NC ROTARY TABLE: USER-PROGRAMMABLE AND ROBUST

OPTIMISED BEARINGS

To achieve maximum quality and reliability, even when under load, all roller bearings run in an oil bath and the plate cam rollers are mounted on needle bearings.

FREELY AND INTUITIVELY PROGRAMMABLE

W.A.S. – WEISS Application Software: Secure and fast commissioning through free-of-charge user software.

W·A·S.indexer
WEISS Application Software

Custom machine for an automotive supplier. A user-programmable NC 320 represents the heart of the system. It brings the seal and springs together and forwards the components to the other tables.

The NC combines robustness and durability with the advantages of a freely programmable rotary table offering a high level of torque. The NC differs from the TC range through its use of a brushless AC servo motor drive. In addition, the drive curve has a constant rise. The NC-T is capable of positioning large loads dynamically and precisely at freely selectable angles.

ADVANTAGES

- User-programmable
- High level of torque
- Absolute position encoder
- High-precision, rigid rotating plate bearing mounting
- Various sizes
- Mechanical interfaces for connecting customer-specific servo motors
- High degree of synchronism
- High degree of repeat accuracy

NC 150T

TECHNICAL DATA

Model:	**NC 150T-A**	**NC 150T-B**
Dial plate diameter:	150 mm	150 mm
Tool plate diameter:	800 mm	800 mm
Direction of rotation:	Freely programmable	Freely programmable
Max. table speed:	31 rpm	58 rpm
Transmission ratio:	i_{Total} = 144.545	i_{Total} =77.091
Max. MTM:	15 kgm²	10 kgm²
Weight:	25 kg	25 kg
Mounting position:	Any*	Any*
Positioning precision:	± 45″	± 45″ (arcsec)
Max. axial run-out of dial plate:	0.01 mm	0.01 mm (at Ø 150 mm)
Max. concentricity:	0.01 mm	0.01 mm
Max. parallelism of rotating plate surface to bottom housing surface:	0.03 mm	0.03 mm (at Ø 150 mm)

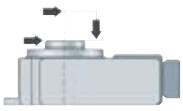
MOTOR DATA**

Nominal speed:	4000 rpm
Motor torque:	1.0 Nm (nom) 3.5 Nm (peak)
Brake torque:	3.5 Nm
Shaft encoder data:	Heidenhain EnDat ROQ425

* Please consult WEISS for overhead mounting positions.

** It is possible to fit popular alternative motors from various manufacturers. We are happy to advise you if you require any further information.

LOAD DATA (for the stationary centre section)

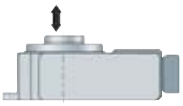


Perm. tilting moment acting on the centre section

200 Nm

Perm. radial force acting on the centre section

2500 N



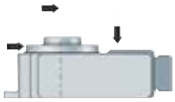
Perm. force acting vertically on the centre section

3500 N

Perm. tangential moment acting on the centre section

150 Nm

LOAD DATA (for the turnplate)



Perm. tilting moment acting on the locked dial plate

500 Nm

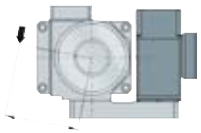
Perm. radial force acting on the locked dial plate

6000 N

Combined loads only after inspection by WEISS.

Perm. operating force (acting vertically on the locked dial plate within the normal Ø)

5500 N



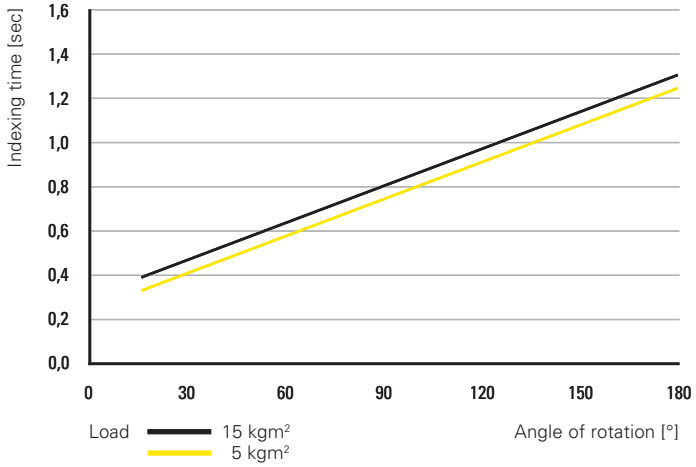
Perm. tangential moment acting on the locked dial plate

