

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Visit our website - *Click HERE*

Mill Specifications

FEATURE	5000(5100)	5400(5410)	2000 (2010)
Max clearance, table to spindle	8.00" (203 mm)	8.00" (203 mm)	9.00" (229 mm)
Throat (without headstock spacer block)	2.25" (50 mm)	2.25" (50 mm)	Adjustable
Throat (with headstock spacer block)	Not included, but 3.50" (89 mm) if optional block is purchased	Included, 3.50" (89 mm)	Not required
Travel, "X" Axis	8.00" (203 mm)	8.00" (203 mm)	8.00" (203 mm)
Travel, "Y" Axis	3.00" (76 mm)	5.00" (127 mm)	7.00" (178 mm)
Travel, "Z" Axis	6.25" (159 mm)	6.25" (159 mm).	5.38" (137 mm)
Hole through spindle	.405" (10 mm)	.405" (10 mm)	.405 (10 mm)
Spindle nose thread	3/4-16 T.P.I.	3/4-16 T.P.I.	3/4-16 T.P.I.
Spindle taper	#1 Morse	#1 Morse.	#1 Morse
Handwheel graduations	.001" (.01 mm)	.001" (.01 mm)	.001" (.01 mm)
Motor/Speed Control (See motor specifications below)	90 Volts DC with electronic speed control (Accepts 100 VAC to 240 VAC, 50 - 60 Hz input and converts automatically to 90 VDC)		
Spindle speed range	70 to 2800 RPM continuously variable with electronic speed control		
Width overall*	14.75" (375 mm)	15.00" (381 mm)	15.00 (381 mm)
Depth overall*	11.75" (298 mm)	14.00" (356 mm)	22.25" (565 mm)
Height overall*	20.75" (527 mm)	20.75" (527 mm)	23.38" (568 mm)
Table size	2.75" x 13.00" (70 x 330 mm)	2.75" x 13.00" (70 x 330 mm)	2.75" x 13.00" (70 x 330 mm)
Hold down provision	2 "T" Slots	2 "T" Slots	2 "T" Slots
Shipping weight	33 lb. (15.0 kg)	36 lb. (16.3 kg)	38 lb. (17.2 kg)
Movements in addition to X-, Y- and Z-axes	Headstock rotation 90° left/right	Headstock rotation 90° left/right	Headstock rotation 90° left/right, column rotation (90° L/R), column pivot (front/back), column swing (90° L/R) and 5.5" column travel (in/out)

*Overall dimensions include motor and speed control

Standard Dimensions of Sherline Tools

If you are making special tooling or a custom accessory for your Sherline tools, this will save you the trouble of measuring your particular machine to find a dimension, some of which are actually quite difficult to measure. If you need a dimension not listed here, please call or write with your request.

Most of the regular specifications can be found by looking at the Lathe and Mill descriptive pages which have a Specifications List at the end of each.

LOCATION	DIMENSION
Bed dovetail angle	55.5 degrees*
Lathe bed to spindle centerline	1.75"
Lathe table surface to spindle centerline (calculated)	.940"
Headstock spindle nose internal taper	#1 Morse
Lathe tailstock internal taper	#0 Morse
Headstock spindle external thread	3/4-16
Pulley groove side angle	19°
Table T-slot centerline distance (lathe and mill)	1.5"
T-slot nominal dimensions** ***Note: The T-slots are extruded into the material. Table surfaces are machined for flatness, but the slots themselves require no additional finishing processes.*	Slot width, top: .25" T width, bottom: .40" Upper slot depth: .10" T Slot depth: .10" (Total depth: .20")
Leadscrew thread pitch, inch (Lathe, mill X and Y axes = 1/4-20, Mill Z axis = 3/8-20)	20 threads per inch or .050" travel per revolution (handwheels divided into 50 increments of .001")
Leadscrew thread pitch, metric (Lathe, mill X and Y axes = 6.3 x 1 mm, Mill Z = 10 x 1 mm)	1 mm travel per revolution (handwheels divided into 100 increments of .01mm)
Leadscrew thread directions	Right-hand: Lathe crosslide, Mill X-axis Left-hand: Lathe leadscrew and tailstock screw, Mill Y-axis and Z-axis
*NOTE: This dimension was determined by measuring the extruded bases that were supplied when we first took over production in the USA from the former Australian	

