm cover		Х	Х	L1
F	3HAC069057-001	Lower arm cover	Х	Х		L1
	3HAC075503-001	Lower arm cover, Clean Room			Х	L1

Spare part illustration



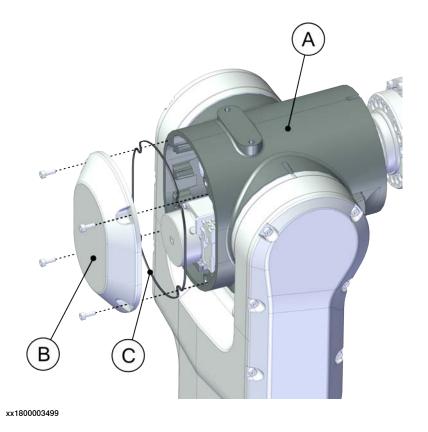
1.5 Spare parts - housing

1.5 Spare parts - housing

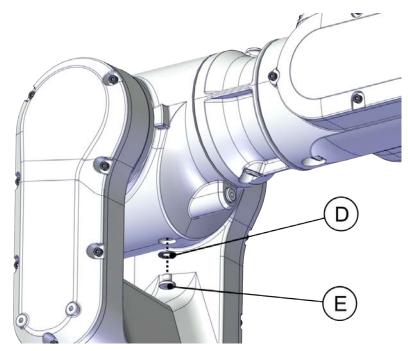
Spare part list

	Spare part number	Description	Standard (IP40)	IP67	Clean Room	Spare part level
Α	3HAC069053-001	Housing	X			L2
	3HAC074272-001	Housing with sealing ring		х		L2
	3HAC075489-001	Housing, Clean Room			Х	L2
В	3HAC069054-001	Housing cover	X	x		L1
	3HAC075501-001	Housing cover, Clean Room			Х	L1
С	3HAC061959-007	Gasket for housing cover		х	Х	L1
D	3HAC064147-001	Rubber sealing washer on housing		х	Х	L1
Е	3HAC064146-001	Plug screw	Х	х		L1
	3HAC070309-001	Plug screw, Clean Room			Х	L1

Spare part illustration



1.5 Spare parts - housing Continued



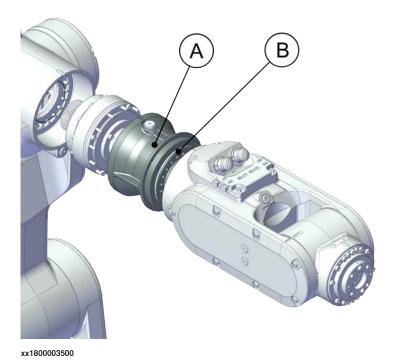
1.6 Spare parts - extender unit

1.6 Spare parts - extender unit

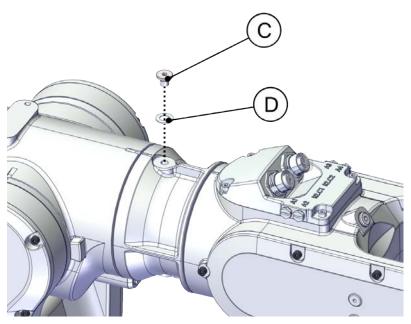
Spare part list

	Spare part number	Description	Standard (IP40)	IP67	Clean Room	Spare part level
Α	3HAC069037-001	Extender unit Used for IRB 1100-4/0.58.	X	Х		L2
	3HAC075508-001	Extender unit, Clean Room Used for IRB 1100-4/0.58. Used with protection type Clean Room.			X	L2
В	3HAB3772-115	O-ring		Х	Х	L2
С	3HAC064146-001	Plug screw	Х	Х		L1
	3HAC070309-001	Plug screw, Clean Room			х	L1
D	3HAC067995-001	Rubber sealing washer on extender unit		Х	Х	L1
Е	3HAC050369-032	Parallel pin	Х	Х	Х	L2

