EITZENBERGER
Luftlagertechnik GmbH

PRODUCTS

AIR BEARING-
ROTARY SYSTEMS

11-2009

EITZENBERGER Luftlagertechnik GmbH
Feichtmayrstraße 17
D-82405 Wessobrunn

Email: info@eitzenberger.com
URL. www.eitzenberger.com

MINIATURE AIR BEARING SPINDLE

EITZENBERGER
Luftlagertechnik GmbH

Miniature air bearing spindle

- Diameter of cylinder bearing 8 mm
- With double vacuum transport to spindle tip
- Tool head ceramic

Mechanical Description		
Diameter of cylinder bearing	mm	8
Stroke	mm	6
Turning stroke	°	360
Weight	g	22
Air supply pressure 2*	bar_{rel}	5
Max. radial carrying capacity (centre of bearing)	N	26
Air consumption 3*	Sl/min	1,55
Air requirements		
Max. particle	Class 2	max. 1 µm
Max. condensing point	Class 5	max. +5 ° C
Max. concentration of oil	Class 3	max. 1 mg/ m³

Patents: US 6. 164.827, DE 199 18 564 A1
2* Other supply pressure on request
3* at nominal carrying capacity
Technical changes without notification, 01/2005

Eitzenberger Luftlagertechnik GmbH
Feichtmayrstraße 17
82405 Wessobrunn
Germany

Telefon: +49 (0) 8809 9229 852
Telefax: +49 (0) 8809 9229 858
info@eitzenberger.com
www.eitzenberger.com

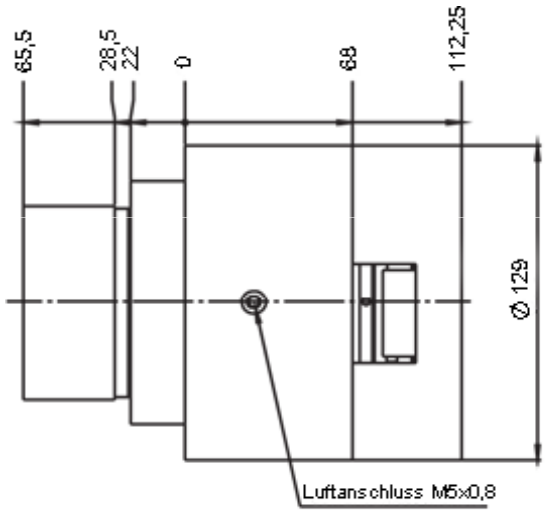
EZ 0192 AIR BEARING SPINDLE

EITZENBERGER
Luftlagertechnik GmbH

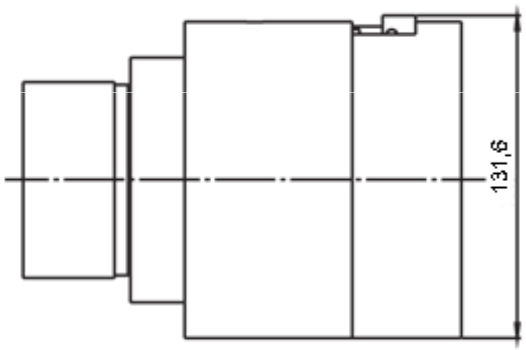
High accurancy air bearing spindle for film exposition

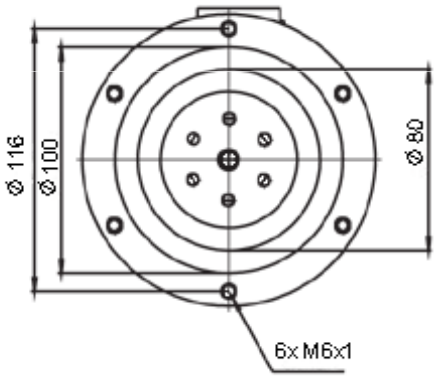
Mechanical Description		
Nominal load, axial, at top of the spindle	N	200
Run out error, radial	µm	0,25
Air supply pressure 2*	bar_{rel}	5,5
Air consumption 3*	Sl/min	20
Encoder *Renishaw RESR*		
Outer diameter	mm	103
Periods per revolution		16.000
Air requirements		
Max. particle	Class 2	max. 1 µm
Max. condensing point	Class 5	max. +5 ° C
Max. concentration of oil	Class 3	max. 1 mg/ m³

Patents: US 6. 164.827, DE 199 18 564 A1
2* Other supply pressure on request
3* at nominal carrying capacity
Technical changes without notification 01/2005



Drehgeberring 103 mm





Eitzenberger Luftlagertechnik GmbH
Feichtmayrstraße 17
82405 Wessobrunn
Germany

Telefon: +49 (0) 8809 9229 852
Telefax: +49 (0) 8809 9229 858
info@eitzenberger.com
www.eitzenberger.com

