

OTW HONING

HONING MACHINES
& ABRASIVES



OTW VERSAHONE HORIZONTAL

HORIZONTAL HONING MACHINE



“HIGHLY VERSATILE”

The OTW VersaHone Horizontal honing machines provide the flexibility, value, and ease of use ideal for those who process a broad range of parts.

STANDARD FEATURES

- Programmable automatic tool
- Expansion system
- Universal chain type fixturing system
- Tool support rest
- 1.25" Diameter hardened steel ways
- Touchscreen PLC operator controls
- Part program storage
- Magnetic filtration system

OPTIONS

- Large selection of vitrified & metalbond abrasives
- 2M or 4.5M stroke lengths
- Special electrical system options
- Paper media coolant filtration system
- CE Certification

TECHNICAL SPECIFICATIONS

OTW VersaHone Horizontal	
I.D. Capacity	1.98 – 22" (50 – 560 mm)*
O.D. Capacity	24" (610 mm) max
Stroke Capacities	6.5' (2 M) 13.0' (4 M)
Stroke Power	2.0 HP (1.5 KW)
Spindle Drive	5.0 HP (3,7 KW)
Spindle Speeds	20 – 300 RPM Infinitely Variable
Stroke Rate	5 – 90 FPM (1,5 27,4 m/min) Infinitely Variable
Electrical System	480V / 3PH / 60 Hz**

*Subject to specific application bore condition and base capacity **Additional voltages available

OTW ULTRAHONE HORIZONTAL

HORIZONTAL HONING MACHINE



“MAXIMUM PRODUCTIVITY”

The OTW UltraHone Horizontal honing system is OTW's heavy duty hone. Offered with two power drive options – full servo (Standard) and full hydraulic (XL) and with multiple fixturing and system options, it can process parts from 1.50" (38 mm) up to 24.0" (610 mm) and is available in lengths up to 72" (1.8 M).

STANDARD FEATURES

- Automatic tool expansion with load sensing
- Universal part holding fixtures
- Stationary driveshaft support with lift
- 3.0" Diameter hardened steel ways
- 6.25" Diameter flanged spindle
- Touchscreen operator controls
- Auto dwell/short stroke
- Part program storage
- Driveshaft indexing feature

OPTIONS

- Two choices of power drive systems
- Wide selection of fixturing options
- Remote connectivity for online support & monitoring
- IIoT ready with full data
- Collection capability
- Coolant filtration and refrigeration options

