



SUPER LATHE-TYPE UNDERCUTTER INSTRUCTIONS

UNDERCUTTER HEAD:

This undercutter is for the shop that handles large armatures - turning and undercutting on a lathe.

Capacity: Same as turning capacity of lathe

Vertical Adjustment: 4-1/2"

Motor: 3/4 h.p. @ 3450 rpm

Weight: Head assembly 60 lbs.

The standard spindle uses a 7/8" O.D. x 5/16" I.D. Saw. When using high-speed steel saws, the larger pulley should be on the saw spindle. For carbide saws reverse the pulleys. Loosen and remove both pulleys at the same time. Do not attempt to pry the gear-belt off the pulleys.

With the optional 3/8" spindle 2 saws can be mounted to cut 2 slots at one pass. The saws are 1-1/8" O.D. x 3/8" I.D. (which will not cut full depth as close to the riser as the 7/8"). The user must supply a spacer, for between the saws, to match the width of the commutator bar.

Note: The saw retaining nut has a left-hand thread.

SLIDE:

Length of Stroke: Slide Carriage travels 21-3/4" on 1-1/2" hardened and ground rods (longer rods available on quotation). Carriage is fitted with Bronze bushings. Adjustable stops provided at both ends of slide.

Base Plate: 37" long x 8" wide with six 3/4" mounting holes 3" apart. (User furnishes proper block and screw to fit his lathe.)

Skewed Bar Adjustment: At left end of rod-end bracket. Skewed Bar Adjustment Knob on top and Socket Head Cap Screw underneath. (See further instructions below.)

Weight: Slide. Complete, 110 lbs.

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OPERATION:

The assembly is delivered with the drive motor, lead screw and ball nut, and travel limiting switch collars in place.

The electrical connections for travel limiting switches and drive motor have special plugs which prevent misconnection.

Under no circumstances should the lead screw be removed from the ball screw nut. If this happens, the balls will fall out of position, requiring dis-assembly of the unit for repair.

The drive motor and lead screw combination allow a variable linear speed range of 0 to 125 inches per minute.

The control panel houses the main power on/off switch and two rotary switches which control forward and return speeds of the slide, and overload fuse. a foot switch controls motion of the slide.

Fasten the Undercutter Head Base or Slide Base to lathe cross-slide in place of the tool-post holder. User must provide a bolt and plate to fit the "T" slot of his lathe. Mount the saw so it turns counter-clockwise when viewed from the top of the spindle.

To avoid vibration, cutting should be done with the saw near the bottom of the vertical slide rods. On large lathes it may be desirable to insert a block between the undercutter and the cross-slide to bring the saw up to the lathe center. **In all cases, be sure to tighten the Socket Head Cap Screw firmly, which is below the Skew Adjustment Knob.**

If Slide-Base is used align the base with the lathe to assure undercutting to uniform depth full length of commutator.

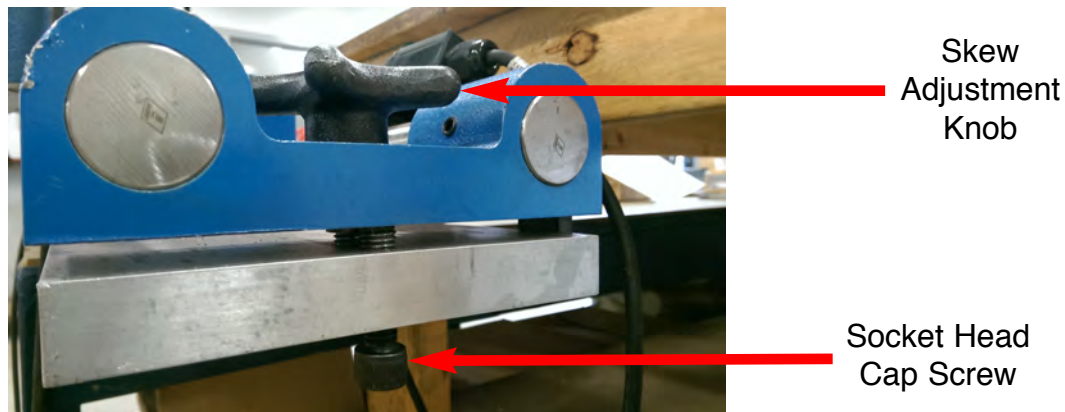
Undercutting should be from the shaft end of the commutator to the riser.

