

Technology that inspires



# PRODUCT RANGE

Mechanics | Software | Electronics



Excerpt of the WEISS Product Range

## NC ROTARY INDEXING TABLE



freely programmable

4

I would like to commission my installation quickly and efficiently



3

I require machine frames, mounting bases or custom equipment



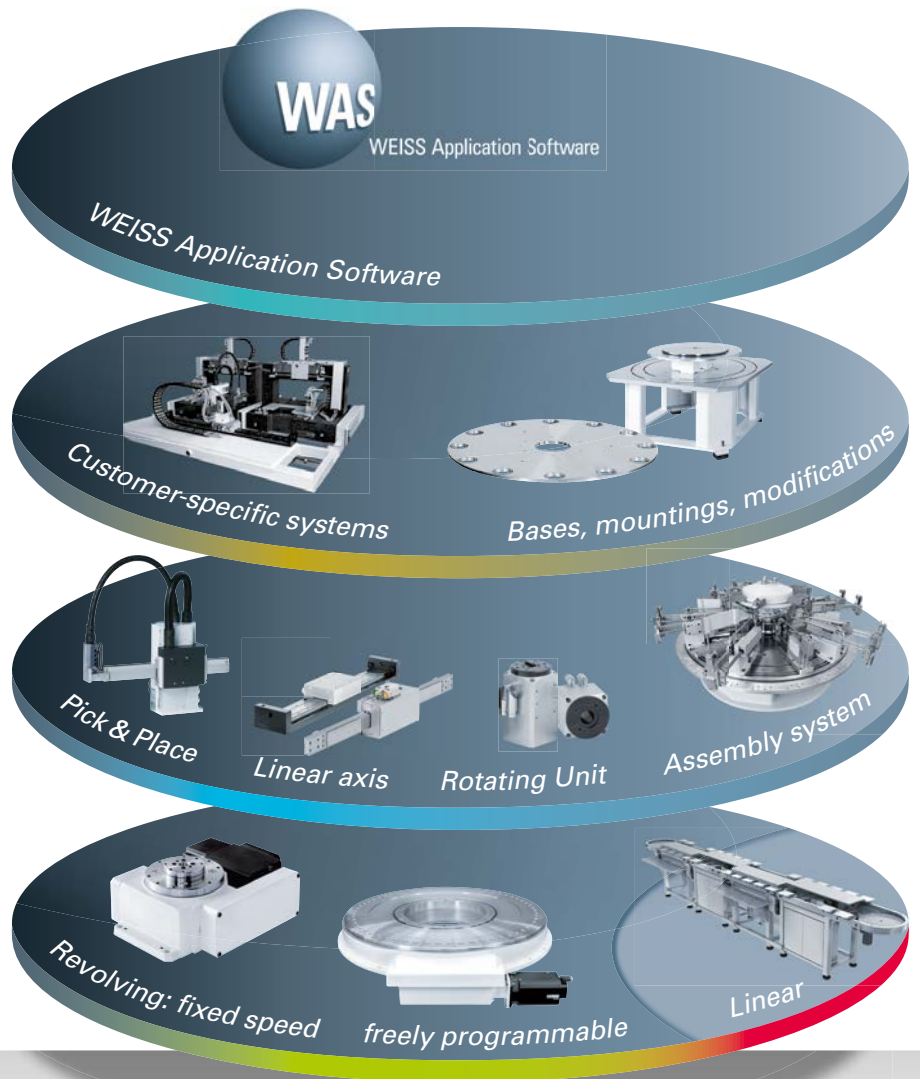
2

I require handling components



1

My transport is...



## Four steps to perfect automation



### Fixed position rotary indexing tables



TC rotary indexing table  
TR rotary indexing ring

### User-programmable rotary indexing tables



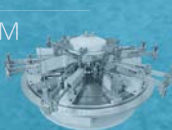
NC rotary indexing table NR rotary indexing ring  
CR/TH heavy duty ring TO torque rotary indexing table  
TW rotary indexing table

### Linear assembly system



LS 280

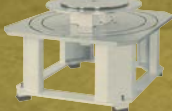
### Handling module



PM Pick-o-Mat

HP Pick&Place HL Linear axis  
HG/HN Linear axes ST/SW rotary unit  
SH Lifting-rotating unit PM Pick-o-Mat

