



DASNY

SECTION A



BID NO.:606	PROJECT NAME & LOCATION	SUNY Broome 907 Front Street Binghamton, New York
Description: Furnish, Deliver and Set Up Haas Manufacturing Equipment		
Bid Open Location: DASNY 515 Broadway, Albany, NY 12207		
Bid Open Date: May 18, 2018		
Bid Open Time: 2:30PM	Contact: Kristen Costello	(518) 257-3359

NOTICE TO BIDDERS

MAIL BIDS EARLY

Sealed bids will be received by DASNY at the above address for the items listed in the attached Bid Breakdown and Schedule. When submitting your bid you must:

1. Prepare your bid on the attached Bid Breakdown and Schedule. Return one signed original of the Bid Breakdown and Schedule
2. If your bid deviates from Specifications, explain such deviations or qualifications on your letterhead, setting forth therein such explanations, and attach them to the Bid Breakdown and Schedule.
3. Submission of a bid constitutes full knowledge and acceptance of all provisions of the Notice to Bidders, all information referenced in the General, Supplemental and Detailed Specifications, the Bid Submission and any Supplemental General Requirements contained herein, as well as any addenda issued in relation to the Invitation for Bids.
4. Each bid shall bear on the outside of the envelope the name of the bidder, address, telephone number and designated as a bid for the following:
DASNY Bid No. 606 - Furnish, Deliver and Set Up Haas Manufacturing Equipment

Bid Opening Date: May 18, 2018 @ 2:30PM

Return to:

DASNY

Attn: Purchasing Unit

515 Broadway

Albany, NY 12207-2964



Bid No.: 606

When a sealed bid is placed inside another delivery jacket, the bid delivery jacket must be clearly marked on the outside **"BID ENCLOSED"** and **"ATTENTION: PURCHASING UNIT"**. The Dormitory Authority will not be responsible for receipt of bids which do not comply with these instructions.

5. Mail bid responses early in order for them to be received before the time of the bid opening. **Late bids will be automatically rejected.** Individuals submitting bids in person or by private delivery services should allow sufficient time for processing through building security to assure that the bids are received prior to the deadline for submitting bids. All individuals who plan to attend bid openings will be required to present government-issued picture identification to building security officials and obtain a visitor's pass prior to attending the bid opening.
6. In accordance with State Finance Law § 139-j and 139-k, this solicitation includes and imposes certain restrictions on communications between Dormitory Authority personnel and an Offerer during this procurement process. Designated contact for this solicitation is:
Alan Miller, Purchasing Coordinator , at
Dormitory Authority – State of New York, 515 Broadway, Albany, NY 12207, (518) 257-3359. Contacts made to other Dormitory Personnel regarding this procurement may disqualify the Offerer and affect future procurements with governmental entities in the State of New York. Please refer to the Authority's website www.dasny.org for Authority policy and procedures regarding this law, or the NYS office of General Services website www.ogs.ny.gov/BU/PC/ for more information about this law.



Bid No.: 606

If you are not submitting a bid it is requested that you complete and return the lower portion of this form

(Please check all that apply and provide comments in the space provided, if necessary)

☐ We are not Submitting a bid.

☐ We Request removal of our name from the mailing list.

☐ Location of the job site.

☐ Commodity is not carried by our company.

☐ Scope is too large.

Other/Additional Explanation: _____

NAME OF
BIDDER:

ADDRESS
:

Street
Telephone

City

State

Zip

Signature of Bidder

Official Title

CLAUSES PURSUANT TO THE OMNIBUS PROCUREMENT ACT OF 1992

It is the policy of New York State to maximize opportunities for the participation of New York State business enterprises, including minority and woman-owned business enterprises as bidders, subcontractors and suppliers on its procurement contracts.

Information on the availability of New York subcontractors and supplies is available from:

Empire State Development
Small Business Division
30 South Pearl Street, 7th Floor
Albany, NY 12207
Phone: (800) 782-8369

A directory of minority and woman-owned business enterprises is available from:

Empire State Development
Division of Minority and Women Business Development
30 South Pearl Street
Albany, NY 12207
Phone: (518) 292-5250

Online Directory: <https://ny.newnycontracts.com/FrontEnd/VendorSearchPublic.asp>

DASNY maintains a directory of minority and women-owned business enterprises:
<http://www.dasny.org/construc/mwsbereg/index.php>

The contractor acknowledges notice that New York State may seek to obtain offset credits from foreign countries as a result of this contract and agrees to cooperate with the State in these efforts.

DASNY encourages the use of recycled Materials in the manufacturing process. To that end, the recycled product must meet the same codes, specifications and standards the non-recycled materials do, including requirements for cost, installation, aesthetics, availability and maintenance.

The Omnibus Procurement Act of 1992 and § 2879 of the NYS Public Authorities Law require that by signing this bid, contractors certify that whenever the total bid amount is greater than \$1 million:

1. The contractor has made reasonable efforts to encourage the participation of New York State Business Enterprises as suppliers and Subcontractors on this project, and has retained the documentation of these efforts to be provided upon request to the State. If the contractor determines that NYS business enterprises are not available to participate on the contract as subcontractors or suppliers, the contractor shall provide a statement indicating the method by which such determination was made. If the contractor does not intend to use subcontractors, contractor shall provide a statement verifying such;
2. The contractor has complied with the Federal Equal Opportunity Act of 1972 (PL 92-261), as amended;
3. The contractor agrees to make reasonable efforts to provide notification to New York State residents of employment opportunities on this project through listing any such positions with the Job Service Division of the New York State Department of Labor, or providing such notification in such manner as is consistent with existing collective bargaining contracts or agreements. The contractor agrees to document these efforts and to provide said documentation to the State upon request;

DASNY is required by law to notify the NYS Department of Economic Development of any procurement contract for one million dollars or more that is to be awarded to an out-of-state vendor. This notice must be done simultaneous to the notification of award provided to the vendor. A purchase order or contract cannot be issued until fifteen (15) days after such notification is provided.