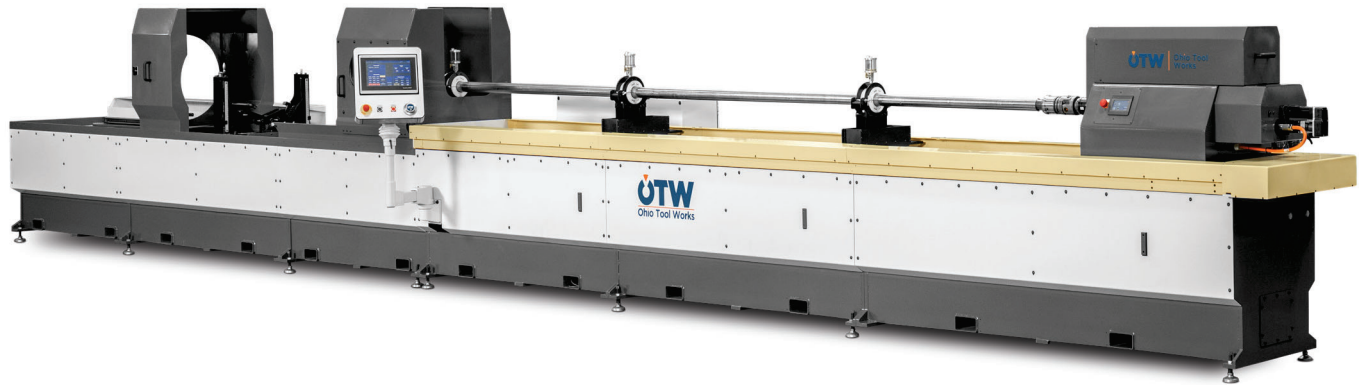
TECHNICAL SPECIFICATIONS

OTW UltraHone Horizontal	Standard (Servo)	XL (Hydraulic)
I.D. Capacity	1.50" – 22.0" (38 – 560 mm) *	1.50" – 24.0" (38 – 610 mm) *
O.D. Capacity	24.0" (610 mm)	26.0" (660 mm)
Stroke Capacities	Up to 45' (14 M)	Up to 56' (17 M)
Stroke Power	11 kW Servo	25.0 HP Hydraulic
Spindle Drive	5.0 HP (3,7 KW)	50.0 HP Hydraulic
Spindle Speeds	Packages from 10 – 2500 RPM Infinitely Variable	
Stroke Rate	1 – 100 FPM (0,3 – 30,5 M/min) Infinitely Variable	
Electrical System	480V / 3PH / 60 Hz**	
Typical Industries Served	Raw Materials, Defense, Plastics, Hydraulics, & Energy	

*Subject to specific application bore condition and base capacity **Additional voltages available

OTW POWERHONE HORIZONTAL

HORIZONTAL HONING MACHINE



“SIMPLE AND PRECISE”

The OTW PowerHone Horizontal honing system is OTW’s production duty hone. Offered with multiple fixturing and system options, it can process parts from 0.500” (12 mm) up to 22” (559 mm) and is available in lengths up to 26’ (8 M).

STANDARD FEATURES

- Automatic tool expansion with load sensing
- Universal part holding fixtures
- Stationary driveshaft support
- 1.5” Diameter hardened steel ways
- 2.0” Diameter bayonet spindle
- Touchscreen operator controls
- Auto dwell/short-stroke
- Part program storage
- Driveshaft indexing feature

OPTIONS

- IIoT ready with full data capability
- Remote connectivity for online support and monitoring
- Coolant filtration system
- Small bore processing options

TECHNICAL SPECIFICATIONS

OTW PowerHone Horizontal	Standard (Servo)
I.D. Capacity	.500” – 22” (12 – 560 mm) *
O.D. Capacity	23.0” (584 mm)
Stroke Capacities	6.6’ (2 M) 13’ (4 M) 20’ (6 M) 26’ (8 M)
Stroke Power	11 kW Servo
Spindle Drive	Up to 20 kW Servo *
Spindle Speeds	Packages from 10 – 3500 RPM Infinitely Variable
Stroke Rate	1 – 100 FPM (0,3 – 30,5 m/min) Infinitely Variable
Electrical System	480V / 3PH / 60 Hz**

*Subject to specific application bore condition and base capacity **Additional voltages available

TURNKEY SOLUTIONS

Ask us about OTW's complete line of tooling, abrasives & consumables.



OTW VERSAHONE VERTICAL

VERTICAL HONING MACHINE

“HIGHLY VERSATILE”

The OTW VersaHone Vertical honing machines provide the flexibility, value, and ease of use ideal for those who process a broad range of parts.

STANDARD FEATURES

- Programmable automatic tool expansion system
- Precision handwheel control
- Profile linear ways
- Touchscreen PLC operator controls
- Part program storage
- Full Servo control
- Ball screw reciprocation

OPTIONS

- IIoT ready with full data capability
- Remote connectivity for online support and monitoring
- Single or multi-spindle configurations
- Universal fixture or Indexing table
- Coolant filtration system



TECHNICAL SPECIFICATIONS

OTW VersaHone Vertical	
I.D. Capacity	0.25" – 6.0" (6.35 – 152 mm)
O.D. Capacity	8.0" (200 mm)
Stroke Capacities	12.0" (305 mm) 24.0" (610 mm) 36.0" (915 mm)
Stroke Power	5.5 kW
Spindle Drive	Up to 10 kW*
Spindle Speeds	Packages from 10 – 3500 RPM Infinitely Variable
Stroke Rate	5 – 90 FPM (1,5 – 27,4 M/min) Infinitely Variable
Electrical System	480V / 3PH / 60 Hz**

*Subject to specific application bore condition and base capacity **Additional voltages available

OTW POWERHONE VERTICAL

VERTICAL HONING MACHINE

“SIMPLE AND PRECISE”

The OTW PowerHone Vertical honing system is OTW's production duty hone. Offered with multiple fixturing and system options, it can process parts from 1.50" (38 mm) up to 16.0" (406 mm) and is available in lengths up to 96" (2.4 M).