### Customer specific solutions

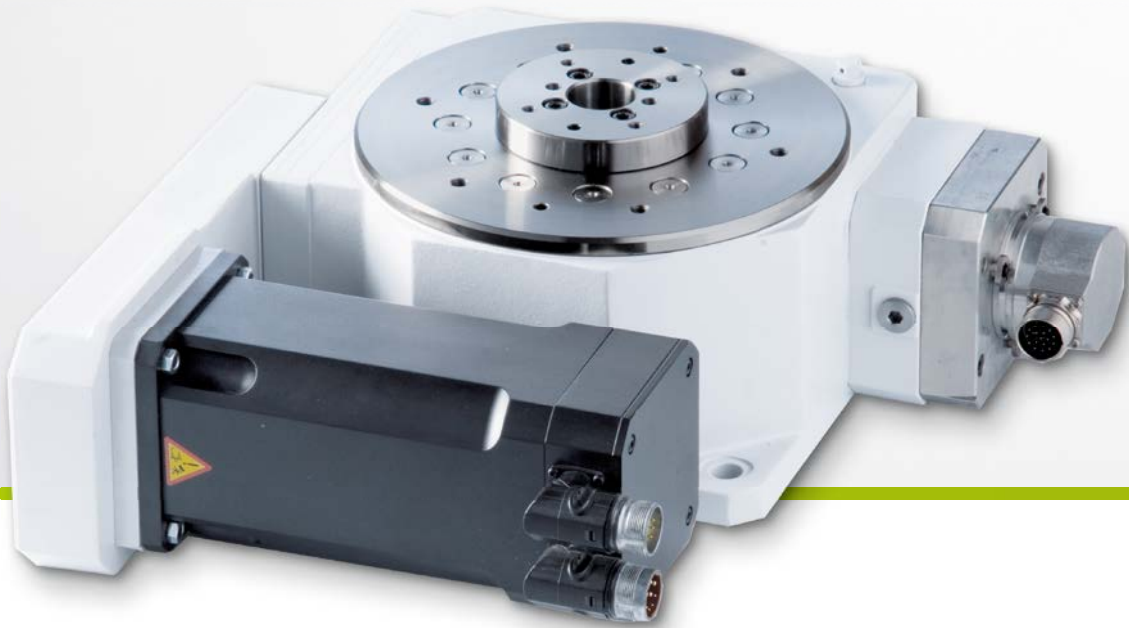


SR/SK indexing machine bases  
Additional indexing plate



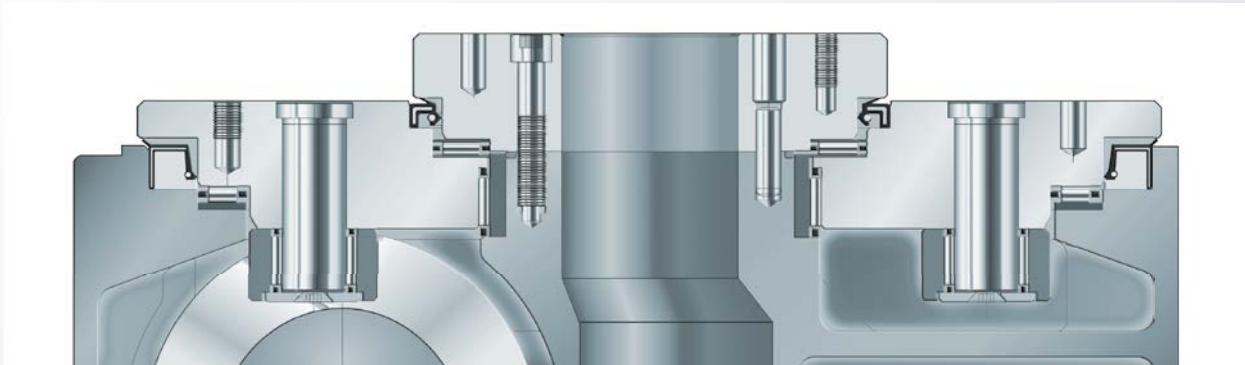
### WAS-Software

WEISS Application Software (WAS)

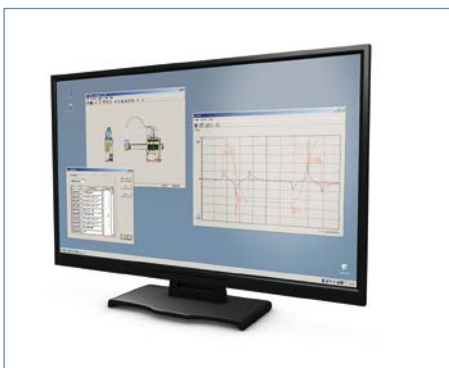


## NC rotary indexing table: User-programmable and robust

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.



Building on our proven TC base system, our rotary tables in the NC-T range enable heavy loads to be positioned dynamically and precisely at freely selectable angles.



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

#### The key advantages at a glance:

- *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

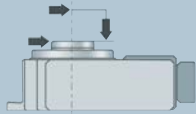
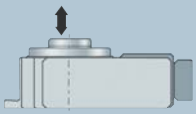

	NC 150T-A	NC 150T-B
<b>Model:</b>	NC 150T-A	NC 150T-B
<b>Dial plate diameter:</b>	150 mm	150 mm
<b>Tool plate diameter:</b>	800 mm	800 mm
<b>Direction of rotation:</b>	any	any
<b>Max. table speed:</b>	31 rpm	58 rpm
<b>Transmission ratio:</b>	$i_{ges} = 144.545$	$i_{ges} = 77.091$
<b>Max. MTM:</b>	15 kgm <sup>2</sup>	10 kgm <sup>2</sup>
<b>Weight:</b>	25 kg	25 kg
<b>Mounting position:</b>	any*	any*
<b>Positioning precision:</b>	± 45"	± 45"
<b>Max. flatness of dial plate:</b>	0.01 mm	0.01 mm (at Ø 150 mm)
<b>Max. run out:</b>	0.01 mm	0.01 mm
<b>Max. parallelism of rotating plate surface to bottom housing surface:</b>	0.03 mm	0.03 mm (at Ø 150 mm)

## Motor data

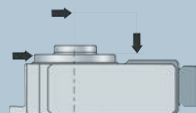
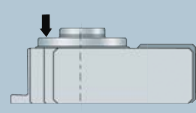
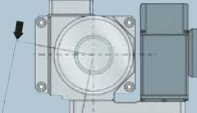
<b>Nominal speed:</b>	4500 rpm
<b>Motor torque:</b>	1.0 Nm (nom) 4.8 Nm (peak)
<b>Brake torque:</b>	4Nm
<b>Shaft encoder data:</b>	Heidenhain EnDat ROQ425

\* Please consult WEISS for overhead mounting positions.