GENERAL SPECIFICATIONS

- (1) The enclosed Purchasing General Conditions are hereby incorporated by reference. Submission of a bid response shall constitute acceptance of such conditions. Any exceptions/clarifications/qualifications to these conditions or other specifications and/or requirements contained herein must be clearly stated in the bid response and, depending upon the nature of such, may be grounds for rejection of your bid.
- (2) Bids must be submitted in the bidder's full legal name, or the bidder's full legal name plus a registered assumed name, if any.
- (3) All NYS bidders are required to be registered to do business with the NYS Department of State or their local County Clerk, whichever is applicable.
- (4) All out-of-state bidders will be required to provide proof of registration to do business in their state. All out-of-state bidders that "do business in New York State" **MUST BE REGISTERED WITH THE NYS DEPARTMENT OF STATE**. Please contact the NYS Department of State at (518) 473-2492. Information is available at the DOS website: www.dos.ny.gov
- (5) DASNY is required by law to notify the Empire State Development of any procurement contract for one million dollars or more that is to be awarded to an out-of-state vendor. This notice must be done simultaneous to the notification of award provided to the vendor. A purchase order or contract cannot be issued until fifteen (15) days after such notification is provided.
- (6) Empire State Development is required by law to identify states and other jurisdictions that impose preferences or other penalties against New York bidders. DASNY is precluded from soliciting bids or entering into procurement contracts with companies that have their principal place of business located in one of the listed jurisdictions, unless the procurement is for a product that is substantially manufactured in New York State or the services are to be performed in New York State. Currently, this list of jurisdictions includes the states of Alaska, Hawaii, Louisiana, South Carolina, West Virginia and Wyoming.
- (7) Unless otherwise indicated, any reference to brands or model numbers is intended to establish a standard. Items of all manufacturers will be considered, provided the item is determined to meet or exceed the required specification. DASNY's decision as to whether a substitute item meets specification will be final. Your attention is directed to Article II-7, Page 5 of the General Conditions. In order to evaluate substitute items, detailed specifications must be submitted for any product that is other than the one(s) specified in the bid.

GENERAL SPECIFICATIONS CONTINUED

- (8) Unless otherwise noted, guarantee on all items is to be one year as detailed in Article XVI of the General Conditions
- (9) All upholstered furniture and drapery panels and lining must meet strict flammability requirements. Standards applicable to this bid, if any, will be delineated in the Detailed Specifications.
- (10) **LABOR/TRADES** - Any labor, materials or means whose employment, or utilization during the course of this contract, shall not in any way cause or result in strike, work stoppages, delays, suspension of work; or similar troubles by workers employed by this contractor or his subcontractors, or by any of the trades working in or about the buildings and premises where work is being performed. Any violation by the contractor of this requirement may in the sole judgment of DASNY be considered as proper and sufficient cause for declaring the contractor to be in default, and for the owner to take action against him as set forth in the Purchasing General Conditions, Article VIII, "Termination", or such other action as DASNY may deem proper.
- (11) Bid results are available on the DASNY website (www.DASNY.org). Bid results will not be given over the phone.
- (12) If you are a NYS Certified Minority or Women Owned Business, please include a copy of your certification with the bid.



DASNY

ANDREW M. CUOMO
Governor

ALFONSO L. CARNEY, JR.
Chair

GERRARD P. BUSHELL, Ph.D.
President & CEO

SUPPLEMENTAL SPECIFICATIONS

The following items are attached for informational purposes. Referenced documents need not be returned with the proposal. These documents are only applicable to the successful bidder and the ensuing procurement contract. Documents are only applicable to the successful bidder and the ensuing procurement contract. Documents applicable to the procurement that will result from this Invitation for Bids are designated by a check box (☒). Unless otherwise indicated, the referenced documents are located at the end of this Invitation for Bids.

- ☒ **Purchasing General Conditions** – The DASNY Purchasing General Conditions contains terms and conditions of purchases made by DASNY. It is recommended that this document be reviewed fully.
- ☒ **M/WBE Utilization Plan and Request for Waiver** - Minority and Women-Owned Business Enterprise (M/WBE) goals for this project are 0% and 0%, respectively. The successful bidder shall be required to complete a Utilization Plan or Request for Waiver, to be approved by DASNY's Opportunity Programs Group. Reference Purchasing General Conditions, Article XIX, Affirmative Action for Contracts Mr. Michael Clay, DASNY Opportunity Programs Group at (518) 257-3464, is available to assist all bidders in attaining these goals. *Reference the enclosed "Good Faith Efforts Guidelines".*
- ☐ **Supplemental General Requirements** – Attached (if applicable) are the Supplemental General Requirements (SGRs) which provide important logistical information and additional conditions which govern this procurement. Please read these SGRs carefully.
- ☐ **Form of DASNY Contract** – The procurement resulting from the Invitation for Bids will be executed through a DASNY purchase order and a related contract. The contract executed with the successful bidder will be in the same substantial form as the attached "Form of Contract". Note that this Invitation for Bids and any response to such will be annexed as binding terms of the purchase agreement.
- ☒ **Certificate of Insurance** (*sample enclosed*) – The successful bidder will be required to provide a Certificate of Insurance pursuant to Article XIV of the enclosed Purchasing General Conditions. The certificate shall name DASNY and other designated parties as additional insureds.

