

Lifting Module Basic

Max. lifting force 1,000 N, stroke from 200 to 600 mm,
manual-hydraulic version

M4.101

Issue 5-16 E



Application

Lifting module for ergonomic design of working places.

Principal use

- Industrial assembly working places
- Height adjustment of assembly working places in workshops
- Maintenance works
- Assembly fixtures
- Adjusting systems in supply processes of mid-sized objects
- Handling systems for product packing and transfer

Fixing and installation

For fixing of *modulog* modules or other components of the user at the top plate the lifting module has an interface 140 x 140.

For fixing of *modulog* modules at the bottom plate the lifting module has an interface 200 x 200.

If the lifting module has to be fixed on a flat level floor, 4 screws M10 of property class 10.9 as well as heavy-duty plugs have to be used.

For increased stability also a base plate, which can be delivered as accessory, can be fixed at the bottom plate.

Advantages

- Elegant and slim design
- Optimised ergonomics
- Simple operation
- No coupling stroke required
- Working in ergonomically optimum height

Description

The stroke movement is obtained by a hydraulic linear unit with single-lever actuation with oil being pumped by means of a piston pump into a plunger cylinder.

For lowering the oil returns by the weight of the load from the cylinder back to the reservoir.

The lifting units are ideal for height adjustment of tables, demonstration objects and similar equipments as well as for medical treatment equipments.

Operation

To lift the load, the foot pedal has to be depressed by approx. 45° several times. The pedal returns to its off-position by means of a return spring.

For a stroke of 100 mm 8 pump motions are required.

To descend the load, the foot pedal has to be moved upwards by approx. 10°.

Material

Lifting profile: aluminium, naturally anodised
Top and bottom plate: aluminium, black anodised

modulog

Lifting module



Part no. 8910-01-X0-H

Technical characteristics

Max. lifting force: 1,000 N
Max. torque: 100 Nm
Stroke: 200 up to 600 mm

Operations

- Foot pedal

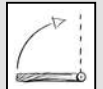


Kombinierbar mit den Modulen

- Rotating module - horizontal axis
DMH 200 as per data sheet M 1.101



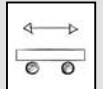
- Tilting module
KMB 100 as per data sheet M 2.101



- Rotating module - vertical axis
DMV 600 as per data sheet M 1.301



- Cart modules
WMS as per data sheet M 5.101



- Floor modules
FMS as per data sheet M 6.101

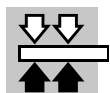


modulog interfaces

- Top plate: 140 x 140 - Ø 10.5 mm
- Bottom plate: 200 x 200 - Ø 10.5 mm

Accessories

- Base and adaptor plates
as per data sheet M 8.100 and M 8.110
- Table plates
as per data sheet M 8.130



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Technical characteristics dimensions

Technical characteristics

Stroke [mm]	A [mm]	A+Stroke [mm]	Weight [kg]
200	420	620	9.5
300	520	820	10
400	620	1020	11.5
500	720	1220	13
600	820	1420	14.5

Important notes!

To descend the lifting module a minimum load of approx. 200 N is required.

The lifting module must only be pressure loaded. The centre of gravity should be within the traverse of the fixing screws.

If the centre of gravity is outside, the dowelled joint with the floor has to be dimensioned correspondingly. In such cases it is recommended to use a larger base plate.

In case of eccentric load of more than 250 mm, the column cannot descend automatically because of too high friction forces.

The lifting module is designed for applications within closed rooms.

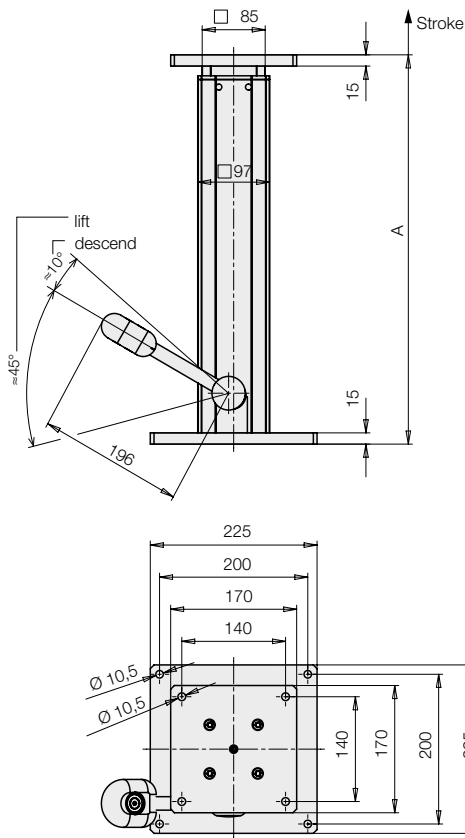
Code for part numbers

Part no. 8910-01-X0-H

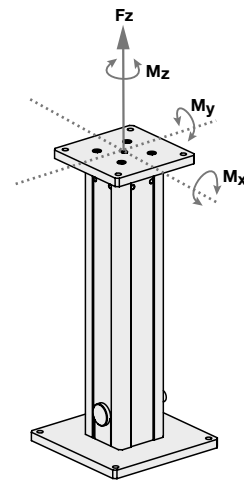
Stroke

- 2 = 200 mm
- 3 = 300 mm
- 4 = 400 mm
- 5 = 500 mm
- 6 = 600 mm

Dimensions



Maximum lifting force and maximum admissible torque load



Maximum lifting force Fz: 1,000 N

Maximum torque load:

Total Mx/y: 100 Nm

Mz: 50 Nm

In the case of eccentric loads, it is recommended to compensate these by counterweights. In off-position the indicated maximum torques may occur.

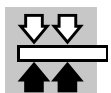
The forces and torques have to be considered by the operator. During the lifting motion only 50% of the maximum values are admitted.

Accessories

Base plate for increased stability

Part no.: 6311-412

See data sheet M 8.100



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Lifting Module Shop-Floor Telescope

Max. lifting force 1,000 and 2,000 N, stroke from 300 to 600 mm, manual-hydraulic and electro-mechanical version

M4.202

Issue 5-16 E



Advantages

- Low basic height
- Large strokes
- Simple and intuitive operation
- Working in ergonomically optimum height
- Sturdy industrial design
- Increase of quality in manufacturing and assembly processes
- Short amortisation time
- Increase of assembly throughput and productivity
- High level of safety against static overloads
- Checked in compliance with DIN EN 1570 with quadruple static overload

Application

Lifting module for workshop applications in the industry.

Principal use

- Industrial assembly working places
- Height adjustment of assembly working places in workshops
- Service
- Assembly fixtures
- Adjusting systems in supply processes of mid-sized objects
- Handling systems for product packing and transfer

Fixing and installation

For fixing of *modulog* modules or other components of the user at the top plate the lifting module has an interface 140 x 140.

For fixing of *modulog* modules at the bottom plate the lifting module has an interface 200 x 200. This plate can also be used to fix the lifting module on a flat level floor. For fixing 4 screws M10 of property class 10.9 as well as heavy-duty plugs are to be used.

For increased stability also a base plate, which can be delivered as accessory, can be fixed at the bottom plate.

Description

The lifting module Shop-Floor Telescope is particularly suitable for lifting and lowering assembly fixtures, working tables and demonstration objects in industrial applications as well as for medical treatment equipments in medical applications.

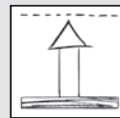
In general, lifting modules are used as base unit of devices for controlled lifting and lowering of loads or for height adjustment only. This version excels particularly by the low base height and the very high strokes.

