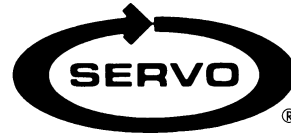


# POWER FEED INSTALLATION

## Model M-9808 Knee Feed

### Kent 3VK, 5VK, and others



#### REFERENCE DRAWINGS ENCLOSED

NA-5444	Bevel Gear Installation
NB-57233	Power Feed Installation
NC-0792	Limit Switch Installation
ND-6292	Type 140 Servo Drive
0800-80001	Servo Power Feed Operation

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#### PREPARATION

- Step 1:* Remove the drive clutch, dial, nut, and key from the elevating jack shaft.
- Step 2:* Remove the bearing retainer. Save the screws for installation later.
- Step 3:* Pull the jack shaft out of the knee. **Hold inboard end up** while removing to avoid damage to the pinion gear.
- Step 4:* Hold the dial hub in soft jaws and unscrew.
- Step 5:* Drill and ream the end of the jack shaft .4375 diameter by 13/16" deep. The .4375 diameter must be concentric to the shaft o.d. within .002 TIR. Chamfer 1/32 x 1/2 diameter. **For best results, machining should be done in a lathe.**
- Step 6:* Place the shaft extension onto the jack shaft. Using the hole provided as a pilot, drill 1/8" diameter through the shaft and pin the extension with the 1/8 diameter x 5/8" long roll pin. File smooth.
- Step 7:* Using the bearing retainer provided, reassemble the jack shaft with the existing socket head cap screws.

#### POWER FEED INSTALLATION

- Step 1:* Slide the shaft spacers onto the jack shaft.
- Step 2:* Secure the adaptor to the bearing retainer with 1/4-20 x 1/2" long socket head cap screws.
- Step 3:* Slide the bearing race onto the lead screw.
- Step 4:* Slide the power feed onto the shaft and secure to the adaptor using the provided 1/4-20 x 1" long socket head cap screws.

#### BEVEL GEAR INSTALLATION

- Step 1:* Install the woodruff key provided and slide the bevel gear in place.
- Step 2:* Follow drawing NA-5444 for installation of the bevel gear. Adjust for proper gear backlash.

## DIAL AND HANDCRANK INSTALLATION

*Step 1:* After getting the proper 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. Two plastic (.030" thick) and five brass (.005" thick) washers are provided for this. Shim as required.

*Step 2:* Put on the dial locking nut.

*Step 3:* Slide the handcrank onto the end of the shaft extension and tighten with the 1/2-20 lock nut.

## LIMIT SWITCH INSTALLATION

*Step 1:* See the limit switch installation drawing NC-0792 enclosed.

## OPERATION

See separate *Servo Power Feed Operation* sheet. Unit will operate on either 50 or 60 cycles.

### WARNINGS

#### **Check hand crank clearances before operation.**

Clearances between the surfaces of the hand crank and the non-moving parts of the equipment on which the hand crank is installed must be at least one-fourth inch (1/4") to prevent injury. Modification of existing hand crank or replacement may be required.

***Do not operate*** without proper clearance!

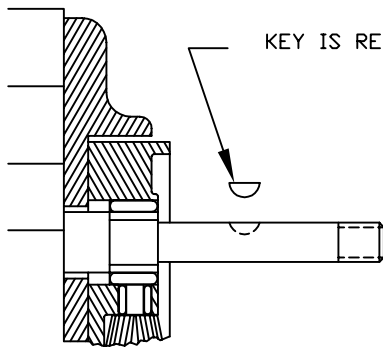
Prevent contact during fast traverses.

## SERVO PRODUCTS COMPANY

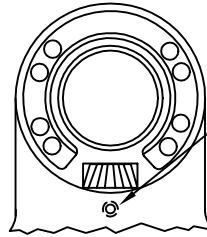
433 North Fair Oaks Avenue, Pasadena, CA 91103 USA  
Phone: 800.521.7359 or 626.796.2460 Fax: 626.796.3845

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

Call for the location of our regional Service Centers.