CORPORATE HEADQUARTERS
515 Broadway
Albany, NY 12207-2964

T 518-257-3000
F 518-257-3100

NEW YORK CITY OFFICE
One Penn Plaza, 52nd Floor
New York, NY 10119-0098

T 212-273-5000
F 212-273-5121

BUFFALO OFFICE
539 Franklin Street
Buffalo, NY 14202-1109

T 716-884-9780
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DORMITORY AUTHORITY STATE OF NEW YORK

**WE FINANCE, BUILD AND
DELIVER.**

www.dasny.org



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SUPPLEMENTAL SPECIFICATIONS CONTINUED

- ☒ **Worker's Compensation / Disability Insurance** – The successful proposer will be required to provide specific documentation with respect to Worker's Compensation and Disability Insurance pursuant to Article XIV of the enclosed Purchasing General Conditions. Requirements are detailed in the enclosed "Workers' Compensation and Disability Benefits Requirements" document.
- ☐ **Prevailing Wage Schedule** – NYS Labor Law requires all wages paid by contractors and subcontractors on public work projects be paid at the prevailing wage rates. Enclosed is the current rate schedule for the appropriate county. Contractors and Subcontractors are responsible for obtaining current rates throughout the course of the project. The NYS Department of Labor (NYS DOL) updates these rates on July 1st of each year. Current rates can be obtained on the NYS DOL website (www.labor.state.ny.us) or by fax at (518) 485-1870. Note that an executed Contractor and Subcontractor Certification and certified payrolls, which include the hours and days worked by each workman, laborer or mechanic, the occupation at which he worked, the hourly wage rate paid and the supplements paid or provided, must be submitted with each and every payment requisition. **DASNY will not process an invoice without this information.** Forms are available on the DASNY website:
<http://www.dasny.org/construc/forms2/vendors.php>
- ☐ **Labor and Material Payment Bond** – The successful bidder must be prepared to provide surety bonds prior to award in accordance with Article XIV of the DASNY Purchasing General Conditions. The costs of these bonds are to be separately stated in the total bid price as indicated on the Bid Breakdown and Schedule.
- ☐ **Performance Bond** – The Successful bidder must be prepared to provide surety bonds prior to award in accordance with Article XIV of DASNY Purchasing General Conditions. The costs of these bonds are to be separately stated in the total bid price as indicated on the Bid Breakdown and Schedule.
- ☒ **Standard Vendor Responsibility Questionnaire (SVRQ)** – The successful proposer, in accordance with Article XXII of DASNY Purchasing General Conditions, will be required to complete the enclosed SVRQ. The award of a contract will be subject to a review of the information contained in these forms.

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SUPPLEMENTAL SPECIFICATIONS CONTINUED

- ☐ **NYS Uniform Contracting Questionnaire (UCQ)** – The successful proposer will be required to complete the enclosed UCQ. The award of a contract will be subject to a review of the information contained in these forms.
- ☐ **DASNY Contractor and Consultant Questionnaire (CCQ)** – The successful proposer will be required to complete the enclosed CCQ. The award of a contract will be subject to a review of the information contained in these

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DETAILED SPECIFICATIONS

Part #	Description	
CL-1	Chucker Lathe; 1" (25 mm) bar, 4.95" (126 mm) swing over table, 12" x 8" (305 x 203 mm) travels (xz), 5 hp (3.7 kW) 6000 rpm, 5C collet spindle, auto air collet closer, spindle orientation, coolant pump, 15" color LCD monitor, USB port, memory lock keyswitch, and rigid tapping.	

Control Options

SO	Spindle Orientation allows the spindle to be commanded to a specific programmed angle, using the spindle motor and spindle encoder for feedback. Controlled by industry-standard M-code, this option provides inexpensive, repeatable spindle positioning accurate to 0.5 degree.	
VQC	Haas Visual Quick Code is a template-driven conversational programming system that makes creating simple G-code programs nearly effortless. Select an operation on-screen, choose the template that matches what you want to do, and fill in dimensions, speeds, feeds, etc. Once all information is filled in and verified, VQC generates the correct G-code program. You can also create custom templates.	
EXPANDED-MEMORY	Increase your program storage capacity in the Haas control by expanding the on-board memory. This allows storing, running, and editing large programs directly at the machine.	
RTAPMM	Don't waste time and money tapping holes the old-fashioned way. Rigid tapping synchronizes the Z-axis motion of the machine with the spindle's rotation, eliminating the need for expensive floating tap holders. This prevents lead-thread distortion and start-thread pullout, while increasing productivity and allowing the use of standard collet toolholders. Rigid tapping is fully integrated with the Haas control, with built-in cycles for tapping, peck tapping, and repeat tapping, as well as an automatic tap recovery procedure, and up to 8X retract speeds.	
EPFDM	The Haas power-failure detection module senses a power failure or severe drop in incoming line voltage and quickly brings all axis motion to a safe and controlled stop. The module maintains power to the electronics long enough to activate brake motors and prevent uncommanded motion that could damage parts and tooling. Vertical axes are brought to a stop with the absolute minimum motion possible.	
ETHERNET	Connect your Haas machine to your local area network (LAN) with the Haas Ethernet Interface. This simple interface provides a reliable network connection to easily transfer program files to and from the machine, at speeds much faster than RS-232. High-speed data transfer rates let you DNC large files over the network at up to 1000 blocks per second, and you can eliminate redundant copies of your NC programs by hosting them all in a single network location. The Ethernet Interface also provides connectivity for HaasConnect mobile machine monitoring, and supports Netshare capabilities.	
VQC	Haas Visual Quick Code is a template-driven conversational programming system that makes creating simple G-code programs nearly effortless. Select an operation on-screen, choose the template that matches what you want to do, and fill in dimensions, speeds, feeds, etc. Once all information is filled in and verified, VQC generates the correct G-code program. You can also create custom templates.	

Options

CPKOL	13-Gallon (49 liter) Coolant Tank with 1/4 hp (186 W) pump; 6 gpm @ 10 psi (22,7 L/min @ 0.7 bar).	
WINDOW BLAST	Splashing coolant and chips often make it difficult to see inside the machine while making parts. The Haas Window Blast feature is a simple yet effective solution that uses your machine's airgun to quickly clear a section of the window - without stopping the machining process and opening the doors. This increases productivity by giving the operator a clear view of the work area during machining, simplifying part set-up and production.	