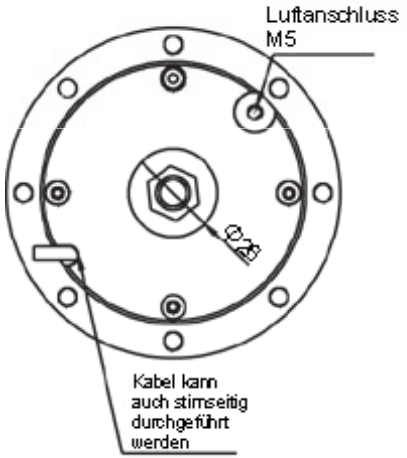
EZ 0198 AIR BEARING SPINDLE

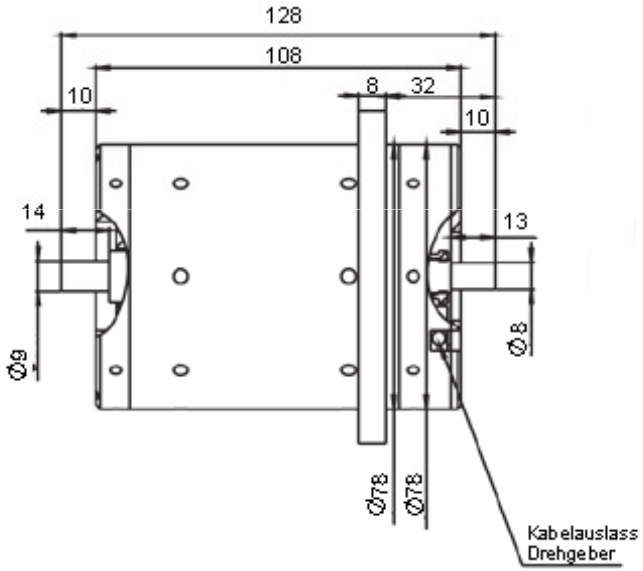
EITZENBERGER
Luftlagertechnik GmbH

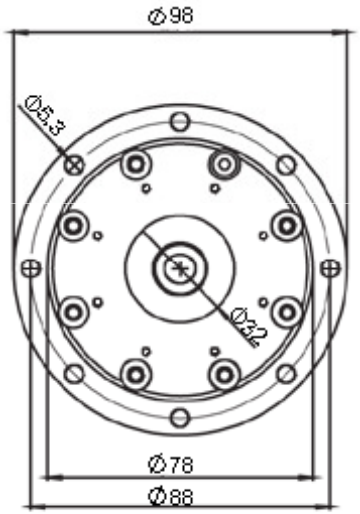
Mechanical Description		
Nominal carrying capacity, axial	N	400
Nominal load, radial, at center	N	600
Nominal load, radial, at top of the spindle	N	100
Run out error, radial	µm	0,3
Air supply pressure 2*	bar_{rel}	5,5
Air consumtion 3*	Sl/min	25
Encoder *Numerik Jena*	RS 40,4/10/3600	
Periods per revolution	3.600	
Output signal	TTL / 1 Vss	
Air requirements		
Max. particle	Class 2	max. 1 µm
Max. condensing point	Class 5	max. +5 ° C
Max. concentration of oil	Class 3	max. 1 mg/ m³

Patents: US 6. 164.827, DE 199 18 564 A1
2* Other supply pressure on request
3* at nominal carrying capacity
Technical changes without notification

01/2005





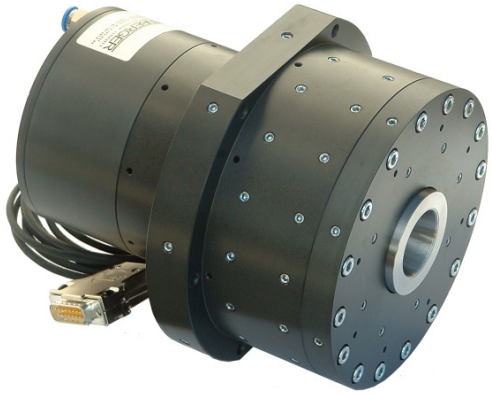


Eitzenberger Luftlagertechnik GmbH
Feichtmayrstraße 17
82405 Wessobrunn
Germany

Telefon: +49 (0) 8809 9229 852
Telefax: +49 (0) 8809 9229 858
info@eitzenberger.com
www.eitzenberger.com

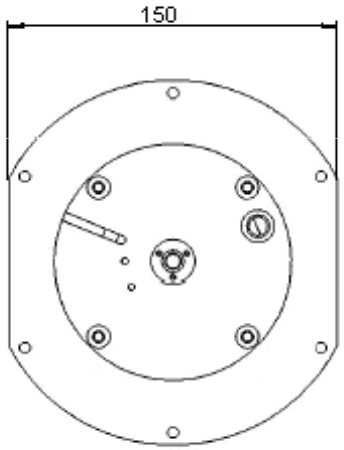
EZ 0204 AIR BEARING SPINDLE

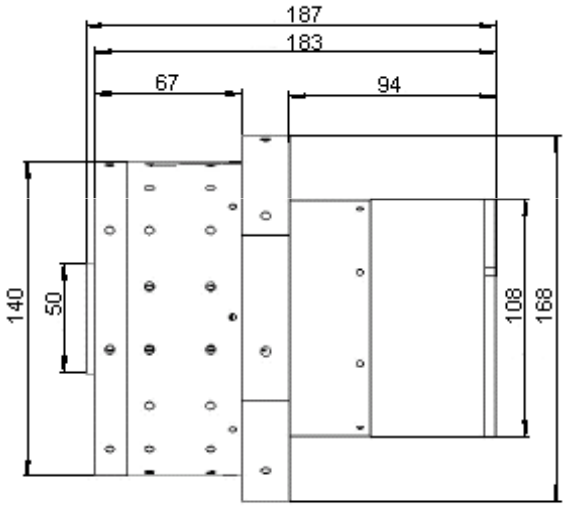
EITZENBERGER
Luftlagertechnik GmbH

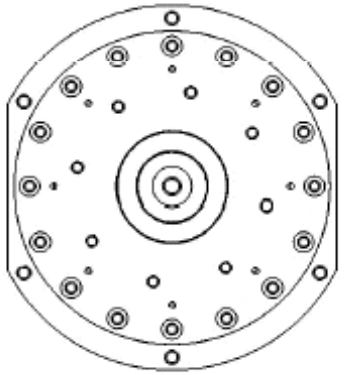


Patents: US 6. 164.827, DE 199 18 564 A1
2* Other supply pressure on request
3* at nominal carrying capacity
Technical changes without notification 01/2005

Mechanical Description		
Nominal carrying capacity, axial	N	1500
Nominal load at top of spindle, radial	N	700
Run out error, radial	µm	1
Inertial moment	kg/m“	5400
Air supply pressure 2*	bar_{rel}	5,5
Air consumption 3*	Sl/min	100
Encoder: *Numerik Jena*	RS 40,4/10/3600	
Periods per revolution		3600
Output signal:		TTL /1Vss
Tool interface	SK	30
Air requirements		
Max. particle	Class 2	max. 1 µm
Max. condensing point	Class 5	max. +5 ° C
Max. concentration of oil	Class 3	max. 1 mg/ m³







Eitzenberger Luftlagertechnik GmbH
Feichtmayrstraße 17
82405 Wessobrunn
Germany

Telefon: +49 (0) 8809 9229 852
Telefax: +49 (0) 8809 9229 858
info@eitzenberger.com
www.eitzenberger.com

EZ 1250 AIR BEARING SPINDLE

EITZENBERGER
Luftlagertechnik GmbH

Mechanical Data		
Dimensions D x H	mm	76 x 274
Carrying capacity, axial, push / pull	N	200 / 170
Carrying capacity, radial, at the center	N	300
Carrying capacity, radial at the top of the spindle	N	180
Run out error, axial, static	µm	0,1
Run out error, radial, static	µm	0,2
Stiffness, axial	N/µm	10
Stiffness, radial	N/µm	18
Inertial Moment	kg/m²	0,002
Weight	kg	4,2
Air supply pressure, air bearing [2*]	bar	5
Air supply pressure, opening device [2*]	bar	5
Air consumption [3*]	Nl/min	40
Material housing	Stainless steel 01.4305	
Material rotor	Stainless steel 01.4305	