Nominal **50 Nm**

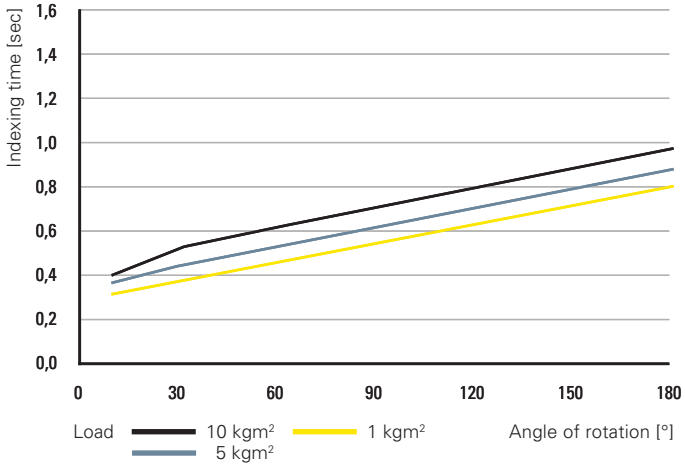
Peak **150 Nm**

TIMING DIAGRAM

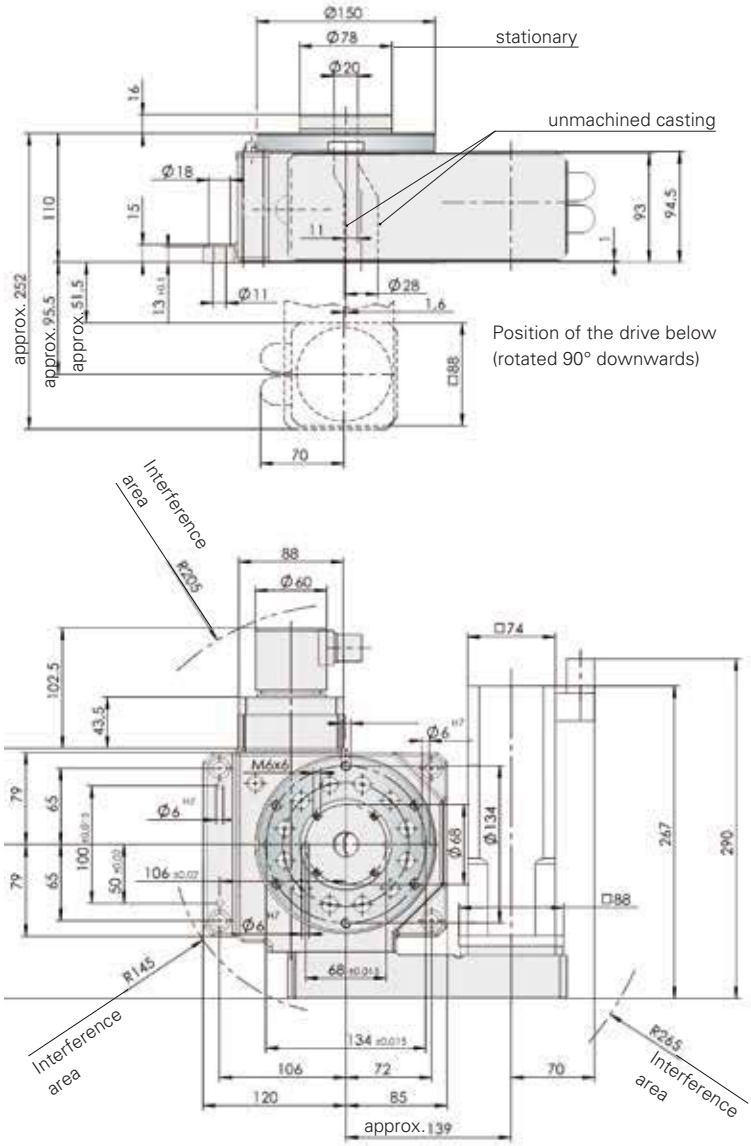
NC 150T-A



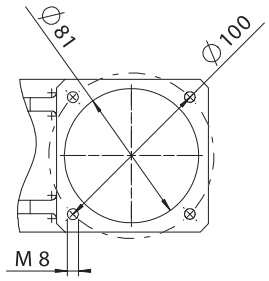
NC 150T-B



DIMENSIONS



Motor flange
(view from the motor side)

