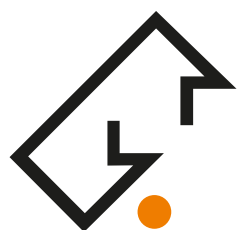


# Precision Dividing Units **RWNC**



WERKZEUGSYSTEME  
MÜLLER GMBH  
**HOFMANN**  
MESS- UND TEILTECHNIK



# Positioning CNC-controlled **Single-Axis NC-Dividing Units RWNC**

## MAIN CHARACTERISTICS

### Excellent Performance and Accuracy Datas

- High indexing spindle speed for minimized non productive times
- High load capacity for the treatment of heavy workpieces
- Extensive automation features
- Exceptionally exact geometry datas within the  $\mu$ -range
- Dividing accuracy up to the range of one tenth of a second of arc



### Surface coated gear box

- High corrosion resistance
- Durability and high availability
- Function and appearance remain over years



### Solid motor cover made of stainless steel

- With internal fixing
- Much more solid in comparison to motor covers made of other materials
- Sealed design by sealing on the planar side



### Sunked and flushed covers and closures on the gear box

- Appealing appearance
- Uninterrupted flow of chips and coolants
- No ingoing gaps



### Attractive Design

- Suitable to current machines of well known manufacturers

## ADVANTAGES

CNC-dividing units from the Hofmann RWNC-series are especially characterised by a reliable, robust and solid design. The customer gets a reliable and individual solution according to the particular application in combination with extraordinary high accuracy values.

The eccentric adjustable worm gear consists of a case hardened worm shaft and a worm wheel made of an extraordinary wear resistant bronze alloy.

A significant low current consumption in comparison to torque drives will be achieved by a low friction and a low backlash run in combination with a high performance lubricant.

The sophisticated design ensures a failure free operation at every time for years and gives hereby an important input for the efficiency of your company.





## AT A GLANCE

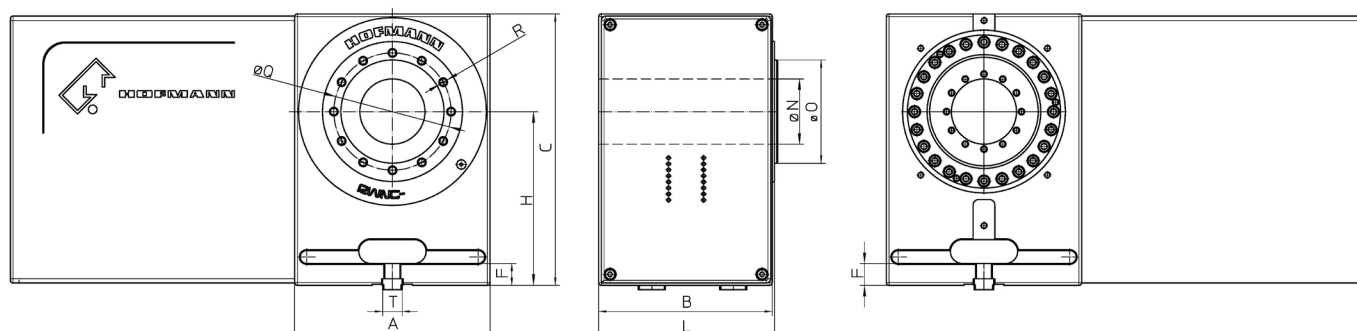
- Highest precision by manufacture and quality control in our own company
- Low energy consumption in comparison to torque drives
- High rigidity by heavy duty axial-/radial ball bearings and worm drive with big diameter
- Eight different design sizes available
- Backlash of worm drive easily adjustable
- Wide variety of motor installations
- Wide range of accessories available
- Attractive price-performance ratio
- Easy to service
- Special designs for customer specific applications easy realizable (see right image)
- Compact construction
- Matured construction
- Long lasting and modular extendible
- Fast customer service