Tooling

ATT8KITSTD	Gang-style tooling kit with 1/2" centers; includes 1 each single position 3/4" ID holders, 1 each turn/face holders for 1/2" square turning tools, 1 each axial turn/face holders for 1/2" square turning tools, 1 set of 3 reducer bushings: 3/4" to 5/8", 1/2", and 3/8".	
ATT8KIT	Gang-style tooling kit with 1/2" centers; includes 1 each single position 3/4" ID holders, 2 each double-position 3/4" ID holders, 2 each turn/face holders for 1/2" square turning tools, 2 each axial turn/face holders for 1/2" square turning tools, 1 set of 3 reducer bushings: 3/4" to 5/8", 1/2", and 3/8".	

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Turret

ATT8	The Haas ATT8 automatic tool turret accepts a wide selection of gang-style tooling, and can use multiple tools in one station to eliminate index time. Automatic indexing allows for unattended operation. The turret uses common 1/2" (12.7 mm) center height gang-style tooling, and includes a basic tool kit.	\$0.00
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Workholding

MC4	This 4" (102 mm) 3-Jaw Manual Scroll Chuck is self-centering, and accommodates both OD and ID clamping. It has a 1.02" (25.9 mm) through-hole, and includes two sets of removable hard jaws (OD and ID), a chuck-to-spindle-nose adapter, and a chuck key.	
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Part #	Description	
ST-25Y	CNC Lathe w/Y Axis; 12" x 21" (305 x 533 mm) max capacity, 3.0" (76 mm) bar, 31.75" (806 mm) swing, $\pm 2.00"$ (± 50.8 mm) Y-axis travel, 30 hp (22.4 kW) vector drive, 3400 rpm, A2-6 spindle, 10" (254 mm) chuck, 12-station turret, high-torque live tooling w/C axis, 15" color LCD monitor, memory lock keyswitch, spindle orientation, USB port and rigid tapping. Standard toolholder kit included.	

Control Options

SO	Spindle Orientation allows the spindle to be commanded to a specific programmed angle, using the spindle motor and spindle encoder for feedback. Controlled by industry-standard M-code, this option provides inexpensive, repeatable spindle positioning accurate to 0.5 degree.	
RTAPMM	Don't waste time and money tapping holes the old-fashioned way. Rigid tapping synchronizes the Z-axis motion of the machine with the spindle's rotation, eliminating the need for expensive floating tap holders. This prevents lead-thread distortion and start-thread pullout, while increasing productivity and allowing the use of standard collet toolholders. Rigid tapping is fully integrated with the Haas control, with built-in cycles for tapping, peck tapping, and repeat tapping, as well as an automatic tap recovery procedure, and up to 8X retract speeds.	
ETHERNET	Connect your Haas machine to your local area network (LAN) with the Haas Ethernet Interface. This simple interface provides a reliable network connection to easily transfer program files to and from the machine, at speeds much faster than RS-232. High-speed data transfer rates let you DNC large files over the network at up to 1000 blocks per second, and you can eliminate redundant copies of your NC programs by hosting them all in a single network location. The Ethernet Interface also provides connectivity for HaasConnect mobile machine monitoring, and supports Netshare capabilities.	
IPS	The Haas Intuitive Programming System is a proprietary conversational programming system that uses easy-to-understand, step-by-step templates to guide the operator through the steps necessary to machine a part. No knowledge of G-code or CAM software is required to create basic programs directly at the Haas control.	
EXPANDED-MEMORY	Increase your program storage capacity in the Haas control by expanding the on-board memory. This allows storing, running, and editing large programs directly at the machine.	
RJH-C	The patented Haas Remote Jog Handle with color LCD lets you to get up-close to the machine's work area for part setup, changeover, and inspection, while still having control of the machine. The jog handle features a 2.8" color graphic display, an 11-button keypad, a triple-knob motion-control system that allows infinitely variable jog speeds, and a built-in magnifier and LED inspection light. You can set tool and work offsets, jog all axes, display machine position, command tool changes, show the current program running, and much more - all from the jog handle.	
EPFDM	The Haas power-failure detection module senses a power failure or severe drop in incoming line voltage and quickly brings all axis motion to a safe and controlled stop. The module maintains power to the electronics long enough to activate brake motors and prevent uncommanded motion that could damage parts and tooling. Vertical axes are brought to a stop with the absolute minimum motion possible.	

Options

ATP	Don't waste time with repetitive and tedious set-up and operation procedures on your Haas lathe. With the Haas Automatic Tool Presetter, you can increase part accuracy and setup consistency, while reducing set-up times by up to 50%. All this results in time savings that generate real, measurable profits. The Automatic Tool Presetter system features automated and manual modes of operation that are easy to use. It has a user-friendly interface for quick, conversational-style programming, and is one of the smartest investments you can make.	
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HIL	Tired of your dark shop, and not having enough light to properly load or inspect your parts while still in the machine? The High-Intensity Lighting option solves this problem with two, super-bright LED lights that you adjust to the perfect location to illuminate your machine workspace. There's nothing like being able to see what you're doing. The lights turn on automatically when the door is opened, and turn off when it's closed. They can also be turned on/off manually.	
JET	The Auto Jet Air Blast automatically keeps your workpiece and/or workholding clean without the need to open the operator doors. Activated by M-code, the air blast can be programmed to activate at any time - while the spindle is turning, at the end of cycle, or before a part pass-off on a Haas dual-spindle lathe. Dual-spindle machines have an independent M-code to activate the air blast for each spindle.	
PTS-1	The Haas fully programmable hydraulic tailstock can be activated via the part program, or controlled directly with the standard foot switch. Closed-loop positioning allows you to stop the tailstock anywhere along its travel. Compact, robust castings provide superior rigidity and vibration damping. The tailstock features an MT4 taper.	
ENCL EXHAUST	Start loading parts sooner, without waiting for the coolant mist to clear from the machine enclosure. The Haas Enclosure Exhaust System keeps the machine's interior clear of mist and smoke generated during the machining process, improving visibility and allowing for faster workpiece exchange. The Enclosure Exhaust System mounts easily to the enclosure, and is controlled and powered by the machine.	