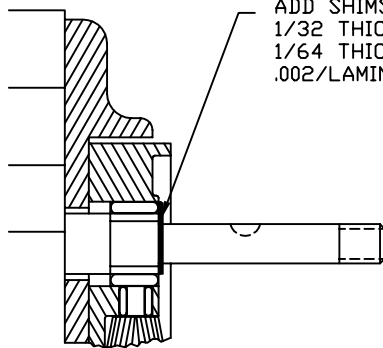


KEY IS REMOVED DURING SHIMMING

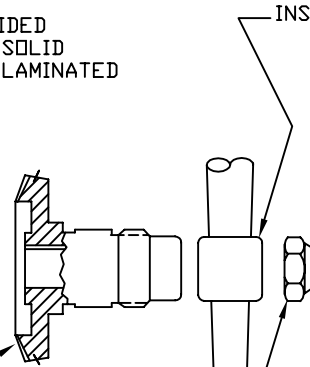


TIGHTEN SLIGHTLY (HOLDS BEVEL PINION STATIONARY DURING SHIMMING.)

STEP 1  
PREPARATION



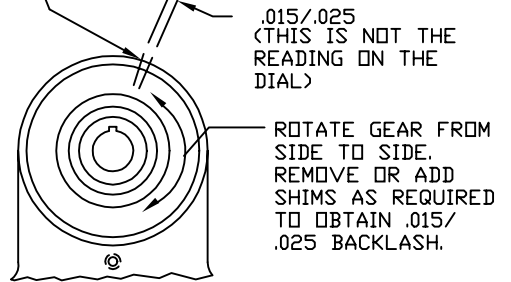
ADD SHIMS PROVIDED  
1/32 THICK ARE SOLID  
1/64 THICK ARE LAMINATED  
.002/LAMINATION



PUSH BEVEL GEAR AGAINST SHIMS.

INSTALL HANDCRANK.

MARK HOUSING AND BEVEL GEAR WITH PENCIL TO CHECK BACKLASH.



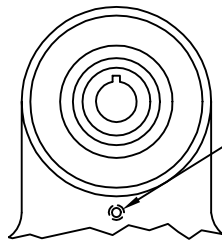
.015/.025  
(THIS IS NOT THE READING ON THE DIAL)

ROTATE GEAR FROM SIDE TO SIDE.  
REMOVE OR ADD SHIMS AS REQUIRED TO OBTAIN .015/.025 BACKLASH.

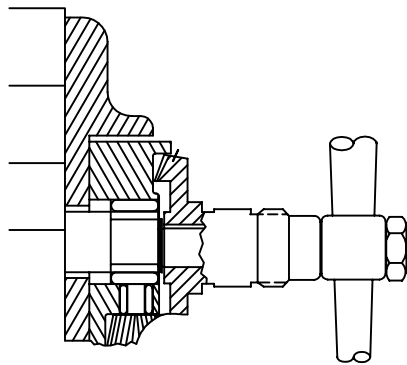
STEP 2  
SHIMMING BEVEL GEAR

TIGHTEN NUT.

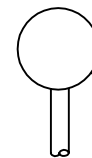
**CAUTION:** IF BACKLASH IS NOT PROPERLY SET BEFORE TURNING UNIT ON, BEVEL GEAR MAY BE DESTROYED.



LOOSEN SETSCREW

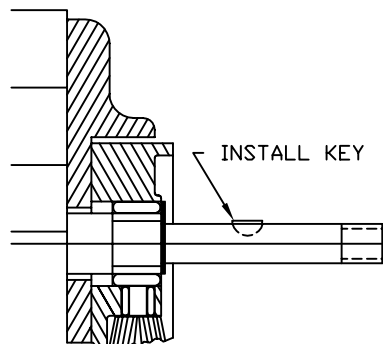


WITH POWER FEED IN NEUTRAL POSITION, TURN HANDCRANK. IF EXCESSIVE GEAR NOISE OR BINDING OCCURS, SHIMS NEED TO BE ADDED. WHEN ADDING SHIMS, REPEAT STEPS 1 AND 2.

