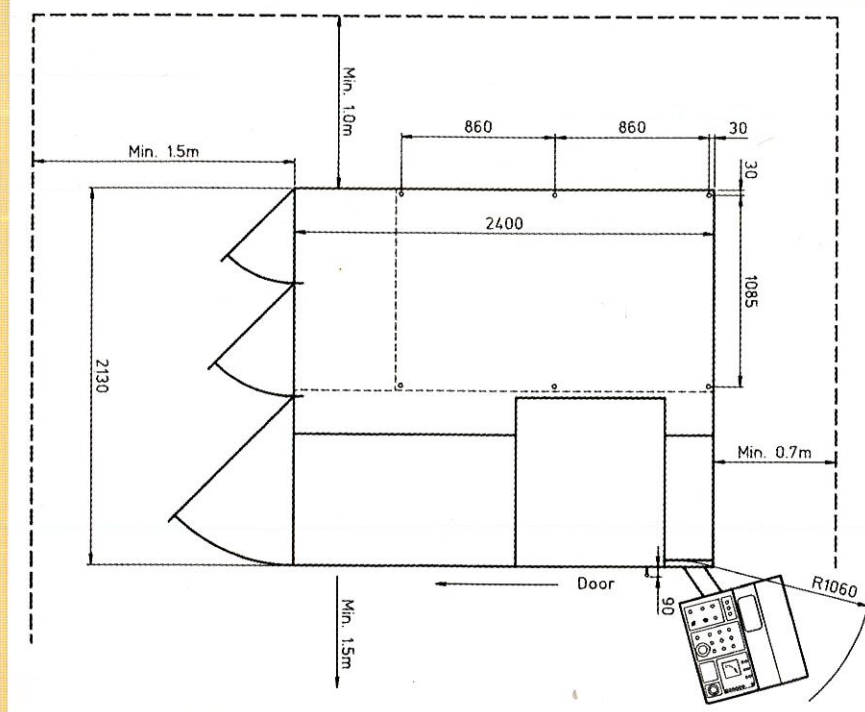




TECHNICAL DATA

	METRIC	INCHES		METRIC	INCHES
GRINDING RANGE			AXIS MOTIONS		
Max. tool length outside work spindle	330 mm	13.00"	A-axis, rotation of work spindle	360°	
Grinding length for multiple operations	250 mm	10"	U-axis, linear motion	250 mm	10"
Max. tool diameter	300 mm	11.8"	W-axis, rotary table	± 102°	
Automatic tool positioning	MARPOSS® 'Touch Probe'		X-axis, linear motion, (+400/-450mm)	850 mm	33.5"
			Y-axis, linear motion	220 mm	8.7"
			Z-axis, vertical linear motion	250 mm	10"
SPINDLE MOTOR AND GRINDING SPINDLE			INSTALLATION REQUIREMENTS		
Oil cooled with max. power out-put of	6.4 kW	8.5 HP	Width x height x depth	2450 x 2020 x 2200 mm	97" x 80" x 87"
Programmable frequency drive	0-8000 RPM		Weight with full coolant tank	approx. 4,000 Kg	8800 lbs
Double sided spindle, oil mist lubricated, diameter	Ø120 mm	5"	Power supply (60 Hz optional)	3 x 380 V, 50 Hz, 25 Amp.	or 220 V, 60 Hz, 32 Amp
Inside spindle taper	2 x ISO-35		PLC control power	24 V DC	
GRINDING WHEELS			Air supply and consumption	6 bar, 80 l/min	90 PSI, < 20 G/min
Max. diameter	Ø300 mm	12"	Color, machine base and electrical	Green	
Wheels per flange and total	1-4 wheels, total of 6		Color, machine enclosure and inside	Off-white	
Number of coolant valves, PLC controlled	6 valves		SOFTWARE/HARDWARE		
Grinding wheel types	CBN, diamond or ceramic		CNC control with integrated PLC	FANUC 16M	
Wheel dressing by standard program	Single point diamond		Menu programming by on-line	Pentium	
Wheel dressing by optional diamond roll, diameter	Ø120	5"	IBM compatible		
Wheel bore size	Ø20-32mm or optional	3/4-1 1/4	Operating system and screen graphic	WINDOWS 95®	
WORK SPINDLE			Absolute pulse coder	No referencing required	
A-axis, spindle taper	ISO-50		COOLANT AND FILTRATION (see page 5)		
Automatic hydraulic clamping, floor switch	60 bar/7500N	900 PSI/1600 lbs			

