



Fraunhofer

TESTED[®] DEVICE

Bosch Rexroth AG
Hinge AI 3842544531
Report No. BO 2112-1289

Statement of
Qualification

Single product
Particle Emission

Statement of Qualification · Single product

Customer	Bosch Rexroth AG Löwentorstrasse 74 91136 Stuttgart Germany
Component tested	
Category:	Working Place and Operator
Subcategory:	Equipment Parts
Product name:	HINGE AL 45/45 3842544531 (manufacturing date: 12/2021; article number: 3842544531)

Random sampling of particle emissions (airborne) at representative sites

Standards/Guidelines:	ISO 14644-1, -14 The norms stated generally refer to the version valid at the time of the tests.
Test devices:	Optical particle counter: LasAir II 110 and LasAir III 110 with measuring ranges $\geq 0.1\text{ }\mu\text{m}$, $\geq 0.2\text{ }\mu\text{m}$, $\geq 0.3\text{ }\mu\text{m}$, $\geq 0.5\text{ }\mu\text{m}$, $\geq 1.0\text{ }\mu\text{m}$ and $\geq 5.0\text{ }\mu\text{m}$
Test environment parameters:	<ul style="list-style-type: none">Cleanroom Air Cleanliness Class (according to ISO 14644-1):..... ISO 1Airflow velocity:.....0.45 m/sAirflow pattern:..... vertical laminar flowTemperature:22 °C \pm 0.5 °CRelative humidity: 45 % \pm 5 %
Test procedure parameters:	<ul style="list-style-type: none">Weight: m = 20 kgCycles:..... 1 /minCycle description:<ul style="list-style-type: none">– Cylinder opens:.....t_o = ~ 1 s– Pause:.....t_p = 28 s– Cylinders closes:t_c = 1 s– Pause:.....t_p = 28 sParameter Set 1:<ul style="list-style-type: none">– Installation position:..... horizontalParameter Set 2:<ul style="list-style-type: none">– Installation position:.....vertical

Test result / Classification

When operated under the specified test conditions, the HINGE AL 45/45 3842544531 is suitable for use in cleanrooms fulfilling the specifications of the following Air Cleanliness Classes according to ISO 14644-1:

Test parameter(s)	Air Cleanlines Class
Cycles: 1 /min Installation position: horizontal	4
Cycles: 1 /min Installation position: vertical	4
Overall result	4

Please note: Transport damages, corrosion, incorrect installation, oil leakage, aging behavior, etc. can influence the test result.


The measuring devices used for the qualification tests are calibrated at regular intervals; their results can be traced back to national and international standards. In cases where no national standards exist, the test procedure implemented complies with the technical regulations and norms applicable at the time of the test. The relevant documentation can be viewed on request at any time.

Detailed information and parameters of the test environment can be found in the Fraunhofer IPA test report.

Fraunhofer Institute for Manufacturing Engineering and Automation IPA

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on behalf of	
Dr.-Ing. Frank Bürger, Project Manager Fraunhofer IPA	



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