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TRAUB TNX200.3

Tool holder Technical Information

Note on applicability

Illustrations in this publication may deviate from the product supplied. Errors and omissions due to technical progress expected.

A word on copyright

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Tool holder selection

For more information, please visit our iXshop at ixshop.ixworld.com

We will be happy to send you an individual offer.
Just call us at +49 711 3191-9854 or
send us an email to werkzeughalter@index-werke.de.

Warranty

When using tool holders that are not adjusted, tested and marked as such by INDEX, the warranty for the tool drive is void.

Information on wear parts

Tool holders are wear parts requiring correct handling.
In order to ensure a long service life, compressed air or coolant must not enter the gap seals of the holders.

Inspection of live tool holders

Tool holders must be inspected at regular intervals (at least twice a year) for smooth running and play.

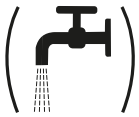
The drive pinion and drive clutch of the live tool holders must be subjected to a visual inspection for damage or wear.

If one of the above-mentioned defects is detected during the inspection of the tool holders, they must be returned immediately for preventive maintenance or repair to the following address:

INDEX-Werke GmbH & Co. KG
Plochinger Straße 92
D-73730 Esslingen
Fon +49 711 3191-554
werkzeughalter@index-werke.de

Tool holders with cooling lubricant supply

Tool holders marked with this symbol must be operated with cooling lubricant (no dry running permitted).

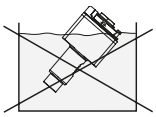


Tool holders marked with this symbol can be converted from external cooling lubricant supply to internal cooling lubricant supply.
Observe dry running capability of IC attachment!

Cooling lubricant filtering

When using live tool holders with internal cooling lubricant supply, it is necessary to use a cooling lubricant filter system with a retained particle size ≤ 50 µm.

Cleaning live tool holders



Live tool holders must never be immersed in cleaning fluid since mixing the cleaning fluid with the bearing grease will reduce the service life of the tool holders.

Speed ratio specifications on tool holders

The value to be programmed is specified in the documentation and on the live tool holders (= the input in the NC program).

$n_{prog} = n_{Tool} \times i$

n_{Tool} = speed at the cutting tool edge

n_{PROG} = speed to be programmed

i = speed ratio in the tool holder

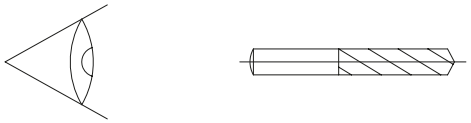
This means the speed increase or speed reduction is not specified as a fraction but as **a number**.

This gives speed **increase** ratios as numbers **less than 1**.
Example: i = 0.333 (corresponds to i = 1:3)
i = 0.676 (corresponds to i = 1:1.48)

Speed reduction ratios are numbers greater than 1.
Example: i = 2 (corresponds to i = 2:1)
i = 1.333 (corresponds to i = 4:3)

Direction of rotation specification

Definition of the viewing direction.
Viewing direction for determining the direction of rotation is always from behind (that is, from the drive direction) toward the shaft.



On the machine side, the direction of rotation has been set by parameters such that M03 always denotes clockwise rotation and M04 counter-clockwise rotation at the interface of the drive pinion of the tool holder.

The direction of rotation given on the holder therefore refers to a "change in direction within the holder". M03 and M04 are machine functions to be programmed.
The ↷ and ↶ arrows indicate the direction of rotation of the cutting edges.

This means:

↷ M03 ↶ M04

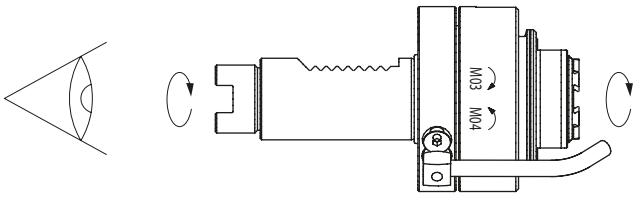
No reversal of direction of rotation
When the holder drive shaft has the **same** direction of rotation as the tool cutting edge, the clockwise direction of run must be specified by M03 (clockwise rotation). Accordingly, counter-clockwise rotation must be specified by M04.

↷ M04 ↶ M03

Reversal of direction of rotation
When the holder drive shaft has the **opposite** direction of rotation as the tool cutting edge, the clockwise direction of rotation must be specified by M04.
Accordingly, counter-clockwise rotation must be specified by M03.

Example

No reversal of direction of rotation



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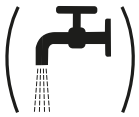

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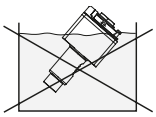

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Tool holders with fixation

Except for very few cases, all tool holders have been pre-adjusted with high precision and sealed with the INDEX V bar / TRAUB adjusting bar/ W-serration.
This setting must not be changed.

The INDEX V bar / TRAUB adjusting bar / W-serration ensures positional accuracy of the tool when re-inserted.

The tool holders are fixed around the shank axis by pins (DIN 69880).

DIN holders can be used.

Double serration of the tool holders allows several uses.

High-pressure unit

The cooling lubricant up to 80 bar (e.g., for deep-hole drilling) is supplied through the standard cooling lubricant line.

Load limits of live tools

The drive power and torques are indicated in the performance charts. These values represent the upper limit of the calculated theoretical performance values (average values). In case of interrupted cuts, e.g., for milling, the load peaks occurring when the cutting edge enters the material may be much higher than the theoretical torque according to the performance chart.

The cutter should be selected so that a cutting edge is constantly being used for cutting during the machining process.

Live tool holders

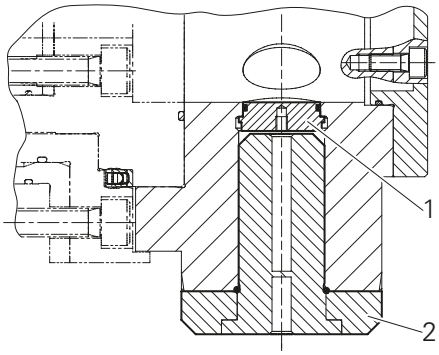
Only the tool located in the working position is live.

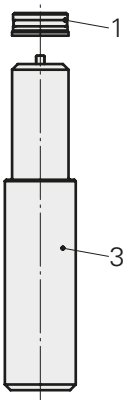
The live tool holders are inserted into the mounting bores in the tool carriers just like non-live tool holders.

Each turret station can accept one live tool.

The motor drives the tool that is exclusively in working position. In addition, the index drive is actuated by switching using the same motor.

The sealing washer (1) must be removed first.





Tool carrier VDI25 with 15 stations

1	Sealing washer	10276629
2	Blanking plug	11046612
3	Mounting pin	10010523

Tool carrier VDI30 with 12 stations

1	Sealing washer	10346973
2	Blanking plug	10286000
3	Mounting pin	10066228

Before using the machine, make sure that all mounting bores without a tool have been closed with a sealing washer and that the gasket on all tool holders is not damaged.

Any mounting bores not used must be closed with blanking plugs during machining processes.

Weight distribution on turret head

Tool holders may have considerably different weights depending on their function and equipment. Therefore, be sure to balance the tool holders evenly around the turret head when tooling.

