ABB

Product manual, spare parts

IRB 140

Product manual, spare parts

IRB 140 type C
IRB 140T type C
IRB 140-6/0.8 type C
IRB 140T-6/0.8 type C

IRC5

Document ID: 3HAC049099-001

Revision: D

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Overview of this manual

About this manual

This manual contains spare parts for:

- IRB 140 and all its variants.

Usage

This manual shall be used as a complement to the product manual for IRB 140 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
1 Rebuilding robot	Information of rebuilding parts, required when rebuilding the robot to another version.
2 Spare parts and exploded view	Complete spare part list and complete list of robot components shown in exploded views.

References

Reference	Document ID
Product manual - IRB 140	*3HAC027400-001*
Circuit diagram - IRB 140 type C	*3HAC6816-3*

Revisions

Revision	Description
-	First edition
A	Spare parts with color Graphite White are added to the spare part lists.
B	Corrected spare part number for lower arm
C	This revision contains the following updates: • Corrections due to updates in terminology. • Motor spare parts for IRB 140 type0 deleted from the spare part lists.

Revision	Description
D	Published in release R17.2. The following updates are made in this revision: • Added spare part for lower arm with protection type Clean Room. • Updated spare part numbers for upper arm and wrist.

Product manual, spare parts - IRB 140
3HAC049099-001 Revision: D

Product documentation, IRC5

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.

All documents listed can be ordered from ABB on a DVD. The documents listed are valid for IRC5 robot systems.

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.
- Decommissioning.
- Reference information (safety standards, unit conversions, screw joints, lists of tools).
- Spare parts list with exploded views (or references to separate spare parts lists).
- Circuit diagrams (or references to circuit diagrams).

Technical reference manuals

The technical reference manuals describe reference information for robotics products.

- *Technical reference manual - Lubrication in gearboxes*: Description of types and volumes of lubrication for the manipulator gearboxes.
- *Technical reference manual - RAPID overview*: An overview of the RAPID programming language.
- *Technical reference manual - RAPID Instructions, Functions and Data types*: Description and syntax for all RAPID instructions, functions, and data types.
- *Technical reference manual - RAPID kernel*: A formal description of the RAPID programming language.
- *Technical reference manual - System parameters*: Description of system parameters and configuration workflows.

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, DVD with PC software).
- How to install included or required hardware.
- How to use the application.
- 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.

The group of manuals includes (among others):

- *Operating manual - Emergency safety information*
- *Operating manual - General safety information*
- *Operating manual - Getting started, IRC5 and RobotStudio*
- *Operating manual - IRC5 Integrator's guide*
- *Operating manual - IRC5 with FlexPendant*
- *Operating manual - RobotStudio*
- *Operating manual - Troubleshooting IRC5*

1 Spare parts - robot IRB 140

Robot IRB 140, spare parts list

The items specified below are shown in the figures *Robot IRB 140, exploded view 1 of 5 on page 16* to *Robot IRB 140, exploded view 5 of 5 on page 20*.

Item	Article number	Part	Protection type	Color	Note
1	3HAC10470-1	Base spare			
2	3HAC8999-1	Bottom plate			
3	9ADA629-44	Torx pan head roll. screw			M5x12
4	3HAC6599-1	Gasket bottom plate			
5	3HAC17396-1	Serial measurement unit			Contains serial measurement board 3HAC031851-001 and battery back 3HAC16831-1.
5	3HAC031851-001	Serial measurement board			DSQC 633A
5	3HAC046277-001	Serial measurement unit			Contains serial measurement board 3HAC044168-001 and battery unit 3HAC044075-001.
5	3HAC044168-001	Serial measurement board			RMU 101
6	3HAC16831-1	Battery back (2-pole battery contact)			Lithium 34x102x63 Can only be used with SMB unit 3HAC17396-1 containing SMB board 3HAC031851-001.
6	3HAC044075-001	Battery unit (3-pole battery contact)			RMU Lithium 7.2V 3.6Ah Can only be used with SMB unit 3HAC046277-001 containing SMB board 3HAC044168-001.
-	3HAC046686-001	SMB replacement set			Contains all parts needed if SMB unit 3HAC17396-1 shall be replaced with SMB unit 3HAC046277-001.
7	21662055-6	Cable straps, outdoors			7.6x368
8	9ADA618-46	Torx pan head screw			M5x20
9	3HAC9030-1	Cable bracket			
10	3HAC9415-1	Clamp			
11	3HAC6755-1	Cable holder			
12	9ADA618-50	Torx pan head screw			M5x40

