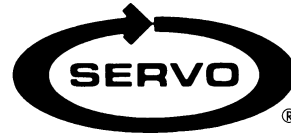


# POWER FEED INSTALLATION

## Model M-0880 Knee Feed

### Ex-Cell-O 602



#### REFERENCE DRAWINGS ENCLOSED

NA-5444	Bevel Gear Installation
NC-0792	Limit Switch Installation
NB-1810	Power Feed Installation
ND-6292	Type 140 Servo Drive
0800-80001	Servo Power Feed Operation

---

#### PREPARATION

*Step 1:* Remove the handcrank, clutch, and dial from the lead screw.

*Step 2:* Rework the dial per drawing ND-1810 detail A.

#### Power Feed Installation

*Step 1:* Slide the bearing race onto the lead screw.

*Step 2:* Slide the power feed onto the bearing race. With the unit square to the dial pad, transfer the two hole centers to the dial pad. Remove the power feed and bearing race.

*Step 3:* Drill and tap two 1/4-20 x 1/2" deep holes into the dial pad.

*Step 4:* Replace the bearing race.

*Step 5:* Install the power feed using two 1/4-20 x 1" long socket head cap screws.

#### BEVEL GEAR INSTALLATION

*Step 1:* Follow drawing NA-5444 for installation of the bevel gear. Adjust for proper gear backlash.

**NOTE** *Skip the portion of NA-5444 step 2 referring to shimming the bevel gear.*

*Extra care should be taken in NA-5444 step 3 since there is no woodruff key for locking the bevel gear, spacer, and handcrank to the shaft.*

*Step 3:* Grease the gear as noted in NA-5444 step 4.

*Step 4:* After obtaining the proper backlash, with the handwheel and spacer in place, drill a 1/8 diameter hole through the bevel gear and pin with the 1/8 diameter x 1-1/4" long roll pin.

## DIAL AND HANDWHEEL INSTALLATION

*Step 1:* Remove the handwheel and spacer.

*Step 2:* Slide the modified dial onto the bevel gear and shim to obtain .005" spacing from the face of the power feed. This is important in order to keep chips from entering the gear train. Four washers are provided for this, two solid and two laminated. Shim as required.

*Step 3:* Replace the spacer and the hand wheel. Pin to the lead screw using the 3/16 x 1-1/2" roll pin.

## LIMIT SWITCH INSTALLATION

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

## OPERATION

See separate *Servo Power Feed Operation* sheet. Plug the unit into a source of 120 volt, 50 or 60 cycle power.

### 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!

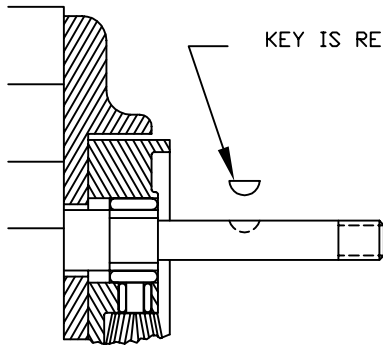
Prevent contact during fast traverses.

## SERVO PRODUCTS COMPANY

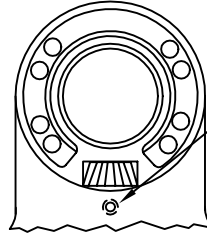
433 North Fair Oaks Avenue, Pasadena, CA 91103 USA  
Phone: 800.521.7359 or 626.796.2460 Fax: 626.796.3845

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

Call for the location of our regional Service Centers.

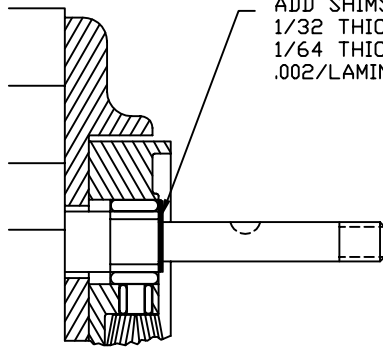


KEY IS REMOVED DURING SHIMMING

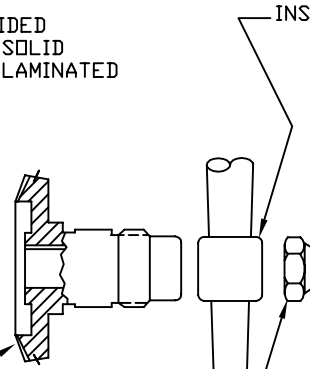


TIGHTEN SLIGHTLY (HOLDS BEVEL PINION STATIONARY DURING SHIMMING.)