manufacturer. The base and several other parts were cast to match this angle and it was not economically feasible at the time to change it to an easier-to-manufacture 60 degrees. The original 55-degree angle was determined by a reference to *Machinery's Handbook, Vol. 17* as the ideal angle to cut a dovetail. When we took over production, a fixture was produced in-house to duplicate the existing angle which had changed slightly from the original 55° to an actual 55.5°. This fixture became the "standard", and every machine built since the early 1970's has been measured against this same fixture. The older brass beds and the current steel beds as well as the parts that fit them are all ground to this same angle.	
ALLOWABLE TOLERANCES	
Spindle Runout (at spindle nose), Maximum allowable (Most are within .0002-.0003")	0.0005"
Spindle End Play (adjustable with preload nut), Factory Settings	with 2800 RPM Pulleys: 0.0002" with 10,000 RPM Pulleys: 0.0003"
Self-Centering 3-jaw and 4-jaw chuck runout	0.003" or less
Leadscrew thread pitch accuracy	±0.001" per inch of travel
COLLETS	
Sherline WW Collet body diameter	0.312" to 0.313"
8 mm WW collets (by others), body diameter	0.314" to 0.315"
WW and 8 mm collet thread	.275-40
HEADSTOCK BEARINGS	
Designation/stock number (ZZ refers to "double shielded")	6004ZZ
Size of bore	20 mm (0.7874")
Tolerance of bore	0.0004"
Outside Diameter	42 mm (1.6535")
Tolerance of OD	0.0005"
Width	12 mm (0.4724")
Bearings	9 balls, 1/4" dia.

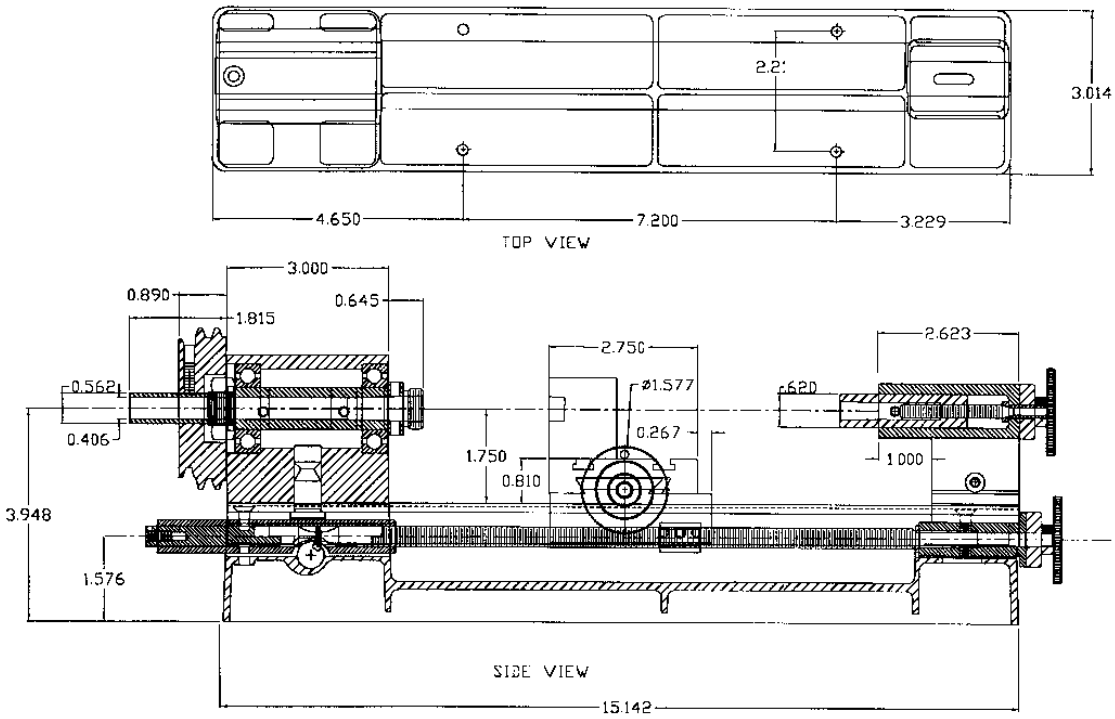
HISTORICAL NOTE

You might find it interesting to note that a problem similar to the one mentioned above is probably why Morse tapers are not perfectly consistent to this day. A Morse taper is listed as "about 5/8" per foot". Standard fixtures were probably made years ago and machines and tools over the years were made to match these fixtures. Modern measurement techniques were able to establish that these fixtures were not all perfectly consistent in angle. Changing the angle, however, would make it impossible for new parts to fit the old machines. Therefore, today we have Morse tapers that each vary slightly from a taper of 5/8" (.6250") per foot. The actual tapers for each number Morse taper are as follows:

MORSE TAPER #	TAPER PER FT.	TAPER PER IN.
0	.62460	.05205
1	.59858	.04988
2	.59941	.04995
3	.60235	.05019
4	.62326	.05193
5	.63151	.05262
6	.62565	.05213
7	.62400	.05200

Sherline Lathe Dimensions

The drawing below shows the key dimensions on a Sherline Model 4000 lathe. It is provided to help those who wish to make special equipment to fit to your lathe. If you wish to download a higher quality version of the drawing, it is also available as a .pdf file.



Motor and Speed Control

ELECTRIC MOTOR SPECIFICATIONS FROM MANUFACTURER

- Type of enclosure: Totally enclosed, non-vented

- Duty rating: Continuous--10 oz. in. at 6100 rpm, .85 amperes; Intermittent--30 oz. in. at 5500 rpm, 1.75 amperes (5 minutes on / 15 minutes off)

- Output horsepower: .06 KW (60 W) at 10 oz. in. / 6100 rpm

- AC voltage (input): Normally 115 VAC, 60 Hz, Single Phase to rectifier (Sherline electronic speed control converts any input from 100 VAC to 240 VAC, 50-60 Hz.)

- DC voltage: 90 VDC to motor (60 Hz)

- Speed in rpm: 6100 rpm continuous

- Class of insulation: Class A, 105° (C.) insulation system

- Normal full load current: .85 amperes

• Starting current: 17 amperes instantaneous starting current (<100 milliamperes). This is also stall current in True RMS

• Max current at time of changeover from lower speed to higher speed: Depends on load

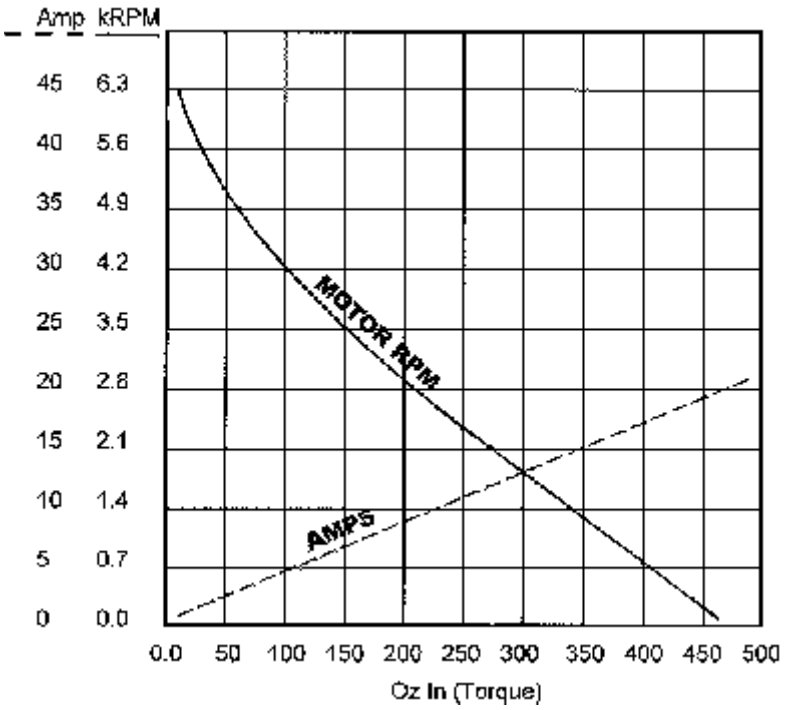
• Type of motor: 3.00 inch (outer diameter) sub-fractional horsepower brush-type permanent magnet motor

• Temperature rise at ambient 50° C.: Less than or equal to 45° C.

• Motor frame size: 3 inches

• End use of motor: Drive unit for lathe or mill

MOTOR TORQUE CURVE



NOTE: Electronic circuitry built into the speed control supplies a constant 90 VDC output to the motor regardless of the input current from 100VAC to 240VAC, 50 or 60 Hz, so Sherline machines can be plugged in and used in any country in the world without a transformer as long as you have the correct wall plug converter..

USE WITH AN INVERTER: This motor and speed control can be used with an inverter that produces a sine wave. It cannot be used with an inverter that produces a square wave.

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP