PITTLER T&S

# PVHDC Series

Large rings made easy

PITTLER.DE
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SWF

## PITTLER T&S

PITTLER develops and produces high-precision multifunctional lathes and skiving machines. They are optimized for soft and hard turning as well as drilling and milling rotationally symmetrical components with a diameter of up to four meters.

In the spirit of the company's founder Wilhelm von Pittler, the skiving technology was further developed into an efficient gear cutting technology, which has established itself in PITTLER's machine portfolio both in the context of complete machining as well as an individual technology.

PITTLER T&S offers the skiving process as a single process or in combination with complete machining. An integrated tool magazine makes it possible to use this efficient gear cutting technology alongside turning, milling, drilling, grinding, thread production, and measuring in a single machine without compromise. The flexible use of technology enables machining in maximum two clampings, thus guaranteeing high levels of accuracy. Coolant, oil, compressed air, or a combination thereof can be used for cooling and better chip flow.

## A DVS TECHNOLOGY GROUP COMPANY

The DVS TECHNOLOGY GROUP is a group of experienced companies engaged in the machining technologies of turning, gear cutting, grinding and honen.
The DVS TECHNOLOGY GROUP employs more than 1050 staff worldwide and is considered a leading system provider of machines, tools, and manufacturing solutions for the soft and hard-fine machining of components.

The DVS TECHNOLOGY GROUP includes the following divisions:

**DVS Machine:**
Manufacture and sale of high-precision machine tools and automation systems

**DVS Services & Tools:**
Customer-specific development, manufacturing, and sale of machine components, tools, and abrasives and related services.

**DVS International Sales & Service:**
Local DVS partners for sales and service in international markets.

## FOCUS ON CORE TECHNOLOGIES

**TURNING**

**MILLING**

**DRILLING**

**PITTLER SKIVING**

**GRINDING**

**MEASURING**

**Solid machine bed**
with continuous guide carrier support for maximum rigidity and accuracy

**Large technology toolbox,**
e.g., a wide variety of tool carriers for turning, drilling, milling, grinding, with or without B-axis

**Automatic tool change**
via chain magazine with up to 87 slots

**Powerful headstocks**
with up to 72,000 Nm torque and an output of up to 300 kW; Infeeds up to 20 mm at 1 mm feed

**Machining on up to four axes**
Turning, grinding, milling, drilling, measuring possible, additional integration of NC axes (tool carriers) can be implemented

# PVHDC series (2000 – 4000)

## Large Rings Made Easy

The PVHDC machines for the machining of large workpieces with a diameter of 1000 – 4000 mm and a height of up to 1000 mm have a particularly stable machine bed with continuous support of the guide carrier for maximum rigidity and accuracy. Up to two compound slides can be installed on the machine bed guides, which can accommodate a wide range of tool carriers: from fixed tool mounts to multifunctional heads with a rotation axis and powered milling spindles. Up to two tool magazines for up to 87 tools each can be provided for automatic tool changing.

The massive headstock features a very robust and highly precise rolling bearing. The drive takes place via a gear stage and is scalable based on the number of motors installed.

The configuration options of the PV series and PVHDC series have a similar modular design.

