

ROLLON®
Linear Evolution



INTL. PATENT PENDING

ACTUATORLINE – ONE series

FOR CLEAN ROOM
Class 3 per ISO 14644-1



ONE: Clean Room Quality

Linear Units up to Clean Room Class ISO 3

For linear automation solutions up to Clean Room Class 3 (DIN EN ISO 14644-1) – international patent pending. First unit in the world to offer maximum clean room quality.

Special seals on the aluminum profile prevent the escape of harmful particulates even when the carriage is in full motion. A vacuum source connected to the unit heads remove internal particulates created by the carriage motion.

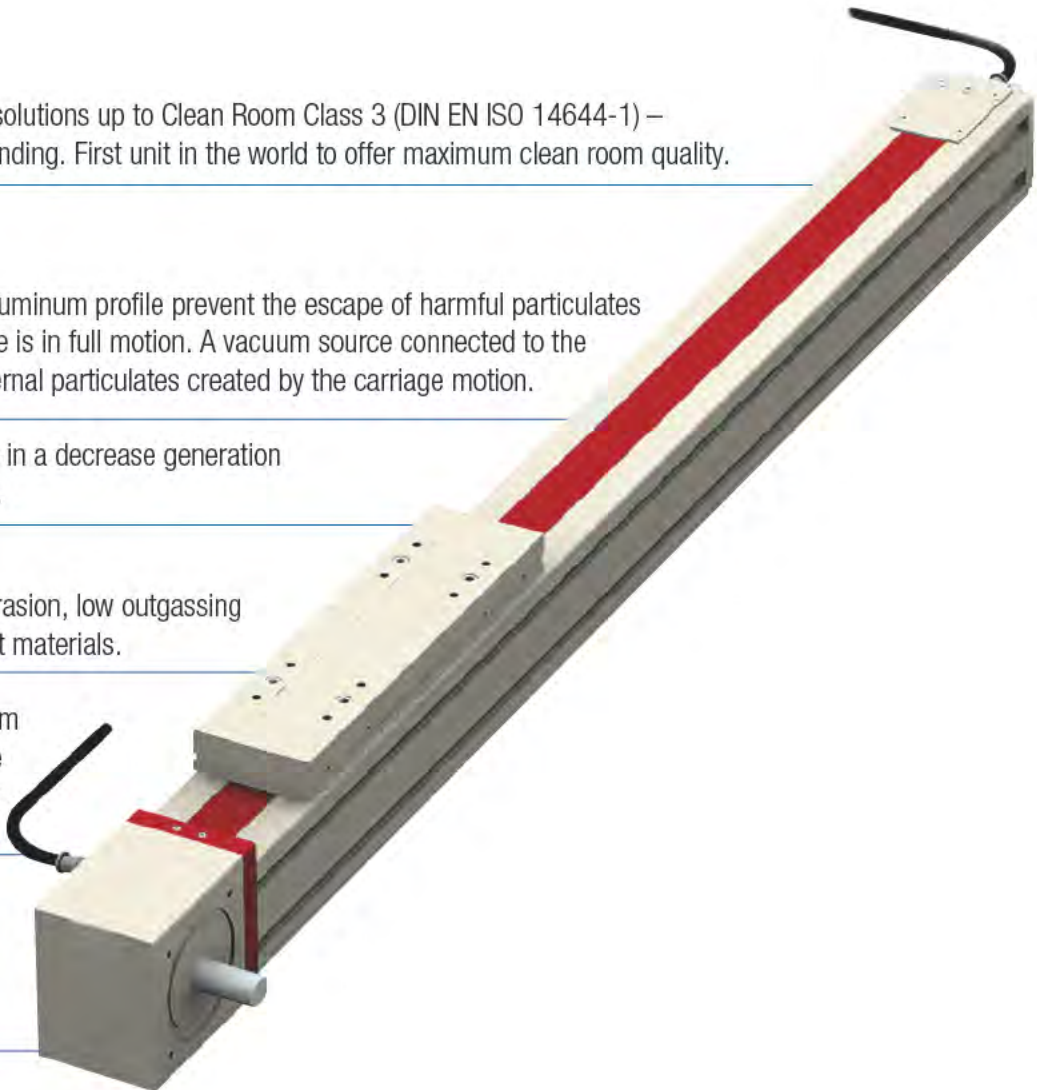
Compact sizing results in a decrease generation of internal particulates.

Utilizes special low-abrasion, low outgassing and corrosion-resistant materials.