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1 Spare parts - robot IRB 140

Continued

Item	Article number	Part	Protection type	Color	Note
13	3HAC10476-1	Control cable spare	Standard Foundry Plus	ABB Orange	L = 3 m
	3HAC050468-001	Control cable spare	Standard Foundry Plus	Graphite White	L = 3 m
14	3HAC10477-1	Control cable spare	Standard Foundry Plus	ABB Orange	L = 7 m
	3HAC050615-001	Control cable spare	Standard Foundry Plus	Graphite White	L = 7 m
15	3HAC7527-1	Damper axis 1			
16	3HAB3402-52	Hex. socket head cap screw			M10x35 8.8 Gleitmo 610
17	3HAC7950-1	Washer			
18	3HAC9860-1	Protecting plate			
19	3HAC8466-1	Protective earth cable			
20	3HAC9063-1	Hose clip			D = 10
21	SK615 503-2	Membrane			
22	K CBH-00	Bracket			CBK
23	KP1-10B	Pushbutton			
24	3HAC7870-1	Gasket base-cover			
25	9ADA290-1	Hexagon nut with flange			M5
26	25291920-2	Plug			R 1/8"
27	25222101-8	Protective hood			D=11.4-13
28	3HAC8806-1	Clamp			
29	3HAC7370-1	Manipulator harness ax 1-6			
31	21662055-3	Cable straps, outdoors			4.8x208
32	3HAC024474-001	Loctite 574			
33	3HAC10470-3	Base, spare	Clean Room		
35	3HAC10477-2	Control cable	Clean Room		L = 7 m
36	3HAC11331-1	Control cable	Standard Foundry Plus		L = 15 m
37	3HAC11331-2	Control cable CR			L = 15 m
38	3HAC13089-1	Control cable	Standard Foundry Plus		L = 30 m
39	3HAC13090-1	Control cable	Standard Foundry Plus		L = 22 m
50	3HAC038547-001	Gearbox axes 1-2	Standard Foundry Plus	ABB Orange	Item 67 incl.
	3HAC038547-002	Gearbox axes 1-2	Standard Foundry Plus	Graphite White	Item 67 incl.

Continues on next page

Product manual, spare parts - IRB 140

Item	Article number	Part	Protection type	Color	Note
51	3HAC021965-002	Motor with pinion	Standard Foundry Plus	ABB Orange	Axis 1 and axis 2 Clean Room listed as item 69.
	3HAC021965-003	Motor with pinion	Standard Foundry Plus	Graphite White	Axis 1 and axis 2 Clean Room listed as item 69.
52	3HAB3409-25	Hex socket head cap screw			M6x20 12.9 Gleitmo 610
53	9ADA312-6	Plain washer			6.4x12x1.6
54	21522012-426	O-ring			74.5x3
55	3HAC6788-1	Bearing hub			
56	3HAC10478-1	Console spare	Standard Foundry Plus		
57	3HAC10472-1	Cover console spare	Standard Foundry Plus	ABB Orange	Item 58 incl.
	3HAC051282-001	Cover console spare	Standard Foundry Plus	Graphite White	Item 58 incl.
58	3HAC7868-1	Gasket console-cover			
59	3HAC5894-1	Cable bracket			T=1.5
60	3HAC6965-1	Sealing ring			150x189x8.5
61	3HAC3785-6	Parallel pin			D = 6 m6 L = 16
62	3HAB3732-19	Sealing ring (V-ring)			85x11
63	9ADA618-55	Torx pan head screw			M6x12
64	21662018-2	Clamp			D = 11
65	3HAC10481-1	Connector bracket			
66	21662055-1	Cable straps, outdoors			2.5x101
67	3HAC042471-001	Mobigear XP320			
68	3HAC034936-001	Gearbox axes 1-2	Clean Room		
69	3HAC021966-001	Motor with pinion	Clean Room		Axis 1 and axis 2 Standard and Foundry Plus listed as item 51.
70	3HAC10478-3	Console, spare	Clean Room		
71	3HAC10472-3	Cover console	Clean Room		
100	3HAC034935-001	Lower arm (axis 3)		ABB Orange	Item 67, 107 and 108 incl.
	3HAC034935-002	Lower arm (axis 3)		Graphite White	
	3HAC034937-001	Lower arm (axis 3)	Clean room		
101	3HAC10471-1	Cover, without lamp unit		ABB Orange	Item 103 incl.
	3HAC050479-001	Cover, without lamp unit		Graphite White	Item 103 incl.
102	3HAC10474-1	Cover, with lamp unit		ABB Orange	Item 103 incl.
	3HAC050265-001	Cover, with lamp unit		Graphite White	Item 103 incl.
103	3HAC7869-1	Gasket lower-arm cover			