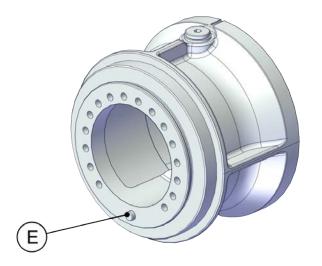
Spare part illustration



1.6 Spare parts - extender unit Continued







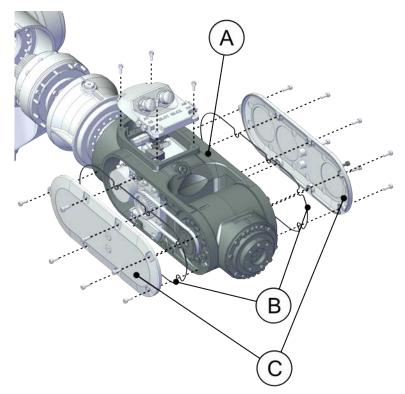
1.7 Spare parts - wrist

1.7 Spare parts - wrist

Spare part list

	Spare part number	Description	Standard (IP40)	IP67	Clean Room	Spare part level
Α	3HAC075794-001	Wrist	X			L2
	3HAC075596-001	Wrist, IP67		X		L2
	3HAC075512-001	Wrist, Clean Room			х	L2
В	3HAC061959-009	Gasket for wrist cover		X	Х	L1
С	3HAC069061-001	Wrist cover	X	X		L1
	3HAC075507-001	Wrist cover, Clean Room			Х	L1

Spare part illustration



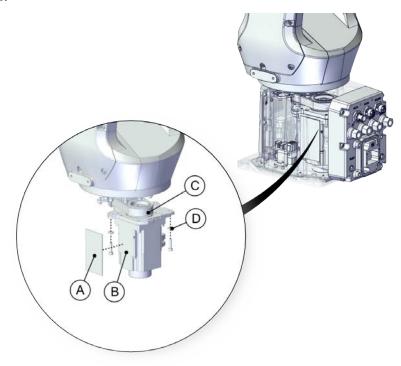
1.8 Spare parts - motors

1.8.1 Axis-1 motor

Spare part list

	Spare part number	Description	Standard (IP40)	IP67	Clean Room	Spare part level
Α	3HAC071020-001	Cooling pad for axis-1 and -2 motors Note Cooling pads are wear parts. One cooling pad sheet contains 6 pieces of small pad. Replace if damaged with one piece each time.		X	X	L2
В	3HAC083589-001	Motor with flange, axis 1	X	Х	Х	L2
С	3HAC061934-001	Timing belt, axis 1	X	X	Х	L2
D	3HAC063985-001	Washer	X	X	Х	L2

Spare part illustration



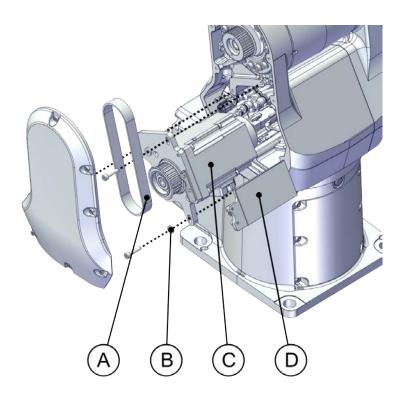
1.8.2 Axis-2 motor

1.8.2 Axis-2 motor

Spare part list

	Spare part number	Description	Standard (IP40)	IP67	Clean Room	Spare part level
Α	3HAC061935-001	Timing belt, axis 2	Х	Х	Х	L2
В	3HAC063985-001	Washer	Х	Х	х	L2
С	3HAC083588-001	Motor with flange, axis 2	Х	Х	х	L2
D	3HAC071020-001	Cooling pad for axis-1 and -2 motors	Х	Х	х	L2
		Note				
		Cooling pads are wear parts. One cooling pad sheet contains 6 pieces of small pad.				
		Replace if damaged with one piece each time.				