Representative:

Sorenco CNC A/S

Islevdalvej 100 • DK-2610 Rødovre
Phone: +45 44 85 06 70 • Fax: +45 44 85 06 71
E-mail: sorencocnc@image.dk



FIRST

for savings

PRO

for automation

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for precision

FEATURING

an uncompromising COOLANT and FILTRATION system.



INTEGRATED AIR-MIST EXTRACTION BY FILTERMIST®.

The high volume, 14m³ per minute filter creates a vacuum around the door area thus removing fumes from the operator working space outside and inside the machine. The air-centrifuge is shown connected to a central exhaust system as required in some countries. The filter can be equipped with an additional filter top for re-cycling of the air back into the work shop area.



HIGH PRESSURE COOLANT PUMP.

With 16 bars and 100 liters per minute the coolant pump is dimensioned to supply enough oil for even heavy duty production requirements.

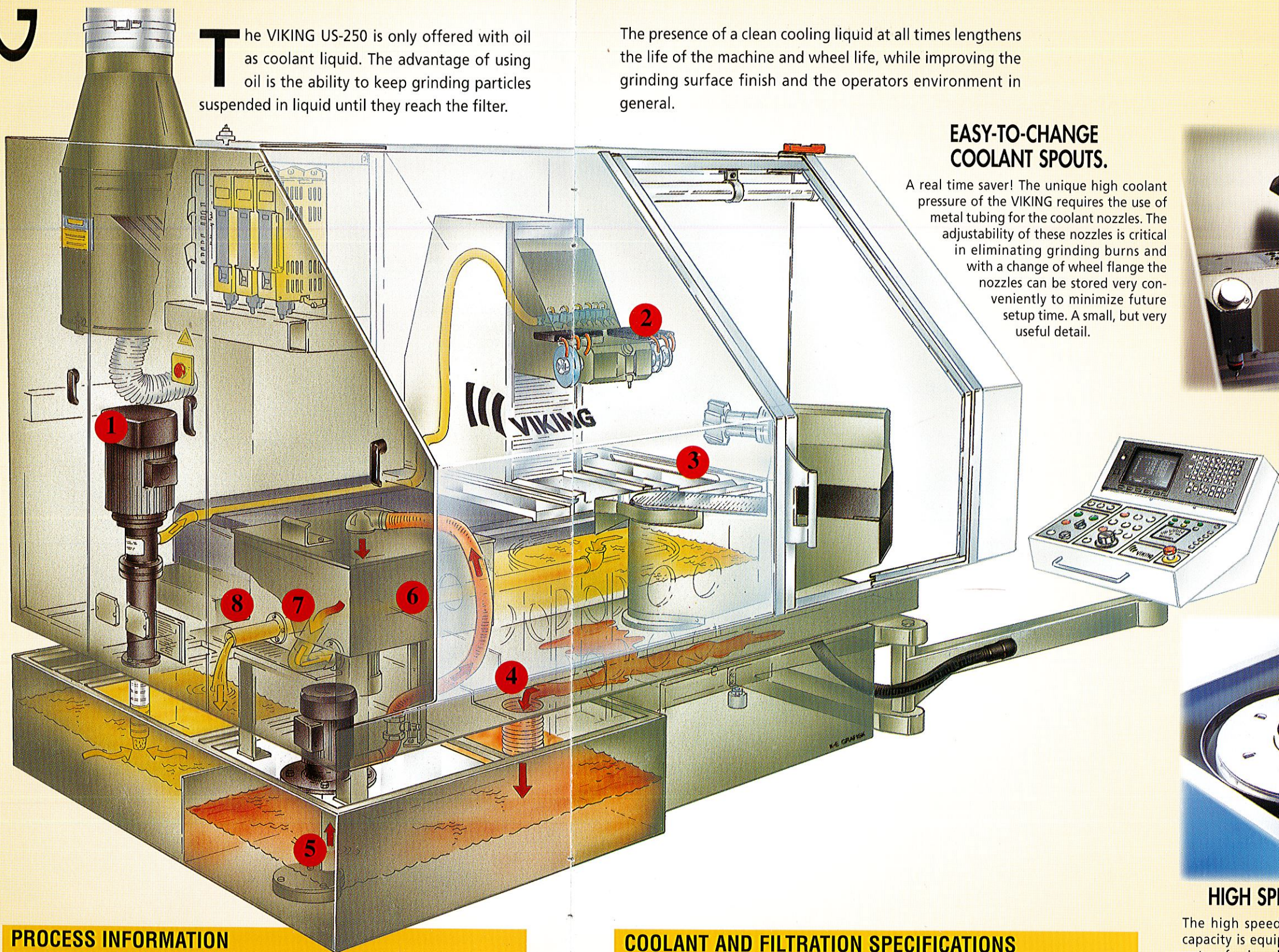
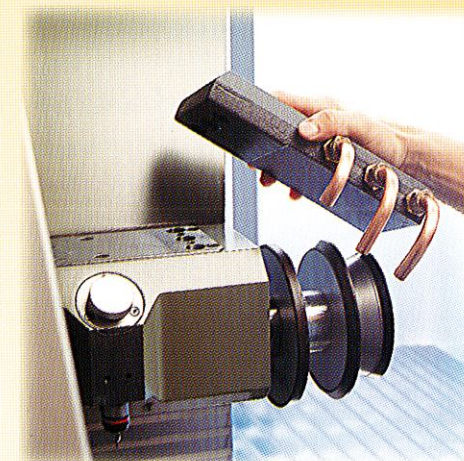
The machine relies only on oil as a coolant with the advantage of a longer machine life and cleaner working environment even when grinding carbide.

