



**Hydro-Jet Vario 1313 • 1525 • 1530 • 2040**

Water-Jet Cutting Systems

## **Hydro-Jet Vario 1313 • 1525 • 1530 • 2040**

The wide variety of application possibilities for water-jet cutting makes it difficult to properly estimate the cost-effectiveness for all equipment variations up front. With our Vario System, the user enjoys maximum flexibility and can expand anytime on an as-needed basis!





Hydro-Jet Vario 1313 • 1525 • 1530 • 1530 • 2040

DESCRIPTION

## The water-jet cutters in this series are suitable for a wide variety of applications and modular extensions

- Completely equipped for Abrasive & Pure-Water Cutting
- Flying Bridge design provides superior rigidity
- High-quality servo-motors and preloaded ball screws on all axes
- Three open sides of the workspace ensure convenient material handling
- High-quality CNC with high user comfort

### Abrasive system

- Very large metering bandwidth and high-precision dosing of abrasives
- Infinitely variable metering can be set directly at the machine's control panel
- Large abrasives tank (1 t) accepts entire „big bags“ from abrasives suppliers



Hydro-Jet Vario 2040 shown

Call us for an individual consultation and demo appointment! → Tel. +49 4321 - 609131



Hydro-Jet Vario 1313 • 1525 • 1530 • 1530 • 2040

DESCRIPTION

Water-Jet Cutting System

## Hydro-Jet Vario 1313

- Cutting capacity: 1300 x 1300 mm
- State-of-the-art GPlus 450 Cut control
- With 3800 bar pressure booster pump
- Large abrasives container (1000 kg)



Shown with  
optional equipment



GPlus 450  
www.knuth-gplus.de

www.knuth.de

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Hydro-Jet Vario 1313 • 1525 • 1530 • 2040

DESCRIPTION

Water-Jet Cutting System

## Hydro-Jet Vario 1525

- Cutting capacity: 2500 x 1500 mm
- State-of-the-art GPlus 450 Cut control
- With 3800 bar pressure booster pump
- Large abrasives container (1000 kg)



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Hydro-Jet Vario 1313 • 1525 • 1530 • 1530 • 2040

DESCRIPTION

Water-Jet Cutting System

## Hydro-Jet Vario 1530

- Cutting capacity: 3000 x 1500 mm
- State-of-the-art GPlus 450 Cut control
- With 3800 bar pressure booster pump
- Large abrasives container (1000 kg)



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Hydro-Jet Vario 1313 • 1525 • 1530 • 1530 • 2040

DESCRIPTION

Water-Jet Cutting System

## Hydro-Jet Vario 2040

- Cutting capacity: 4000 x 2000 mm
- State-of-the-art GPlus 450 Cut control
- With 3800 bar pressure booster pump
- Large abrasives container (1000 kg)



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# Hydro-Jet Vario 1313 • 1525 • 1530 • 2040

## SPECIFICATIONS

Specifications Hydro-Jet	Vario 1313	Vario 1525	Vario 1530	Vario 2040
<b>Cutter System</b>				
Cutting capacity	1300 x 1300 mm	2500 x 1500 mm	3000 x 1500 mm	4000 x 2000 mm
Z axis travel	155 mm	155 mm	155 mm	155 mm
Table load capacity max.	800 kg/m <sup>2</sup>	800 kg/m <sup>2</sup>	800 kg/m <sup>2</sup>	800 kg/m <sup>2</sup>
Fill capacity of sand container (max)	1000 kg	1000 kg	1000 kg	1000 kg
Max. sand feed	0 - 500 g/min	0 - 500 g/min	0 - 500 g/min	0 - 500 g/min
<b>Feed</b>				
Rapid feed	8000 mm/min	8000 mm/min	8000 mm/min	8000 mm/min
<b>Accuracy</b>				
Positioning accuracy	± 0,1 mm	± 0,1 mm	± 0,1 mm	± 0,1 mm
Repeatability	± 0,05 mm	± 0,05 mm	± 0,05 mm	± 0,05 mm
<b>Dimensions / Weight</b>				
Overall dimensions (L x W x H)	2900 x 2800 x 2100 mm	3700 x 3700 x 2000 mm	3700 x 4200 x 2000 mm	4200 x 5200 x 2000 mm
Weight (without water)	2000 kg	3000 kg	3500 kg	4500 kg
Weight with water	4000 kg	5000 kg	7000 kg	10500 kg
Part No.	166 226	166 215	166 217	166 216

### Standard Equipment

- |                                  |                                       |  |
|----------------------------------|---------------------------------------|--|
| - CNC-Control GPlus 450 Cut      | - grid nesting                        | - abrasive cutter head                   |
| - TFT Monitor                    | - high-pressure pump Ecotron 3800 bar | - abrasives container (1000 kg)          |
| - electronic hand-wheel          | - proportional valve                  | - abrasives conveyor                     |
| - control panel                  | - check valve                         | - operating and programming instructions |
| - Gplus 450 Cut cutting software | - HD filter at the cutter head        |  |