Spare part illustration

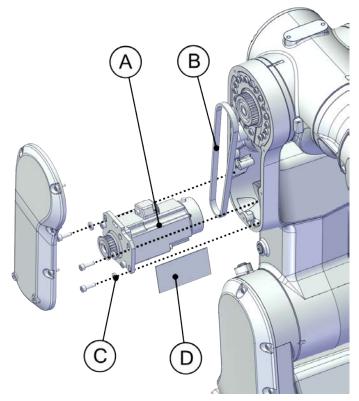


1.8.3 Axis-3 motor

Spare part list

	Spare part number	Description	Standard (IP40)	IP67	Clean Room	Spare part level
Α	3HAC083587-001	Motor with flange, axis 3	Х	Х	Х	L2
В	3HAC061936-001	Timing belt, axis 3	X	X	Х	L2
С	3HAC063985-001	Washer	Х	Х	Х	L2
D	3HAC071021-001	Cooling pad for axis-3 and -4 motors Note	x	x	х	L2
		Cooling pads are wear parts. One cooling pad sheet includes 10 pieces of small pad.				
		Replace if damaged with one piece each time.				

Spare part illustration



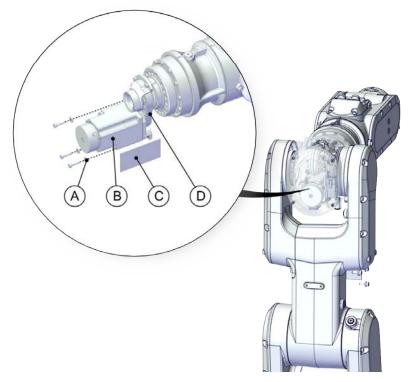
1.8.4 Axis-4 motor

1.8.4 Axis-4 motor

Spare part list

	Spare part number	Description	Standard (IP40)	IP67	Clean Room	Spare part level
Α	3HAC064765-001	Washer	х	х	Х	L2
В	3HAC083586-001	Motor with flange, axis 4	Х	Х	Х	L2
С	3HAC071021-001	Cooling pad for axis-3 and -4 motors Note Cooling pads are wear parts. One cooling pad sheet includes 10 pieces of small pad. Replace if damaged with one piece each time.		X	X	L2
D	3HAC061937-001	Timing belt, axis 4	Х	Х	Х	L2

Spare part illustration



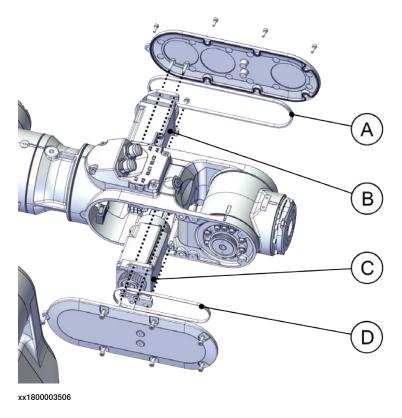
1.8.5 Axis-5 and axis-6 motors

1.8.5 Axis-5 and axis-6 motors

Spare part list

	Spare part number	Description	Standard (IP40)		Clean Room	Spare part level
Α	3HAC061939-001	Timing belt, axis 6	Х	X	Х	L2
В	3HAC083584-001	Motor with flange, axis 6	Х	Х	Х	L2
С	3HAC083585-001	Motor with flange, axis 5	Х	Х	Х	L2
D	3HAC061938-001	Timing belt, axis 5	Х	Х	Х	L2

Spare part illustration



1.9.1 Axis-1 gearbox

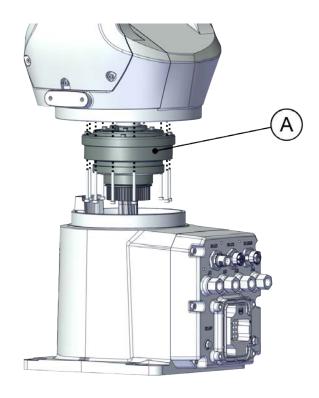
1.9 Spare parts - gearboxes

1.9.1 Axis-1 gearbox

Spare part list

	Spare part number		Standard (IP40)	IP67	Clean Room	Spare part level
Α	3HAC069062-001	Gear unit with pulley, axis 1	Х	X	X	L2