Item	Article number	Part	Protection type	Color	Note
104	3HAC021756-001	Rot. ac motor incl. pinion			Axis 3
105	3HAC6793-1	Timing belt			
106	3HAC6762-1	Belt shield			
107	3HAB3643-17	Groove ball bearing			80x100x10
108	3HAA2166-13	VK-Cover			D = 100 B = 10
109	3HAC7880-1	Damper axis 2			
110	3HAA2356-14	Washer SRKB			6.4x18x1.6
111	3HAB3402-15	Hex. socket head cap screw			M5x20 8.8 Gleitmo 610
112	9ADA312-5	Plain washer			5.3x10x1
113	3HAC9258-1	Indicator lamp			
114	3HAC034935-001	Lower arm	Foundry	ABB Orange	
	3HAC034935-002	Lower arm	Foundry	Graphite White	
115	3HAC10471-3	Cover, without lamp unit			
116	3HAC10474-3	Cover, with lamp unit			
150	3HAC062198-001	Upper arm compl. with wrist	Standard	ABB Orange	Motors included
	3HAC062198-002	Upper arm compl. with wrist	Standard	Graphite White	Motors included
150	3HAC062198-003	Upper arm compl. with wrist	Clean Room	White	
151	3HAC061146-002 [i]	Wrist	Standard Foundry	ABB Orange	Item 155, 181 and 182 incl.
151	3HAC061146-003 [i]	Wrist	Standard Foundry	Graphite White	
151	3HAC061145-002 [i]	Wrist	Clean Room	White	
152	3HAC025420-001	O-ring sealing plate			
153	3HAB3409-37	Hex. socket head cap screw			M8x25 12.9 Gleitmo 610
154	9ADA312-7	Plain washer			8.4x16x1.6
155	25291920-2	Plug			R 1/8"
157	3HAB3409-39	Hex. socket head cap screw			M8x35 12.9 Gleitmo 610
158	9ADA334-7	Spring washer, conical			8.4x18x2
159	3HAB3732-13	Sealing ring (V-ring)			99x10.5
160	3HAC021757-001	Rot. ac motor with pinion			Axis 4
161	3HAB3772-24	O-ring			29x3
162	3HAC021758-001	Rot. ac motor with pinion			Axis 5 and axis 6
164	3HAC024360-001	Motor Console axes 5-6			
167	3HAC7367-1	Cable holder			
169	3HAC6779-1	Timing belt			

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Item	Article number	Part	Protection type	Color	Note
170	3HAC6777-1	Timing Belt Pulley Z2/5			
171	3HAC6778-1	Timing Belt Pulley Z2/6			
173	3HAC7391-1	Belt shield			
174	3HAC10473-1	Cover armhousing			Item 175 incl.
175	3HAC7867-1	Gasket upper arm cover			
176	3HAC7881-1	Damper axis 3			
177	3HAC6761-1	Cable guide			
178	3HAC7561-3	Dustcap for receptacles 12p			
179	21252052-178	Distance bolt			M5X55
180	3HAC6598-1	Hose nipple			G 1/4"
181	3HAB8964-1	Damper axis 5			
182	3HAC042564-001	Optimol Optigear BM 100			
186	3HAC10439-3	Cover armhousing	Clean Room		
187	3HAC036283-001	Cable protection			

