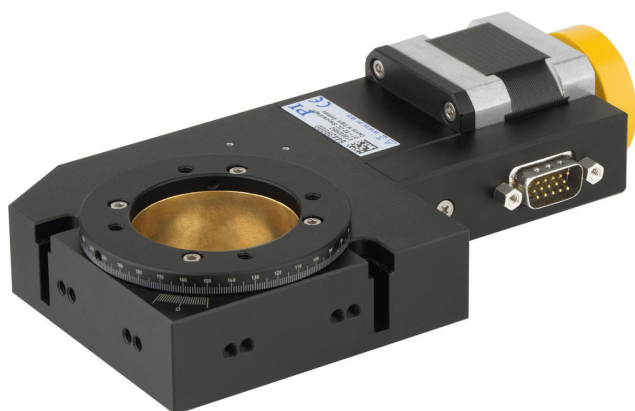


# Compact Rotation Stage

## Large Clear Aperture



### DT-80

- Unlimited travel range
- Repeatability to 175  $\mu\text{rad}$
- Maximum velocity 40°/s
- Reference switch

#### Precision-class rotation stage

Worm drive with high gear ratio for precision positioning. Large aperture with 40 mm  $\varnothing$ . Mechanical reference switch.

#### Drive types

- DC servo motor with rotary encoder on the motor shaft
- Stepper motor

#### Application fields

Precision microassembly. Research. Automation.

Motion	Unit	Tolerance	64439100	64439200
Active axes			$\theta Z$	$\theta Z$
Rotation range in $\theta Z$	°		360	360
Maximum angular velocity in $\theta Z$ , unloaded	°/s		40	30
Radial error in X	$\mu\text{m}$	Typ.	$\pm 30$	$\pm 30$
Axial error	$\mu\text{m}$	Typ.	$\pm 30$	$\pm 30$
Tilt error around X (wobble)	$\mu\text{rad}$	Typ.	$\pm 100$	$\pm 100$

Positioning	Unit	Tolerance	64439100	64439200
Minimum incremental motion in $\theta Z$	$\mu\text{rad}$	Typ.	69.8	69.8
Unidirectional repeatability in $\theta Z$	$\mu\text{rad}$	Typ.	$\pm 87.5$	$\pm 87.5$
Bidirectional repeatability in $\theta Z$	$\mu\text{rad}$	Typ.	6982	6982
Reference switch			Mechanical, N/C contact, to 30 V, NPN	Mechanical, N/C contact, to 30 V, NPN
Integrated sensor			Incremental rotary encoder	—
Sensor resolution	Cts./rev.		2000	—