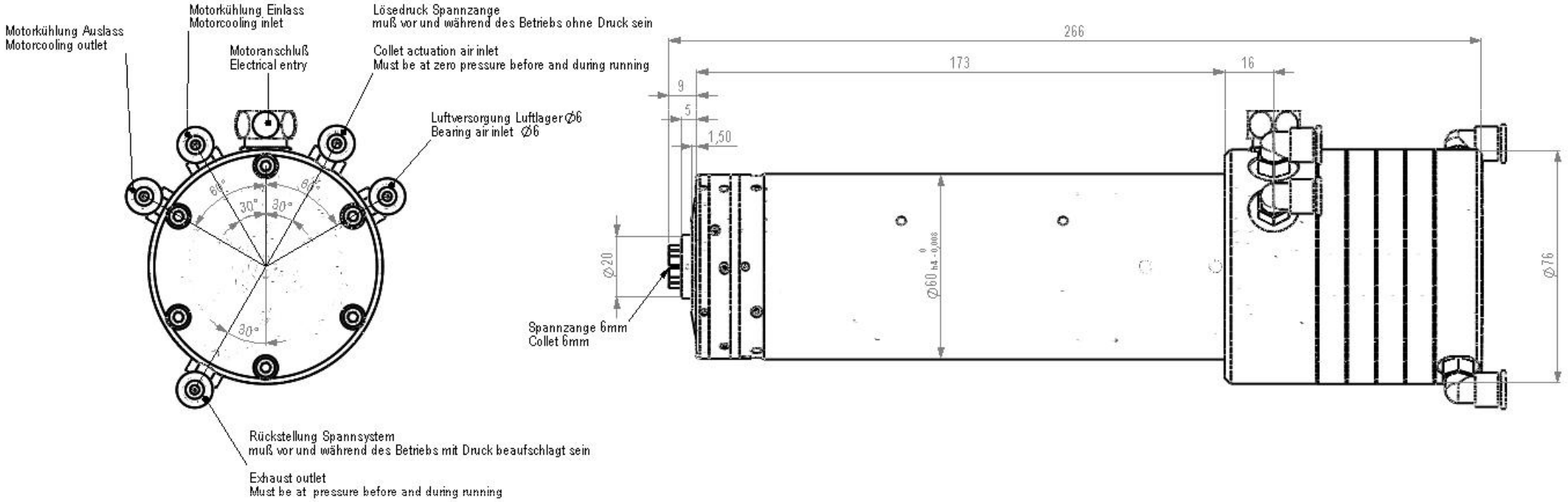
Motor Data		
Frequenz	Hz	1333
Rev per min	U/min	80 000
Voltage	V	340
Nominal current	A	1,3
Ausgangsleistung	W	525
Nominal torque	Nm	0,064

Eitzenberger Luftlagertechnik GmbH
Feichtmayrstraße 17
82405 Wessobrunn
Germany

Telefon: +49 (0) 8809 9229 852
Telefax: +49 (0) 8809 9229 858
info@eitzenberger.com
www.eitzenberger.com

EZ 1250 AIR BEARING SPINDLE

EITZENBERGER
Luftlagertechnik GmbH



Patents: US 6. 164.827, DE 199 18 564 A1
2* Other supply pressure on request
3* at nominal carrying capacity
Technical changes without notification 01/2009

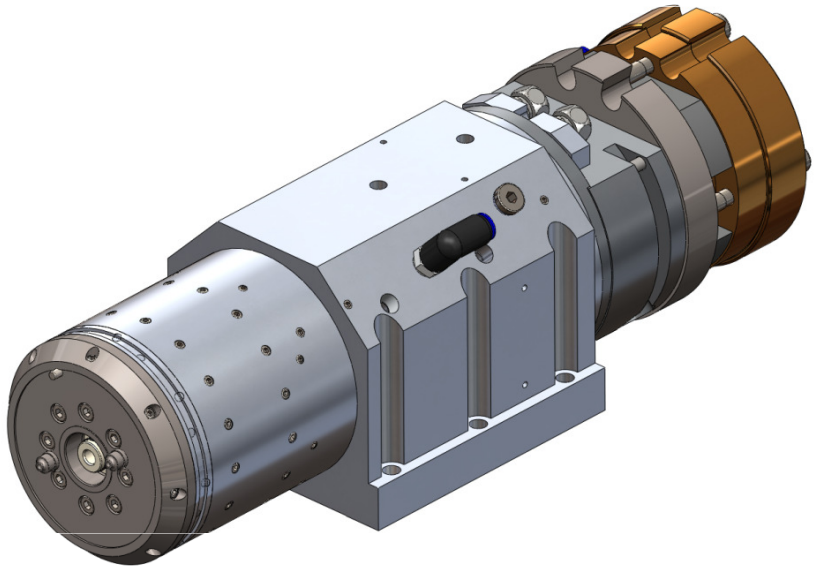
Eitzenberger Luftlagertechnik GmbH
Feichtmayrstraße 17
82405 Wessobrunn
Germany

Telefon: +49 (0) 8809 9229 852
Telefax: +49 (0) 8809 9229 858
info@eitzenberger.com
www.eitzenberger.com

EZ 0225 AIR BEARING SPINDLE WITH TOOL CHANGER

EITZENBERGER
Luftlagertechnik GmbH

High accurancy air bearing spindle with pneumatic tool changer and water cooled direct drive and a *Heidenhain* rotary encoder for position controlled applications.