From the start position, depress the foot switch to begin forward travel. The slide will move along the slide bars - as long as the foot switch is held down - until it contacts the travel limiting switch. If the foot switch is released, before the slide contacts the limit switch, it will stop and return to the start position. If the slide is allowed full travel to the limit switch, it will stop, only after releasing the foot switch will the slide return to the start position.

For initial set-up of the undercutter, to align the saw along the length of the bar to be undercut, a slow speed can easily be selected from the "forward" rotary switch on the control panel. Once a satisfactory alignment has been established, then an appropriate forward cutting speed can be selected, a return stroke speed is selected in a similar manner.

When alignment of the saw is satisfactory the travel limiting switch collars can be positioned as required.

When a skewed bar is encountered, adjustment of the horizontal bars is accom-



plished by a Skew Adjustment Knob on the top and a Socket Head Cap Screw underneath the end plate. Loosen the socket head cap screw located on the under side of the base, adjust the skew with the knob on top of the end plate. Once the slide is level, **tighten the socket head cap screw firmly** against the bottom of the end plate. This will allow for vibration-free operation. (See Picture above)

When the Slide-Base is not used, there is no provision to adjust for skewed bars.

CARE & MAINTENANCE:

NEVER: disengage the ball nut from the ball screw, doing so will cause the balls to fall out of the nut, requiring factory service.

Although the slide bars are case hardened they can be damaged if struck by hard tools, e.g. files or hammers. Any deep nicks in the sliding surface will cause damage to the bronze bushings in the carriage.

DAILY: Wipe off any accumulated dust from the slide bars and ball screw. A light coating of machine oil should be applied to the slide bars after several hours of use.

A light molybdenum grease should be applied to the ball screw. Run the carriage back and forth over the full length of the screw to make sure the grease is introduced into the ball screw nut.

Periodically check the security of the socket cap head screws in the ball screw to motor coupling, and the ball nut flange.

