



TURBO DRIVE INSTALLATION

MODEL 9808T KNEE FEED

Kent, Kingston KTM 3V & Webb 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-58596	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) 9/32" diameter transfer punch

- d) .4375 drill, 3/16" drill, #7 drill
- e) 1/4-20 tap
- f) 3/4" socket wrench
- g) set of inch hex wrenches
- h) clean shop rag

- Step 2:* Clean the power feed mounting area completely.
- Step 3:* Remove the drive clutch nut and the drive clutch from the elevating jack shaft.
- Step 4:* Remove the dial nut, dial, and dial carrier. Keep the dial for reuse later.
- Step 5:* Remove the existing bearing retainer. Keep the screws for reuse later.
- Step 6:* Pull jack shaft out of knee. Hold inboard end up while removing to avoid damage to the pinion gear.
- Step 7:* Press the bearing off the jack shaft.
- Step 8:* 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 9:* 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 10:* Reassemble and replace the jack shaft in the machine.
- Step 11:* Replace the existing bearing retainer with #57904 retainer provided. Secure using existing screws.
- Step 12:* Slip spacer #5426 and bearing race #1616 onto the jack shaft. Slide the adaptor #0771 over the bearing race and locate against front of the knee.
- Step 13:* Orient the adaptor as shown in section A-A on drawing NB-58596. Transfer three mounting holes to the bearing retainer. Remove the bearing retainer to drill and tap 1/4-20 through. Then re-install the bearing retainer.
- Step 14:* Secure the adaptor to the bearing retainer with three 1/4-20 x 5/8" long socket head cap screws. Do not bottom out. Remove the bearing race.

TURBO DRIVE INSTALLATION

- Step 1:* Slide two spacers #4341 onto the jack shaft followed by bearing race #1616 as shown.
- Step 2:* Slide the Turbo Drive onto the bearing race and push against the adaptor. 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.

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.

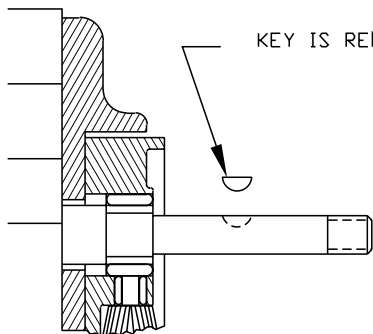
SERVO PRODUCTS COMPANY

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

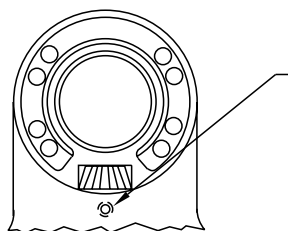
Web: www.servoproductsco.com

If service is required, call Servo Products Company.

DO NOT PLUG IN POWER UNTIL ALL STEPS ARE COMPLETED.

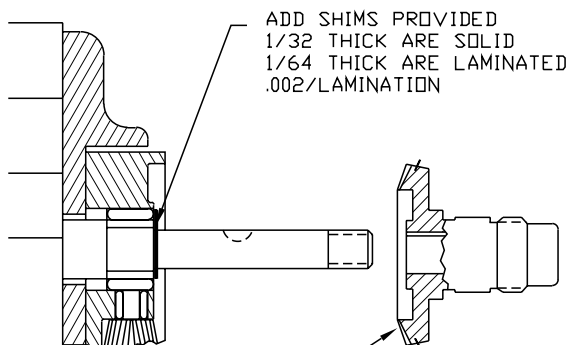


KEY IS REMOVED DURING SHIMMING

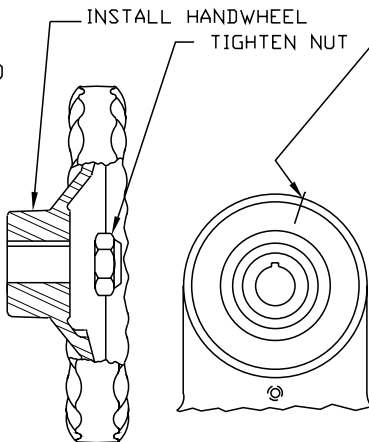


TIGHTEN SLIGHTLY (HOLDS BEVEL PINION STATIONARY DURING SHIMMING.)
(TIGHTEN UPPER ONE ONLY)

STEP 1
PREPARATION



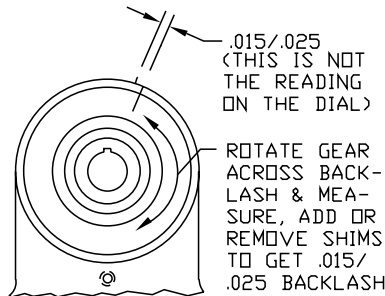
ADD SHIMS PROVIDED
1/32 THICK ARE SOLID
1/64 THICK ARE LAMINATED
.002/LAMINATION