## Load data (for the stationary centre section)

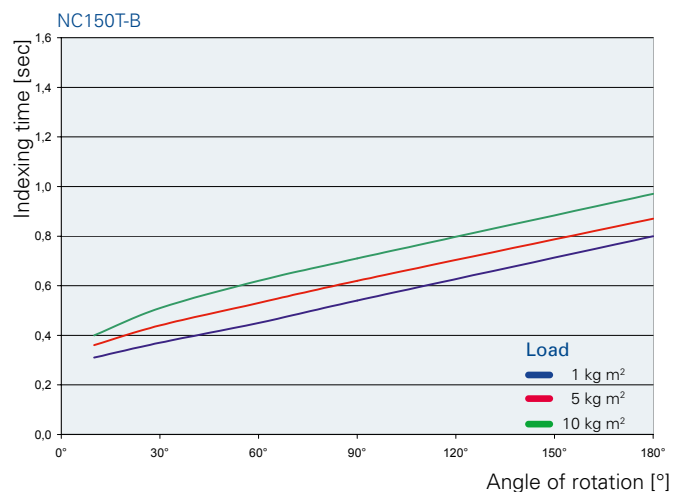
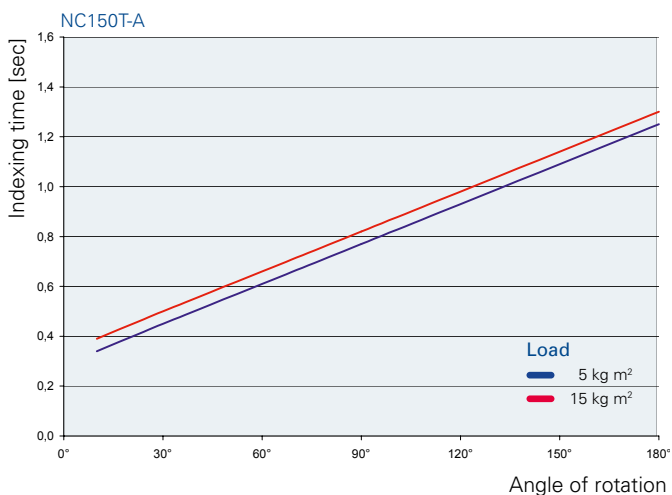
		
Perm. tilting moment acting on the centre section <b>200 Nm</b>	Perm. force acting vertically on the centre section <b>3500 N</b>	Perm. tangential moment acting on the centre section <b>150 Nm</b>
Perm. radial force acting on the centre section <b>2500 N</b>		

## Load data (for the turnplate)

		
Perm. tilting moment acting on the locked dial plate <b>500 Nm</b>	Perm. operating force (acting vertically on the locked dial plate within the normal Ø) <b>5500 N</b>	Perm. tangential moment acting on the locked dial plate Nominal: <b>50 Nm</b>
Perm. radial force acting on the locked dial plate <b>6000 N</b>		Peak: <b>150 Nm</b>

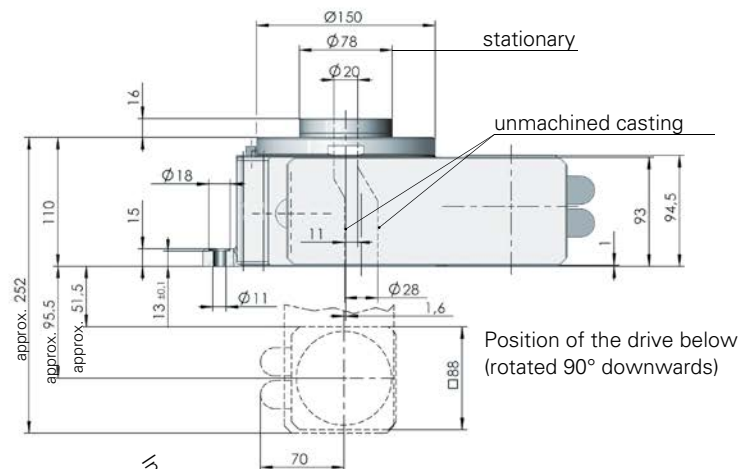
Combined loads only after inspection by WEISS.

## Timing diagram



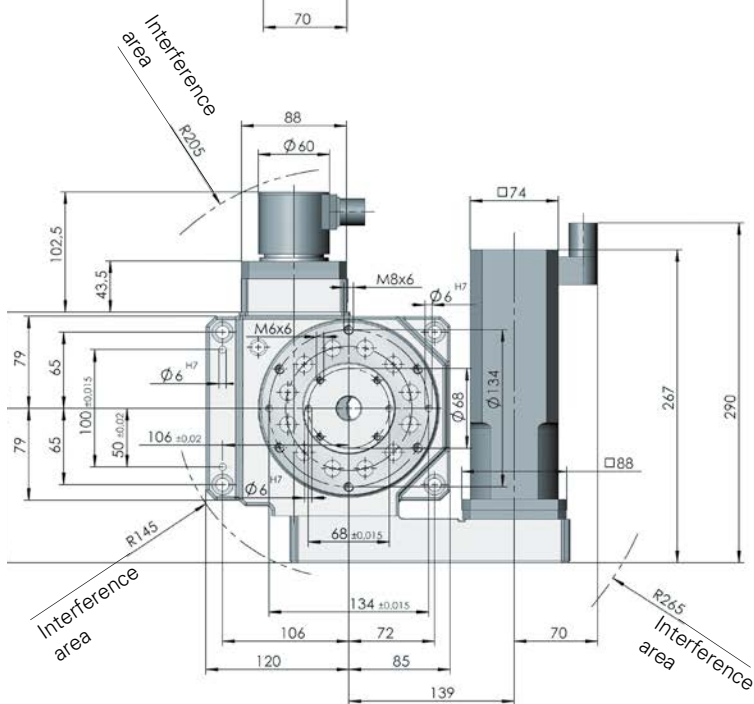


# NC 150T Dimensions



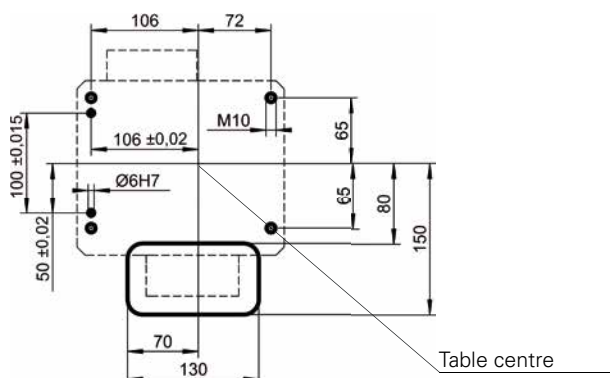
**Note:**  
The motor must be accessible for servicing!  
Please leave the necessary space for motor plug and cable outlet.