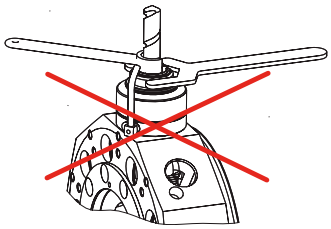
Collision

After a collision has occurred, check whether the tool carrier has been displaced. If this is the case, the tool carrier must be realigned to ensure that the drive and tool holder gears accurately engage with each other.

Tool change on live tool holders

To avoid damaging or changing the adjustment of the drive train in the turret, tools must **not** be changed on the live tool holders inserted in the turret.

Tools in live tool holders must be changed outside the machine.



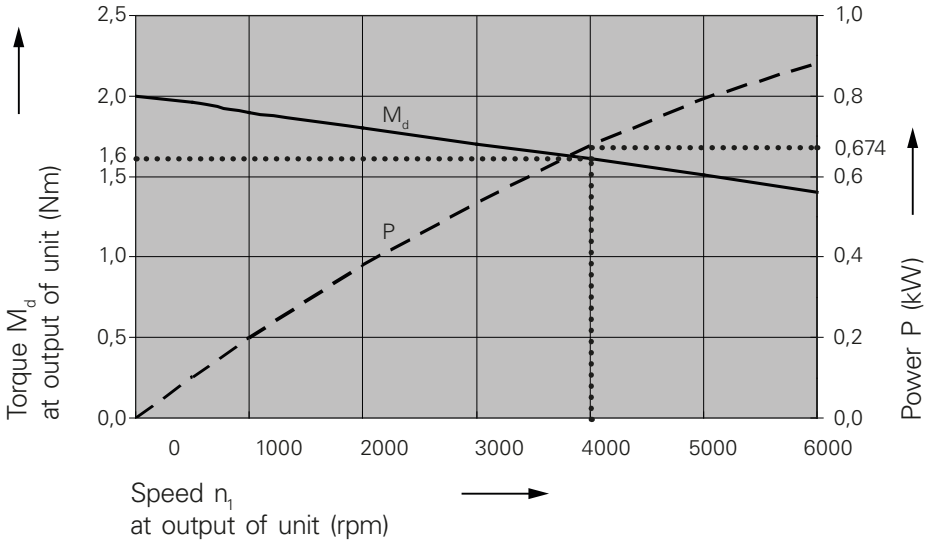
Notes on how to use the diagram when using tool holders

The diagram relates to the output speed **n** of the tool unit. The tool speed can be read directly from the diagram only if the internal speed ratio **i** in the tool holder is 1:1.

For tool holders with an internal speed ratio i ≠ 1, the output speed **n** of the tool unit to be programmed must be calculated from the required tool speed and the speed ratio i. Afterwards, the actual powers or torques can be read off or determined.

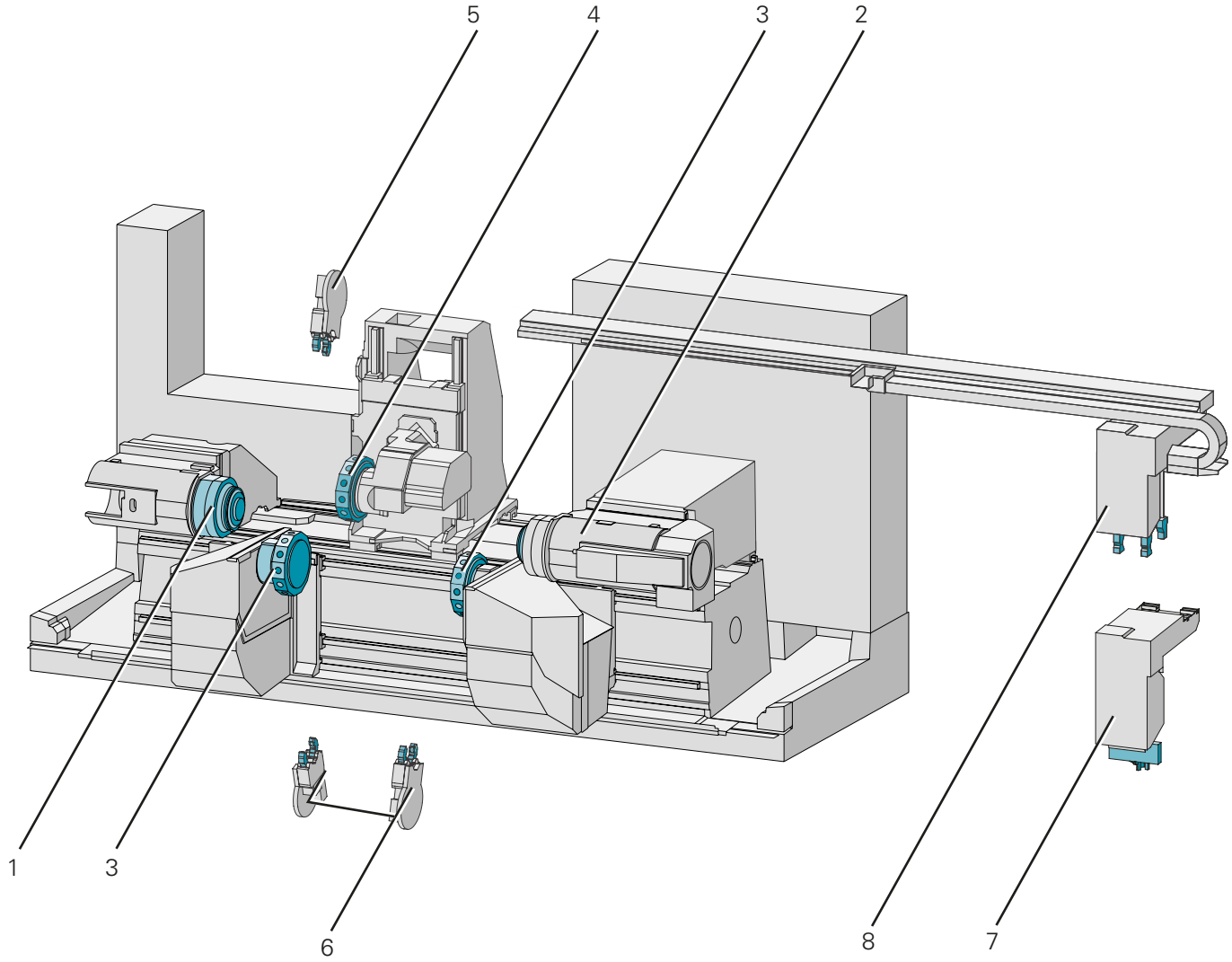
Example (at 100% duty cycle):

live tool unit, tool speed n_{Tool} = 1000 rpm	
Internal speed ratio i of the tool holder	i = 4
Programmed speed n_{prog} for the drive of the unit	$n_{prog} = n_{Tool} * i = 1000 \text{ rpm} * 4 = 4000 \text{ rpm}$
Torque M_{Tool} at the output of the tool holder	Read-out M_d at speed n_{prog} = 4000 rpm = 1.6 Nm $M_d = M_{Tool}$: i Formula changed: $M_{Tool} = M_d * i = 1.6 \text{ Nm} * 4 = 6.4 \text{ Nm}$
Power P at the output of the tool holder ≈ Power P at the output of the setup	Read-out at 4000 rpm –> P = 0.67 kW calculated: $P = 2 * \pi * n_{prog} * M_d$ $P = \frac{2 * \pi \times 4000 * 1.6 \text{ Nm}}{60 * 1000} = 0.67 \text{ kW}$