INSTALL HANDWHEEL

TIGHTEN NUT

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



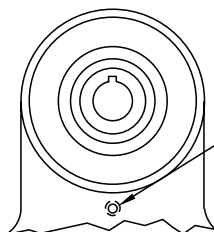
.015/.025
(THIS IS NOT THE READING ON THE DIAL)

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

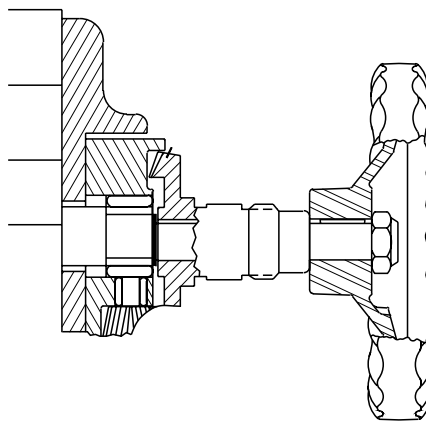
PUSH BEVEL GEAR AGAINST SHIMS.

STEP 2
SHIMMING BEVEL GEAR

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

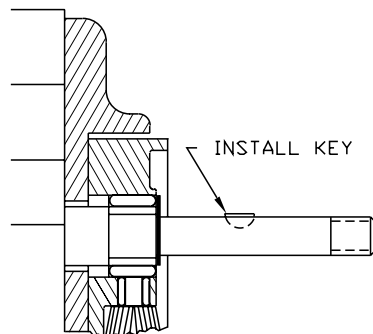


LOOSEN SETSCREW

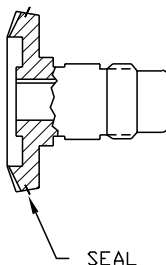


MANUALLY TURN HANDWHEEL. IF EXCESSIVE GEAR NOISE OR BINDING OCCURS, SHIMS NEED TO BE ADDED OR REMOVED, WHEN RE-SHIMMING, REPEAT STEPS 1 AND 2.

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)

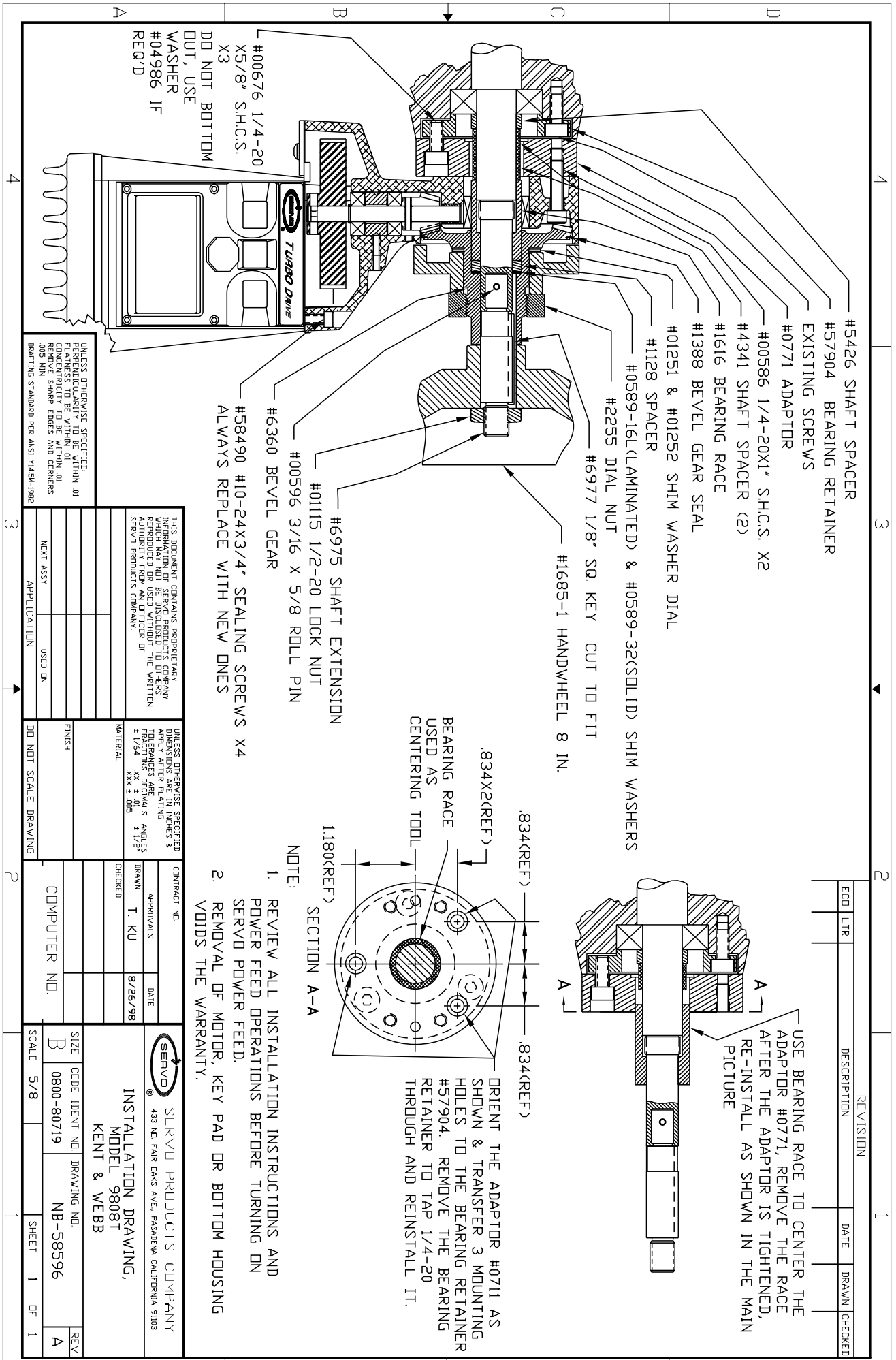
PICTURES IN THIS DRAWING ARE FOR REFERENCE ONLY. SEE INSTALLATION DRAWING OF CORRESPONDING MODEL FOR EXACT PARTS CONFIGURATION.



