

Slim design: integrated motor gearing and limit switches

The LiMax in brief



LiMax - the slim all cylindrical linear actuator with **Maximum** force rating.

The modular LiMax design uses an in-line layout of motor, planetary gearing and lead screw drive (or ball screw) to achieve a high force rating in relation to the diameter of the body. The wide range of options enables a selection of specification to suit most applications. The integrated stroke limit switches are fully adjustable, allowing on-site adjustment to suit the application.

The LiMax is a very cost effective linear actuator offering the optimum price/performance ratio.

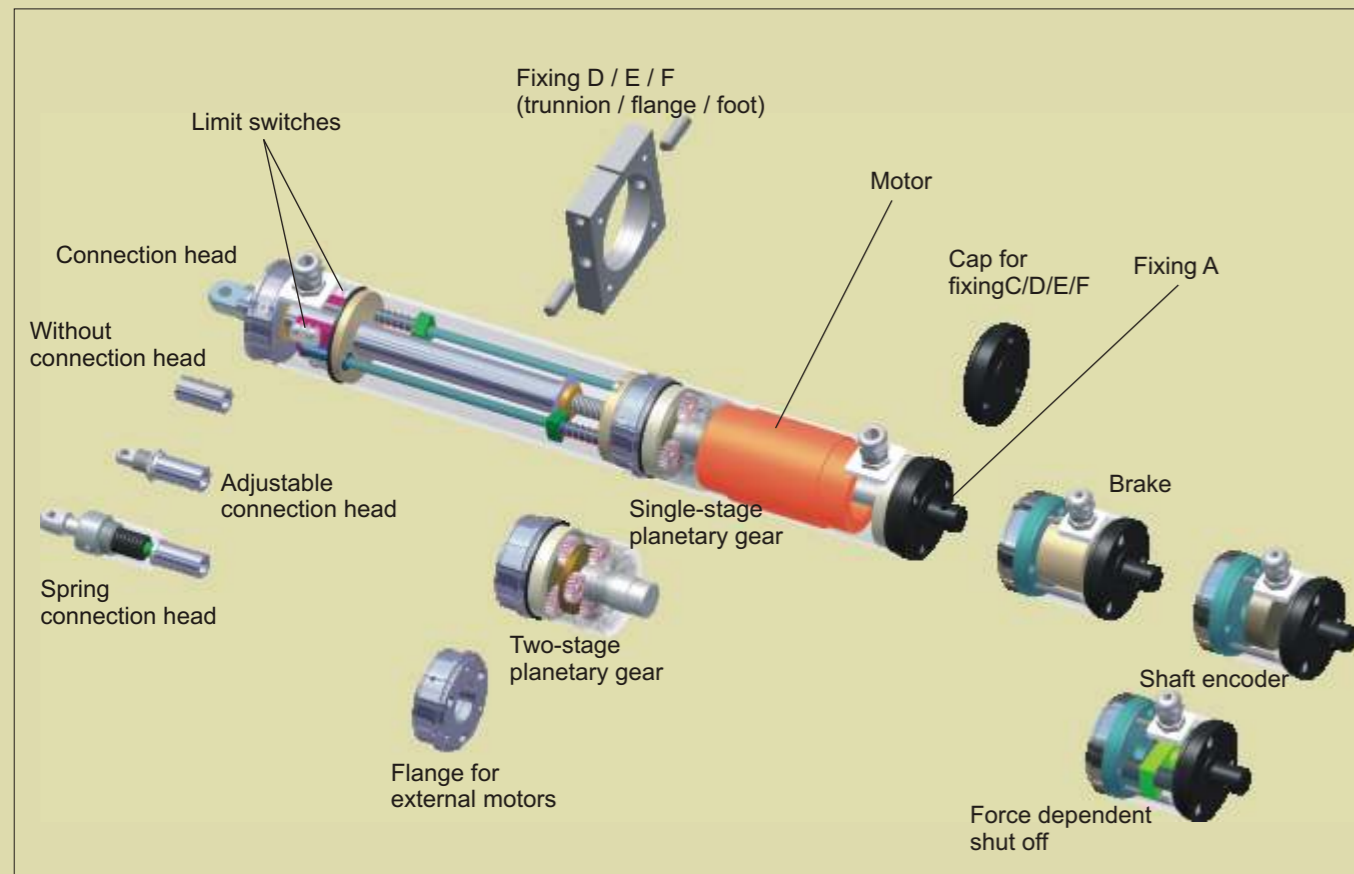
The all-stainless steel body, piston and end fittings are standard and coupled with an IP65 water jet protection rating mean trouble free use in exposed locations and resistance to corrosive environments. The all-cylindrical design will appeal to designers where the actuators are highly visible such as in the facades of modern buildings.

