



TURBO DRIVE INSTALLATION

MODEL 5080T KNEE FEED

Acra, Victor 16VSK/VK Mills

- ➔ **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.

REFERENCE DRAWINGS ENCLOSED

NA-58496	Bevel Gear Installation
NB-58514	Turbo Drive Installation
0800-80678	Turbo Drive Operation manual

PREPARATION

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

- a) lathe
- b) 3/8" electric hand drill
- c) #7 drill, 3/16" drill

- d) 1/4-20 tap
- e) 9/32" diameter transfer punch
- f) flat file
- g) 3/4" socket wrench
- h) set of inch hex wrenches
- i) grease
- j) 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 #57904 retainer provided.

Step 6: Slip spacer #5426 and bearing race #6649 onto the jack shaft as shown. Slide the Turbo Drive over the bearing race and locate against front of the knee.

Step 7: Using a 9/32" diameter transfer punch, transfer three mounting holes from the feed to the bearing retainer. Remove the unit, the bearing retainer and all the parts just installed. Then drill and tap 1/4-20 UNC threads through the bearing retainer.

Step 8: Pull jack shaft out of knee. Hold inboard end up while removing to avoid damage to the pinion gear.

Step 9: Press the bearing off the jack shaft.

Step 10: Drill and ream the end of the jack shaft .4375" diameter by 13/16" deep. The .4375" dia. must be concentric to the shaft O.D. within .002" T.I.R. Chamfer 1/32" x 1/2" diameter. **For best results, machining should be done in a lathe.**

Step 11: Place the shaft extension #6975 into the end of the jack shaft. 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.

Step 12: Reassemble and replace the jack shaft in the machine.

Step 13: Replace the bearing retainer.

TURBO DRIVE INSTALLATION

Step 1: Slide spacer #5426 onto the jack shaft followed by bearing race #6849 as shown.

Step 2: Slide spacer coupling #6684 and the Turbo Drive onto the bearing race and push against the knee. Secure with two 1/4-20 x 1-1/4" 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.

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 the key, dial, dial nut #2255 and spacer #6745. 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.

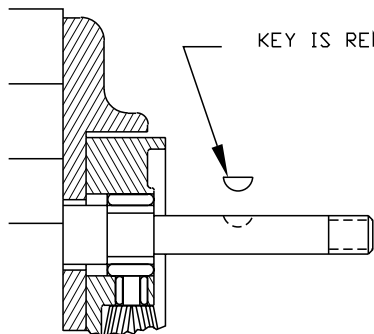
SERVO PRODUCTS COMPANY

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

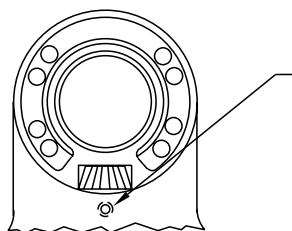
Web: www.servoproductsco.com

If service is required, call Servo Products Company.

DO NOT PLUG IN POWER UNTIL ALL STEPS ARE COMPLETED.

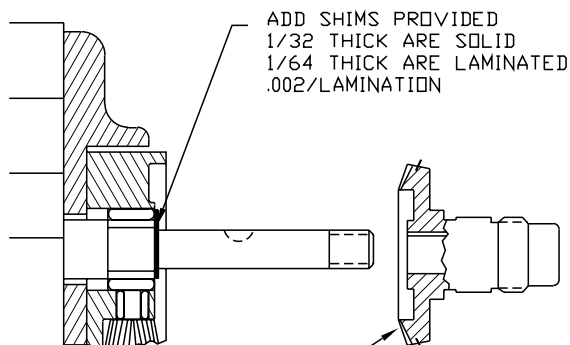


KEY IS REMOVED DURING SHIMMING

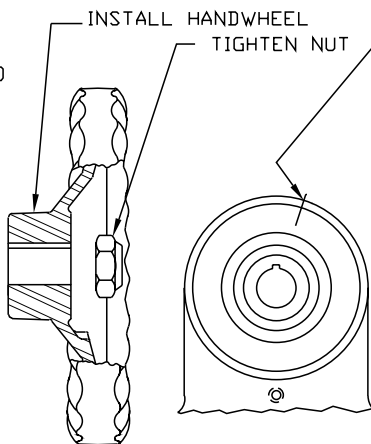


TIGHTEN SLIGHTLY (HOLDS BEVEL PINION STATIONARY DURING SHIMMING.)
(TIGHTEN UPPER ONE ONLY)