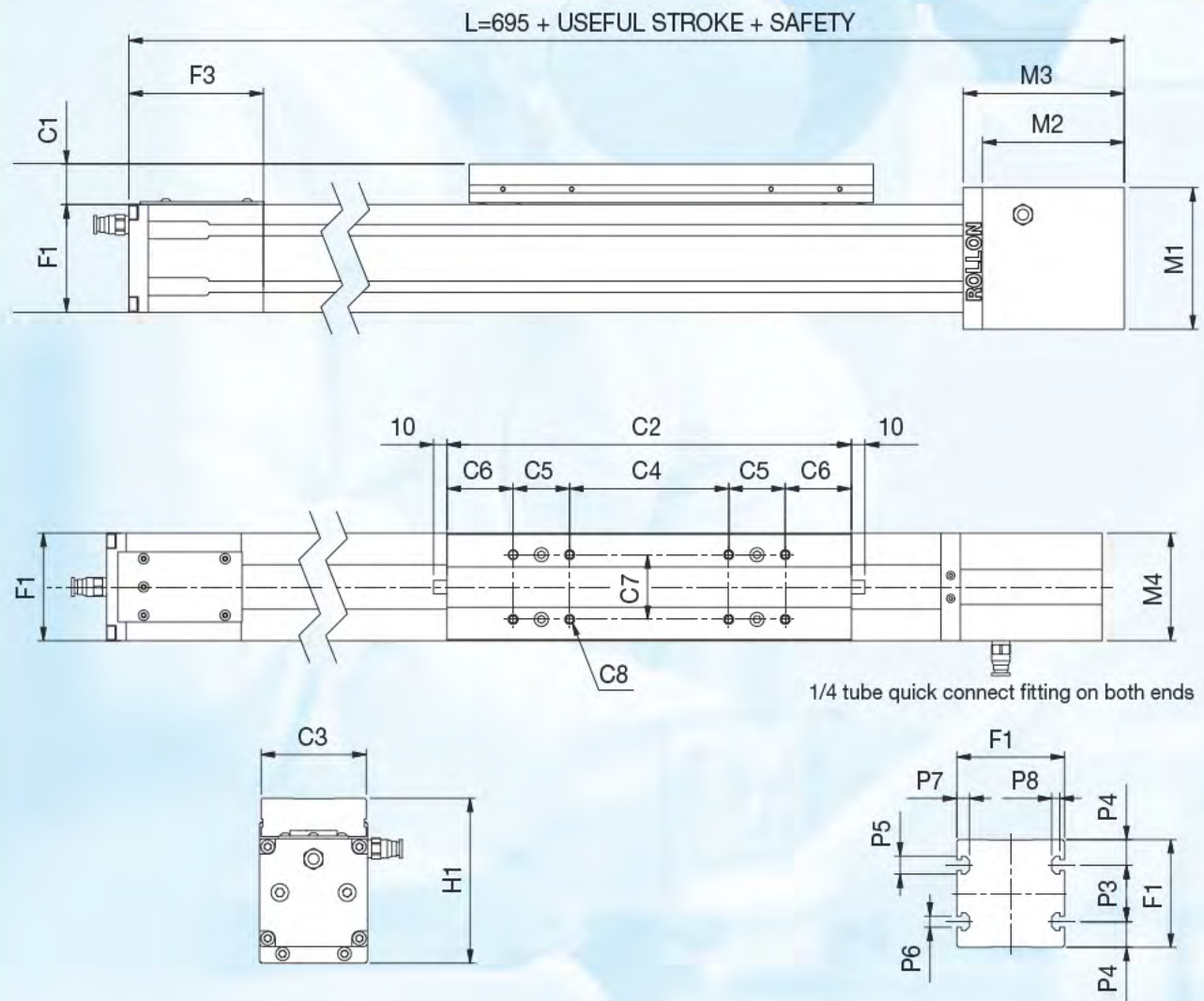
Clean room and vacuum grade lubrication is the only grade of lubricant used for these units.

