

**Linear actuators RH 1250**  
**Max. lifting force 4.5 to 12.5 N, stroke 80 to 250 mm**  
**manual-hydraulic version**

**L7.101**  
 Issue 6-15 E



**Advantages**

- High operating safety by speed limiting valve and pressure relief valve
- Optional descent actuation by pushing or turning
- Optional fork or flange mounting
- Precise plunger guide
- Independent of external power supply
- No obligatory tests as per electrical safety regulations
- Compact design
- Single-lever operation
- Maintenance free
- Resistant against disinfectants
- Different lacquerings as an option

**Application**

Linear actuators RH 1250 are universally used as manually-operated actuators for linear movements.

**Principal use**

- Height adjustment of hospital and nursing beds as well as mobile nursing chairs
- Height adjustment of patient transporters and therapy couches
- Adjustment of examination and care chairs as well as childbirth beds
- Height adjustment of instrument tables
- Actuator for lifting modules and lifting tables

**Fixing and installation**

The linear actuators RH 1250 have 1 location hole Ø 12,1 mm in the plunger and 2 centring pivots Ø 38 mm for the connection of user's constructions.

The user's construction must exclude side loads and forced conditions.

The centring pivots Ø 38 mm are unlacquered.

There are two different operating directions of the pump lever: clockwise and counterclockwise operation of the pump lever, depending on the user's construction.

**Description**

Linear actuators RH 1250 are manually operated, hermetically sealed, hydro-mechanical actuators for linear adjusting procedures.

The compact design contains the pump piston and the valve technology. Also the oil reservoir and the plunger cylinder are integrated.

The hydraulic transmission in connection with the manual operation allows a good dosage of very high forces.

Important for that are also the mechanics with minimum clearance as well as the sensitive responding valves with exactly defined switching points.

In principle only push forces can be generated.

**Operation**

The plunger rod is extended by reversible rotation of approx. 40° by an operating lever at the operating shaft.

The recommended lever length is approx. 300 mm.

To retract the plunger cylinder, the operating shaft has to be turned to the opposite direction by approx. 10°. The operating shaft returns automatically.

**Linear actuators RH 1250 manually operated**



**Part no.: M8-XX-XX-X-A-X-L-X-X**

**Technical data**

Max. push force: 4,500 – 12,500 N  
 Stroke: 80 – 250 mm

**Operations**

- Foot pedal or hand lever



**Mechanical interface**

Plunger eye Ø 12 mm  
 Centring pivot Ø 38 mm  
 Optional extra: Fork or flange mounting

**Accessories**

- Foot pedal
- Hand lever
- Bearing blocks

**Material**

Body: Aluminium  
 Operating shaft: Steel, corrosion resistant  
 Plunger: Steel, corrosion resistant

**Important notes!**

The linear actuators RH 1250 are resistant against corrosion, detergents and disinfectants up to +70 °C.

The admissible operating temperature is 10° up to 40 °C.

To retract the plunger of the linear actuator a push load of at least 100 N is required.



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 Engineering — Phone 1-800-827-2526 Web [www.carrlaneroemheld.com](http://www.carrlaneroemheld.com)

## Technical data and code for part numbers

### Functioning

All versions of the RH 1250 are operated with an operating lever, that is pinned at the operating shaft.

The integrated flow control valve provides for an uniform descent speed in all load conditions.

Due to the possibility to get a drilled operating shaft, the actuator can quickly be installed and put into operation.

It has to be considered that the user's construction always acts with push force onto the actuator.

The actuator has a high safety against overload. In the case of overload it is not possible to continue pumping the actuator, but descent is possible. The operator has to make sure that the actuator is not overloaded.

### Technical data

Lifting force	Pump strokes	Required pump torque	v Descent	Release torque Descent	Release angle Descent
[N]	[per 100 mm]	[Nm/full load]	[s/100 mm]	[Nm/full load]	[°]
4500	7±1	160	4.5±1	10	2 – 10
6500	9±1	160	4.5±1	11	2 – 10
9500	13±1	160	4.5±1	15	2 – 10
12500	22±1	120	4.5±1	17	2 – 10

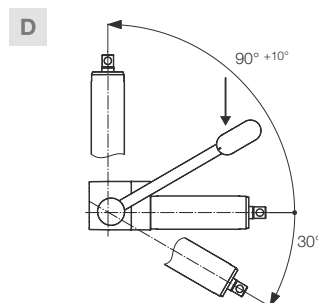
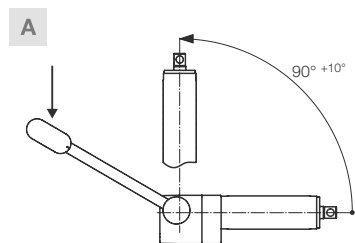
### Important notes!

