

Rotating Module - Horizontal Axis DMH 200

Max. load 2,000 N
manual operation

M1.101

Issue 5-16 E



Advantages

- Rotating in both directions
- Safe indexing
- Rotating and indexing possible by one-hand operation
- Compact device
- Sturdy design for industrial assembly
- Allows ergonomic working
- Safe and quick handling in assembly processes
- 4 function variants
- Easily combinable with other *modulog* modules

Application

Rotating module for universal use in assembly and handling processes in the industry.

Principal use

- Gear assembly
- Motor assembly
- Pump construction
- Turning operations during product transfer

Material

Body: steel, black oxide
Rotating plate: steel, black oxide
Indexing mechanism: steel, hardened
Bearing: steel, hardened

Mounting

To fix *modulog* modules or components of the user, the rotating module has a 140 x 140 *modulog* interface in the flange plate and the body.

In addition, at the bottom of the body 4 fixing threads are provided to allow vertical mounting of the rotating module.

As accessory for the vertical mounting onto other *modulog* modules an adaptor plate with an 140 x 140 *modulog* interface is available.

As accessory for individual fixing holes a round flange plate without 140 x 140 interface is available.

Description

The rotating module - horizontal axis DMH is a double supported rotation axis that can compensate high axial and radial forces. The angle of rotation in both directions is 360°. Due to special bearings it is insensitive to shocks and thrusts.

The design of the rotating module allows its integration in applications with light as well as with heavy loads.

When using the rotating module in assembly processes, component parts can be rotated rationally, quickly and safely and can be assembled ergonomically from all sides.

The rotating module is equipped with an optional indexing (see page 3 to 5 of this series).

Operation

The basic version of the rotating modules does not have any operating elements.

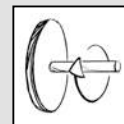
The rotating operation is manually effected at the workpiece or at the assembly fixture. Alternatively, versions with hand lever are available.

The indexing is operated by a hand lever of the rotating module or a separate hand lever or foot pedal.

modulog

Rotating module - horizontal axis DMH 200

Part-no. 650X-0X-XX-X-X



Technical characteristics

Max. load: 2,000 N
Max. torque:
axial: 800 Nm
radial: 800 Nm
Angle of rotation: 360°

Operations

- Manual
- Hand lever



Indexing

Operation with

- Hand lever
- Foot pedal



Combinable with the modules

- Tilting module
KMB 100
as per data sheet M 2.101
- Rotating module - vertical axis
DMV 600
as per data sheet M 1.301
- Lifting module
as per data sheet M 4.XXX



modulog interfaces

- Flange plate: 140 x 140 - M10
- Body: 140 x 140 - Ø 10.5 mm

Accessories

- Adaptor plates
as per data sheet M 8.110
- Flange plate
as per data sheet M 8.120



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Version without indexing manual operation



Description

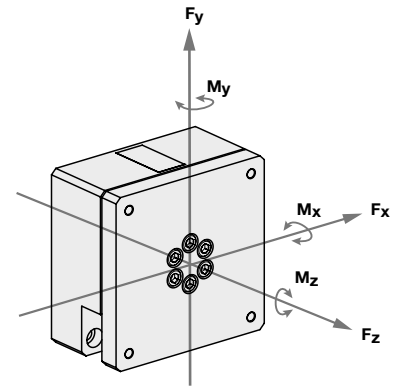
The rotating module - horizontal axis DMH 200 does not have an indexing in its basic version. The rotating operation is manually effected at the workpiece or at the assembly fixture.

