

THE NEW

Harrison A-A



3 HP VARIABLE SPEED PRECISION TOOLMAKER'S LATHE

- * 13" SWING X 25" CENTERS
- * 35 TO 3000 RPM
- * DUAL SYSTEM INCH/ METRIC
- * 1.5" COLLET CAPACITY

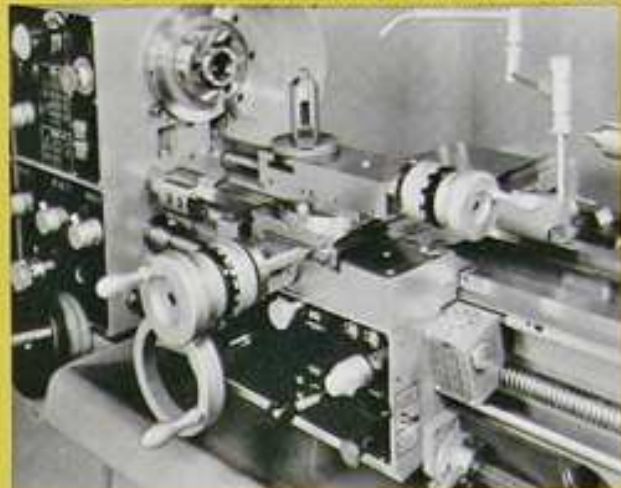
*A VERSATILE AND SENSITIVE TOOLROOM LATHE
AT A REASONABLE PRICE*

REM SALES
INCORPORATED

LOCAL
DISTRIBUTOR

A DIVISION OF THE ROBERT E. MORRIS COMPANY
Farmington Avenue, Farmington, CT 06032

OPERATOR CONVENIENCE PROMOTES PRODUCTIVITY
EVERYTHING WITHIN EASY REACH—A TOOLMAKER'S DELIGHT



RECOMMENDED FOR THE MOST EXACTING
ASSIGNMENTS IN TOOLROOM OR LABORATORY

SKILLED HANDS LOVE THIS EXTRAORDINARY ARRAY OF OPERATOR CONVENIENCES AND SAFETY FEATURES, FOUND ONLY IN THE NEW HARRISON AA LATHE

- Digital Readout of Spindle RPM
- GAMET Ultra-Precision Spindle Bearings
- Reischauer-ground Back Gears
- Precision Lead Screw and Feed Screws
- Generous Collet Capacity
- Induction Hardened Bedways
- Universal Inch/Metric Gearbox
- Compact Carriage—Full Length Cross Slide
- Separate Lead Screw, Feed Rod, Control Shaft
- Double Wall Apron with Oil Reservoir
- One-Shot Lube for Saddle and Cross Slide
- Built-in Coolant and Chip Pan
- Motor Coolant System with Splash Guard
- Diameter Reading Graduations on Cross Feed
- Anti-backlash Cross Feed Nut
- Thread Dial for Inch Threads
- Chrome Handwheels, Dials, Bed Wipers
- Lockable Storage Compartment

- Dual-Reading Inch/Metric Dials for Cross Feed and Compound
- Lever Clamping Tailstock with Tang Drive Spindle
- Graduated Tailstock Quill with Micrometer Dial
- Continuous Duty Motor for Extra Drive Power

Safety Features

- Built-in Swivel Chuck Guard
- Foolproof Single Lever Spindle Control
- Efficient Foot Treadle Spindle Brake
- Leadscrew Torque Limiting Device
- Feed Rod Safety Slip-clutch
- Non-rotation Provision for Apron Handwheel
- Fail-Safe Electrics to National Electrical Code
- Twist Lock Emergency Stop Button for Positive Safety
- Safety Disconnect Switch on End Gear Cover
- Totally Enclosed Fan Cooled Drive Motor
- Current-On Indicator Light

HARRISON AA LATHE—GENERAL SPECIFICATIONS

CAPACITY AND DIMENSIONS

Swing over Bed and Carriage Wings	13 1/4"
Swing over Extended Cross Slide	8 1/4"
Bed Width	8"
Bed Depth under Head & Tailstock	12"
Drive Motor TEFC Continuous Duty	3HP

HEADSTOCK—SEMI-GEARED

Spindle Nose—American Std D1-4" Camlock	
Hole through Spindle	1 1/4"
Speed Range—Infinitely Variable in Three Ranges	35-3000 RPM

CARRIAGE AND COMPOUND

Cross Slide Width	6"
Compound Width	3 1/4"
Cross Slide Travel	7 1/2"
Tool Slide Travel	3 3/4"

TAILSTOCK

Spindle Diameter	1 7/8"
Spindle Travel	4 1/2"
Spindle Taper	No. 3 Morse

THREADS AND FEEDS

35 Inch Pitches	2 to 56 T.P.I.
39 Metric Pitches	2mm to 14mm
18 Module Pitches	3 to 3.5 Mod.
18 Diametral Pitches	8 to 56 D.P.
Range of Feeds, Longitudinal	.001 to .040"
Range of Feeds, Cross	.0005 to .020"

STANDARD EQUIPMENT as listed above, plus Round Tool Post, Drive Plate, Center Sleeve and 2 Centers, Vee Belts, Wrenches, Instruction and Parts Manual, Accuracy Test Sheet.