Material

Lifting profile: aluminium, naturally anodised
 Top and bottom plate: aluminium, black anodised

modulog

Lifting module



Part no. 8918-0X-X0-X

Technical characteristics

Max. lifting force: 1,000, 2,000 N
 Max. bending moment: 500 Nm
 Stroke: 300 up to 1,000 mm

Operations

- Foot pedal
- Foot switch
- Hand panel



Combinable with the modules

- Rotating modules - horizontal axis as per data sheet M 1.101 / M 1.201



- Rotating modules - vertical axis as per data sheet M 1.301



- Tilting modules as per data sheet M 2.101 / M 2.201



- Cart modules WMS as per data sheet M 5.101



- Floor modules FMS as per data sheet M 6.101 FMD as per data sheet M 6.201



modulog interfaces

- Top plate: 140 x 140 – Ø 10.5 mm
- Base plate: 200 x 200 – Ø 10.5 mm

Accessories

- Foot switch and hand panel as per data sheet M 8.200
- Extension cable as per data sheet M 8.200
- Electrical supply unit as per data sheet M 8.200
- Base and adaptor plates as per data sheet M 8.100 and M 8.110
- Table plates as per data sheet M 8.130 and M 8.131



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Manual-hydraulic version operation with foot pedal



Description

The stroke movement is obtained by a hydraulic linear unit with single-lever actuation with oil being pumped by means of a piston pump into a plunger cylinder.

During retraction the oil returns due to the weight of the load from the cylinder back to the reservoir. A defined speed reduction is effected, independent of the load.

The manual-hydraulic variant is particularly sturdy and durable. This variant meets high safety demands and withstands jerking and knocking loads in applications.

According to the application 2 different force levels can be selected. The number of pump strokes depends on the force level.

Code for part numbers

Part no. 8918-0X-X0-H

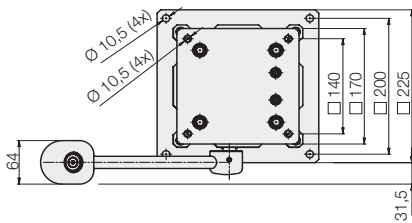
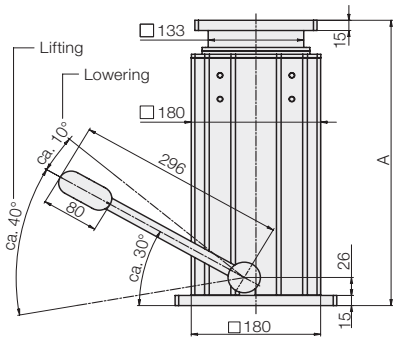
Maximum lifting force

- 1 = 1,000 N
- 2 = 2,000 N

Stroke

- 3 = 300 mm
- 4 = 400 mm
- 6 = 600 mm
- 8 = 800 mm
- 10 = 1,000 mm

Dimensions



Accessories

Base plate for increased stability

Part no. 6311-412

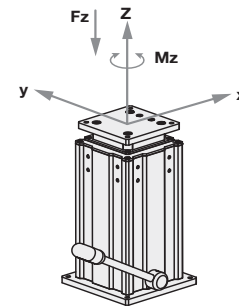
See data sheet M 8.100

Operation

To lift the load, the foot pedal has to be depressed by approx. 40° several times. The pedal returns to its off-position by means of a return spring.

To lower the load, the foot pedal has to be moved upwards by approx. 10°.

Maximum lifting force and maximum admissible torque load



Stroke	A	A + stroke	Weight
[mm]	[mm]	[mm]	[kg]
300	420	720	15
400	470	870	20
600	570	1,170	25
800	670	1,470	30
1,000	770	1,770	35

Lifting force	Pump strokes per 100 mm	Descent speed
[N]		[mm/s]
1,000	2.2	approx. 90
2,000	3.5	approx. 60

Important notes!

To descend the lifting module a minimum load of approx. 200 N is required.

The lifting module must only be pressure loaded. The centre of gravity should be within the traverse of the fixing screws. If the centre of gravity is outside, the dowelled joint with the floor has to be dimensioned correspondingly.

In such cases it is recommended to use a larger base plate.

In case of eccentric load of more than 250 mm, the column cannot descend automatically because of too high friction forces.

The lifting module is designed for applications within closed rooms.

Maximum lifting force Fz

Alternatively 1,000 N, 2,000 N

Maximum torque load:

Total Mx/y: 500 Nm

Mz: 300 Nm

In the case of eccentric loads, it is recommended to compensate these by counterweights. In off-position the indicated maximum torques may occur.

The forces and torques have to be considered by the operator. **During the lifting motion only 50 % of the maximum values are admitted.**



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Electro-mechanical version operation with foot switch or hand panel



Description

The lifting motion is generated by an electric motor with a spindle lifting gear.

The electrically operated variant is particularly suitable for positioning and adjusting tasks of working tables as well as for material supply and transport.

They excel by a smooth running.

Code for part numbers

Part no. 8918-0X-X0-E

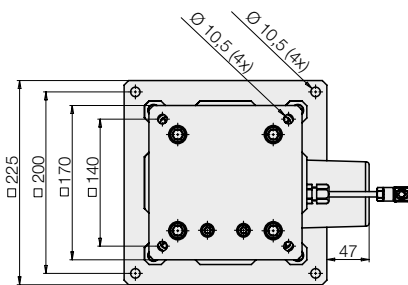
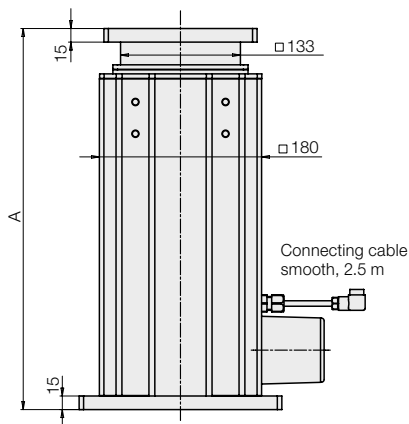
Maximum lifting force

- 1 = 1,000 N
- 2 = 2,000 N

Stroke

- 3 = 300 mm
- 4 = 400 mm
- 6 = 600 mm
- 8 = 800 mm
- 10 = 1,000 mm

Dimensions



Operation

Lifting and lowering is triggered by push-buttons with touch control contact. After release of the push-button, the motion will be immediately stopped.

Technical characteristics

Electric connection	Plug
Duty cycle	15 % ED
Code class	IP 54
Control voltage	24 V DC

Lifting force	Lifting speed (load-dependent)	Current consumption (load dependent)
[N]	[mm/s]	[A]
1,000	34 ... 30	6.5
2,000	18 ... 14	7.0

Maximum lifting force, maximum admissible torque load and important notes

As per manual-hydraulic version (previous page)

Delivery

The lifting modules are delivered ready for connection. The connecting cable from the lifting module to the supply unit is included in the delivery. Foot switch or hand panel as well as supply units and a mains cable have to be ordered separately as accessory.

Electrical accessories

• Foot switch

with connecting cable 3.0 m
Part no. 3823-038



• Hand panel

with connecting cable 1.6 m
Part no. 3823-025



• Supply unit

with control
for one lifting module
Part no. 3821-246



• Mains cable 230 V AC

with earthing type plug for supply units
Mains cable smooth, 3.0 m
Part no. 3823-040

Further accessory

See data sheet M 8.200

Accessories

Base plate for increased stability

Part no. 6311-412

See data sheet M 8.100



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Lifting Module Range

Max. lifting force 6,000 N, stroke from 440 to 940 mm, electro-mechanical telescope version

M4.203

Issue 1-16 E



Advantages

- Low basic height
- Good accessibility
- Very high flexibility
- Improved productivity
- Simple integration
- Optimised ergonomics
- Simple operation

Application

Double telescopic lifting module for workshop applications in the industry.