STANDARD FEATURES

- Full servo control
- Single and two-stage tool expansion with load sensing
- Automatic size control options
- Completely self-contained design
- Touchscreen operator controls
- Single & multiple spindle options
- On-board integration options for automated part handling & gaging systems

OPTIONS

- IIoT ready with full data capability
- Remote connectivity for online support and monitoring
- Coolant filtration system
- Custom fixturing



TECHNICAL SPECIFICATIONS

OTW PowerHone Vertical	
I.D. Capacity	.500" – 20" (12 – 500 mm) *
O.D. Capacity	22.0" (560 mm)
Stroke Capacities	Up to 96" (2438 mm)
Stroke Power	11,0 kW Servo
Spindle Drive	Up to 20 kW *
Spindle Speeds	Packages from 10 – 3500 RPM Infinitely Variable
Stroke Rate	1 – 100 FPM (0,3 – 30,5 m/min) Infinitely Variable
Electrical System	480V / 3PH / 60 Hz**
Typical Industries Served	Aerospace, Automotive, Defense, Hydraulics, & Energy

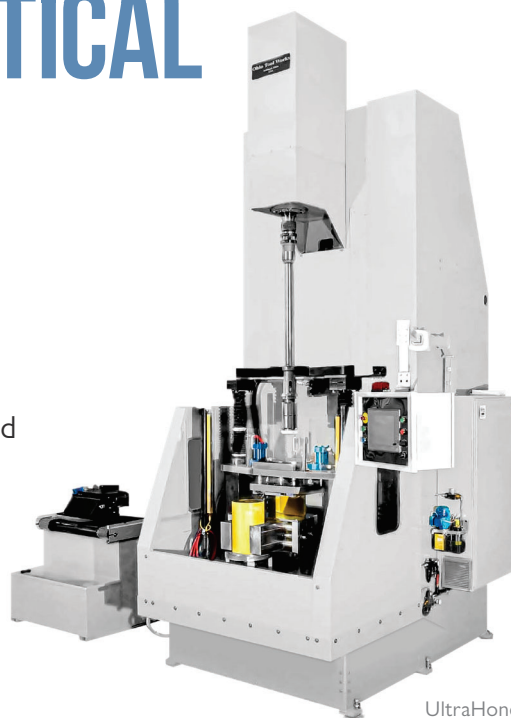
*Subject to specific application bore condition and base capacity **Additional voltages available

OTW ULTRAHONE VERTICAL

VERTICAL HONING MACHINE

“MAXIMUM PRODUCTIVITY”

The OTW UltraHone Vertical honing system is OTW's heavy duty hone. Offered with two power drive options – full servo (Standard) and full hydraulic (XL) and with multiple fixturing and system options, it can process parts from 1.50" (38 mm) up to 24.0" (610 mm) and is available in lengths up to 72" (1.8 M).



UltraHone (V) Standard

STANDARD FEATURES

- Single and two-stage tool expansion with load sensing
- Automatic size control options
- Median size control system
- Plug type sizing
- Completely self-contained design
- Touchscreen operator controls

OPTIONS

- Two choices of power drive systems
- Wide selection of fixturing options
- Remote connectivity for online support and monitoring
- IIoT ready with full data collection capability
- Coolant filtration and refrigeration options



UltraHone (V) XL

TECHNICAL SPECIFICATIONS

OTW UltraHone Vertical	Standard (Servo)	XL (Hydraulic)
I.D. Capacity	1.50" – 22.0" (38 – 560 mm) *	1.50" – 24.0" (38 – 610 mm) *
O.D. Capacity	24.0" (610 mm)	26.0" (660 mm)
Stroke Capacities	Up to 72" (1829mm)	Up to 72" (1829mm)
Stroke Power	11 kW Servo	25.0 HP Hydraulic
Spindle Drive	Up to 30 kW Servo*	50.0 HP Hydraulic
Spindle Speeds	Packages from 10 – 2500 RPM Infinitely Variable	
Stroke Rate	1 – 100 FPM (0,3 – 30,5 m/min) Infinitely Variable	
Electrical System	480V / 3PH / 60 Hz**	
Typical Industries Served	Aerospace, Automotive, Defense, Hydraulics, & Energy	

*Subject to specific application bore condition and base capacity **Additional voltages available



TURNKEY SOLUTIONS

Ask us about OTW's complete line of tooling, abrasives & consumables.