# Positioning CNC-controlled Single-Axis NC-Dividing Units RWNC

## TECHNICAL DATA



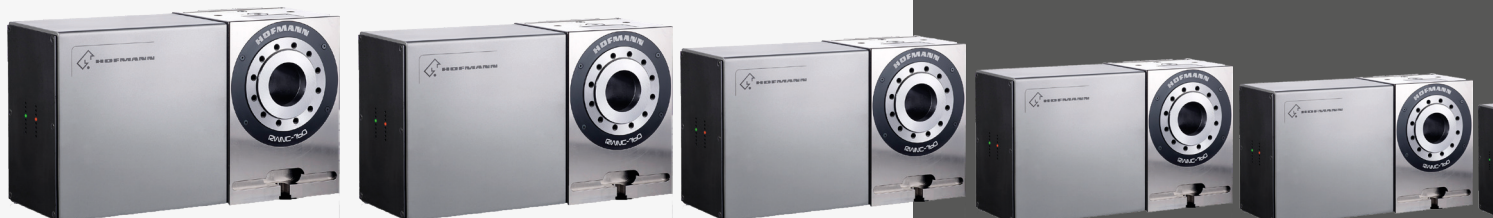
Type/centre height	(mm)	75	100	125	160	220	300	380	400
A	(mm)	70	90	120	180	260	430	520	600
B	(mm)	100	130	145	160	195	210	270	300
C	(mm)	110	145	185	250	350	510	640	700
F	(mm)	16	20	20	20	20	40	40	40
H	(mm)	75	100	125	160	220	300	380	400
L (spindle system)	(mm)	102	132	147	162	197	217	280	310
N	(mm)	18	17	30	60	80	150	200	320
O h6	(mm)	30	40	60	95	160	410	480	540
Q	(mm)	40	52	76	108	190	320	380	450
R	(mm)	4 x M5	4 x M8	4 x M8	12 x M8	12 x M10	12 x M12	12 x M16	12 x M16
T h6	(mm)	according to customers request							
Weight	(kg)	6	12	30	60	125	300	540	800

## SIZES

An almost full and complete range of individual customer wishes will be covered by our modular design, which offers a large variability by currently eight different sizes and a wide range of different motor mounting variations.

## DESIGNS

Individual solution for every application:



## Accuracies

Type/centre height	(mm)	75	100	125	160	220	300	380	400
Indexing accuracy (standard) indirect position feedback	(sec)	± 45	± 45	± 20	± 15	± 10	± 10	± 10	± 10
direct position with RCN 2xx / bearing	(sec)	-	± 5	± 5	± 5	± 5	± 5	± 5	± 5
direct position with RCN 25xx / 55xx	(sec)	-	± 2.5	± 2.5	± 2.5	± 2.5	± 2.5	± 2.5	-
direct position with RCN 83xx / 85xx	(sec)	-	± 1.5	± 1.5	± 1	± 1	± 1	± 1	-
Circular runout of internal and external spindle taper	(mm)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Axial runout of indexing spindle face	(mm)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

## Load and performance data

Type/centre height	(mm)	75	100	125	160	220	300	380	400
Reduction ratio worm gear	(i)	45:1	45:1	60:1	90:1	90:1	90:1	120:1	120:1
Spindle speed at indexing operation	(U/min)	135	135	50	35	35	35	17	17
Load capacity with vertical indexing spindle	(kg)	45	180	340	750	1,200	3,500	5,000	8,000
Load capacity with horizontal indexing spindle	(kg)	25	45	95	200	320	650	1,000	1,500
Load capacity with horizontal indexing spindle and tailstock	(kg)	40	80	170	400	900	2,000	3,000	4,000
Load capacity with horizontal indexing spindle and support	(kg)	-	-	340	800	1,800	4,000	6,000	8,000
Maximum axial forces	(kN)	3	17	24	45	55	75	95	120
Maximum workpiece torque	(Nm)	150	500	1,000	3,000	6,000	10,000	14,000	18,000
Clamping moment at 160 bar	(Nm)	120	250	750	1,400	3,000	7,500	15,000	28,000

- Centre heights:  
75, 100, 125, 160, 220, 300, 380, 400 (mm)
- Indirect measurement systems
- Direct measurement systems for increased indexing accuracy
- Mounting of all motor types according to customers request
- Increased circular or axial runouts
- multi-spindle versions