Principal use

- Automation
- Drive technology, gears box assembly
- Couplings, cardan shafts
- Compressors, pumps, hydraulic elements
- Industrial fittings
- Materials-handling technology
- Automotive industry and their suppliers
- Mechanical engineering
- Building and agricultural machines
- Electronics

Fixing and installation

For fixing of *modulog* modules or other components of the user at the top plate, the lifting module has an interface 140 x 140.

The bottom plate with double interface 200 x 200 is used to fix the lifting module on the flat level floor.

For fixing, 6 screws M 10 of property class 10.9 as well as heavy-duty plugs are to be used.

Description

The drive of the telescopic lifting module Range consists of a 230V A.C. motor and a spindle drive with trapezoidal spindle.

A motor brake in combination with the trapezoidal spindle guarantees safe holding of the driven position.

The telescopic guide unit consists of a precise aluminium profile section with a pre-stressed plain bearing with low friction and without clearance for exact positioning.

The compact construction with low height and small width guarantees an unhindered accessibility to the workpiece from all sides.

Mechanical and electric interfaces can be easily integrated in the process of automation.

Operation

The operation is made by hand panel or foot switch or alternatively by a primary electric control.

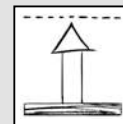
Lifting and lowering is triggered by push-buttons with touch control contact. After release of the push-button, the motion will be immediately stopped.

Material

Lifting profile:	aluminium, naturally anodised
Top and bottom plate:	aluminium, black anodised
Protection cap:	steel, black-lacquered

modulog

Lifting module



Part no. 8924-02-XX-E

Technical data

Max. lifting force:	2,000 N
Max. torque:	500 Nm
Stroke:	440 to 940 mm

Operations

- Foot switch
- Hand panel



Combinable with the modules

- Rotating module – horizontal axis
DMH 200
as per data sheet M 1.101
DMHe 200
as per data sheet M 1.201



- Rotating module – vertical axis
DMV 600
as per data sheet M 1.301
DMVe 600
as per data sheet M 1.201



- Tilting module
KMB 100
as per data sheet M 2.101
KME 100
as per data sheet RHI-M012



modulog interfaces

- Top plate: 140 x 140 - Ø 10.5 mm
- Bottom plate: 200 x 200 - Ø 10.5 mm

Accessories

- Base and adaptor plates
as per data sheet M 8.100 and M 8.110
- Table plates
as per data sheet M 8.130 and M 8.131
- Electrical operating elements, lines and connectors
as per data sheet M 8.203



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Technical data dimensions • accessories

Technical data

Lifting speed	70 mm/s
Electric connection	1/PE (230 VAC/50 Hz)
Rating	0.75 kW
Control voltage	24 VDC
Duty cycle	20 % ED
Code class	IP 54

Stroke [mm]	A [mm]	A + stroke [mm]	Weight [kg]
440	470	910	73
540	520	1060	77
740	620	1360	84
940	720	1660	91

Important notes

The lifting module must only be pressure loaded. The centre of gravity should be within the traverse of the fixing screws. If the centre of gravity is outside, the dowelled joint with the floor has to be dimensioned correspondingly. In such cases it is recommended to use a larger base plate. The lifting module is designed for applications within closed rooms. Not suitable for applications with impact load or vibration.

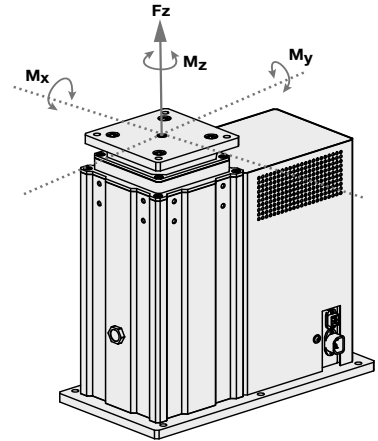
Code for part numbers

Part no. 8924-02-XX-E

Stroke

44 = 440 mm
54 = 540 mm
74 = 740 mm
94 = 940 mm

Maximum lifting force and maximum admissible torque load



Maximum lifting force F_z : 2,000 N

Maximum torque load

Total $M_{x/y}$: 500 Nm
 M_z : 300 Nm

In the case of eccentric loads, it is recommended to compensate these by counterweights. In off-position the indicated maximum torques may occur.

The forces and torques have to be considered by the operator.

During the lifting motion only 50% of the maximum values are admitted.

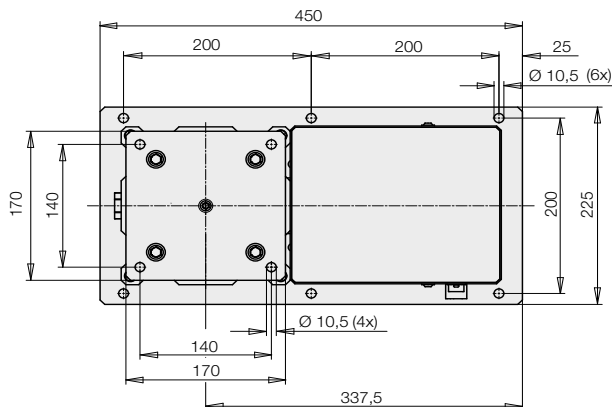
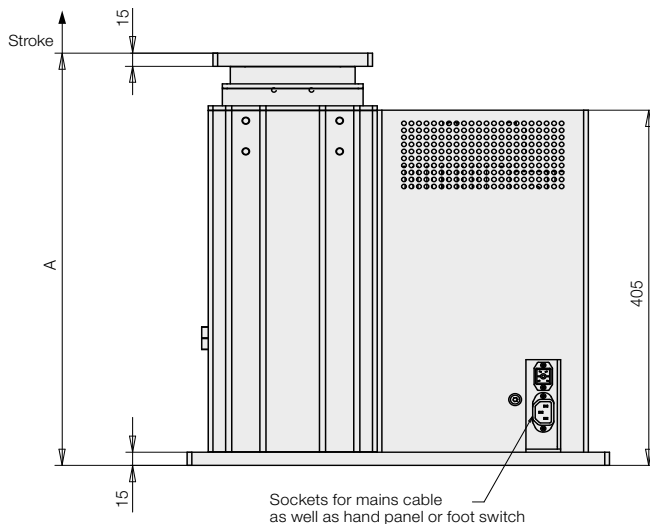
Delivery

The lifting modules are delivered ready for connection. Electrical operating elements and mains cables can be ordered separately as an accessory.

Electrical accessories required for a functional system:

- Electrical operating elements, lines and connectors as per data sheet M 8.203
- Mains cable 230 VAC
Mains cable, smooth with earthing type plug, 3 m
Part no. 3829-202

Dimensions



Accessories

Base plate for increased stability as per data sheet M 8.100



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Lifting Module Shop Floor

Max. lifting force 1,000 to 6,000 N, stroke from 200 to 600 mm,
manual-hydraulic and electro-mechanical version

M4.301

Issue 5-16 E



Advantages

- Simple and intuitive operation
- Working in ergonomically optimum height
- Sturdy industrial design
- Increase of quality in manufacturing and assembly processes
- Short amortisation time
- Increase of assembly throughput and productivity
- High level of safety against static overloads

Application

Lifting module for workshop and assembly applications in the industry.

Principal use

- Industrial assembly working places
- Height adjustment of assembly working places in workshops
- Service
- Assembly fixtures
- Adjusting systems in supply processes of mid-sized objects
- Handling systems for product packing and transfer

Fixing and installation

For fixing of *modulog* modules or other components of the user at the top plate the lifting module has an interface 140 x 140.