Customised versions can be manufactured where necessary.

Feel free to contact us.

Options:

- Wide selection of AC- and DC-Motors available
- Customized stroke lengths
- Large range of encoder
- Lubricating nipple in connection head
- Flange for external motors
- Ball screw spindle
- Customized adaptations

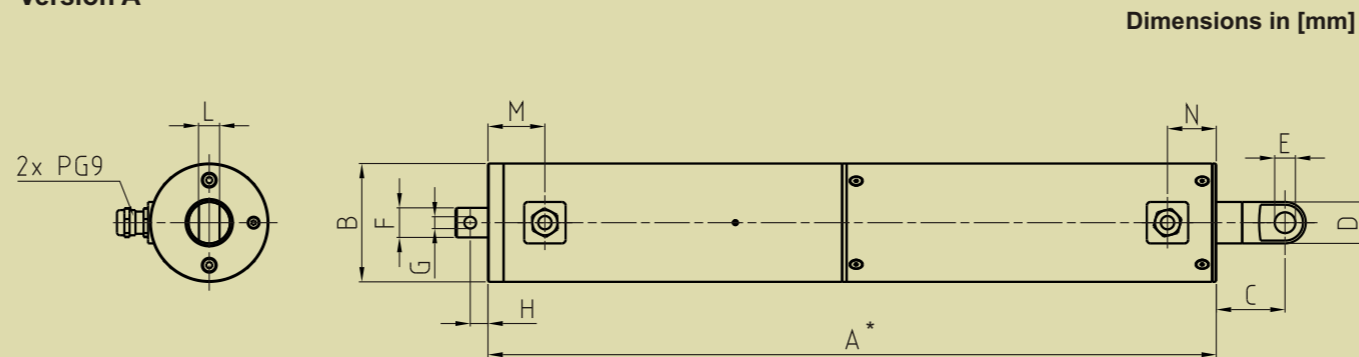


Subject to changes - for updated information refer to www.framo-morat.com

Wide range of mounting facilities

Dimensions (for DC on request) / fixing versions

Version A



Type	Basic stroke**	A*		B	C	D	E	F	G	H	L	M	N
		1-stage	2-stage										
LiMax 60	200	541	553	Ø60	34	Ø20	Ø8	Ø15	Ø5	10	8	36	31
LiMax 80	200	562,5	577,5	Ø80	46,5	Ø28	Ø14	Ø20	Ø8	12	14	38,5	33

* Measurement A is based on the basic stroke. For longer strokes measurement "A" varies according to the extension of the stroke length.