STEP 1
PREPARATION



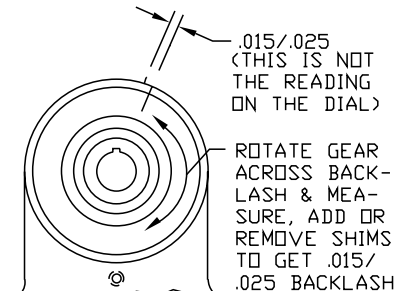
ADD SHIMS PROVIDED
1/32 THICK ARE SOLID
1/64 THICK ARE LAMINATED
.002/LAMINATION



INSTALL HANDWHEEL

TIGHTEN NUT

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



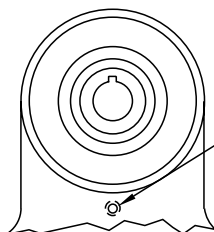
.015/.025
(THIS IS NOT THE READING ON THE DIAL)

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

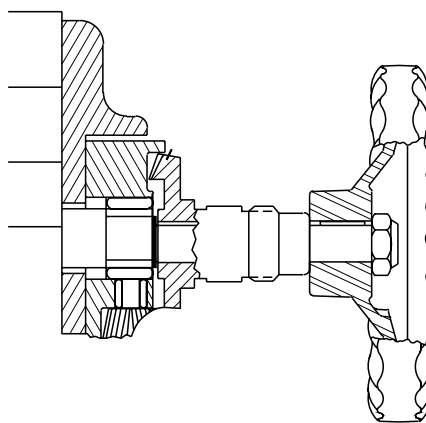
STEP 2
SHIMMING BEVEL GEAR

PUSH BEVEL GEAR AGAINST SHIMS.

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

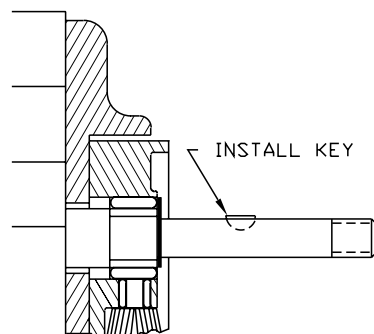


LOOSEN SETSCREW

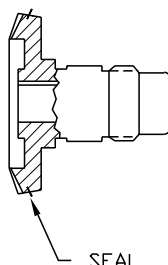


MANUALLY TURN HANDWHEEL. IF EXCESSIVE GEAR NOISE OR BINDING OCCURS, SHIMS NEED TO BE ADDED OR REMOVED, WHEN RE-SHIMMING, REPEAT STEPS 1 AND 2.

STEP 3
DOUBLE CHECK OF SHIMMING



INSTALL KEY



SEAL

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.



