



(P/N 6502 shown)



PRODUCT DESCRIPTION

- 6501—3/4-16 Spindle w/ 30-tooth timing belt pulley
- 6502—3/4-16 Spindle w/ 2-step V-belt pulley
- 6503—ER-16 Spindle w/ 30-tooth timing belt pulley
- 6504—ER-16 Spindle w/ 2-step V-belt pulley

Industrial Headstocks

P/N 6501, 6502, 6503 and 6504

Spindle Precautions

It is important to realize that this spindle should be considered light duty. To make the spindle versatile on Models 6501 and 6502, the spindle nose includes both a 3/4-16 external thread and a #1 Morse internal taper. A .405 (10 mm) through hole allows long stock to be passed through the spindle. This design provides a lot of versatility, but was not intended for long or out-of-round parts to be rotated at high RPM. The same precaution regarding long stock applies to the ER-16 collet models. It is up to the operator to determine if the spindle and the setup are adequate and safe for the job being attempted.

The spindle is equipped with a dust cap, but it is not totally sealed. The presence of dust from grinding operations can shorten bearing life considerably. It was also not designed to be operated in a coolant bath. The spindle shaft should be shielded from coolant spray.

Introduction

The Sherline industrial headstock was developed based on the headstock used on the Sherline lathe and milling machine. It features two 20mm lifetime lubricated ball bearings with an adjustable preload nut. The preload is adjusted at the factory to .0002" (.005 mm) of endplay. This is controlled by the outer races of the bearings being held apart by the headstock case and the inner races being pulled together by the preload nut. This is appropriate for extended running at speeds in the range of 4000 RPM or less. If you anticipate running at higher speeds up to a maximum of 10,000 RPM, you should reduce the preload adjustment to keep from producing excess heat in the headstock. After extended running, a properly adjusted headstock will be warm but should not become too hot to touch.

Adjusting the Preload

To reduce the preload adjustment, remove the spindle pulley, loosen the set screw in the preload nut and back the preload nut off four degrees of rotation (counterclockwise). The bearings are lightly pressed into the case, so the inner race will not move without a sharp tap with a plastic mallet to

the end of the spindle where the pulley was attached. When adjusted, retighten the set screw and reinstall the pulley.

If you find your bearings are set too loose, you may want to take up on the endplay. You can check them with an indicator or by spinning the spindle without the drive belt engaged. If the spindle spins freely with a chuck or faceplate on it, the spindle is too loose for normal work. Adjust the preload nut until the spindle turns approximately one and a half revolutions when spun by hand.

Mounting the Headstock

Two 1/4-20 holes are provided in the bottom of the headstock for mounting to your fixture. They are located on the spindle centerline with 2.0" between centers. A 3/16" wide x .100" deep slot is provided between the mounting holes should you wish to use a 3/16" alignment key to aid in precisely locating your headstock.

Accessories Available

Sherline manufactures a complete line of accessories for the headstock, including 3-jaw and 4-jaw chucks, drill chucks, collets and special tool holders. See our tools and accessories website at Sherline.com or call for a catalog.

Specifications

- Spindle base size: 3.0" long x 3.36" wide (76.2 mm x 85.4 mm)
- Spindle case height: 3.66" (93.1 mm)
- Spindle centerline height above table: 2.50" (63.5 mm)
- Hole through spindle: .405" (10 mm)
- Spindle nose thread (Models 6501, 6502): 3/4-16
- Spindle nose internal taper (Models 6501, 6502): #1 Morse
- Spindle nose thread and taper (Models 6503, 6504): ER-16
- Bearings: (2) 20 mm lifetime lubricated ball bearings with adjustable preload
- End play (factory preload adjustment): .0002" (.0051 mm)

- Maximum spindle speed: 10,000 RPM
- Recommended continuous spindle speed: 4000 RPM or less
- Mounting provision: 2 holes, 1/4-20, 2" (50.8 mm) between centers on part centerline
- Alignment provision: 3/16" x .10" slot between mounting holes on spindle centerline for 3/16" alignment key
- Weight: (Models 6501, 6503) 3.5 lb. (1.59 kg), (Models 6502, 6504): 3.8 lb (1.72 kg)

Thank you,
Sherline Products Inc.

Parts List		
NO. REQ.	PART NO.	DESCRIPTION
1	31080	10-32 x 3/8" Flat Point Set Screw
1	40160	Preload Nut
1	40230	Spindle (3/4-16/#1 Morse) (used on P/N 6501, 6502)
1	40320	Dust Cover
1	40330	10-32 x 5/8" SHCS
2	40420	Headstock Bearings
2	40440	#2 x 1/4" Self-Tapping Phillips Head Screws
1	43230	2-Step V-Belt Pulley (used on P/N 6502, 6504)
1	65016	30-T Timing Belt Pulley (used on P/N 6501, 6503)
1	65021	Industrial Headstock Case w/ Flat Base
1	65023	Spindle (ER-16) (used on P/N 6503, 6504)