

ROBOTICS

Product manual, spare parts

IRB 7710



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Product manual, spare parts

IRB 7710

OmniCore

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Overview of this manual

About this manual

This manual contains spare parts for:

- IRB 7710 and all its variants.

Usage

This manual shall be used as a complement to the product manual for IRB 7710 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.

References

Documentation referred to in the manual, is listed in the table below.

Document name	Document ID
<i>Product manual - IRB 7710</i>	<i>3HAC089600-001</i>
<i>Product specification - IRB 7710</i>	<i>3HAC089603-001</i>
<i>Circuit diagram - IRB 7710/IRB 7720</i>	<i>3HAC089629-001</i>

Revisions

Revision	Description
A	First edition.
B	Published in release 24C. The following updates are done in this revision: <ul style="list-style-type: none"> • Added a guide ring to the balancing device spare part list.

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1 Definition of spare part levels

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.

- L3 spare parts

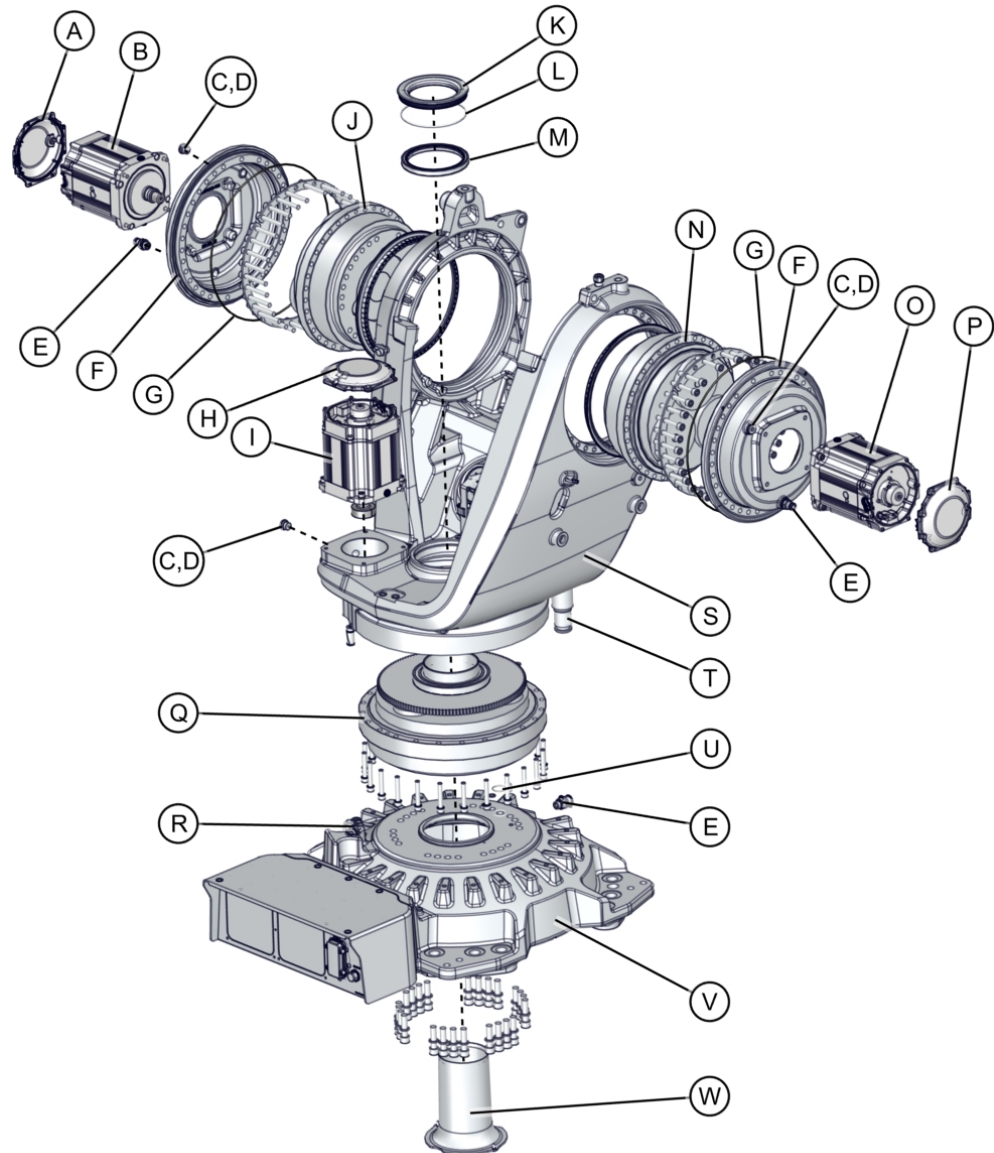
L3 spare parts shall only be replaced or repaired by qualified ABB service technician with knowledge of the application due to reduce risk of injury or damage to equipment. Improper installation may void warranty.

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2 Spare parts - axis 1-3

2.1 Axis 1-3

Parts list



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Spare part	Article number	Note	Level
A	Connection box cover FS180 with gasket 3HAC072864-003 (Graphite White) 3HAC072864-005 (ABB Orange) 3HAC074336-004 (Graphite White, threaded connection) 3HAC074336-005 (ABB Orange, threaded connection)	Replace if damaged. On axis-2 motor	L2

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2 Spare parts - axis 1-3

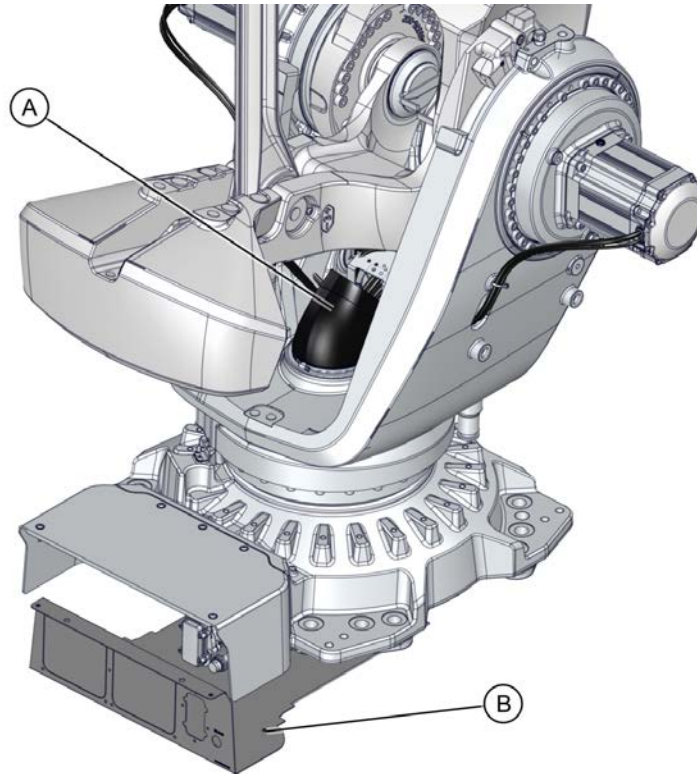
2.1 Axis 1-3

Continued

	Spare part	Article number	Note	Level
B	Motor unit (including connection box and pinion)	3HAC085098-002 (Graphite White) 3HAC085098-003 (ABB Orange)		L2
C	Magnetic plug, G 1/2"	3HAC16721-1		L1
D	O-ring, G 1/2"	3HAC061327-059	Used on oil plug. Always replace when refitting oil plug.	L1
E	Quick coupling G1/2"	3HAC072846-001		L1
F	Motor flange	3HAC074412-004 (Graphite White) 3HAC074412-005 (ABB Orange)		L2
G	O-ring	3HAB3772-160	On motor flange.	L2
H	Connection box cover FS180 with gasket	3HAC072864-003 (Graphite White) 3HAC072864-005 (ABB Orange) 3HAC074336-004 (Graphite White, threaded connection) 3HAC074336-005 (ABB Orange, threaded connection)	Replace if damaged. On axis-1 motor	L2
I	Motor unit (including connection box and pinion)	3HAC085097-003 (Graphite White) 3HAC085097-004 (ABB Orange)		L2
J	Gearbox	3HAC074200-006	Includes o-ring 3HAC061327-067	L2
K	Protection ring	TBD		L2
L	O-ring	TBD	On axis-1 protection ring.	L2
M	Radial sealing with dust lip	3HAB3701-51		L2
N	Gearbox	3HAC074200-006	Includes o-ring 3HAC061327-067	L2
O	Motor unit (including connection box and pinion)	3HAC085098-002 (Graphite White) 3HAC085098-003 (ABB Orange)		L2
P	Connection box cover FS180 with gasket	3HAC072864-003 (Graphite White) 3HAC072864-005 (ABB Orange) 3HAC074336-004 (Graphite White, threaded connection) 3HAC074336-005 (ABB Orange, threaded connection)	Replace if damaged. On axis-2 motor	L2
Q	Gearbox	3HAC085094-002 (Graphite White) 3HAC085094-003 (ABB Orange)	Includes o-ring 3HAC061327-105	L2
R	Sync plate, axis 1	3HAC075111-001		L1
S	Frame	3HAC069373-004 (Graphite White) 3HAC069373-005 (ABB Orange)		L2
T	Mechanical stop pin	3HAC084500-001		L1
U	O-ring	3HAC061327-033	1 pcs. At the oil inlet hole on the gear-box.	L2
V	Base	3HAC069336-004 (Graphite White) 3HAC069336-005 (ABB Orange)		L2
W	Protection tube	3HAC084551-001		L2