**OPTIMIZED FOR WORKPIECES WITH A DIAMETER OF 1000 – 4000 MM**

# Center of rotation

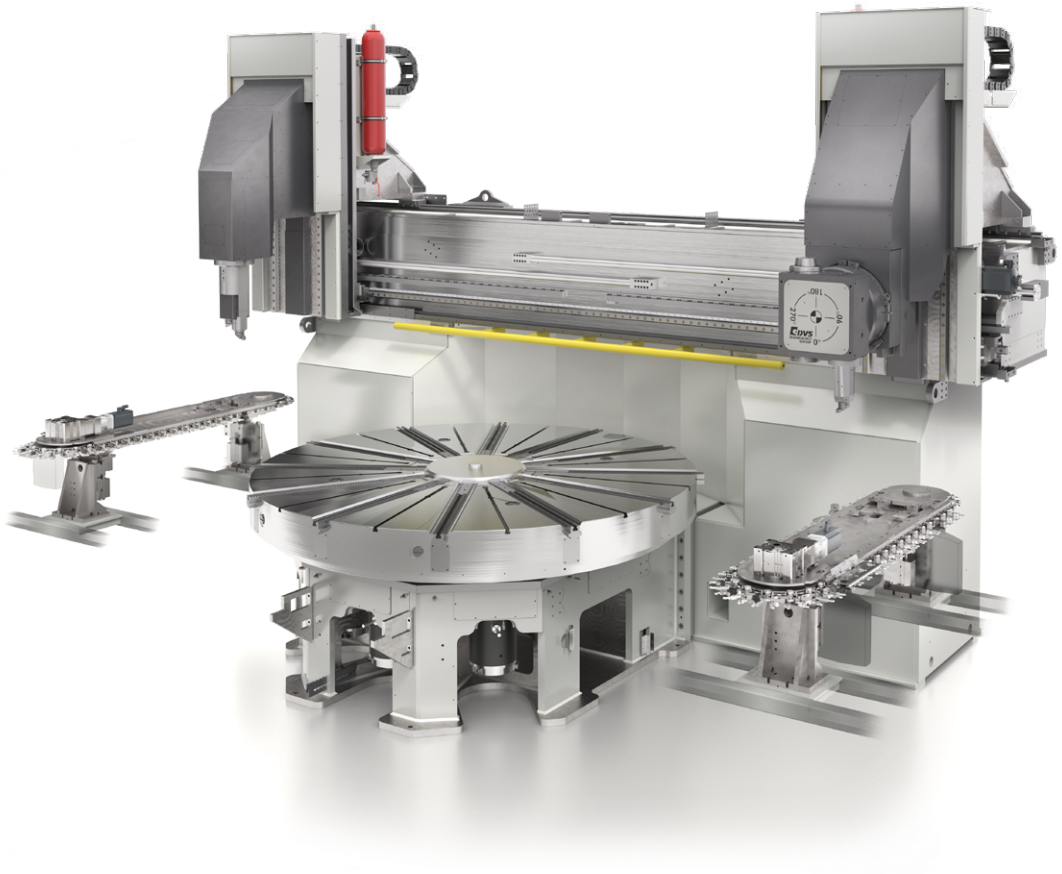
The PVHDC series impresses with powerful spindle boxes that offer an infeed of up to 20 mm at a feed of 1 mm.

The modular technology of the PVHDC series includes tool carriers that can handle turning, drilling, milling, and grinding. The optional integration of a B-axis in the tool carrier expands the machining spectrum and enables the production of highly complex geometries.

The automatic tool change is implemented via chain magazines that offer up to 87 slots. This allows different tools to be changed quickly and efficiently, thus increasing the productivity of the machine. The solid machine bed of the PVHDC series has a continuous guide carriage that ensures maximum rigidity and accuracy. This ensures precise and reliable machining results.

Grinding applications can also be integrated as in the PV series. This enables hard-fine machining. This function can be used to machine workpieces with special requirements on hardness, precision, and surface quality.

Overall, the PVHDC series is a proven machine solution. Thanks to powerful headstocks, versatile machining capabilities, automatic tool change, a solid machine bed, and the ability to integrate grinding applications, it is the perfect solution for demanding applications in the fields of wind energy, aerospace, construction and commercial vehicles, as well as industrial transmissions.



## YOUR ADVANTAGE

- Powerful headstocks: S1 torques up to 72000 Nm and S1 powers up to 300 kW
- Infeeds up to 20 mm at 1 mm feed
- Technology toolbox consisting of a tool carrier and B-axis for complex geometries
- Automatic tool change via chain magazine with up to 87 slots
- Solid machine bed with continuous guide carriage for maximum rigidity and accuracy