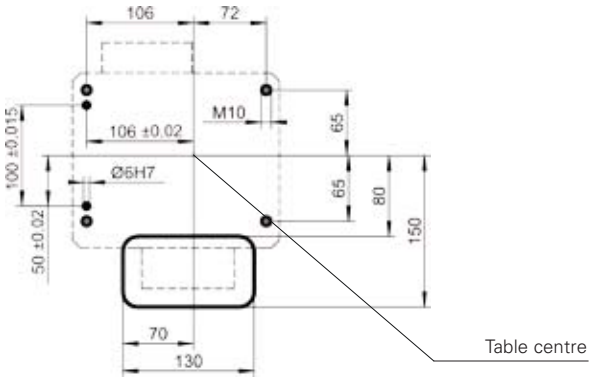


Note:
The motor must be accessible for servicing! Please leave the necessary space for motor plug and cable outlet.

If you require subsequent drilling work on the rotary table, please request information on permissible drilling depths.

The rotary plate position shown corresponds to the home position of the rotary table (delivery state).
It is possible to fit popular alternative motors from various manufacturers. The drive flange geometries are motor-dependent.

Installation hole pattern with cutout for drive when mounted below



NC 220T

TECHNICAL DATA

Model:	**NC 220T-A**	**NC 220T-B**
Dial plate diameter:	220 mm	220 mm
Tool plate diameter:	1100 mm	1100 mm
Direction of rotation:	Freely programmable	Freely programmable
Max. table speed:	23 rpm	56 rpm
Transmission ratio:	i_{Total} = 171.154	i_{Total} =71.314
Max. MTM:	30 kgm²	15 kgm²
Weight:	40 kg	40 kg
Mounting position:	Any*	Any*
Positioning precision:	± 40″	± 40″ (arcsec)
Max. axial run-out of dial plate:	0.01 mm	0.01 mm (at Ø 220 mm)
Max. concentricity:	0.01 mm	0.01 mm
Max. parallelism of rotating plate surface to bottom housing surface:	0.03 mm	0.03 mm (at Ø 220 mm)

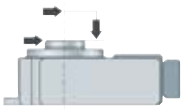
MOTOR DATA**

Nominal speed:	4000 rpm
Motor torque:	4.1 Nm (nom) 5.0 Nm (peak)
Brake torque:	5.0 Nm
Shaft encoder data:	Heidenhain EnDat ROQ425

* Please consult WEISS for overhead mounting positions.

** It is possible to fit popular alternative motors from various manufacturers. We are happy to advise you if you require any further information.

LOAD DATA (for the stationary centre section)

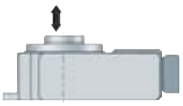


Perm. tilting moment acting on the centre section

300 Nm

Perm. radial force acting on the centre section

4000 N



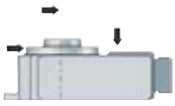
Perm. force acting vertically on the centre section

5000 N

Perm. tangential moment acting on the centre section

200 Nm

LOAD DATA (for the dial plate)



Perm. tilting moment acting on the locked dial plate

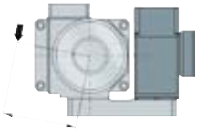
700 Nm

Perm. radial force acting on the locked dial plate

8000 N

Perm. operating force (acting vertically on the locked dial plate within the normal Ø)