- Installation of rotary distributor for hydraulic or pneumatic possible 2-, 4-, 6-fold
- different versions of indexing spindle:
  - Cylindrical bore (standard)
  - Morse taper MT
  - Short taper ST
  - Steep taper
  - Hollow shaft cone HSK
  - Customer spindle solutions





# Positioning CNC-controlled **Single-Axis NC-Dividing Units RWNC**

## ACCESSORIES

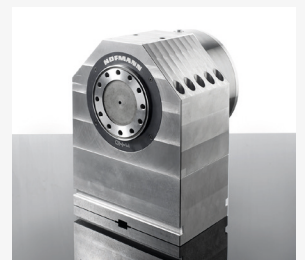
### Tailstocks

- For a safe support and a low vibration fixture of long workpieces
- Manual, pneumatic or hydraulic operation
- Centre heights according to customers request
- Different sizes and taper fixtures available



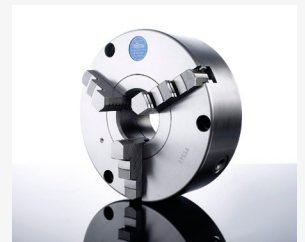
### Supports

- Designed for the fixation of clamping bridges or similar clamping devices
- Available without clamping or with clamping 400 Nm, 1,000 Nm, 2,000 Nm
- Different sizes and centre heights available
- Diverse special models



### Three and four jaw chucks (manual and hydraulic)

- Precision chucks of renowned manufacturers for accurate and powerful clamping of very different workpieces
- Automatic workpiece clamping via hydraulic cylinder realisable



### Face plates

available in various diameters and versions:

- Easy and safe clamping of workpieces
- Special versions for every diameter available



### Controls

- Control of the dividing unit via M-function of the machine by independent CNC-control
- Independent CNC-control for the drive
- No preparation on the side of the machine necessary, for the operation of a 4th axis
- Interface and wiring complete and ready for operation for the connection to the machine control



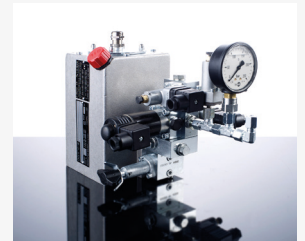
### Interfaces | Power supply

- Large selection of standard interfaces/power supplies for machines of many renowned manufacturers available
- Individual and flexible design of interface/power supply



## Hydraulic units | pressure converters

- Unit to be installed independently and externally, for the supply of the dividing unit with hydraulic pressure
- Integrated pressure converters



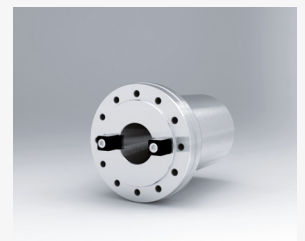
## Collet chucks

- Allowing high precision and centric clamping of turned parts and semifinished products
- Assembly of different collet chuck manufacturers like Hainbuch, Ortlieb a. s. o.
- Possibilities for automation on request



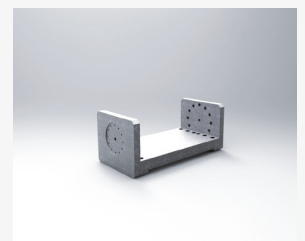
## Spindle holders

- Standardised spindle holders for flexible and automated workpiece fixture, e. g. ST, HSK, MT
- Circular runout within the  $\mu$ -range



## Clamping bridges

- Various flanges for dividing unit and support available
- Set of Kipp clamping bridges in various versions available:
  - Cube with or without bore pattern
  - Swing with or without bore pattern
  - Zero point clamping systems



Further accessories available upon request.



## Motors

- Mounting of servo motors from a wide variety of manufacturers (Siemens, Heidenhain, Fanuc, Mitsubishi, Indramat) by versatile adapter system realizable
- Mounting variant (motor mounting straight, toothed belt drive, angle gear box) will be adapted to the conditions inside of the machine housing and the requirements of the customer



## Direct Heidenhain measurement systems

- In case of high demands on indexing accuracy
- Indexing accuracy up to  $\pm 1,5''$



# Positioning CNC-controlled **Single-Axis NC-Dividing Units RWNC**

Long workpieces with large diameters can be machined through the use of the

## **RWNC-400**

as an additional axis on machining centers of different manufacturers.