The transmission ratio and the technical data of each tool holder are available in our iXshop at ixshop.ixworld.com

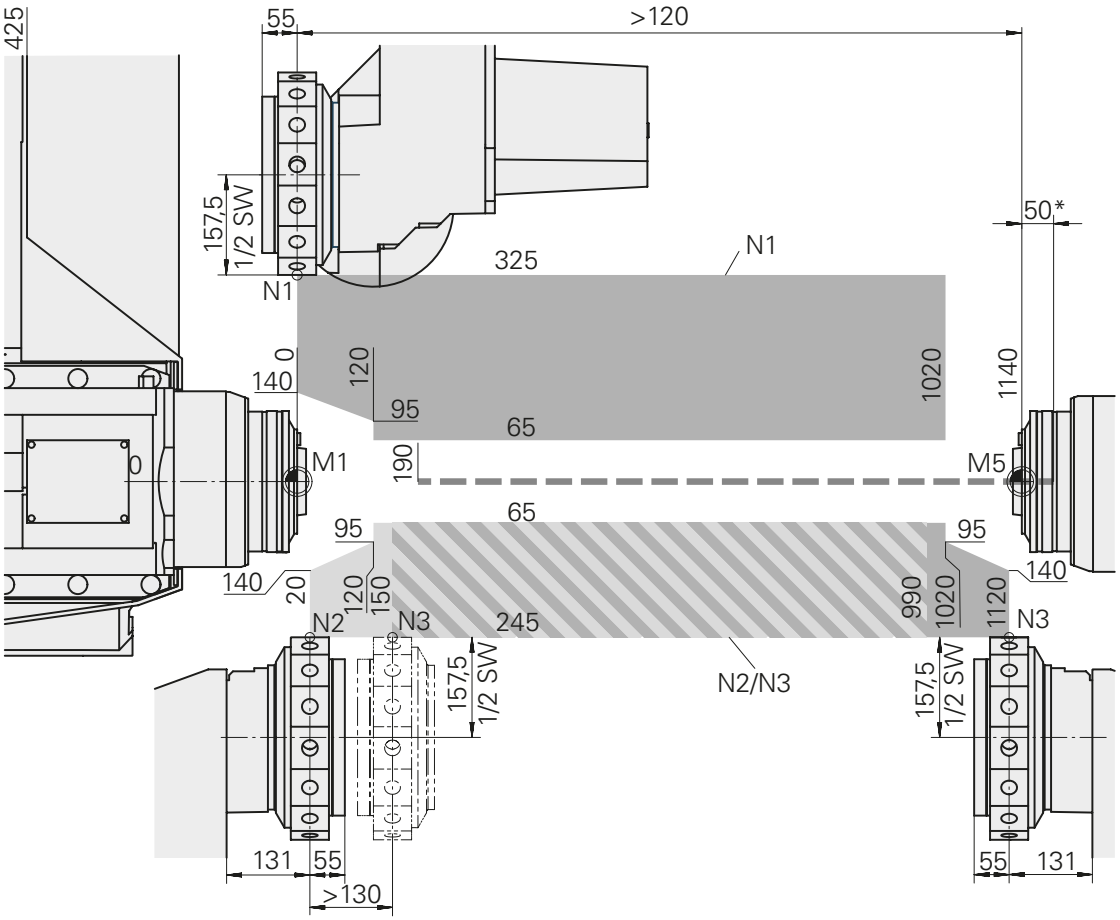
Modular system TRAUB TNX200.3



1 Main spindle D76
2 Counter spindle D76
3 Lower tool carrier VDI25 - XZY
Lower tool carrier VDI30 XZY
Lower tool carrier VDI30 - XZY with TRAUB gib
4 Upper tool carrier VDI25 - XZY
Upper tool carrier VDI30 - XZY
Upper tool carrier VDI30 - XZY with TRAUB gib
5 Upper turret steady rest (optional)
6 Lower turret steady rest (optional)
7 Shaft type workpiece handling unit (optional)
8 Flange type workpiece handling unit (optional)

Work area TRAUB TNX200.3

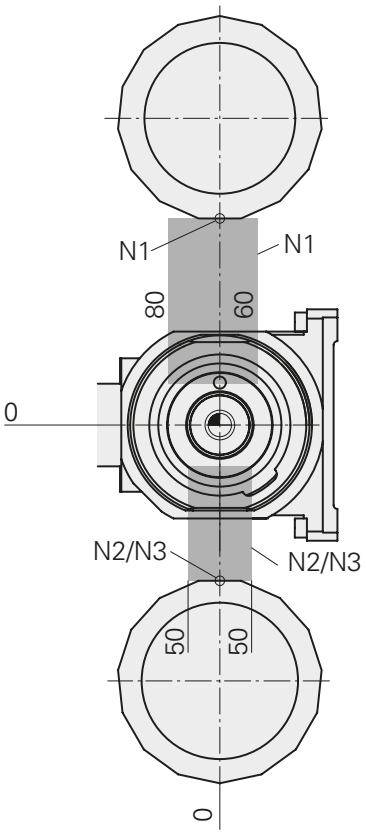
Upper tool carrier XZY, VDI25
Lower left and right tool carriers XZY, VDI25
Main/counter spindle, spindle clearance D76mm