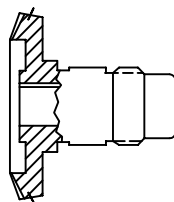


CONTROL HANDLE @ NEUTRAL POSITION

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)

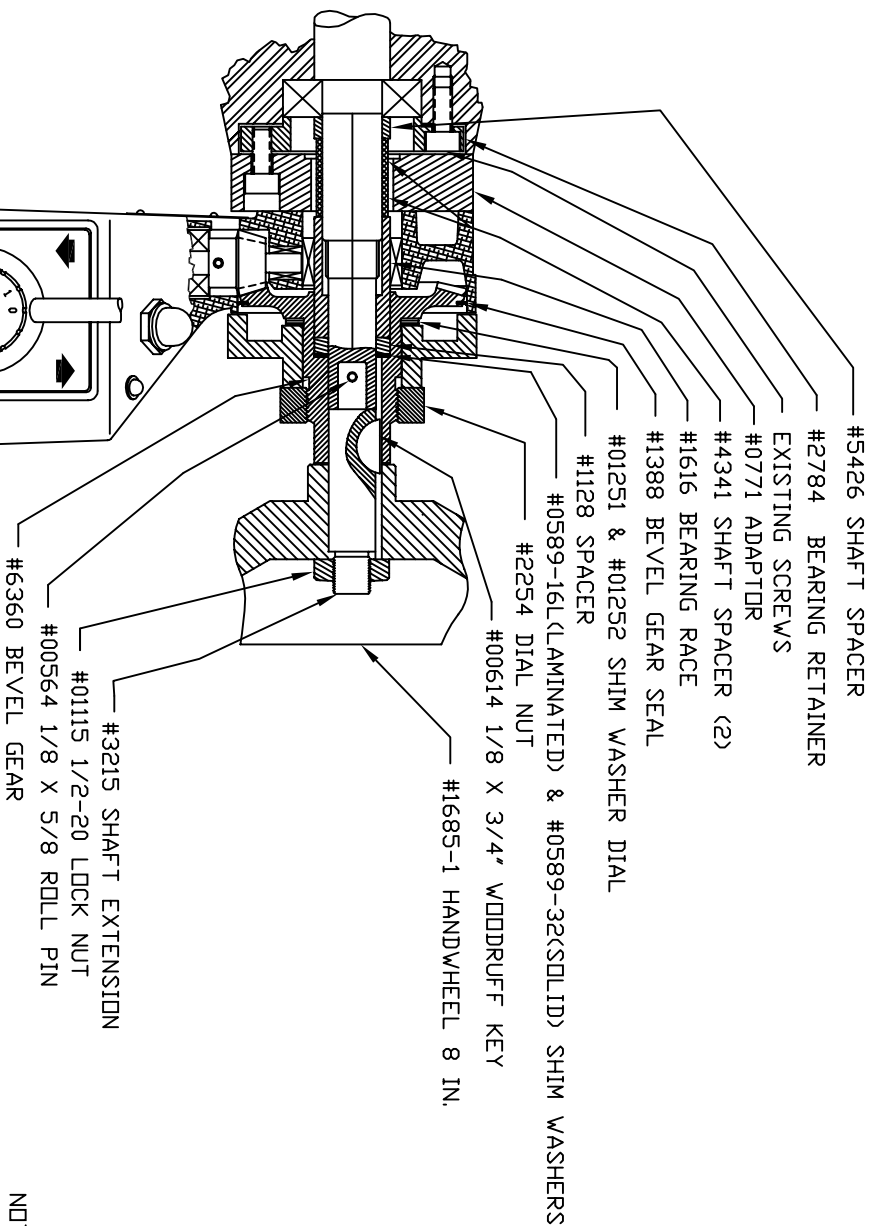
PICTURES IN THIS DRAWING ARE FOR REFERENCE ONLY. SEE INSTALLATION DRAWING OF CORRESPONDING MODEL FOR EXACT PARTS CONFIGURATION.