For fixing of *modulog* modules at the bottom plate the lifting module has an interface 200 x 200. This plate can also be used to fix the lifting module on a flat level floor. For fixing 4 screws M10 of property class 10.9 as well as heavy-duty plugs are to be used.

For increased stability, a base plate (separately available as an accessory) can be fixed to the bottom plate.

Description

The lifting module Shop-Floor is particularly suitable for lifting and lowering assembly fixtures, working tables and demonstration objects in industrial applications as well as for medical treatment equipments in medical applications.

In general, lifting modules are used as a base unit of devices for controlled lifting and lowering of loads or for height adjustment only.

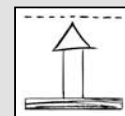
Material

Lifting profile: aluminium, naturally anodised
Top and bottom plate: aluminium, black anodised

modulog

Lifting module

Part no. 8915-0X-X0-X



Technical data

Max. lifting force: 1,000 up to 6,000 N
Max. bending moment: 500 Nm
Stroke: 200 to 600 mm

Operation

- Foot pedal
- Foot switch
- Hand panel



Combinable with the modules

- Rotating module – horizontal axis
DMH 200
as per data sheet
M 1.101 / M 1.201



- Tilting modules KMB 100
as per data sheet
M 2.101 / M 2.201



- Rotating module – vertical axis
DMV 600
as per data sheet
M 1.301



- Cart modules
WMS
as per data sheet M 5.101



- Floor modules
FMS as per data sheet M 6.101
FMD as per data sheet M 6.201



modulog interfaces

- Top plate: 140 x 140 – Ø 10.5 mm
- Bottom plate: 200 x 200 – Ø 10.5 mm

Accessories

- Electrical control modules for 1, 2, 3 or 4 lifting modules as per data sheet M 8.200
- Control module with battery holder as per data sheet M 8.201
- Electrical operating elements, lines and connectors as per data sheet M 8.203
- Base and adaptor plates as per data sheet M 8.100 and M 8.110
- Table plates as per data sheet M 8.130 and M 8.131



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Manual-hydraulic version operation with foot pedal



Description

The stroke movement is obtained by a hydraulic lifting drive with single-lever actuation, with oil being pumped by means of a piston pump into a plunger cylinder.

During retraction the oil returns due to the weight of the load from the cylinder back to the reservoir. A defined speed reduction is effected, independent of the load.

The manual-hydraulic variant is particularly sturdy and durable. This variant meets high safety demands and withstands jerking and knocking loads in applications.

According to the application 3 different force levels can be selected. The number of pump strokes depends on the force level.

Operation

To lift the load, the foot pedal has to be depressed by approx. 40° several times. The pedal returns to its off-position by means of a return spring.

To lower the load, the foot pedal has to be moved upwards by approx. 10°.

Code for part numbers

Part no. 8915-0X-X0-H

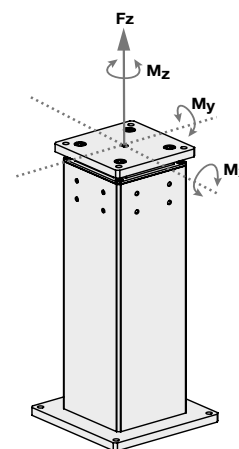
Maximum lifting force

- 2 = 2,000 N
- 4 = 4,000 N
- 6 = 6,000 N

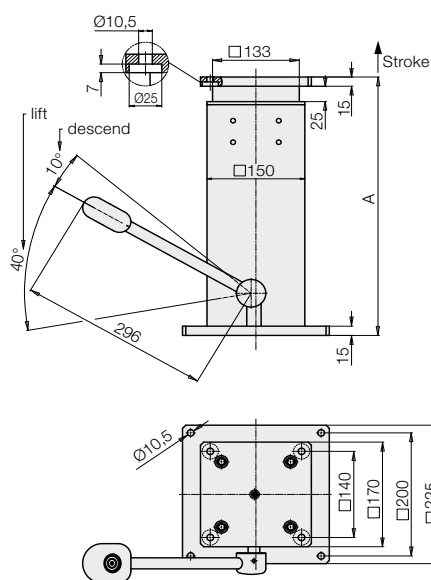
Stroke

- 2 = 200 mm
- 3 = 300 mm
- 4 = 400 mm
- 5 = 500 mm
- 6 = 600 mm

Maximum lifting force and maximum admissible torque load



Dimensions



Stroke [mm]	A [mm]	A + stroke [mm]	Weight [kg]
200	420	620	15
300	520	820	20
400	620	1,020	25
500	720	1,220	30
600	820	1,420	35

Lifting force [N]	Pump strokes per 100 mm	Descent speed [mm/s]
2,000	5	approx. 45
4,000	7	approx. 22
6,000	9	approx. 22

Important notes!

To descend the lifting module a minimum load of approx. 200 N is required.

The lifting module must only be pressure loaded. The centre of gravity should be within the traverse of the fixing screws. If the centre of gravity is outside, the dowelled joint with the floor has to be dimensioned correspondingly. In such cases it is recommended to use a larger base plate.

In case of eccentric load of more than 250 mm, the column cannot descend automatically because of too high friction forces.

The lifting module is designed for applications within closed rooms.

The hydro-manual lift drive can not be operated with synchronization control.

Maximum lifting force Fz

Optionally 2,000 N, 4,000 N or 6,000 N (1,000 N only for the electro-mechanical version)

Maximum torque load:

Total M_{x/y}: 500 Nm
M_z: 300 Nm

Accessories

- Base plate for increased stability as per data sheet M 8.100



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Sales — Phone (636) 386-8022 Fax (636) 386-8034

Engineering — Phone 1-800-827-2526 Web www.carrlaneroemheld.com

Subject to change.

Electro-mechanical version



Description

The lifting motion is generated by an electric motor with a spindle lifting gear.

The electrically operated variant is particularly suitable for positioning and adjusting tasks of working tables as well as for material supply and transport.

They excel by a smooth running.

Operation

Lifting and lowering is triggered by push-buttons with touch control. After release of the push-button, the motion will be immediately stopped.

Synchronization

Up to 4 lifting modules can be operated with synchronization control by a corresponding control module.

For example complete lifting platforms can be designed.

For operation with synchronization control, only lifting modules with code letter G are suitable.

Control units with synchronization control for 2, 3, or 4 lifting modules are available.

Code for part numbers

Part no. 8915-0X-X0-X

Maximum lifting force

1 = 1,000 N (only for variant E + B)
 2 = 2,000 N
 4 = 4,000 N
 6 = 6,000 N

Stroke

2 = 200 mm
 3 = 300 mm
 4 = 400 mm
 5 = 500 mm
 6 = 600 mm

Electronics

E = integrated stroke end disconnection (not suitable for synchronization control) with coiled connecting cable, 1.5 m
 G = with incremental stroke measuring system (suitable for synchronization control) with smooth connecting cable, 2.5 m
 I = with incremental stroke measuring system (suitable for memory function) with smooth connecting cable, 2.5 m
 B = with incremental stroke measuring system (suitable for memory function and battery mode) with smooth connecting cable, 0.3 m

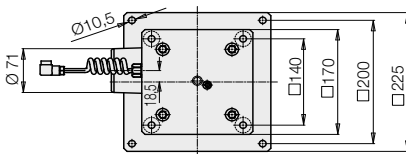
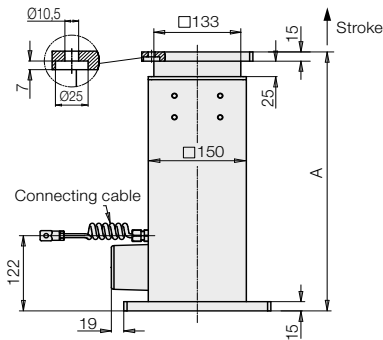
Delivery

The lifting modules are delivered ready for connection. The connecting cable from the lifting module to the control module is included in the delivery. Operating elements as well as control modules and mains cables can be ordered separately as an accessory.