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

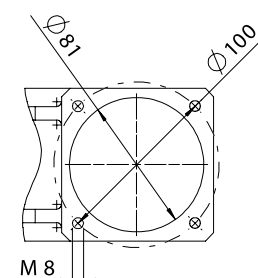


producer	motor description
B&R (WEISS standard)	8MSA3M.R0-I9
recommended third party motors	
SEW	DFS56L-4500
Siemens (1FK7)	1FK7034-5AK71
Bosch-Rexroth	MSK40C-0450-NN-S1-UP1-NNNN
Rockwell	MPL-B320P-MJ22AA
Beckhoff	AM3033-1E01
Mitsubishi	HC-KFS-43-B
ParkerHauser	SMHA82 60 03 8 14 2ID 65 A7 4
BergerLahr/Schneider/Telemecanique	BSH1002P31F2A
FANUC	α iF1/5000
ABB	SDM 261-002N7-092/40-6070

Installation hole pattern with cutout for drive when mounted below



Motor flange (view from the motor side)



# NC 220T

## Technical data

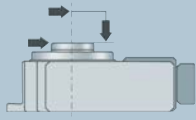
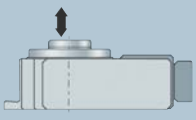
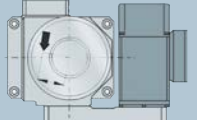
	NC 220T-A	NC 220T-B
<b>Model:</b>	NC 220T-A	NC 220T-B
<b>Dial plate diameter:</b>	220 mm	220 mm
<b>Tool plate diameter:</b>	1100 mm	1100 mm
<b>Direction of rotation:</b>	any	any
<b>Max. table speed:</b>	23 rpm	56 rpm
<b>Transmission ratio:</b>	$i_{ges} = 171.154$	$i_{ges} = 71.314$
<b>Max. MTM:</b>	30 kgm <sup>2</sup>	15 kgm <sup>2</sup>
<b>Weight:</b>	40 kg	40 kg
<b>Mounting position:</b>	any*	any*
<b>Positioning precision:</b>	± 40"	± 40" (degree seconds)
<b>Max. flatness of dial plate:</b>	0.01 mm	0.01 mm (at Ø 220 mm)
<b>Max. run out:</b>	0.01 mm	0.01 mm
<b>Max. parallelism of rotating plate surface to bottom housing surface:</b>	0.03 mm	0.03 mm (at Ø 220 mm)

## Motor data

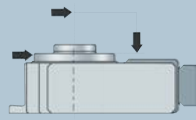
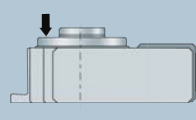
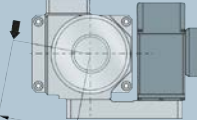
<b>Nominal speed:</b>	4000 rpm
<b>Motor torque:</b>	3.7 Nm (nom) 7 Nm (peak)
<b>Brake torque:</b>	7 Nm
<b>Shaft encoder data:</b>	Heidenhain EnDat ROQ425

\* Please consult WEISS for overhead mounting positions.

## Load data

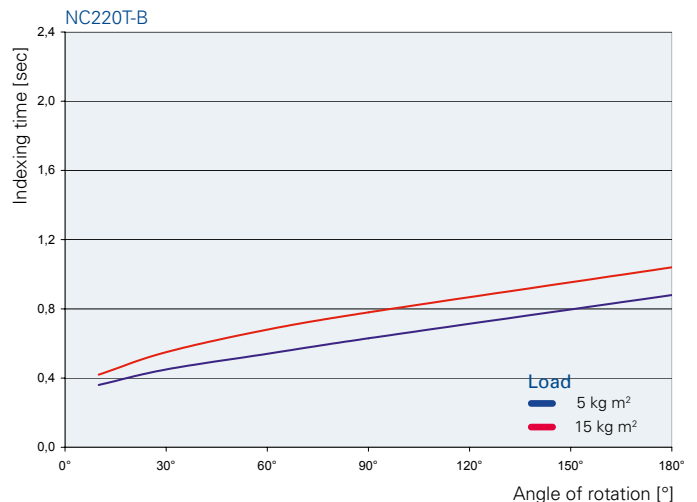
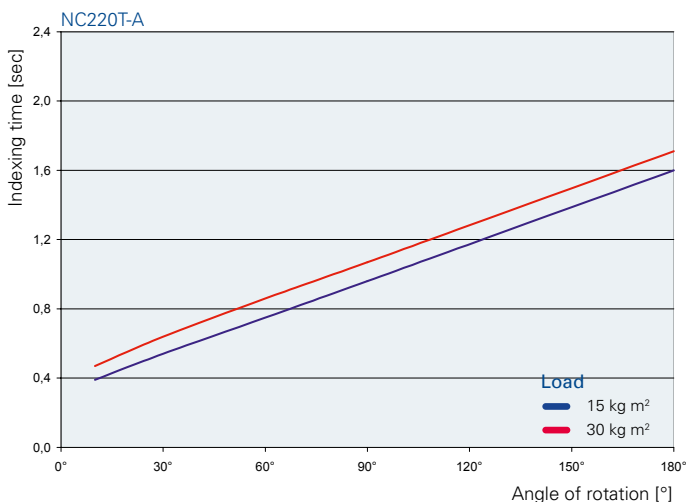
		