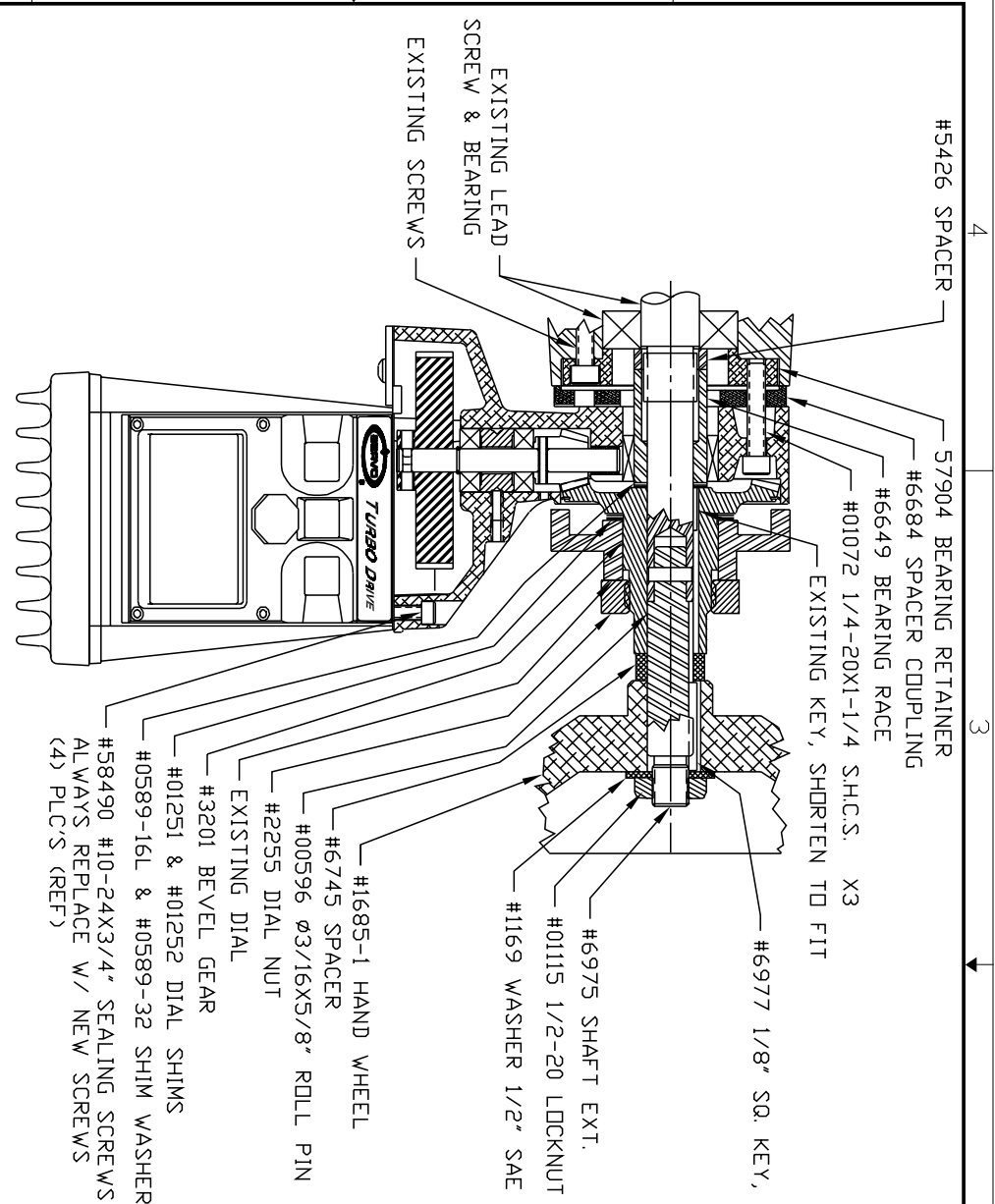
SERVO PRODUCTS COMPANY

BEVEL GEAR INSTALLATION

NA-58496

STEP 4
LUBRICATION

REVISION		DATE	DRAWN	CHECKED
ECD	LTR			
DESCRIPTION				



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

UNLESS OTHERWISE SPECIFIED
 DIMENSIONS ARE IN INCHES &
 DECIMALS THEREOF. ANGLES
 ARE IN DEGREES. FINISH
 UNLESS OTHERWISE SPECIFIED
 IS 1/64" ± 0.015
 ± 1/64" ± 0.015
 ± 1/2°
 UNLESS OTHERWISE SPECIFIED
 SURFACES SHALL BE FINISHED
 TO THE FOLLOWING TOLERANCES
 WITHIN 0.1 TOTAL OR 0.040/FT.
 SURFACE ROUGHNESS WITHIN 125
 REMOVE SHARP CORNERS AND
 EDGES .005 MIN
 DRAFTING STANDARD PER ANSI Y14.5M-1982

THIS DOCUMENT CONTAINS PROPRIETARY
 INFORMATION OF A TRADE SECRET
 WHICH MAY NOT BE DISCLOSED TO OTHERS
 REPRODUCED OR USED WITHOUT THE WRITTEN
 PERMISSION FROM AND UNDER THE
 SERVO PRODUCT'S COMPANY.

UNLESS OTHERWISE SPECIFIED
 DIMENSIONS ARE IN INCHES &
 DECIMALS THEREOF. ANGLES
 ARE IN DEGREES. FINISH
 UNLESS OTHERWISE SPECIFIED
 IS 1/64" ± 0.015
 ± 1/64" ± 0.015
 ± 1/2°

CONTRACT NO.	APPROVALS	DATE
	T. KU	7/02/98

SERVO PRODUCTS COMPANY
 432 N. FAIR OAKS AVE., PASADENA CALIFORNIA 91103
INSTALLATION DRAWING,
MODEL 5080T
 ACRA
 SIZE CODE IDENT NO. DRAWING NO. REV.
 B 0800-80700 58514
 SCALE SHEET OF