2.2 Axis 1-3 protection type Foundry Plus

Parts list



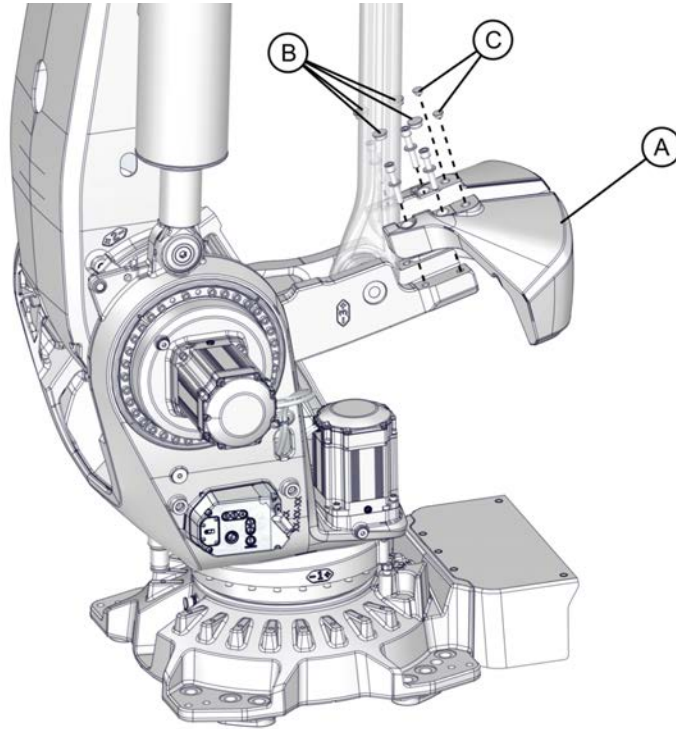
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	Spare part	Article number	Note	Level
A	Cable protection, Foundry Plus	3HACxxx		L2
B	Base connector housing	3HAC072234-001		L2

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3 Spare parts - counter balancing weight

Parts list



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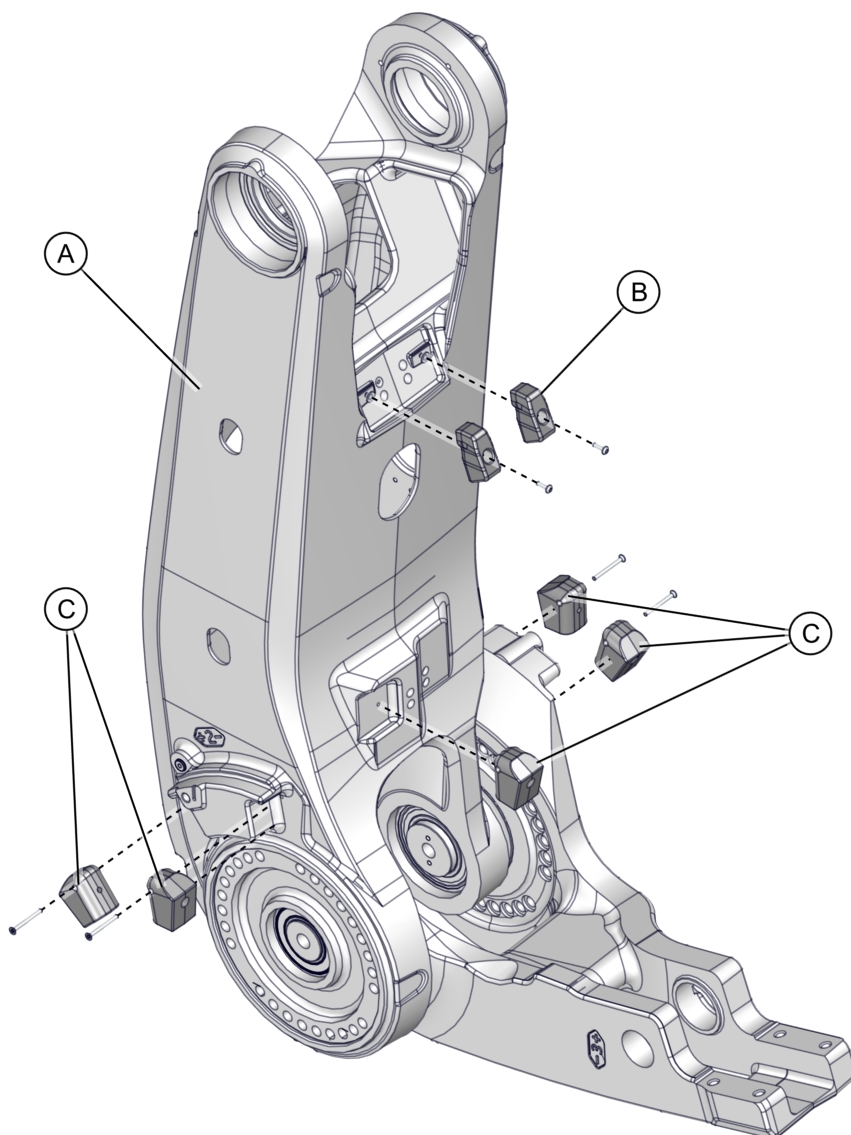
	Spare part	Article number	Note	Level
A	Counter balancing weight	3HAC076326-004 (Graphite White) 3HAC076326-005 (ABB Orange)		L2
B	Protection plug	3HAC4836-6	For screw holes.	L1
C	Protection plug	3HAC4836-21	For lifting holes.	L1

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4 Spare parts - lower arm

4.1 Lower arm

Parts list



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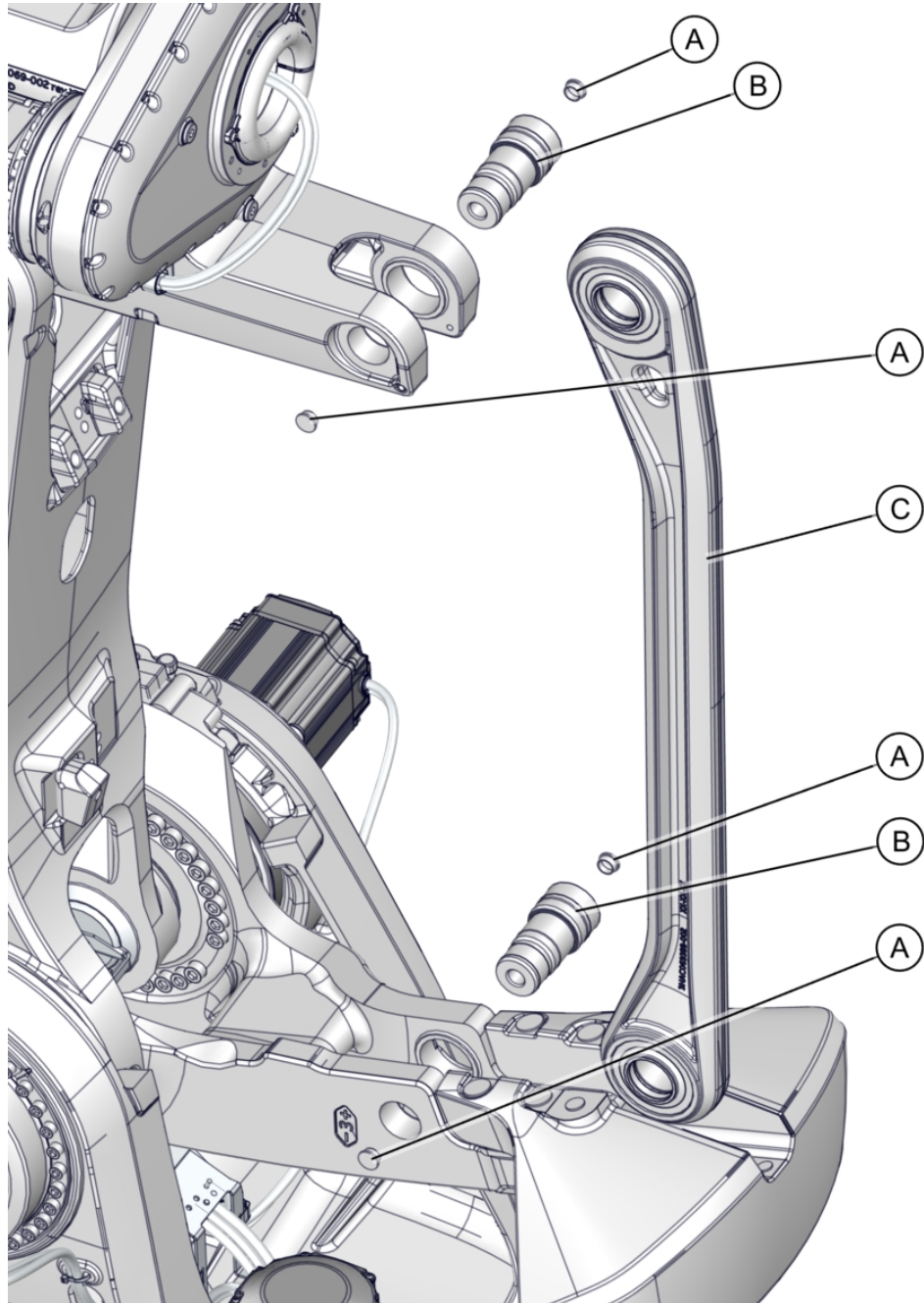
	Spare part	Article number	Note	Level
A	Lower arm system	3HAC069375-003 (Graphite White) 3HAC069375-004 (ABB Orange)	Includes lower and parallel arm	L3
B	Damper	3HAC022338-001	On lower arm	L1
C	Damper	3HAC12991-1	On axis 2, axis 3 and lower arm	L1