Perm. tilting moment acting on the centre section <b>300 Nm</b>	Perm. force acting vertically on the centre section <b>5000 N</b>	Perm. tangential moment acting on the centre section <b>200 Nm</b>
Perm. radial force acting on the centre section <b>4000 N</b>		

## Load data (for the turnplate)

		
Perm. tilting moment acting on the locked dial plate <b>700 Nm</b>	Perm. operating force (acting vertically on the locked dial plate within the normal Ø) <b>7500 N</b>	Perm. tangential moment acting on the locked dial plate Nominal: <b>70 Nm</b> Peak: <b>200 Nm</b>
Perm. radial force acting on the locked dial plate <b>8000 N</b>		

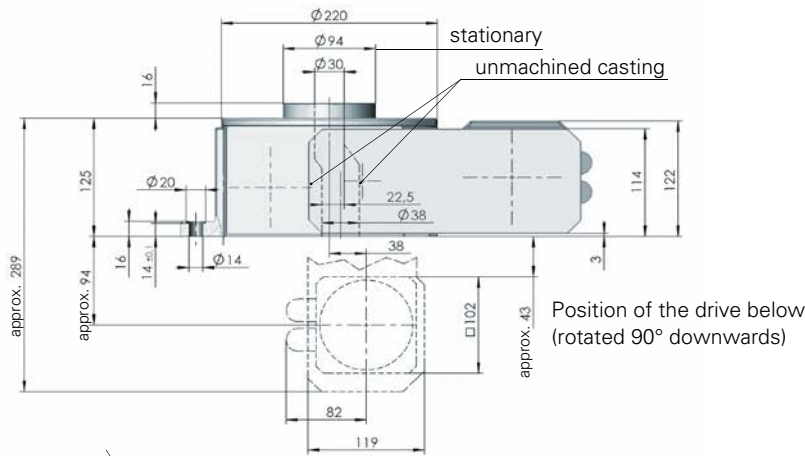
Combined loads only after inspection by WEISS.

## Timing diagram





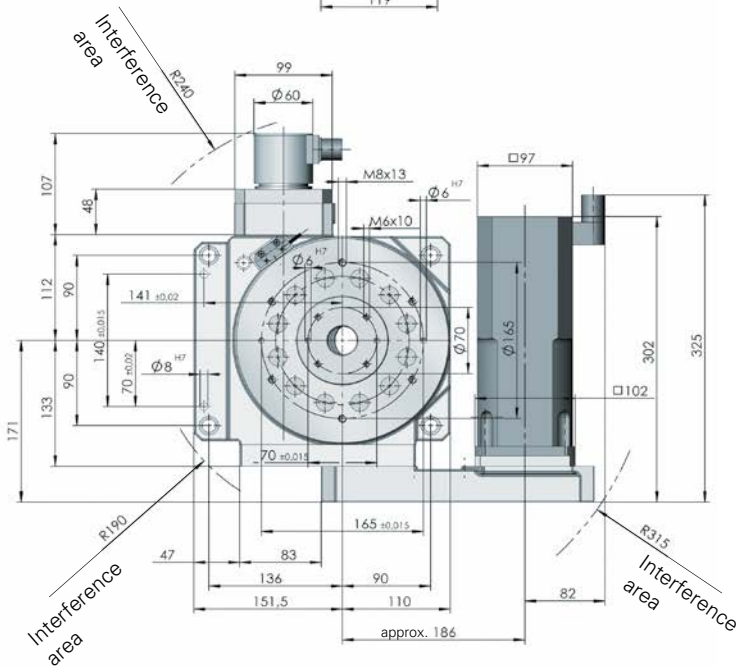
# NC 220T Dimensions



**Note:**

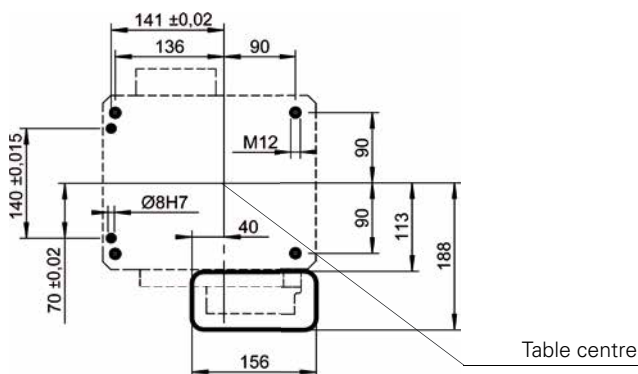
The motor must be accessible for servicing! Please leave the necessary space for motor plug and cable outlet.

