

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

ABB ROBOTS

3HAC16831-1

INDUSTRIAL BATTERY PACK

Applicable product family: ABB robotics and control systems

OFFICIAL SOURCE

irb2400.pdf

The following pages are selected from the supplied manufacturer document and retain their original page content.

3 Maintenance

3.4.2 Oil change, gearbox axes 5-6 (wrist unit)

Continued

	Action	Note
3	 WARNING Handling gearbox oil involves several safety risks, see Gearbox lubricants (oil or grease) on page 34 .	
4	Valid for IRB 2400L/5 kg Fill oil in the plug hole (A) located on the tilt housing (axis 5) until the oil reaches up to oil plug (B) in the front of the wrist.	
5	Valid for IRB 2400/10/16 kg Fill oil in the plug hole (A) located on the tilt housing (axis 5) until the oil reaches up to the hole located on the side of the wrist.	
6	 Note If the robot is mounted in suspension, the wrist should be turned 180°.	
7	Refit the oil plugs to the wrist.	

3.4.3 Replacement of SMB battery



Note

The battery low alert (38213 **Battery charge low**) is displayed when the battery needs to be replaced. The recommendation to avoid an unsynchronized robot is to keep the power to the controller turned on until the battery is to be replaced. For an SMB board with 3-pole battery contact (RMU101 3HAC044168-001 or RMU102 3HAC043904-001), the lifetime of a new battery is typically 36 months. For an SMB board with 2-pole battery contact, the typical lifetime of a new battery is 36 months if the robot is powered off 2 days/week or 18 months if the robot is powered off 16 h/day. The lifetime can be extended for longer production breaks with a battery shutdown service routine. See *Operating manual - IRC5 with FlexPendant* or *Operating manual - OmniCore* for instructions.



WARNING

See [Hazards related to batteries on page 36](#).

Location of SMB battery unit

The SMB battery unit is located inside the robot base, as shown in the figure below.

A	SMB connection
B	SMB battery RMU
C	SMB battery connector

Required equipment



Note

There are two variants of SMB units and batteries. One with 2-pole battery contact and one with 3-pole battery contact. The battery with the 3-pole contact has a longer lifetime.

It is important that the SMB unit uses the correct battery. Make sure to order the correct spare parts. Do not replace the battery contact!

Equipment	Spare part no.	Note
Battery unit (2-pole battery contact)	3HAC16831-1	Lithium battery. This battery requires that the serial measurement unit 3HAC17396-1 is installed.
Battery unit (3-pole battery contact)	3HAC044075-001	RMU Lithium battery. Can only be used with SMB unit 3HAC046277-001 containing SMB board 3HAC044168-001.
Gasket, cover	3HAC3200-1	Always replace with a new one!

Continues on next page

3 Maintenance

3.4.3 Replacement of SMB battery

Continued

Equipment	Spare part no.	Note
Standard toolkit		The content is defined in the section Standard tools on page 230 .
Other tools and procedures may be required. See references to these procedures in the step-by-step instructions below.		These procedures include references to the tools required.



CAUTION

Always cut the paint with a knife and grind the paint edge when disassembling parts. See [Cut the paint or surface on the robot before replacing parts on page 113](#).

Replacement, SMB battery

The procedure below details how to replace the SMB battery.

	Action	Note
1	 DANGER Turn off all electric power, hydraulic and pneumatic pressure supplies to the robot!	
2	 xx0200000023  WARNING The unit is sensitive to ESD. Before handling the unit please read the safety information in the section The unit is sensitive to ESD on page 51	
3	Remove the rear cover plate (A) on the robot by unscrewing its attachment screws (B).  CAUTION Clean cover from metal residues before opening. Metal residues can cause shortage on the boards which can result in hazardous failures.	
4	Remove the battery terminals from the serial measuring board and cut the clasp that keeps the battery unit in place.	
5	Fit the new battery and connect the terminals to the serial measuring board.	Shown in the figure Location of SMB battery unit on page 99 .
6	Refit the cover to the robot base, together with a new gasket.	Always replace a removed gasket with a new! Spare part no. is specified in Required equipment on page 99 .