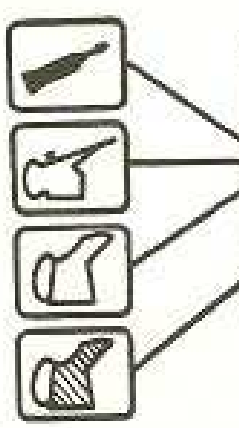
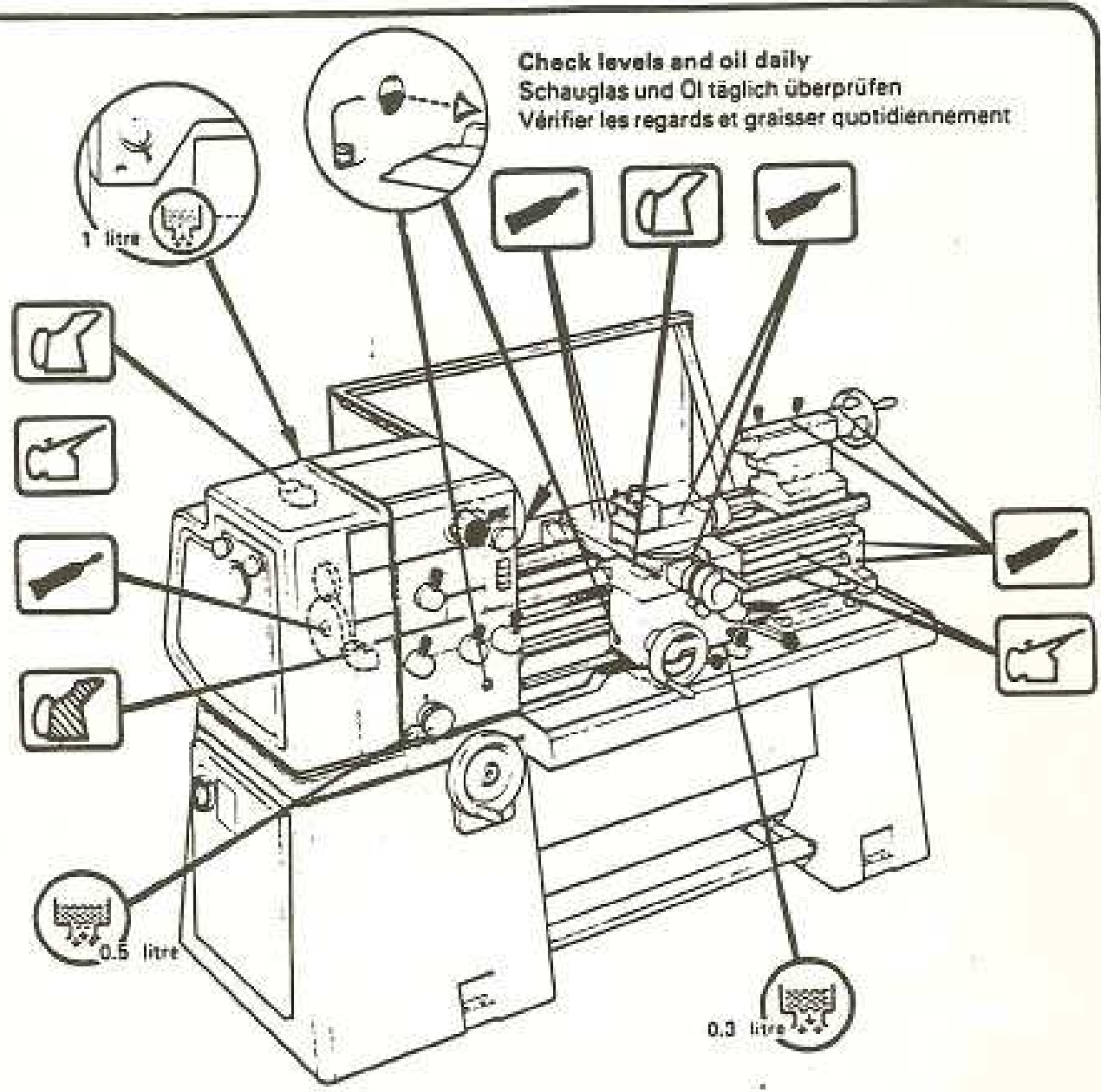
COMPLETE ELECTRICAL EQUIPMENT consisting of 3HP TEFC Reversing Main Drive Motor, Low Voltage Control Circuit, Overload and No-Volt Protection, Emergency Stop Button, Pilot Light and Isolator Switch.

EXTRA EQUIPMENT: Hydraulic Tracer, Rear Tool Post, Face Plates, Chucks, Collet Equipment, Taper Attachment, Follow and Steady Rests, Square Turret, Bed Turret, Micrometer Carriage Stop, Drill Chucks, etc.

SPECIFICATIONS ARE SUBJECT TO MODIFICATION AND IMPROVEMENT WITHOUT NOTICE

HARRISON LATHES ARE BUILT IN ENGLAND FOR REM SALES INCORPORATED, A SUBSIDIARY OF THE ROBERT E. MORRIS COMPANY. SALES AND SERVICE BY REPUTABLE MACHINE TOOL DISTRIBUTORS IN ALL PRINCIPAL INDUSTRIAL AREAS.

Check levels and oil daily
 Schauglas und Öl täglich überprüfen
 Vérifier les regards et graisser quotidiennement



Mobil	BP	Castrol	C	Esso	Shell	TEXACO
DTE OIL HEAVY MEDIUM	ENERGOL HLP 68 (ISO)	HYSPIM AWS 68	P.W.L.C.	NUTO H68	TELLUS 68 OR R68	RANDO HD 68
DTE EXTRA HEAVY	ENERGOL HP 150 (ISO)	ALPHA ZN 220	WLM	NURAY 100	VITREA 220	REGAL R & O 220



PRICE DATA

A SUBSIDIARY OF THE ROBERT L. MORRIS COMPANY

NATIONAL DISTRIBUTOR OF FINE MACHINE TOOLS

34 Bradley Park Road, East Granby, CT 06026
Telephone: (203) 653-0071 FAX: (203) 653-0393

February 1, 1992

HARRISON LATHE PRICE LIST

MODEL AA 3HP VARIABLE SPEED PRECISION TOOL ROOM LATHE

HARRISON MODEL AA PRECISION VARIABLE SPEED LATHE, 13" SWING x 25" BETWEEN CENTERS, having 4" Cam Lock Spindle, complete with construction features and standard equipment described as follows:

- | | |
|---|--|
| <ul style="list-style-type: none"> Infinitely Variable Reversible Drive 35 to 3000 RPM in three ranges Spindle Digital RPM Display GAMET Ultra Precision Spindle Bearings Hardened and Ground Headstock Gears Spindle bored to pass 1-1/2" Diameter Lead Screw for Threading with Exclusive Torque Limiting Device to prevent Overload Damage to Gearbox Totally Enclosed Quick-Change Gearbox, with Oil Bath for Inch/Metric Threading Foot-Operated Spindle Brake Induction Hardened Bedways One-Shot Lubrication System for Cross Slide and Carriage Wings Induction Hardened and Ground Guideways | <ul style="list-style-type: none"> Independent Feed Rod with Safety Slipping Overload Clutch for Driving Longitudinal and Cross Feeds FULL LENGTH Cross Slide with Direct-Diameter Reading Micrometer Dial Anti-Backlash Cross Slide Nut Double Wall Apron with Hardened Gears and Self-Contained Lubrication Non-Rotation Safety Provision for Apron Handwheel Tailstock with Micrometer Dial on Handwheel, Graduated Spindle and Lever Locks Safety Starting Lever Cabinet Base with Chip Pan, Coolant Reservoir and Storage Compartment |
|---|--|

ELECTRICAL EQUIPMENT FURNISHED

3 HP TEFC Reversible Motor Drive complete with 115 Volt control circuit; Magnetic Starter with unfused safety disconnect line switch; Internal Circuit Breaker Protection, fail-safe provision in case of power interruption; Current-On Light; EMERGENCY STOP Button; and Electrical Cut-out Switch activated by End Gear Guard. Electrical equipment and wiring conform to National Electrical Code and NFPA Electrical Standard No. 79 for Metal Working Machine Tools.