STEP 1  
PREPARATION



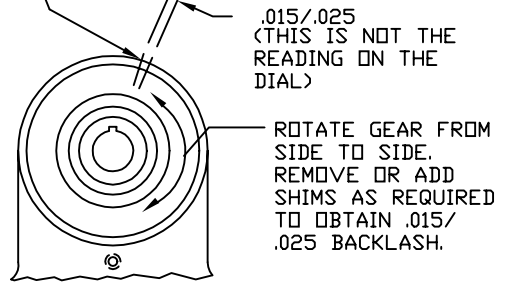
ADD SHIMS PROVIDED  
1/32 THICK ARE SOLID  
1/64 THICK ARE LAMINATED  
.002/LAMINATION



PUSH BEVEL GEAR AGAINST SHIMS.

INSTALL HANDCRANK.

MARK HOUSING AND BEVEL GEAR WITH PENCIL TO CHECK BACKLASH.



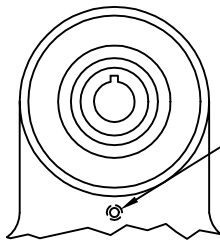
.015/.025  
(THIS IS NOT THE READING ON THE DIAL)

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

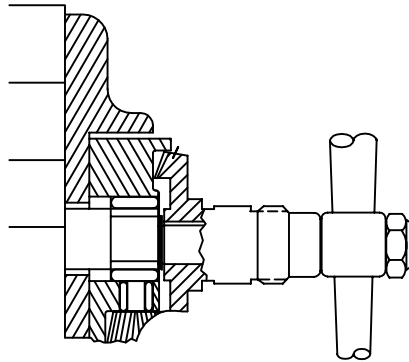
STEP 2  
SHIMMING BEVEL GEAR

TIGHTEN NUT.

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



LOOSEN SETSCREW

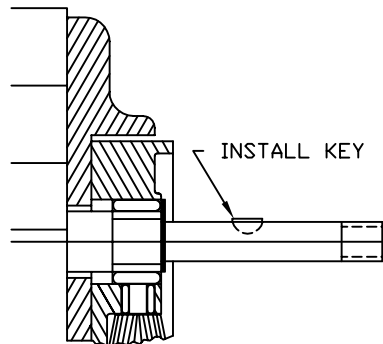


WITH POWER FEED IN NEUTRAL POSITION, TURN HANDCRANK. IF EXCESSIVE GEAR NOISE OR BINDING OCCURS, SHIMS NEED TO BE ADDED. WHEN ADDING SHIMS, REPEAT STEPS 1 AND 2.