* = clearing travel

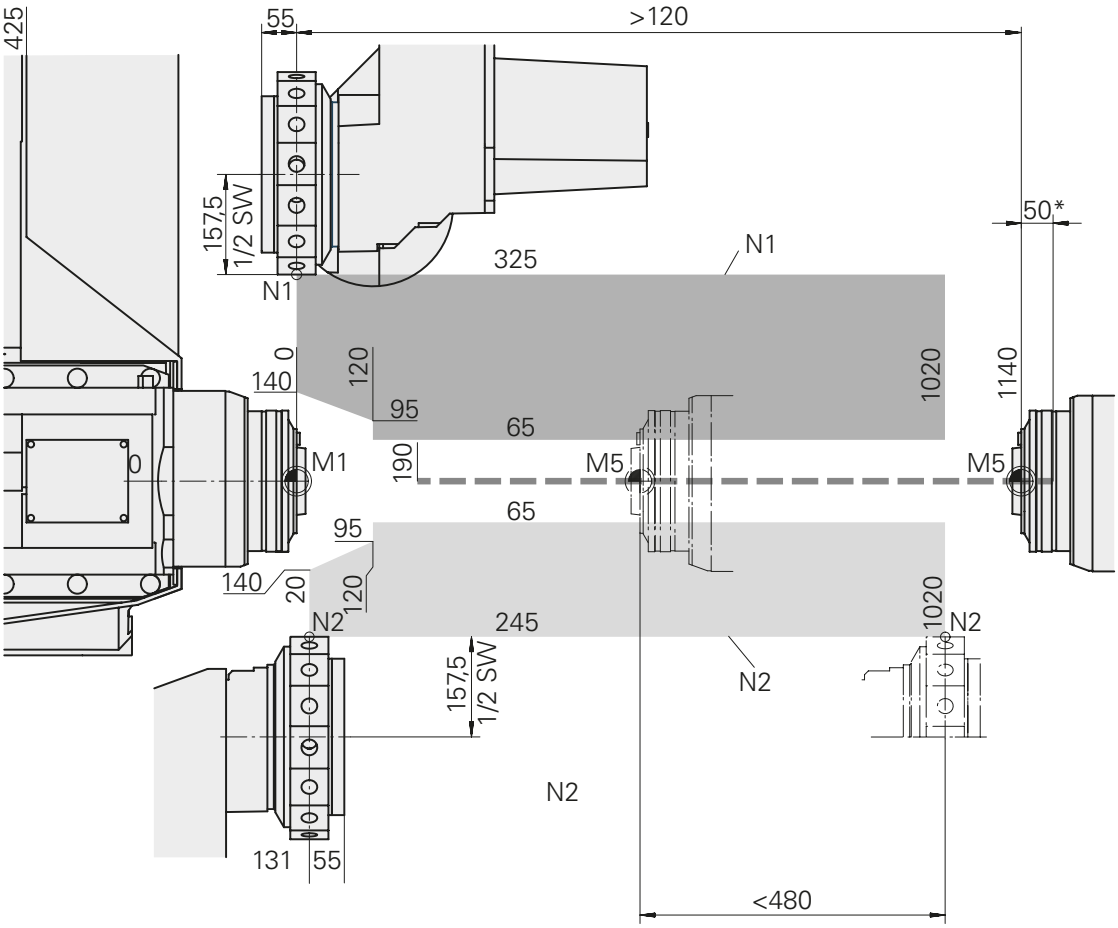
Work area TRAUB TNX200.3

Upper tool carrier XZY, VDI25
Lower left and right tool carriers XZY, VDI25
Main/counter spindle, spindle clearance D76mm



Work area TRAUB TNX200.3

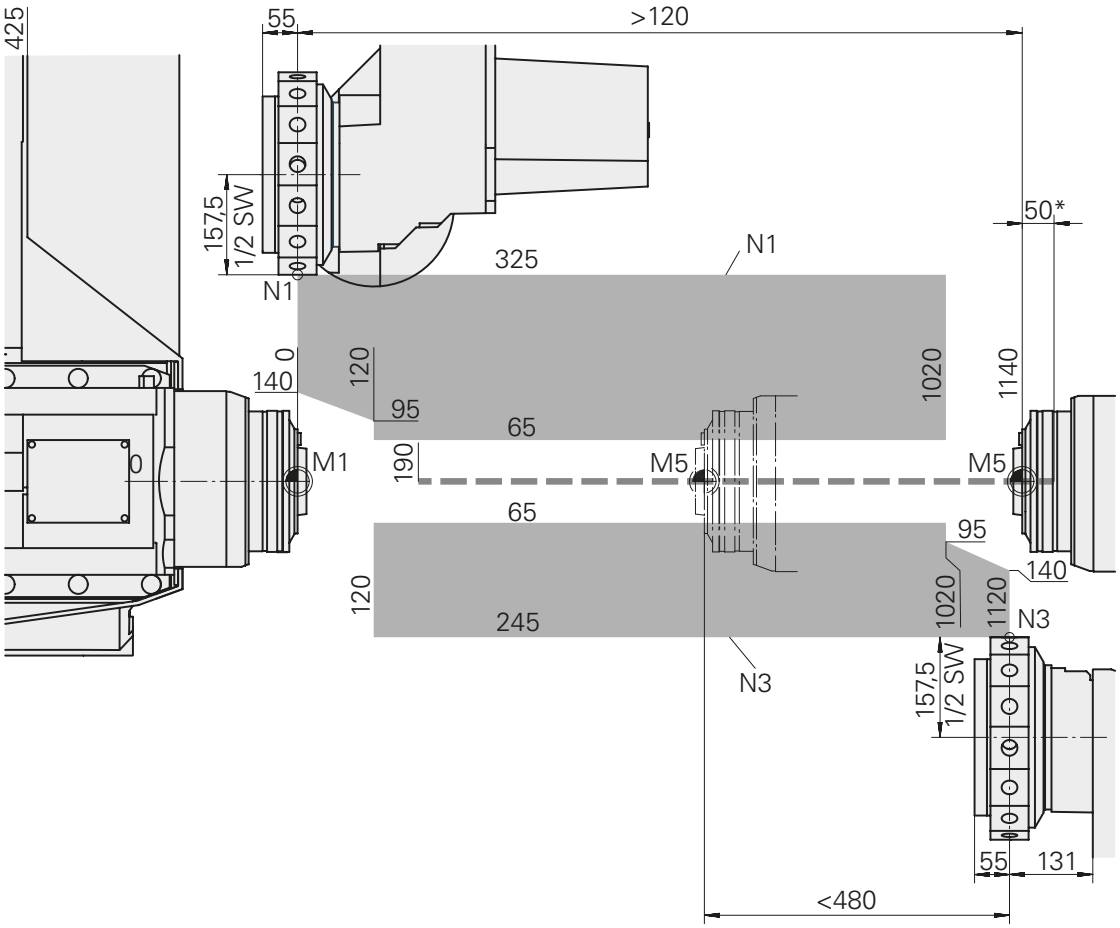
Upper tool carrier XZY, VDI25
Lower left tool carrier XZY, VDI25
Main/counter spindle, spindle clearance D76mm



* = clearing travel

Work area TRAUB TNX200.3

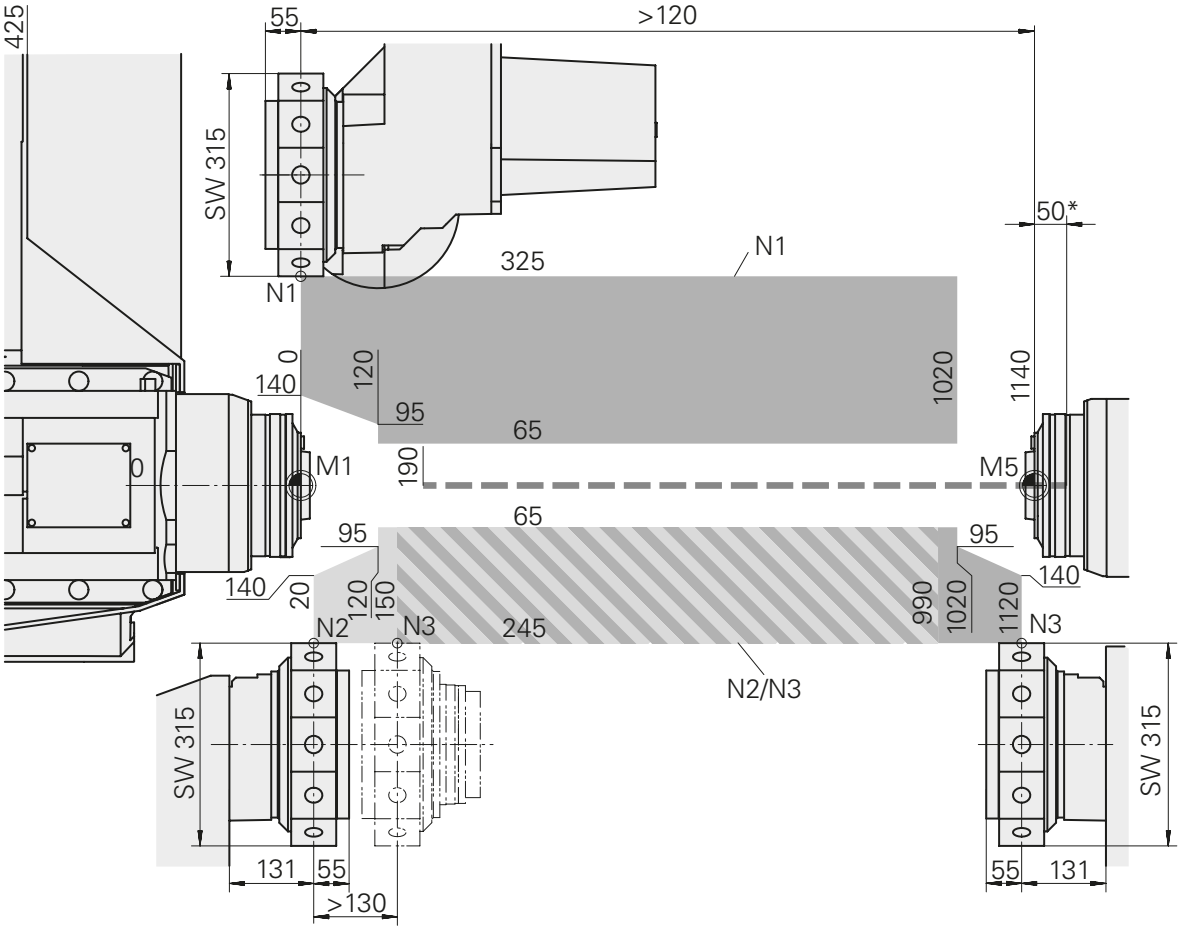
Upper tool carrier XZY, VDI25
Lower right tool carrier XZY, VDI25
Main/counter spindle, spindle clearance D76mm