Tooling

BMT65KIT	Inch Toolholder Kit, BMT65; includes 3 each 1" OD Toolholders, 1 each 1" ID Boring Bar Holder, 2 each 1.5" ID Boring Bar Holder.	
BMT65-90-DEGREE	Driven Toolholder, 90 Degree, for BMT65 Turret	
BMT65-STRAIGHT	Driven Toolholder, Straight, for BMT65 Turret	

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Part #	Description	
MINIMILL	Vertical Machining Center; 16" x 12" x 10" (406 x 305 x 254 mm), 40 taper, 7.5 hp (5.6 kW) vector drive, 6000 rpm, 10-station automatic tool changer, coolant pump, power-failure detection module, 1 GB program memory, memory lock keyswitch, 15" color LCD monitor and USB port.	

Accessories

CONV-PKG-BT	The Haas Convenience Package consists of a stainless steel work table and large storage shelf that mount to the front of the machine, along with a tool tray for 40-taper toolholders that mounts above them. A toolholder vise mounted to the work table provides a convenient place for maintaining tools, and a side rack holds smaller hand tools, such as wrenches and screwdrivers.	
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Control Options

ETHERNET	Connect your Haas machine to your local area network (LAN) with the Haas Ethernet Interface. This simple interface provides a reliable network connection to easily transfer program files to and from the machine, at speeds much faster than RS-232. High-speed data transfer rates let you DNC large files over the network at up to 1000 blocks per second, and you can eliminate redundant copies of your NC programs by hosting them all in a single network location. The Ethernet Interface also provides connectivity for HaasConnect mobile machine monitoring, and supports Netshare capabilities.	
1GB	Standard Program Memory, 1 GB	
RTAPMM	Don't waste time and money tapping holes the old-fashioned way. Rigid tapping synchronizes the Z-axis motion of the machine with the spindle's rotation, eliminating the need for expensive floating tap holders. This prevents lead-thread distortion and start-thread pullout, while increasing productivity and allowing the use of standard collet toolholders. Rigid tapping is fully integrated with the Haas control, with built-in cycles for tapping, peck tapping, and repeat tapping, as well as an automatic tap recovery procedure, and up to 8X retract speeds.	
HAAS CONNECT	HaasConnect is a web-based application that lets you monitor the operating status of your Haas machine remotely - anywhere, any time, on any device. HaasConnect provides instant alerts - via SMS, email, and iOS/Android push notifications - for specific machine events, like cycle start, program end, alarms, and overrides to feeds, spindle speed, or rapids. You choose which events you care about, and set up alerts to go to specific personnel for specific machine events. Simply log in to www.My.HaasCNC.com to manage your users and alerts. HaasConnect requires a Haas machine with the Next Generation Control (NGC), and an active Internet connection. Free apps are available for all of your iOS and Android devices.	
MEDIA DISPLAY	The Haas M-130 Media Display M-Code is a powerful tool for communicating with machine operators and programmers directly from the Haas control as an NC program runs. Use M-130 to call up setup instructions, tool lists, CAD images, manufacturing information, and more. When the program reaches an M-130, the specified media (image, video, or PDF) will be displayed in the upper right corner of the control screen. The function is turned off using an M-131 in the program. NextGen Control only.	

Options

WL-MM	This energy-efficient LED work light provides bright illumination of the work area for part inspection, job setup, and changeovers. The light turns on with the machine, but can be operated manually via a switch on the control pendant.	
WINDOW BLAST	Splashing coolant and chips often make it difficult to see inside the machine while making parts. The Haas Window Blast feature is a simple yet effective solution that uses your machine's airgun to quickly clear a section of the window - without stopping the machining process and opening the doors. This increases productivity by giving the operator a clear view of the work area during machining, simplifying part set-up and production.	

CPK-HF-MM	The high-flow coolant pump kit for your Haas Mini Mill upgrades the standard 1/4 hp (186 W) pump to a 3/4 hp (0.6 kW) pump that delivers 5.25 gpm @ 30 psi (19.9 L/min @ 2 bar), providing increased coolant pressure to clear chips during deep-hole drilling and blind-pocket milling. Activated via M-code or the keypad, the high-flow coolant pump allows higher cutting speeds to reduce cycle times, and prevents re-cutting chips for increased tool life and better surface quality. Includes a coolant level sensor.	
ENCL EXHAUST	Start loading parts sooner, without waiting for the coolant mist to clear from the machine enclosure. The Haas Enclosure Exhaust System keeps the machine's interior clear of mist and smoke generated during the machining process, improving visibility and allowing for faster workpiece exchange. The Enclosure Exhaust System mounts easily to the enclosure, and is controlled and powered by the machine.	
AAG	The Haas Automatic Air Gun (AAG) supplies high-pressure / high-flow air directly to the cutting zone to clear chips safely and automatically during dry machining, or to blow chips and coolant out of deep pockets. AAG provides a constant air blast through an adjustable cylinder and retractable barrel that you aim directly at the tool's cutting edge. AAG is also good for cutting non-metallic materials where coolant can't be used. Activated by M code, the air blast can be programmed to turn on while the spindle is turning, or at the end of a cycle.	