Electrical accessories required for a functional system:

- Control modules as per data sheet M 8.200 or
- Control module with battery holder as per data sheet M 8.201
- Operating elements and mains cable as per data sheet M 8.203

Dimensions



Technical data

Electric connection	Plug
Duty cycle	15 % ED
Code class	IP 54
Control voltage	24 V DC

Variant E, I and B

Lifting force	Lifting speed (load-dependent)	Current consumption (load dependent)
[N]	[mm/s]	[A]
1,000	32 ... 28	7
2,000	18 ... 16	6
4,000	10 ... 8	6
6,000	7 ... 5	7.5

Variant G

Lifting force	Lifting speed (load-dependent)	Current consumption (load dependent)
[N]	[mm/s]	[A]
2,000	18 ... 16	6
4,000	8 ... 6	4.5
6,000	6 ... 4	5.5

Accessories

- Base plate for increased stability as per data sheet M 8.100

Maximum lifting force, maximum admissible torque load and important notes

As per manual-hydraulic version (see previous page).

The maximum pull force of the electro-mechanical version is 80% of the push force!



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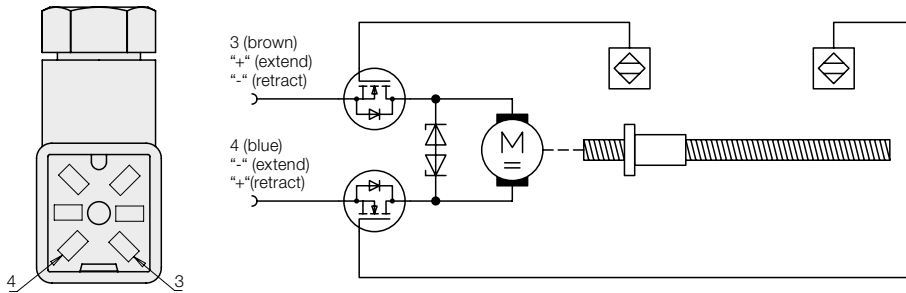
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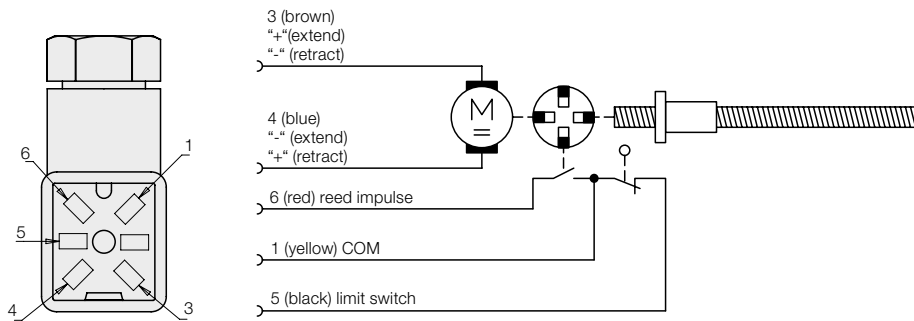
Engineering — Phone 1-800-827-2526 Web www.carrlaneroemheld.com

Electro-mechanical version

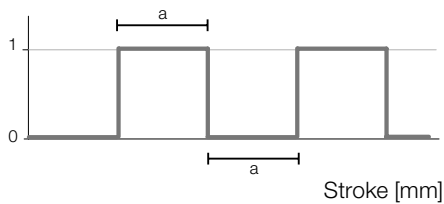
Circuit diagram and connection plug-type connectors for lifting modules with stroke end disconnection (with last digit E)



Circuit diagram and connection plug-type connectors for lifting modules with incremental stroke measuring system (with last digit I, B and G)



Resolution of the incremental stroke measuring system



- 1 kN: $a = 0.75$ mm stroke
- 2 kN: $a = 0.75$ mm stroke
- 4 kN: $a = 0.5$ mm stroke
- 6 kN: $a = 0.375$ mm stroke



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Lifting Module Strong

Max. lifting force 6,000 N, stroke from 200 to 400 mm, manual-hydraulic and electro-mechanical version

M4.401

Issue 5-16 E



Advantages

- Lifting force up to 6,000 N
- High load by steel guiding profile with high section modulus
- Rigid guiding system without clearance
- Sturdy and tough
- Compact design
- Ergonomic design
- Safe and precise handling

Application

Lifting modules for high demands in the industrial assembly.

Principal use

- Industrial production plants
- Automotive industry
- Assembly of car seats
- Drive technology, axes, cardan shafts
- Compressors, hydraulic elements, pumps
- Turbines, motors, gearbox construction
- Applications with frequent load changes

Fixing and installation

For fixing of *modulog* modules or other components of the user at the top plate the lifting module has an interface 140 x 140.

For fixing of *modulog* modules at the bottom plate the lifting module has an interface 200 x 200. This plate can also be used to fix the lifting module on a flat level floor. For fixing 4 screws M10 of property class 10.9 as well as heavy-duty plugs are to be used.

For increased stability also a base plate, which can be delivered as accessory, can be fixed at the bottom plate.

Description

The lifting module Strong has a high-tensile cylinder tube profile with chromium-plated surfaces. The high precision of the tube profile enables a guiding system without clearance and perfect smooth running.

The guiding profile is protected against rotary motion by a key connection with minimum clearance.

The guiding system works without fat and oil lubrication. High-quality materials for plain bearings are used.

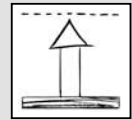
Characteristic are applications with indifferent, dynamically swelling rotating motions and shock motions.

Material

Guiding system, top and base plates are made of steel. Materials for plain bearings are made on the base of polymers.

modulog

Lifting module



Part-no. 8919-06-X0-X

Technical characteristics

Max. lifting force: 6,000 N
Max. bending moment: 800 Nm
Stroke: 200 up to 400 mm

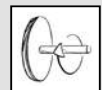
Operations

- Foot pedal
- Foot switch
- Hand panel

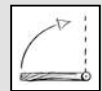


Combinable with the modules

- Rotating modules – horizontal axis as per data sheet M 1.101, and M 1.201



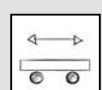
- Tilting modules KMB 100 as per data sheet M 2.101



- Rotating modules – vertical axis DMV 600 as per data sheet M 1.301



- Cart modules WMS as per data sheet M 5.101



- Floor modules FMS as per data sheet M 6.101



modulog interfaces

- Top plate: 140 x 140 – Ø 10.5 mm
- Bottom plate: 200 x 200 – Ø 10.5 mm

Accessories

- Foot switch and hand panel as per data sheet M 8.200
- Extension cable as per data sheet M 8.200
- Electrical supply units as per data sheet M 8.200
- Base and adaptor plates as per data sheet M 8.100 and M 8.110
- Table plates as per data sheet M 8.130



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Manual-hydraulic version operation with foot pedal



Description

The stroke movement is obtained by a hydraulic lifting jack with single-lever actuation, with oil being pumped by means of a piston pump into a plunger cylinder.

During retraction the oil returns due to the weight of the load from the cylinder back to the reservoir. A defined speed reduction is effected.

The manual-hydraulic version is particularly sturdy and durable. This variant meets high safety demands and withstands jerking and knocking loads in applications.

Operation

To lift the load, the foot pedal has to be depressed by approx. 40° several times. The pedal returns to its off-position by means of a return spring.

To lower the load, the foot pedal has to be moved upwards by approx. 10°.

Per 100 mm stroke 10 pump motions are required.

Descent speed approx. 25 mm/sec.