STANDARD EQUIPMENT FURNISHED

- | | |
|---|---|
| <ul style="list-style-type: none"> Inch/Metric Dials for Top Slide and Cross Slide Motor Driven Coolant System Full Length Rear Splash Guard Round Tool Post Drive Plate Swiveling Nose-Mounted Chuck Guard | <ul style="list-style-type: none"> Center Sleeve and (2) #3MT Centers Threading Dial Bedway Wipers Set of Wrenches Machine Manual Built-in Storage Compartment Accuracy Test Sheet |
|---|---|

COMPLETE STANDARD LATHE as described above, wired for 230 or 460 Volts, 3 Phase, 60 Cycles\$ 20,550.00

EXTRA EQUIPMENT AND ACCESSORIES FOR MODEL AA LATHES

- Hydraulic Tracing equipment Consult Rem
- Telescopic Taper Attachment - turn 10" maximum length at one setting, 20 degrees maximum included angle - Factory installed\$ 1,295.00
- for customer installation\$ 1,400.00
- High Speed Threading Attachment - Factory installed\$ 2,260.00*
- "Metra Dial" Thread Indicator Dial to allow disengagement of half nuts while cutting selected metric threads\$ 700.00*
- Apron Handwheel Dial - Inch Graduations\$ 600.00

EXTRA EQUIPMENT AND ACCESSORIES - continued

Steady Rest, 0" to 4" capacity	\$ 360.00
Steady Rest, 3" to 7" capacity	Consult Rem
Follow Rest, 0" to 2" capacity	\$ 195.00
<u>Micrometer Carriage Stop</u>	<u>\$ 235.00</u>
Five-Position Carriage Stop Assembly	\$ 530.00
Dial Indicator Carriage Stop - 1 inch travel	\$ 300.00*
- 2 inch travel	\$ 330.00*
Five-Position Cross Slide Stop Assembly	\$ 315.00
12" Diameter Face Plate 4" Camlock	\$ 280.00
<u>6-1/4" Diameter Precision 3-Jaw Universal Chuck with Two-Piece Top Jaws and HARDENED AND GROUND SCROLL</u>	<u>\$ 895.00*</u>
Soft Blank Top Jaws for 6-1/4" Chuck, per set of (3)	\$ 75.00*
<u>8" Diameter Precision 4-Jaw Independent Chuck, Meehanite body and FORGED STEEL solid reversible jaws</u>	<u>\$ 875.00*</u>
Super Accurate Set Rite 6" Diameter 3-Jaw Universal Steel Body Chuck with Two-Piece Top Jaws and HARDENED and GROUND SCROLL - guaranteed repeatability $\pm .0005"$	\$ 855.00*
Plexiglass Chip Guard for Saddle Mounting	\$ 220.00
4-Way Turret Tool Post	\$ 495.00*
<u>Quick Change Tool Post Set including following holders: (1) Turning and Facing, (1) Turning, Facing and Boring, (1) Heavy Duty Boring, (1) Universal Parting, and Threading</u>	<u>\$ 575.00*</u>
Heavy Duty Open Side Rear Tool Post Assembly for Extended Cross Slide	\$ 430.00
<u>Draw-in Collet Attachment for 1-1/16" capacity 5C Collets, handwheel operated</u>	<u>\$ 395.00*</u>
Lever-Operated Production Type Draw-in Collet Attachment for 5C Collets	\$ 790.00*
Sjogren Front Mounted 5C Collet Chuck	\$ 1,225.00*
Round 5C Collets, any fractional size, 1/8" to 1-1/16"	\$ 24.50*
Collet Rack for (16) 5C Collets Mounted on Rear Splash Guard	\$ 135.00*
Burnerd Multi-size <u>Key-Operated</u> Nose Type Collet Chuck, 1-1/2" max. round cap.	\$ 1,235.00*
(1) Set of (12) Multi-size Collets, 1/16" through 1-1/2" round capacity	\$ 1,836.00*
Six-Station Self-Indexing Bed Turret, blank faces for customer boring	\$ 3,875.00*
Six-Station Cross Slide Mounted Turret with 12 Tool capacity, including following Holders, (3) Turning and Facing, (1) 1/2" Drill Chuck with Arbor, (3) Tool Holder Bushings - 3/8", 1/2", and 3/4"	\$ 2,950.00*
Anti-Friction Revolving Tailstock Center, #3 Morse Shank	\$ 110.00*
1/2" Capacity Drill Chuck for Tailstock with #3 Morse Shank	\$ 72.00*
3/4" Capacity Drill Chuck for Tailstock with #3 Morse Shank	\$ 112.00*
<u>Machine Light</u>	<u>\$ 110.00*</u>
Extra Vee Belt	\$ 75.00*
Extra Parts and Service Manuals	NET \$ 50.00

PAINTING - Machines are painted standard Harrison Two-Tone Grey/White. Upon request, machine will be painted any one color at an additional charge of \$800.00. Each additional color will be priced at \$175.00. These prices are NET.

* OBTAINED THROUGH OUTSIDE SOURCES and subject to any price revisions made by suppliers.

Above prices are F.O.B. Connecticut warehouse and are subject to change without notice.




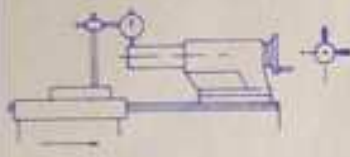
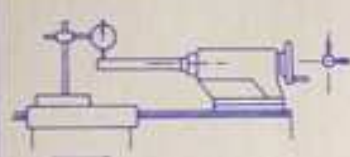
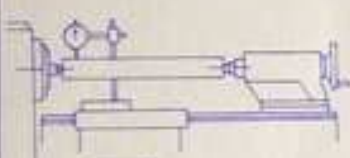
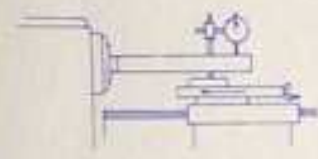
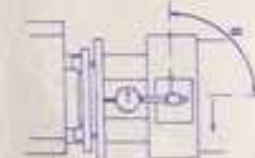
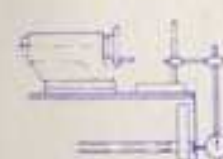
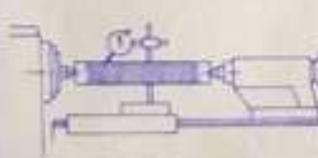
Accuracy chart

