

Energy efficient, compact, easy to clean

MOVIGEAR® mechatronic drive system
with clean room certificate*



Discover impressive energy-saving potential in cleanrooms

The MOVIGEAR® mechatronic drive system offers new energy-efficient solutions for applications up to cleanliness class 2*. The compact and easy to clean design meets the demanding hygienic requirements on air quality as well as the permitted amount and size of particles released. At the same time energy consumption is reduced by up to 50 % compared to conventional drive technology used for such applications.

This mechatronic drive system will enable many machine and system operators to open up entirely new energy-saving potentials in the

- food industry,
- chemical, pharmaceutical and cosmetic industries,

- biotechnology and medical technology,
- but also in the semiconductor industry and solar panel production,
- and many more.

* meets ISO 14644-1



Classification of cleanliness classes

Nomenclature				Maximum permitted number of particles complaint with DIN EN 146			
DIN EN ISO 14644-1	EG-GMP "at rest"	EG-GMP "in operation"	US Fed. Standard 209E*	0.1 µm		0.2 µm	
				per m ³	per cbf	per m ³	per cbf
1				10	0.3	2	0.1
2				100	3	24	1
3			1	1,000	30	237	7
				1,240	35	265	8
4			10	10,000	300	2,370	67
				12,000	340	2,650	75
5	A B	A	100	100,000	2,833	23,700	671
						26,500	750
6			1,000	1,000,000	28,329	237,000	6,710
7	C	B	10,000				
8	D	C	100,000				
9							

44-1 according to various particle sizes

0.3 µm		0.5 µm		1.0 µm		5.0 µm	
per m ³	per cbf	per m ³	per cbf	per m ³	per cbf	per m ³	per cbf
10	0.3	4	0.1				
102	3	35	1	8	0.2		
106	3	35	1				
1,020	29	352	9.9	83	2		
1,060	29	353	10				
10,200	289	3,520	100	832	24	29	0.8
		3,520	100			20	0.6
		3,520	100			29	0.8
10,600	300	3,530	100				
102,000	2,890	35,200	997	8,320	235	293	8
		35,300	1,000			247	7
		352,000	9,972	83,200	2,357	2,930	83
		352,000	9,972			2,900	82
		352,000	9,972			2,900	82
		353,000	10,000			2,470	70
		3,520,000	99,716	832,000	23,569	29,300	830
		3,520,000	99,716			29,000	821
		3,520,000	99,716			29,000	821
		3,530,000	100,000			24,700	700
		35,200,000	997,167	8,320,000	235,694	293,000	8,300



Depending on the speed, the MOVIGEAR® mechatronic drive system meets the following air cleanliness classes:

Motor speed	Air cleanliness class (according to ISO 14644-1)
500 rpm	2
1000 rpm	2
1500 rpm	4
2000 rpm	4

Overview of features

Design	<ul style="list-style-type: none"> – The smooth overall design and the compact unit comprising gear unit, motor, and electronics facilitates thorough cleaning of the entire drive system and results in a reduced emission of particles. – At present available in two sizes covering a torque range from 20 Nm to 400 Nm.
Special anti-stick surface	<ul style="list-style-type: none"> – Makes for easier cleaning – Prevents paint flaking at the interfaces because the surface finish is applied prior to assembly by burning into the housing material – Prevents particles from sticking to the surface – Is resistant against mechanical stress and common cleaning agents
No fan	<ul style="list-style-type: none"> – No swirling of air, dirt, and particles – Reduction in noise emission – Allows for complying with noise limits at the workplace
Cost-effectiveness	<ul style="list-style-type: none"> – Reduction in energy costs by up to 50 % due to high overall efficiency



The Fraunhofer Institute certifies that the MOVIGEAR® drive for clean room applications meets the requirements up to air cleanliness class 2 according to ISO 14644-1, depending on the motor speed, and that the drive can be operated in such applications.



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