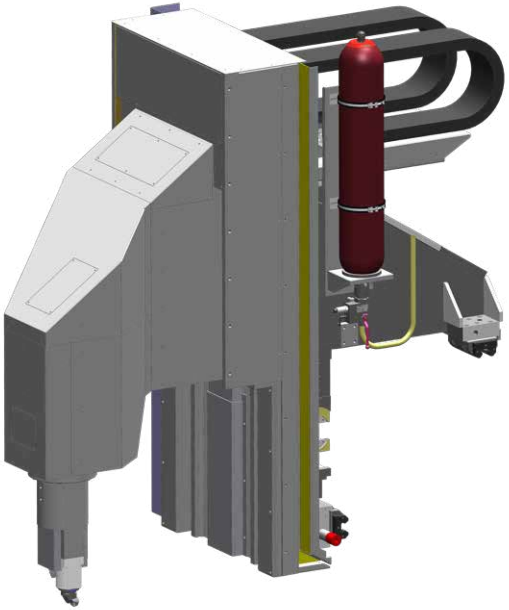
## COMPOUND SLIDE UNIT

The compound slide features a sophisticated design with its durable cast iron construction, reinforced with ribs, and direct connection to the central lubrication system. It is arranged vertically and features carefully sized roller guides that ensure low-friction movement, as well as telescopic covers that protect the X-axis slides and extend their life.

The driving force is transmitted via extremely resilient ball screws, which are driven by highly dynamic and maintenance-free three-phase feed motors:  this guarantees quick and reliable movements.

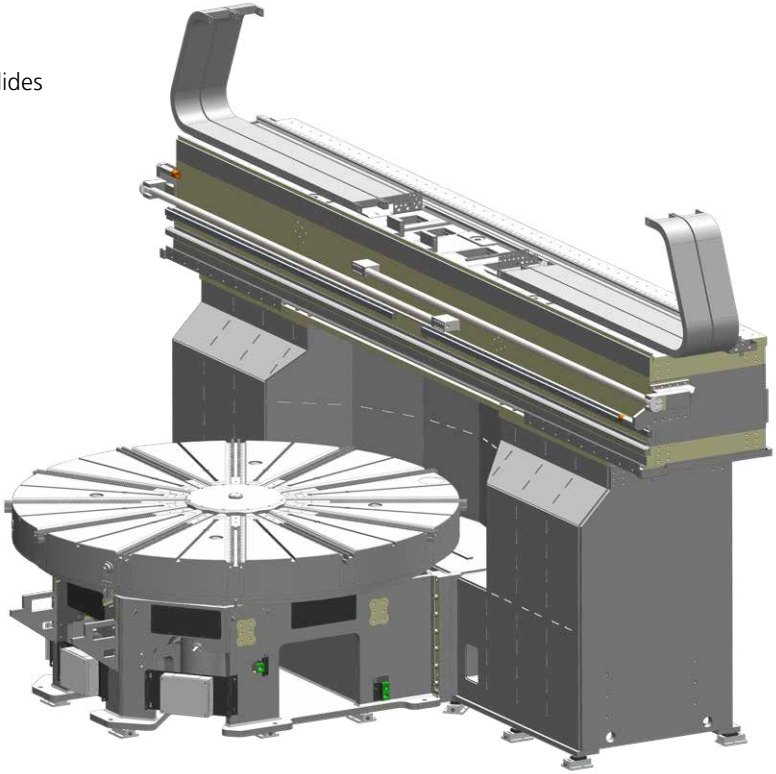
The well thought-out placement of the guide rails of the compound slide with a generous Y-distance is an ideal weight balance for the stable tool carriers. This enables the effective absorption of tilting moments and the forces of the tool carrier, which optimizes the precision and stability of your machining processes. The entire construction of the compound slide is designed for torsional rigidity, which forms the basis for the highest level of precision and reliability.

Overall, the compound slide combines high rigidity with balanced power transmission and is therefore a key element for top-notch machining results and quality.



Tool carrier

Compound slides



# Overview of modular system

The process-oriented configuration of the modular system offers numerous advantages for manufacturing. Thanks to the wide range of different variants and a machine portfolio specifically adapted to the customers' requirements and component-specific challenges, PITTLER offers many different options for the complete machining of your workpieces. This creates an optimal cost-benefit ratio and allows you to save investment costs for an additional machine.

The individually adapted structure also improves the workpiece quality by reducing clamping errors. Short throughput times and simple production planning are made possible by combining several processing steps in one machine. Changeovers and/or workpiece changes during production minimize downtime. Another option for the PV machine series is to implement a second tool carrier and thus realize four-axis machining, or to include special applications such as grinding in the machining portfolio.

In summary, the modular design enables the efficient use of resources, faster product delivery, and cost reductions. Companies can improve their product quality, increase productivity, and become more competitive through process-oriented configurations.