7500 N



Perm. tangential moment acting on the locked dial plate

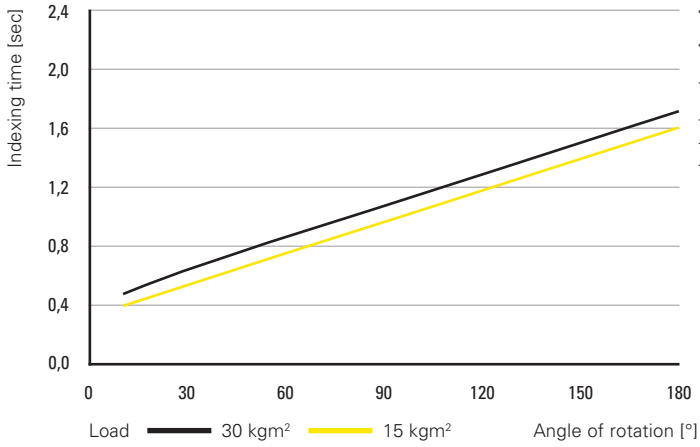
Nominal **70 Nm**

Peak **200 Nm**

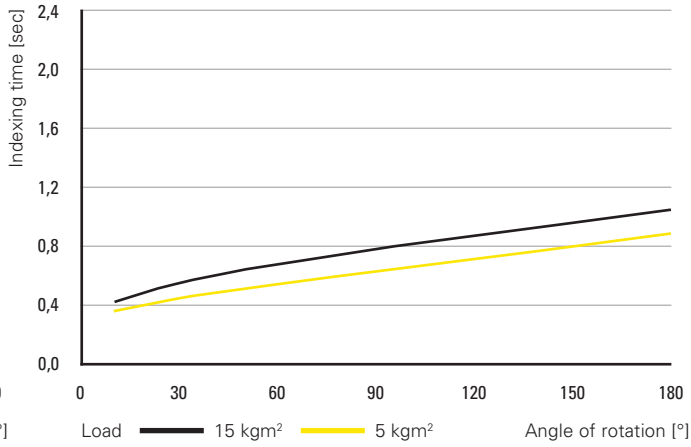
Combined loads only after inspection by WEISS.