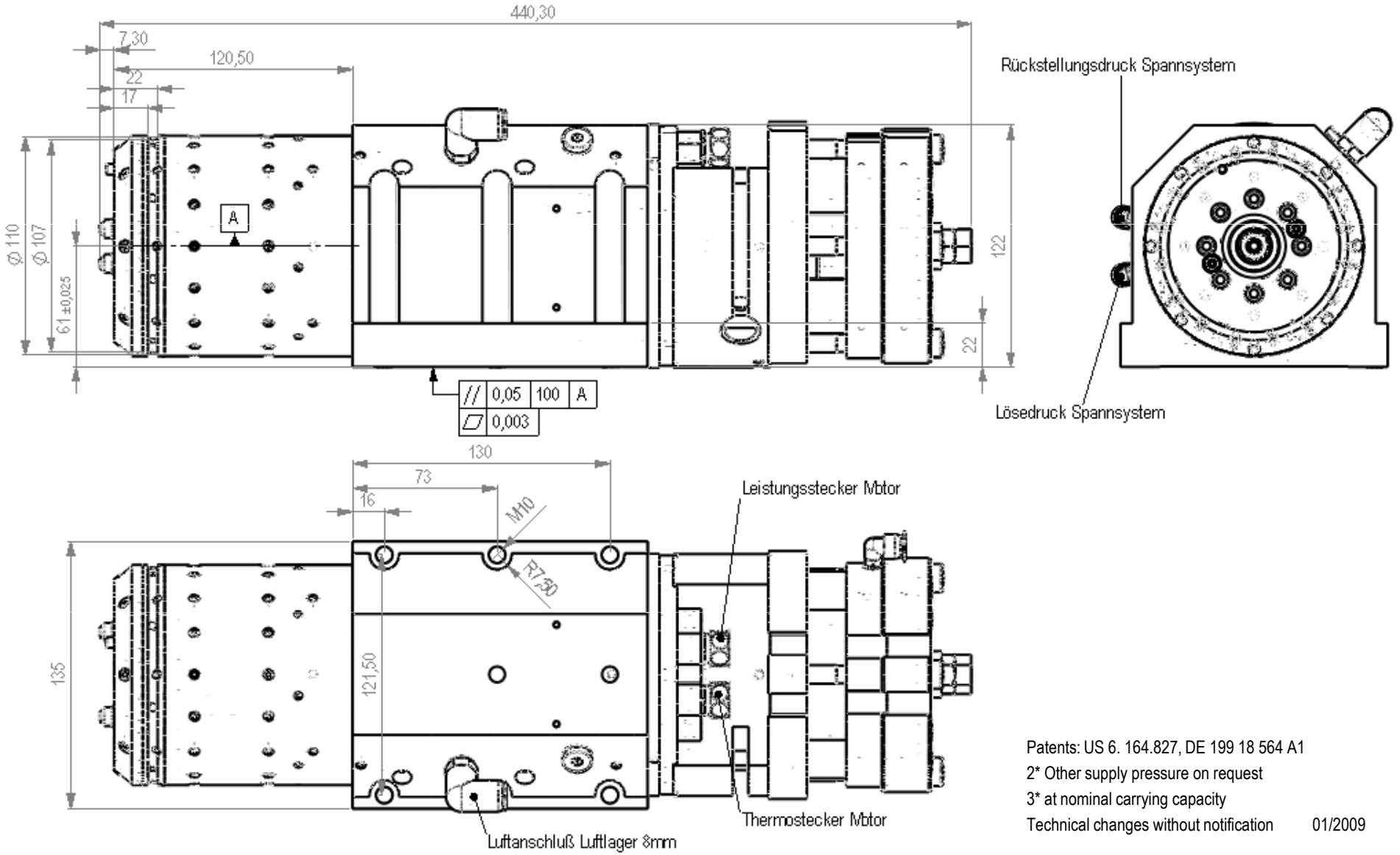
Mechanical Data		
Dimensions L x W x H	mm	440 x 135 x 122
Stroke	°	360
Carrying capacity, axial, push / pull	N	800 / 350
Carrying capacity, radial	N	700
Run out error, axial	µm	0,1
Run out error, radial	µm	0,3
Stiffness, axial	N/µm	60
Stiffness, radial	N/µm	40
Inertial moment	kg/m²	0,04
Weight	kg	17,4
Air supply pressure [2]*	bar	5
Air consumtion [3]*	Nl/min	70
Operating temperature, spindle min / max	°C	18 / 28
Inlet temperature, coolant min / max	°C	18 / 25
Material housing	Aluminum	
Material rotor	Stainless steel 01.4305	
Motor Data		
Levitec dcm 83/45-60_04003_001, water cooled alternative air cooled		
Rev per min	rev/min	6000
Nominal torque, *water cooled / air cooled*	Nm	4,3 / 3,5
Peak torque, *water cooled / air cooled*	Nm_{max}	9,0 / 5,3
Nominal current, *water cooled / air cooled*	A	9,1 / 7,3
Ratet voltage, *water cooled / air cooled*	V	200 / 193
Measurement System		
Encoder *Heidenhain ERO 1384*		
Signal periods per revolution		2024
Signal		1 Vss

Eitzenberger Luftlagertechnik GmbH
Feichtmayrstraße 17
82405 Wessobrunn
Germany

Telefon: +49 (0) 8809 9229 852
Telefax: +49 (0) 8809 9229 858
info@eitzenberger.com
www.eitzenberger.com

EZ 0225 AIR BEARING SPINDLE WITH TOOL CHANGER

EITZENBERGER
Luftlagertechnik GmbH



Patents: US 6. 164.827, DE 199 18 564 A1
2* Other supply pressure on request
3* at nominal carrying capacity
Technical changes without notification 01/2009

Eitzenberger Luftlagertechnik GmbH
Feichtmayrstraße 17
82405 Wessobrunn
Germany

Telefon: +49 (0) 8809 9229 852
Telefax: +49 (0) 8809 9229 858
info@eitzenberger.com
www.eitzenberger.com

EZ 1309 AIR BEARING SPINDLE

EITZENBERGER
Luftlagertechnik GmbH

Mechanical Description		
Outer diameter x height	mm	148 x 61
Carrying capacity axial	N	1600
Carrying capacity radial	N	300
Run out error axial	µm	0,1
Run out error radial	µm	0,1
Stiffness axial	N/µm	125
Stiffness radial	N/µm	25
Moment of tilt, maximal	Nm	17
Resistance against tilt	Nm/µrad	0,5
Inclination complience	µrad/Nm	2
Inertial moment	kg m²	0,007
Weight	kg	4,4
Air supply pressure	bar	5
Air consumption	Nl/min	16
Material housing	Aluminum, anodized	
Material rotor	Stainless steel	