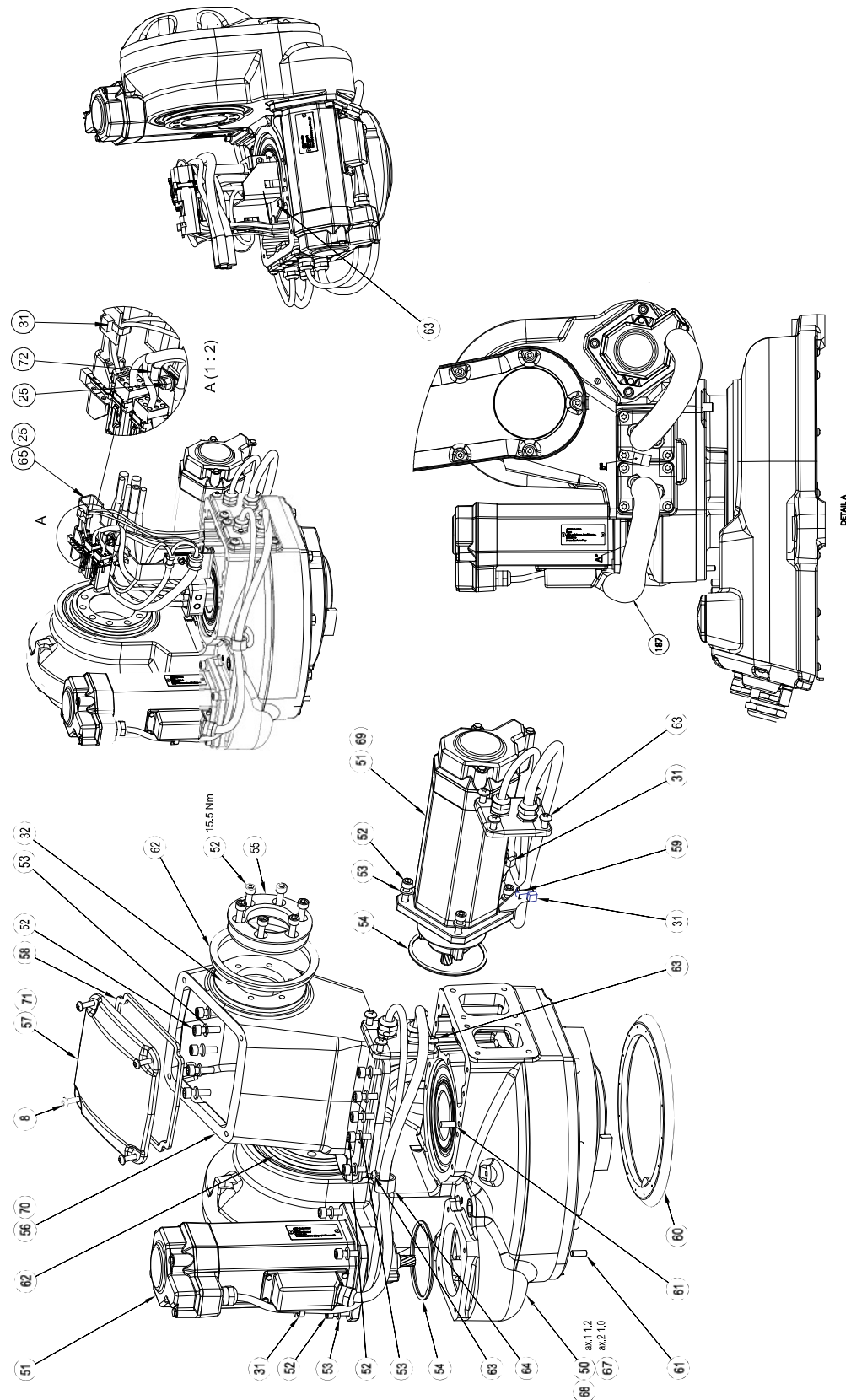i Discard the small guide pin enclosed with the wrist. Not needed for IRB 140.