Probe System

WIPS-R	Set up your Haas mill up to 5 times faster using the Haas Wireless Intuitive Probing System (WIPS). WIPS is a complete probing package that includes the spindle probe, tool setting probe, and optical machine interface, along with powerful software that guides the operator through the job set-up process with intuitive, easy-to-use templates. WIPS allows you to quickly and easily define work offset coordinates, set tool length offsets, and perform in-process inspection, for both part inspection and tool breakage detection. The system includes the Haas Visual Programming System, macros, spindle orientation, and coordinate rotation and scaling. WIPS is the single best productivity improvement you can add to your Haas mill.	
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Tooling Taper (BT/CT)

CT	The tool changer supplied on this machine will accept CAT, DIN-69871-1 and ISO-7388/1 style toolholders.	
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Part #	Description	
VF-2TR	5-Axis Vertical Machining Center; 30" x 16" x 20" (762 x 406 x 508 mm), with removable 6.3" (160 mm) 2-axis trunnion rotary table, 40 taper, 30 hp (22.4 kW) vector drive, 8100 rpm, inline direct-drive, side-mount tool changer, 1000 ipm (25.4 m/min) rapids, automatic chip auger, programmable coolant nozzle, power-failure detection module, 1 GB program memory, coordinate rotation & scaling, color remote jog handle, macros, high-speed machining, 15" color LCD monitor, USB port, memory lock keyswitch, rigid tapping and 55-gallon (208 liter) flood coolant system.	

Accessories

ACF	Keeping your coolant system unclogged and operating with maximum flow not only improves part finish, but also increases the life of your tools and inserts. The Haas Auxiliary Coolant Filter is a bag-style filtration system that keeps the coolant free of particulates down to 5 microns, which extends the usable life of the coolant, and translates into considerable time and money savings. It is ideal for machines with the Through-Spindle Coolant option, and mandatory for machines with TSC when machining cast iron, cast aluminum, phenolics, and other particulate-producing materials.	
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Chip Removal System

CC	This auger-style chip conveyor automatically removes chips from the machine, while compressing them and wringing out the coolant. It is ideal for both short runs and high-production environments, eliminating the downtime required for manual chip removal. The auger can be activated via M-code or directly from the control pendant, and there are settings to control the interval and duration of the auger cycle for automatic operation. Smart-sensing technology automatically reverses the auger if a jam occurs.	
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Control Options

32GB	This expanded on-board solid-state memory allows you to store large programs and media files right at the machine, including .jpeg, .png, .pdf, .mov, and .mp4 files. You can edit and run programs directly from Expanded Memory, with no difference in navigation or performance from the standard memory.	
HOME	This option allows the operator to quickly send the machine's axes to a second, user-defined Home position that's different than the machine's standard Home position. It can be used to quickly send the spindle to a preferred location for tool loading or inspection, or to send the table to an alternate location for part or fixture loading. Easily "taught" to the machine, the Second Home Position is a simple one-button feature.	
DWO/TCPC	G254 Dynamic Work Offsets (DWO) and G234 Tool Center Point Control (TCPC) are software features in the Haas control that make setting up 4- and 5-axis jobs as easy as setting up a 3-axis machine. These software features allow an operator to place the part and fixture anywhere on the table, regardless of the location that was programmed in the CAM system. This simplifies set-up operations, and eliminates the need for costly workholding, like self-centering fixtures. DWO and TCPC determine the difference between the centers-of-rotation programmed in the CAM system and the centers-of-rotation within the machine and apply the appropriate offsets. This increases productivity and reduces part handling, because the operator no longer needs to repost the program every time the part location on the table changes. DWO applies to all 3+1 and 3+2 machining, while TCPC applies to all simultaneous 4- and 5-axis machine movements. Easy-to-use calibration templates are included.	

HSM	The Haas High-Speed Machining option allows faster feedrates and more complex toolpaths, without hesitation or starving the machine. By combining a proprietary motion algorithm with block look-ahead, HSM delivers contouring feedrates up to 1200 ipm (30.5 m/min), without risk of distortion to the programmed path. This yields shorter cycle times, higher accuracy, and smoother motion. The Haas HSM option accepts ISO standard G-code from all major CAM systems, and can be combined with settings and G-codes to produce exceptional results. HSM is mandatory for 3D and simultaneous 4- or 5-axis programs, and produces the desired results when short strokes are combined with high feedrates.	
ETHERNET	Connect your Haas machine to your local area network (LAN) with the Haas Ethernet Interface. This simple interface provides a reliable network connection to easily transfer program files to and from the machine, at speeds much faster than RS-232. High-speed data transfer rates let you DNC large files over the network at up to 1000 blocks per second, and you can eliminate redundant copies of your NC programs by hosting them all in a single network location. The Ethernet Interface also provides connectivity for HaasConnect mobile machine monitoring, and supports Netshare capabilities.	
MEDIA DISPLAY	The Haas M-130 Media Display M-Code is a powerful tool for communicating with machine operators and programmers directly from the Haas control as an NC program runs. Use M-130 to call up setup instructions, tool lists, CAD images, manufacturing information, and more. When the program reaches an M-130, the specified media (image, video, or PDF) will be displayed in the upper right corner of the control screen. The function is turned off using an M-131 in the program. NextGen Control only.	
HAAS CONNECT	HaasConnect is a web-based application that lets you monitor the operating status of your Haas machine remotely - anywhere, any time, on any device. HaasConnect provides instant alerts - via SMS, email, and iOS/Android push notifications - for specific machine events, like cycle start, program end, alarms, and overrides to feeds, spindle speed, or rapids. You choose which events you care about, and set up alerts to go to specific personnel for specific machine events. Simply log in to www.My.HaasCNC.com to manage your users and alerts. HaasConnect requires a Haas machine with the Next Generation Control (NGC), and an active Internet connection. Free apps are available for all of your iOS and Android devices.	
MACRO	The Haas User-Definable Macros option offers the programmer the ability to customize functions for a specific application or process. Some examples of macro applications are subroutines for custom canned cycles, probing routines, operator prompting, automation integration, driving optional devices, complex motion, and family-of-parts machining with variables. The possibilities are endless.	
COORD	Coordinate Rotation allows you to rotate your part program to another location or around a circumference; it also integrates well with a spindle probe to speed workpiece setup, especially when loading cast parts or uneven components in a workholding device. Scaling is perfect for working with families of parts, where all you need to do is increase or decrease (scale) the size of a toolpath or pattern. Each axis can also be scaled independently to accomplish complicated tasks, such as programming shoe molds, where length and width do not scale equally for different sizes.	
RJH-C	The patented Haas Remote Jog Handle with color LCD lets you to get up-close to the machine's work area for part setup, changeover, and inspection, while still having control of the machine. The jog handle features a 2.8" color graphic display, an 11-button keypad, a triple-knob motion-control system that allows infinitely variable jog speeds, and a built-in magnifier and LED inspection light. You can set tool and work offsets, jog all axes, display machine position, command tool changes, show the current program running, and much more - all from the jog handle.	