TIMING DIAGRAM

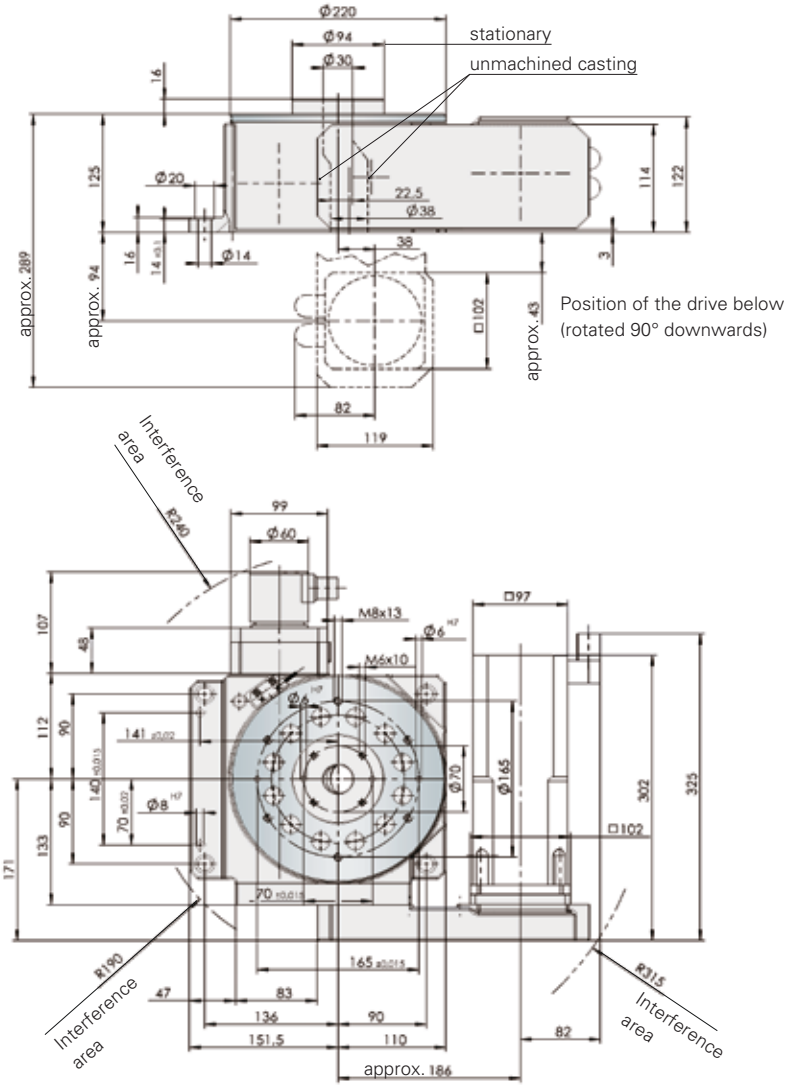
NC 220T-A



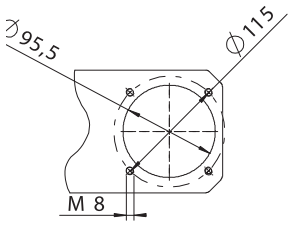
NC 220T-B



DIMENSIONS



Motor flange
(view from the motor side)

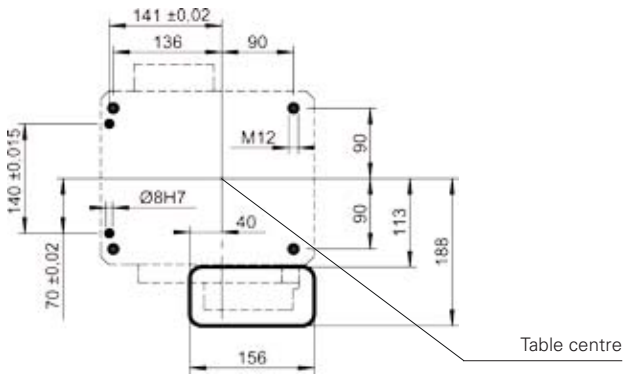


Note:
The motor must be accessible for servicing! Please leave the necessary space for motor plug and cable outlet.

If you require subsequent drilling work on the rotary table, please request information on permissible drilling depths.

It is possible to fit popular alternative motors from various manufacturers.

Installation hole pattern with cutout for drive when mounted below



NC 320T

TECHNICAL DATA

Model:	**NC 320T-A**	**NC 320T-B**
Dial plate diameter:	320 mm	320 mm
Tool plate diameter:	1400 mm	1400 mm
Direction of rotation:	Freely programmable	Freely programmable
Max. table speed:	24 rpm	35 rpm
Transmission ratio:	i_{Total} = 166.25	i_{Total} = 113.05
Max. MTM:	100 kgm²	50 kgm²
Weight:	120 kg	120 kg
Mounting position:	Any*	Any*
Positioning precision:	± 35″	± 35″ (arcsec)
Max. axial run-out of dial plate:	0.01 mm	0.01 mm (at Ø 320 mm)
Max. concentricity:	0.01 mm	0.01 mm
Max. parallelism of rotating plate surface to bottom housing surface:	0.03 mm	0.03 mm (at Ø 320 mm)

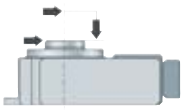
MOTOR DATA**

Nominal speed:	4000 rpm
Motor torque:	7.0 Nm (nom) 12 Nm (peak)
Brake torque:	8.0 Nm
Shaft encoder data:	Heidenhain EnDat ROQ425

* Please consult WEISS for overhead mounting positions.

** It is possible to fit popular alternative motors from various manufacturers. We are happy to advise you if you require any further information.

LOAD DATA (for the standing centre part)

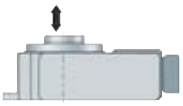


Perm. tilting moment acting on the centre section

1800 Nm

Perm. radial force acting on the centre section

10000 N



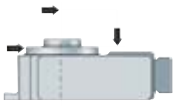
Perm. force acting vertically on the centre section

18000 N

Perm. tangential moment acting on the centre section

800 Nm

LOAD DATA (for the dial plate)



Perm. tilting moment acting on the locked dial plate

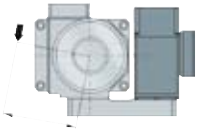
2250 Nm

Perm. radial force acting on the locked dial plate

15000 N

Perm. operating force (acting vertically on the locked dial plate within the normal Ø)