4 Spare parts - lower arm

4.2 Parallel rod

4.2 Parallel rod

Parts list

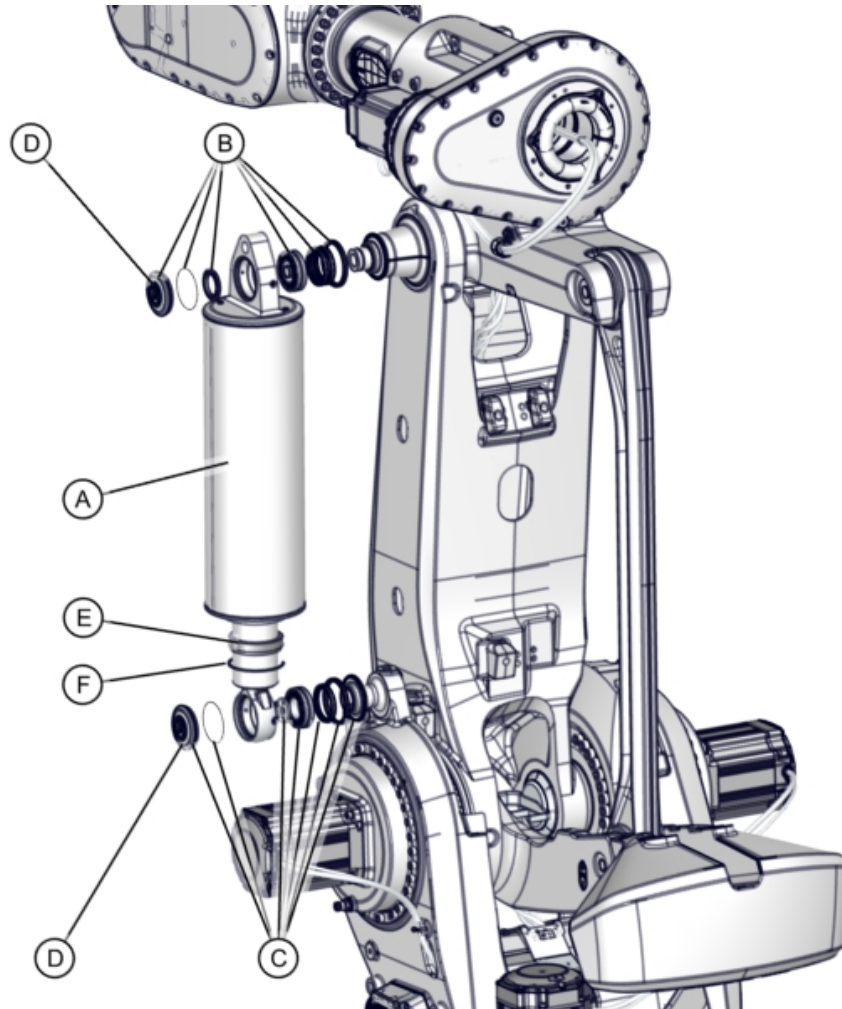


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	Spare part	Article number	Note	Level
A	Protection plug	3HAC4836-11	Replace if damaged.	L2
B	Shaft, parallel rod	3HAC083678-001		L2
C	Parallel rod	3HAC085618-003 (Graphite White) 3HAC085618-004 (ABB Orange)	Includes spherical roller bearing and washers.	L2

5 Spare parts - balancing device

Parts list



xx2300001495

	Spare part	Article number	Note	Level
A	Balancing device	3HAC084742-003 (Graphite White) 3HAC084742-004 (ABB Orange)		L2
B	Maintenance set, upper link ear	3HAC091950-001	The maintenance kit contains: <ul style="list-style-type: none"> • End cover • O-ring • Nut • Radial sealing with dust lip • Spherical roller bearing • Support ring 	L2

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5 Spare parts - balancing device

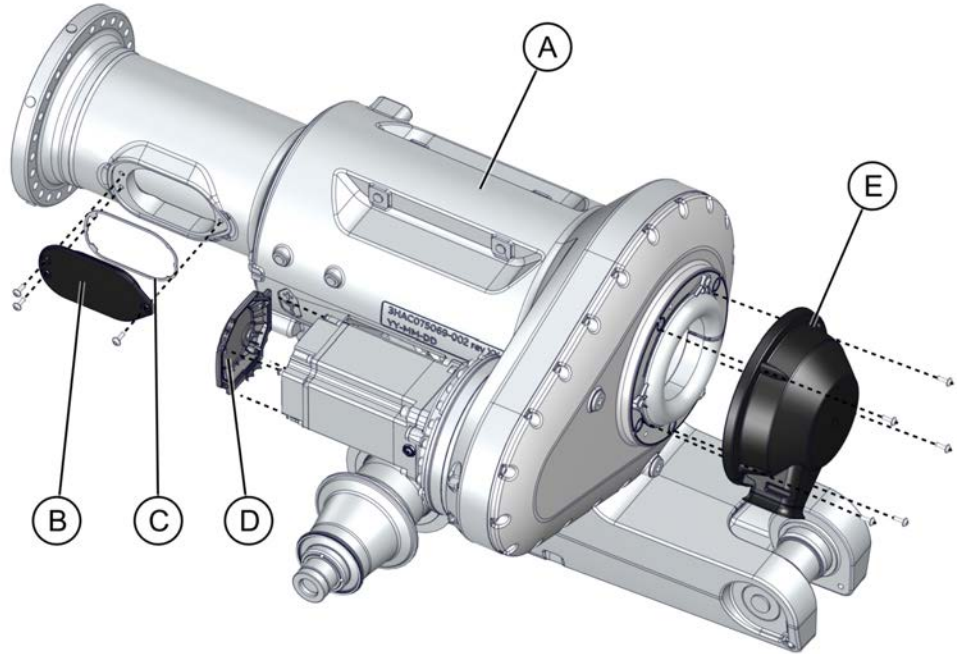
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	Spare part	Article number	Note	Level
C	Maintenance set, lower link ear	3HAC091953-001	The maintenance kit contains: <ul style="list-style-type: none">• End cover• O-ring• Spacer ring• Radial sealing with dust lip• Spherical roller bearing• Support ring• Washer• Torx pan head screw	L2
D	Cover	3HAC075038-001	On the balancing device ear.	L2
E	Guide ring	3HAC034897-001		L2
F	Circlip SB 120	3HAC036620-001		L2

6 Spare parts - upper arm excluding wrist

6.1 Upper arm excluding wrist

Parts list



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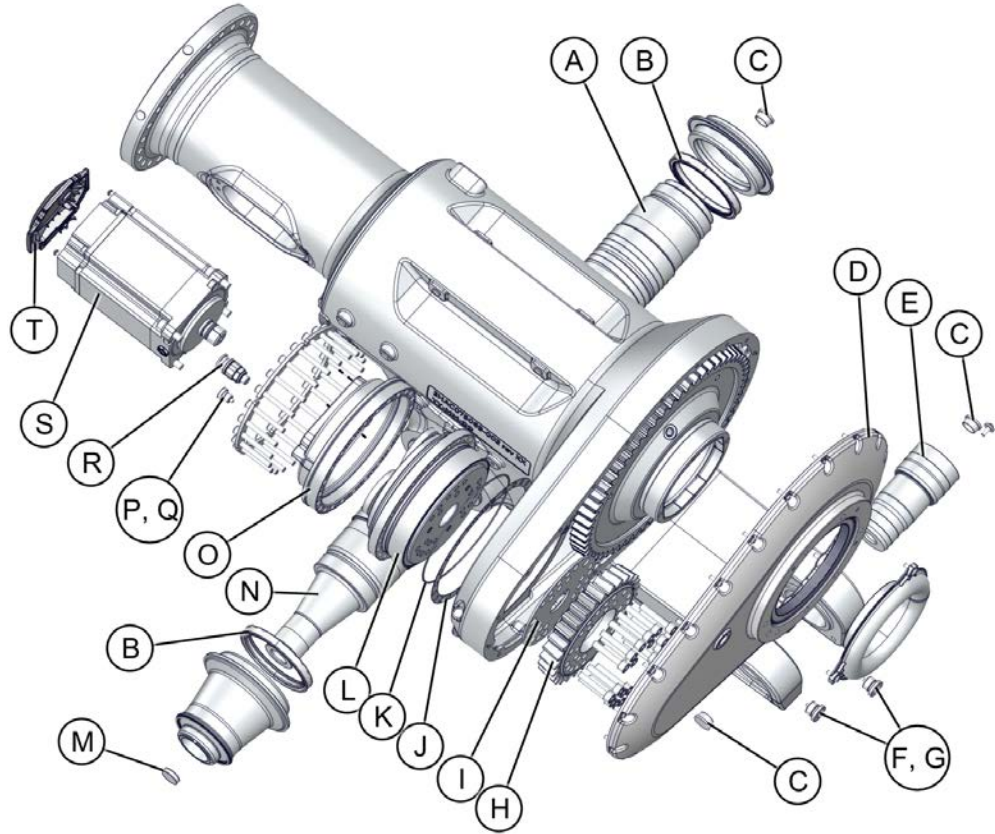
	Spare part	Article number	Note	Level
A	Upper arm	3HAC084914-002 (Graphite White) 3HAC084914-003 (ABB Orange)	Includes axis-4 motor and gearbox.	L3
B	Side cover	3HAC071727-001	Replace if damaged.	L2
C	Gasket, side cover	3HAC073715-001	Protection type Foundry Plus	L2
D	Connection box cover FS130 with gasket	3HAC072863-003 (Graphite White) 3HAC072863-005 (ABB Orange)	Replace if damaged. On axis-4 motor	L2
E	Cover with gasket	3HAC074623-003	Protection type Foundry Plus	L2