Harrison
Precision Lathes

TABLE 1. GEOMETRICAL TESTS

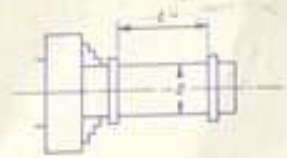
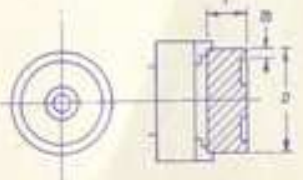
1	2	3	4	5	6
No.	Diagram	Test to be Applied	Permissible Deviation mm	Actual Reading	Observations
G1		Straightness of Slideways (a) Longitudinal (b) Transverse	(a) $DC < 500$ 0.01 convex, $500 < DC < 1000$ 0.015 convex Local tolerance: 0.005 for any length of 250 . (b) $0.03/1000$	(a) 0.008 $.00031$ inches (b) 0.02	Measurements made at positions equally distributed throughout the length of the bed. The level to be placed on the transverse slide. Level reading at A-A set to zero. Specify \pm level reading at B.
G2		Straightness of Carriage movement in the horizontal plane.	$DC < 500$ 0.01 $500 < DC < 1000$ 0.015	0.01	
G3		Parallelism of the Tailstock guides to carriage movement. (a) Horizontal plane. (b) Vertical plane.	(a) $DC < 1500$ 0.02 Local tolerance: 0.01 for any length of 500 . (b) $DC < 1500$ 0.03 Local tolerance: 0.02 for any length of 500 .	(a) 0.01 (b) 0.01	With tailstock as close as possible to the carriage, readings taken when they are moved together. Tailstock sleeve should remain locked so that the dial gauge fixed on carriage always touches at same point.
G4		(a) Periodic axial slip. (b) Camming of face plate resting surface.	(a) 0.005 (b) 0.01 including periodical axial slip.	(a) 0.002 (b) 0.004	
G5		Run-out of spindle nose.	0.007	0.002 mm $= .000079$ inches	
G6		Run-out of axis of work spindle taper. (a) Measured at spindle nose. (b) Measured at a distance from spindle nose.	(a) 0.005 (b) 0.005 for 100 0.010 for 200 0.015 for 300	(a) $0.005 = .000197$ inches (b) 0.01	
G7		Parallelism of spindle axis to carriage longitudinal movement. (a) Horizontal plane (b) Vertical plane.	(a) $0.01/300$ frontwards. (b) $0.02/300$ upwards.	(a) 0.01 (b) 0.015	

TABLE 1. GEOMETRICAL TESTS

1	2	3	4	5	6
No.	Diagram	Test to be Applied	Permissible Deviation mm	Actual Reading	Observations
G8		Run-out of spindle nose centre.	0.01	0.01 = 0.0039	The dial gauge shall be placed perpendicular to the generating line of the taper.
G9		Parallelism of the axis of tailstock sleeve to carriage movement. (a) Horizontal plane. (b) Vertical plane.	(a) 0.01/100 frontwards. (b) 0.015/100 upwards.	(a) 0.001 (b) 0.01	With tailstock sleeve extended it should be locked as under normal working conditions.
G10		Parallelism of taper bore of tailstock sleeve to carriage movement. (a) Horizontal plane. (b) Vertical plane.	(a) 0.02/300 frontwards. (b) 0.02/300 upwards.	(a) 0.01 (b) 0.012	With tailstock sleeve withdrawn and locked as under normal working conditions.
G11		Difference in height between headstock and tailstock centres.	0.02 tailstock centre higher than headstock centre.	0.002	Readings taken at the extremities of the test mandrel with the tailstock sleeve withdrawn as in normal working conditions.
G12		Parallelism of the longitudinal movement of top slide to spindle axis.	0.015/150	0.012	Measurements are made in a vertical plane (after setting top slide parallel with the spindle axis in the horizontal plane).
G13		Squareness of the transverse movement of the cross slide to the spindle axis.	0.01/300 direction of error = $>90^\circ$	0.002	
G14		Axial displacement due to camming of each thrust bearing.	0.01	0.008	
G15		Accuracy of pitch generated by leadcrew. (a) over any length of 300. (b) over any length of 50.	(a) 0.03/300 (b) 0.01/50	(a) 0.017 (b) 0.008	Measured by means of a dial gauge feeling the flanks of a master leadcrew.

DC: Distance between centres. Da: Swing over bed.

TABLE 2. PRACTICAL TESTS

1	2	3	4	5	6	7
No.	Diagram	Test to be Applied	Check to be Applied	Permissible Deviation	Actual Reading	Observations
P1		Machining of two diameters on cylindrical piece held in a chuck. $D = \geq Da/8$ $L = 0.5 Da$	(a) Roundness (b) Cylindricity. Any taper should be such that the major diameter is near the headstock nose	(a) 0.007 (b) 0.01 for $L = 150$	(a) 0.002 (b) 0.01	Test to be made with finishing cuts and feeds
P2		Facing of flat surface of piece held in a chuck. $D = \geq 0.5 Da$ $L = Da/8 \text{ max.}$	The faced surface should be flat to concave.	0.007 for $D = 150$	0.000	Tests to be made with finishing cuts and feeds.

TESTS AND ACCURACIES

The tests and accuracies shown in this chart conform to ISO/R1708 (BS4656:Part 1:1970, DIN 8605-1976)

"Test conditions for general purpose lathes testing of accuracy—PRECISION LATHES."

CONDITION OF MACHINE

Tests to be applied when the lathe is at normal operating temperature as defined in ISO/R230 (BS3800:1964).

LATHE

MODEL ... V.330

SERIAL NUMBER ... 330.315.11364

CHIEF INSPECTOR ... M. Newitt

DATE



TALYROND graph indicates the deviation from true roundness on a sample workpiece turned on this lathe.