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

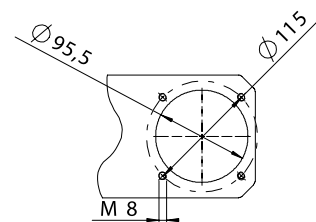


producer	motor description
B&R (WEISS standard)	8MSA4M.R0-V7
recommended third party motors	
SEW	DFS56H-4500
Siemens (1FK7)	1FK7042-5AK71
Bosch-Rexroth	MSK60B-0600-NN-S1-UP1-NNNN
Rockwell	MPL-B320P-Mxx4AA
Beckhoff	AM3051-1G01
Mitsubishi	HC-KFS-73-B
ParkerHauser	SMHA100 56 06 5 19 2ID 65 A7 4
BergerLahr/Schneider/Telemecanique	BSH1003P31F2A
FANUC	α iF2/5000
ABB	SDM 261-004N2-110/40-6070

Installation hole pattern with cutout for drive when mounted below



Motor flange (view from the motor side)



# NC 320T

## Technical data

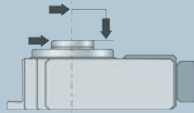
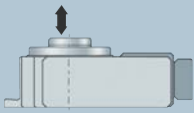

	NC 320T-A	NC 320T-B
<b>Model:</b>	NC 320T-A	NC 320T-B
<b>Dial plate diameter:</b>	320 mm	320 mm
<b>Tool plate diameter:</b>	1400 mm	1400 mm
<b>Direction of rotation:</b>	freely programmable	freely programmable
<b>Max. table speed:</b>	24 rpm	35 rpm
<b>Transmission ratio:</b>	$i_{ges} = 166.25$	$i_{ges} = 113.05$
<b>Max. MTM:</b>	100 kgm <sup>2</sup>	50 kgm <sup>2</sup>
<b>Weight:</b>	120 kg	120 kg
<b>Mounting position:</b>	any*	any*
<b>Positioning precision:</b>	± 35"	± 35" (degree seconds)
<b>Max. flatness of dial plate:</b>	0.01 mm	0.01 mm (at Ø 320 mm)
<b>Max. run out:</b>	0.01 mm	0.01 mm
<b>Max. parallelism of rotating plate surface to bottom housing surface:</b>	0.03 mm	0.03 mm (at Ø 320 mm)

## Motor data

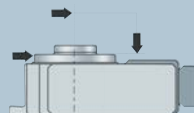
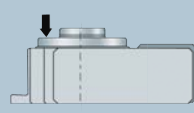
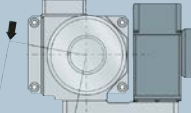
<b>Nominal speed:</b>	4000 rpm
<b>Motor torque:</b>	7 Nm (peak) 12 Nm (Spitze)
<b>Brake torque:</b>	8 Nm
<b>Shaft encoder data:</b>	Heidenhain EnDat ROQ425

\* Please consult WEISS for overhead mounting positions.

## Load data (for the standing centre part)

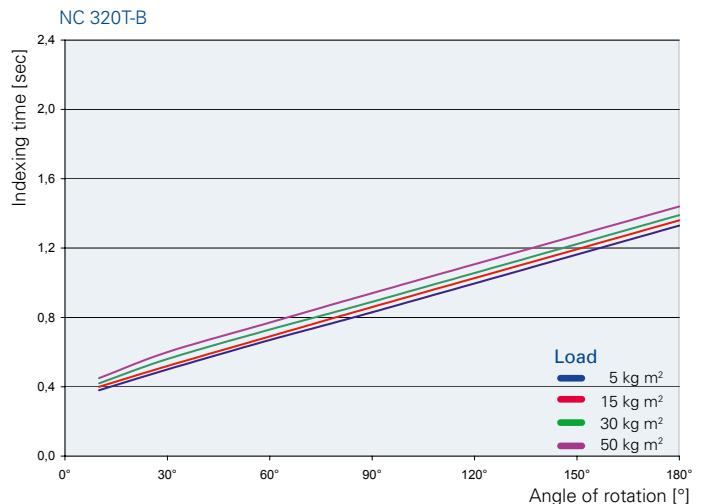
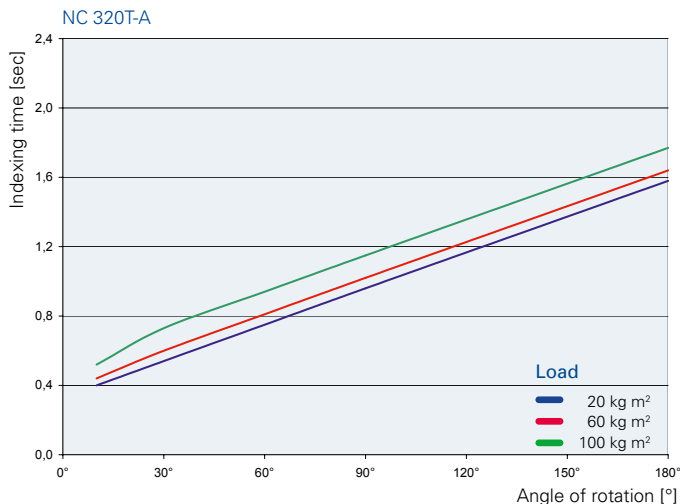
		
<i>Perm. tilting moment acting on the centre section</i> <b>1800 Nm</b>	<i>Perm. force acting vertically on the centre section</i> <b>18000 N</b>	<i>Perm. tangential moment acting on the centre section</i> <b>800 Nm</b>
<i>Perm. radial force acting on the centre section</i> <b>10000 N</b>		

## Load data (for the turnplate)

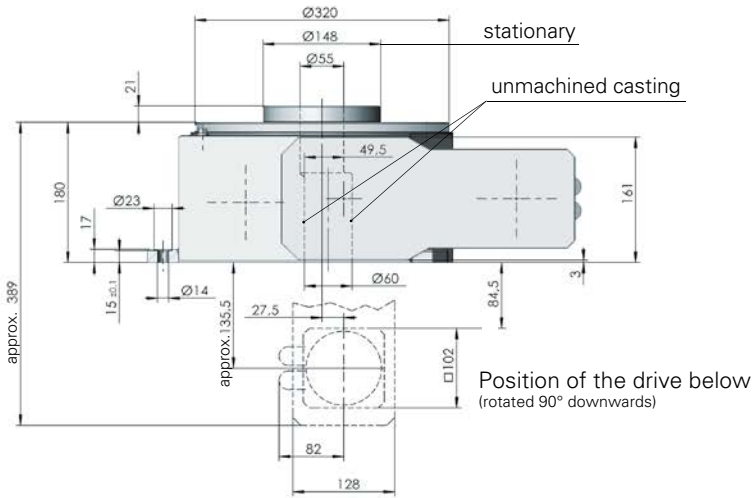
		
<i>Perm. tilting moment acting on the locked dial plate</i> <b>2250 Nm</b>	<i>Perm. operating force (acting vertically on the locked dial plate within the normal Ø)</i> <b>15000 N</b>	<i>Perm. tangential moment acting on the locked dial plate</i> Nominal: <b>400 Nm</b> Peak: <b>800 Nm</b>
<i>Perm. radial force acting on the locked dial plate</i> <b>15000 N</b>		

Combined loads only after inspection by WEISS.