6 Spare parts - upper arm excluding wrist

6.2 Upper arm parts

6.2 Upper arm parts

Parts list



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	Spare part	Article number	Note	Level
A	Shaft, axis-3	3HAC074233-003	Replace if damaged.	L3
B	Radial sealing with dust lip	3HAB3701-71	Always replace with a new sealing.	L3
C	Protection plug	3HAC4836-11	Replace if damaged.	L2
D	Arm house cover including cassette sealing	3HAC084032-003 (Graphite White) 3HAC084032-004 (ABB Orange)	Gasket and cassette sealing included	L2
E	Shaft, parallel rod	3HAC083678-001		L2
F	Magnetic plug, G 1/2"	3HAC16721-1		L1
G	O-ring, G 1/2"	3HAC061327-059	Used on oil plug. Always replace when refitting oil plug.	L2
H	Cylindrical gear Z3	3HAC074343-001		L3
I	Set of shims	3HAC084969-001		L3
J	Friction shim	3HAC085686-001		L3
K	O-ring	3HAC061327-078	Included in gearbox spare part, but replace if damaged. 2 pcs	L3

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6 Spare parts - upper arm excluding wrist

6.2 Upper arm parts Continued

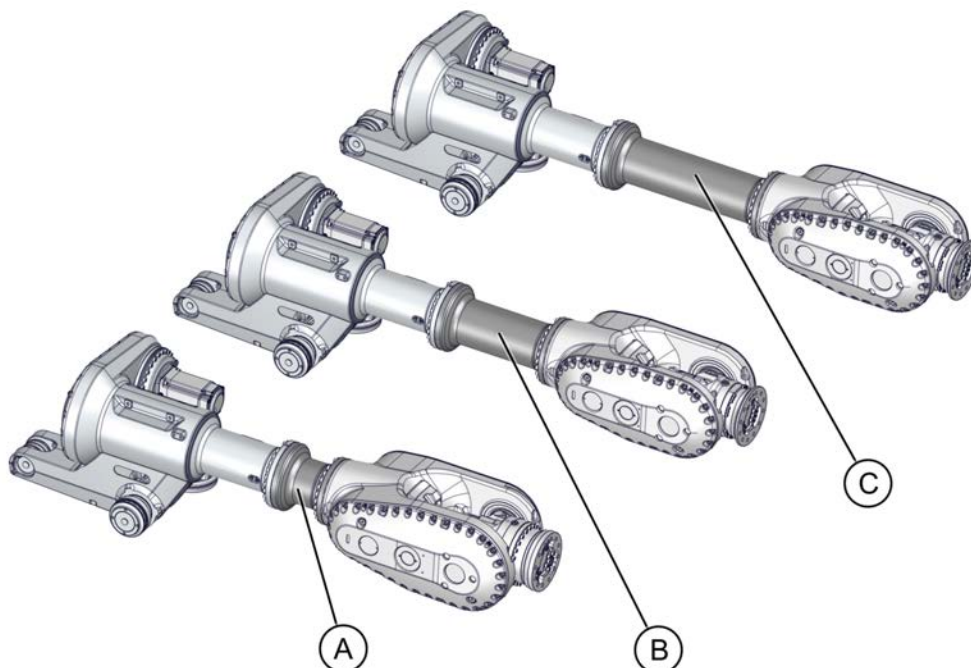
	Spare part	Article number	Note	Level
L	Gearbox	3HAC084911-003 (Graphite White) 3HAC084911-004 (ABB Orange)	Includes o-ring 3HAC061327-078	L3
M	VK cover	3HAA2166-12	Replace if damaged.	L2
N	Shaft, axis-2	3HAC074233-001	Replace if damaged.	L3
O	Motor flange	3HAC069745-004 (Graphite White) 3HAC069745-005 (ABB Orange)		L2
P	Magnetic plug, G 1/4"	3HAC037925-001		L2
Q	O-ring, G 1/4"	3HAC061327-060	Used on oil plug. Always replace when refitting oil plug.	L2
R	Quick coupling G1/4"	3HAC074630-001		L2
S	Motor unit (including connection box and pinion)	3HAC084261-003 (Graphite White) 3HAC084261-004 (ABB Orange)		L2
T	Connection box cover FS130 with gasket	3HAC072863-003 (Graphite White) 3HAC072863-005 (ABB Orange)	Replace if damaged. On axis-4 motor	L2

6 Spare parts - upper arm excluding wrist

6.3 Upper arm extenders

6.3 Upper arm extenders

Parts list



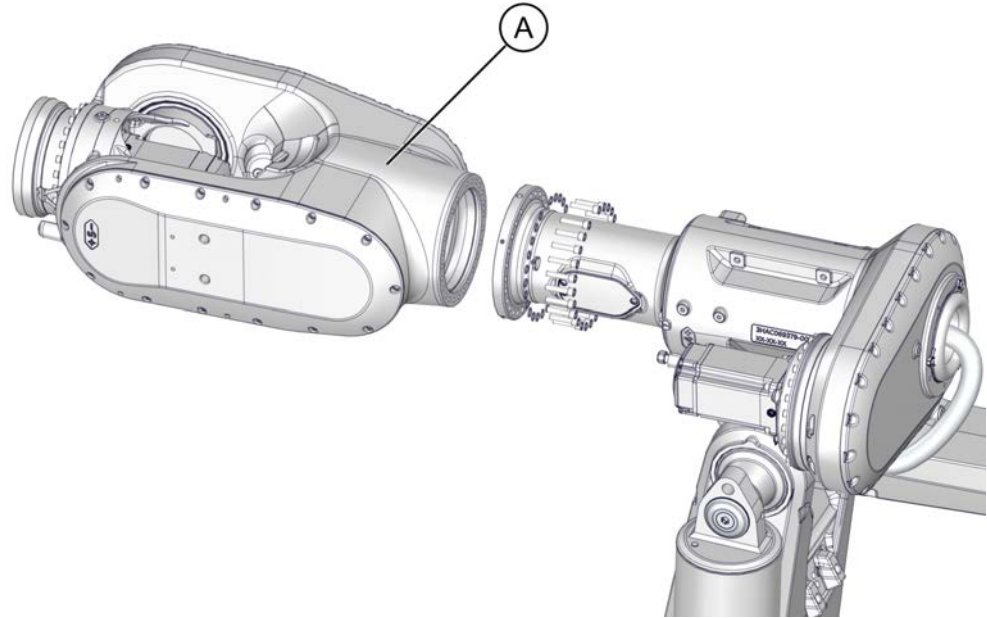
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	Spare part	Article number	Note	Level
A	Arm extender, 230 mm	3HAC075271-006 (Graphite White) 3HAC075271-007 (ABB Orange)		L2
B	Arm extender, 490 mm	3HAC072729-006 (Graphite White) 3HAC072729-007 (ABB Orange)		L2
C	Arm extender, 700 mm	3HAC076085-006 (Graphite White) 3HAC076085-007 (ABB Orange)		L2