A special feature of this dividing unit is the spindle bore with a diameter of either 320 mm or 360 mm through which the workpieces can be pushed through.

Dividing units with this size have usually spindle bores with a maximum bore diameter of 200 mm. This was made possible by a new design of the dividing spindle and housing, as well as a specially developed hydraulic clamping device for this unit.



Drilling Technology

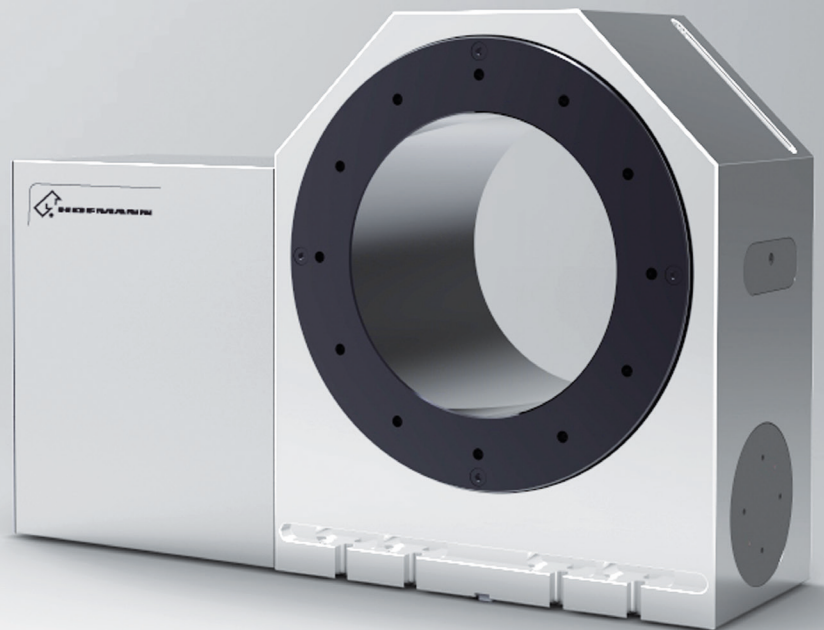


Oil Industry



Mining

Therefore the RWNC-400 is especially appropriate to manufacturers of drilling technology, for the oil industry and mining.



## **SPECIAL CHARACTERS**

- Extremely wide spindle bore with a diameter of either 320 mm or 360 mm
- Machining of long workpieces through the spindle bore is possible
- High clamping moment of 28,000 Nm
- Centre height of 400 mm
- Surface coated gear box for high corrosion resistance
- Solid motor cover made of stainless steel with internal fixing
- Sunked and flushed covers and closures on the gear box





## MULTI-SPINDLE DIVIDING UNITS

are available with 2, 3, 4, 5 and 6 indexing spindles. Centre heights and axis distances are adaptable according to customers requirements.

Depending on the axes distance, the indexing spindles are in a common housing or several one axes dividing units will be coupled on a base plate.



The multi-spindle dividing units correspond in construction the single-spindle RWNC-series.



# Positioning CNC-controlled Customer and Special Solutions



The Hofmann product segment when it comes to automation, cost savings and large quantities in your production.

With the extension of a HOFMANN additional axis from the product segment customer and special solutions, productivity of machining centers from different manufacturers can be increased efficiently.

The close dialogue with the customer is most important at the Hofmann customer and special solutions product segment in order to obtain the optimum solution for the respective application. Special features such as special mountings of the servomotor, connections to machine-side power supply or number and design of the workpiece holders are defined and implemented in close contact with the customer. In contrast to specified modular systems, there are virtually no limitation in design and construction.