Code for part numbers

Part-no. 8919-06-X0-H

Stroke

2 = 200 mm

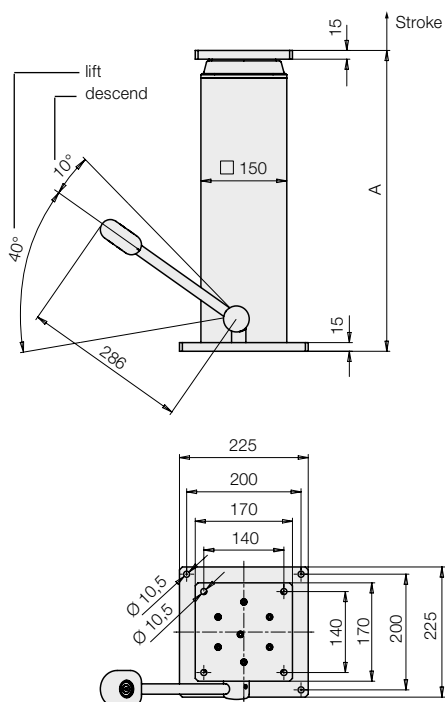
3 = 300 mm

4 = 400 mm

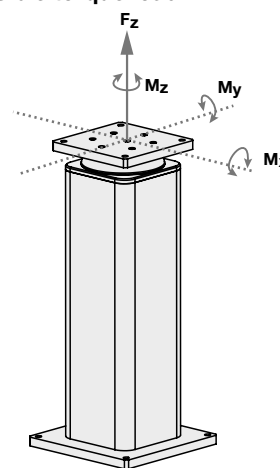
Technical characteristics

Stroke [mm]	A [mm]	A + stroke [mm]	Weight [kg]
200	520	720	50
300	620	920	55
400	720	1,120	60

Dimensions



Maximum lifting force and maximum admissible torque load



Maximum lifting force F_z : 6,000 N

Maximum torque load:

Total $M_{x/y}$: 800 Nm

M_z : 400 Nm

In the case of eccentric loads, it is recommended to compensate these by counterweights. In off-position the indicated maximum torques may occur.

The forces and torques have to be considered by the operator.

During the lifting motion only 50% of the maximum values are admitted.

Accessories

Base plate for increased stability

Part-no. 6311-412

See data sheet M 8.100

Important notes!

To descend the lifting module a minimum load of approx. 100 N is required. The lifting module must only be pressure loaded. The centre of gravity should be within the traverse of the fixing screws. If the centre of gravity is outside, the dowelled joint with the floor has to be dimensioned correspondingly. In such cases it is recommended to use a larger base plate.

In case of eccentric load of more than 250 mm, the column cannot descend automatically because of too high friction forces.

The lifting module is designed for applications within closed rooms.



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Electro-mechanical version operation with foot switch or hand panel



Description

The lifting motion is generated by an electric motor with a spindle lifting gear.

The electrically operated variant is particularly suitable for positioning and adjusting tasks of working tables as well as for material supply and transport.

They excel by a smooth running.

Code for part numbers

Part-no. **8919-06-X0-X**

Stroke _____
2 = 200 mm
3 = 300 mm
4 = 400 mm

Control

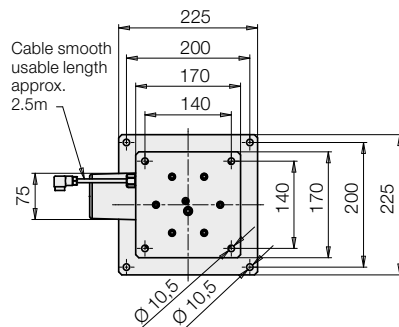
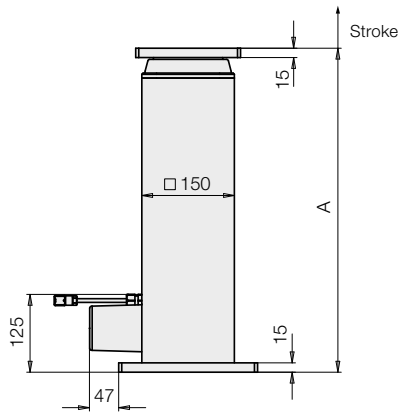
E = individual operation
I = for memory control

Maximum lifting force F_z: 6,000 N

Admissible torque load and important notes

As per manual-hydraulic version (see page 2).

Dimensions



Operation

Lifting and lowering is triggered by push-buttons with touch control contact. After release of the push-button, the motion will be immediately stopped.

Memory function

The hand panel for the memory function has four further push-buttons. To store a position, the lifting module is moved to a position, and then the push-button M is to be operated at the same time as position push-button 1, 2 or 3. Later the lifting unit can be moved again to the stored position by means of the position push-buttons 1, 2 or 3.

The stored positions are durably kept until they are overwritten by a new storage process.

Technical characteristics

Lifting speed (load-dependent)	7...5 mm/s
Electric connection	Plug
Duty cycle	15 % ED
Code class	IP 54
Control voltage (Power input)	24 VDC (200 W)
Current consumption	8 A

Delivery

The lifting modules are delivered ready for connection. Foot switch or hand panel as well as supply units and a mains cable have to be ordered separately as accessory.

Electrical accessories

See data sheet M 8.200

• Foot switch

with connecting cable 3.0 m

Part-no. 3823-038



• Hand panel

with connecting cable 1.6 m

Part-no. 3823-025



• Operating panel

with connecting cable 1.6 m for memory control

Part-no. 3823-109

• Supply unit

with control for one lifting module

Part-no. 3821-246



with memory control for one lifting module

Part-no. 3821-411 M

• Mains cable 230 VAC

with safety plug for supply units
Mains cable smooth, 3.0 m

Part-no. 3823-040

Accessories

Base plate for increased stability

Part-no. 6311-412

See data sheet M 8.100



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Lifting Module Solid

Max. lifting force 4,000 N, stroke from 200 to 400 mm,
manual-hydraulic version

M4.402

Issue 5-16 E



Application

Lifting modules for high demands on performance and service life in the industrial assembly.

Principal use

- Ergonomic design of working places
- Industrial production plants
- Automotive industry
- Assembly of car seats
- Assembly of drive components, axes and cardan shafts
- Assembly of compressors, hydraulic components and pumps
- Assembly of turbines, motors and gear boxes
- Applications with frequent load changes

Fixing and installation

For fixing of *modulog* modules or other components of the user at the top plate, the lifting module has an interface 140 x 140 and 200 x 200.

For fixing of *modulog* modules at the bottom plate, the lifting module has an interface 200 x 200. This plate can also be used to fix the lifting module on a flat level floor. For fixing, screws M10 of property class 10.9 as well as heavy-duty plugs are to be used.

For increased stability, a base plate, which can be mounted to the bottom plate, is available as accessory. Fixing on the floor is made by means of the base plate.

Advantages

- Lifting force up to 6,000 N
- Displacement with low friction is also given with high torque load
- High load by roller guiding element with high section modulus
- Sturdy and tough
- Compact design
- Safe and precise handling
- Checked in compliance with DIN EN 1570 with quadruple static overload
- Better working with lower load
- Integrated stop for pedal

Description

The lifting module has an integrated roller guiding element. This allows a backlash-free guiding system with very good smooth running and the introduction of high moments into the lifting module.

The guiding system is lifetime lubricated. To obtain high robustness, all components are made of high-quality materials. Characteristic are applications with indifferent, dynamically swelling rotating motions and shock motions.

Material

All essential elements are made of steel to obtain a high robustness.