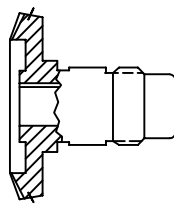


CONTROL HANDLE @ NEUTRAL POSITION

STEP 3  
DOUBLE CHECK OF SHIMMING



INSTALL KEY



SEAL

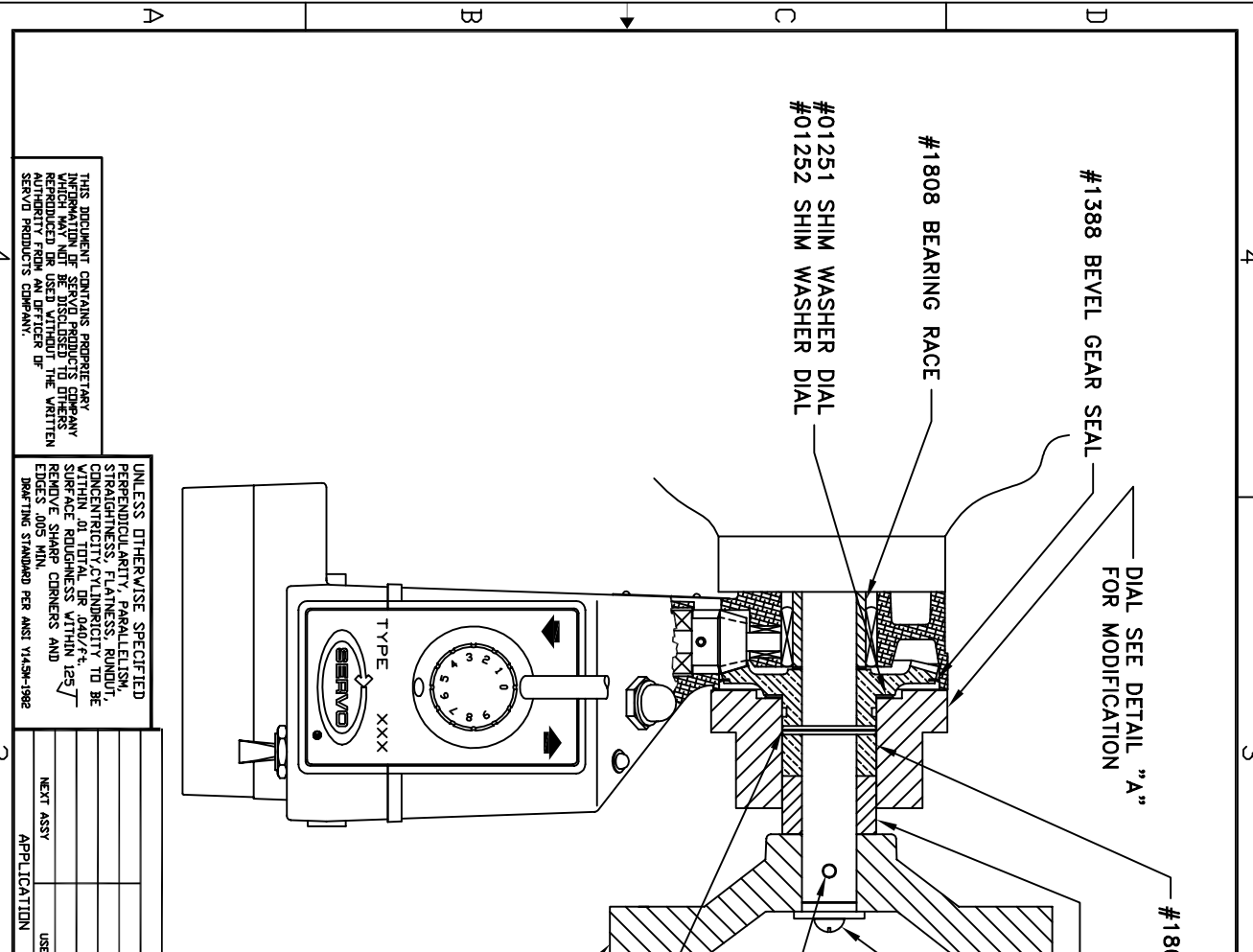
REMOVE GEAR, PACK WITH GREASE. (DO NOT USE SILICONE TYPE GREASE) REPLACE GEAR. (DO NOT LOSE ANY SHIMS)

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

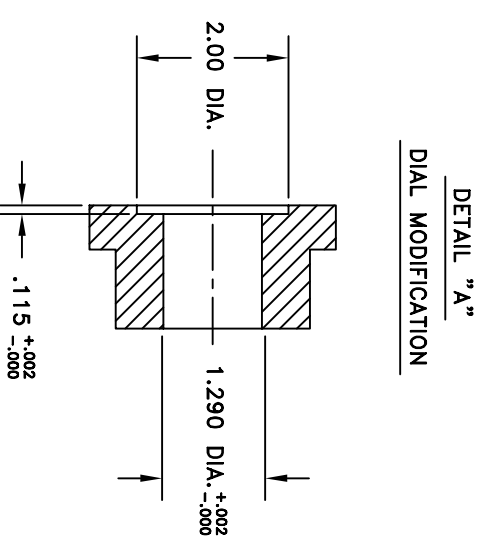
SERVO PRODUCTS COMPANY

BEVEL GEAR INSTALLATION

NA-5444 C



- NOTES:
1. MODEL #890 KNEE FEED (SHOWN) VARIABLE SPEED AND LIMIT SWITCH
  2. INSTALLATION OF MODEL #870 SAME AS MODEL #890 EXCEPT POWER FEED IS SINGLE SPEED AND NO LIMIT SWITCH
  3. SEE DRAWING #0792 FOR INSTALLATION OF LIMIT SWITCH MODEL #890 ONLY
  4. BEFORE TURNING ON SERVO POWER FEED.



THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF SERVOPRODUCTS COMPANY. REPRODUCTION OR USE WITHOUT THE WRITTEN AUTHORITY FROM AN OFFICER OF SERVOPRODUCTS COMPANY.

UNLESS OTHERWISE SPECIFIED PERPENDICULARITY, PARALLELISM, STRAIGHTNESS, FLATNESS, ROUNDNESS, CONCENTRICITY, CYLINDRICITY TO BE WITHIN .01 TOTAL OR .040/√R. SURFACE ROUGHNESS WITHIN 125. REMOVE SHARP CORNERS AND EDGES .005 MIN. DRAWING STANDARD PER ANSI Y14.5M-1982

TYPE	XXX
APPLICATION	USED ON
NEXT ASSY	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES & TOLERANCES ARE AS FOLLOWS:	CONTRACT NO.
FRACTIONS: DECIMALS: ANGLES: ± 1/64    .XX ± .01    ± 1/2°	APPROVALS
MATERIAL: NOTED	DRAWN J. TUCKER
CHECKED	DATE 11/27/96
DID NOT SCALE DRAWING	COMPUTER NO.