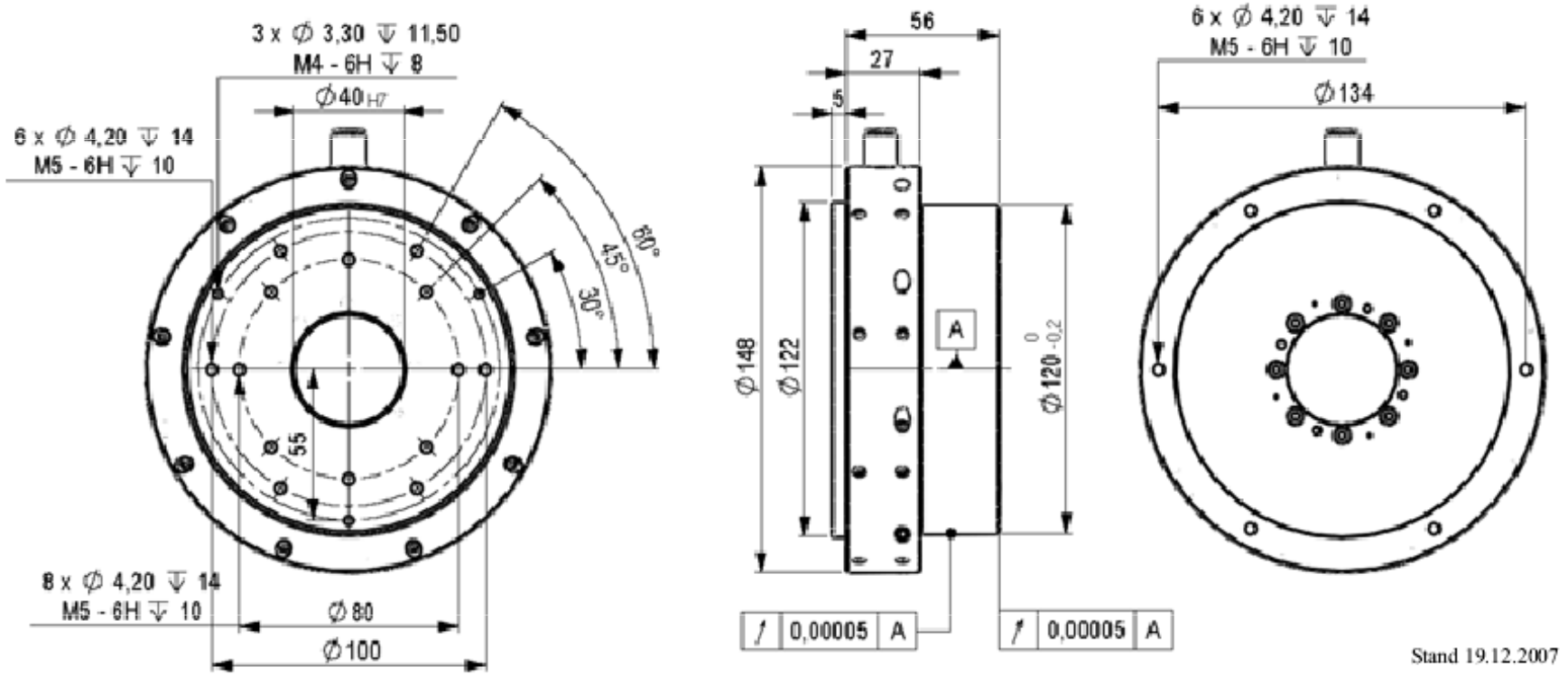
Air requirements		
Max. particle	Class 2	max. 1 µm
Max. condensing point	Class 5	max. +5 ° C
Max. concentration of oil	Class 3	max. 1 mg/ m³

Eitzenberger Luftlagertechnik GmbH
Feichtmayrstraße 17
82405 Wessobrunn
Germany

Telefon: +49 (0) 8809 9229 852
Telefax: +49 (0) 8809 9229 858
info@eitzenberger.com
www.eitzenberger.com

EZ 1309 AIR BEARING SPINDLE

EITZENBERGER
Luftlagertechnik GmbH



Stand 19.12.2007

Patents: US 6. 164.827, DE 199 18 564 A1
Other dimensions on request
Technical changes without notification, 05/2008

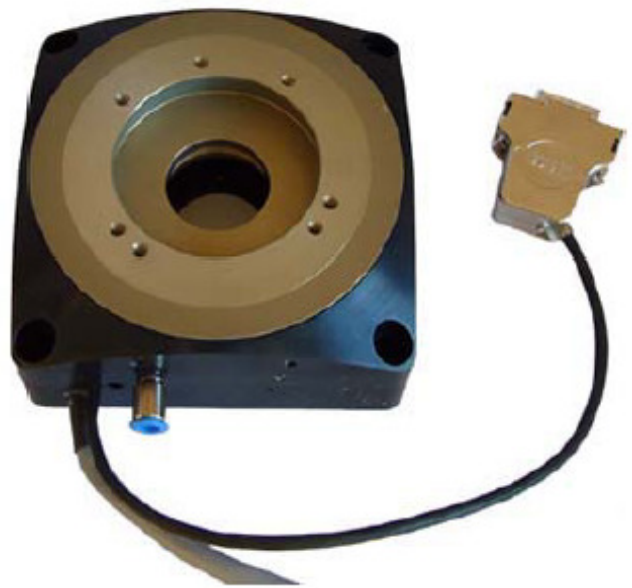
Eitzenberger Luftlagertechnik GmbH
Feichtmayrstraße 17
82405 Wessobrunn
Germany

Telefon: +49 (0) 8809 9229 852
Telefax: +49 (0) 8809 9229 858
info@eitzenberger.com
www.eitzenberger.com

EZ 0675 AIR BEARING ROTARY TABLE

EITZENBERGER
Luftlagertechnik GmbH

Air bearing rotary table with direct drive for high accuracy applications.
Rotor can be clamped by turning off air.



Electrical connection:
Measurement connected with15 Pin Sub D
Connector Motor cables with open end.

