

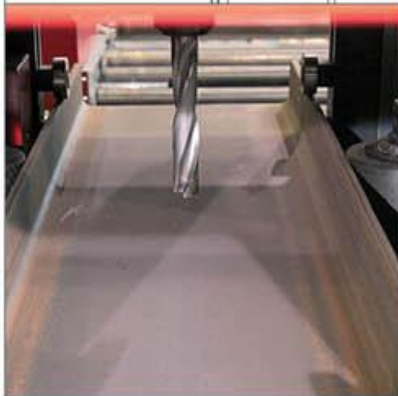
Voortman Quotation

Client:

Quotation nr:

Date :

Machine :V600



V600

Drilling system



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V600 Drilling system

A. BASIC EXECUTION V600 DRILLING SYSTEM

The V600 Drilling system consists of support beams, a fixed drilling table and a drilling cabin. The cabin moves horizontally along the drilling table. The drilling table consists of a material support table and a power rail for the cabin. On the drilling cabin are mounted the horizontal drilling unit, the operator's panel, the switch panel, the hydraulic unit, the air compressor and the tool holders. The hydraulic vertical material clamp is also mounted to the drilling cabin.

Because the drilling cabin has a constant connection with the power rail by means of a bus bar there is a constant power supply.



- Main frame, consisting of:
 - ♦ Drilling table, length 65', effective width 12".
 - ♦ Support beams, for buffering of starting material.
 - ♦ Power rail, provides the power supply for the entire system.
- Movable drilling cabin with:
 - ♦ Horizontal mounted drilling unit, 1-axis.
 - Vertical stroke 0 - 40", horizontal stroke 0 - 18".
 - ♦ Movable drilling unit. Drilling unit movable in horizontal direction.
 - Movement effective 0 – 59'.
 - ♦ Drilling unit is provided with a manual quick-change adapter.
 - ♦ Vertical hydraulic material clamping.
 - ♦ Web and flange height measuring.
 - ♦ Swarf bin.
 - ♦ Hydraulic unit, for the vertical material clamp.
 - ♦ Air compressor, for the drill air/mist lubrication.
 - ♦ Control unit and switch panel.

Price V600 basic execution\$ 85,000

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B. DESCRIPTION BASIC EXECUTION DRILLING SYSTEM

➤ **Drilling table**

The drilling table is fixed. The operator positions a profile against the zero-reference line on the drilling table, after which the drilling process can start.

Length	: effective 65'.
Width	: 12"
Working height	: 36" (± 1" height adjustment)

➤ **Support beams**

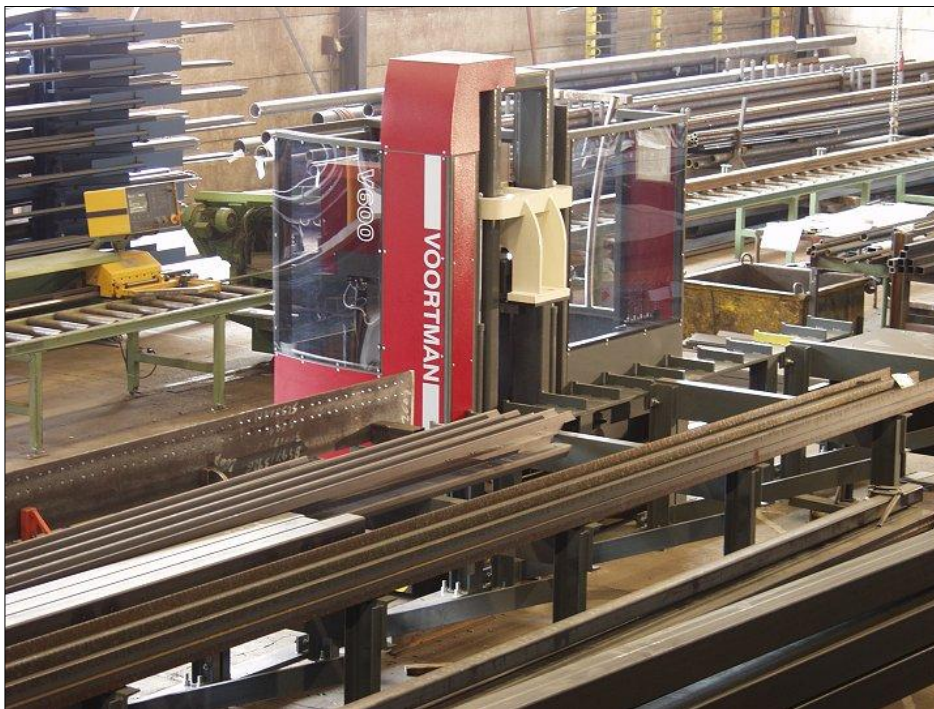
The support beams are mounted to the drilling table.

The operator can place profiles upon these beams for stock. When a profile is drilled the operator removes the profile from the drilling table and puts a new profile from the support beams onto the drilling table.

Number of beams	: 12 pcs. with drilling table length of 65'
Length	: 5'.
Working height	: 36" (± 1" height adjustment)

Extra support beams

With table extension of 6-½', 1 extra material beam.



➤ **Power rail**

The power rail is mounted to the supports of the drilling table. The power rail is fed from a central location, so that the entire power rail is live but protected. By means of pins on the cabin the voltage is transmitted to the switch panel on the drilling cabin.

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➤ Description components movable drilling cabin

On the drilling cabin is mounted the horizontal drilling unit, the control unit and the hydraulic material clamp. The cabin is also provided with a swarf bin, air compressor, hydraulic unit and a tool holder with 6 positions.



The cabin moves over a rack along the side of the drilling table and does not touch the floor. The 2 drive gear wheels which run over the rack, guarantees accurate movement & positioning. The wheels take care of the drive and sense the exact position of the drilling cabin.

The tolerance-free guidance of the cabin is realized by several wheels, which move at the top in manufactured U-profile rails and at the bottom side over a manufactured beam.

The drilling platform is executed with a frequency-controlled drive and an electrical operated brake.

Drive : 2 hp
Positioning speed : max. 121' per minute.

For operator safety the drilling platform is provided with a housing. On both sides of this platform are safety bumpers mounted for collision protection. These bumpers avoid dangerous situations when the drilling platform is moving. The housing is also fitted with 2 doors; one door provides ease of access for a drill change. The other door offers the operator access to the chip bin. For safety both doors are provided with optical sensing devices. Whenever a door is opened the drilling process is automatically interrupted.



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➤ Drilling unit VDH 1000

Rigid, consolidated frame, on which the drilling unit is fixed.

Drilling unit. Rotation and feed are automatically regulated and a table records the machining conditions. Movements are by motorized ball screws in combination with linear guides, movements are frequency driven. Internally mist-lubricated drills produce optimal machining conditions. The drills being internally cooled by a mixture of air and oil.

After replacing a new or sharpened drill the length of the drill will be checked automatically.

Advantage: a very quick drilling process and short programming time. The drilling unit searches the profile at high-speed, after which the unit switches over to drilling speed. After drilling the unit runs back at high-speed.



During the drilling process there are 3-axes active: the X-, Y- and Z-axis.

X- axis: Movement of drilling cabin in horizontal direction.

Y- axis: Horizontal movement of the drilling unit (drilling feed)

Z- axis: Vertical height adjustment of the drilling unit



[Click to play video](#)

0 – 59'

0 - 18"

0 - 40"

Positioning speed X- axis: max. 100' per minute

Positioning speed Z- axis: max. 33' per minute

The drilling unit is able to provide a profile with centre points. The drilling unit is also suitable for thread tapping.

Linear guides for the Y- and Z-axis. The linear guides and the spindles are provided with pre-stressed nuts. By means of these guides the drilling unit is positioned vertically.



[Click to play video](#)

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➤ **Vertical hydraulic material clamping**

The profile is clamped to the table by means of 2 hydraulic cylinders. For guidance of the clamp there are mounted 2 vertical linear guides with carriage trucks on the drilling cabin. The vertical clamp has a stroke of 41".

➤ **Web and flange height measuring**

The hydraulic cylinder of the vertical clamp will be provided with a measuring device for measuring the actual flange height during the clamping of a profile. Also the vertical clamp is provided with a sensor for web height measuring. The holes in the flanges can be positioned with regard to the centre of the measured flange height or the actual web height.

➤ **Chip bin**

During the drilling process the chips will fall directly into the chip bin to avoid swarf falling to the floor and risking a dangerous situation when the drilling platform is moving.

➤ **Hydraulic unit**

For the vertical hydraulic clamping unit. The capacity of the hydraulic pump unit is 3 hp.

➤ **Air compressor**

For the air/mist lubrication during the drilling process.

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➤ Control unit and switch panel

The control unit and the switch panel are mounted on the drilling cabin. In this way a lot of floor space will be saved and the operator has the freedom to watch the production process. The drilling system is controlled from the VACON 110 computer control.

