



# TURBO DRIVE INSTALLATION

## MODEL 9821T KNEE FEED

Acer Mill

- ➔ **NOTE** This Turbo Drive Knee Feed is configured for mounting the feed on the front of the knee with the keypad facing left. The lead screw pitch is 5 turns per inch left hand with 2 to 1 reducing bevel gear set from the jack shaft to the lead screw (jack screw). See **CAUTION** below before changing anything!

### CAUTION

The Turbo Drive power cable should be left **unplugged** until the drive is properly installed on the lead screw.

See the **Operation** manual to reverse the direction of travel or to change the lead screw pitch default. Turn **off** the Turbo Drive and **remove** the power plug from the wall before you attempt to change any jumpers or reverse the top housing.

### WARNINGS

**DO NOT** install and operate this power feed without the 8" safety handwheel Servo #1685-1 for the knee feed. This is required to prevent injury.

**Check handwheel clearances before operation.**

Clearances between the surfaces of the handwheel and the non-moving parts of the equipment on which the handwheel is installed must be at least one-fourth inch (1/4") to prevent injury.

**Do not operate** without proper clearance!

Prevent contact during fast traverses.

### WARRANTY CAUTION

There are **NO** user-serviceable parts inside the center or bottom housings. Removal of the motor, keyboard, or bottom housing screws **voids** the warranty.

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### REFERENCE DRAWINGS ENCLOSED

NA-58496	Bevel Gear Installation
NB-58618	Turbo Drive Installation
0800-80678	Turbo Drive Operation manual

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### PREPARATION

**Step 1:** Gather together the following items that you will need to complete this installation.

- a) 3/8" electric hand drill
- b) 3/16" drill
- c) flat file

- d) 3/4" socket wrench
- e) set of inch hex wrenches
- f) clean shop rag

*Step 2:* Clean the power feed mounting area completely.

*Step 3:* Remove the drive clutch from the elevating jack shaft.

*Step 4:* Remove the dial nut, dial, and dial carrier. (Turn the dial carrier counterclockwise to remove.) Keep the dial for reuse later.

*Step 5:* Replace the existing bearing retainer with #6544 retainer provided.

*Step 6:* Slip spacer #58208 and bearing race #0774 onto the jack shaft as shown. Slide the Turbo Drive over the bearing race and locate against front of the knee.

*Step 7:* Screw the shaft extension #1556 onto the end of the jack shaft and tighten. Finish drill 3/16" diameter through the shaft and pin the extension with the 3/16" diameter x 5/8" long roll pin. File smooth.

## **TURBO DRIVE INSTALLATION**

*Step 1:* Slide the Turbo Drive onto the bearing race and push against the knee. Secure with two 1/4-20 x 1" long socket head cap screws.

*IF:* If the bearing race is not flush with the needle bearing in the unit within  $\pm.05$ ", then either shim behind the race or machine the spacer to correctly locate the race.

## **BEVEL GEAR INSTALLATION**

*Step 1:* Follow the drawing NA-58496 for installation of the bevel gear. Adjust for proper gear backlash.

*Step 2:* Replace the existing key after adjusting for backlash.

## **DIAL AND HANDWHEEL INSTALLATION**

*Step 1:* After getting the proper gear backlash, the dial should be adjusted to obtain .005" spacing from the face of the power feed. This is important in order to keep chips from entering the gear train. Three plastic (.030" thick) and five brass (.005" thick) washers are provided for this. Shim as required.

*Step 2:* In the following sequence, install key #04986, dial, and dial nut #2255. Slide the handwheel #1685-1 in place and tighten with 1/2-20 locknut #01115.

## **TURBO DRIVE OPERATION**

See the separate **Servo Turbo Drive Operation** manual for complete operating instructions. Plug the unit into a properly grounded three-

wire outlet supplying 110 volt single phase 50/60 Hz 6 amp power. Turn the control switch ON and follow the instructions in the manual or on the **Quick Reference** sheet for setting limits.

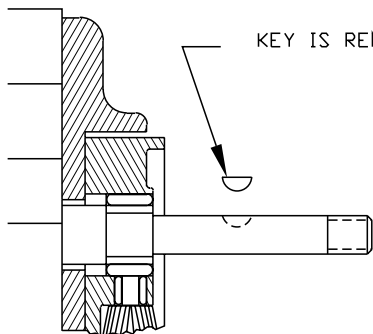
**SERVO PRODUCTS COMPANY**

433 North Fair Oaks Avenue, Pasadena, CA 91103 USA  
Phone: 800.521.7359 or 626.796.2460 Fax: 626.796.3845

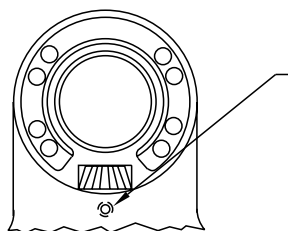
Web: [www.servoproductsco.com](http://www.servoproductsco.com)

If service is required, call Servo Products Company.

DO NOT PLUG IN POWER UNTIL ALL STEPS ARE COMPLETED.