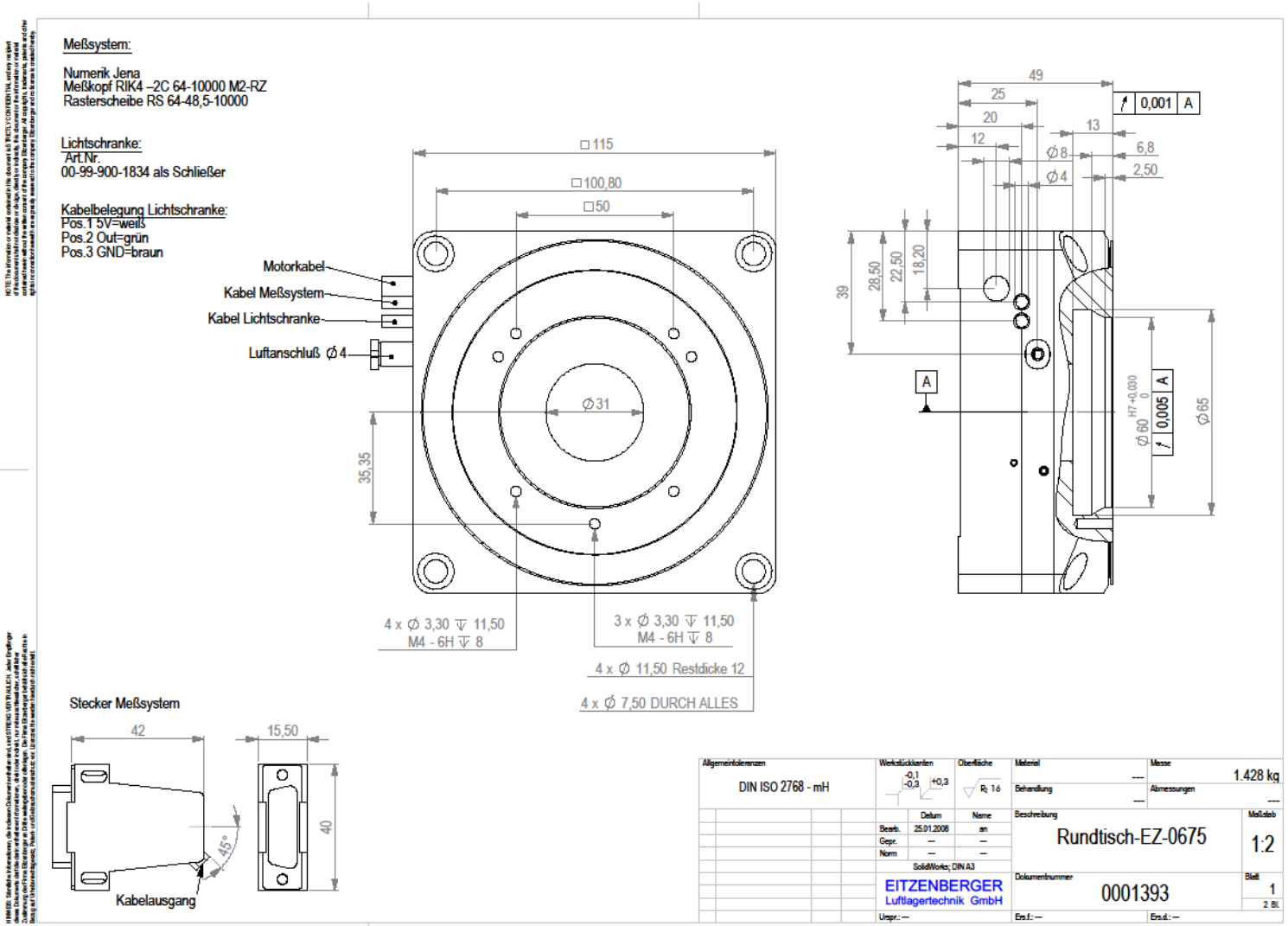
Mechanical Data		
Dimensions L x W x H	mm	115 x 115 x 49
Carrying capacity axial	N	200
Carrying capacity, radial	N	60
Run out error, axial	µm	0,1
Run out error, radial	µm	0,1
Stiffness , axial	N/µm	20
Stiffness, radial	N/µm	7
Inclination max load	Nm	10
Resistance against tilt	Nm/µrad	0,033
Inclination complience	µrad/Nm	30
Inertial moment	Kg m²	0,001
Weight	Kg	1,6
Air supply pressure	bar	5
Air consumption	Nl/min	12
Material housing	Aluminum	Anodized
Material rotor	Aluminum	hardcoat
Motor Data		
Rev. per min	rpm/min	1000
Torque, continiuous	Nm	0,5
Torque, maximal	Nm	5
Intermediate circuit voltage	V	60
With hall sensor		
Measurement System		
Signal periods per Rev	10.000 / TTL bis	4.000.000
Signal output	1Vss / alternativ	RS 422

Eitzenberger Luftlagertechnik GmbH
Feichtmayrstraße 17
82405 Wessobrunn
Germany

Telefon: +49 (0) 8809 9229 852
Telefax: +49 (0) 8809 9229 858
info@eitzenberger.com
www.eitzenberger.com

EZ 0675 AIR BEARING ROTARY TABLE

EITZENBERGER
Luftlagertechnik GmbH



Patente: US 6. 164.827, DE 199 18 564 A1
Andere Größen auf Anfrage
Technische Änderungen vorbehalten 04/2009

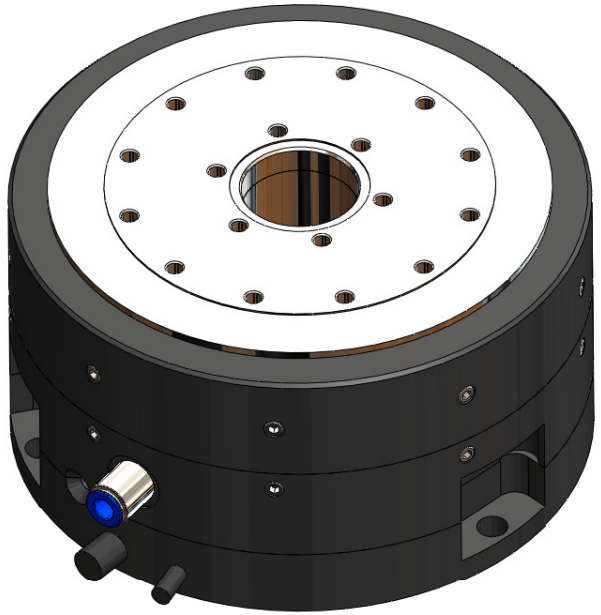
Eitzenberger Luftlagertechnik GmbH
Feichtmayrstraße 17
82405 Wessobrunn
Germany

Telefon: +49 (0) 8809 9229 852
Telefax: +49 (0) 8809 9229 858
info@eitzenberger.com
www.eitzenberger.com

EZ 0275 AIR BEARING ROTARY TABLE

EITZENBERGER
Luftlagertechnik GmbH

Air bearing rotary table with direct drive for high accuracy applications.
Equipped with a direct drive motor and a high accuracy rotary encoder for position controlled applications.
Rotor can be clamped by turning off air.



Electrical connection:
Measurement connected with15 Pin Sub D
Connector Motor cables with open end.

Mechanical Description

Outer diameter x height	mm	149 x 80
Turning range	°	360
Carrying capacity axial, compressure 5bar / tenside	N	600 / 200
Carrying capacity radial	N	300
Run out error , axial	µm	0,05
Run out error, radial	µm	0,05
Stiffness ,axial	N/µm	200
Stiffness, radial	N/µm	30
Resistance against tilt	Nm/µrad	0,13
Inclination complience	µrad/Nm	7,8
Inclination max load	Nm	20
Inertial moment	Kg m²	0,007
Weight	Kg	13,5
Air supply pressure	bar	5
Air consumption	Nl/min	13
Material housing	Aluminium	Anodized black
Material rotor	Stainless steel	01.4305

Motor Data

IDAM RMF 2P 77x15LD		
Rev. per min	rpm/min	1000
Continiuous torque	Nm	0,76
Continiuous / peak current	A eff	3 / 8
Thermal guard	° C	110