Part-no. 6505-02-36-0

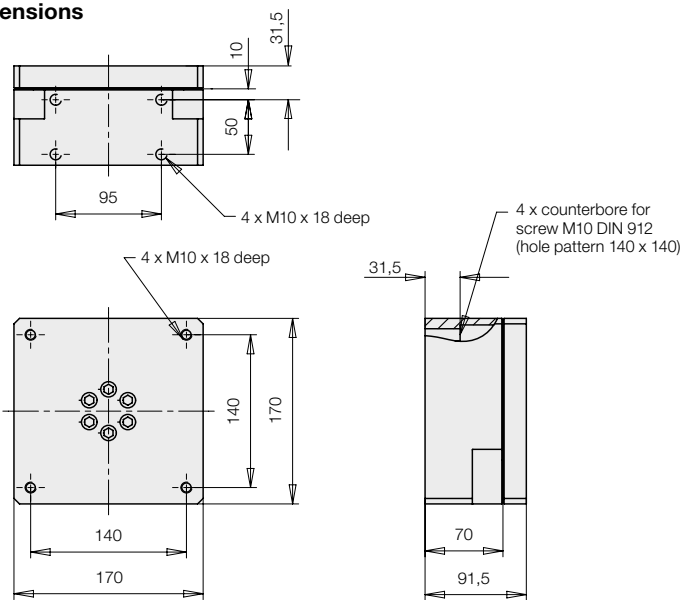
Technical characteristics

Operation:	manual at the component part
Angle of rotation:	360°
Direction of rotation:	both directions
Indexing:	without
Weight:	14 kg

Maximum admissible load



Dimensions



Accessories

• **Adaptor plate**
for vertical mounting of the rotating module
Part-no. 6311-326
See data sheet M 8.110

• **Flange plate**
round for individual fixing holes
Part-no. 6311-400
See data sheet M 8.120

Important notes!

The fixing screws M10 are not included in our delivery.
The rotating module is designed for applications within closed rooms.

Maximum admissible forces:

$F_x = \pm 2,000 \text{ N}$
 $F_y = \pm 2,000 \text{ N}$
 $F_z = \pm 1,000 \text{ N}$

Maximum admissible torques

Total $M_{x/y}$ = 800 Nm
 M_z : only relevant for version with indexing (see page 3 to 6 of this series)

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 rotating motion only 50% of the maximum values are admitted.



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Automatic indexing operation with hand lever



Description

The rotating module - horizontal axis DMH 200 with automatic indexing is a compact and functional unit.

Rotating as well as indexing are ergonomically operated by one hand lever only.

Operation

To rotate the component part the hand lever is operated in any direction.

Every 90° indexing of the position is made automatically. Engagement and disengagement of the indexing is also effected automatically.

The off-position of the hand lever can be engaged in steps of 90°, so that for every rotation the desired off-position can be adjusted.

The standard indexing and engagement positions of the hand lever are set to 4 x 90°.

Part-no.

6505-01-36-M

Technical characteristics

Operation:	with hand lever
Angle of rotation:	360°
Direction of rotation:	both directions
Indexing:	mechanical, automatic
	Operation with hand lever
	Indexing positions 4 x 90°
	Positioning precision $\lt; \pm 1^\circ$
Weight:	19 kg

Maximum admissible load

According to the version without indexing (see previous page).