The indicated torques are the maximum torques required for operation.

The return torque of the operating shaft for the pump stroke is max. 6 Nm. The return torque of the operating shaft for the descent is max. 2 Nm. The indicated return torques must not be exceeded

by the user's constructions of the operating lever. Otherwise, it could be possible that the operating lever will not be moved back to the off-position or an unintentional descent of the actuator could occur.

### Admissible mounting positions for operating direction



### Available on request:

- Stroke lengths up to 600 mm in gradations of 50 mm (up to lifting force 6,500 N)
- Descent actuation by pushing  
Variant for emergency adjustment in hospital beds. By pushing the descent bolt, additionally mounted at the actuator, the plunger can be safely pushed in. The descent bolt returns automatically.
- Descent actuation by turning  
Variant for emergency adjustment in hospital beds. By rotating a descent shaft, additionally

mounted at the actuator, the plunger can be safely retracted.

The descent actuation by turning does not return automatically.

- Front-side thread M8 in the plunger
- Versions with low residual magnetism for MRT applications
- Other descent speeds
- Other colours
- Customised special actuators

### Code for part numbers

Part no. M8-XX-XX-X-A-X-L-X-X

#### Maximum lifting force

(push force)

04 = 4,500 N

06 = 6,500 N

09 = 9,500 N

12 = 12,500 N

#### Stroke

08 = 80 mm

14 = 140 mm

20 = 200 mm

25 = 250 mm

#### Bore hole operating shaft

1 = perpendicular to the

plunger Ø 6 mm

(see drawing page 3)

2 = parallel to the plunger Ø 6 mm

3 = without bore hole

#### Fixation (page 3)

S = Standard

G = Fork (up to 6,500 N lifting force)

F = Flange (up to 6,500 N lifting force)

#### Colour

1 = unlacquered

2 = RAL 9016 traffic white

3 = RAL 9006 white aluminium

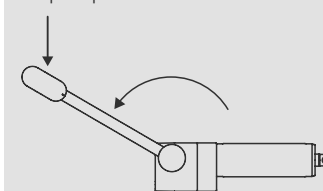
4 = RAL 9005 black

5 = RAL 7035 light grey

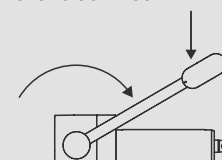
6 = RAL 7038 agate grey

#### Operating direction

A = pump lever counterclockwise



D = pump lever clockwise



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## Mounting variants

The RH 1250 is available in different mounting variants.

Besides the standard mounting with centring pivot  $\varnothing 38$  mm mounted at the housing, the RH 1250 can be delivered with fork mounting or flange mounting.

Part no. **M8-XX-XX-X-A-X-L-X-X**

Mounting

S = Standard

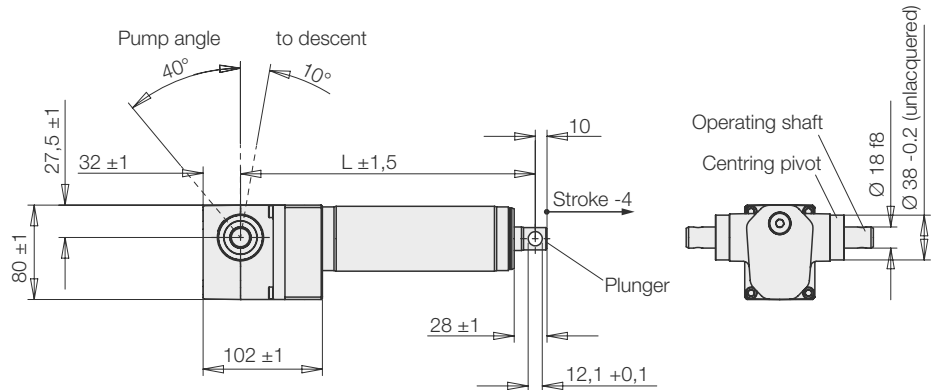
G = Fork

F = Flange

### Standard

The standard version of the actuator is located by forks or eyes in the user's construction at the centring pivots  $\varnothing 38$  mm and is secured with a bolt  $\varnothing 12$  mm. It has to be considered that the user's construction always acts with push force onto the actuator.