## SPECIAL FEATURES

- Design of a Hofmann special solution will be done in close dialogue with the customer
- Almost no limitation in design and construction
- Solid and rigid construction to achieve high cutting data
- Use of proven and reliable components from the standard Hofmann dividing units

## PURPOSE/APPLICATIONS

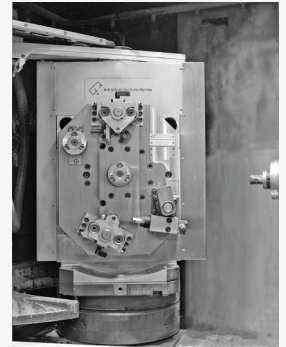
- Production of large quantities
- Saving of set up- and tool change times
- Use on special machines
- Processing outside of defined standard solutions
- Retrofitting, flexibility and improved performance of existing machine concepts



## Examples

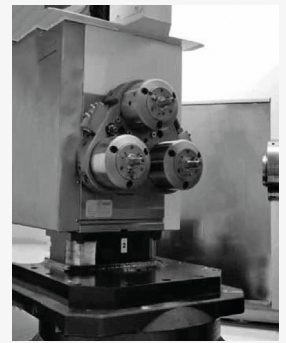
### HOFMANN RWNC-300 LD-Additional Axis

- In machine's work envelope the first workpiece is processing in the first device. Upon completion the dividing unit swivels 180 degrees for machining the second workpiece in the device on the back of the unit.
- On the front and back you always can install a workpiece clamping provided by customer.
- On the setting station both workpieces will be clamped onto the device in front as well as at the back of the dividing unit.



### RWNC-220 in Special Design

- Indexing spindle in double-sided design for taking up two hydraulic clamping devices at the front and back of the dividing unit.
- Dimensions of housing will be modified to the restricted space conditions.
- Hydraulic pressure supplies by hydraulic connection element central through the palette and the base area of the dividing unit.
- Installation of the servo motor to the dividing unit in consideration of the space conditions in the machine's work envelope.
- Indexing spindle with short taper and hole pattern according to customer specification for taking up the hydraulic clamping device.

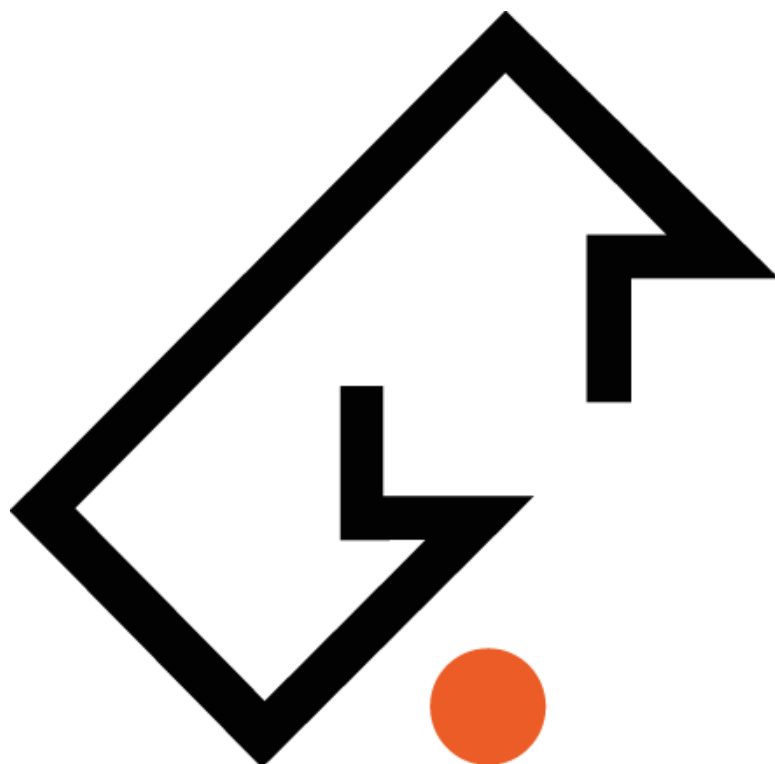


### RWNC-160/6 Additional Axis with six spindles for a machining center

- Clamping of six workpieces, be processed in a row with one tool in the same work operation
- Multi-sided machining in one set-up. It is no longer necessary to repeatedly relocate the workpiece.
- Setup in fast and simple way.



For special use cases when standard dividing units cannot be used or reach their limits, we develop special solutions - customized in accordance to your tasks and machine technology.



**Werkzeugsysteme Müller GmbH**  
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