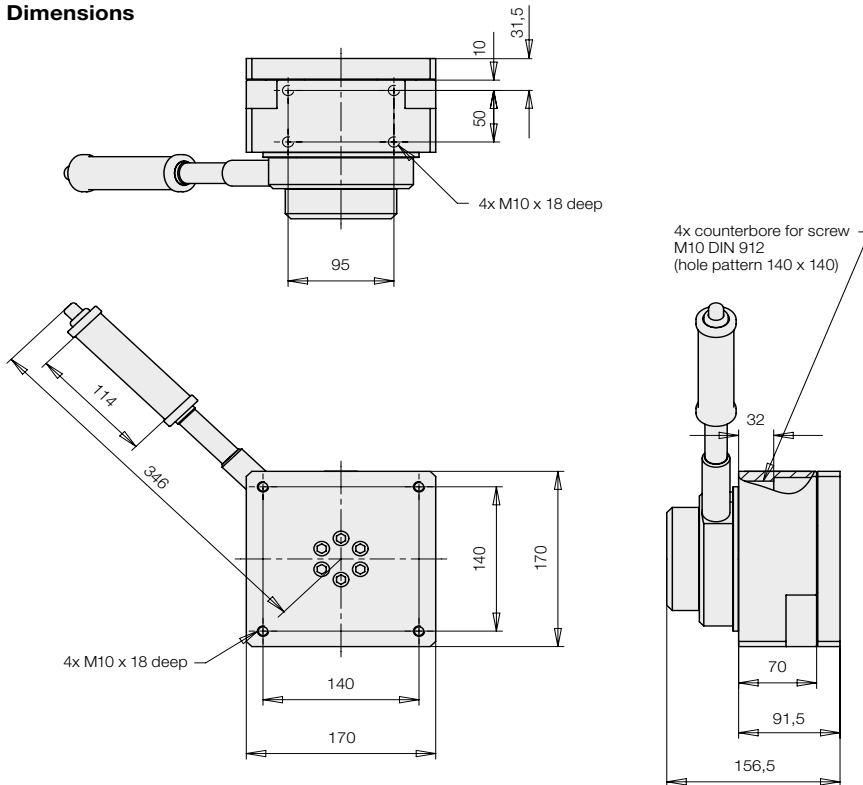
Maximum admissible torque around the rotation axis M_z

The maximum torque around the rotation axis of the rotating module M_z in engaged mode is **250 Nm**.

The maximum torque to rotate the workpiece must not exceed **15 Nm**.

The module may only be moved in a controlled way to the indexing positions. If the indexing bolt engages in full motion, the module will be dynamically overloaded.

Dimensions



Accessories

• Adaptor plate

for vertical mounting of the rotating module of the rotating module

Part-no. 6311-326

See data sheet M 8.110

• Flange plate

round for individual fixing holes

Part-no. 6311-400

See data sheet M 8.120

Important notes!

In case of vertical mounting of the rotating module - for example on a lifting module - it has to be considered that the hand lever can only be rotated by max. 270° in such applications.

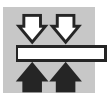
The fixing screws M10 are not included in our delivery. (Recommended property class 10.9)

The rotating module is designed for applications within closed rooms.

Application example



Rotating module DMH 200, with adaptor plate vertically mounted on a lifting module.



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Actively operated indexing operation with hand lever



Description

The rotating module - horizontal axis DMH 200 with actively operated indexing is a compact and functional unit.

Rotating as well as indexing are ergonomically operated by one hand lever only.

Operation

To unlock the indexing position the hand lever has to be tilted in axial direction by approx. 10° to get connected by form fit with the rotating module.

The component part can only be rotated in any direction by means of the hand lever. Only after safe locking in the desired position the hand lever is free again and the workpiece locked with the housing by form fit.

The off-position of the hand lever can be engaged in steps of 90°, so that for every rotation the desired off-position can be adjusted.

The standard indexing and engagement positions of the hand lever are set to 4 x 90°.

Part-no.

6505-02-36-M

Technical characteristics

Operation:	with hand lever
Angle of rotation:	360°
Direction of rotation:	both directions
Indexing:	mechanical, actively operated with hand lever
	Indexing positions 4 x 90°
	Positioning precision < ±1°
Weight:	19 kg

Maximum admissible load

According to the version without indexing (see page 2 of this series).