T. S. HARRISON & SONS LTD

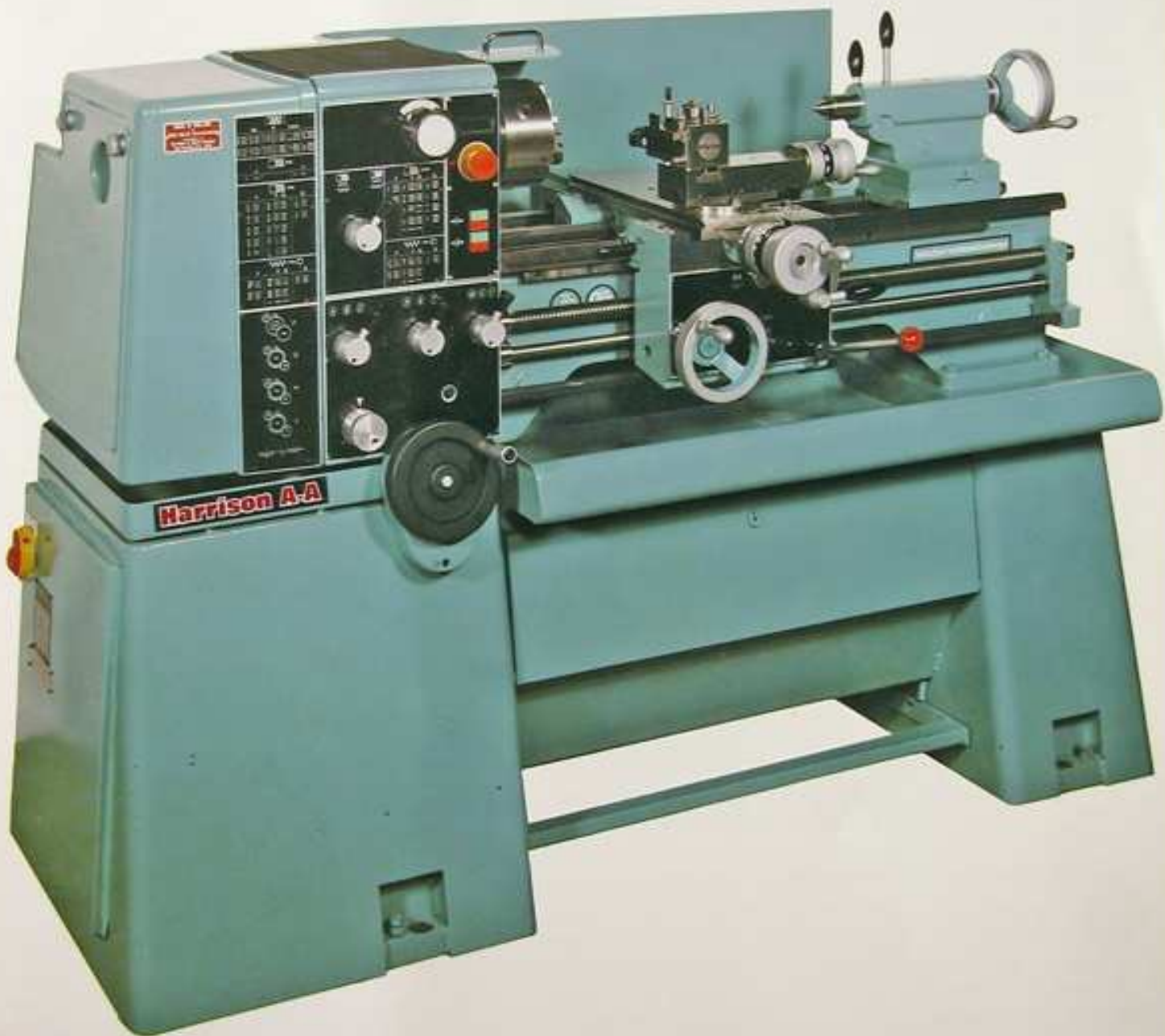
Union Street, Heckmondwike, Yorkshire, England, WF16 0HN

Telephone 0924-403751/6 0924-409391/6

Telegrams: Harrison, Heckmondwike. Telex: 55217



Harrison A-A



Precision Toolmaker's Lathe

NATIONAL DISTRIBUTOR



34 Bradley Park Road
East Granby, Ct. 06026
(203) 653-0071

A subsidiary of THE ROBERT E. MORRIS COMPANY

Local Distributor

Known t



A VERSATILE AND SENSITIVE 13" TOOLROOM LATHE

3 HP - 3000 RPM

VARIABLE SPEED - INCH/METRIC

The **HARRISON AA PRECISION TOOLMAKER'S LATHE** meets the demand for a small, dependable high speed lathe for the toolroom, laboratory, or precision production work. Exceptional versatility is built into the lathe, evidenced by its quiet, full-power variable speed drive; its Universal inch/metric gearbox; its dual reading inch/metric dials; its electronic digital spindle speed indicator; and its numerous operating and safety features. With respect to accuracy, this fine lathe conforms to all universally accepted American and International Precision Lathe Standards. It accepts all conventional lathe tools and attachments, and is recommended for the most exacting assignments.

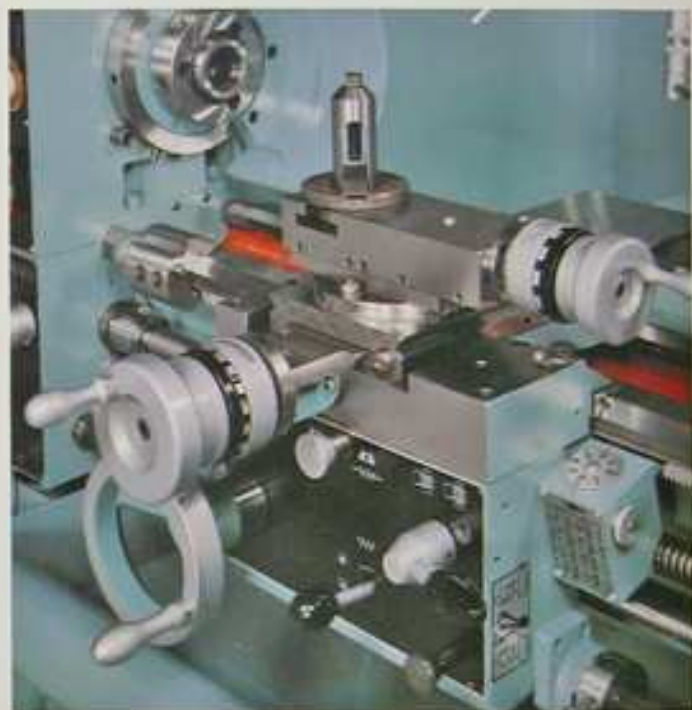
Throughout the design, strength and rigidity are combined with speed and accuracy to handle the widest range of turning and threading applications. Generously proportioned component parts made from the best materials assure many years of dependable full capacity usage. Simplicity of operation, easy accessibility for inspection and maintenance, and clean-cut appearance are typical **Harrison** characteristics. Careful consideration is given to the safety of the operator and to compliance with prospective OSHA standards. Flow-line manufacturing techniques in a modern well-equipped machine tool plant achieve economies allowing the reasonable price levels which make **Harrison** lathes outstanding values in the world market.

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The Variable Speed Headstock is powered by a well proved variable speed unit driving directly from the motor. Three separate overlapping speed ranges are dial selected, two lower speed ranges through ground gearing, and higher speeds above 800 RPM via direct non-gear drive. Spindle speed is changed by means of a conveniently located handwheel while the machine is running, and RPM is registered on a lighted digital display. The drive provides full power at all speeds, an unusual capability in variable speed lathes. The headstock has a Vee and Flat fitting to the lathe bed to preserve original precise alignments, and has a self-contained lubrication system. The lathe spindle is exceptionally stiff and mounted in GAMET ultra-precision opposed thrust taper roller bearings. It invites a generous range of sensitive collet-gripped work as well as conventional chucking applications. A sturdy swiveling chuck guard is mounted around the hardened spindle nose. Spindle Forward-Stop-Reverse is controlled by a gated monolever attached to the apron, and a powerful electrically interlocked foot brake is provided.