## Timing diagram

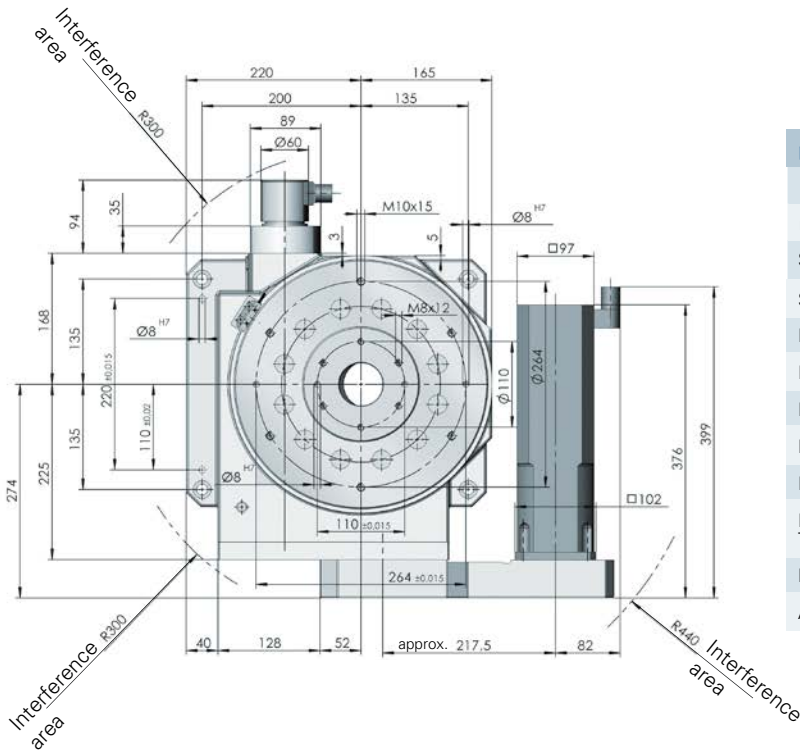


# NC 320T Dimensions

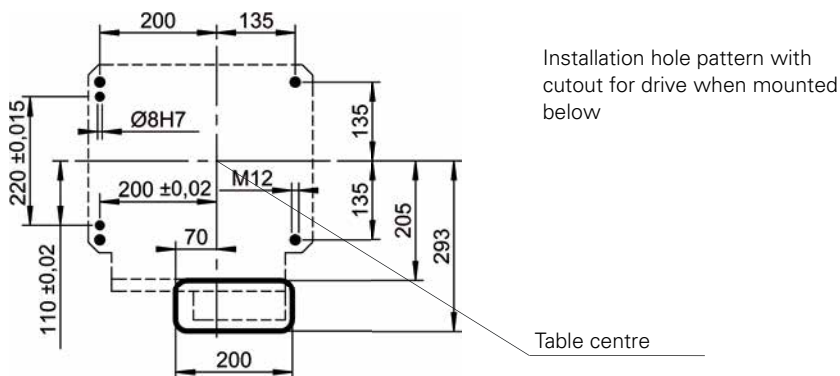


**Note:**  
The motor must be accessible for servicing!  
Please leave the necessary space for motor plug and cable outlet.

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

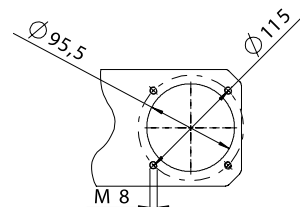


producer	motor description
B&R (WEISS standard)	8MSA4X.R0-V7
recommended third party motors	
SEW	CFM71M-4500
Siemens (1FK7)	1FK7060-5AH71
Bosch-Rexroth	MSK60C-0600-NN-S1-UP1-NNNN
Rockwell	MPL-B420P-Mxx4AA
Beckhoff	AM3052-1K01
Mitsubishi	HC-SFS153B
ParkerHauser	SMHA115 56 10 8 19 21 65 A7 4
BergerLahr/Schneider/Telemechanique	BSH1004P31F2A
FANUC	α iF8/3000
ABB	SDM 261-010N0-110/40-6070



Installation hole pattern with cutout for drive when mounted below

Motor flange (view from the motor side)



# WAS – WEISS Application Software

Start - Simple - Safe - Fast

### Communication in the language of your choice:

The simple to use hand-held device displays clear text messaging allowing for a quick start-up and trouble free operation.

### Ready for production in just 3 minutes:

1. Connect control system with handheld device
2. Select language
3. Enter load mass moment of inertia
4. Enter step angle
5. Adjust speeds or ramps

### User-friendly operating programs

In addition to the basic functions of the handheld device, the WAS – WEISS Application Software also gives you easy access to the various options offered by the table drive. The Windows PC for visualisation is connected via RS232 or Ethernet via the control system.