15000 N



Perm. tangential moment acting on the locked dial plate

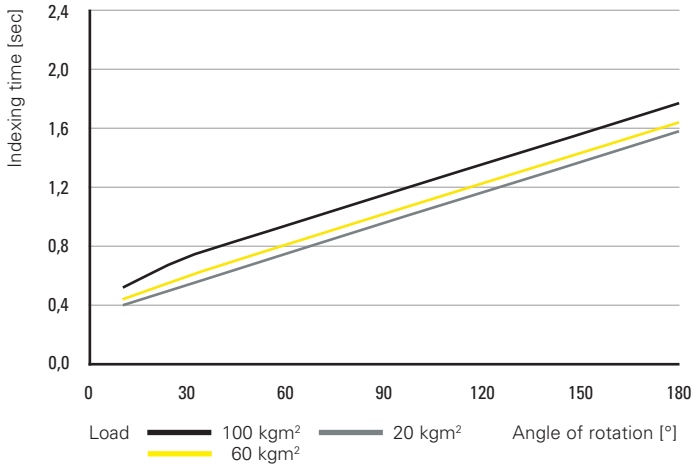
Nominal **400 Nm**

Peak **800 Nm**

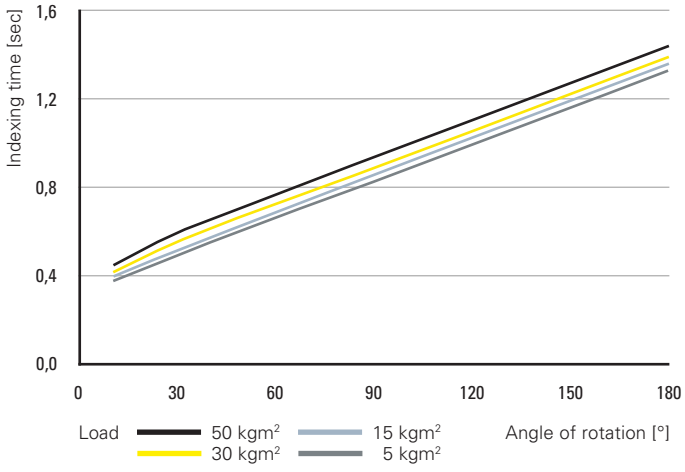
Combined loads only after inspection by WEISS.