Options

ENCL EXHAUST	Start loading parts sooner, without waiting for the coolant mist to clear from the machine enclosure. The Haas Enclosure Exhaust System keeps the machine's interior clear of mist and smoke generated during the machining process, improving visibility and allowing for faster workpiece exchange. The Enclosure Exhaust System mounts easily to the enclosure, and is controlled and powered by the machine.	
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HIL	Tired of not having enough light to properly load or inspect your parts in the machine? The High-Intensity Lighting option includes a pair of super-bright LED lights that can be easily adjusted to perfectly illuminate your machine workspace. These energy-efficient lights turn on automatically when the doors are opened, and turn off when closed. They can also be turned on/off manually or via M-code.	
TAB	The Haas Through-Spindle Air Blast (TAB) option supplies high-pressure / high-flow air through the tool, directly to the cutting edge, to clear chips and provide cooling during dry machining. TAB yields better surface finishes, and allows higher speeds and feeds, by blasting chips away from the tool to prevent recutting chips. TAB is great for deep-hole pocketing, side milling, drilling, and facing. It is activated by M-code, or manually from the control pendant. Because TAB uses the same delivery system as through-spindle coolant, you can easily switch between air and coolant through the tool, as needed. TAB also can be used to power super-high-speed air-turbine tools directly through the spindle, without the need for collars or a separate air supply to the tool. Available for inline spindles only. Requires a Haas Through-Spindle Coolant system.	
P-COOL	Boost your productivity. Reduce cycle times. Eliminate all that opening and closing of the mill doors to adjust coolant lines. Our Programmable Coolant Nozzle is a multi-position nozzle that automatically directs coolant precisely at the cutting tool. The position of the nozzle is controlled via the program, and set specifically for each tool length - saving operator time by eliminating constant adjustments. The nozzle position may also be adjusted manually from the control pendant while a program is running.	
WINDOW BLAST	Splashing coolant and chips often make it difficult to see inside the machine while making parts. The Haas Window Blast feature is a simple yet effective solution that uses your machine's airgun to quickly clear a section of the window - without stopping the machining process and opening the doors. This increases productivity by giving the operator a clear view of the work area during machining, simplifying part set-up and production.	

Probe System

WIPS-R	Set up your Haas mill up to 5 times faster using the Haas Wireless Intuitive Probing System (WIPS). WIPS is a complete probing package that includes the spindle probe, tool setting probe, and optical machine interface, along with powerful software that guides the operator through the job set-up process with intuitive, easy-to-use templates. WIPS allows you to quickly and easily define work offset coordinates, set tool length offsets, and perform in-process inspection, for both part inspection and tool breakage detection. The system includes the Haas Visual Programming System, macros, spindle orientation, and coordinate rotation and scaling. WIPS is the single best productivity improvement you can add to your Haas mill.	
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Spindle

10K-40T-IN	10,000-rpm Spindle, 40 taper, 30 hp (22.4 kW) vector drive, inline direct-drive.	
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Through-Spindle Coolant

TSC	This Haas Through-Spindle Coolant system provides up to 300 psi (21 bar) of coolant to the cutting tool, allowing for heavier cuts, higher feedrates, deep-hole drilling, and better surface finishes. With Through-Spindle Coolant, you can really reduce your cycle times to increase throughput, and you'll produce higher-quality parts. To minimize clogging, the Haas TSC pump includes an innovative self-cleaning feature. Maximum rpm with TSC enabled is 15,000 rpm.	
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Tooling Taper (BT/CT)

CT	The tool changer supplied on this machine will accept CAT, DIN-69871-1 and ISO-7388/1 style toolholders.	
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Part #	Description	
VF-2YT	Vertical Machining Center; 30" x 20" x 20" (762 x 508 x 508 mm), 40 taper, 30 hp (22.4 kW) vector drive, 8100 rpm, inline direct-drive, 20-station carousel tool changer, 1000 ipm (25.4 m/min) rapids, power-failure detection module, 1 GB program memory, 15" color LCD monitor, USB port, memory lock keyswitch, rigid tapping and 55-gallon (208 liter) flood coolant system.	

Additional Axis

4AXBL	The fastest way to increase the productivity of your Haas mill is to add a Haas 4th-axis rotary product. The Haas 4th-axis drive allows the use of a fully integrated 4th-axis Haas rotary table or indexer for multi-sided machining, yielding increased productivity and reduced setups. The drive is fully integrated to the Haas control, allowing simple plug-n-play installation of a Haas rotary table or indexer. This option is field installable.	
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Control Options