ABRASIVES GUIDE

This guide is designed to help determine the right abrasive for your specific application. This guide will quickly direct you to the correct abrasive whether you are rough honing or precision finishing.



MATERIAL	ROUGHING				FINISHING			
	VITRIFIED		METALBOND		VITRIFIED		METALBOND	
	SILICON CARBIDE	ALUMINUM OXIDE	DIAMOND	CBN	SILICON CARBIDE	ALUMINUM OXIDE	DIAMOND	CBN
Aluminum (13,15,17, 440 Series)	•	•	•		•	•	•	
Brass	•		•		•		•	
Bronze	•		•		•		•	
Carbon	•	•	•		•	•	•	
Carbide (Tungsten, Titanium, Tantalum)	•	•	•		•	•	•	
Cast Iron	•	•	•		•	•	•	
Compacted Graphite (CGT)	•	•	•		•	•	•	
Nodular Iron	•	•	•		•	•	•	
Malleable Iron	•	•	•		•	•	•	
Ceramic	•		•		•		•	
Silicone Nitride	•		•		•		•	
Aluminum Oxide	•		•		•		•	
Glass			•				•	
High Nickel Alloys								
Inconel-600 Series		•		•	•			•
Inconel-700 Series				•				•
Hastelloy		•		•				•
Incoloy		•		•				•
Nickel		•		•				•
Niobium		•		•				•
Nikasil		•	•				•	

MATERIAL	ROUGHING				FINISHING			
	VITRIFIED		METALBOND		VITRIFIED		METALBOND	
	SILICON CARBIDE	ALUMINUM OXIDE	DIAMOND	CBN	SILICON CARBIDE	ALUMINUM OXIDE	DIAMOND	CBN
Steel - Carbon & Alloy		•		•				•
4000 Series		•		•	•	•		•
5000 Series		•		•	•	•		•
6000 Series		•		•	•	•		•
8000 Series		•		•	•	•		•
Steel-High Speed		•		•		•		•
M-Series		•		•		•		•
T-Series		•		•		•		•
Steel-H-Series Hot Forming & Die Steels		•		•		•		•
Stainless Steel		•		•		•		•
300 Series		•		•		•		•
400 Series		•		•		•		•
High Chrome (ie 13cr., 20cr, 24cr)		•		•		•		•
Non-Magnetic Material		•		•		•		•
Tool & Die Steel		•		•		•		•
A-Series		•		•		•		•
O-Series		•		•		•		•
S-Series		•		•		•		•
H-Series		•		•		•		•
Hot Forming & Die Steels		•		•		•		•
Miscellaneous Materials		•		•		•		•
Chromium	•	•	•		•	•	•	
Copper (100-Series)	•	•	•		•	•	•	
Magnesium		•		•		•		•
Molybdenum		•		•		•		•
Monel		•		•		•		•
Stellite		•		•		•		•
Tungsten	•		•		•		•	
Titanium		•		•		•		•
Tantalum				•				•
Vanadium		•		•		•		•
Zirconium			•				•	

VITRIFIED ABRASIVES

With dedicated in-house production facilities, Ohio Tool Works manufactures the honing industry's highest quality line of standard, custom, and replacement vitrified honing abrasives designed to meet the needs of customers from any industry in the world. Whatever your application or production volume, we offer a complete line of conventional abrasive types, grades, sizes, and mounting configurations

FEATURES

- Abrasive Cross-Sections from .06" and Above and Lengths to 8.0"
- Hybrid Ceramic & Related Products
- Impregnated Fiber Sticks
- Conventional & Custom Mountings



ALUMINUM OXIDE / 80 GRIT



ALUMINUM OXIDE / 120 GRIT



ALUMINUM OXIDE / 180 GRIT



ALUMINUM OXIDE / 320 GRIT



ALUMINUM OXIDE / 400 GRIT



ALUMINUM OXIDE / 500 GRIT



ALUMINUM OXIDE WHITE / 120 GRIT



ALUMINUM OXIDE CERAMIC



ALUMINUM OXIDE CERAMIC



ALUMINUM OXIDE RESIN BOND



SILICON CARBIDE BLACK / 80 GRIT



SILICON CARBIDE BLACK / 320 GRIT



SILICON CARBIDE BLACK / 500 GRIT



SILICON CARBIDE GREEN / 120 GRIT



SILICON CARBIDE GREEN / 220 GRIT



SILICON CARBIDE GREEN / 500 GRIT



ALUMINUM OXIDE

Vitrified Aluminum Oxide is a mined mineral. It is processed to grit sizes 6 to 1200. Aluminum Oxide crystals have sharp-edged block shapes. The cutting surface is constantly renewed keeping it sharp and free of build-up. Aluminum Oxide is the most widely used abrasive material.