A Low Voltage Control Center, built into the face of the headstock, contains the lighted spindle speed indicator, a twist-lock master stop button, and pushbuttons for the coolant system and hydraulic tracer when supplied. Non-glaring legend plates show end gear combinations for the wide range of inch and metric threads and feeds. As a convenience to the operator only 16 practical progressive feed selections are charted in the inch system, from .0005" to .020" per revolution, and 16 metric feed rates from .015mm through .5mm, even though end gears supplied with the lathe permit over 200 feed and thread combinations.

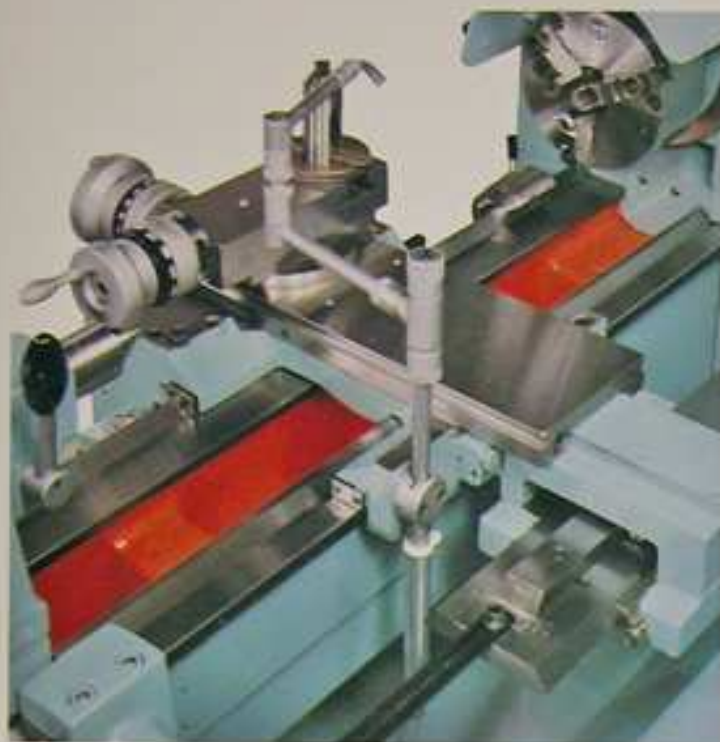


The Carriage is a sturdy compact assembly with generous bearing area on the hardened and ground bedways. Wipers are fitted front and rear. Adjustable gibs are provided to take up wear on both compound and cross slides. Dual reading inch/metric dials with adjustable slip rings are fitted to the cross and compound feed screws. To avoid reading errors, dual dials have rotating shields which expose to view either measuring system, but not both at the same time, a very desirable feature. The cross feed screw reads .001" or .02mm on work diameter, and is equipped with an anti-backlash feed nut. The compound rest may be swivelled 360°. The full length cross slide facilitates the mounting of tracing equipment and other tooling, while providing excellent protection for the feedscrew assembly and guideways.

The Apron is double-walled, with a self-contained lubrication system. A one-shot lube system serves the cross slide and carriage wings. The drop-worm feed control and screw cutting engagement lever cannot be used at the same time. The precision leadscrew is reserved strictly for thread cutting. The gated monolever for Spindle Forward-Stop-Reverse and threading dial for inch threads are attached to the apron. The handwheel has provision for nonrotation when cutting — a valuable safety feature.

The 3HP Main Drive Motor is the totally enclosed fan-cooled type, mounted on the bed behind the headstock for good ventilation and easy access. All electrical equipment conforms to national electrical and fire prevention codes.

Accuracy and durability

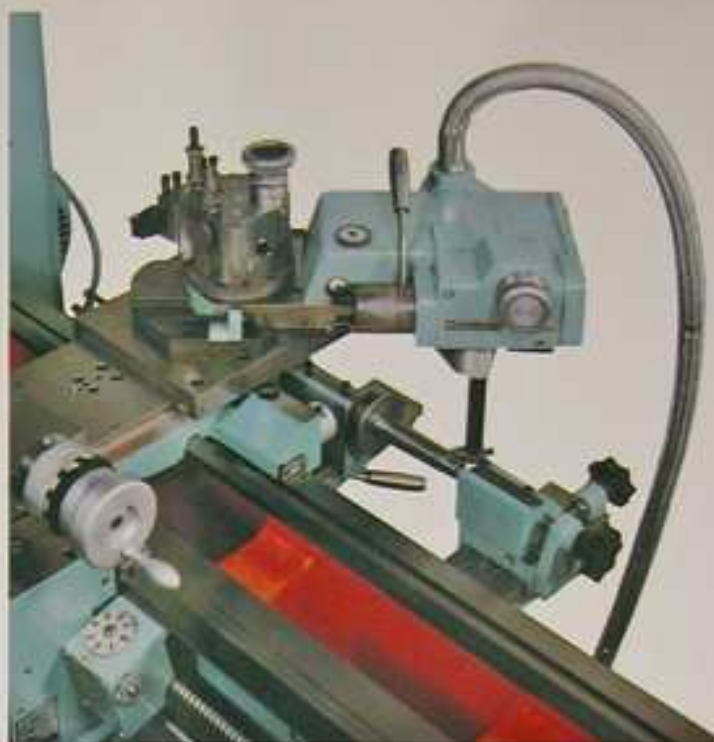


The Taper Turning Attachment is the telescopic type. The swivel slide is graduated in inches per foot and degrees, 10° each side of parallel. A maximum cut of 10" can be made at one setting.

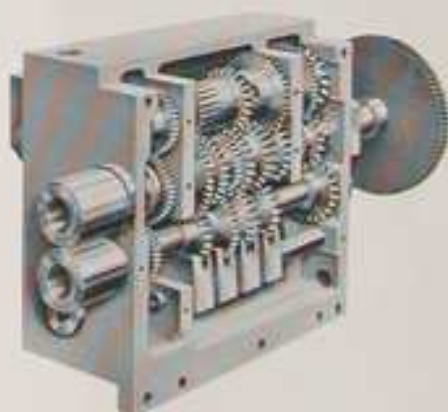
The Lathe Bed is of modern ribbed design, heavily cross-braced to withstand the heaviest cutting forces. All bearing surfaces are induction hardened and precision ground. The bed is securely bolted to a one-piece steel cabinet base, flared for great stability, which contains the electrical control enclosure, motor driven coolant system, and a spacious storage compartment.

The End Gear Train includes non-metallic intermediate gears for noise-free running without lubrication. This system assures unvarying positive drive, and is far superior to old style belt drives often employed in high speed lathe gear trains. The basic feed and threading ranges may be readily extended using the change gears supplied. A safety electrical disconnect switch is actuated when the end guard is removed.