The VIKING US-250 is only offered with oil as coolant liquid. The advantage of using oil is the ability to keep grinding particles suspended in liquid until they reach the filter.

The presence of a clean cooling liquid at all times lengthens the life of the machine and wheel life, while improving the grinding surface finish and the operators environment in general.

EASY-TO-CHANGE COOLANT SPOUTS.

A real time saver! The unique high coolant pressure of the VIKING requires the use of metal tubing for the coolant nozzles. The adjustability of these nozzles is critical in eliminating grinding burns and with a change of wheel flange the nozzles can be stored very conveniently to minimize future setup time. A small, but very useful detail.

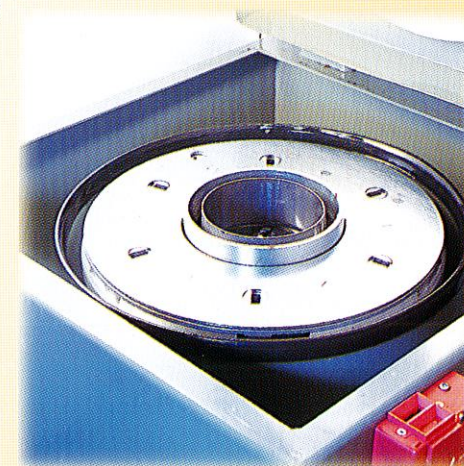


PROCESS INFORMATION

- ① Grundfos® pump delivers 80-100 liters per minute.
- ② Adjustable coolant nozzle directed at the grinding process.
- ③ Steep and narrow oil-chutes with no sludge sedimentation possible.
- ④ Return into 500 liter dirty tank.
- ⑤ Feed pump for centrifuge.
- ⑥ High speed centrifuge.
- ⑦ Return into 800 liter clean tank.
- ⑧ Overflow from clean tank into dirty tank.