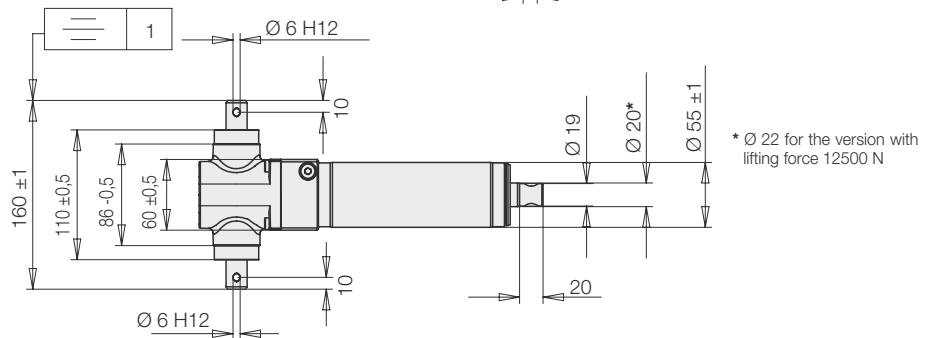
Stroke [mm]	L [mm]	L + stroke [mm]	Weight [kg]
80	192	272	2.2
140	252	392	3
200	312	512	3.5
250	362	612	4



### Fork\*\*

For easy mounting by means of flange and bolt.

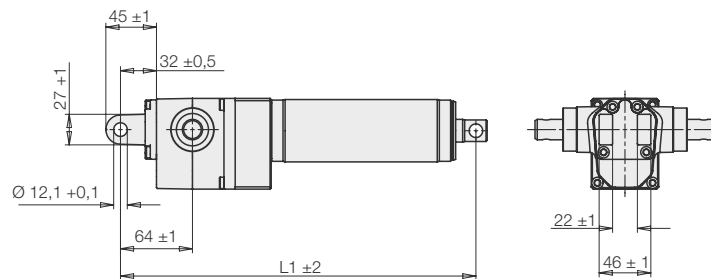
Stroke [mm]	L1 [mm]	L1 + stroke [mm]	Weight [kg]
80	256	336	2.2
140	316	456	3
200	376	576	3.5
250	426	676	4



### Flange\*\*

Often selected variant for example in therapy couches. Integration of the actuator in a steel structure by means of fork and bolt.

Stroke [mm]	L2 [mm]	L2 + stroke [mm]	Weight [kg]
80	261	341	2.2
140	321	461	3
200	381	581	3.5
250	431	681	4

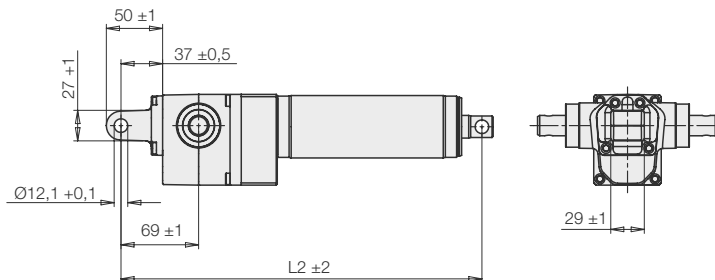


\*\* Fork and flange mounting up to a lifting force of 6.500 N available.

Forks and flanges have drafts.

### Important note!

To avoid an overload of the actuator, external stops are to be provided for the operating elements in order to limit the pump angle to 40°. Also for extensions with far-off levers supports for torque compensation have to be provided.



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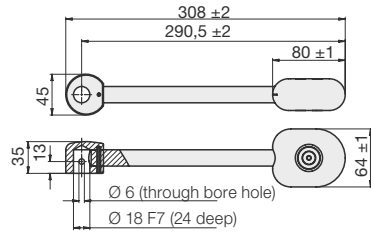
## Version with limit switches

### Accessories

#### • Foot pedal

Pre-drilled for the arrangement of 90° to the shaft bore hole

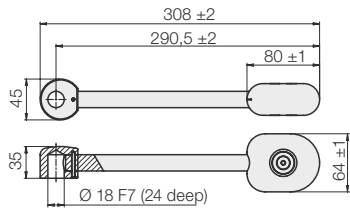
**Part no. 0990-180**



#### • Foot pedal

Without bore hole for application-specific arrangement.

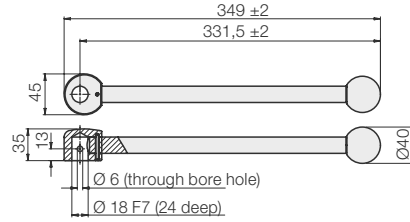
**Part no. 0990-181**



#### • Hand lever

Pre-drilled for the arrangement of 90° to the shaft bore hole

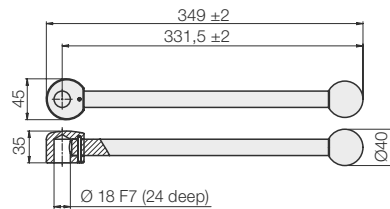
**Part no. 0990-182**



#### • Hand lever

Without bore hole for application-specific arrangement.

