

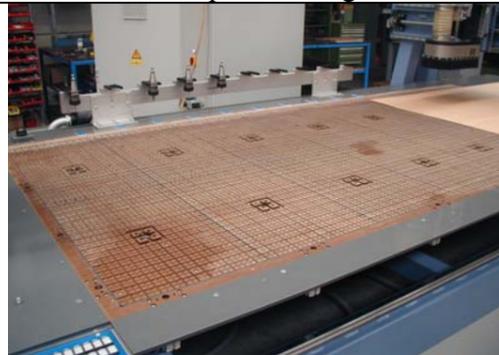
17. full CAM-package (3D)	With a CAM-package (3D version), it is possible to import complex pieces with 3D-contours. The according ISO-programme can be generated automatically.
18. Linear encoders	The positioning with linear encoders is more precise than with standard encoders, and it is less sensitive to temperature variation. This results in an increase in machine precision.
19. Frame filled with vibration dampening material	The steel frame can optionally be filled with special polymer concrete (shrink resistant). This increases the anti-vibration behaviour as well as the base weight of the machine.



Pick-up tool changer



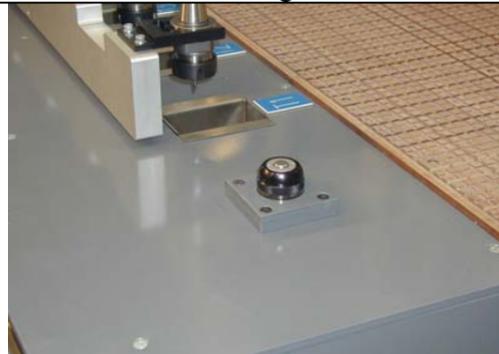
Oil mist lubrication



Vacuum segments



Aggregate



Tool length measuring unit



Machine equipped for pendulum operation

The machine is available in following dimensions (other dimensions on request).

VARIOUS MODELS & DIMENSIONS					
	V2515	V3015	V3020	V4020	V6020
Range (XxY)	2500x1500	3000x1500	3000x2000	4000x2000	6000x2000
Vertical range	300 mm				
Dimensions (*)	3400x2600	3900x2600	3900x3100	4900x3100	6900x3100

(\*)indicative dimensions, not including protection/security zone, electrical cabinet, refrigerating equipment nor options, if any.

**VASKON**

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Automation – Special machine construction

Krommebeekstraat 24 – BE 8930 MENEN  
Tel +32 56 52 14 80 - Fax +32 56 53 00 15  
www.vaskon.com

## Vertical CNC milling machine

(for milling thin/thick sheet material)



Our vertical milling machines are available in any current sheet dimensions (e.g. 2500x1500, 3000x1500, up to 6000x2000), and are mostly used for the processing of any thick or thin sheet material made out of ferrous and non-ferrous materials, i.e. in case of large X and Y dimensions, and rather limited thickness (standard 300 mm distance between spindle nose and table).

The machine can be delivered with different options. Most current options are described further on. In case you might have a specific request, please contact us. As Vaskon is specialised in special machine construction & automation according to customer's requirements, we can surely submit a proposal, perfectly matching your wishes.



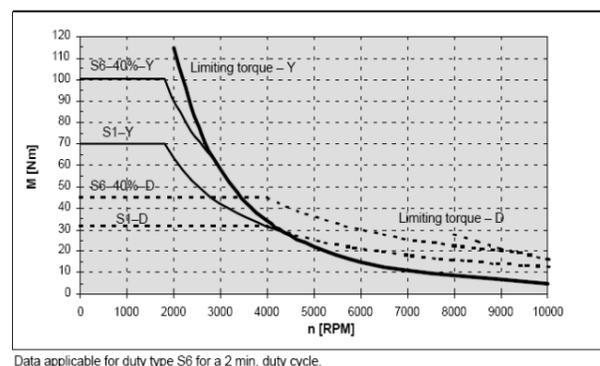
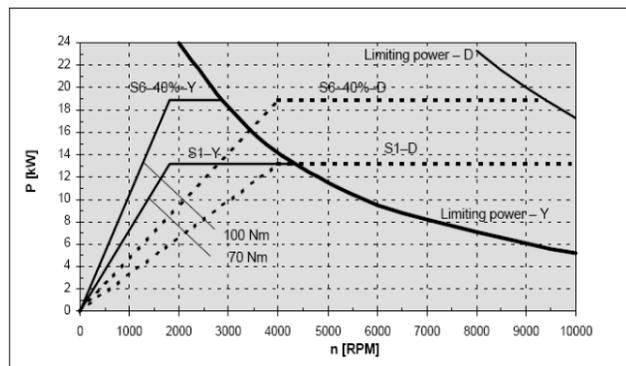
The standard execution of the machine consists of:

- Drive by synchronous servomotors with high-resolution encoder (Siemens)
- Ball lead screw transmission (or rack & pinion if stroke > 3m)
- Preloaded linear guideway.
- Speed (X as well as Y): rapid traverse 30 m/min
- Vacuum table, with powerful vacuum pump, for material clamping
- Universal spindle (13 kW, max 10.000 rpm)
- Tool holder ISO-40 (HSK-63)
- Synchronised tapping, which makes tap holders with compensation unnecessary.
- Pick-up tool changer with 10 positions
- Oil mist lubrication
- Control panel (control Siemens 810D)
- Shopmill (user-friendly user interface)
- Safety guard by multiple light beam safety device (3 beams) (number of sides depends on machine layout)

Other specifications & options on request.

The standard machine is equipped with a Direct-Drive spindle, provided with double winding motor (star/delta). The machine switches from star to delta, choosing in this way the most appropriate winding for the machining at low or high speed frequency, so that the spindle torque remains optimal within the complete speed range.

The spindle is water-cooled, which results in an excellent thermal stability of the spindle. The heat developed by the spindle is evacuated through a heat exchanger into the ambient air.



Data applicable for duty type S6 for a 2 min. duty cycle.

Other spindles (other power & speed frequency) can be obtained optionally.



OPTIONS	
1. Dust extraction unit	For the aspiration of smaller chips (plastic, aluminium,...). Not suitable for steel chips.
2. Protection bellows	The machine is equipped with bellows which protect linear guideways against chips, dust and dirt.
3. Tool changer with more positions	In case more tools are needed.
4. Pendulum operation mode	The range of the machine is divided into 2 zones (each approx. half a length), and the machine is moving from one zone to the other. In this way, the operator charges at one side, while the machine is operating on the other side.
5. Enclosed casing	The machine can be fully enclosed. The cabinet is made out of transparent polycarbonate, and is constructed in such a manner that maximum accessibility is ensured in order to load the sheet material. This also provides additional security in case the working piece would come loose, or if the tool would break off.
6. Automatic lubrication	The central lubrication system ensures the automatic lubrication of linear guideways and ball lead screws at frequent intervals during machine operation, which saves time and prevents maintenance problems.
7. Massive work table with T-grooves	This replaces the vacuum table and allows mechanical clamping of work pieces.
8. Machine equipped with cooling water	The cooling water is flowing into a tank which is placed under the machine. A filter prevents chips from falling into the tank.
9. Cooling through spindle	The cooling through the spindle is using a high pressure pump to conduct the coolant through the tool at approx. 21 bar.
10. Electronic hand wheel	For moving each axis and adjustment of spindle speeds and feed rates.
11. Segmentation of the vacuum table	The complete table range is divided into a number of sections, and the vacuum in each chamber can be switched on or off separately (out of the programme). This reduces vacuum leakage (e.g. if smaller pieces have to be made), and the work piece releases less easily from the vacuum table.
12. Tool length measuring device	Allowing easy measurement of the tool length.
13. Advanced sensing system (wireless)	A length sensor with cone can be offered, permitting easy adjustment of the operation and process control. It measures the work piece and the results are sent to the control by means of a wireless system.
14. Pneumatic stops	Pneumatic retractable stops reduce the risk of milling the stops away (caused by wrong manipulation or programming).
15. Machine equipped with aggregate (in combination with distance blocks for clamping the work piece)	An aggregate allows to operate the side of a work piece as well. In this case, the work piece has to be clamped on special distance blocks, which allow to clamp the work piece higher, compared to a standard machine. Remark: the use of aggregates may have an influence on the required Z-stroke (to be discussed).
16. Shopmill PC	This software package allows you to prepare programmes on a separate PC, of which the user interface is completely identical as the one on the machine. It is also possible to import dxf-drawings (2D) into this package, as well as to generate the machine code automatically.