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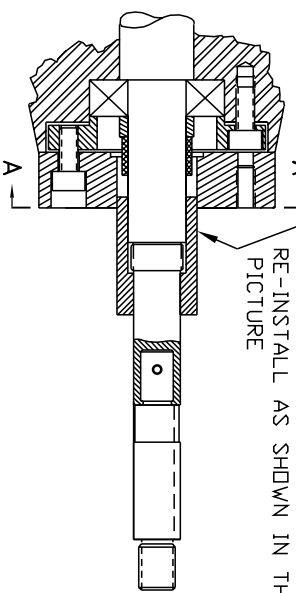
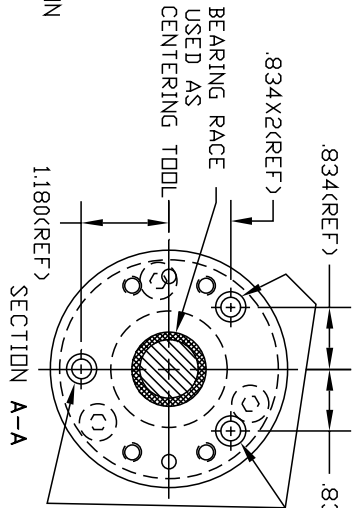
BEVEL GEAR INSTALLATION

NA-58496



- #5426 SHAFT SPACER
- #57904 BEARING RETAINER
- EXISTING SCREWS
- #0771 ADAPTOR
- #00586 1/4-20X1" S.H.C.S. X2
- #4341 SHAFT SPACER (2)
- #1616 BEARING RACE
- #1388 BEVEL GEAR SEAL
- #01251 & #01252 SHIM WASHER DIAL
- #1128 SPACER
- #0589-16(L(LAMINATED)) & #0589-32(SOLID) SHIM WASHERS
- #2255 DIAL NUT
- #6977 1/8" SQ. KEY CUT TO FIT
- #1685-1 HANDWHEEL 8 IN.
- #6975 SHAFT EXTENSION
- #01115 1/2-20 LOCK NUT
- #00596 3/16 X 5/8 ROLL PIN
- #6360 BEVEL GEAR
- #58490 #10-24X3/4" SEALING SCREWS X4

ALWAYS REPLACE WITH NEW ONES



ORIENT THE ADAPTOR #0711 AS SHOWN & TRANSFER 3 MOUNTING HOLES TO THE BEARING RETAINER #57904. REMOVE THE BEARING RETAINER TO TAP 1/4-20 THROUGH AND REINSTALL IT.

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

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES & ANGLES ARE IN DEGREES. DECIMALS ARE ROUNDED UP TO THE NEXT HIGHER VALUE. UNLESS OTHERWISE SPECIFIED, DIMENSIONS TO BE WITHIN OF CONCENTRICITY TO BE WITHIN OF REMOVE SHAPE EDGES AND CORNERS TO THE NEXT STANDARD PER ANSI Y14.5M-1982

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FINISH	APPLY AFTER PLATING
APPLICATION	USED ON
NEXT ASSY	

CONTRACT NO.	DATE
APPROVALS	8/26/98
DRAWN	T. KU
CHECKED	
COMPUTER NO.	

SIZE	CODE IDENT NO.	DRAWING NO.
B	0800-80719	NB-58596
SCALE	5/8	

SERVO PRODUCTS COMPANY 433 ND FAIR OAKS AVE., PASADENA CALIFORNIA 91103	
INSTALLATION DRAWING, MODEL 9808T KENT & WEBB	
REVISION	DATE DRAWN CHECKED
SHEET	1 OF 1