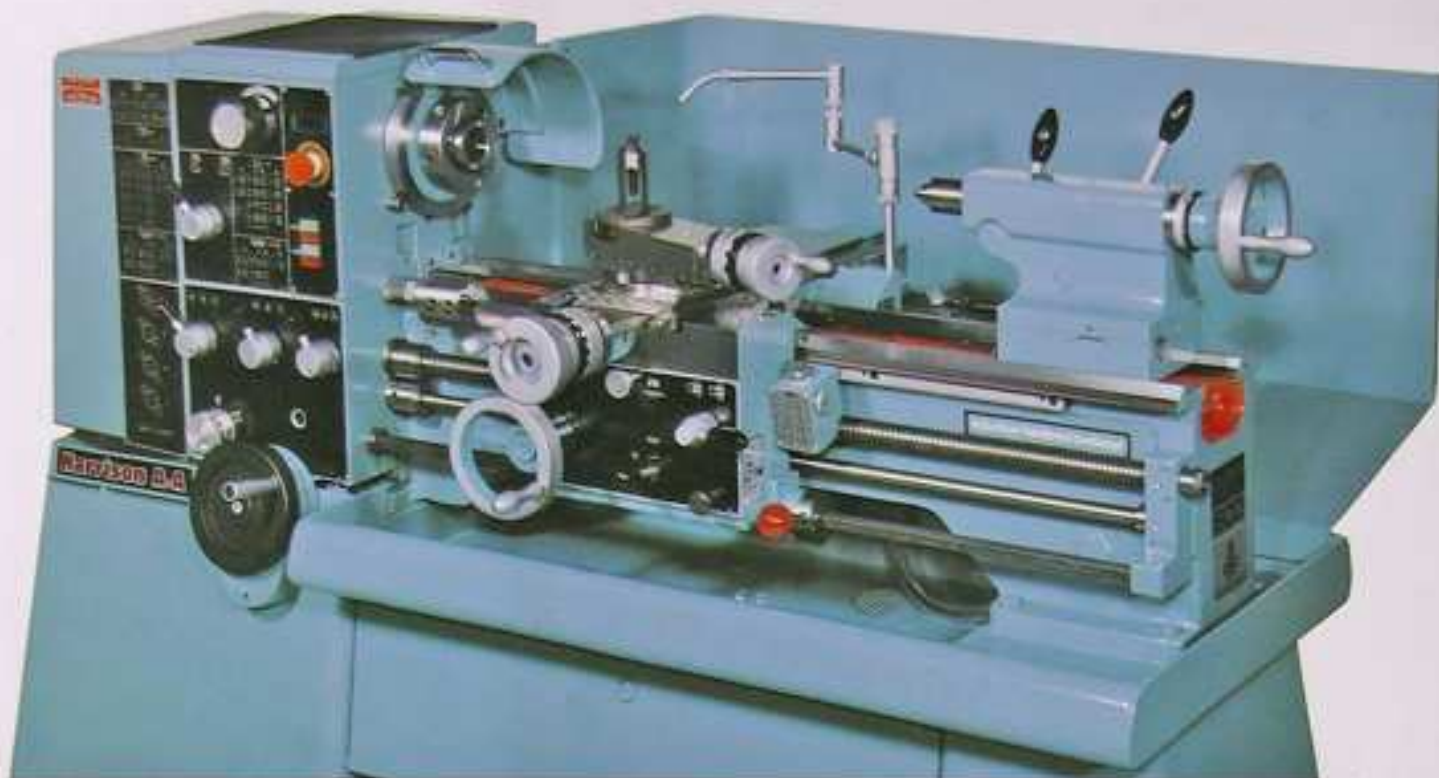
The Tailstock is the setover type, with lever locks for the quill and bed engagement. Other features are tang drive, drift slot, tool ejection, inch/metric quill graduations, ball thrust bearing, bed wipers. The handwheel has a micrometer dial for fine adjustments.



Hydraulic Copying Equipment is a valuable extension to the usefulness and production capacity of any lathe. The extended cross slide readily accepts equipment for longitudinal and face tracer turning, copy boring, and high speed threading to tolerance of $\pm .0005"$ (.015mm). Maximum copying length is 21" (535mm) to a maximum profile depth of 2.5" (64mm).



The Universal Gearbox is a totally enclosed quick change design with self-contained lubrication system providing total threading capability. It affords selection of a comprehensive range of inch, metric, diametral pitch and module threads by means of 3 levers and a rotary dial. The central selector lever may be used to cut feed rate in half, or to double the feed rate, instantaneously. Gear teeth and clutches are induction hardened. Torque limiting devices on both leadscrew and feed rod protect against overload.

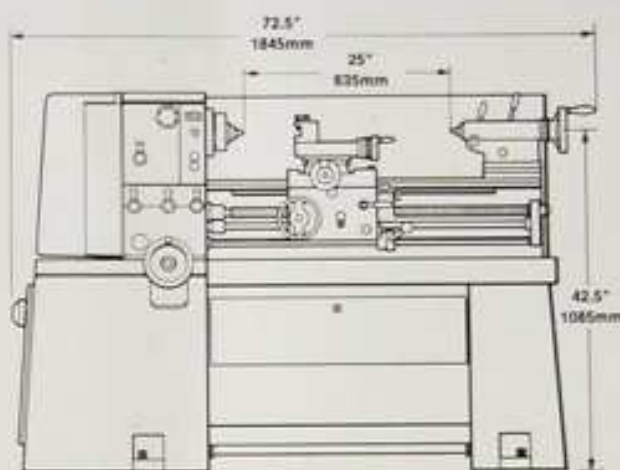
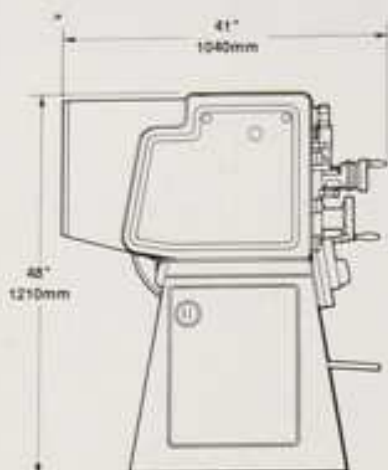