Measurement System

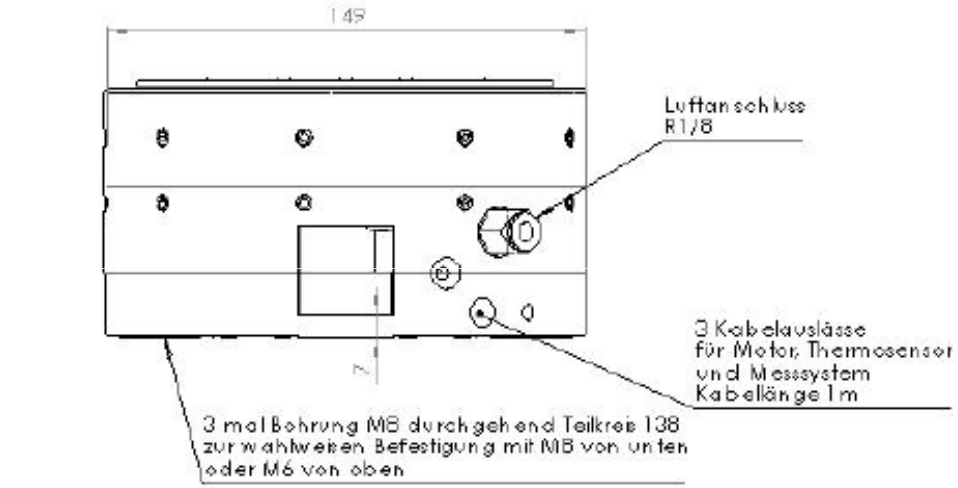
Numerik Jena RIK4		
Signals per rotation		18000
Signal output		RS 422 / 1Vpp
Reference signal		TTL active high

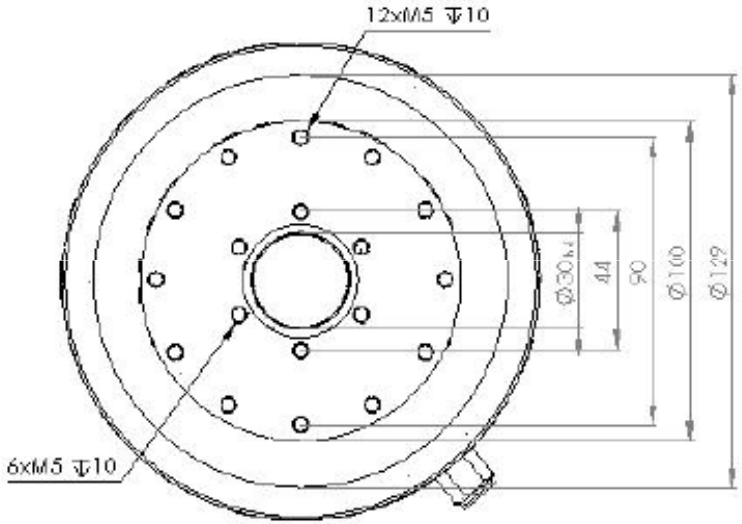
Eitzenberger Luftlagertechnik GmbH
Feichtmayrstraße 17
82405 Wessobrunn
Germany

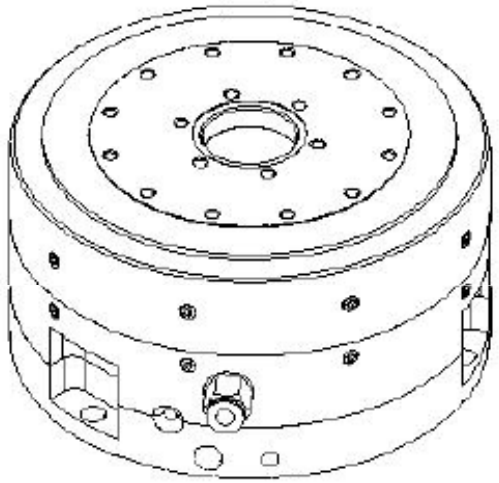
Telefon: +49 (0) 8809 9229 852
Telefax: +49 (0) 8809 9229 858
info@eitzenberger.com
www.eitzenberger.com

EZ 0275 AIR BEARING ROTARY TABLE

EITZENBERGER
Luftlagertechnik GmbH







Patents: US 6. 164.827, DE 199 18 564 A1
Other dimensions on request
Technical changes without notification, 08/2008

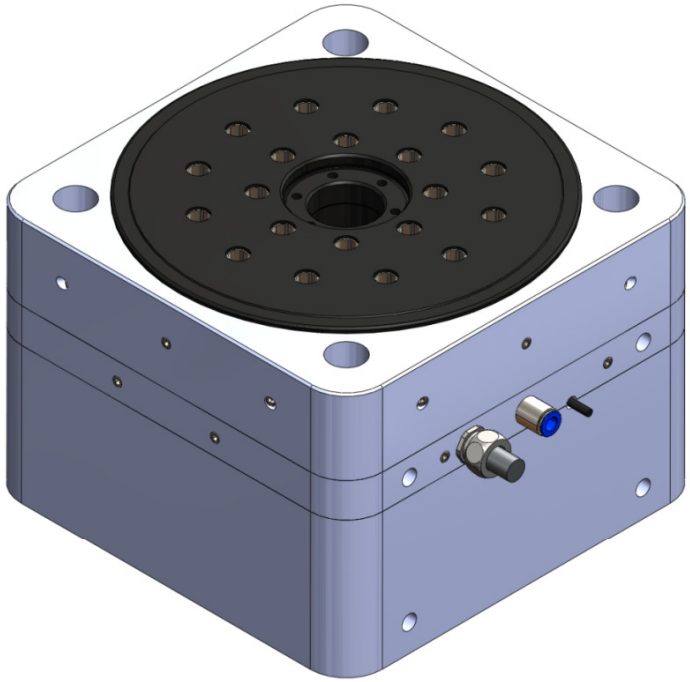
Eitzenberger Luftlagertechnik GmbH
Feichtmayrstraße 17
82405 Wessobrunn
Germany

Telefon: +49 (0) 8809 9229 852
Telefax: +49 (0) 8809 9229 858
info@eitzenberger.com
www.eitzenberger.com

EZ 0570 AIR BEARING ROTARY TABLE

EITZENBERGER
Luftlagertechnik GmbH

Air bearing rotary table with direct drive for high accuracy applications.
Equipped with a direct drive motor and a high accuracy rotary encoder for position controlled applications.
Rotor can be clamped by turning off air.