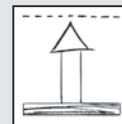
Variants

Drive variants with brushless electric motor 48 VDC or hydraulic cylinder can be realised on request as per customer's specifications. Service life and lifting speed is perfect for cycle-related assemblies.

modulog

Lifting module

Part no. 8926-0X-X0-H



Technical data

Max. lifting force: 4,000 N, 6,000 N
Max. bending moment: 1,000 Nm
Stroke: 200 up to 400 mm

Operations

- Foot pedal



Combinable with the modules

- Rotating module – horizontal axis as per data sheet M 1.101 and M 1.201



- Tilting module KMB 100 as per data sheet M 2.101



- Rotating module – vertical axis DMV 600 as per data sheet M 1.301



modulog interfaces

- Top plate: 140 x 140 – M10
200 x 200 – Ø 10.5 mm
- Bottom plate: 200 x 200 – Ø 10.5 mm

Accessories

- Base and adaptor plates as per data sheet M 8.100 and M 8.110
- Table plates as per data sheet M 8.130



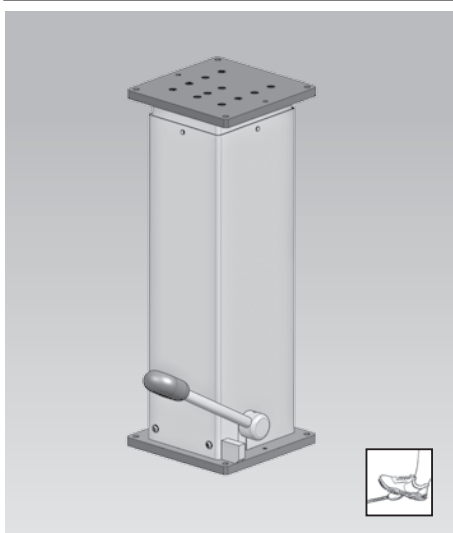
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Manual-hydraulic version operation with foot pedal



Description

The stroke movement is obtained by a manual-hydraulic lifting drive with single-lever actuation, with oil being pumped by means of a piston pump into a plunger cylinder.

During retraction the oil returns due to the weight of the load from the cylinder back to the reservoir. A defined speed control is effected.

The manual-hydraulic version is particularly sturdy and durable. This variant meets high safety demands and withstands jerking and knocking loads in applications.

Operation

To lift the load, the foot pedal has to be depressed by approx. 40° several times. The pedal returns to its off-position by means of a return spring.

To lower the load, the foot pedal has to be moved upwards by approx. 10°.

Code for part numbers

Part no. 8926-0X-X0-H

Maximum lifting force

4 = 4,000 N

6 = 6,000 N

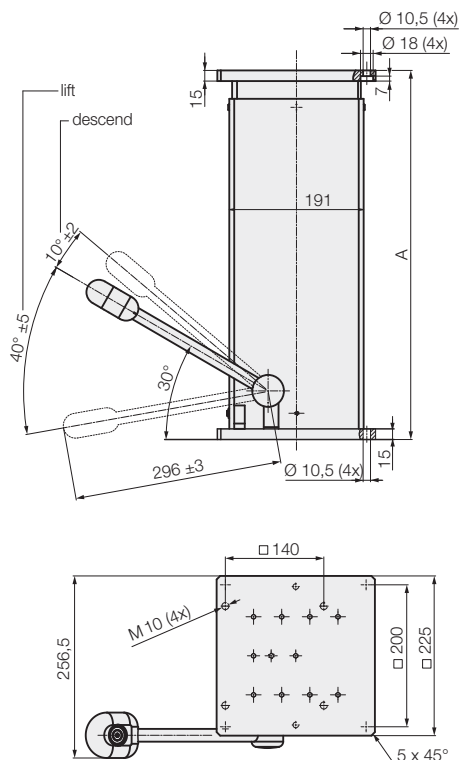
Stroke

2 = 200 mm

3 = 300 mm

4 = 400 mm

Dimensions

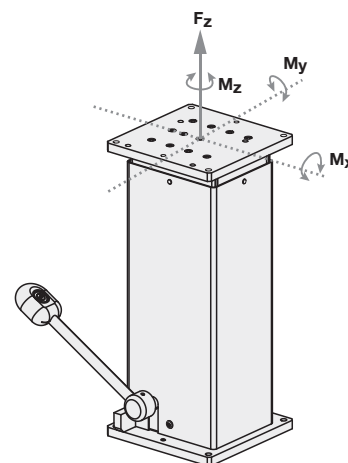


Technical data

Stroke	A	A + stroke	Weight
[mm]	[mm]	[mm]	[kg]
200	420	620	56
300	520	820	64
400	620	1,020	73

Lifting force	Pump strokes per 100 mm	Descent speed
[N]		[mm/s]
4,000	7	approx. 22
6,000	9	approx. 22

Maximum lifting force and maximum admissible torque load



Maximum lifting force F_Z:

Alternatively 4,000 N or 6,000 N

Maximum torque load:

Total M_{x/y}: 1,000 Nm

M_z: 1,000 Nm

The specified maximum torques may occur, the forces and torques have to be taken into account by the operator.

Accessories

Base plate for increased stability

Part no. 6311-460

See data sheet M 8.100

Important notes!

The lifting module must only be pressure loaded. The centre of gravity should be within the traverse of the fixing screws. If the centre of gravity is outside, the dowelled joint with the floor has to be dimensioned correspondingly. In such cases it is recommended to use a larger base plate.

The lifting module is designed for applications within closed rooms.



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Lifting Module Twin-Strong

Max. lifting force 4,000 and 6,000 N, stroke from 200 to 400 mm, manual-hydraulic and electro-mechanical version

M4.501

Issue 5-16 E



Advantages

- Lifting force up to 6,000 N
- Extreme load due to double steel guides
- Very high section modulus
- Rigid guiding system without clearance
- Sturdy and tough
- Compact design
- Modular standard design, easy to combine
- Less load on the operator due to ergonomic design
- Safe and precise handling
- Safety factor 2.0 against static overload

Application

Lifting module for extreme loads.

Principal use

- Industrial production with difficult application conditions
- Automotive industry
- Assembly of car seats
- Drive technology, axes, cardan shafts
- Compressors, hydraulic elements, pumps
- Turbines, motors, gearbox construction
- Applications with frequent load changes and high torque loads

Fixing and installation

For fixing of *modulog* modules or other components of the user at the top plate the lifting module has a triple interface 140 x 140.

For fixing of the lifting module on a flat level floor the lifting module has a double interface 200 x 200. For fixing 6 screws M10 of property class 10.9 as well as heavy-duty plugs are to be used.

Description

The lifting module Twin-Strong has two high-tensile cylinder tube profiles with chromium-plated surfaces. The design with solid profiles allows a stable guiding system with perfect smooth running. The high precision of the profiles permits a guiding system without clearance and perfect smooth running.

The guiding system works without fat and oil lubrication. High-quality materials for plain bearings are used.

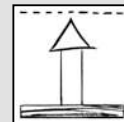
Characteristic are applications with indifferent, dynamically swelling rotating motions and shock motions.

Material

Double guiding system, top and base plates are made of steel. Materials for plain bearings are made on the base of polymers.

modulog

Lifting module



Part no. 8914-06-X0-X

Technical data

Max. lifting force: 4,000, 6,000 N
Max. torque: 2,000 Nm
Stroke: 200 to 400 mm

Operations

- Foot pedal
- Foot switch
- Hand panel



Combinable with the modules

- Rotating module - horizontal axis
DMH 200
as per data sheet M 1.101



- Tilting module
KMB 100
as per data sheet M 2.101



- Rotating module - vertical axis
DMV 600
as per data sheet M 1.301



modulog interfaces

- Top plate: 140 x 140 - Ø 10.5 mm
- Bottom plate: 200 x 200 - Ø 10.5 mm

Accessories

- Electrical operating elements, lines and connectors
as per data sheet M 8.203
- Control modules
as per data sheet M 8.200
- Base and adaptor plates
as per data sheet M 8.100 and M 8.110
- Table plates
as per data sheet M 8.130 and M 8.131



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Manual-hydraulic version operation with foot pedal



Description

The stroke movement is obtained by a hydraulic lifting jack with single-lever actuation, with oil being pumped by means of a piston pump into a plunger cylinder.