* = clearing travel

Work area TRAUB TNX200.3

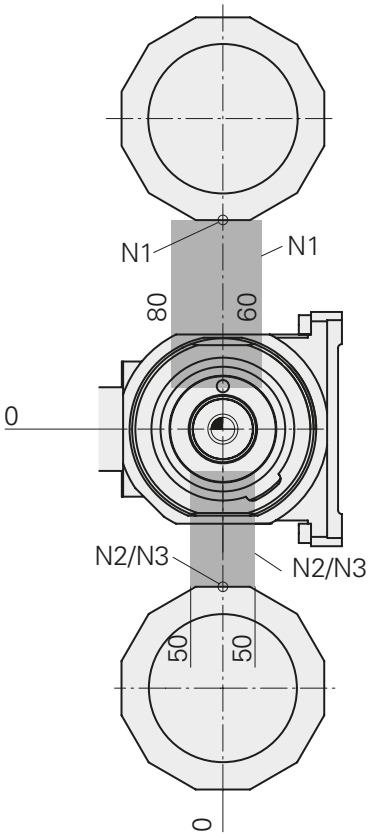
Upper tool carrier XZY, VDI30
Lower left and right tool carriers XZY, VDI30
Main/counter spindle, spindle clearance D76mm



* = clearing travel

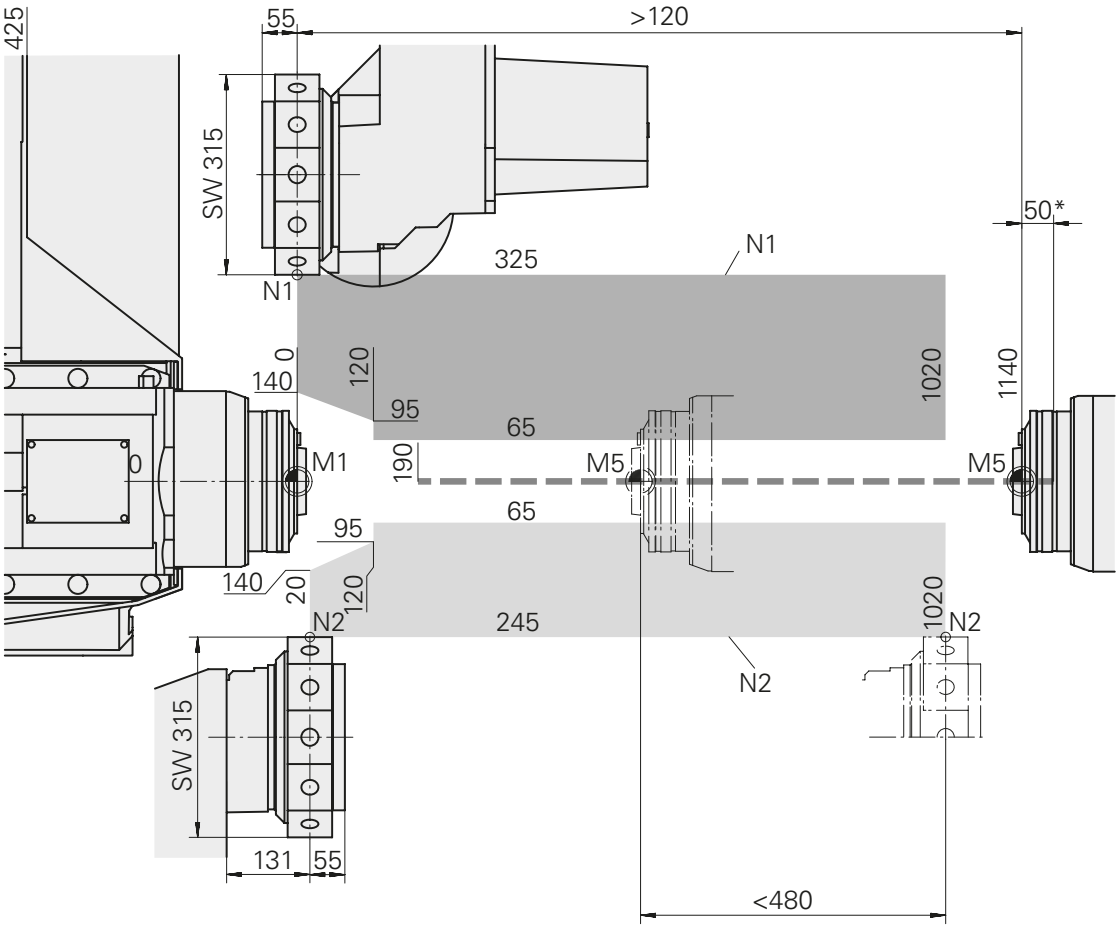
Work area TRAUB TNX200.3

Upper tool carrier XZY, VDI30
Lower left and right tool carriers XZY, VDI30
Main/counter spindle, spindle clearance D76mm