SPECIFICATIONS

- Aluminum Oxide honing abrasives are available in combinations of the specifications listed in the chart below.

ALUMINUM OXIDE SPECIFICATIONS CHART

GRAIN TYPES	GRIT SIZES	STONE HARDNESSES	STONE SIZES	STONE LENGTHS	MOUNTINGS
Aluminum Oxide	80	H (ultra soft)	1/4" x 1/4"	1" - 4"	Mounded
Aluminum Oxide White	120	I (soft)	5/16" x 5/16"	1" - 6"	Unmounted
Ceramic Oxide	150	IP (induced porosity)	3/8" x 3/8"	1" - 8"	
Resin Bond	180	J (soft medium)	1/2" x 1/2"	1" - 8"	
	240	K (medium)	5/8" 5/8"	1" - 8"	
	320	L (medium hard)	3/4" x 3/4"	1" - 8"	
	400	M (hard)	1" x 1"	1" - 8"	
	500				

SILICON CARBIDE

Vitrified Silicon Carbide is a mined material. It is harder and more friable than aluminum oxide. Silicon Carbide has sharp structure and is often used for hard, nonferrous materials and extra fine finishes.

SPECIFICATIONS

- Silicon Carbide honing abrasives are available in combinations of the specifications listed in the chart below

SILICONE CARBIDE SPECIFICATIONS CHART

GRAIN TYPES	GRIT SIZES	STONE HARDNESSES	STONE SIZES	STONE LENGTHS	MOUNTINGS
Silicon Carbide Black	80	H (ultra soft)	1/4" x 1/4"	1" - 4"	Mounded
Silicon Carbide Green	120	I (soft)	5/16" x 5/16"	1" - 6"	Unmounted
	150	IP (induced porosity)	3/8" x 3/8"	1" - 8"	
	180	J (soft medium)	3/8" x 7/16"	1" - 8"	
	240	K (medium)	1/2" x 1/2"	1" - 8"	
	320	L (medium hard)	.375" x .375"	1" - 8"	
	400	M (hard)	5/8" x 5/8"	1" - 8"	
	500				

METALBOND ABRASIVES

We offer several different “Metalbonded” Honing abrasive configurations to fit a variety of applications. We will tailor a bond for your specific application to increase tool life as well as tailor an abrasive to meet your specific surface finish requirements. Metalbond Abrasive selections include CBN and Diamond.

When utilizing Metalbond as opposed to Vitrified bonds, the life and cutting action of the abrasive increases greatly. Bonds can be modified to give the operator excellent abrasive life and increase productivity

FEATURES

- Premium Metalbonds
- Synthetic & Natural Diamond
- Monocrystalline CBN Premium Abrasive
- Conventional & Custom Mountings



METALBOND ABRASIVE STYLES



CBN (CUBIC BORON NITRIDE)

CBN is the second hardest abrasive material. It has a sharp, blocky structure and is the most widely used super-abrasive for cost and versatility. CBN is best suited for ferrous materials and certain grades of cast iron.

CBN SPECIFICATIONS CHART

GRAIN TYPES	GRIT SIZES	BONDS	GEOMETRIES	STONE SIZES (H&W)	MOUNTINGS
Monocrystalline CBN (Cubic Boron Nitride)	Mesh 30-400	Premium Metalbonds	Modified Standard	.039" through .750"	Steel
Microcrystalline	Micron 500-800	CONCENTRATION	Blind Hole	STONE SIZES (L)	Aluminum
		25 - 150	Hard Tips	up to 12"	Bronze
			Abrasive Length/ Width Variations		