Sizes:

ONE 50
ONE 80
ONE 110



CLEAN ROOM Linear Units ONE Series



Dimensions [mm]

	H1	M1	M2	M3	M4	C1	C2	C3	C4	C5	C6	C7	C8	F1	F3	P3	P4	P5	P6	P7	P8
ONE 50	80	70	70	80	60	20	150	48	62	26	18	30.5	8xM5x6 DP	50	65	26	12	8.3	4.2	6.2	4
ONE 80	122.5	105	105	120	80	30	300	78	118	42	49	48	8xM6x6 DP	80	100	42	19	13.5	8.4	9.8	6
ONE 110	167.5	145	145	160	130	40	380	108	140	60	60	70	8xM8x6 DP	110	135	62	24	18	11.3	12	8.5

All the drawings in this catalog are available in CAD files on www.rolloncorp.com

CLEAN ROOM Linear Units ONE Series

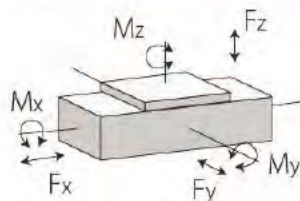


Technical data

		ONE 50	ONE 80	ONE 110
Min. useful stroke length	[mm]	100	100	100
Max. useful stroke length	[mm]	3700	6000	6000
Max. positioning repeatability	[mm]	0.05	0.05	0.05
Max. speed	[m/s]	4	5	5
Max. acceleration	[m/s ²]	50	50	50
Type of belt		22-AT5	32-AT10	50-AT10
Type of pulley		Ø 37-Z23-Zero Play	Ø 60-Z19-Zero Play	Ø 86-Z27-Zero Play
Carriage displacement per pulley turn	[mm]	115	190	270
Carriage weight	[kg]	0.4	2.7	5.6
Zero travel weight	[kg]	1.8	10.5	22.5
Weight for 100 mm useful stroke	[kg]	0.4	1	1.4

Theoretical and maximum permissible loads

		ONE 50				ONE 80				ONE 110			
		Theoretical load rating		Max. recommended load		Theoretical load rating		Max. recommended load		Theoretical load rating		Max. recommended load	
		static	dynamic	static	dynamic	static	dynamic	static	dynamic	static	dynamic	static	dynamic
F _x	[N]	890	670	640	480	2230	1670	1600	1200	4410	3310	3180	2400
F _y	[N]	7000	4490	1260	490	43400	34800	7810	3760	79000	55000	14220	5940
F _z	[N]	7000	4490	1260	490	43400	34800	7810	3760	79000	55000	14220	5940
M _x	[Nm]	42	27	7	3	620	480	108	52	1300	860	235	90
M _y	[Nm]	230	150	41	16	3170	2540	570	270	7110	4950	1280	530
M _z	[Nm]	230	150	41	16	3170	2540	570	270	7110	4950	1280	530





Belt driven **CLEAN ROOM** Linear Actuators **ONE Series**

Main Features

CERTIFIED CLEAN ROOM CLASS

The ONE series is a device tested by IPA FRAUNHOFER Institute – Stuttgart (D).

We achieved the following cleanness class using a vacuum pump and a special sealing belt (Intl. Patent Pending)

“ISO CLASS 3” according to ISO 14644-1
“Class 1” according to U.S. FED 209 E

VACUUM SYSTEM

The ONE Series has specific connection fittings installed on the drive-end and on idle-end of the units, where the vacuum systems will be connected.

Although the vacuum level must be evaluated on a case-by-case basis, Rollon has tested the ONE 80 units at 0.8 bar up to 4000 mm stroke. An ISO CLASS 3 rating was achieved due to the combined action of the vacuum pump and the Rollon special sealing belt.

SELECTED MECHANICAL COMPONENTS

The ONE Series is assembled with select high quality components.

Only stainless steel (AISI 303, AISI 440C) is used for the bearings, linear guides, shafts, pulleys, and other metallic components. Where it is impossible to use stainless steel material, Rollon provides a special treatment which has been tested under severe conditions and under particle generation.

DRIVEN BELT

The One Series is the first linear unit driven by a timing belt capable of achieving ISO CLASS 3. We are using a high quality polyurethane timing belt with AT profile, manufactured by a leading company in the field.

LUBRICATION

The ONE Series is equipped with innovative and hi tech linear guides equipped with special ball retention cages.

This feature supports a long-term maintenance-free condition and a low particle generation when combined with special lubricant, specifically developed and adopted for Clean Room and Vacuum applications.

RANGE

The ONE Series is now available in 3 different sizes.

- ONE 50
- ONE 80
- ONE 110

Maximum stroke is 6,000 mm, except for the ONE 50, where the maximum stroke is 3,700 mm.

For technical details and load capability, please refer to the previous pages.

ROLLON®

Linear Evolution



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