Work area TRAUB TNX200.3

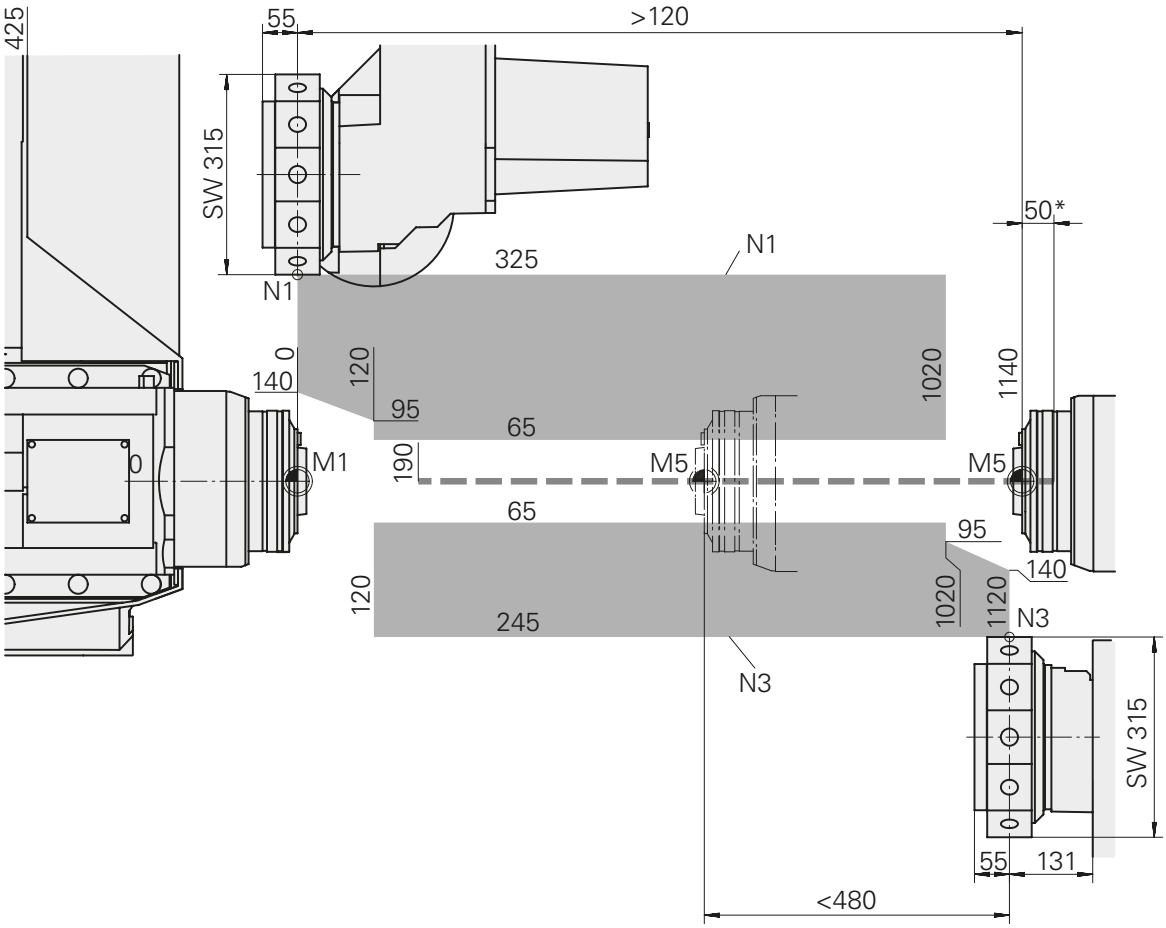
Upper tool carrier XZY, VDI30
Lower left tool carrier XZY, VDI30
Main/counter spindle, spindle clearance D76mm



* = clearing travel

Work area TRAUB TNX200.3

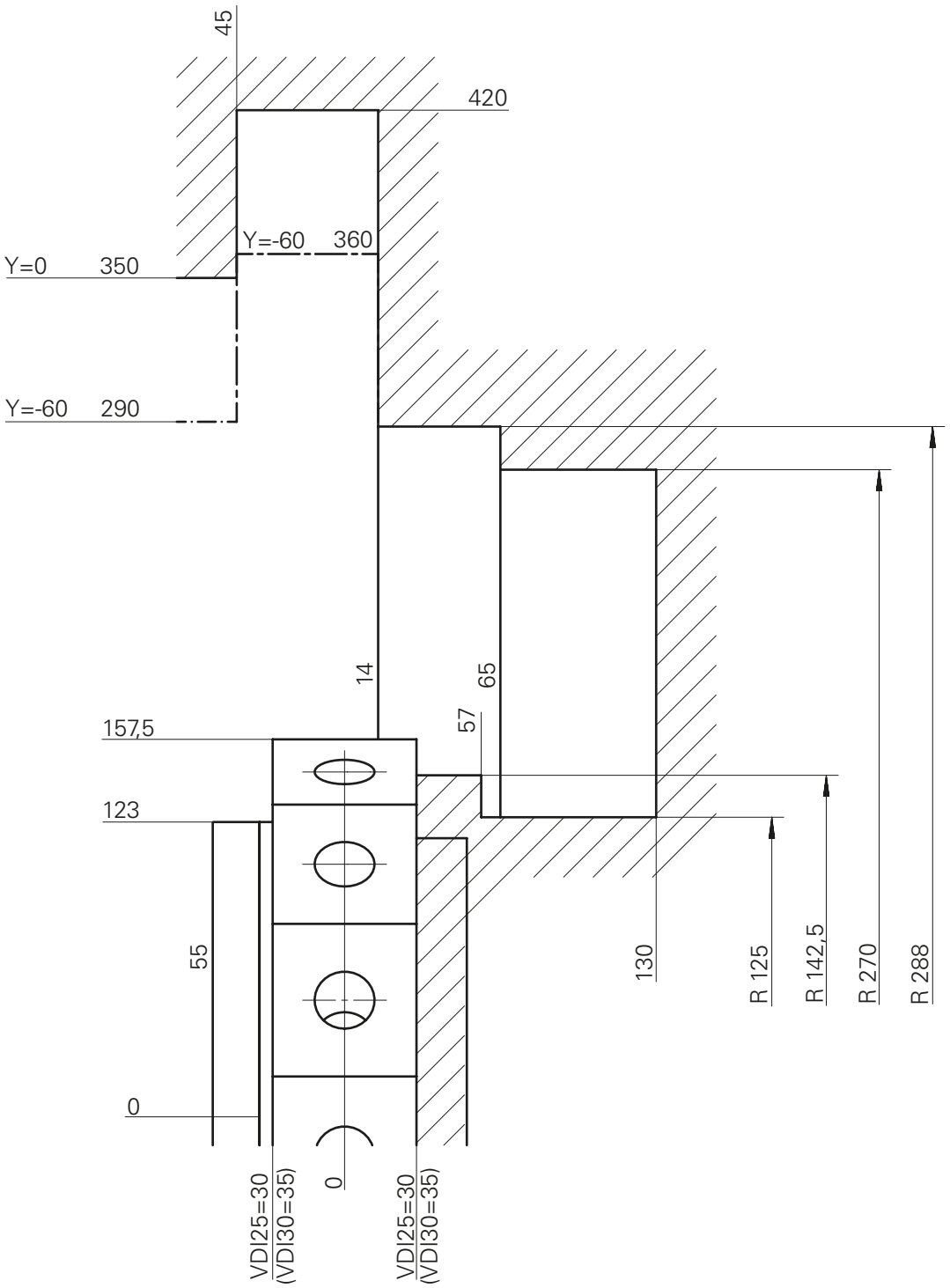
Upper tool carrier XZY, VDI30
Lower right tool carrier XZY, VDI30
Main/counter spindle, spindle clearance D76mm