TIMING DIAGRAM

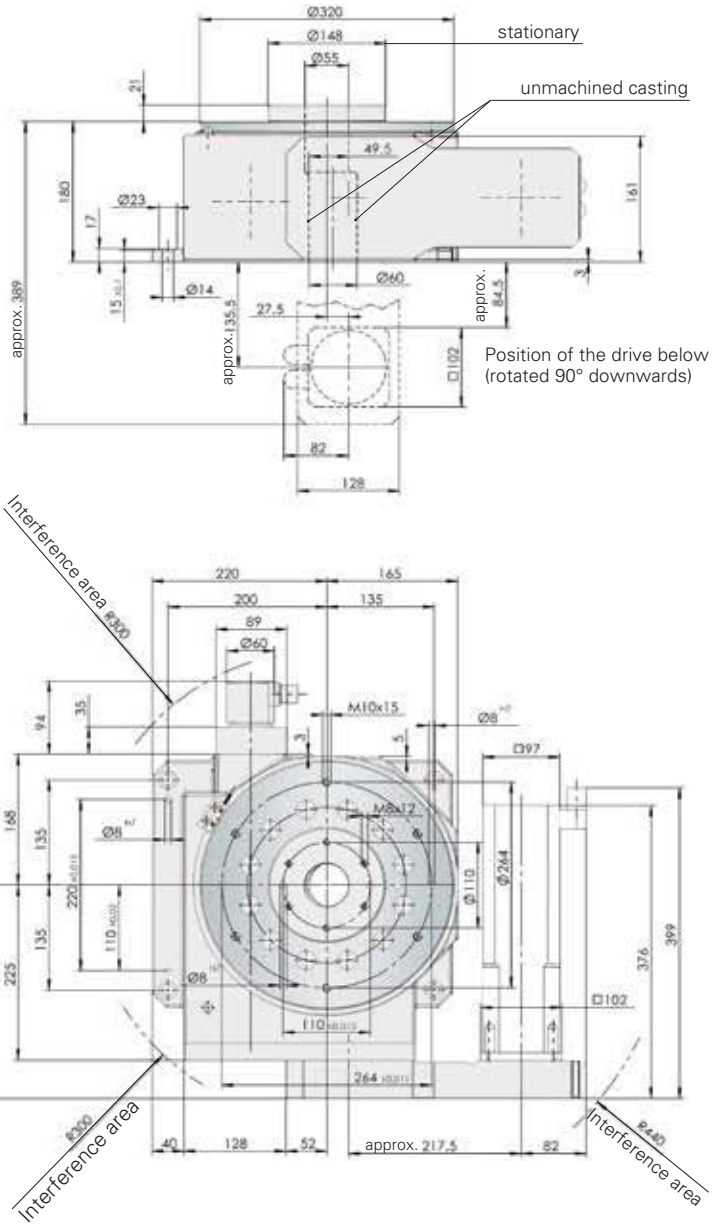
NC 320T-A



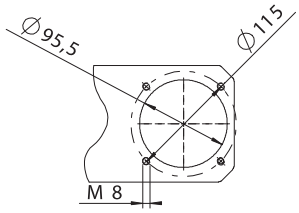
NC 320T-B



DIMENSIONS



Motor flange
(view from the motor side)

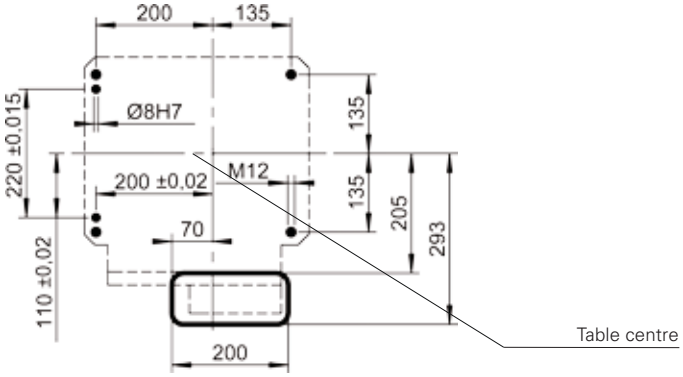


Note:
The motor must be accessible for servicing! Please leave the necessary space for motor plug and cable outlet.

If you require subsequent drilling work on the rotary table, please request information on permissible drilling depths.

It is possible to fit popular alternative motors from various manufacturers.

Installation hole pattern with cutout for drive when mounted below



W.A.S./W.A.S. 2

WEISS APPLICATION SOFTWARE

The W.A.S. (WEISS Application Software) offers you easy access to the table drive options. The W.A.S. 2 software also offers quick and easy commissioning of entire multi-axis systems.

- Free language selection
- Easy access to axis parameters
- Diagnostic options, remote maintenance
- Inputs and outputs can be forced (e.g. for start-up)
- Software cams can be specified
- Error history

DESIGN AND CONNECTION

- Plug & play
- Pre-parameterised control package
- Perfectly matched components
- Outstanding flexibility with regard to cable length and interfaces

SAFETY AND SERVICE

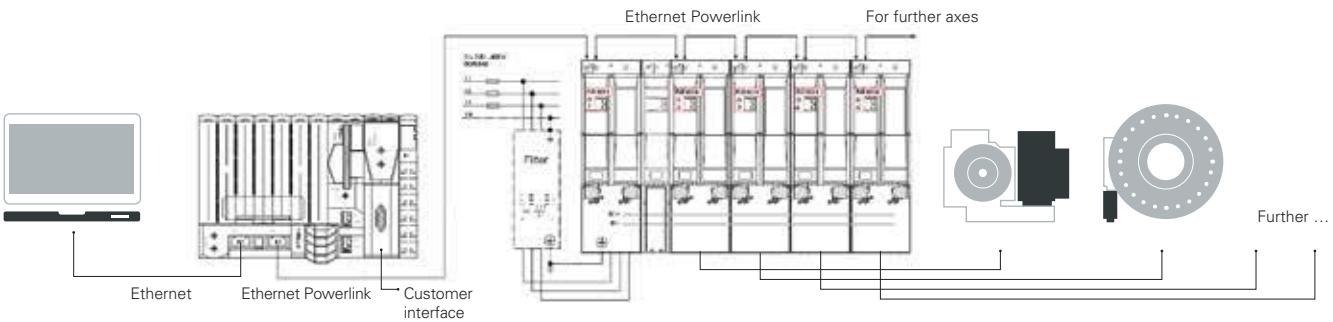
- Absolute measuring system
- Safe torque off function integrated
- Safe Motion on request
- Worldwide service
- Comprehensive safety and monitoring functions