Mechanical Description

Dimensions L x W x H	mm	200 x 200 x 140
Turning range	°	360
Carrying capacity axial	N	2500
Carrying capacity radial	N	2500
Run out error axial	µm	0,1
Run out error radial	µm	0,1
Stiffness axial	N/µm	350
Stiffness radial	N/µm	125
Resistance against tilt	Nm/µrad	0,58
Inclination complience	µrad/Nm	1,7
Inclination max load	Nm	70
Inertial moment	Kg m²	0,019
Weight	Kg	15,43
Air supply pressure	bar	5
Air consumption	Nl/min	18
Material housing	Aluminum	anodized grey
Material rotor	Aluminum	Hardcoat black

Motor Data

HIWIN TMR 32		
Continiuous / peak torque	Nm	8 / 22
Continiuous / peak voltage	A eff	3 / 8

Measurement System

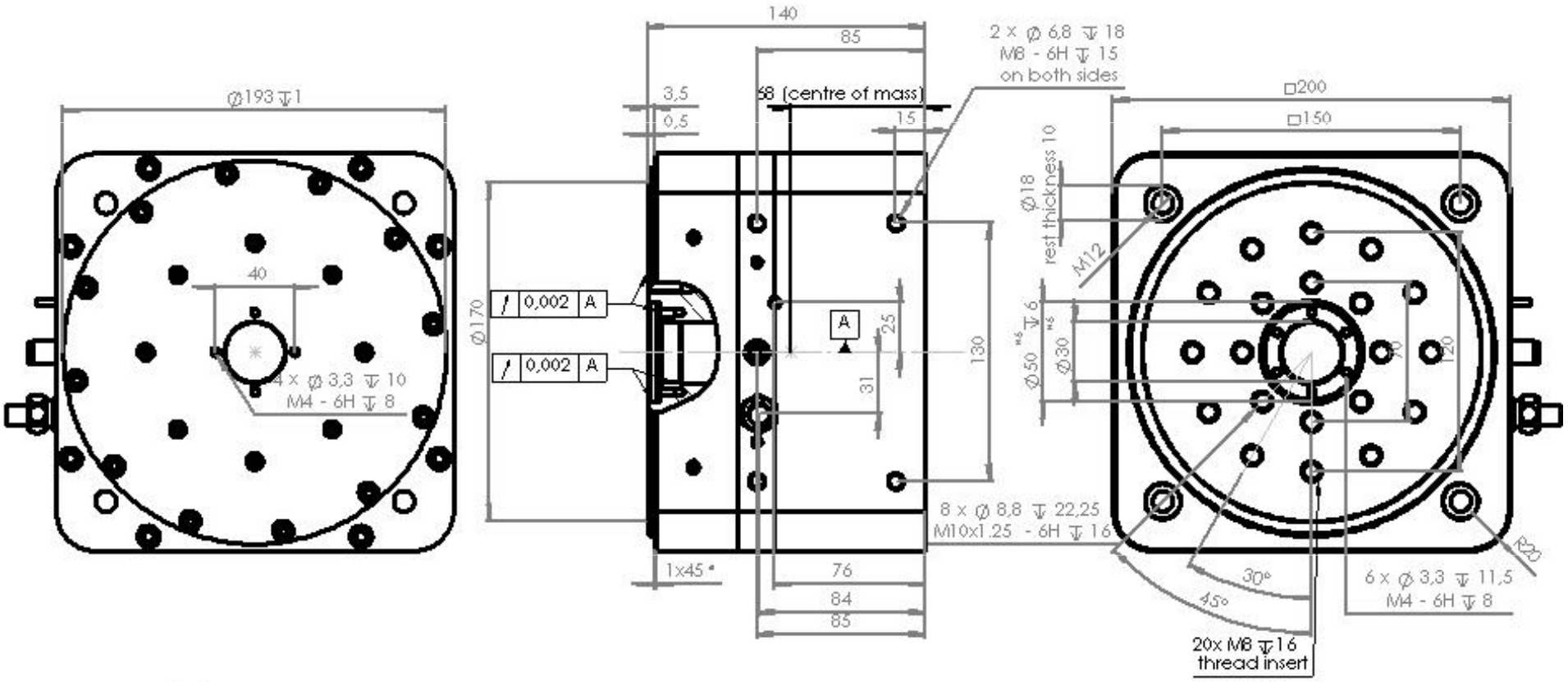
Numerik Jena RIK4		
Signals per rotation		9000 / 18000
Signal output		RS 422 / 1Vpp
Reference signal		TTL active high

Eitzenberger Luftlagertechnik GmbH
Feichtmayrstraße 17
82405 Wessobrunn
Germany

Telefon: +49 (0) 8809 9229 852
Telefax: +49 (0) 8809 9229 858
info@eitzenberger.com
www.eitzenberger.com

EZ 0570 AIR BEARING ROTARY TABLE

EITZENBERGER
Luftlagertechnik GmbH



Patents: US 6. 164.827, DE 199 18 564 A1
Other dimensions on request
Technical changes without notification, 07/2008

Eitzenberger Luftlagertechnik GmbH
Feichtmayrstraße 17
82405 Wessobrunn
Germany

Telefon: +49 (0) 8809 9229 852
Telefax: +49 (0) 8809 9229 858
info@eitzenberger.com
www.eitzenberger.com

Air Supply

Description	Value	Remark
Particle size	Class 2	Maximum size of particles 1 µm
Condensing point	Class 4	Maximum Condensing Point + 3 °C
Contained Oil	Class 2	Maximum Concentration of Oil 0,1 mg/m³

compare DIN ISO 8573-1

Please note: Inspect and exchange the particle filter of the air service unit and drain the condensation water depending on daily use and pollution.

Always monitor air bearings with a pressure switch to prevent the bearings from running with no or insufficient supply pressure during extended periods of time.

Assembly of Air Bearing Pads

Take care for high cleanness

1. Connect air bearing to supply pressure..
   Take care not to pollute bearings with particles in the tube.
2. Clean air bearings and rail surface thoroughly.
   E. g. with alcohol and an optics cleaning rag.
3. Lower bearing carefully to rail.
   Before supply bearing with a low supply pressure.
   Watch bearings edge. It can be demaged easily.
4. If you are working on the bearings:
   Supply bearings with adequate pressure continuously.
   Never move bearings without supply pressure.

Eitzenberger Luftlagertechnik GmbH
Feichtmayrstraße 17
82405 Wessobrunn
Germany

Telefon: +49 (0) 8809 9229 852
Telefax: +49 (0) 8809 9229 858
info@eitzenberger.com
www.eitzenberger.com

EITZENBERGER
Luftlagertechnik GmbH

PRODUCTS

AIR BEARING-ROTARY SYSTEMS

11-2009

EITZENBERGER
Luftlagertechnik GmbH
Feichtmayrstraße 17
D-82405 Wessobrunn

Email: info@eitzenberger.com
URL. www.eitzenberger.com