

ABB DSQC406 3HAC035301-001

01 Product architecture

Product role

ABB DSQC406 3HAC035301-001 is the MDU-430A main drive unit for selected IRC5 Drive System 09 configurations. It forms the principal motor-drive assembly in the small-robot arrangement.

Operating context

The small-robot Drive System 09 layout reserves a distinct set of cabinet positions for the main drive. Additional axes use separate ADU-790A units and the ARU-430A rectifier arrangement. Position labels identify the installation architecture; they must not be interpreted as an interchangeable list of drive types.

Function map

01	IRC5 axis configuration
02	MDU-430A main drive
03	Motor connections
04	Robot axes

Key capabilities

Capability 1 Combines the main drive functions in one MDU-430A assembly.	Capability 2 Occupies the Y1, Y2, Z1 and Z2 drive positions in the applicable small-robot layout.
Capability 3 Works alongside separate ADU-790A units when external axes are fitted.	Capability 4 Uses the ARU-430A rectifier arrangement when additional drive units are present.

System integration

Drive System 09 distinguishes the small-robot MDU-430A layout from the MDU-790A layout used for larger robots. Cable placement and the axis assignment must therefore follow the actual cabinet configuration rather than a similar-looking drive assembly.



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02 Technical data and interfaces

Principal technical data

Parameter	Value
Drive architecture	IRC5 Drive System 09
Drive unit type	MDU-430A
Main-unit positions	Y1 / Y2 / Z1 / Z2
Additional-axis drive	ADU-790A, DSQC664
Additional-axis rectifier	ARU-430A, DSQC417
Additional-axis positions	X3, Y3, Z3

Additional engineering data

Item	Value or condition
Main assembly	DSQC406 / MDU-430A
Occupied main positions	Y1, Y2, Z1, Z2
First additional-axis position	X3; ADU-790A
Second additional-axis position	Y3; ADU-790A
Third additional-axis position	Z3; ADU-790A
Additional rectifier positions	X1 / X2; ARU-430A

How to apply these data

Before removal, preserve the cabinet configuration and motor-harness allocation. Main supply isolation and the controller discharge procedure are prerequisites for work in the drive section. Use ESD precautions on signal connections and restore protective connections before testing.

Service boundary

Preserve the motor-to-axis assignments and the external-axis rectifier arrangement. Replacing the main unit does not remove the need to check the configured drive-system layout.



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03 Integration and application

Interface map

Interface	Purpose	Engineering note
Main-drive positions	MDU-430A occupies the selected small-robot arrangement.	Do not substitute the larger-robot MDU-790A layout.
Motor harness	Carries the assigned robot-axis connections.	Retain connector identity and axis assignment.
Additional drives	ADU-790A units occupy X3, Y3 and Z3 as fitted.	External axes are separate from the principal main-drive assembly.
Additional rectifier	ARU-430A is needed when additional drive units are present.	Preserve the rectifier arrangement during service.

Application contexts

IRB 120 and 140 drives Service the matching small-robot Drive System 09 main-drive arrangement.	IRB 1600 drive cabinets Restore the applicable MDU-430A position in an IRC5 installation.
IRB 340 and 360 systems Maintain the drive layout selected for these robot configurations.	Additional-axis installations Retain the separate rectifier and added drive units used by external axes.

Commissioning record

Retain the robot/controller configuration, main-drive identity, motor connector map and the fitted additional-axis positions. Include the controlled motion-test result and any event codes resolved during commissioning. A software or harness change must be tracked separately from the physical drive exchange.



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04 Engineering decisions

Diagnostic decisions

Cabinet uses a different drive generation

Resolve the installed drive-system architecture first. This document covers the applicable Drive System 09 arrangement.

External axis fitted

Identify its ADU position and associated rectifier. Do not remove companion hardware because the main unit has been exchanged.

Wrong axis responds after service

Stop motion and check retained motor-harness assignments. Connector fit alone cannot establish correct axis mapping.

Drive alarm remains after exchange

Read the controller event and inspect the affected path. A replacement main unit does not prove the surrounding supply and harness are sound.

Product precautions

01

Disconnect controller mains before working in the drive cabinet.

02

Allow stored drive-system energy to discharge under the cabinet service procedure.

03

Use ESD precautions while handling the drive assembly and signal connections.

04

Match the cabinet to the Drive System 09 MDU-430A arrangement.

05

Identify every motor connector before separating the unit from the harness.

06

Retain the additional rectifier when additional drive units are installed.

07

Restore cable routes and retain all protective-earth connections.

08

Run controlled axis checks with the correct robot configuration before production motion.

Important notice

Confirm the auxiliary rectifier arrangement before adding drive hardware to an external-axis system.



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05 Questions and functional acceptance

Product-specific engineering questions

Which drive-system generation uses ABB DSQC406 3HAC035301-001?

This MDU-430A assembly is used in the applicable IRC5 Drive System 09 small-robot configuration.

Why must external-axis hardware be checked when replacing ABB DSQC406 3HAC035301-001?

Additional axes use separate ADU-790A drive units and require the ARU-430A additional rectifier in this arrangement.

Product-specific engineering questions (continued)

Where does ABB DSQC406 3HAC035301-001 sit in the small-robot drive layout?

The main drive unit occupies the Y1, Y2, Z1 and Z2 positions of the applicable Drive System 09 layout.

Is the larger-robot MDU-790A layout interchangeable with ABB DSQC406 3HAC035301-001?

The two layouts use different main drive units and position assignments; the MDU-790A layout should not be substituted for an MDU-430A configuration.

Functional acceptance

Cabinet configuration

Check the main drive and fitted auxiliary units. The intended MDU/ADU/rectifier arrangement is retained.

Harness restoration

Compare each connector with its retained assignment. No axis connector is exchanged or left unsecured.

Related catalogue pages

[ABB DSQC236T](#)

[ABB 3HAC061275-001](#)

[ABB 3HAC033388-001](#)

Technical basis

ABB 3HAC021313-001 Rev. P, Drive System 09 layout and controller parts