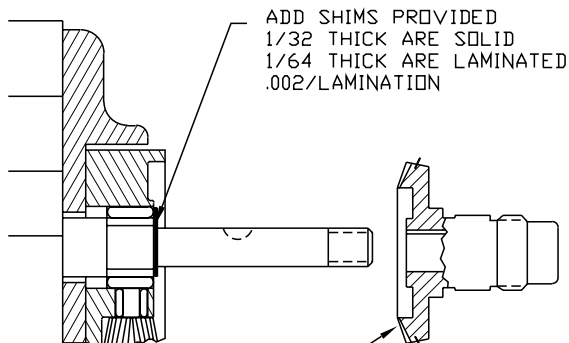


KEY IS REMOVED DURING SHIMMING

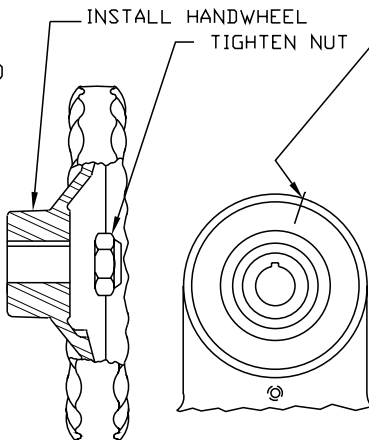


TIGHTEN SLIGHTLY (HOLDS BEVEL PINION STATIONARY DURING SHIMMING.)  
(TIGHTEN UPPER ONE ONLY)

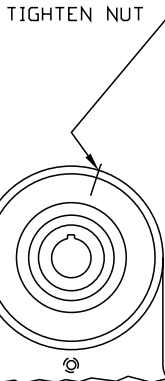
**STEP 1**  
**PREPARATION**



ADD SHIMS PROVIDED  
1/32 THICK ARE SOLID  
1/64 THICK ARE LAMINATED  
.002/LAMINATION

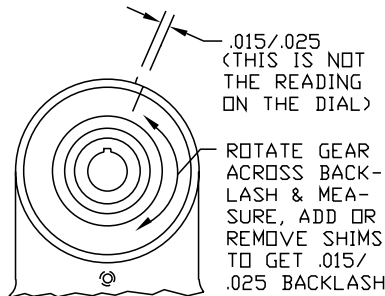


INSTALL HANDWHEEL



TIGHTEN NUT

SCRIBE ACROSS GEAR & HOUSING WHILE PUSHING GEAR AGAINST ONE SIDE OF THE BACKLASH



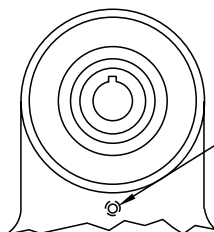
.015/.025  
(THIS IS NOT THE READING ON THE DIAL)

ROTATE GEAR ACROSS BACKLASH & MEASURE, ADD OR REMOVE SHIMS TO GET .015/.025 BACKLASH

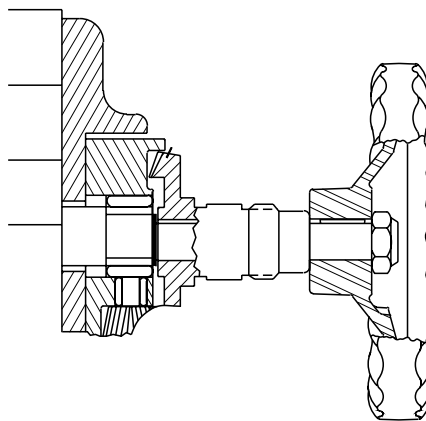
PUSH BEVEL GEAR AGAINST SHIMS.

**STEP 2**  
**SHIMMING BEVEL GEAR**

**CAUTION:** IF BACKLASH IS NOT PROPERLY SET BEFORE TURNING UNIT ON, BEVEL GEAR MAY BE DESTROYED.

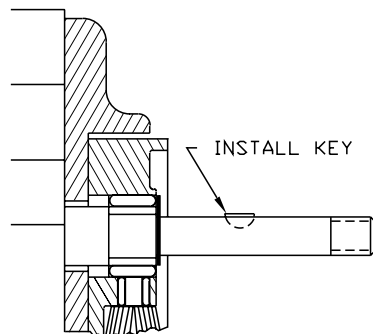


LOOSEN SETSCREW

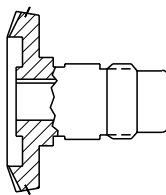


MANUALLY TURN HANDWHEEL. IF EXCESSIVE GEAR NOISE OR BINDING OCCURS, SHIMS NEED TO BE ADDED OR REMOVED, WHEN RE-SHIMMING, REPEAT STEPS 1 AND 2.

**STEP 3**  
**DOUBLE CHECK OF SHIMMING**



INSTALL KEY



SEAL

**STEP 4**  
**LUBRICATION**

REMOVE GEAR, PACK WITH GREASE. (DO NOT USE SILICONE TYPE GREASE) REPLACE GEAR. (DO NOT LOSE ANY SHIMS)

PICTURES IN THIS DRAWING ARE FOR REFERENCE ONLY. SEE INSTALLATION DRAWING OF CORRESPONDING MODEL FOR EXACT PARTS CONFIGURATION.

