

Lin Linear unit for linear motions

adaptable to all **...Max-...-F** actuators size S and M

for conversion of a rotating into a linear motion and mounting on valves up to 42 mm stroke

Lin - ...
Lin - ... - CT

Subject to change!

Compact. Easy installation. Universal. Cost effective. Safe.

Type	Stroke (max.)	Description
Lin- 7.5	7.5 mm	Linear unit up to max. 7.5 mm stroke, suitable for all ...Max-...-F actuators size S or M with spring return function
Lin- 10	10 mm	Linear unit up to max. 10 mm stroke, suitable for all ...Max-...-F actuators size S or M with spring return function
Lin- 15	15 mm	Linear unit up to max. 15 mm stroke, suitable for all ...Max-...-F actuators size S or M with spring return function
Lin- 20	20 mm	Linear unit up to max. 20 mm stroke, suitable for all ...Max-...-F actuators size S or M with spring return function
Lin- 30	30 mm	Linear unit up to max. 30 mm stroke, suitable for all ...Max-...-F actuators size S or M with spring return function
Lin- 40	42 mm	Linear unit up to max. 42 mm stroke, suitable for all ...Max-...-F actuators size S or M with spring return function
Lin- ... - CT	as above with aluminium housing and seawater resistant C5-M painting, resistant against corrosive and/or maritime atmosphere.	Lifting rod, connection parts and screws in stainless steel

Product views and applications

Lin + ExMax-... size M



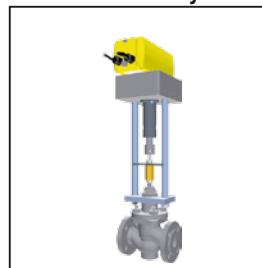
Lin + RedMax-... size M



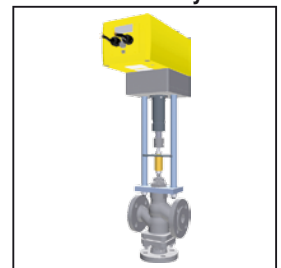
Lin + InMax-... size M



Lin + ExMax-... size S assembled on 2-way valve



Lin + ExMax-... size M assembled on 3-way valve



Selection of recommended actuators in relation of force and max. stroke

Type	LIN - 7.5	LIN - 10	LIN - 15	LIN - 20	LIN - 30	LIN - 40	
max. stroke	7.5 mm	10 mm	15 mm	20 mm	30 mm	42 mm	
Force							
500 N	...Max- 15 - ...F	...Max- 15 - ...F	...Max- 15 - ...F	...Max- 15 - ...F	...Max- 15 - ...F	...Max- 30 - ...F	At strokes between two values use the next higher linear unit e.g. 24 mm stroke = Lin-30
800 N				...Max- 30 - ...F	...Max- 30 - ...F	...Max- 50 - ...F	
1.000 N				...Max- 30 - ...F	...Max- 50 - ...F	-	
1.500 N				...Max- 30 - ...F	...Max- 50 - ...F	-	
2.000 N	...Max- 30 - ...F	...Max- 50 - ...F	-				
2.500 N	...Max- 30 - ...F	...Max- 50 - ...F	-				
3.000 N	...Max- 30 - ...F	...Max- 50 - ...F	-				

Attention: Limitation of resolution at YF-actuators with strokes < nominal (motor blockade)!
Note the maximum force of the actuator to prevent damage to your valve!

Description Highlights

The Lin-... unit is used for conversion of a ¼ turn rotation into a linear motion. The stroke is available acc. to Lin type from 7.5 to 42 mm.

Lin-... + ...Max-... linear-valve actuators are for automation of 2-way valves or 3-way valves and applications as control or safety actuator.

The linear unit is suitable for all ...Max-...-F actuators size S or M. The valve adaption is specified acc. to valve manufacturer by valve type and nominal size DN.

- ▶ Linear conversion for safety applications (fail-safe function)
- ▶ For ...-Max-...-F actuators with and without spring return, size S and M
- ▶ Easy mounting
- ▶ 100 % overload protected
- ▶ Compact design and small dimension (L x W x H = 160 x 141 x 206 mm)
- ▶ Form fitting double square shaft connection
- ▶ Robust aluminium housing (optional with seawater resistant C5-M painting)
- ▶ IP66 protection
- ▶ Gear made of stainless steel and sinter metal
- ▶ Optional accessories: Ex terminal boxes and mounting bracket


Technical data

Material Housing:	Aluminium anodized AlMg4,5
Lifting rod:	Stainless steel V4A / AISI 316L / DIN EN 1.4404
Adapter/coupling:	Stainless steel V4A / AISI 316L / DIN EN 1.4404
Dimensions	L × W × H = 160 × 141 × 206 mm
Weight	~ 4,3 kg
Temperature	-20...+50 °C
Delivery	Linear unit inclusive adapters (12 × 12 mm for ...Max actuators size S and 16 × 16 mm for size M) and screws (M4 × 85 mm resp. M8 × 130 mm) in stainless steel V4A

Valve adaption

For selection of suitable valve adaption and pricing are following details necessary:

1. Valve's manufacturer
2. Valve type
3. Valve nominal size DN

For existing adaptations these data are usually sufficient for the selection. For valves Schischek did not designed an adaption yet a detailed drawing of the valve is necessary. When ordering the actuator type and the adaptation type must be specified.