Spare part illustration

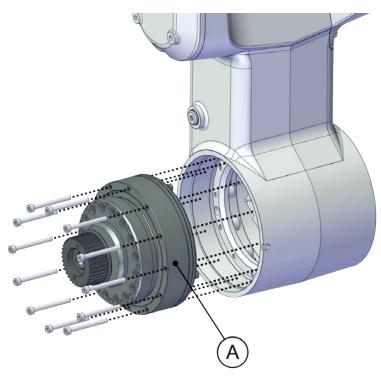


1.9.2 Axis-2 gearbox

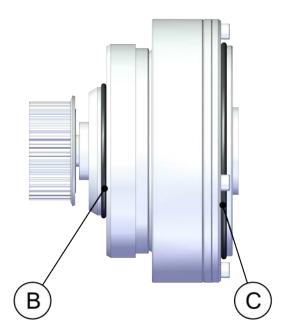
Spare part list

	Spare part number	Description	Standard (IP40)	IP67	Clean Room	Spare part level
Α	3HAC073517-001	Gear unit with pulley, axis 2	Х	Х	Х	L2
В	3HAB3772-143	O-ring on circular spline side		Х	Х	L2
С	3HAB3772-182	O-ring on flexible spline side		х	Х	L2

Spare part illustration



1.9.2 Axis-2 gearbox *Continued*

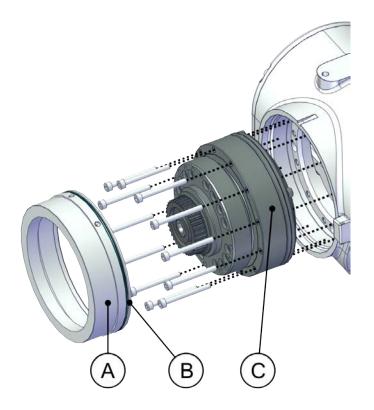


1.9.3 Axis-3 gearbox

Spare part list

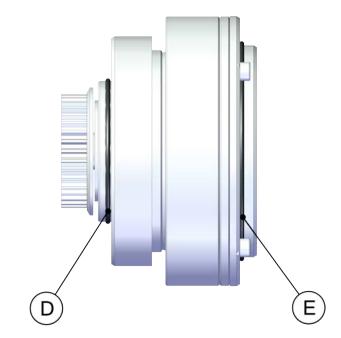
	Spare part number	Description	Standard (IP40)	IP67	Clean Room	Spare part level
Α	3HAC073218-001	Labyrinth sealing ring	Х	Х	х	L2
В	3HAC061327-032	O-ring	Х	Х	Х	L2
С	3HAC073518-001	Gear unit with pulley, axis 3	Х	Х	Х	L2
D	3HAC061327-009	O-ring on circular spline side		Х	Х	L2
Е	3HAC061327-008	O-ring on flexible spline side		Х	Х	L2

Spare part illustration



xx1800003509

1.9.3 Axis-3 gearbox *Continued*



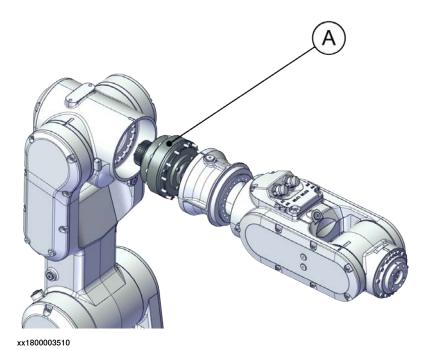
xx1900002206

1.9.4 Axis-4 gearbox

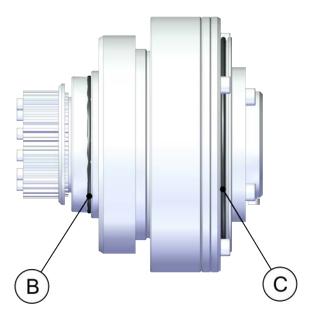
Spare part list

	Spare part number	Description	Standard (IP40)	IP67	Clean Room	Spare part level
Α	3HAC073519-001	Gear unit with pulley, axis 4	Х	Х	Х	L2
В	3HAC061327-009	O-ring on circular spline side		Х	Х	L2
С	3HAB3772-115	O-ring on flexible spline side		Х	Х	L2