### Safety and service

- Absolute-value measuring system
- Safe Torque off (SIL 2, PL "d")
- Worldwide service / C-UL-US listed
- Comprehensive safety and monitoring functions
- 

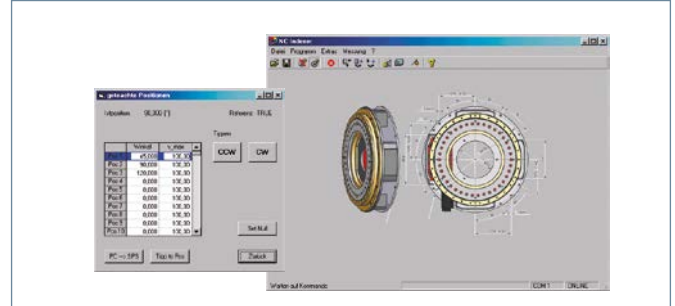
### Communication

The following interfaces are available:

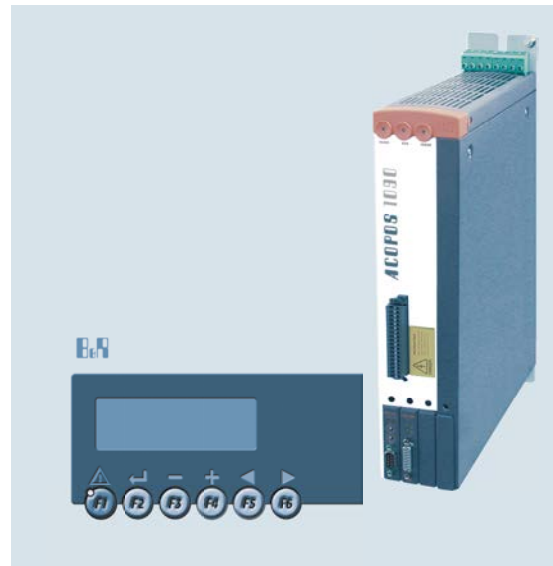
- Digitale I/O (24V inputs and outputs)
- Profibus-DP
- DeviceNet-CAN (tested at Rockwell control)
- EtherNet/IP (tested at Rockwell control)
- Modbus TCP (tested at Telemecanique control)
- Ethernet
- CAN Bus
- Free ASCII protocol

### Design and connection

- All components integrated with plug-in connections
- Cables oil-resistant and cable-chain compatible  
Cables available in various lengths (5, 10, 15, 20, 25 m)



Uniform operator concept for all servomechanical WEISS products.



### Software

- Up to 128 teachable positions
- Up to 10 drive programmes can be stored
- Simple access to all axis parameters
- Software cam can be defined
- Diagnosis options and remote maintenance
- Inputs and outputs can be forced (e.g. for start-up)
- Fault history
- Free choice of language (German, English, French)

Technical data	NC 150T	NC 220T	NC 320T
Main power voltage:	400...480 VAC ± 10%; 48...62 Hz	400...480 VAC ± 10%; 48...62 Hz	400...480 VAC ± 10%; 48...62 Hz
Power voltage 24V:	24 VDC ± 5%; 2.5 A	24 VDC ± 5%; 2.5 A	24 VDC ± 5%; 2.5 A
Connection power:	3 kVA	5 kVA	10 kVA
Installation dimensions WxDxH:	70.5 x 375 x 236 mm	70.5 x 375 x 236 mm	70.5 x 375 x 236 mm



# Machine Dimensioning NC-T

- Enquiry     Enclosure with order

Dear Customer,

Thank you for your interest in our NC rotary indexing 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

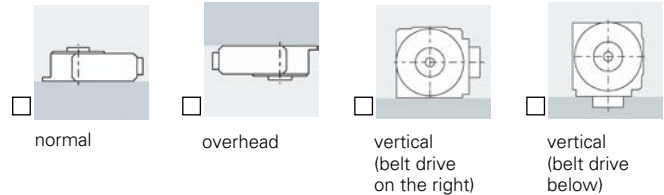
Based on the calculated mass inertia, do you require:

- The shortest switching time  
 A longer switching time of approx. \_\_\_\_\_ sec  
 Angle of rotation \_\_\_\_\_ °  
 Standing time \_\_\_\_\_ sec

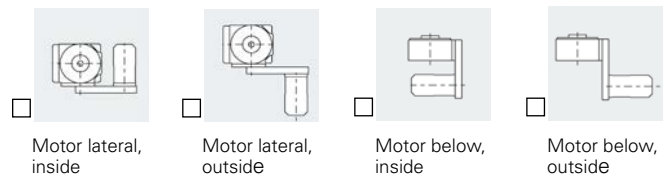
## Colour

- RAL 7035 (light grey)  
 Special colour RAL \_\_\_\_\_ (extra charge)

## Permissible mounting positions



## Position of the drive motor



## Required to specify your NC table

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

### Additional indexing plate

Diameter: \_\_\_\_\_ mm  
 Thickness: \_\_\_\_\_ mm  
 Material     Al                       St                       other

Please draw a sketch of how your load is build on the table.  
 Total mass inertia \_\_\_\_\_ kg m<sup>2</sup>  
 (additional indexing plate and add-ons)

### Workpiece and fixtures

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

## Additional indexing plate

Included in the scope of offer and delivery                      Processing according to drawing No. \_\_\_\_\_

## WEISS control system package

Servo motor, amplifier, WAS Software  
 Cables length:  5 m     10 m     15 m     20 m     25 m  
 Hand-held terminal (optional)

### Interface to the customer SPS

- Ethernet                       Profibus-DP  
 digitale I/O                       CAN Bus  
 Free ASCII protocol                       DeviceNet-CAN (Rockwell)  
 EtherNet/IP (Rockwell)     Modbus TCP (Telemecanique)

## Interface to WAS – 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: \_\_\_\_\_  
 eMail: \_\_\_\_\_

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