Order example:

Modulating valve actuator with spring return in explosive atmosphere zone 2 for valve with 20 mm stroke and 1.500 N needed force.

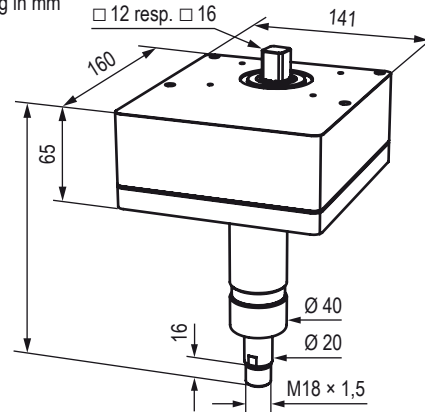
Actuator: RedMax-30-YF

Linear adaption: LIN-20

Valve adaption: suitable to valve type on request

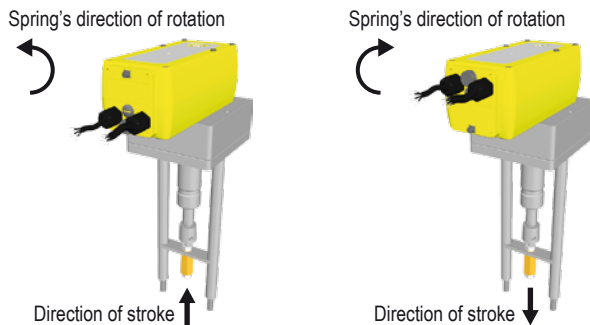
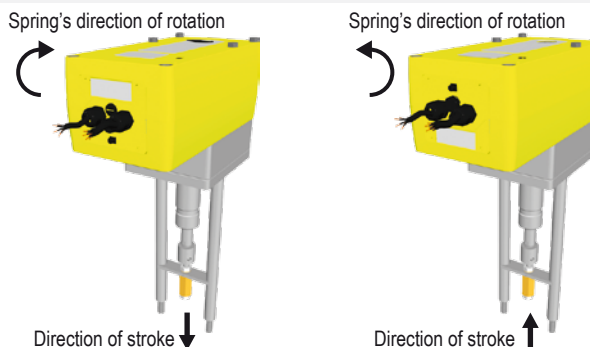
Dimensions

Dimensioning in mm



Attention
Warning notes

- The blocking force is much higher than the nominal force. Verify if your valve is suitable!
- If the real time of actuator's spring return increases to more than 1.5 times of nominal spring return time you should check the application. The safety function is reduced.
- Actuators size S with 1 s and size M with 3 s spring return time are not permitted to be run together with the linear adaption LIN.

Conversion of rotating into linear motion
Size S

Size M

Positioning speed in acc. of run times
Positioning speed of motor and spring – size S

...Max...-F	Positioning speed motor [s/mm]						Positioning speed spring [s/mm]	
	Motor running time s/90°						Spring return time s/90°	
Size S	3	7,5	15	30	60	120	3	10
+ Lin- 7.5	0,4	1,0	2,0	4,0	8,0	16	0,4	1,5
+ Lin- 10	0,3	0,75	1,5	3,0	6,0	12	0,3	1,0
+ Lin- 15	0,2	0,5	1,0	2,0	4,0	8,0	0,2	0,7
+ Lin- 20	0,15	0,4	0,75	1,5	3,0	6,0	0,15	0,5
+ Lin- 30	0,1	0,25	0,5	1,0	2,0	4,0	0,1	0,3
+ Lin- 40	0,1	0,18	0,36	0,72	1,43	2,86	0,1	0,2

Positioning speed of motor and spring – size M

...Max...-F	Positioning speed motor [s/mm]					Positioning speed spring [s/mm]
	Motor running time s/90°					Spring return time s/90°
Size M	40	60	90	120	150	20
+ Lin- 7.5	5,34	8,0	12	16	20	2,6
+ Lin- 10	4,0	6,0	9,0	12	15	2,0
+ Lin- 15	2,67	4,0	6,0	8,0	10	1,3
+ Lin- 20	2,0	3,0	4,5	6,0	7,5	1,0
+ Lin- 30	1,33	2,0	3,0	4,0	5,0	0,7
+ Lin- 40	1,0	1,43	2,15	2,86	3,58	0,5