SERVO PRODUCTS COMPANY

BEVEL GEAR INSTALLATION

NA-5444 C

REVISION		DATE	DRAWN	CHECKED
ECD	LTR			
DESCRIPTION				



NOTE:  
 1. REVIEW ALL INSTALLATION INSTRUCTIONS AND POWER FEED OPERATIONS BEFORE TURNING ON SERVO POWER FEED.

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES & TOLERANCES ARE AS FOLLOWS: DECIMALS ± 1/64, .XX ± .005, ANGLES ± 1/2°

UNLESS OTHERWISE SPECIFIED, FINISHES ARE IN INCHES & TOLERANCES ARE AS FOLLOWS: DECIMALS ± 1/64, .XX ± .005, ANGLES ± 1/2°


UNLESS OTHERWISE SPECIFIED, FLATNESS TO BE WITHIN .01, CONCENTRICITY TO BE WITHIN .01, REMOVE SHARP EDGES AND CORNERS .005 MIN.

DRAWING STANDARD PER ANSI Y14.5M-1992

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES & TOLERANCES ARE AS FOLLOWS: DECIMALS ± 1/64, .XX ± .005, ANGLES ± 1/2°	UNLESS OTHERWISE SPECIFIED FINISHES ARE IN INCHES & TOLERANCES ARE AS FOLLOWS: DECIMALS ± 1/64, .XX ± .005, ANGLES ± 1/2°
NOTED	NOTED
NONE	NONE

CONTRACT NO.	APPROVALS	DATE
	DRAWN G. BADEA	7/17/91
	CHECKED	


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**INSTALLATION DRAWING,**  
**MODEL 9808**  
**KENT 3VK & 5VK**