7 Spare parts - wrist

7.1 Wrist complete

Parts list



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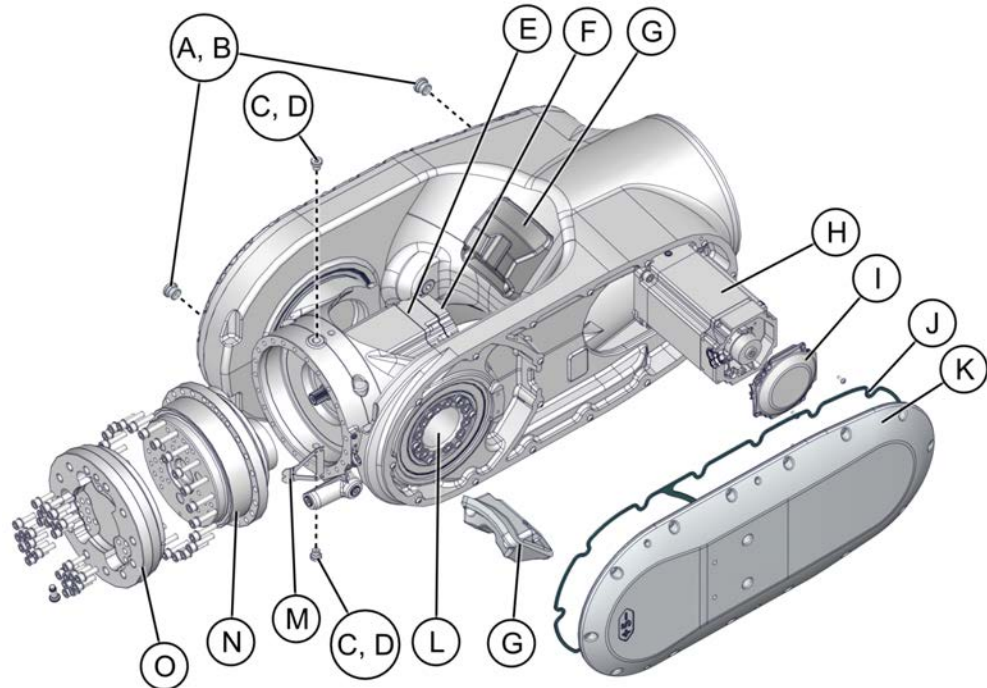
	Spare part	Article number	Note	Level
A	Wrist	3HAC085018-002 (Graphite White) 3HAC085018-003 (ABB Orange)	Complete unit with motors and gears.	L2

7 Spare parts - wrist

7.2 Wrist parts

7.2 Wrist parts

Parts list



xx240000621

	Spare part	Article number	Note	Level
A	Magnetic plug, G 1/2"	3HAC16721-1		L1
B	O-ring, G 1/2"	3HAC061327-059	Used on oil plug. Always replace when refitting oil plug.	L2
C	Magnetic plug, G 1/4"	3HAC037925-001		L1
D	O-ring, G 1/4"	3HAC061327-060	Used on oil plug. Always replace when refitting oil plug.	L2
E	Motor unit (including connection box and pinion)	3HAC076985-003 (Graphite White) 3HAC076985-004 (ABB Orange)		L2
F	Connection box cover with gasket	3HAC079381-003 (Graphite White) 3HAC079381-004 (ABB Orange)	Replace if damaged. On axis-6 motor	L2
G	Damper / mechanical stop axis 5	3HAC085025-001	On wrist Includes two dampers.	L1
H	Motor unit (including connection box and pinion)	3HAC076984-003		L2
I	Connection box cover with gasket	3HAC072863-003 (Graphite White) 3HAC072863-005 (ABB Orange)	Replace if damaged. On axis-5 motor	L2
J	Gasket	3HAC085052-001	For wrist cover. Replace if damaged.	L2

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7 Spare parts - wrist

7.2 Wrist parts Continued

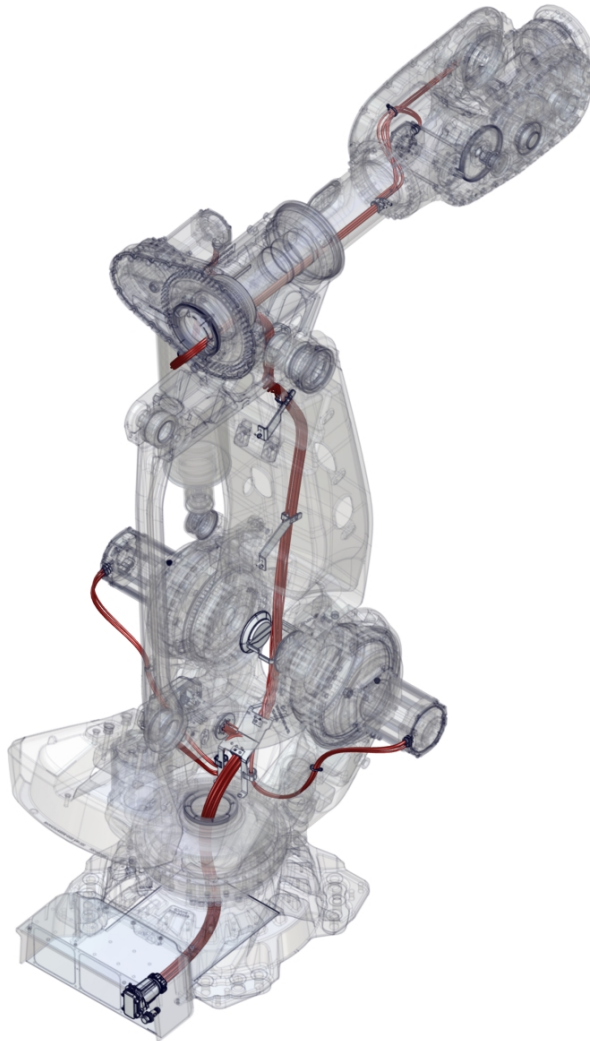
	Spare part	Article number	Note	Level
K	Wrist cover	3HAC085026-002 (Graphite White) 3HAC085026-003 (ABB Orange)	Replace if damaged.	L2
L	Support shaft including bearing	3HAC085078-002 (Graphite White) 3HAC085078-003 (ABB Orange)	Replace if damaged.	L3
M	Sync plate, axis 6	3HAC055028-001		L1
N	Gearbox	3HAC075792-002 (Graphite White) 3HAC075792-003 (ABB Orange)	Includes o-ring 3HAC061327-078	L2
O	Turning disc	3HAC085063-002	IRB 7710-500/2.85 IRB 7710-430/3.1 IRB 7710-360/3.3 IRB 7710-310/3.5	L2
P	Process turning disc	3HAC084761-004	IRB 7710-400/2.85 LID IRB 7710-390/3.1 LID IRB 7710-325/3.3 LID IRB 7710-280/3.5 LID	L2

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8 Spare parts - electronic parts

8.1 Manipulator harness ax 1-6

Parts list



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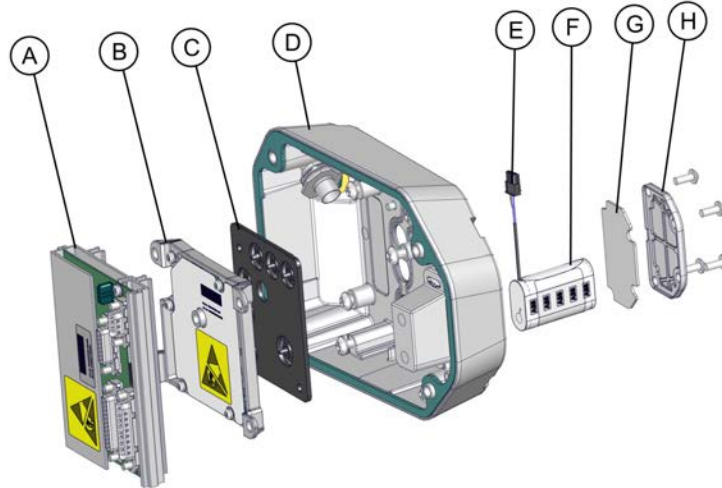
	Spare part	Article number	Note	Level
A	Cable harness	3HAC084561-001		L2

8 Spare parts - electronic parts

8.2 Electrical parts

8.2 Electrical parts

Parts list



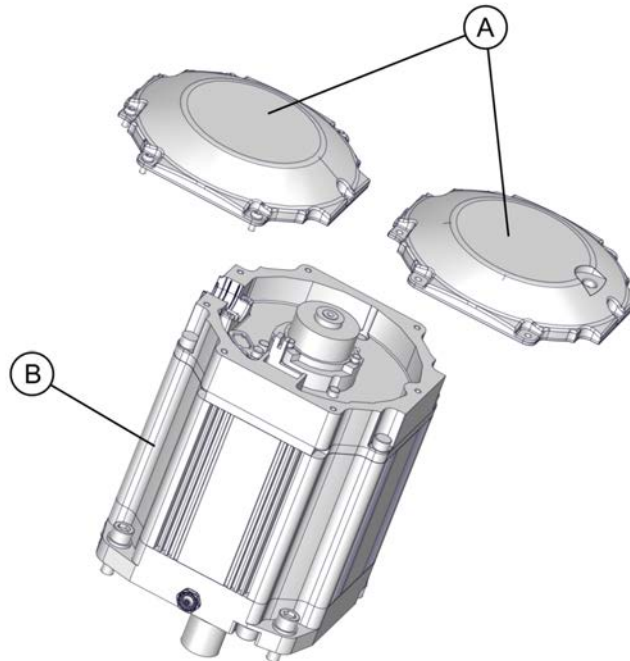
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	Spare part	Article number	Note	Level
A	Serial measurement unit	3HAC043904-001		L2
B	Brake release unit	3HAC073540-001		L2
C	Push button guard	3HAC070515-001		L2
D	Cover, electronics	3HAC081189-003 (Graphite White) 3HAC081189-004 (ABB Orange)	Includes gasket. Replace if damaged.	L2
E	Battery cable	3HAC073539-001	Replace if damaged.	L2
F	Battery pack	3HAC044075-001	Battery includes protection circuits. Only replace with the specified spare part or an ABB-approved equivalent.	L1
G	Gasket for battery cover	3HAC073342-001	Replace if damaged.	L1
H	Cover, battery	3HAC070509-001		L1