Spare part illustration



1.9.4 Axis-4 gearbox *Continued*



xx1900002207

1.10.1 Axis Calibration items

1.10 Spare parts - Accessories

1.10.1 Axis Calibration items

Spare part list

Spare part number	Description	Spare part level	Stand- ard (IP40)	IP67	Clean Room	Illustration	
3HAC059556- 001	Protective plug for bushing	L1	X	Х			
3HAC059557- 001	Protective plug for bushing, Clean Room	L1			X	xx1600001042	
3HAC061926- 001	Calibration pin cover, 6 mm	L1	X	х		xx1900001420	

Spare part illustration

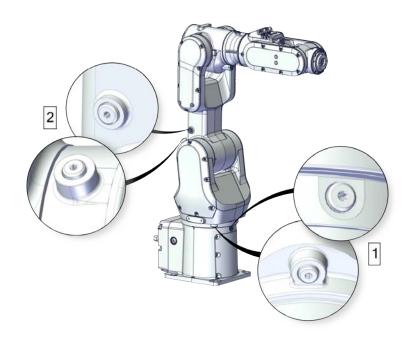
The protective plugs are installed in the bushings used for the calibration tools for Axis Calibration method.

There are two bushings each on axes 1, 2, 3 and 4.

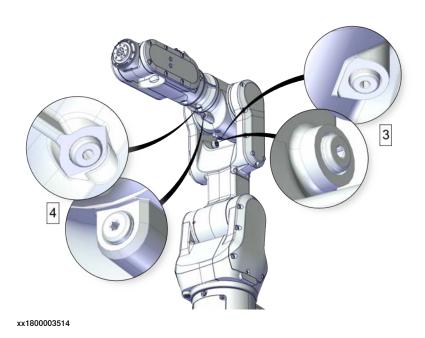
Axis 5 has one bushing and a fixed calibration pin with a protective cover. For Clean Room robots, axis 5 does not have the protection cover on the fixed calibration pin.

1.10.1 Axis Calibration items *Continued*

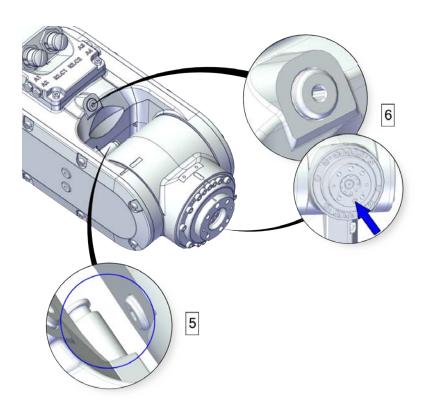
Axis 6 has only one bushing.



xx1800003320



1.10.1 Axis Calibration items Continued



xx1800003515

1.10.2 Special tools

1.10.2 Special tools

Spare part list

Spare part number	Description	Illustration
3HAC071022-001	Special toolkit Includes J5.C2 connector assembly tool, brake release button assembly tool, axis-4 motor fitting tool and M3x25 eye bolt.	
-	J5.C2 connector assembly tool Included in the special toolkit 3HAC071022-001. Used to remove and refit the J5.C2 connector, if the Ethernet cabling is equipped.	xx190000006
-	brake release button assembly tool Included in the special toolkit 3HAC071022-001. Used to remove and refit the brake release button.	
-	axis-4 motor fitting tool Included in the special toolkit 3HAC071022-001. Used to refit the axis-4 motor.	xx1900000042
		xx1800003620

1.10.2 Special tools Continued

Spare part number	Description	Illustration
-	M3x25 eye bolt Included in the special toolkit 3HAC071022-001.	xx1900000107
3HAC074609-001	Radial sealing assembly tool set Used with protection class IP67 and protection type Clean Room. Used for the press-fitting of radial sealings. Includes three sets of radial sealing fitting tool for axis 1, axis 2 and axis 3.	
	Axis-1 radial sealing assembly tool Included in the radial sealing assembly tool set 3HAC074609-001.	xx1900002209
-	Axis-2 radial sealing assembly tool Included in the radial sealing assembly tool set 3HAC074609-001.	xx1900002210
-	Axis-3 radial sealing assembly tool Included in the radial sealing assembly tool set 3HAC074609-001.	xx1900002211



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