* = clearing travel

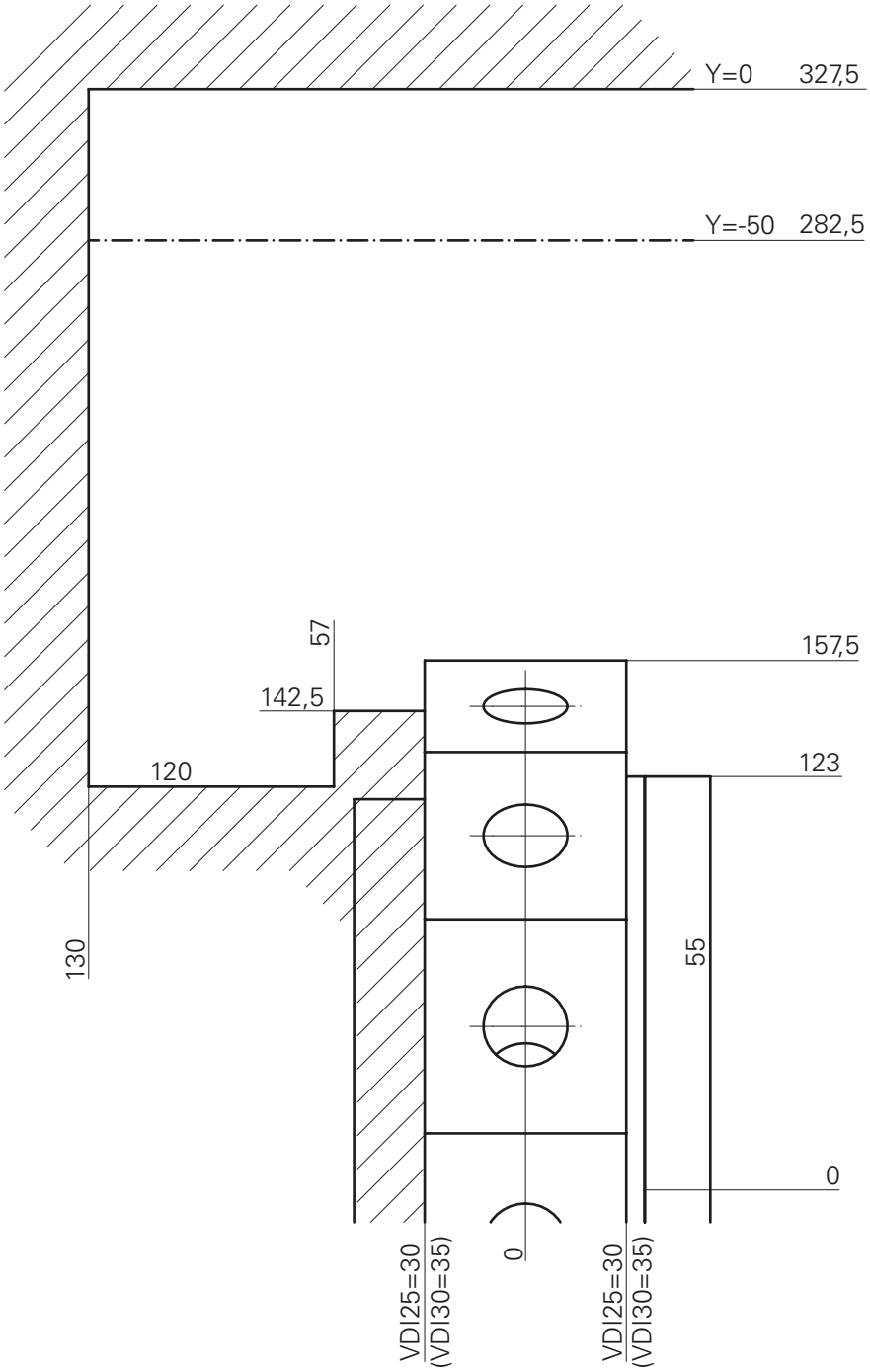
Swivel range TRAUB TNX200.3

Upper tool carrier XYZ, VDI25 and VDI30



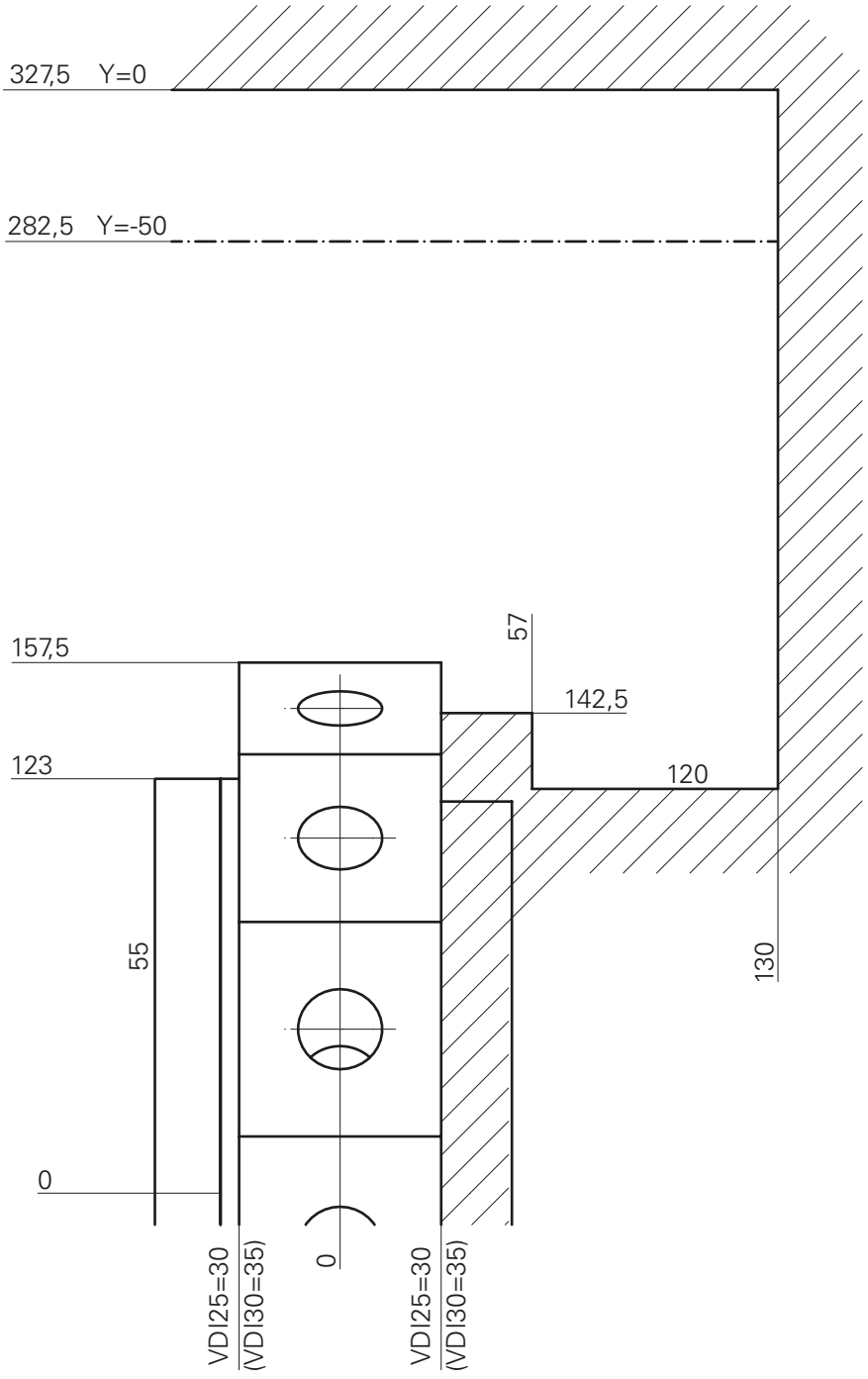
Swivel range TRAUB TNX200.3

Lower left tool carrier XYZ, VDI25 and VDI30



Swivel range TRAUB TNX200.3

Lower right tool carrier XYZ, VDI25 and VDI30



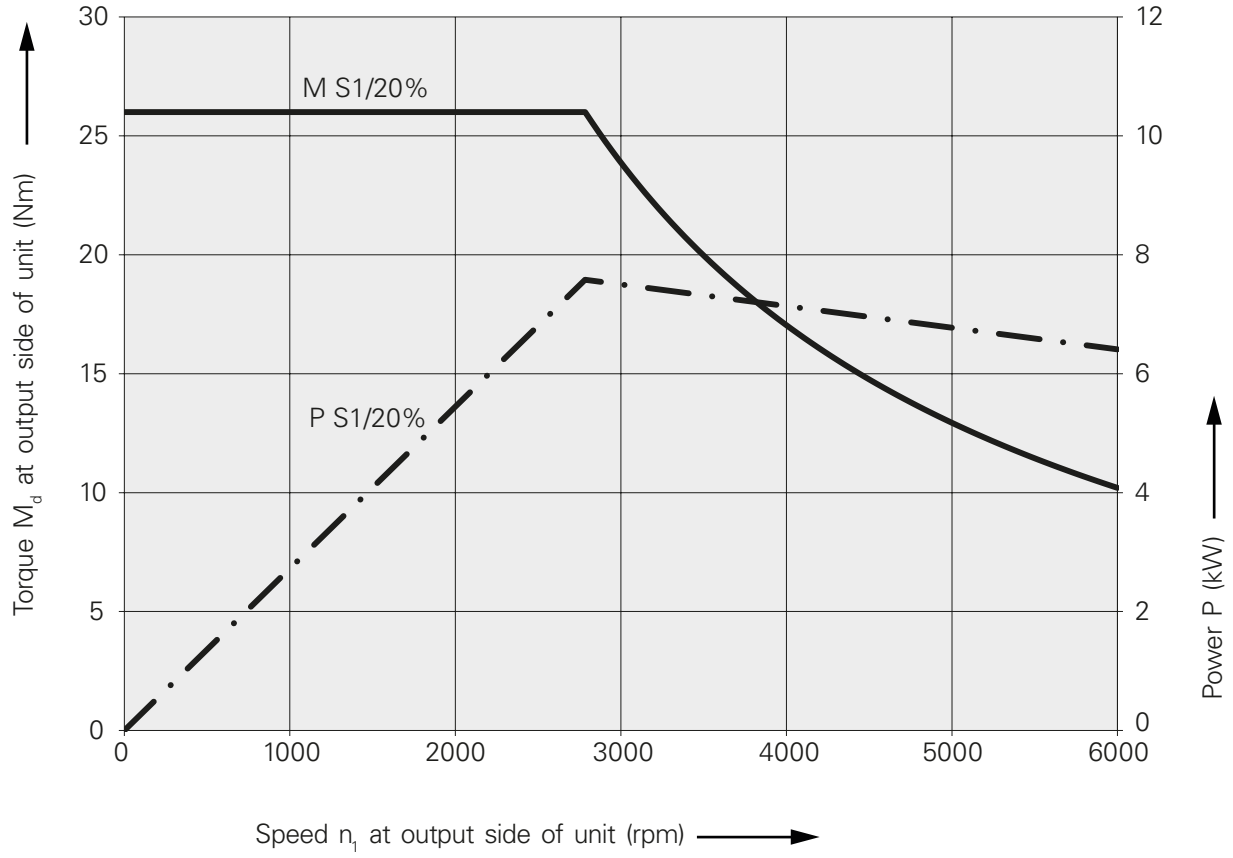
Performance chart TRAUB TNX200.3

Live tools with tooling system VDI25 and VDI30