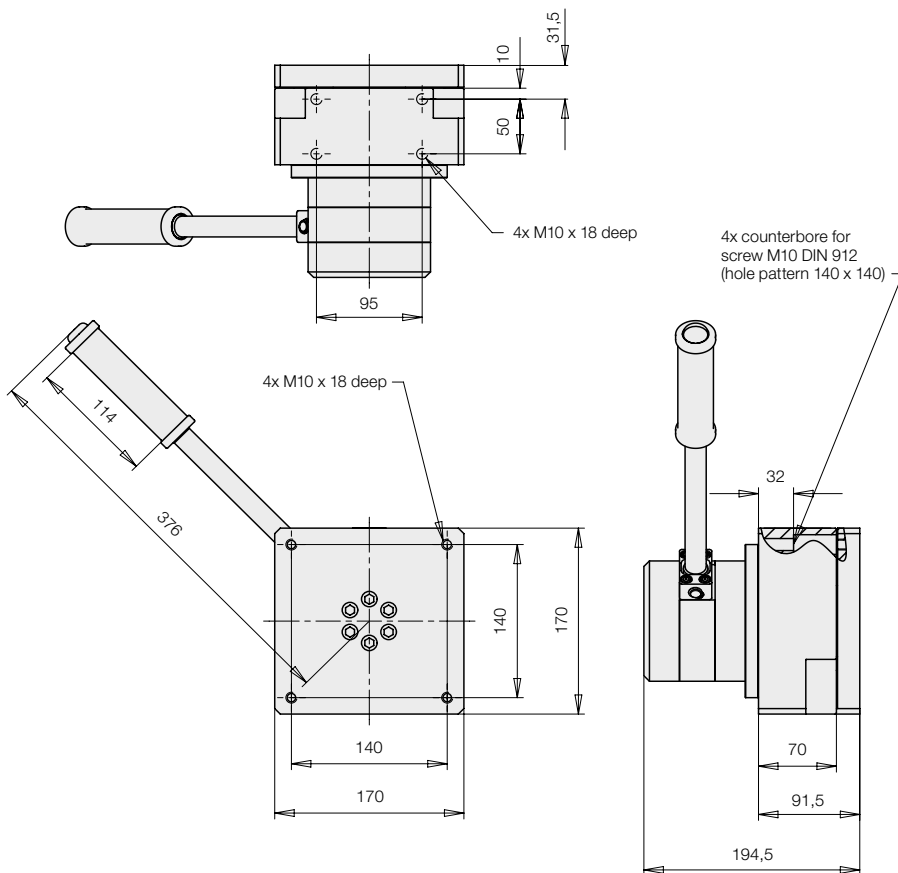
Maximum admissible torque around the rotation axis M_z

The maximum torque around the rotation axis of the rotating module M_z in engaged mode is **500 Nm**.

The maximum torque to rotate the workpiece must not exceed **20 Nm** due to ergonomic reasons.

The module may only be moved in a controlled way to the indexing positions. If the indexing bolt engages in full motion, the module will be dynamically overloaded.

Dimensions



Accessories

• Adaptor plate
for vertical mounting of the rotating module of the rotating module

Part-no. 6311-326
See data sheet M 8.110

• Flange plate
round for individual fixing holes
Part-no. 6311-400
See data sheet M 8.120

Important notes!

In case of vertical mounting of the rotating module - for example on a lifting module - it has to be considered that the hand lever can only be rotated by max. 270° in such applications. The fixing screws M10 are not included in our delivery (recommended property class 10.9). The rotating module is designed for applications within closed rooms.



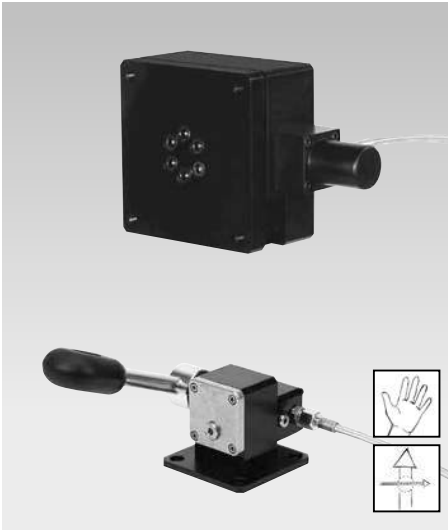
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Indexing with foot pedal manual operation



Description

The rotating module - vertical axis DMH 200 with indexing with foot pedal is a compact and functional unit.