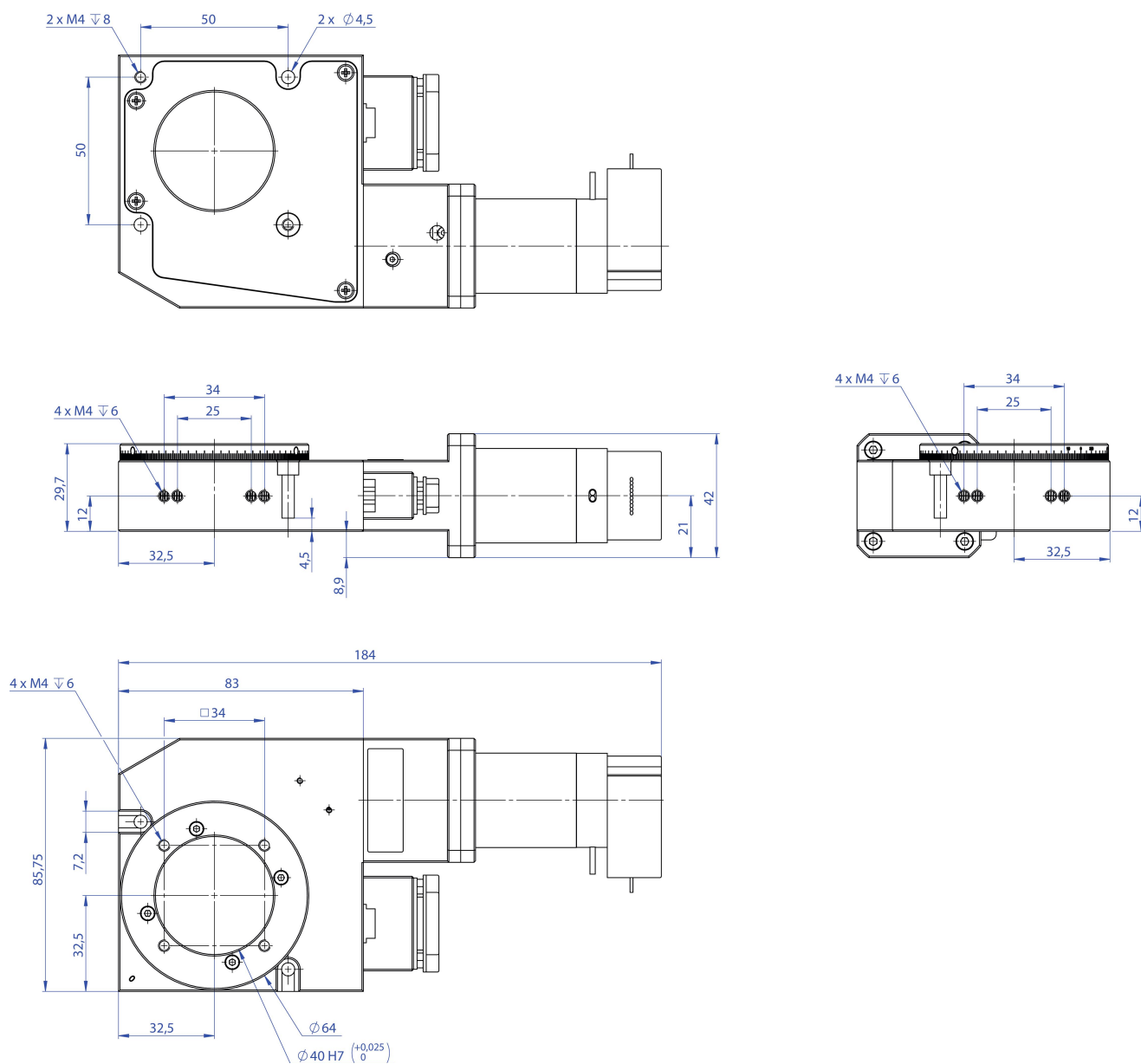
Drive Properties	Unit	Tolerance	64439100	64439200
Drive type			DC motor	2-phase stepper motor
Nominal voltage	V		24	24
Nominal current, RMS	A	Typ.	1.3	1.7
Motor resolution	Full steps/ rev.		—	200
Drive torque clockwise in $\theta Z$	N·m	Max.	0.1	0.1
Drive torque counterclockwise in $\theta Z$	N·m	Max.	0.1	0.1
Resistance phase-phase	$\Omega$	Typ.	5	1.7
Inductance phase-phase	mH		0.54	3.3

Mechanical Properties	Unit	Tolerance	64439100	64439200
Permissible push force in X	N	Max.	10	10
Permissible push force in Y	N	Max.	10	10
Permissible push force in Z	N	Max.	20	20
Permissible torque in $\theta X$	N·m	Max.	5	5
Permissible torque in $\theta Y$	N·m	Max.	5	5
Worm gear reduction			180	180
Bearing type			Ball bearings	Ball bearings
Overall mass	g		800	800
Material			Anodized aluminum	Anodized aluminum

Miscellaneous	Unit		64439100	64439200
Operating temperature range	°C		5 to 40	5 to 40
Connector			HD D-sub 15 (m)	HD D-sub 15 (m)
Recommended controllers/ drivers			C-863, C-885 with C-863.20C885 C-884 Modular ACS controller	C-663.12, C-885 with C-663.12C885 Modular ACS controller

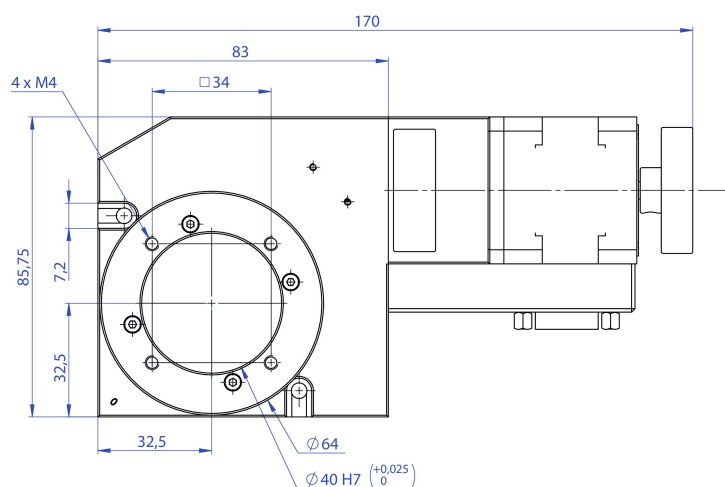
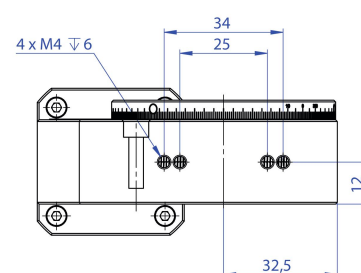
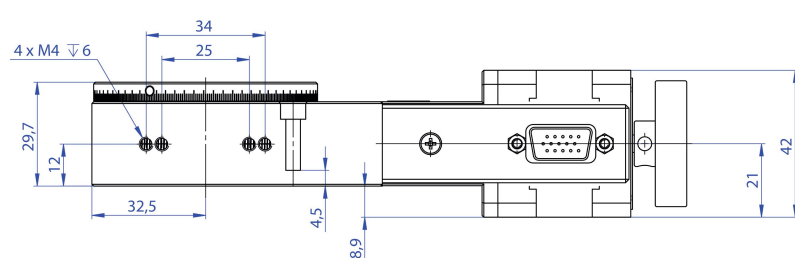
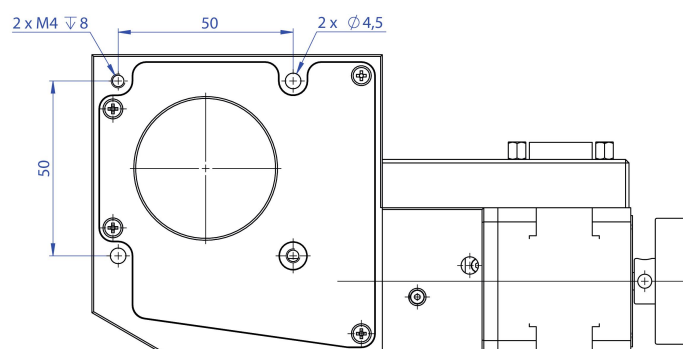
At PI, technical data is specified at  $22 \pm 3$  °C. Unless otherwise stated, the values are for unloaded conditions. Some properties are interdependent. The designation "typ." indicates a statistical average for a property; it does not indicate a guaranteed value for every product supplied. During the final inspection of a product, only selected properties are analyzed, not all. Please note that some product characteristics may deteriorate with increasing operating time.

## Drawings / Images

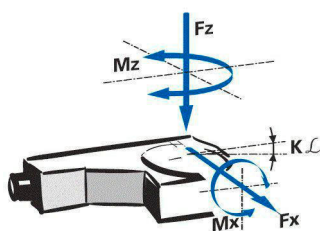


DT-80 rotation stage, DC motor, dimensions in mm. Note that a comma is used in the drawings instead of a decimal point.

## Drawings / Images



DT-80 rotation stage, stepper motor, dimensions in mm. Note that a comma is used in the drawings instead of a decimal point.



Direction of the axes and torques for rotation stages

## Order Information

**64439100**

DT-80 Rotation stage, 40 mm Ø aperture, DC motor, >360° rotation range, mechanical reference switch

**64439200**

DT-80 Rotation stage, 40 mm Ø aperture, stepper motor, >360° rotation range, mechanical reference switch