Super Lathe-Type Undercutter

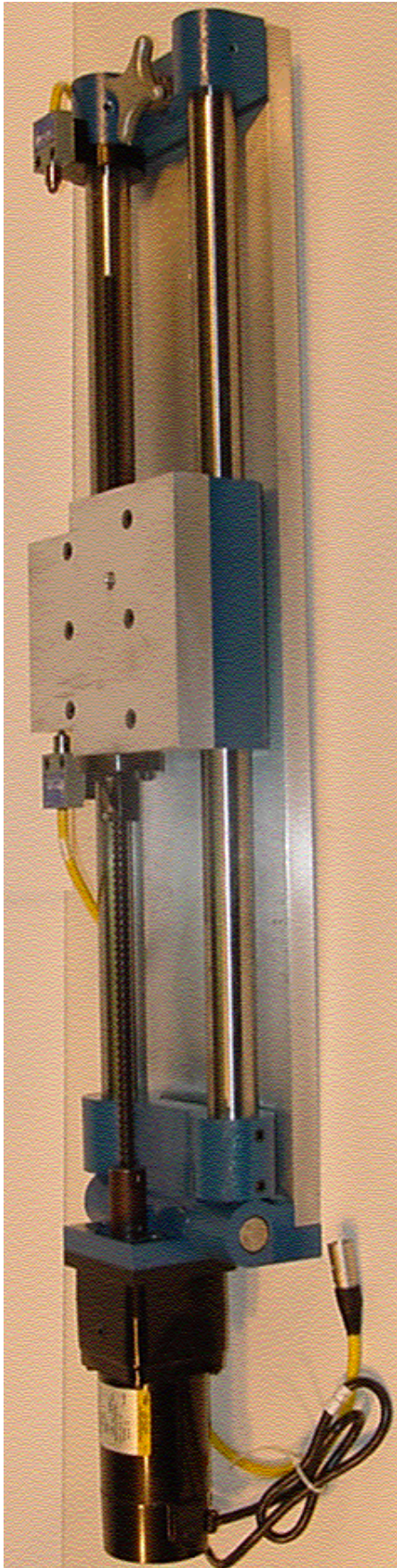


Super Lathe-Type Undercutter Parts List

Quantity	Description	Part No.
1	Base, Pedestal	LTHU282
2	Screw, 3/8-16 x 1/2, Hollow Hd., Set, w/ Brass Tip	
1	Block, Tool Post	
1	Screw, 5/8-11 x 2-1/2, Hex Hd., Cap	
1	Washer, 1-1/2 x 3/32 x 5/8, Heavy	
2	Rod, Slide, Vertical, 1-1/4 x 18"	
2	Screw, 1/2-13 x 1, Hex Hd., Cap	
1	Plate, End	
1	Bushing Set	
1	Screw, Vertical Adjusting	LTHU4219
2	Nut, 5/8-18, Jam	
1	Tubing, 3/4 x 11/16 x 6-1/4"	
1	Handwheel, 5"; w/ Revolving Handle	LTHU44001
1	Screw, 5/16-18 x 1/2, Hollow Hd., Set	
1	Base, Motor	LTHU441
2	Screw, 3/8-16 x 1, Hollow Hd., Cap	
4	Screw, 3/8-16 x 1, Hex Hd., Cap	
4	Washer, 3/8", Flat, SAE	
4	Screw, 5/16-18 x 3/4, Hex Hd., Cap	
4	Washer, 5/16", Flat	
1	Motor Assembly, 115 or 230 V.	LTHU44150(A) or (B)
1	Pulley, 1-3/4 x 5/8"	LTHU15LF050
1	Screw, 1/4-20 x 3/8, Socket Hd., w/ Brass Tip	
1	Pulley, 2-1/2 x 1/2", Modified 1/2" to 5/8"	
1	Screw, 1/4-20 x 3/8" Socket Hd., w/ Brass Tip	
1	Belt	LTHU28GL050
1	Key, Straight, 3/16 x 1-1/4"	
1	Guard Assembly, Belt	LTHU44250
1	Wrench, End, 1/2"	
1	Wrench, End, Stamped, 11/16"	
1	Housing, Spindle, 5/16"	
1	Cap, Bearing	LTHU4412
1	Bearing	LTHU77R10
1	Bushing, 5/8 x 3/4 x 1"	LTHUAA7243
1	Spindle, Saw, 5/16"	LTHU443A
1	Nut, Saw Retaining, 5/16"	LTHU4422
1	Spindle Assembly, 5/16"	LTHU445
1	Housing, Spindle, 3/8"	
1	Cap, Bearing	LTHU4412
1	Bearing	LTHU77R10
1	Bushing, 5/8 x 3/4 x 1"	LTHUAA7243
1	Spindle, Saw, 3/8"	LTHU446
1	Nut, Saw Retaining, 3/8"	LTHU4420

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Quantity	Description	Part No.
4	Spacer, Saw, 3/8"	
1	Spindle Assembly, 3/8"	LTHU443



*Super Lathe-Type
Undercutter
Slide Carriage*



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Slide Carriage Parts List*

Quantity	Description	Part No.
1	Block, Pivot	
1	Pin, 1-1/8 x 8"	
1	Slide	
1	Plate, Riser, 1-1/4 x 8 x 8-1/2"	
4	Bushing, 1-3/4 x 1-1/2 x 2"	LTHU01
1	Pivot	LTHU2827
4	Screw, 3/8-16 x 1/2, Hollow Hd., Set, w/ Brass Tip	
2	Screw, 5/16-18 x 1/2, Hollow Hd., Set	
2	Rod, Polished, 1-1/2 x 36"	LTHU28351
2	Collar, Switch Mounting	
1	Plate, End	LTHU2828
2	Bushing, 1-3/4 x 1-1/2 x 2"	
1	Screw, Adjusting, w/ Lock Screw	
1	Knob, Lock, V-4	
1	Washer, 1-1/4x 17/32 x 3/32, Brass	
1	Plate, Base, 1 x 8 x 38"	
1	Screw, 1/2-20 x 1-3/4, Hollow Hd., Cap	
3	Screw, 3/8-16 x 1-3/8, Hollow Hd., Cap	
1	Screw, 3/8-16 x 1, Hollow Hd., Cap	
1	Guide	
1	Screw, 1/4-20 x 1/4, Hollow Hd., Set, + Brass Plug	
1	Screw, Ball, 1/2 x .500 RH x 28"	
1	Nut, Ball, 1/2 x .500 RH	
1	Flange, Ball Nut	
1	Coupling, Shaft, 2" (Motor to Screw)	
1	Motor, 1/12 HP, 259 RPM, 115 or 230 V.	
1	Controller, DC Motor Drive, 115 or 230 V.	