## MACHINE BED 1–1

- 1 spindle | 1 compound slide
- Standard version
- Optionally available with Y-axis

## MACHINE BED 1–2

- 11 spindle | 2 compound slides
- 4-axis simultaneous machining for reduction of main time or special tool carriers for special applications
- Optionally available with Y-axis

## MACHINE BED 2–1P SHUTTLE SLIDE VERSION

- 2 spindles| 1 compound slide
- Manual loading and unloading as well alignment and/or conversion on spindle 1 while spindle 2 is machining

## MACHINE BED 2–2P SHUTTLE SLIDE VERSION

- 2 spindles| 2 compound slide
- Manual loading and unloading as well alignment and/or conversion on spindle 1 while spindle 2 can machine in four axes

## MACHINE BED 2–2

- 2 spindles| 2 compound slide
- Two machines in one: significant investment savings, capacity expansion

# More highlights

## Headstock

- Different headstocks or power spindles with and without Y-axis available

## Turret

- Eight- or twelve-head turret with different tool systems (fixed or driven)

## Standard multifunctional head

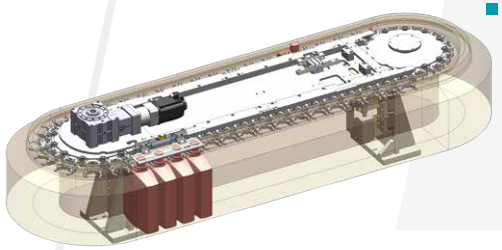
- Multifunctional head with two separate tool mounts:
  one for turning tools (fixed mount),
  one power spindle for driven tools
- With stepless A- and B-axis

## Multifunctional head with additional A-axis

- Multifunctional head with two separate tool mounts:
  one for turning tools (fixed mount),
  one power spindle for driven tools
- With stepless A- and B-axis

## Single tool mount

- Single tool mount fixed or driven; With the driven version, the spindle is clamped through hydraulic expansion when turning
- Can be combined with tool magazines for automatic tool changing



## Chain drive hoist magazines

- Tool magazines in different lengths with up to 87 tools and a wide variety of tool systems such as Capto or HSK

## Tower tool magazine

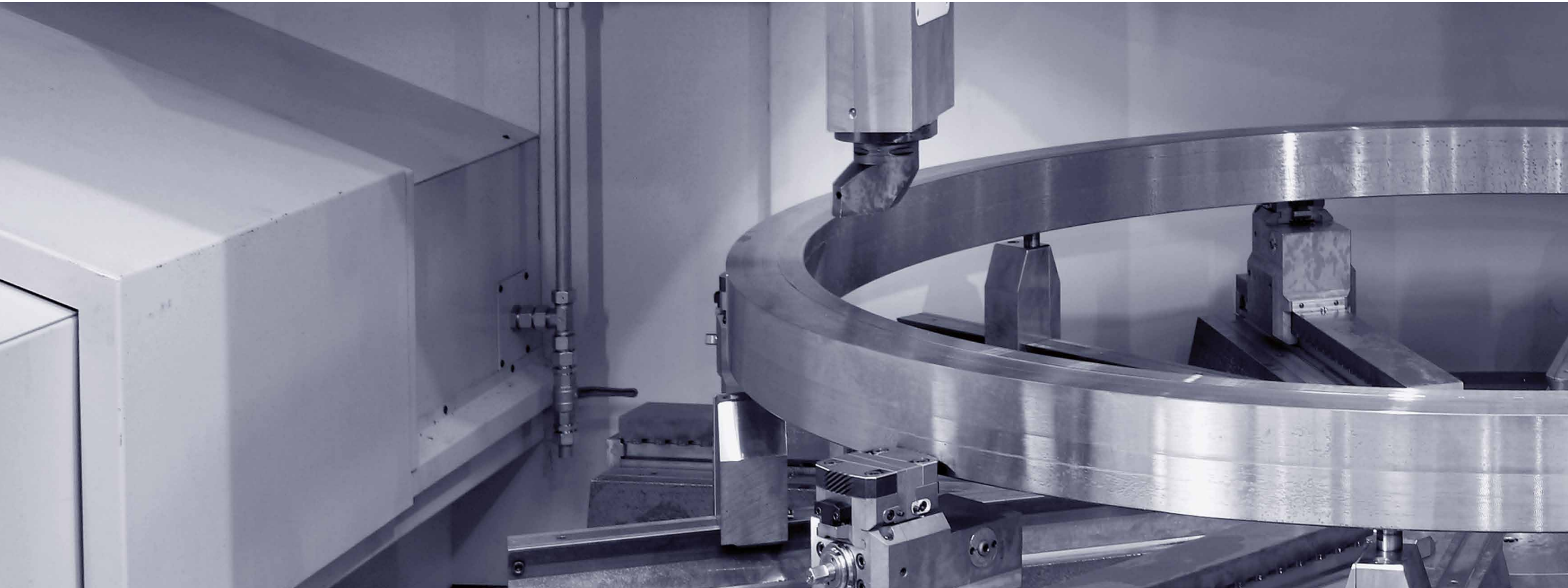
- Tool magazine with setup position for up to 150 tools and a wide variety of tool systems such as Capto or HSK