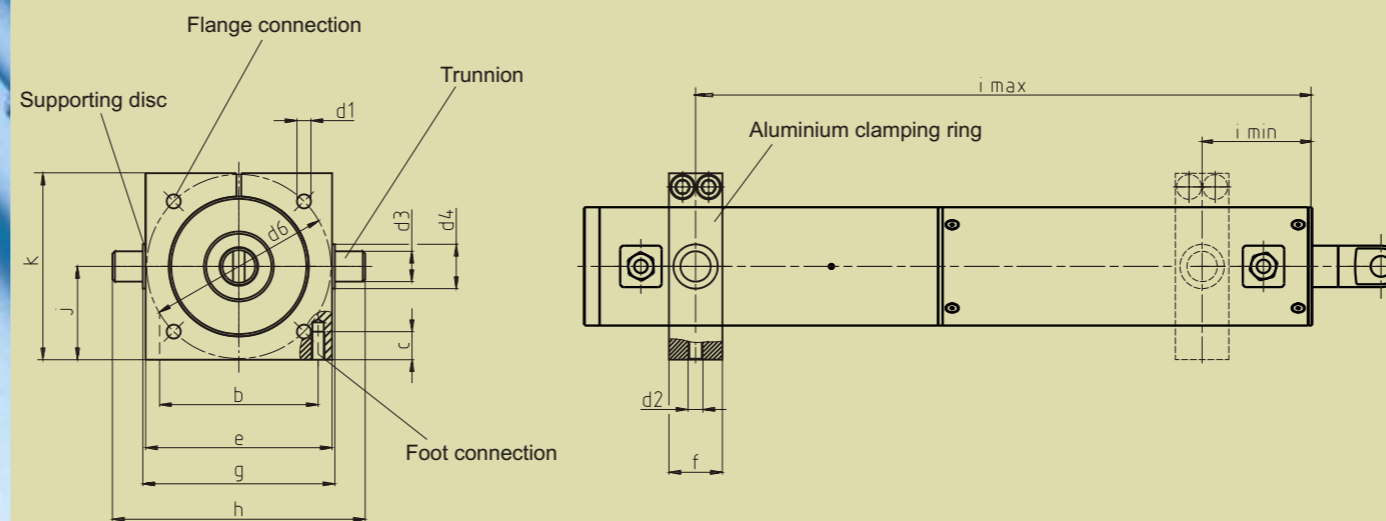
** Shorter stroke lengths on request

Max. stroke length:
LiMax 60 = 400mm
LiMax 80 = 800mm

Version D: Trunnion

Version E: Flange mounting

Version F: Foot mounting



	i min.	i max.	e	k	h	j	Trunnion			Flange			Foot		
							d3 h7	d4	g	d1	d6	d2	b	c	f
LiMax 60	55	428 + stroke	78	80	108,4	40	8	14	82,4	6	79	M6	69	12	16
LiMax 80	60	437 + stroke	100	110	130,4	50	10	16	102,4	7	100	M8	87	16	20

* Measurement "i max." is based on the basic stroke. For longer strokes measurement "i max." varies according to the extension of the stroke length

All measurement in mm

Customized stroke lengths on request

Performance table (for DC on request)

LiMax 60 - 1 x 230 V AC

Speed n ₁ [min ⁻¹]	Motor power P ₁ [kW]	Duty cycle [%]	Planetary gear stages	Trapezoidal thread [mm]	Stroke speed [mm/s]	Max. stroke force [N] at stroke length [mm]		
						200	300	400
1200	0,06	15	1:1	Tr12x6 So	120	210	210	210
1200	0,06	15	1:1	Tr12x4 Ss	80	250	250	250
1200	0,06	15	1:1	Tr12x3 Sd	60	290	290	290
1200	0,06	15	1:1	Tr12x2 Sd	40	320	320	320
1200	0,06	15	1-st.	Tr12x6 So	31	770	770	770
1200	0,06	15	1-st.	Tr12x4 Ss	21	930	930	930
1200	0,06	15	1-st.	Tr12x3 Sd	15	1050	1050	1050
1200	0,06	15	1-st.	Tr12x2 Sd	10	1150	1150	1150
1200	0,06	15	2-st.	Tr12x6 So	8	2550	2550	2200
1200	0,06	15	2-st.	Tr12x3 Sd	4	3500	2250	1250
1200	0,06	15	2-st.	Tr12x2 Sd	3	3500	3500	2200

LiMax 80 - 3 x 230 / 400 V AC

Speed n ₁ [min ⁻¹]	Motor power P ₁ [kW]	Duty cycle [%]	Planetary gear stages	Trapezoidal thread [mm]	Stroke speed [mm/s]	Max. stroke force [N] at stroke length [mm]						
						200	300	400	500	600	700	800
2700	0,22	30	1:1	Tr18x8 So	360	250	250	250	250	250	250	250
2700	0,22	30	1:1	Tr18x4 Ss	180	320	320	320	320	320	320	320
2700	0,22	30	1:1	Tr18x3 Sd	135	340	340	340	340	340	340	340
2700	0,22	30	1-st.	Tr18x8 So	84	1000	1000	1000	1000	1000	1000	1000
2700	0,22	30	1-st.	Tr18x4 Ss	42	1320	1320	1320	1320	1320	1320	1320
2700	0,22	30	1-st.	Tr18x3 Sd	31	1400	1400	1400	1400	1400	1400	1400
2700	0,22	30	2-st.	Tr18x8 So	19	3750	3750	3750	3750	3750	2500	1900
2700	0,22	30	2-st.	Tr18x4 Ss	10	5000	5000	5000	4900	3400	2500	1900
2700	0,22	30	2-st.	Tr18x3 Sd	7	5200	5200	5200	5200	4800	3600	2700