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## OPTIONS

Optional Equipment	Part No.	Part No.
- Laser pointer	180 828	- Dryer for compressed air 251 090
- Z axis with collision guard	250 135	- System for stabilization of water quality 251 091
- Reinforced Z axis with 5-axis machining	252 173	- Water additive for silicate stabilization 251 092
- Software option for contour nesting	180 820	- Splatter guard, foldaway for Vario 1313 252 165
- 5-axis cutter system	251 182	- Splatter guard, foldaway for Vario 1525 252 166
- Tube Cutter	252 169	- Splatter guard, foldaway for Vario 1530 252 167
- Automatic cutter head calibration	252 170	- Splatter guard, foldaway for Vario 2040 252 168
- IGEMS optical part recognition	252 156	- Light curtains on 2 sides 180 337
- IGEMS water-jet cutting package	252 171	- Light curtains on 3 sides 180 338
- IGEMS Nest Level 2	251 448	- Light curtains on 4 sides 180 339
- IGEMS Sign Maker	251 449	- Vacuum system for abrasive-mud removal, 4 m <sup>2</sup> (Vario 1313) 180 735
- IGEMS Tile Maker	251 450	- Vacuum system for abrasive-mud removal, 6 m <sup>2</sup> (Vario 1525 + 1530) 180 728
- IGEMS Tube Cut	251 452	- Vacuum system for abrasive-mud removal, 8 m <sup>2</sup> (Vario 2040) 180 736
- IGEMS Organizer	251 451	
- IGEMS Floating License	251 453	
- IGEMS Data Exchange	251 155	
- Starter kit	166 213	



### 5-axis cutter system

- Chamfering up to 60°
- TaperControl - cutting angle correction feature for high-precision cutting results
- 5-axis cutting kinematics with Harmonic drives = high dynamics and precision
- Endless Rotating = no contour interruptions and no repeated plunge-cuts = time and cost savings



Cutting results



## High-pressure pump Ecotron 38.37

This powerful high-pressure pump with 37 kW drive delivers up to 3.8 Liter water per minute, making it the first choice for abrasive water-jet cutting

- Operating pressure from 50 to 380 MPa, infinitely variable via a proportional valve
- All components are mounted on a base frame, enclosed within a sound proofing enclosure; the electric control is within a control cabinet that also is mounted on the base frame
- Optimized hydraulics for extremely fast switch-over
- Water supply will be interrupted automatically when the pump is shut off
- Pressure booster with large plunger diameter and long stroke ensures long life

### Specifications BHDt Ecotron 38.37

Main motor rating	37 kW
Flow rate (max.)	3,8 l/min
Operating overpressure (max.)	380 MPa
Continuous operating pressure (max.)	380 MPa
Dual stroke (max.)	38 min <sup>-1</sup>
Ambient temperature for oil/air cooler	10 - 35°
Ambient temperature for oil/water cooler	10 - 45°
Dimensions width x depth x height	1800 x 800 x 1150 mm
Weight	1000 kg



- Pulsation damper with large reservoir (2.49 l) reduced pressure fluctuations
- Pressure relief valve is standard
- All warnings and monitoring functions are displayed in plain text on a touchscreen monitor

# CNC Cutting with GPlus 450 Cut

Features the ideal user-interface

to accommodate the special requirements of 2D Water-Jet Cutting

## Intuitive programming

- **easy, user-oriented operation** allows quick creation of programs
- **geometry imports** from DXF and DIN/ISO program files
- faulty geometries can be repaired and edited with the **integrated DXF Analyzer**
- **50 standard macros** simplify the creation of a wide variety of geometries
- **instant display** of all starting cut changes in the drawing with simulation option
- **optimum material utilization** via grid nesting function with critical features like turning, mirroring, and manual sorting
- **material database with plate management function** - for the management of all customer-specific data on machined materials, including cutting technology data, and dimensions

- **optimum contour approach** made possible by a multitude of definable starting cut conditions differentiating between circular and non-circular inside and outside contours
- **zoom feature** - enlarges the part view and all starting cuts

## Accessories

- **contour nesting**, allows nesting of several workpiece types on just one plate

## Samples of Parameter Help Graphics



Plate and Parameter Database



Technology and Machine Setup



Grid Nesting (rectangular nesting)

# GPlus Cut - our Windows-based CNC control system for Cutting Systems

## Quick - powerful - user-oriented: key hardware facts

- **Workshop-oriented programming** at the control or external programming (CAD/CAM)
- **450 NC blocks/sec**, 200 sets LookAhead
- The GPlus 450 features a **17" TFT color monitor** shows all data for a user-friendly programming experience and easy operation
- Status messages show the user the current state of the control
- **Graphic simulation** with integrated Zoom function for a detailed display of the actual chip removal
- A standard 10/100 MBit Ethernet interface and **USB port** allow fast data transfers from externally created programs (CAD/CAM) and saving these on the GPlus 450 hard drive
- **Single CPU concept** (advantage: ties up only 2% of the system capacity)
- **40 GB storage**, , 2.0 GHz Intel Celeron processor, 256 MB RAM
- **Worldwide remote diagnostics**
- Profibus, CANopen, DeviceNet implementation is possible
- **Easy integration** of the machine in factory networks
- **The mobile hand-held** device combines practical and compact controls to simplify machine setup



## Your GPlus Advantage

- easy to learn without prior DIN-ISO programming knowledge - from newcomers to professional users
- short learning curve for experienced users - immediate productivity
- quick programming directly at the machine, or easy transfer of programs to minimize down-times
- GPlus Support for any programming questions and quick assistance for problems