SKILLED HANDS LOVE THIS EXTRAORDINARY ARRAY OF OPERATOR CONVENIENCES AND SAFETY FEATURES

- Full Power Variable Speed Drive
- Digital Display of Spindle RPM
- Precision Leadscrew & Feed Screws
- Dual Reading Inch/Metric Dials on Cross Feed and Compound Screws
- Separate Leadscrew, Feed Rod, Control Shaft
- Inch/Metric Gearbox for Total Threading Capability
- Threading Dial for Inch Threads
- Hardened & Reischauer-ground Headstock Gears
- Ultra-Precision Spindle Bearings
- Hardened & Ground Bedways, Sturdy Bed Design
- Full Length Cross Slide
- Cross Feed Screw Reads .001" or .02mm on Diameter
- Anti-backlash Cross Feed Nut
- One-Shot Lube System for Cross Slide and Saddle
- Tailstock with Graduated Quill and Micrometer Dial
- Built-in Coolant and Chip Pan
- Motor Driven Coolant System with Splash Guard
- Rigid One-piece Cabinet Base with Electrical Control Enclosure
- Chrome Handwheels, Dials, Bed Wipers
- Built-in swiveling Chuck Guard
- Low Noise Level - 80 Decibels Maximum
- Non-rotation provision for Apron Handwheel
- Totally Enclosed Variable Speed Headstock
- Foot-operated Spindle Braking
- Totally Enclosed Gearbox with self-contained Lube System
- Totally Enclosed Apron with self-contained Lube System
- Totally Enclosed Fan-cooled Main Drive Motor
- Foolproof Gated Spindle Control Lever
- Overload Limiting Clutches on Leadscrew and Feedshaft
- Reduced Voltage [115V] Control Circuit
- Emergency Twist-Lock Stop Button
- Fail-Safe Electricals to National Electrical Code
- Control Enclosure with Interlocked Disconnect Switch on Door Latch
- Safety Disconnect Switch for End Train Gear Cover
- Lockable Storage Compartment
- All Controls within Easy Reach

Harrison Universal Quick Change Gear Boxes provide for EVERY STANDARD ISO Metric Thread Pitch and EVERY STANDARD Inch Thread Pitch - a most unusual capability.

HARRISON MODEL AA 13" TOOLMAKER'S LATHE



CAPACITY AND DIMENSIONS

Swing over bed & carriage wings	13" (330mm)
Swing over extended Cross Slide	8-1/4" (210mm)
Center distance	25"
Induction Hardened & Ground Bedways	
Minimum Hardness	Rockwell C-44
Bed width	8" (205mm)
Bed depth under Head & Tailstock	11 1/4" (285mm)
Steady Rest capacity	0" to 4" (100mm)
Follow Rest capacity	0" to 2" (50mm)
Working height, floor to spindle C/L	42 1/2" (1082mm)
Drive Motor TEFC Reversing	3HP (2.2KW)

Headstock

Spindle Bearings	GAMET Ultra Precision
Spindle Nose	D1-4" Camlock
Hole thru Spindle - To Pass	1 1/2" DIA. (38mm)
Infinitely Variable Speeds, (3) Overlapping Ranges:	
Low Range thru gears	35-180 RPM
Intermediate Range thru gears	150-800 RPM
High Range thru direct drive	500-3000 RPM
Speed Indicator	Lighted Digital Display
Foot operated brake	Standard Equipment

Carriage and Compound

Cross Slide width	5-1/2" (140mm)
Compound width	3-1/4" (82mm)
Cross Slide travel	7-1/2" (190mm)
Tool Slide travel	3-5/8" (92mm)
One-shot lubrication	Standard Equipment
Full length Cross Slide	Standard Equipment
Lead Screw	1-1/8" x 4 TPI (28mm) (Metric Lead Screw Optionally Available)
Feed Rod diameter	11/16" (18mm)
Safety Overload Clutch on Feed Rod	Yes
Safety Torque Limiting Device on Lead Screw	Yes

Threads listed on Headstock Charts:

52 Inch Pitches: 4, 4.5, 5, 5.5, 6, 6.5, 6.75, 7, 7.5, 8, 9, 10, 10.5, 11, 11.5, 12, 13, 13.5, 14, 15, 16, 16.5, 18, 20, 21, 22, 23, 24, 26, 27, 28, 30, 32, 33, 36, 38, 39, 40, 42, 44, 46, 48, 52, 56, 64, 72, 80, 88, 92, 96, 104, 112
45 Metric Pitches: 1, 1.5, 2, 2.25, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7, 7.5, 8, 9, 1, 1.1, 1.2, 1.25, 1.3, 1.4, 1.5, 1.6, 1.75, 1.8, 2.0, 2.2, 2.25, 2.3, 2.4, 2.5, 2.6, 2.75, 3.0, 3.25, 3.5, 4.0, 4.5, 5, 5.5, 6, 6.5, 7
18 Module Pitches from .3 to 3.5 MOD
18 Diametral Pitches from 8 to 56 D.P.

Feed Rates listed on Headstock Charts:

21 Useful Feeds in inches per revolution: .0005, .0008, .001, .0012, .0016, .0017, .002, .0025, .003, .004, .005, .006, .008, .01, .012, .015, .02, .025, .030, .035, .040

21 Useful Feeds in millimeters per revolution: .015, .02, .025, .03, .04, .045, .05, .06, .08, 1, 1.2, 1.5, 2, 2.5, 3, 4, 5, 6, 7, 9, 1

*Note 24 additional feeds are available from a listing displayed inside headstock end train guard.

Tailstock

Spindle diameter	1-21/32" (42mm)
Graduations on Spindle	1/8" & 2mm
Graduations on Micrometer Dial	.001" (.025mm)
Spindle travel	4-3/8" (111mm)
Spindle taper	No. 3 Morse
Set over	1/2" (13mm)
Tang Drive, with drift slot	Yes

Weights and Measures (Approx.)

Basic Lathe: Net Weight	1500 lbs (682KG)
Shipping Weight	1850 lbs (840KG)
Copying Lathes:	Add 250 lbs (114KG)
Overall L x W x H Shipping Crate:	83" x 44" x 56" (2112mm x 1120mm x 1425mm)

Standard Equipment: Digital display of spindle RPM, Inch/Metric Dials for Top Slide & Cross Slide, Motor Driven Coolant System, Rear Splash Guard, Round Tool Post, Drive Plate, Swiveling Nose-Mounted Chuck Guard, Center Sleeve & (2) #3MT Centers, Thread Indicator, Bedway Wipers, Set of Wrenches, Machine Manual, Accuracy Test Sheet.

Electrical Equipment: 3HP TEFC Reversible Motor Drive complete with 115V control circuit; magnetic starter with unfused safety disconnect line switch, fail-safe provision in case of power interruption; EMERGENCY STOP Button. Electrical equipment and wiring conform to NFPA Electrical Standard No. 79 for Metal Working Machine Tools.

Extra Equipment: Digital Readout Systems, High Speed Threading Attachment, Hydraulic Copying equipment, rear tool post, face plates, chucks, collet equipment, taper attachment, follow and steady rests, square turret, bed turret, micrometer carriage stop, cross feed threading stops, etc.

SPECIFICATIONS ARE SUBJECT TO MODIFICATION AND IMPROVEMENT WITHOUT NOTICE.