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4.6 Frame and base

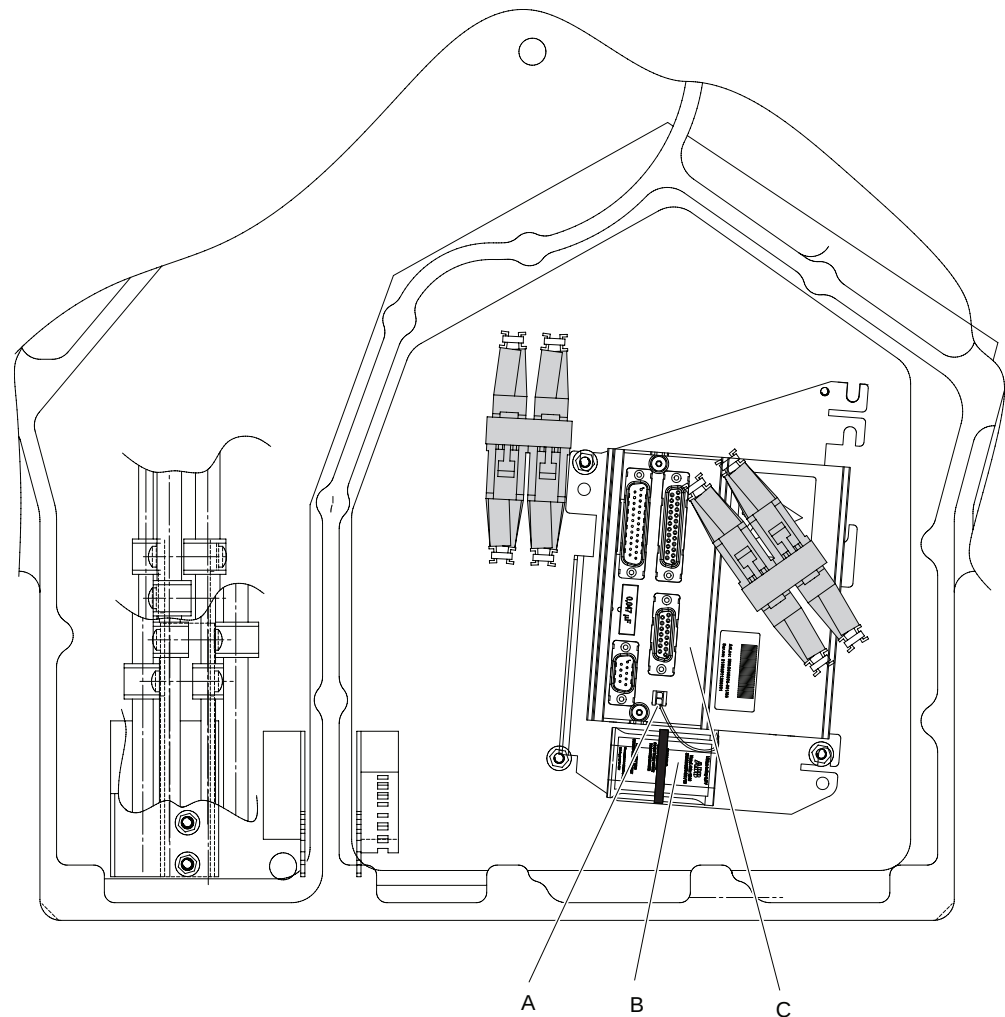
4.6.1 Replacement of SMB unit

Location of SMB unit

The SMB unit (SMB = serial measurement board) is located on the left hand side of the base, as shown in the figure below.

A more detailed view of the component and its position may be found in chapter [Spare part lists on page 233](#).