9 Spare parts - motors

9.1 Axis-1

Parts list



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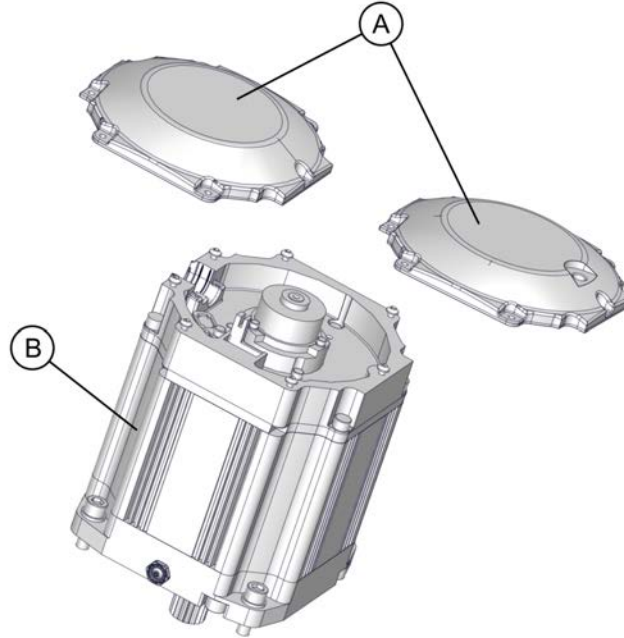
	Spare part	Article number	Note	Level
A	Connection box cover FS180 with gasket	3HAC072864-003 (Graphite White) 3HAC072864-005 (ABB Orange) 3HAC074336-004 (Graphite White, threaded connection) 3HAC074336-005 (ABB Orange, threaded connection)	Replace if damaged. On axis-1 motor	L2
B	Motor unit (including connection box and pinion)	3HAC085097-003 (Graphite White) 3HAC085097-004 (ABB Orange)		L2

9 Spare parts - motors

9.2 Axis-2

9.2 Axis-2

Parts list

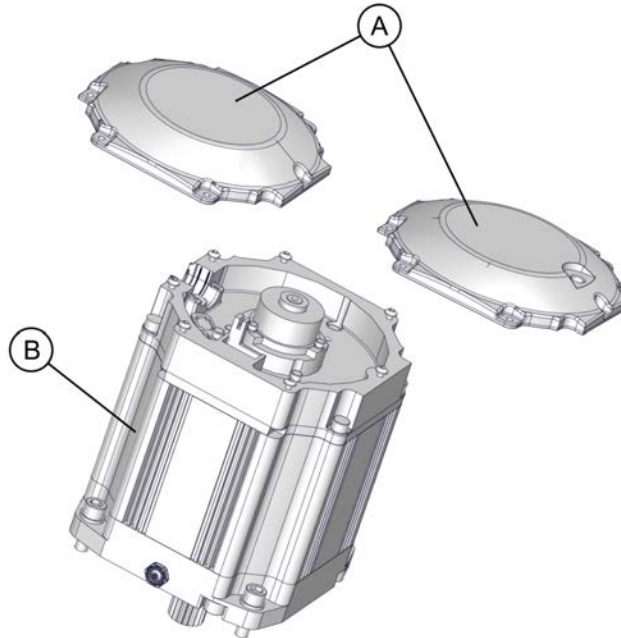


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	Spare part	Article number	Note	Level
A	Connection box cover FS180 with gasket	3HAC072864-003 (Graphite White) 3HAC072864-005 (ABB Orange) 3HAC074336-004 (Graphite White, threaded connection) 3HAC074336-005 (ABB Orange, threaded connection)	Replace if damaged. On axis-2 motor	L2
B	Motor unit (including connection box and pinion)	3HAC085098-002 (Graphite White) 3HAC085098-003 (ABB Orange)		L2

9.3 Axis-3

Parts list



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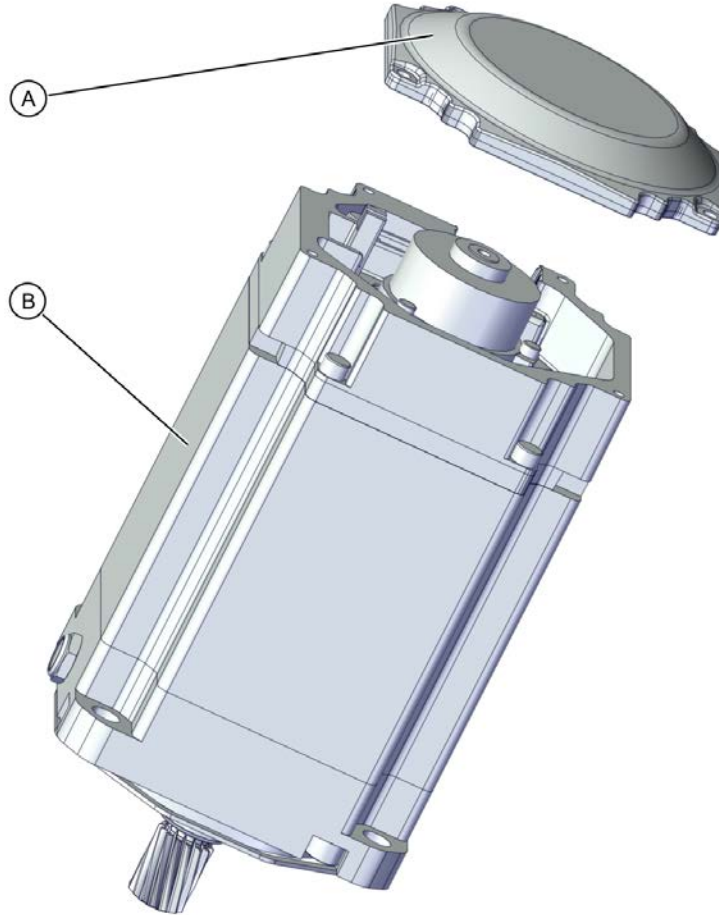
	Spare part	Article number	Note	Level
A	Connection box cover FS180 with gasket	3HAC072864-003 (Graphite White) 3HAC072864-005 (ABB Orange) 3HAC074336-004 (Graphite White, threaded connection) 3HAC074336-005 (ABB Orange, threaded connection)	Replace if damaged. On axis-3 motor	L2
B	Motor unit (including connection box and pinion)	3HAC085098-002 (Graphite White) 3HAC085098-003 (ABB Orange)		L2

9 Spare parts - motors

9.4 Axis-4

9.4 Axis-4

Parts list

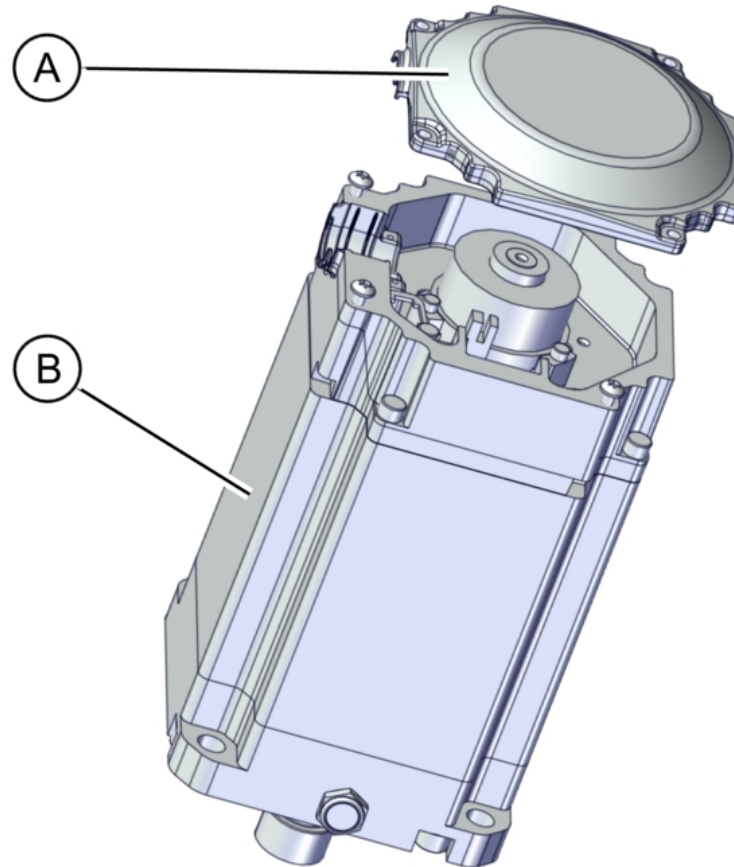


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	Spare part	Article number	Note	Level
A	Connection box cover FS130 with gasket	3HAC072863-003 (Graphite White) 3HAC072863-005 (ABB Orange)	Replace if damaged. On axis-4 motor	L2
B	Motor unit (including connection box and pinion)	3HAC084261-003 (Graphite White) 3HAC084261-004 (ABB Orange)		L2