32GB	This expanded on-board solid-state memory allows you to store large programs and media files right at the machine, including .jpeg, .png, .pdf, .mov, and .mp4 files. You can edit and run programs directly from Expanded Memory, with no difference in navigation or performance from the standard memory.	
HOME	This option allows the operator to quickly send the machine's axes to a second, user-defined Home position that's different than the machine's standard Home position. It can be used to quickly send the spindle to a preferred location for tool loading or inspection, or to send the table to an alternate location for part or fixture loading. Easily "taught" to the machine, the Second Home Position is a simple one-button feature.	
HSM	The Haas High-Speed Machining option allows faster feedrates and more complex toolpaths, without hesitation or starving the machine. By combining a proprietary motion algorithm with block look-ahead, HSM delivers contouring feedrates up to 1200 ipm (30.5 m/min), without risk of distortion to the programmed path. This yields shorter cycle times, higher accuracy, and smoother motion. The Haas HSM option accepts ISO standard G-code from all major CAM systems, and can be combined with settings and G-codes to produce exceptional results. HSM is mandatory for 3D and simultaneous 4- or 5-axis programs, and produces the desired results when short strokes are combined with high feedrates.	
MEDIA DISPLAY	The Haas M-130 Media Display M-Code is a powerful tool for communicating with machine operators and programmers directly from the Haas control as an NC program runs. Use M-130 to call up setup instructions, tool lists, CAD images, manufacturing information, and more. When the program reaches an M-130, the specified media (image, video, or PDF) will be displayed in the upper right corner of the control screen. The function is turned off using an M-131 in the program. NextGen Control only.	
RTAP-3	Don't waste time and money tapping holes the old-fashioned way. Rigid tapping synchronizes the Z-axis motion of the machine with the spindle's rotation, eliminating the need for expensive floating tap holders. This prevents lead-thread distortion and start-thread pullout, while increasing productivity and allowing the use of standard collet toolholders. Rigid tapping is fully integrated with the Haas control, with built-in cycles for tapping, peck tapping, and repeat tapping, as well as an automatic tap recovery procedure, and up to 8X retract speeds.	
ETHERNET	Connect your Haas machine to your local area network (LAN) with the Haas Ethernet Interface. This simple interface provides a reliable network connection to easily transfer program files to and from the machine, at speeds much faster than RS-232. High-speed data transfer rates let you DNC large files over the network at up to 1000 blocks per second, and you can eliminate redundant copies of your NC programs by hosting them all in a single network location. The Ethernet Interface also provides connectivity for HaasConnect mobile machine monitoring, and supports Netshare capabilities.	

HAAS CONNECT	HaasConnect is a web-based application that lets you monitor the operating status of your Haas machine remotely - anywhere, any time, on any device. HaasConnect provides instant alerts - via SMS, email, and iOS/Android push notifications - for specific machine events, like cycle start, program end, alarms, and overrides to feeds, spindle speed, or rapids. You choose which events you care about, and set up alerts to go to specific personnel for specific machine events. Simply log in to www.My.HaasCNC.com to manage your users and alerts. HaasConnect requires a Haas machine with the Next Generation Control (NGC), and an active Internet connection. Free apps are available for all of your iOS and Android devices.	
RJH-C	The patented Haas Remote Jog Handle with color LCD lets you to get up-close to the machine's work area for part setup, changeover, and inspection, while still having control of the machine. The jog handle features a 2.8" color graphic display, an 11-button keypad, a triple-knob motion-control system that allows infinitely variable jog speeds, and a built-in magnifier and LED inspection light. You can set tool and work offsets, jog all axes, display machine position, command tool changes, show the current program running, and much more - all from the jog handle.	

Options

WINDOW BLAST	Splashing coolant and chips often make it difficult to see inside the machine while making parts. The Haas Window Blast feature is a simple yet effective solution that uses your machine's airgun to quickly clear a section of the window - without stopping the machining process and opening the doors. This increases productivity by giving the operator a clear view of the work area during machining, simplifying part set-up and production.	
AAG1	The Haas Automatic Air Gun (AAG) supplies high-pressure / high-flow air directly to the cutting zone to clear chips safely and automatically during dry machining, or to blow chips and coolant out of deep pockets. AAG provides a constant air blast through an adjustable cylinder and retractable barrel that you aim directly at the tool's cutting edge. AAG is also good for cutting non-metallic materials where coolant can't be used. Activated by M code, the air blast can be programmed to turn on while the spindle is turning, or at the end of a cycle.	
ENCL EXHAUST	Start loading parts sooner, without waiting for the coolant mist to clear from the machine enclosure. The Haas Enclosure Exhaust System keeps the machine's interior clear of mist and smoke generated during the machining process, improving visibility and allowing for faster workpiece exchange. The Enclosure Exhaust System mounts easily to the enclosure, and is controlled and powered by the machine.	
HIL	Tired of not having enough light to properly load or inspect your parts in the machine? The High-Intensity Lighting option includes a pair of super-bright LED lights that can be easily adjusted to perfectly illuminate your machine workspace. These energy-efficient lights turn on automatically when the doors are opened, and turn off when closed. They can also be turned on/off manually or via M-code.	

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Spindle

10K-40T-IN	10,000-rpm Spindle, 40 taper, 30 hp (22.4 kW) vector drive, inline direct-drive.	
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Through-Spindle Coolant

TSC READY	Through-Spindle Coolant Ready machines are pre-configured to accept an optional Haas Through-Spindle Coolant system. The TSC drawbar, plumbing, and wiring are preinstalled at the factory, making field installation of TSC faster, easier, and less invasive.	
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Tooling Taper (BT/CT)

CT	The tool changer supplied on this machine will accept CAT, DIN-69871-1 and ISO-7388/1 style toolholders.	
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Part # Description

HRT160	160 mm (6.3") Servo Rotary Table. Requires Haas mill with 4th-axis drive for full 4th-axis operation, or a rotary control box for stand-alone operation. Requires a Haas mill with software version 18.00 or later.	
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Options

SIGMA5	Sigma 5 servomotor drives are the default for current Haas rotary products. They are required to use the rotary on 2011 or newer Haas mills. To use the rotary on a 2010 or older Haas mill, you must order the Sigma 1 option.	
TBS-160	The Haas Tooling Block System is made from 6061-T6 aluminum alloy, and can be machined to meet your requirements. The system includes the aluminum tooling block, an outboard A-frame support and a steel mounting plate. Tooling block measures 12" (305 mm) long x 4" (102 mm) square.	