Note that the robot is shown with the SMB cover already removed!



xx1300000289

A	SMB battery cable
B	SMB battery RMU (3-pole battery contact)
C	SMB unit RMU 101

Continues on next page

4 Repair

4.6.1 Replacement of SMB unit

Continued

Required equipment



Note

There are different variants of SMB units and batteries. The variant with the 3-pole battery contact has longer lifetime for the battery.

It is important that the SMB unit uses the correct battery. Make sure to order the correct spare parts. Do not replace the battery contact!

Equipment	Spare part no.	Art. no.	Note
Gasket, base cover		3HAB 5537-1	Must always be replaced!
Serial measurement unit	3HAC17396-1		Contains serial measurement board 3HAC031851-001 and battery pack 3HAC16831-1.
Serial measurement unit	3HAC046277-001		Contains serial measurement board 3HAC044168-001 and battery pack 3HAC44075-001.
Standard toolkit			The content is defined in the section Standard tools on page 230 .
Circuit diagram		-	See the chapter Circuit diagram on page 235 .
Other tools and procedures may be required. See references to these procedures in the step-by-step instructions below.			These procedures include references to the tools required.

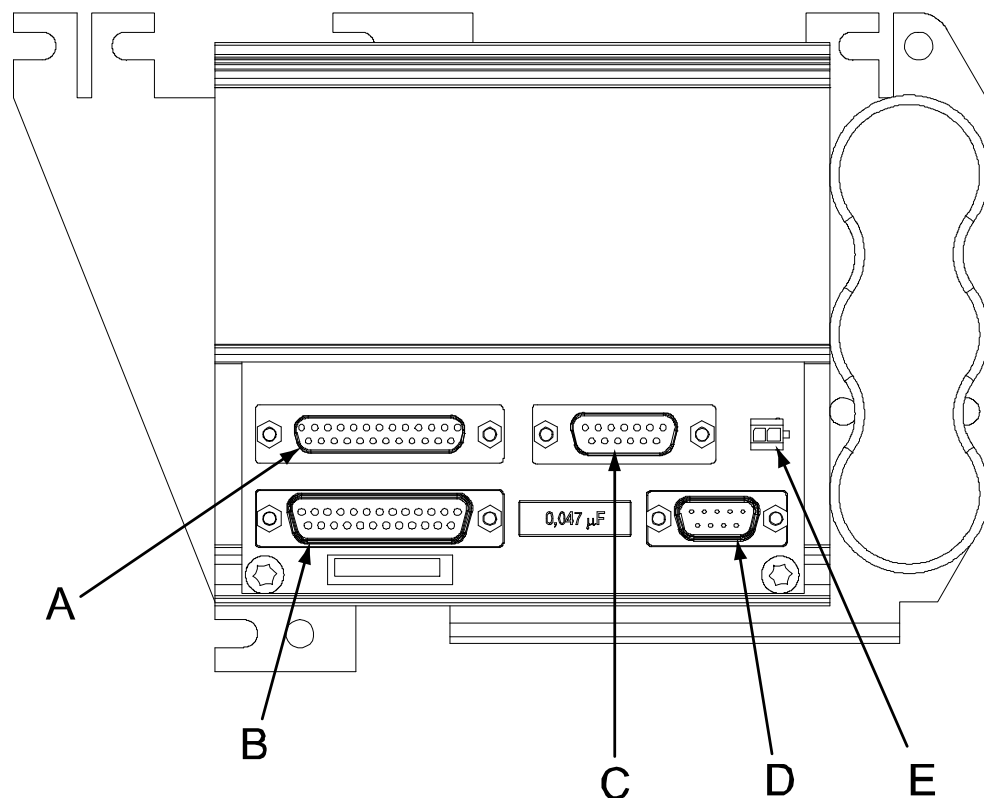


CAUTION

Always cut the paint with a knife and grind the paint edge when disassembling parts. See [Cut the paint or surface on the robot before replacing parts on page 113](#).

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SMB unit, layout



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A	Connector R2.SMB4-6
B	Connector R2.SMB1-3
C	Connector R2.SMB1-2 (external axis)
D	Connector R2.SMB
E	Connector R2.G (battery unit)

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