VACON 110 computer system assembled in an operator's panel, consisting of:

- Industrial PENTIUM machine computer with hard disk. The computer is assembled in a metal dust-free housing.
- Industrial TFT-color monitor 15", giving a very high quality picture presentation.
- Industrial flat keyboard.
- CD-Rom for exchange of NC-files and DSTV-data.
- Push buttons and signal lamps for automatic and manual operation.
- Communication between various modules and the control system realized with a fiber optic cable. Advantages of this technology are fast communication and a minimum of interruption sensitivity.

➤ V600 software

The drilling system is as standard executed with a software program developed by Voortman under our own control.

Marks V600 software:

- By rotating the profile, it is possible to drill the material on all sides.
- Software generates automatically a graphic reproduction of the product on the color screen.
- Batch software for producing several products behind each other on the drilling table.
- Control software is suitable for:
 - Manual input of products.
 - Alteration of stored products (Storage capacity PC practically unlimited).
 - Automatic production from a 3D CAD-drawing system (DSTV-data).
- Office program: The structure of the office program is identical to the machine program. This program offers, users not working with a 3D drawing system, the possibility to program the product off-line
- Diagnostic overview: The monitor can give an overview of the most important switches, push buttons and sensors.

➤ Color drilling system

- RAL 3003 Red (Protection plates and housing frame)
- RAL 7011 Grey (Drilling table, support beams and housing)
- RAL 9001 White (Vertical clamp)

V600 Drilling system

C. OPTIONS

1. Drill sharpening unit

Type : APE 40

Suitable for sharpening of twist drills. Diameter range $\frac{1}{8}$ " - $1\frac{9}{16}$ ".

Standard equipment:

- Precision 6-jaws chuck.
- Set of no. 4 cams for right hand tool with 1, 2, 3, 4, 6 cutting edges.
- Morse Cone MC1, MC2, MC3 and MC4.
- Coolant installation.
- Vertical wheel centre electric spindle power for point thinning.
- Grinding wheel for conical surface grinding $8" \times 1" \times 1\frac{1}{4}"$.
- Grinding wheel for point thinning $5" \times \frac{1}{2}" \times \frac{6}{8}"$.
- Control panel 24V.
- Equipment for grinding wheel dresser on the diameter and on the right side of the grinding wheel.
- Wheel dresser diamond ct. 0.5.
- Instructions book and service keys.



Price \$

V600 Drilling system

Technical specifications

➤ Working range:

Flat steel	- width	: 2-1/2" - 40"
	- thickness	: 3/8" - 3-1/8"
Angle steel (h x w)		: 3" x 3" - 14" x 14"
Max beams Weight		: 18,000 lbs
American standard channels		: C 3 x 5 - C 15 x 50
Square tubes & composite profiles		: max. height 40"

Remark: The distance between the bottom side of the profile and the edge of the hole being drilled has to be at least 5/8". Tools (magnets) for processing of flat steel are not included.

➤ 1- axis drilling system V600

Drill diameter	: 5/16" - 1-9/16"
Thread tapping	: 3/8" - 1"
Clamping range	: 2" - 40"
Feed	: electr./autom.; step less, electronic driven
Lubricant	: internal cooling air/oil
Centering possibility	: yes
Spindle rpm	: min. 200 rpm max. 1,200 rpm

Power supply	: 460 volt / 3 phase / 60 Hz
Not included	: Voltage stabilizer when needed.
Ambient temperature	: 30°-90° F
Working height	: 36" (± 1" height adjustment)

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D. GENERAL CONDITIONS

- Prices : Nett, excluding local or national taxes.
- Delivery : CFR (Incoterms 2000)
Excluding supply and connection of mains electric feed cable to the switch panel.
Excluding hotel costs Voortman engineer.
Excluding lifting facilities for unloading and installation. Hall/Mobile crane and / or forklift truck to be provided by customer.
- Installation : Included
- Delivery time : 2-4 weeks
- Payment : 40% down payment with order.
55% Prior to shipment.
5% after installation, not to exceed 30 days from date of final acceptance.
- Consequential losses : Unless otherwise stated in these conditions there shall be no liability for either party towards the other party for loss of production, loss of profit, loss of use, loss of contracts or for any consequential, economic or indirect loss whatsoever. The seller should not be liable for defects, which may cause loss of production, loss of profit and other indirect loss.
- Insurance : The buyer shall cover transit insurance coverage of contracted items.
- Guarantee : **12 months**, but max. 2000 production hours. Guarantee expires by incorrect use.
- Validity quotation : 30 days after date of quotation.

During the installation of the equipment the customer will provide two people to assist the Voortman Engineers.

On all our offers and orders the Orgalime terms and conditions are valid unless agreed otherwise. We will send you these terms upon request.