9.5 Axis-5

Parts list



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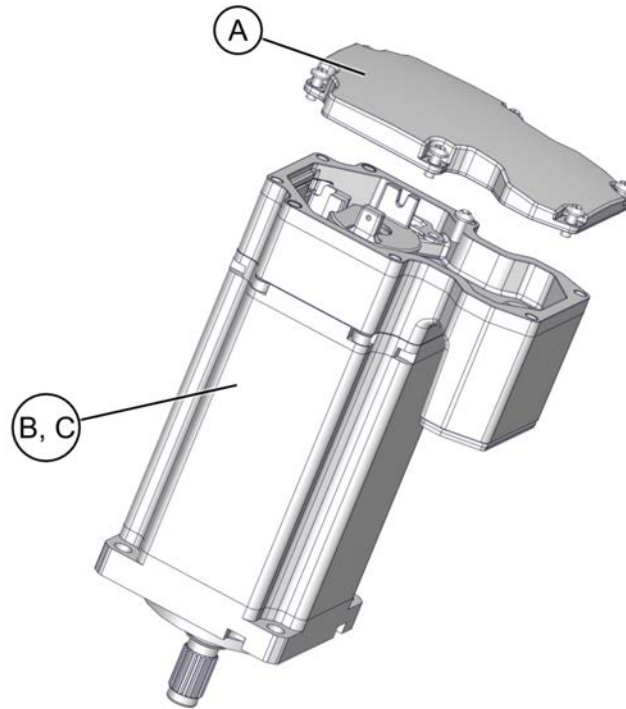
	Spare part	Article number	Note	Level
A	Connection box cover with gasket	3HAC072863-003 (Graphite White) 3HAC072863-005 (ABB Orange)	Replace if damaged. On axis-5 motor	L2
B	Motor unit (including connection box and pinion)	3HAC076984-003		L2

9 Spare parts - motors

9.6 Axis-6

9.6 Axis-6

Parts list



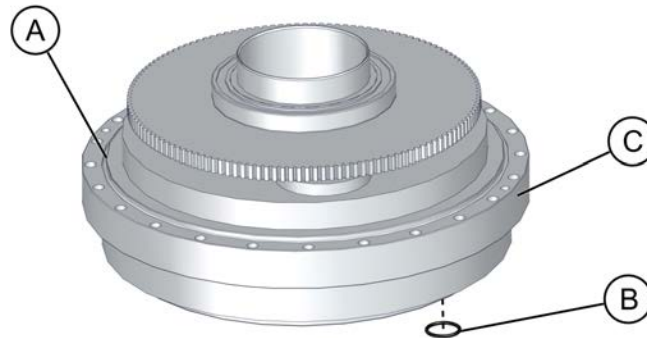
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	Spare part	Article number	Note	Level
A	Connection box cover with gasket	3HAC079381-003 (Graphite White) 3HAC079381-004 (ABB Orange)	Replace if damaged. On axis-6 motor	L2
B	Motor unit (including connection box and pinion)	3HAC076985-003 (Graphite White) 3HAC076985-004 (ABB Orange)		L2

10 Spare parts - gears

10.1 Axis-1

Parts list



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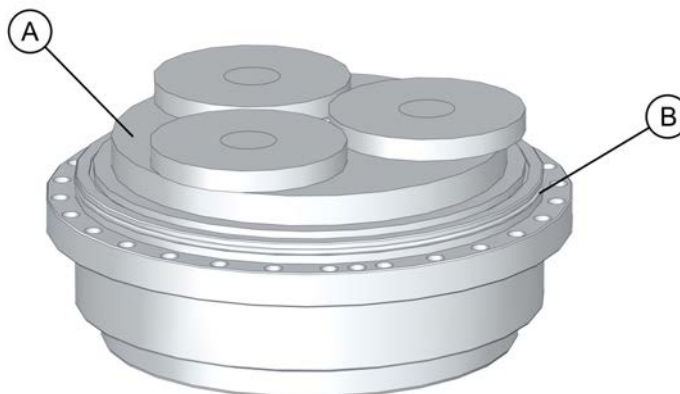
	Spare part	Article number	Note	Level
A	O-ring	3HAC061327-105	On gearbox. Included in gearbox spare part, but replace if damaged.	L2
B	O-ring	3HAC061327-033	1 pcs. At the oil inlet hole on the gearbox.	L2
C	Gearbox	3HAC085094-002 (Graphite White) 3HAC085094-003 (ABB Orange)	Includes o-ring 3HAC061327- 105	L2

10 Spare parts - gears

10.2 Axis-2

10.2 Axis-2

Parts list

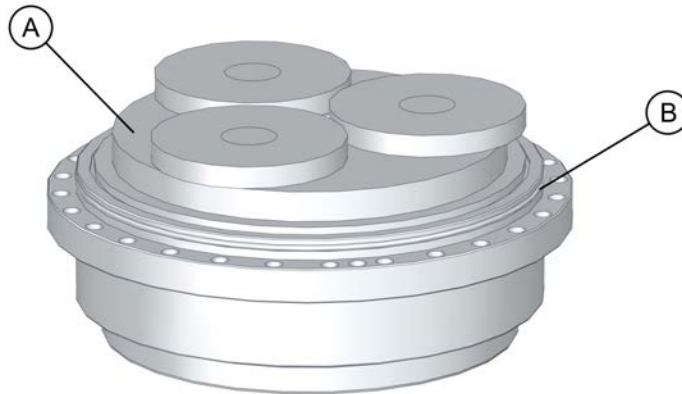


xx2300000133

	Spare part	Article number	Note	Level
A	Gearbox	3HAC074200-006	Includes o-ring 3HAC061327-067	L2
B	O-ring	3HAC061327-067	On gearbox. Included in gearbox spare part, but replace if damaged.	L2

10.3 Axis-3

Parts list



xx230000133

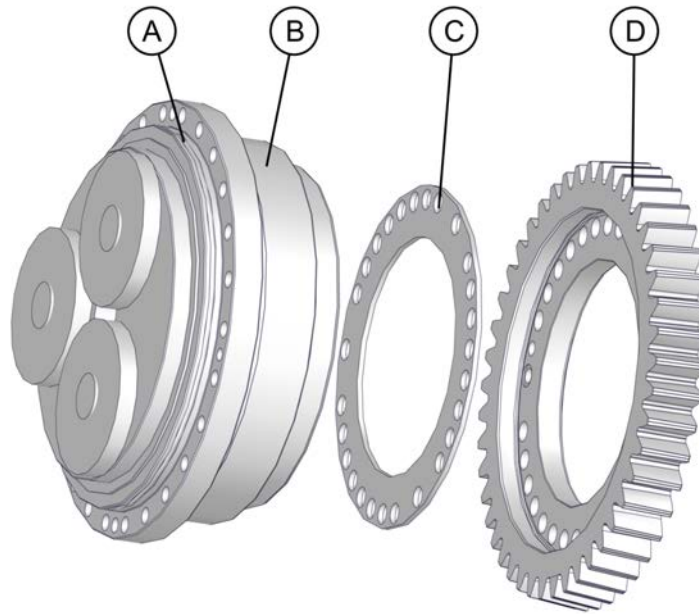
	Spare part	Article number	Note	Level
A	Gearbox	3HAC074200-006	Includes o-ring 3HAC061327-067	L2
B	O-ring	3HAC061327-067	On gearbox. Included in gearbox spare part, but replace if damaged.	L2

10 Spare parts - gears

10.4 Axis-4

10.4 Axis-4

Parts list

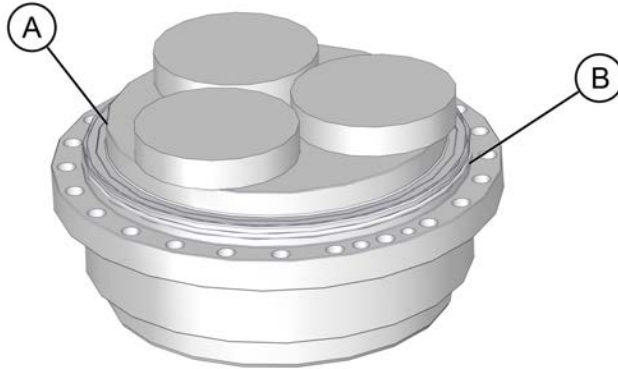


xx240000624

	Spare part	Article number	Note	Level
A	O-ring	3HAC061327-078	Included in gearbox spare part, but replace if damaged. 2 pcs	L3
B	Gearbox	3HAC084911-003 (Graphite White) 3HAC084911-004 (ABB Orange)	Includes o-ring 3HAC061327-078	L3
C	Set of shims	3HAC084969-001		L3
D	Cylindrical gear Z3	3HAC074343-001		L3

10.5 Axis-6

Parts list



xx240000623

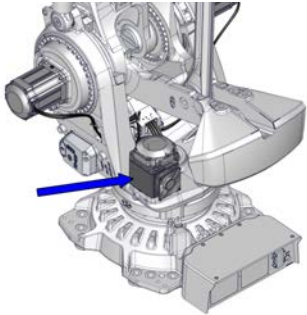
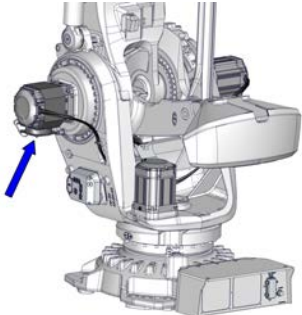
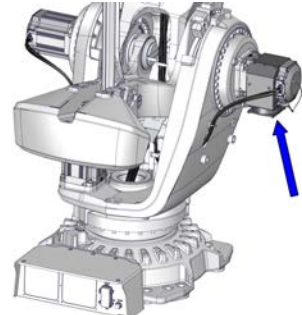
	Spare part	Article number	Note	Level
A	Gearbox	3HAC075792-002 (Graphite White) 3HAC075792-003 (ABB Orange)	Includes o-ring 3HAC061327-078	L2
B	O-ring	3HAC061327-078	Included in gearbox spare part, but replace if damaged.	L2

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11 Spare parts - options

11.1 Motor cooling fan

Parts list

Axis- 1	Axis-2	Axis-3
 <p>xx2400000557</p>	 <p>xx2400000558</p>	 <p>xx2400000559</p>



Note

The robot can only have two cooling fans installed at the same time.