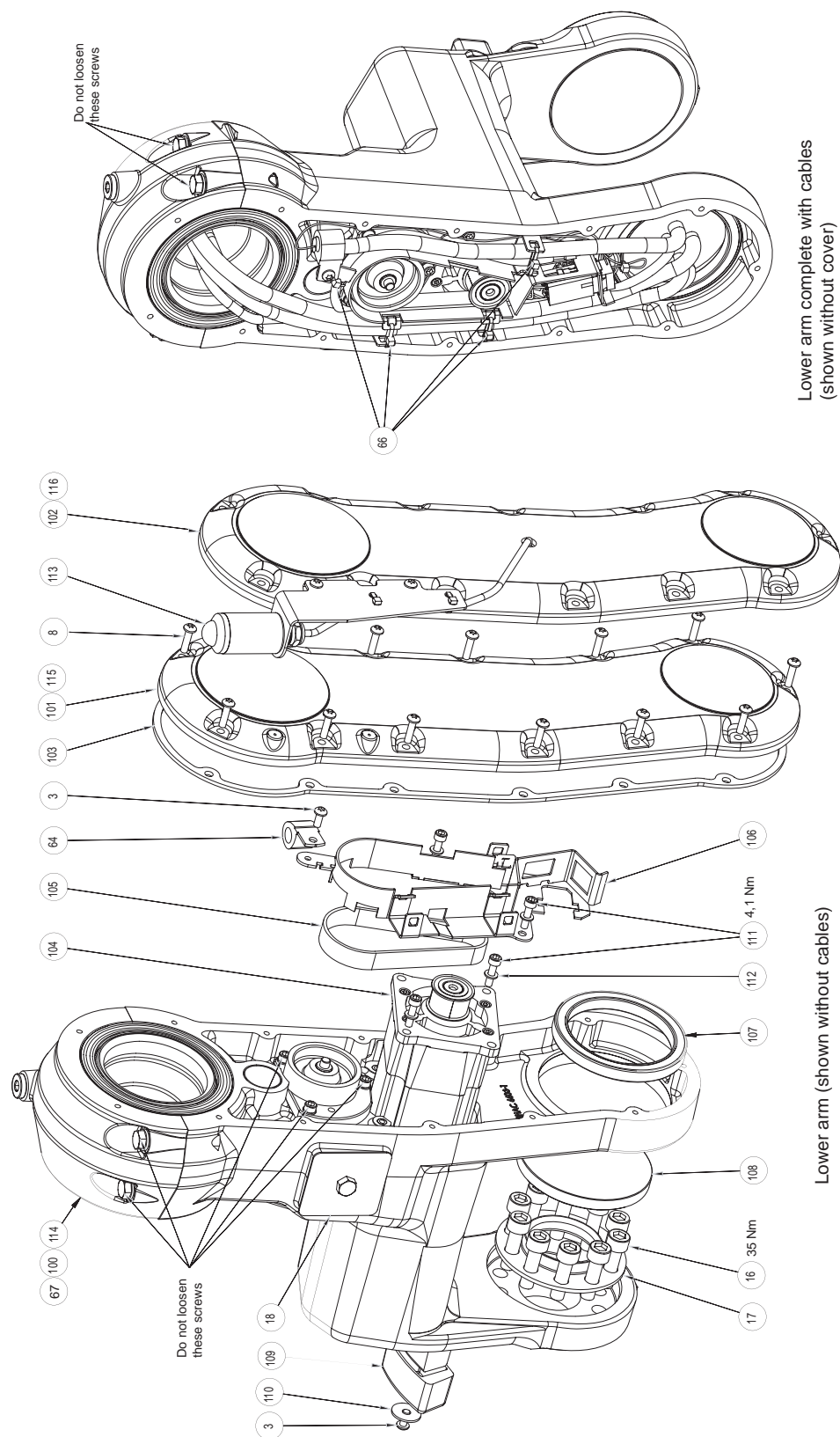
Robot IRB 140, exploded view 1 of 5
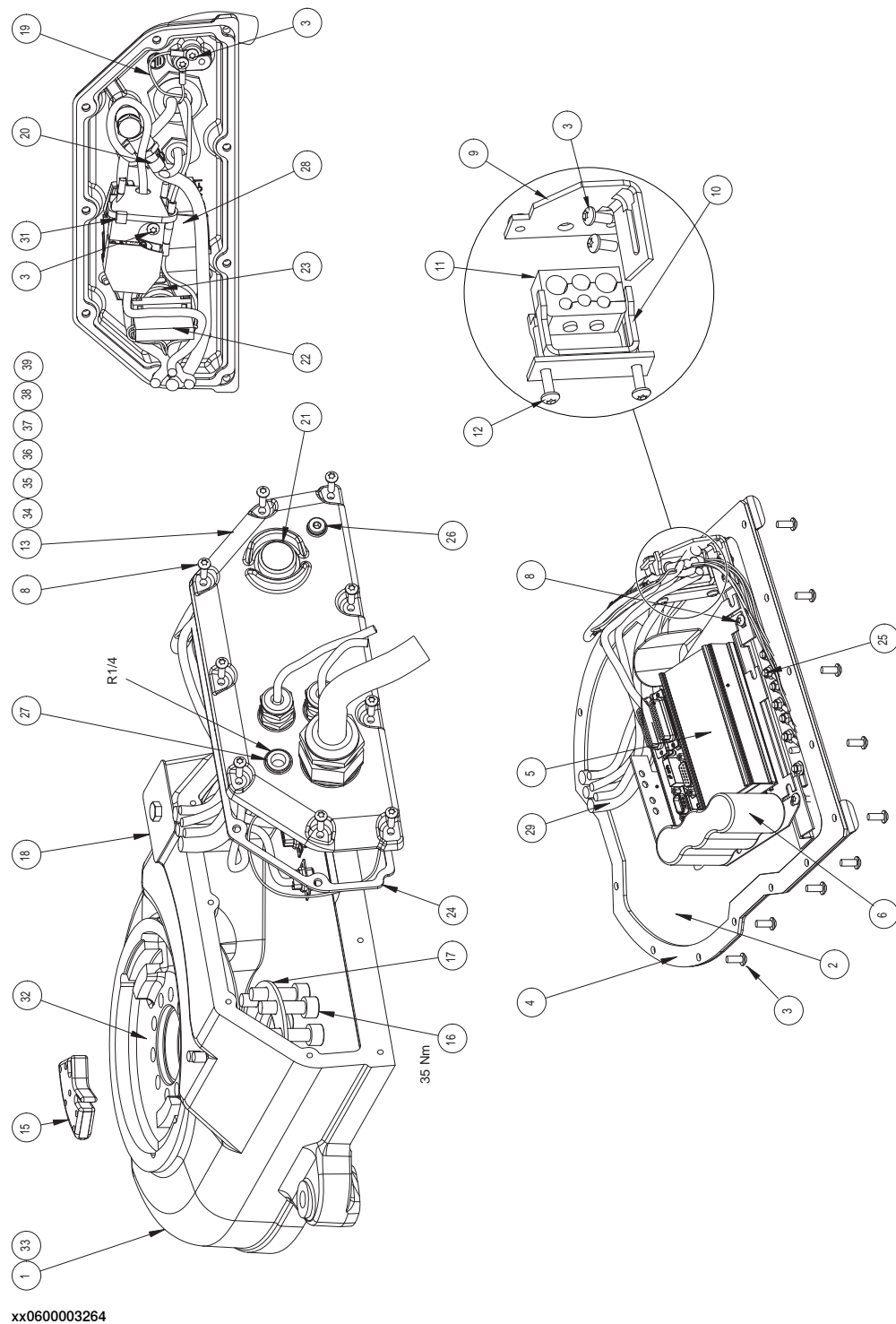
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Robot IRB 140, exploded view 2 of 5