COMMUNICATION

- Digital I/O (24-V inputs and outputs)
- Profibus DP
- EtherNet/IP (Rockwell)
- PROFINET (W.A.S. 2 only)
- EtherCAT (W.A.S. 2 only)
- More available on request

Electrical data	NC 150T	NC 220T	NC 320T
Main power voltage	**400 up to 480 VAC, ± 10 %; 48 up to 62 Hz**		
Power voltage 24 V	24 VDC ± 5 %; 2.5 A + Brake		
Connection power max.	**3 kVA**	**5 kVA**	**10 kVA**
Installation dimensions W x H x D	70.5 x 375 x 236 mm		

ACP Multi circuit diagram (W.A.S. 2)



MACHINE DESIGN NC-T

Fax to: +49 (0) 6281 5208-99 or just fill in the form online: www.weiss-international.com

☐ Enquiry ☐ Attachment to order

Dear Customer,
Thank you for your interest in our NC rotary tables. To enable us to supply you with the correct unit for your application, we kindly ask you to answer the following questions:

Model with absolut encoder

☐ NC 150T-A ☐ NC 150T-B
☐ NC 220T-A ☐ NC 220T-B
☐ NC 320T-A ☐ NC 320T-B

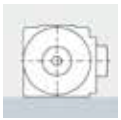
Switch time

Based on the calculated mass moment of inertia, do you require:
☐ The shortest switching time
☐ A longer switching time of approx. _____ sec
☐ Angle of rotation _____ °
☐ Standing time _____ sec

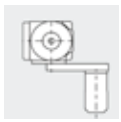
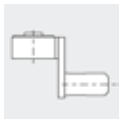
Colour

☐ RAL 7035 (light grey)
☐ Special colour RAL _____ (extra charge)

Permissible mounting positions

☐  normal
☐  overhead
☐  vertical (belt drive on the right)
☐  vertical (belt drive below)

Position of the drive motor

☐  Motor laterally, inside
☐  Motor laterally, outside
☐  Motor below, inside
☐  Motor below, outside

Required to specify your NC table

The following specification regarding your configuration is fundamental for the calculation of the mass moment of inertia.

Diameter: _____ mm
Thickness: _____ mm
Material: ☐ Al ☐ St ☐ Other

Please draw a sketch of how your load is build on the table.

Workpiece and fixtures

No. of stations: _____
Weight per station: _____ kg
Centre of gravity diameter: _____ mm

Mass moment of inertia: _____ kgm² (additional indexing plate and add-ons)

Additional indexing plate

☐ Included in the scope of offer and delivery
Processing according to drawing No. _____

Electrical data

☐ WEISS control package
Servo motor, amplifier, W.A.S. Software
Cables length: ☐ 5 m ☐ 10 m ☐ 15 m ☐ 20 m ☐ 25 m
☐ Hand-held terminal (optional)

Interface to the customer PLC
☐ Digital I/O ☐ PROFINET (W.A.S. 2 only)
☐ Profibus-DP ☐ EtherCAT (W.A.S. 2 only)
☐ EtherNet/IP (Rockwell)

Interface to W.A.S. – WEISS Application Software
RS232 and Ethernet are included in the scope of delivery
☐ Converter USB to RS232

☐ Supply of customers motor and controller**
☐ Customer to fit motor**
** Please forward a drawing of motor flange
Manufacturer: _____
Type: _____
(Motor specification following consulting WEISS)

For technical enquiries

Company: _____
Name: _____
Country: _____

Desired delivery date: _____
Phone: _____ Fax: _____
E-Mail: _____