Nominal force (N) at spring of actuator in relation of max. stroke of LIN at temperatures between -20...+40 °C

Nominal force (N)	LIN - 7.5	LIN - 10	LIN - 15	LIN - 20	LIN - 30	LIN - 40	Blocking force in motor is round about 3 to 4 times larger than nominal force. Note valve dimensioning!
...Max- 15 -F	1.500	1.500	1.000	800	500	-	
...Max- 30 -F	3.000	3.000	2.000	1.500	1.000	800	
...Max- 50 -F	-	-	3.000	3.000	2.000	1.500	

Attention: Limitation of resolution at YF-actuators with strokes < nominal (motor blockade)! Note the maximum force of the actuator to prevent damage to your valve!

Nominal force (N) at spring of actuator in relation of max. stroke of LIN at temperatures between 0...+40 °C

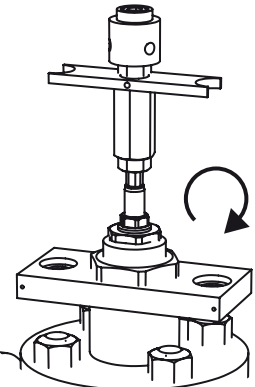
Nominal force (N)	LIN - 7.5	LIN - 10	LIN - 15	LIN - 20	LIN - 30	LIN - 40	Blocking force in motor is round about 1.5 to 2 times larger than nominal force. Note valve dimensioning!
...Max- 15 -F	3.000	3.000	2.000	1.600	1.000	-	
...Max- 30 -F	6.000	6.000	4.000	3.000	2.000	1.600	
...Max- 50 -F	-	-	6.000	6.000	4.000	3.000	

Above mentioned values are nominal trusts with performed self adjustment drive.

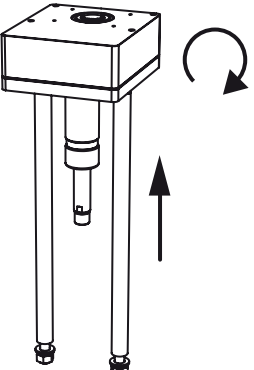
The maximum trusts can read values which are up to three to four times higher than values of tables. Without performed self adjustment drive there can occur much higher trust values, which can cause damages on the mentioned valve or linkages.

► Mounting of Lin-... unit

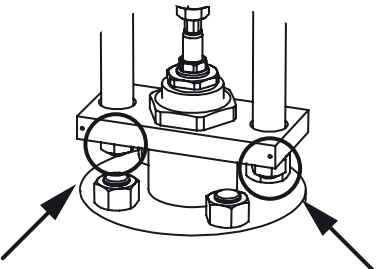
1. Screw connection parts on valve



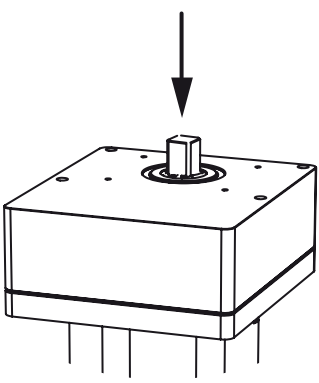
2. Screw in scraper rods



3. Tighten with nuts (2 x)

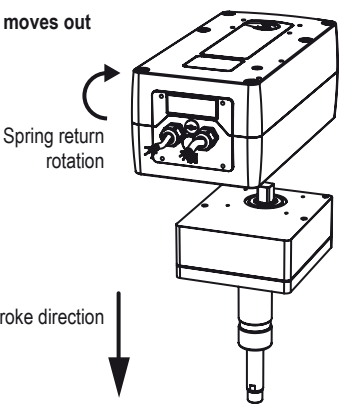


4. Connect adaption to Lin unit



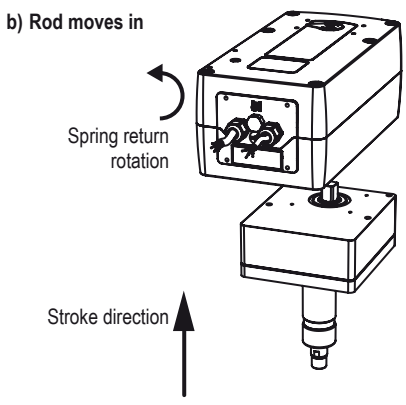
5. Function on valve (Fig. shows Max actuator size M)