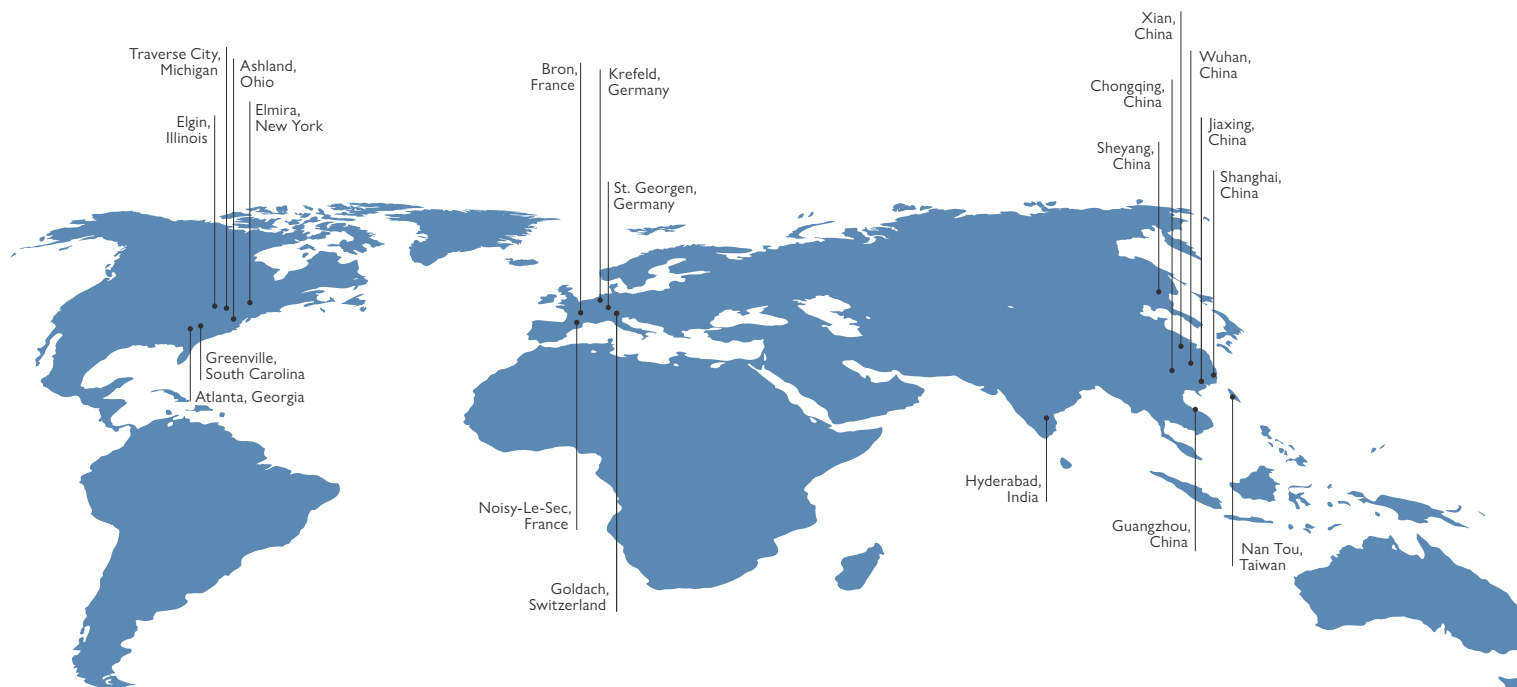
DIAMOND

Diamond is the hardest known abrasive material and comes from both synthetic and natural sources. Diamond is generally best suited for non-ferrous materials except certain cast irons.

DIAMOND SPECIFICATIONS CHART

GRAIN TYPES	GRIT SIZES	BONDS	GEOMETRIES	STONE SIZES (H&W)	MOUNTINGS
Synthetic Diamond	Mesh 30-400	Premium Metalbonds	Modified Standard	.039" through .750"	Steel
Natural Diamond	Micron 500-800	CONCENTRATION	Blind Hole	STONE SIZES (L)	Aluminum
		25 - 150	Hard Tips	up to 12"	Bronze
			Abrasive Length/ Width Variations		

HARDINGE WORLDWIDE



Hardinge is a leading international provider of advanced metal-cutting solutions. We provide a full spectrum of highly reliable CNC turning, milling, grinding, and honing machines as well as technologically advanced workholding accessories.

The diverse products we offer enable us to support a variety of market applications in industries including aerospace, agricultural, automotive, construction, consumer products, defense, energy, medical, technology, transportation and more.

We've developed a strong global presence with manufacturing operations in North America, Europe, and Asia. Hardinge applies its engineering and applications expertise to provide your company with the right machine tool solution and support every time.

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