xx0600003265

Robot IRB 140, exploded view 3 of 5

Do not loosen these screws

Lower arm complete with cables (shown without cover)

66

116
102
113
8
115
101
103
3
64
105
104
106
111 4,1 Nm
112
107
108
16 35 Nm
17

Lower arm (shown without cables)

114
100
67

Do not loosen these screws

18
109
110
3

xx0600003266

Robot IRB 140, exploded view 4 of 5

xx0600003267

Robot IRB 140, exploded view 5 of 5

Upper arm with cables (shown without cover)

Upper arm complete
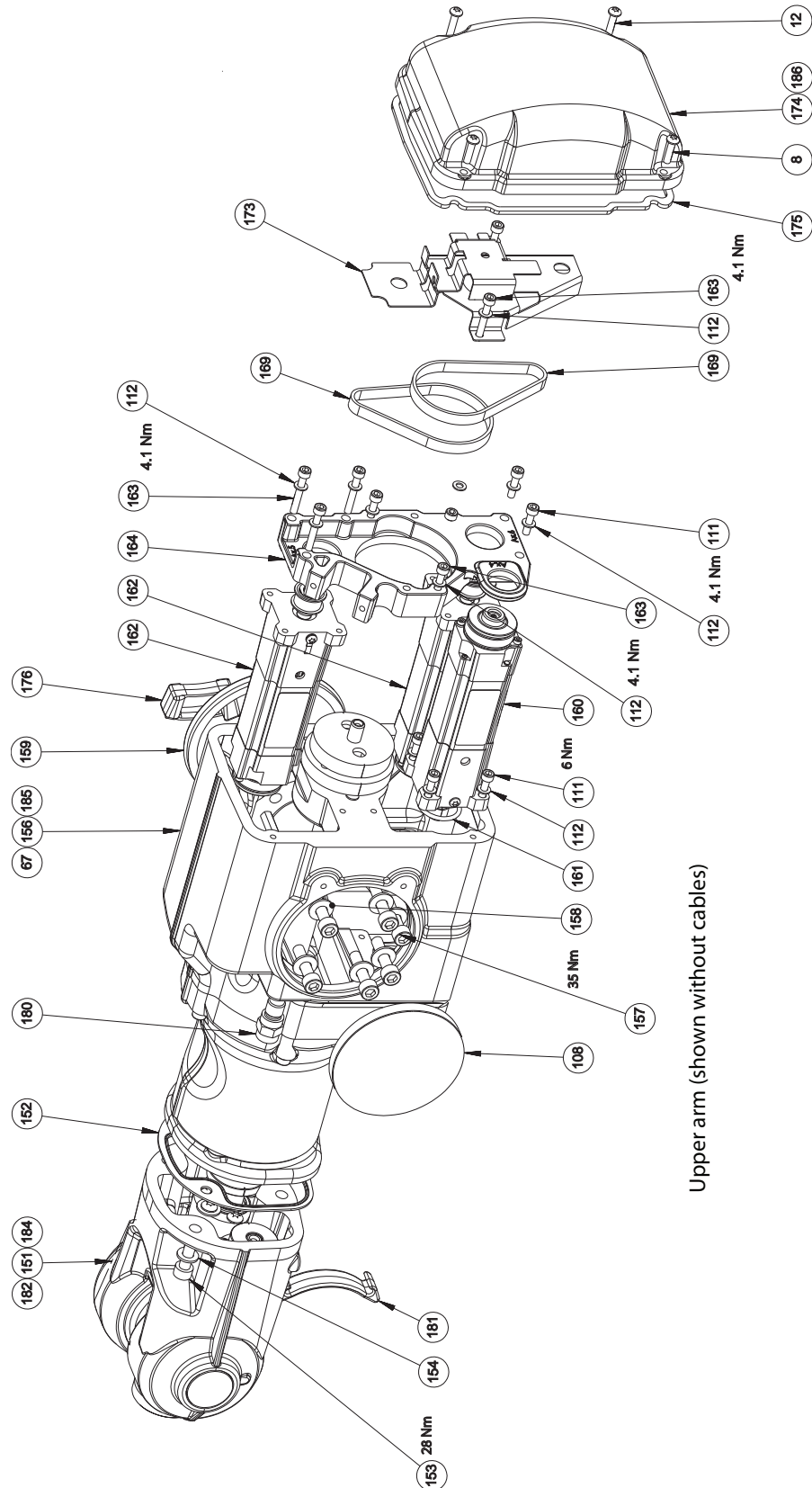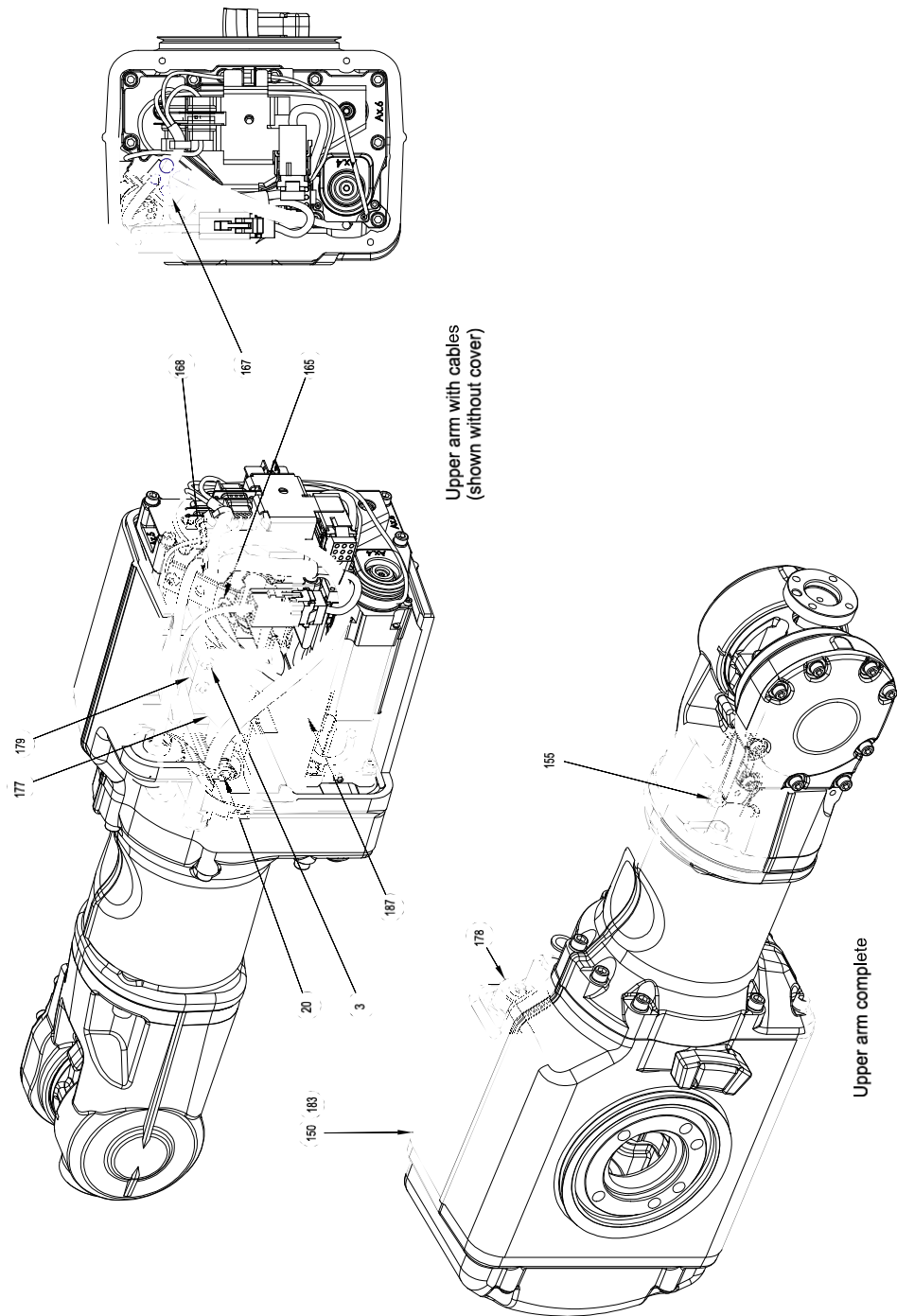
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2 Options

Force sensor package small

Equipment	Art. no.	Note
Force sensor package	3HAC046244-001	
Force Sensor Small	3HAC046093-001	
Sensor cable 5m	3HAC043521-001	
Adapter plate	3HAC046107-001	
Adapter plate	3HAC047790-001	
Positioning ring	3HAC046099-001	
Extension part	3HAC047791-001	
Parallel pin	9ABA108-25	
Parallel pin	9ABA108-34	
Hex socket head cap screw	9ADA183-22	M6X10
Hex socket head cap screw	9ADA183-24	M6X16
Torx counters. head screw	9ADA625-44	M8X130