a) Rod moves out



Stroke direction ↓

b) Rod moves in

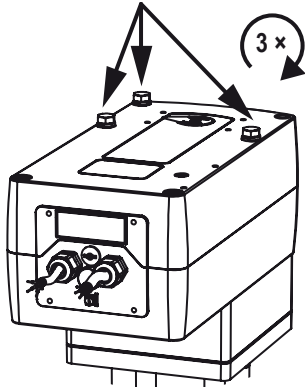


Stroke direction ↑

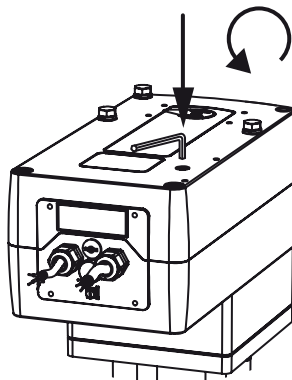
► Mounting of Lin-... unit



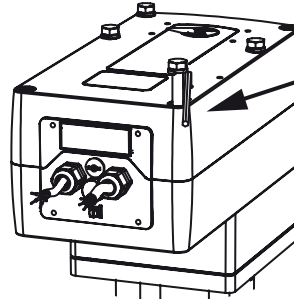
6. Screw actuator on Lin unit



7. Rotate Allen key 1½ turns (pretensioning the spring)



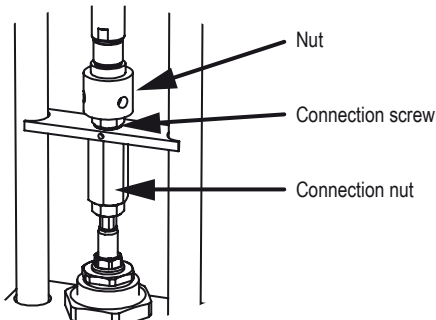
Rotate 1½ turns
Note turn direction!



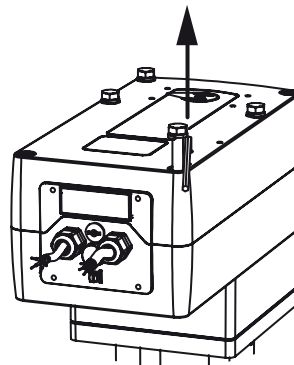
Insert screw
into hole to
block Allen key

8. Screw nut to valve linkage

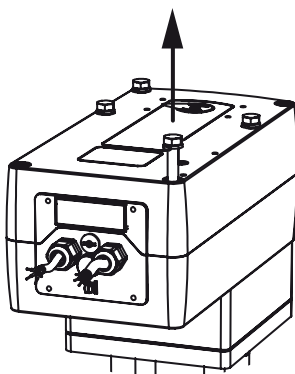
- Note valve tightness!
- If necessary adjust connection parts again!



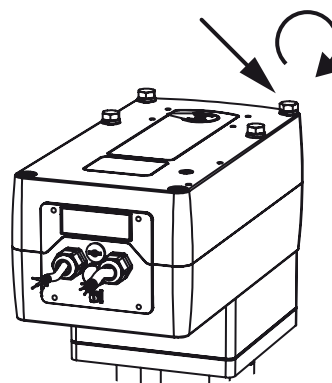
9. Remove Allen key



10. Pull out inserted screw



11. Fix screw here

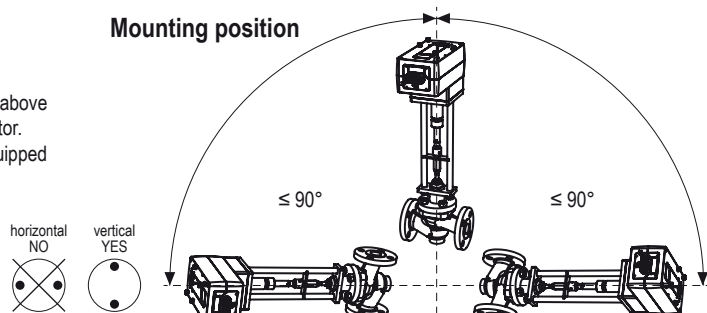


Important information for installation and operation

When mounting particularly observe the following:

- The linkage spacer columns for the actuators should only be mounted vertically.
- Valve actuators should only be mounted as shown, never suspended.
- When mounting on a steam valve, the actuator should not be mounted vertically above the valve as the rising heat and steam could cause damage at parts of the actuator.
- If mounted outside or in areas with a high level of humidity, the drive must be equipped with a heater.
- Vibration should be avoided, they shorten the serviceable life of the actuators. Suitable shock absorption should be incorporated.
- Pressure fluctuations in steam systems must be avoided to protect the actuator.

Mounting position



Lin_en
V01 - 24-Jan-2014