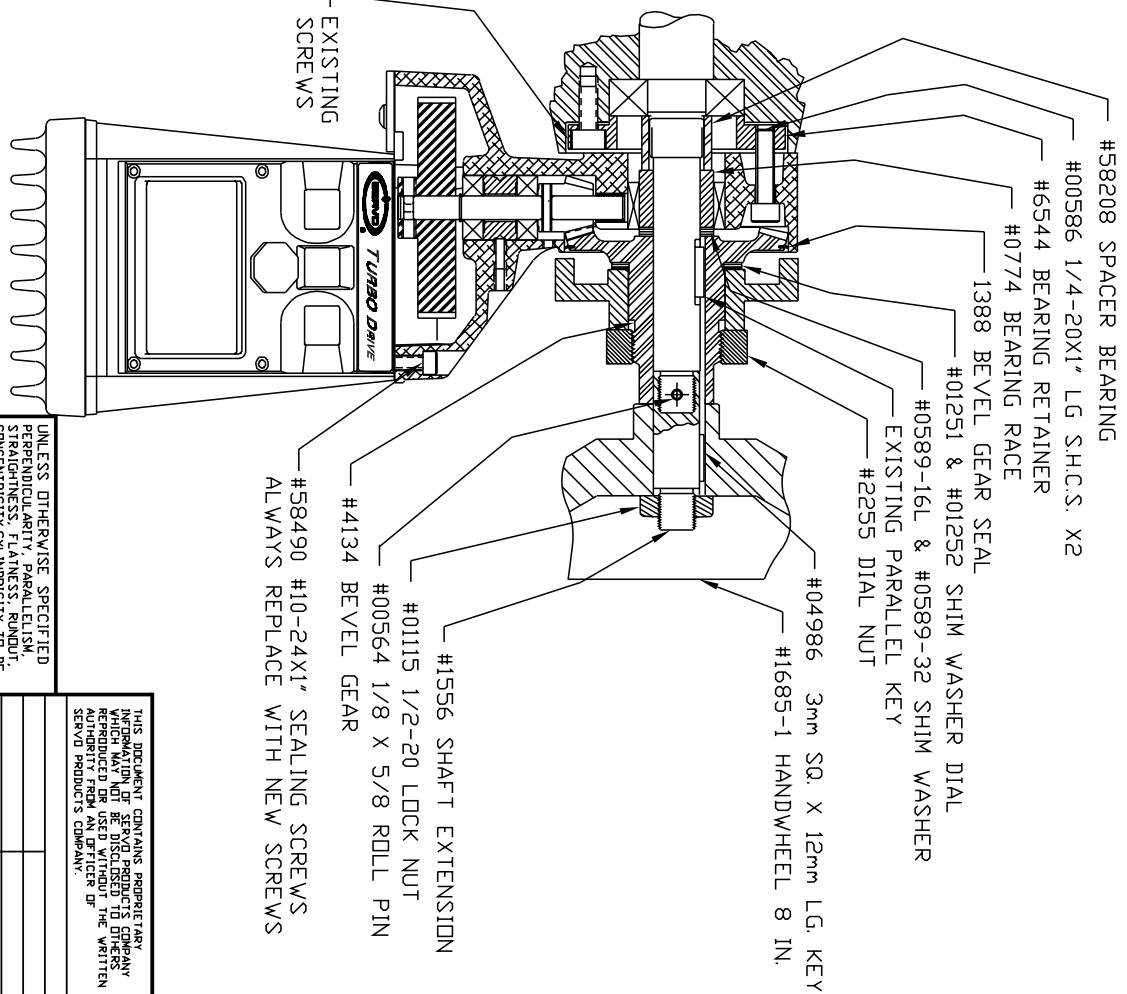


SERVO PRODUCTS COMPANY

BEVEL GEAR INSTALLATION

NA-58496

REVISION		DATE	DRAWN	CHECKED
ECD	LTR			
DESCRIPTION				



NOTE:  
 1. REVIEW ALL INSTALLATION INSTRUCTIONS AND POWER FEED OPERATION INSTRUCTION BEFORE TURNING ON SERVO POWER FEED.  
 2. REMOVAL OF MOTOR, KEY PAD OR BOTTOM HOUSING VOIDS WARRANTY.

UNLESS OTHERWISE SPECIFIED SERVO PRODUCTS COMPANY DIMENSIONS ARE IN INCHES & TOLERANCES ARE ANGLES ± 1/2° FINISH ± 1/64 XXX ± .015

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CONTRACT NO.	APPROVALS	DATE
	BRAVN T. KU	9/16/98
CHECKED		

SERVO PRODUCTS COMPANY  
 433 N. FAIR DMES AVE., PASADENA CALIFORNIA 91103  
 INSTALLATION DRAWING  
 MODEL 9821T  
 ACER OEM  
 DRAWING NO. NB-58618  
 SHEET OF

APPLICATION	USED ON
NEXT ASSY	

COMPUTER NO.  
 SCALE 5/8

SIZE CODE IDENT NO. DRAWING NO.  
 B 0800-80727 NB-58618  
 REV.