It consists of a basic module with integrated indexing mechanism and an operating unit with foot pedal, connected by a 2 m long hydraulic hose.

This flexible connection allows the individual placement of the operating unit at the most favourable ergonomic position.

The rotating operation is manually effected at the workpiece or at the assembly fixture.

Operation of the indexing

By operating the foot pedal by 35° downwards the index is released and the workpiece or the fixture can be rotated.

If the foot pedal is not operated, the index bolt engages automatically into the next indexing position.

The operation with a foot pedal guarantees that the operator always has both hands free.

The standard indexing positions are set to 8 x 45°, 6 x 60°, 4 x 90° and 3 x 120°. Other angles are available on request.

Important notes!

The fixing screws M10 are not included in our delivery (recommended property class 10.9).

The rotating module is designed for applications within closed rooms.

The module may only be moved in a controlled way to the indexing positions. If the indexing bolt engages in full motion, the module will be dynamically overloaded.

Code for part numbers

Part-no.: 6508-02-XX-O-I

Engagement position

- 45 = 8 x 45°
- 60 = 6 x 60°
- 36 = 4 x 90°
- 12 = 3 x 120°

Technical characteristics

Operation:	manual at the component part
Angle of rotation:	360°
Direction of rotation:	both directions
Indexing:	hydromechanical
	Operation with foot pedal
Weight:	25 kg

Maximum admissible torque around the rotation axis M_z

The maximum torque around the rotation axis of the rotating module M_z in engaged mode is **800 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 rotating motion only 50% of the maximum values are admitted.

Accessories

• Adaptor plate

for vertical mounting of the rotating module

Part-no. 6311-326

See data sheet M 8.110

• Flange plate

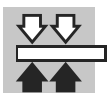
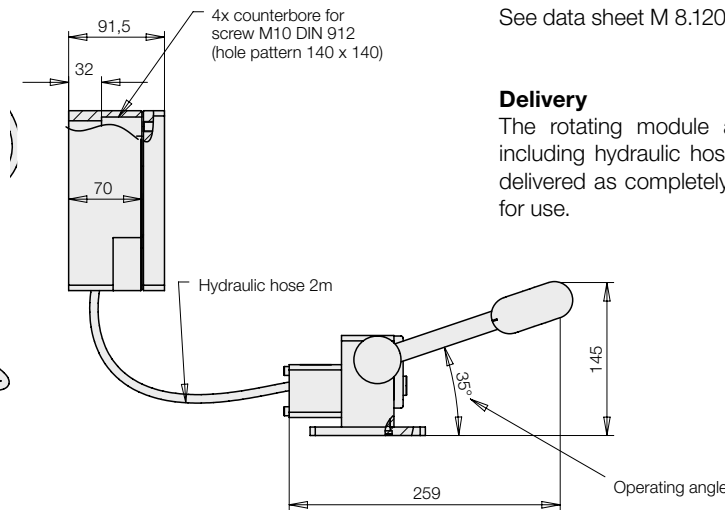
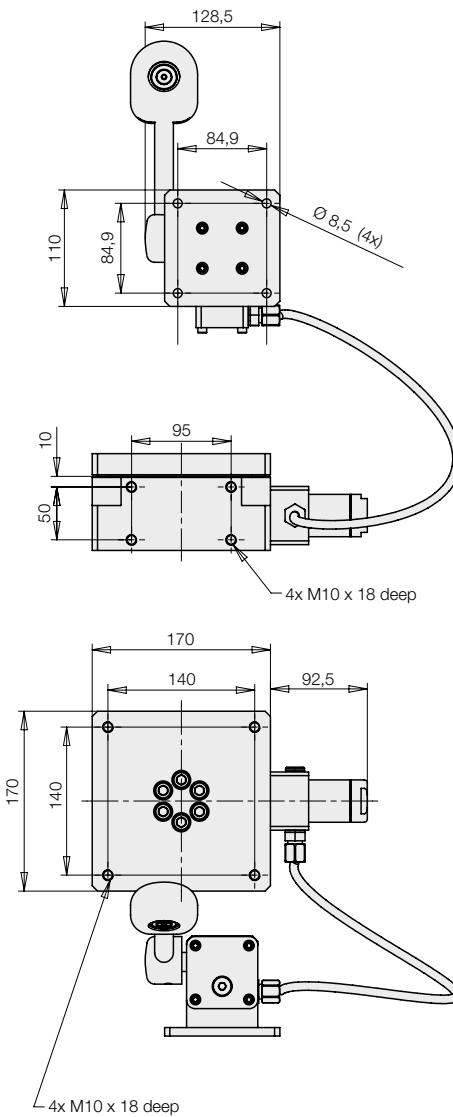
round for individual fixing holes

Part-no. 6311-400

See data sheet M 8.120

Delivery

The rotating module and the indexing unit including hydraulic hose and hydraulic oil are delivered as completely assembled unit ready for use.



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Rotating Module DMHe 200 / DMVe 600

Electrically operated

Max. load 2,000 N, max. torque 120 Nm

M1.201

Issue 1-16 E



Advantages

- Versions for horizontal or vertical axis of rotation
- Rotating in both directions
- Auto stop
- Low-backlash gear
- Self-locking in any position
- Compact design
- Sturdy design
- Convertible
- Ergonomic working
- Safe and quick handling in assembly processes
- Long service life
- Checked in compliance with DIN EN 1570 with quadruple static overload

Principal use

- Assembly of automotive parts
- Motor assembly
- Gear assembly
- Pump construction

Operation

The module is operated with touch control by means of an optionally available hand panel or foot switch with two push-buttons. It can safely stop in every angular position. An automatic stop is preset at all 90° positions. The zero position of the automatic stop can be preset to any position by pushing both push-buttons.

Description

Rotating modules are used in assembly and handling processes to transform electrical energy into a rotating movement.

When using the rotating module, component parts can be rotated rationally, quickly and safely and can be assembled ergonomically from all sides.

The strongly reduced worm gear allows high holding torques in standstill.

The double-bearing drive shaft compensates high axial and radial forces.

The rotating module is designed for a long service life. The electronically commutated DC motor is virtually wear-free.

The mechanical components and sealing elements are designed for 1,000,000 indexing cycles within the indicated load limits.

The rotating modules – horizontal axis and vertical axis are nearly identical in construction, thus the axis alignment can be retrofitted for different applications.

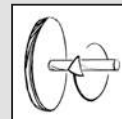
modulog rotating modules electrically operated

- horizontal axis

DMHe 200

Part no. 6508-02-36-E

Max. load: 2,000 N

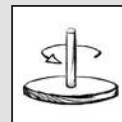


- vertical

DMVe 600

Part no. 6509-10-36-E

Max. load: 6,000 N



Technical data

Angle of rotation:	360°
Max. torque:	120 Nm
Max. holding torque:	350 Nm
Max. torque:	800 Nm
Rotation:	any
index:	90° standard optionally 45°/60°/180°

Operations

- Foot switch
- Hand panel



Combinable with the modules

Lifting modules

- Shop Floor Telescope: as per data sheet M 4.202
- Range: as per data sheet M 4.203
- Shop-Floor: as per data sheet M 4.301
- Strong: as per data sheet M 4.401
- Solid: as per data sheet M 4.402

modulog interfaces

- Flange plate: 140 x 140 - M10
- Body: 140 x 140 - M10

Accessories

- Switching power supply Part no. 6863-020
- Hand panel as per data sheet M 8.203
- Foot switch as per data sheet M 8.203



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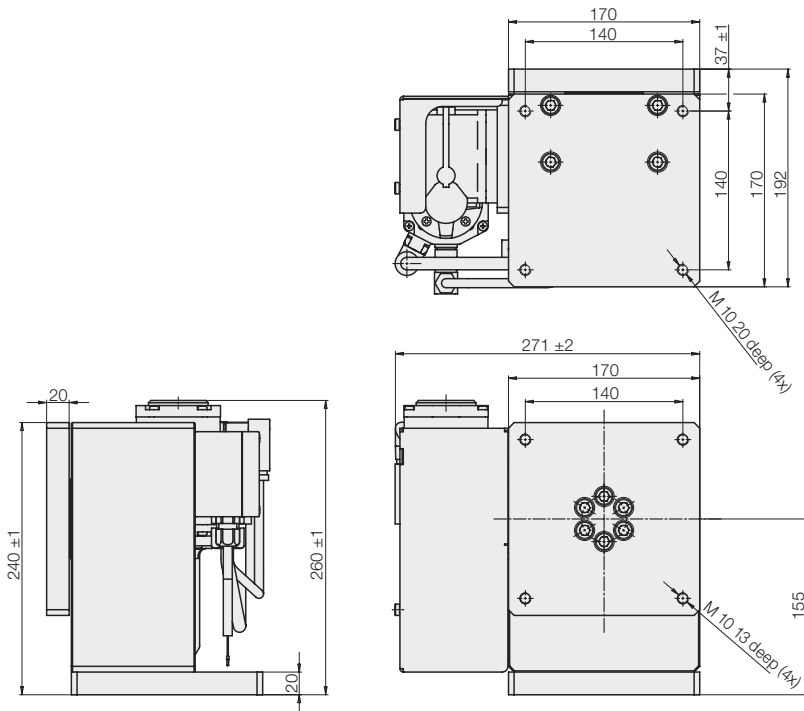
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Rotating module horizontal axis DMHe 200

Dimensions



Part no. 6508-02-36-E

Installation

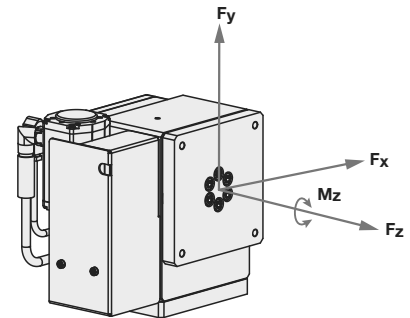
The rotating module has a *modulog* interface 140x140 mm and can be mounted by 4 screws M10 onto a fixture or another module. The power supply is made by the separately available switching power supply. An electronic control is integrated.

Technical data

Max. total F_x/F_y	[N]	2,000
Max. F_z	[N]	1,000
Max. driving torque M_z	[Nm]	120
Max. holding torque M_z	[Nm]	350
Max. total of all torques $M_x/M_y/M_z$	[Nm]	800
Max. cycle time (ED)		25 %, 60 s On
Code class		IP 54
Current consumption	[A]	6 ... 16
Max. admissible current consumption	[A]	20
Supply voltage	[V DC]	24–30

Adjust the speed of rotation by trimming potentiometer 2.5 to 7.5 rpm.
Adjust the indexing angles 45, 60, 90 and 180 degree by trimming potentiometer.
Adjust the soft stops by trimming potentiometer.

Maximum admissible load



Maximum admissible forces:

$F_x = \pm 2,000$ N
 $F_y = \pm 2,000$ N
 $F_z = \pm 1,000$ N

Maximum admissible torques:

M_x or $M_y = 800$ Nm
 $M_z = 350$ Nm (in standstill)

The total of all occurring forces or torques must not exceed the highest single value.

The rotating module is checked in compliance with DIN EN 1570 with quadruple static overload.



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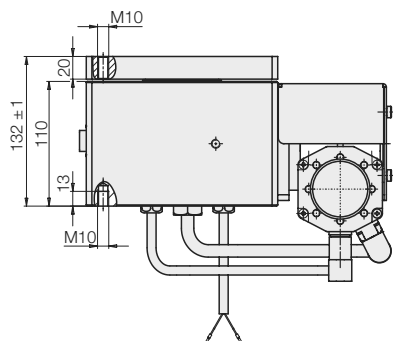
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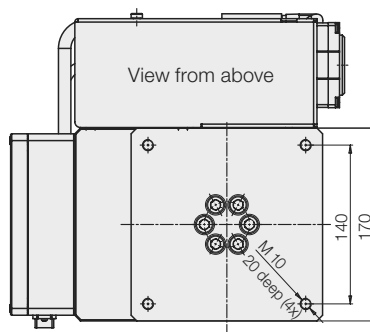
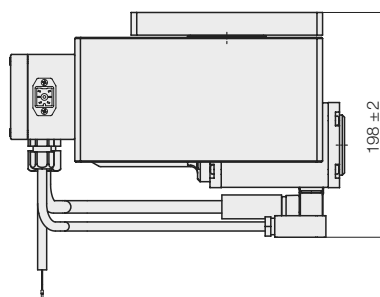
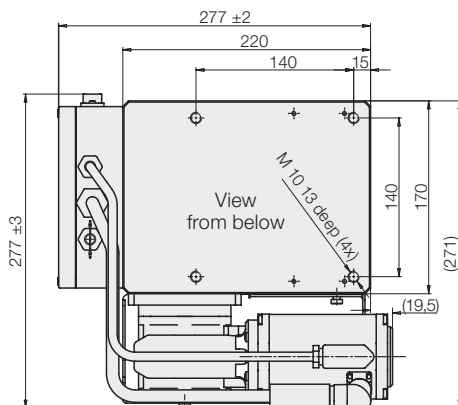
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Rotating module vertical axis DMVe 200

Dimensions



Part no. 6509-10-36-E



Technical data

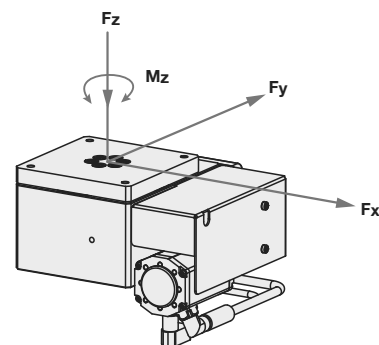
Max. total F_x/F_y	[N]	2,000
Max. F_z	[N]	6,000
Max. driving torque M_z	[Nm]	120
Max. holding torque M_z	[Nm]	350
Max. total of all torques $M_x/M_y/M_z$	[Nm]	800
Max. cycle time (ED)	25 %, 60s On	
Code class	IP 54	
Current consumption	[A]	6...16
Max. admissible current consumption	[A]	20
Supply voltage	[V DC]	24-30

Adjust the speed of rotation by trimming potentiometer 2.5 to 7.5 rpm.

Adjust the indexing angles 45, 60, 90 and 180 degree by trimming potentiometer.

Adjust the soft stops by trimming potentiometer.

Maximum admissible load



Maximum admissible forces:

$F_x = \pm 2,000$ N

$F_y = \pm 2,000$ N

$F_z = + 6,000$ N

Maximum admissible torques

M_x or $M_y = 800$ Nm

$M_z = 350$ Nm (in standstill)

The total of all occurring forces or torques must not exceed the highest single value.

The rotating module is checked in compliance with DIN EN 1570 with quadruple static overload.

Installation

The rotating module has a *modulog* interface 140x140 mm and can be mounted by 4 screws M10 onto a fixture or another module. The power supply is made by the separately available switching power supply.

An electronic control is integrated.

When mounting onto a flat surface an elevation of the module has to be provided because of protruding components.



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