Spare part number	Description
3HAC092582-001 (Graphite White) 3HAC092583-001 (ABB Orange)	Fan unit Available for the axis-1, axis-2 and axis-3 motor. Can not be used together with protection type Foundry Plus. Includes fan unit, customer connection plate and required fasteners.
3HAC033082-001 ?	Cable harness for fan unit

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12 Spare parts - accessories

12.1 Axis Calibration items

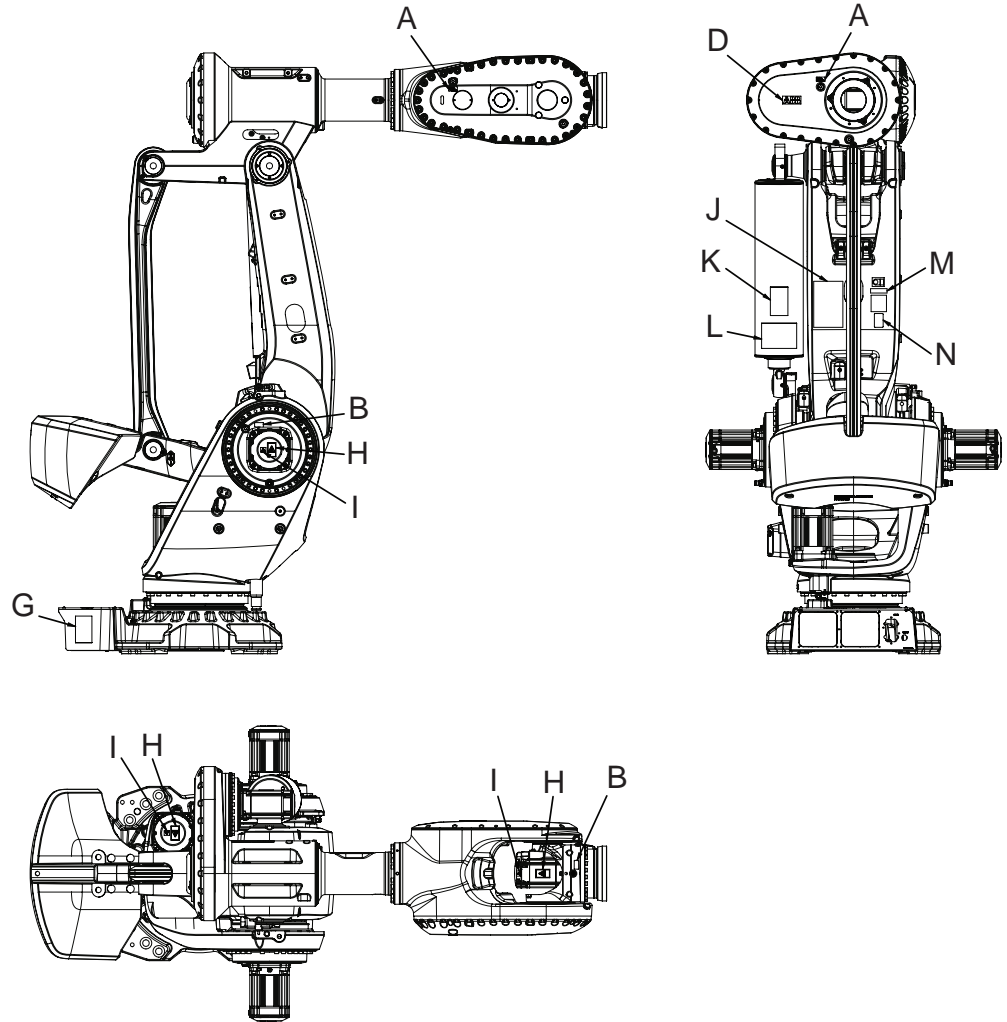
Spare part list

Spare part number	Description	Spare part level
3HAC064875-001 (axes 1, 2, 3 and 4)	Protection cover and plug set	L2
3HAC059487-001 (axes 5 and 6)	Contains replacement calibration pin covers and protective plugs for the bushings.	

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13 Spare parts - labels

Spare part illustration

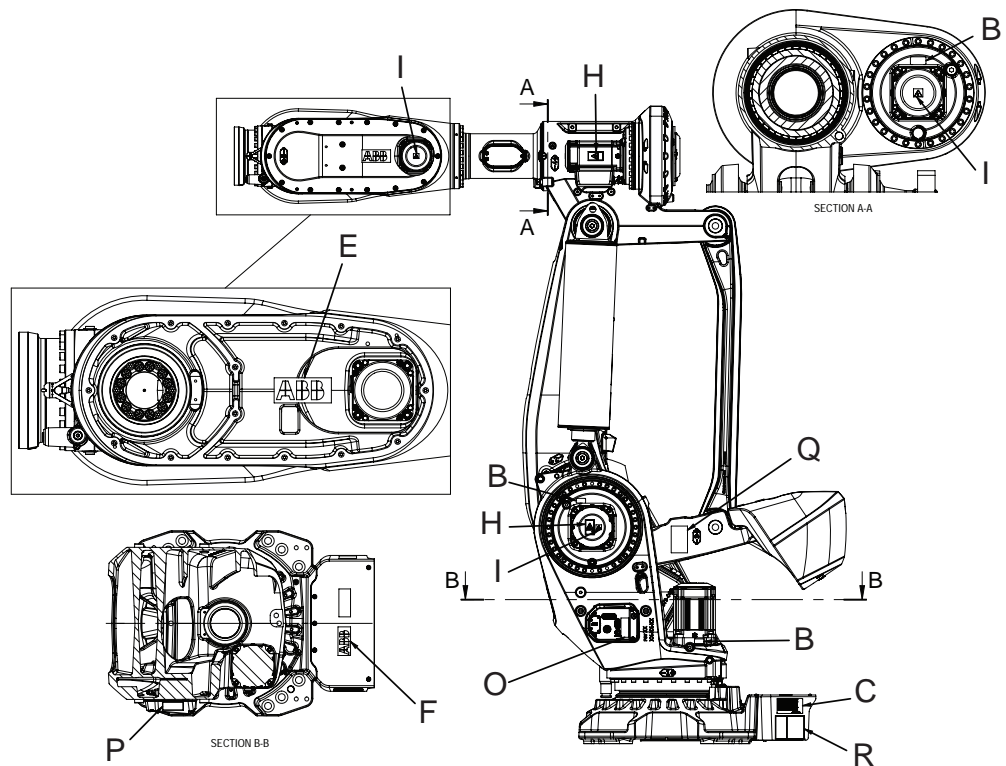


xx240000261

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13 Spare parts - labels

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xx2400000262

	Spare part	Article number	Level
A	Lubrication label Mobilgear 600 XP 320	3HAC021485-001	L1
B	Lubrication label Kyodo Yushi TMO 150	3HAC032726-001	L1
C	Lubrication label	3HAC032905-001	L1
D	ABB logotype label	3HAC0453-4 / 3HAC17765-1	L1
E	ABB logotype label	3HAC0453-1 / 3HAC5089-1	L1
F	ABB logotype label	3HAC0453-5 / 3HAC077301-002	L1
G	Warning label Tipping robot	3HAC9191-1	L1
H	Warning label Hot surface	29454489-16	L1
I	Warning label Electrical (flash)	3HAC1589-1	L1
J	Instruction label Lifting of robot	3HAC086908-001	L1
K	Warning label Stored energy	3HAC065665-001 (3HAC3981-1)	L1
L	Instruction label Before disassembly, see product manual	3HAC4591-1	L1

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	Spare part	Article number	Level
M	ABB information sign	3HAC14257-1	L1
N	Calibration label	3HAC13488-1	L1
O	Instruction label Brake release	3HAC076755-001	L1
P	Warning label / Instruction label Moving robot / MOTORS OFF	3HAC076756-001	L1
Q	Warning label Crush	3HAC4517-1	L1
R	Warning label Extended working range	3HAC021761-001	L1

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14 Consumables and wear parts

14.1 Wear parts

Wear part list

Spare part	Article number
Lubricating oil	-
O-ring, G 1/2"	3HAC061327-059
O-ring, G 1/4"	3HAC061327-060
Battery pack	3HAC044075-001



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