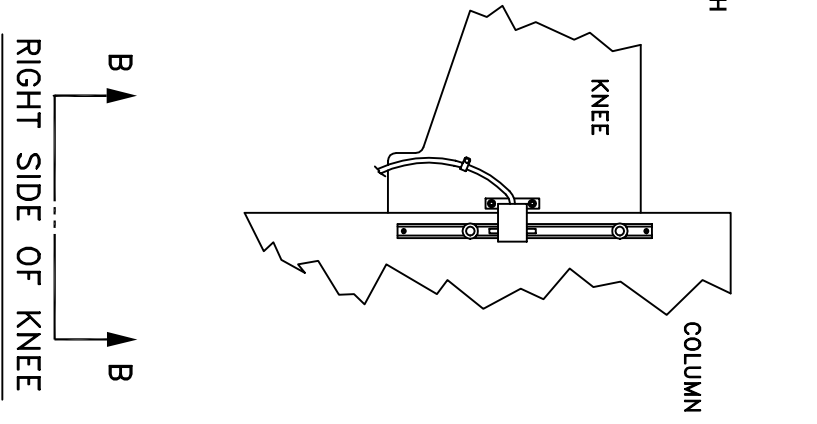
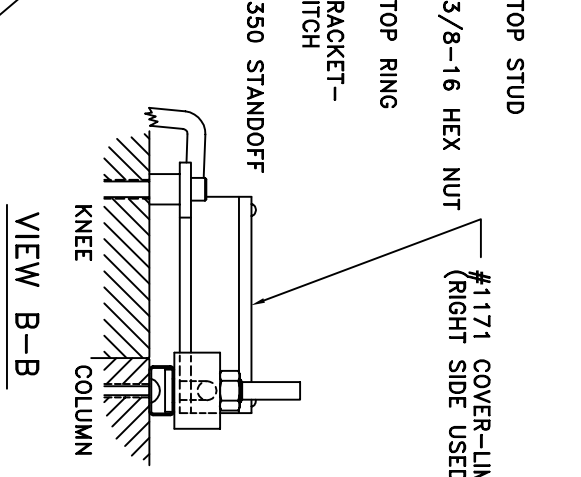
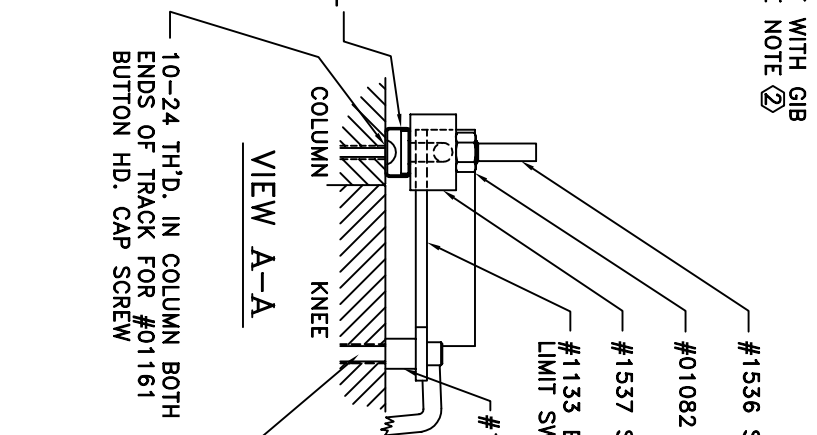
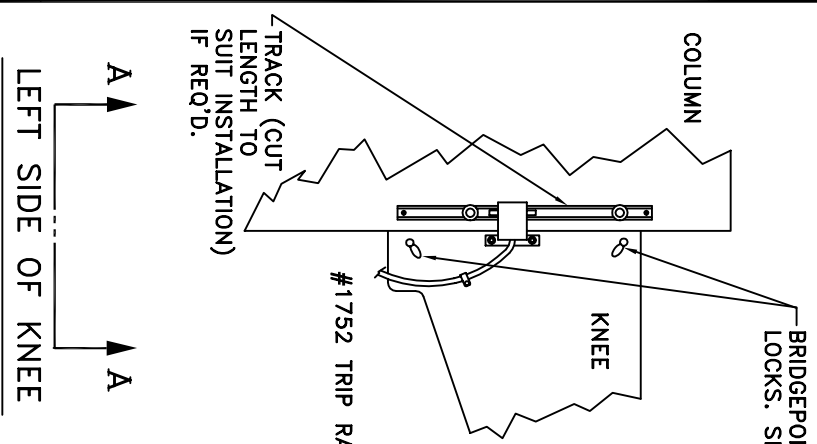
SIZE	CODE IDENT NO.	DRAWING NO.
B	0800-80474	NB-57233
SCALE	5/8	SHEET
		OF

4 3 2 1

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REVISION		DATE	DRAWN	CHECKED
ECD	LTR	DESCRIPTION		

- NOTES:**
- LIMIT SWITCH MAY BE MOUNTED ON RIGHT OR LEFT HAND SIDE OF MILL.
  - BRIDGEPORT WITH GIB LOCKS IN KNEE MOUNT LIMIT SWITCH ON RIGHT HAND SIDE OF KNEE.



UNLESS OTHERWISE SPECIFIED, FLATNESS TO BE WITHIN .01 CONCENTRICITY TO BE WITHIN .01 REMOVE SHARP EDGES AND CORNERS .005 MIN.

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES & FRACTIONS ARE IN ANGLES	DRAWN	DATE
TOLERANCES ARE ± 1/64 XX ± .005 ± 1/2° <td>J. TUCKER</td> <td>05/20/98</td>	J. TUCKER	05/20/98
MATERIAL	CHECKED	
FINISH		
NOTED		
NOTED		
APPROVALS		
CONTRACT NO.		

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**INSTALLATION LIMIT STOP**

SIZE: B CODE IDENT. NO.: DRAWING NO.: NC-0792  
 SCALE: SHEET 1 OF 1

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APPROVALS		
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**INSTALLATION LIMIT STOP**

SIZE: B CODE IDENT. NO.: DRAWING NO.: NC-0792  
 SCALE: SHEET 1 OF 1