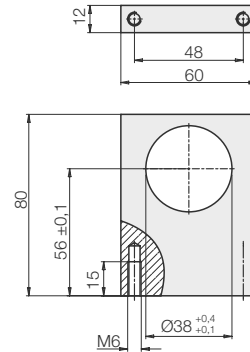
**Part no. 0990-183**



#### • Bearing block

For location of the RH 1250 at the bearing eyes Ø 38  
2 off are required

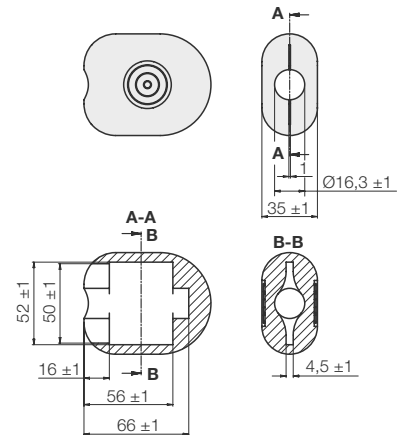
**Part-no. 3537-289**



#### • Pedal cover, black

For application-specific lever or as spare part

**Part-no. 3549-002**



### Important notes

The RH 1250 is not suitable for pull load. If the plunger will be loaded by pulling, air can be pulled into the hydraulic system and this can lead to malfunctions. This can be eliminated by repeated extension and retraction of the actuator.



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# Linear Actuators Provide Upgraded Quality to Activity Chair, at Lower Price

**Challenge:** Rifton Equipment designed, and brought to market, a new seating system called the Activity Chair. One of the required features was a base that allowed height adjustment with a 225-lb client in the chair. This was accomplished by use of a foot-operated hydraulic pump. The previous supplier provided a pump that functioned well, but when it proved costly, was reluctant to work with Rifton to economize. Rifton felt it was important to reduce costs on the chair where possible.

**Solution:** Rifton turned to linear actuators from Carr Lane Roemheld. After acquiring samples, and submitting them to an exhaustive validation/testing process, Rifton determined that the new product was actually an upgrade in quality on several fronts.

Carr Lane Roemheld saved Rifton a significant amount of money, and provided some minor design modifications to meet their requirements, including custom packaging specifications.

## Need for cost control, while retaining quality

Rifton's new Activity Chair is designed for feeding, speech therapy, active learning, and for clients with sensory processing challenges. "One of the required features was a base that allowed height adjustment with a 225-lb client in the chair," said Kirk Wareham, Rifton's Director of Product Design. This was accomplished by use of a foot-operated hydraulic pump. While the pump from the original supplier functioned well, it was quite costly. "We felt it was only responsible



to reduce our costs where possible, and ask for a price reduction commensurate with the dramatically rising sales of the Activity Chair," said Wareham about the original supplier. "Also, since we are able to pay our bills promptly we typically request, and are typically granted, an early-pay discount. Communication is vital to a thriving and mutually beneficial relationship, and we were disappointed to find that the supplier would not even entertain a discussion on either point. There were also some minor quality issues. An additional driver of the project was the hope to reduce

the amount of inventory being held in our warehouse."

## Carr Lane Roemheld's linear actuators fit the bill

Rifton then researched others in the field, and found that linear actuators from Carr Lane Roemheld were comparable to the original design. "After acquiring samples, and submitting them to an exhaustive validation/testing process, we determined that the new product was actually an upgrade on several fronts," said Wareham. "Prior to making a final decision, we then paid a visit to the Carr Lane Roemheld facility in Fenton, Missouri, in the hopes of establishing a strong and long-term relationship."

Wareham continued to find benefits to the new partnership. "Carr Lane Roemheld offered a price that would save us a significant amount of money. They also made some minor design modifications to meet our requirements, including custom packaging specifications. Our designers felt that the Carr Lane Roemheld pump was actually an upgrade in quality. Because Carr Lane Roemheld agreed to hold stock for us, and to deliver on a one-week lead time, we were able to reduce our inventory by over \$100,000. We also received a visit from an engineer from the manufacturing plant in Germany, to review quality expectations and design features; this was very helpful. Carr Lane Roemheld also offered us an early-pay discount. Although there was a minor problem with the first order, they stood behind their product and resolved the issue for us in a timely fashion."

The bottom line? "I would certainly highly recommend Carr Lane Roemheld as a valued supplier to any business," Wareham said.



*A linear actuator from Carr Lane Roemheld was built in to the base of the chair to allow height adjustment. The chair is designed for ease in therapy, feeding and other activities, with a client weight up to 225 lbs.*



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