During retraction the oil returns due to the weight of the load from the cylinder back to the reservoir. A defined speed reduction is effected.

The manual-hydraulic variant is particularly sturdy and durable. This variant meets high safety demands and withstands jerking and knocking loads in applications.

Code for part numbers

Part no. 8914-0X-X0-H

Maximum lifting force

4 = 4,000 N

6 = 6,000 N

Stroke

2 = 200 mm

3 = 300 mm

4 = 400 mm

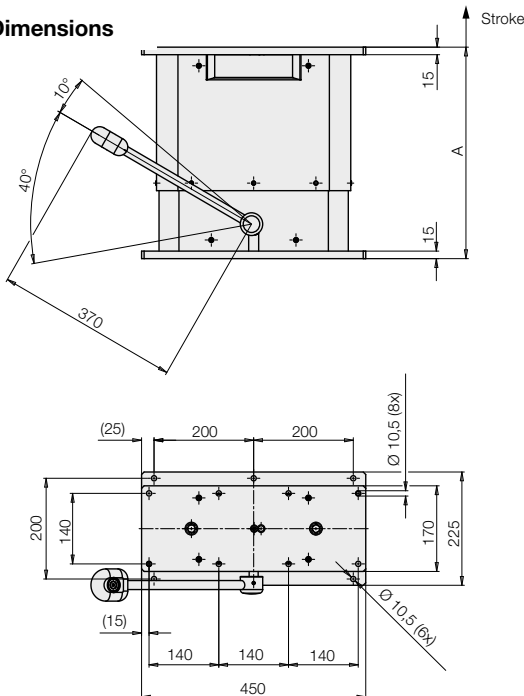
Operation

To lift the load, the foot pedal has to be depressed by approx. 40° several times. The pedal returns to its off-position by means of a return spring.

To lower the load, the foot pedal has to be moved upwards by approx. 10°.

Per 100 mm stroke 10 pump motions are required.

Dimensions



Important notes!

To descend the lifting module a minimum load of approx. 200 N is required.

The lifting module must only be pressure loaded. The centre of gravity should be within the traverse of the fixing screws. If the centre of gravity is outside, the dowelled joint with the floor has to be dimensioned correspondingly. In such cases it is recommended to use a larger base plate.

In case of eccentric load of more than 250 mm, the column cannot descend automatically because of too high friction forces.

The lifting module is designed for applications within closed rooms.

Maximum torque load:

M_x: 2000 Nm or **M_y**: 1200 Nm

M_z: 600 Nm

In the case of eccentric loads, it is recommended to compensate these by counterweights. In off-position the indicated maximum torques may occur.

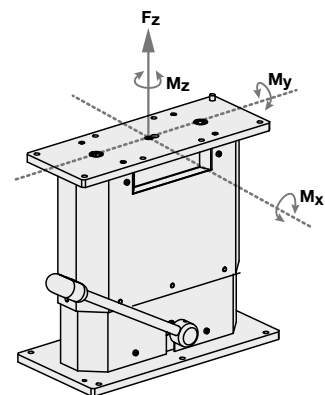
The forces and torques have to be considered by the operator. During the lifting motion only 50 % of the maximum values are admitted.

Technical data

Stroke	A	A + stroke	Weight
[mm]	[mm]	[mm]	[kg]
200	420	620	95
300	520	820	100
400	620	1020	105

Lifting force	Pump strokes	Descent speed
[N]	per 100 mm	[mm/s]
4,000	7	approx. 22
6,000	9	approx. 22

Maximum lifting force and maximum admissible torque load



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Manual-hydraulic version



Description

The lifting motion is generated by an electric motor with a self-locking spindle lifting gear. The electrically operated variant is particularly suitable for positioning and adjusting tasks of working tables as well as for material supply and transport. They excel by a smooth running.

Operation

Lifting and lowering is triggered by push-buttons with touch control contact. After release of the push-button, the motion will be immediately stopped.

Code for part numbers

Part no. 8914-0X-X0-X

Maximum lifting force

4 = 4,000 N
6 = 6,000 N

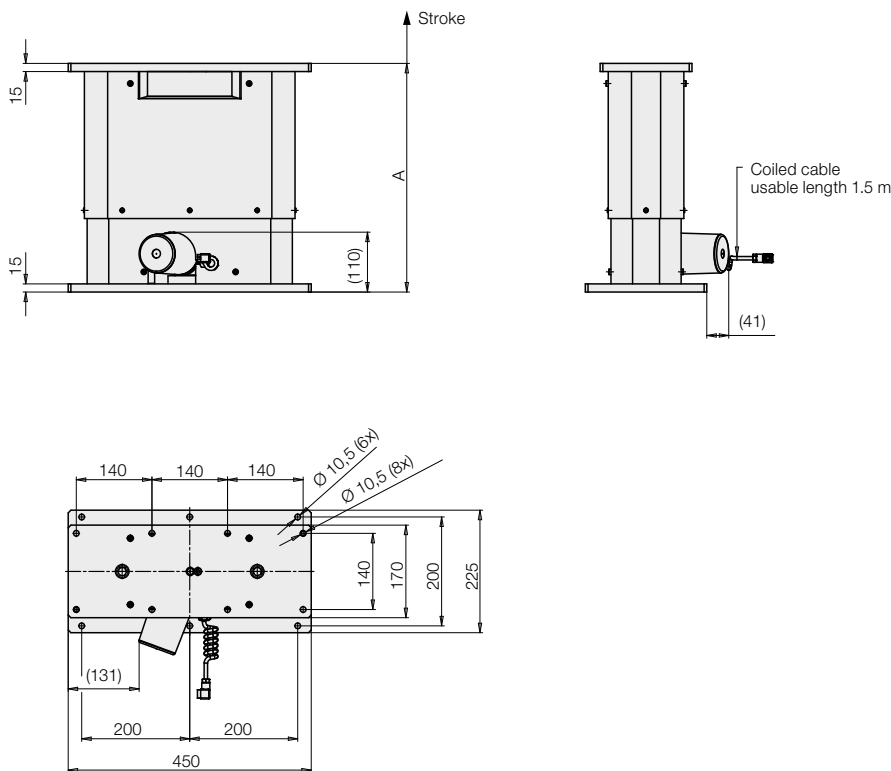
Stroke

2 = 200 mm
3 = 300 mm
4 = 400 mm

Electronics

E = integrated stroke end disconnection (not suitable for synchronization control) with coiled connecting cable, 1.5 m
I = with incremental stroke measuring system (suitable for memory function) with smooth connecting cable, 2.5 m

Dimensions



Admissible torque load and important notes

As per manual-hydraulic version (see page 2).

Technical data

Lifting speed (load-dependent)	6 ... 4 mm/s
Electric connection	Plug
Duty cycle	15 % ED
Code class	IP 54
Control voltage	24 V DC
Power input	144 W

Delivery

The lifting modules are delivered ready for connection. Electrical operating elements as well as control modules and mains cables can be ordered separately as an accessory.

Electrical accessories required for a functional system:

- Electrical operating elements, lines and connectors as per data sheet M 8.203
- Control modules as per data sheet M 8.200

Accessories

- Base plate for increased stability as per data sheet M 8.100



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