LiMax 80 - 1 x 230 V AC

Speed n ₁ [min ⁻¹]	Motor power P ₁ [kW]	Duty cycle [%]	Planetary gear stages	Trapezoidal thread [mm]	Stroke speed [mm/s]	Max. stroke force [N] at stroke length [mm]						
						200	300	400	500	600	700	800
2700	0,12	15	1:1	Tr18x8 So	360	130	130	130	130	130	130	130
2700	0,12	15	1:1	Tr18x4 Ss	180	180	180	180	180	180	180	180
2700	0,12	15	1:1	Tr18x3 Sd	135	190	190	190	190	190	190	190
2700	0,12	15	1-st.	Tr18x8 So	84	540	540	540	540	540	540	540
2700	0,12	15	1-st.	Tr18x4 Ss	42	720	720	720	720	720	720	720
2700	0,12	15	1-st.	Tr18x3 Sd	31	760	760	760	760	760	760	760
2700	0,12	15	2-st.	Tr18x8 So	19	2050	2050	2050	2050	2050	2050	1900
2700	0,12	15	2-st.	Tr18x4 Ss	10	2700	2700	2700	2700	2700	2500	1900
2700	0,12	15	2-st.	Tr18x3 Sd	7	2850	2850	2850	2850	2850	2850	2700

Depending on application a brake is requested.

Duty ratio applies to 10 minutes duty time.

For tensile loading applies the maximum stroke force of the particular stroke speed.

Ordersample

Type - Version - stroke force - stroke speed - stroke length
LiMax 60 - WA - 1150 - 10 - 200

So = No self-locking
Ss = Static self-locking
Sd = Dynamic self-locking

General information

- Maximum allowable ambient temperature -20 up to +60°C.
- For minus degrees a motor standby heating is required.
- A re-lubrication nipple is recommended for vertical applications.
- The piston rod is not torsion protected.

Stainless steel and water jet protection

Application examples

Architecture Solar Shading



Attractive all-cylindrical stainless steel design is very suited to modern building solar shading systems.

Telecommunications



High force rating and weatherproof design is suitable for all applications exposed to the elements.

Handling



Fully adjustable limit switches mean flexibility in setting-up

Benefits at a glance

Economically

- Optimum price/performance ratio
- Low operating cost
- Simple installation and start-up
- Low maintenance
- Long life cycle
- Integrated options

Reliable operation

- Life time lubrication
- Reliable under extreme conditions like heat, dust, moisture
- Force dependent shut-off option
- Integrated safety switch
- Thermal protection
- Reproducible positioning accuracy

Design freedom

- Fully adjustable limit sw
- Water jet protected (IP65) option
- Stainless steel resists corrosion
- Modular design many options
- Various types of mounting and end connection
- Reliable integration in existing control systems
- High power density
- Wide range of three-phase, single phase AC and also DC motors
- Customized versions to special order
- Special stroke lengths available on request

Pharma-/ Chemistry-/ Food industry



The water jet protection (IP65) and stainless steel design is resistant to exposure in highly corrosive environments.

More about Framo® . . .

Worm Gear Sets

Millions in use worldwide. Catalog worm gear sets are available from stock. Custom versions on request.



Gears

On specification External gears / Internal gears, spur gears, helical gears and spherical gears.

LiMax

The slim, strong and all stainless steel linear actuator with integrated free adjustable limit switches.



Mini

Extremely compact linear actuator with integrated limit switches and many options.

Compacta

Slip-on geared motor with built-in limit switches and many options.

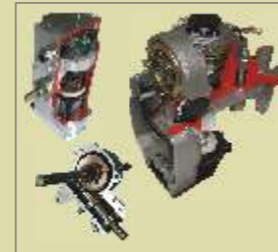


LinearChain

The Framo® Push-Pull Chain combines long strokes with minimum space requirements.

DiscPower

Disc motor with integrated planetary gear.



Custom Drives

Framo designs and produces custom drives from worm gear box to complete drives.

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