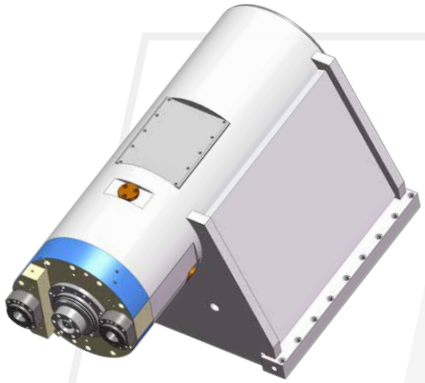
# Specific tool carriers of the PVHDC series

The universal tool carriers are selected depending on the application. In addition to the familiar systems, HDC-specific tool carriers are also available:

The Tertia head integrates two rigid swivel mounts (one for internal and one for external machining) and offers extremely powerful power spindle variants. The processing head with an integrated ram offers optimal performance even for tall components Its additional 750 mm Z-axis in combination with the usual high rigidity offers the solution for tall workpieces. Tool mounts such as Capto and/or HSK are used in all tool carriers in the HDC series. Depending on the machine size and cutting task, a size between C6 and C10 or HSK63 and HSK100 is used.

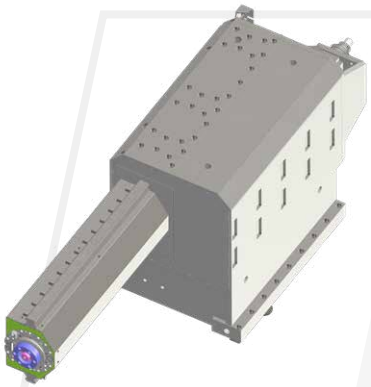
The mechanically operated tool clamps for automatic tool changing are integrated. No additional intermediate units or adapters are required.
For some tool carriers, a powerful variant with a driven power spindle is available, which is clamped hydraulically if necessary and can thus also be used as a turning tool mount.





## Tertia head

- Two rigid rotating mounts: one for internal and one for external machining
- A high performance power spindle for powered tools



## Ram

- Additional fixed 750 mm Z-axis implemented as a ram
- Total travel path of the Z axis 1750 mm

# Technical Data

| | PVHDC2000 | PVHDC3000 | PVHDC4000 |
|---|---|---|---|
| **WORKPIECE** | | | |
| Max. table/chuck diameter (mm) | 2000 | 2500 | 3800 |
| Max. workpiece diameter (mm) | 2200 | 3000 | 3800 |
| Max. arc | 2500 | 3200 | 4000 |
| Distance of table top to tool holder | | 800 – 1200 | |
| Workpiece height | | 600 – 1000 | |
| **MACHINE (WITH 1/2 SUPPORTS)** | | | |
| Length without chip conveyor (mm) | 6600 | 7000 / 7400 | 9600 |
| Length with chip conveyor (mm) | 8600 | 7400 / 11400 | 11800 |
| Height (without/with ram) (mm) | | 5300 / 6000 | 5700 / 6500 |
| Depth (mm) | | 5000 | 6000 |
| Weight (t) | 50 – 100 | 95 – 130 | 150 – 250 |

PVHDC2000

PVHDC3000

PVHDC4000

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