COOLANT AND FILTRATION SPECIFICATIONS

Total volume of coolant oil	1300 liters	340 gallons
Machine base tank for clean oil	800 liters	210 gallons
External tank (integrated) for dirty oil	500 liters	130 gallons
Coolant supply pump	80-100 l/min. at 16 bar	20-25 G/min. at 230 PSI
Centrifuge feed pump	15 or 100 l/min.	4 or 25 G/min.
High speed centrifuge	15 l/min.	4 G/min.
High volume centrifuge (optional)	100 l/min.	25 G/min.
DE-filter, stand alone (optional)	120-150 l/min.	30-40 G/min.
Air filtration by FILTERMIST®, built-in	14 m ³ /min.	



HIGH SPEED CENTRIFUGE.

The high speed centrifuge with 80 l/min capacity is equipped with a labyrinth flow system forcing all the oil to pass through the centrifuge. This improved system gives this particular centrifuge the added advantage of high filtration capability at full flow.

The centrifuge is located inside a cabinet, over the dirty oil tank. This special detail minimizes the chance of oil spill when changing the centrifuge drum.

FIRST

Your choice for SAVINGS.

US-250 model **FIRST** is the ultimate choice in a comparison between price and capacity. The concept of this model is to compete in price with much smaller 5 axis models, while maintaining the rigidity and capability of larger 5 and 6-axis machines.

We have reached this goal by including all the necessary peripheral equipment. When it comes to grinding capacity, coolant oil filtration and operator convenience the VIKING US-250 has it all.

THE WORKING RANGE.

The VIKING US-250 has an effective working range of 3 to 32 millimeters in diameter when grinding out of the solid with CBN or diamond wheels. Customers use our machine for tools 1 mm in diameter and smaller using a steady rest, although the machine is, by design, much too powerful for continuous work in this range.

In re-sharpening conditions the upper limit is determined by a maximum possible tool diameter of 280 mm or the recommended maximum tool weight of 20 kg at 100 mm from the spindle nose.

THE GRINDING SPINDLE.

To grind 32 mm carbide tools the machine is equipped with a very rigid spindle designed and built by VIKING. It is equivalent to a standard Ø120 mm commercially available spindle.

The dual sided spindle allows up to 6 wheels to be used at one time, giving optimum flexibility in wheel selection. The flanges have a standard ISO-35 male taper combining strength and precision with low manufacturing costs.

The wheel range is limited in size to Ø300 mm with Ø250 being the most economical upper limit. The lower diameter limit is governed by the maximum spindle speed of 8,000 RPM made possible by the built-in frequency converter.



For long-life, the spindle is oil mist lubricated using only the highest quality SKF bearings. A unique labyrinth seal prevents any dirty oil to penetrate from the outside during the spindle cool down period.

WHY CHOOSE A SIX AXIS MACHINE?

The U-axis is the technical feature, which most obviously differentiates the US-250 from the competition.

The U-axis is indispensable when grinding full radius tools, where the ability to grind over the center gives an unsurpassed accuracy.

For other tools, the U-axis offers the advantage of having a constant starting point for grinding. Your operator will quickly come to appreciate this advantage when grinding larger tools or using wheel packs.

The X and Y axes are used for positioning and the U-axis for grinding. With this design you always have a 250 mm axis stroke for grinding, regardless of wheel size, flange length, tool diameter or length of tool. With the U-axis the working range of the US-250 is thus very predictable and you will most likely never reach an over-travel alarm during the grinding of any standard tool!

WEAR AND TEAR!

Our machine is designed for a long life and easy, low cost service. The prism guides of the X and Y axes are Teflon coated and protected by continuous oil lubrication, thereby providing a very high wear resistant surface, low stick slip and high vibration dampening. The guides are virtually indestructible even in a crash situation. The wear and crash conditions are mostly absorbed by the ball screws, which are easy to replace at a relatively low cost.