Upper tool carrier XYZ

Speed range 0-6000 rpm

For information on how to use the diagram,
see Chapter "Technical Information".



Performance chart TRAUB TNX200.3

Live tools with tooling system VDI25 and VDI30

Lower left and right tool carriers XYZ

Speed range 0-6000 rpm

For information on how to use the diagram,
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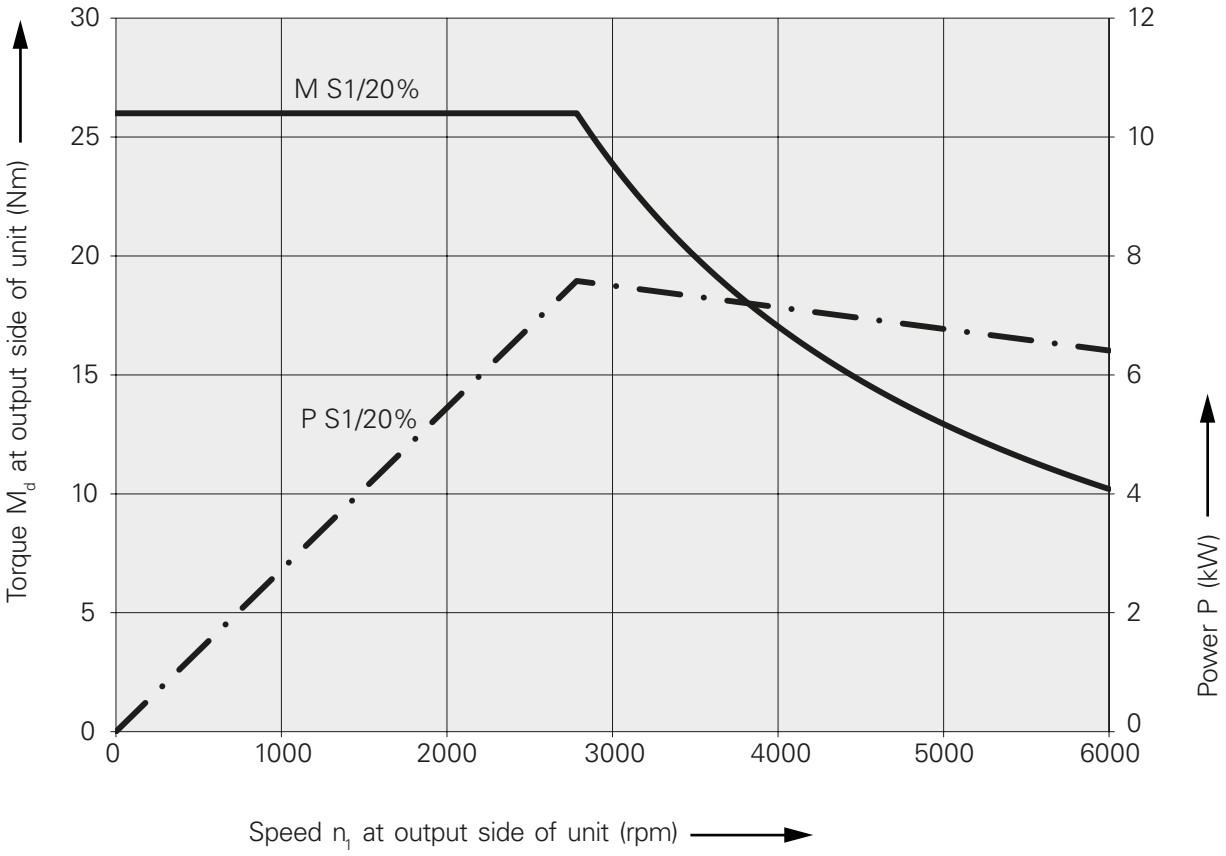

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