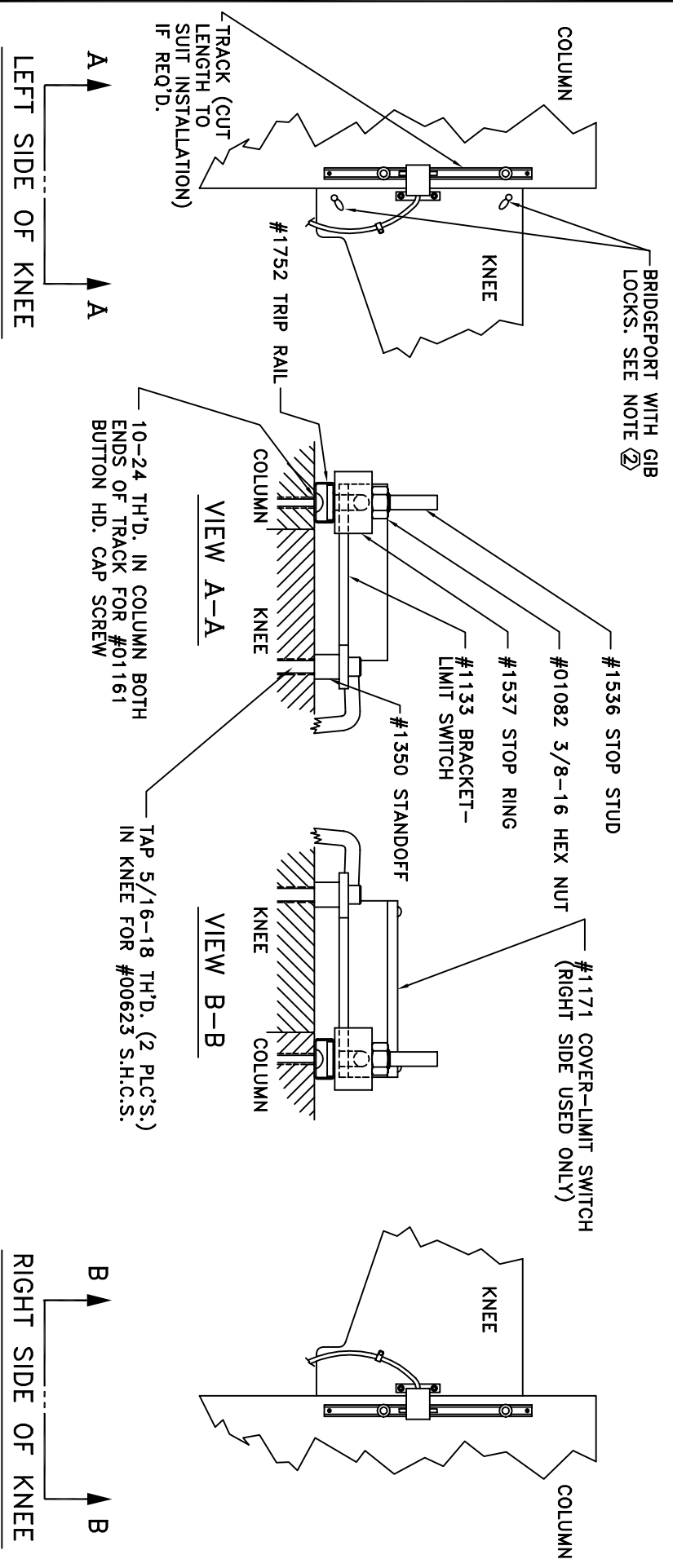
**SERVOPRODUCTS COMPANY**  
 433 N. FAIR DAMS AVE., PASADENA, CALIFORNIA 9103

**MODEL 870/890 KNEE LIFT**  
**INSTALLATION DRAWING**  
**EXCELLO 602 MILL**

SIZE: B    CODE: 9800-80012    DRAWING NO.: NB-1810    REV.: D  
 SCALE:    SHEET:    OF:

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.

THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF SERVOD PRODUCTS COMPANY WHICH MAY NOT BE DISCLOSED TO OTHERS WITHOUT THE WRITTEN AUTHORITY FROM AN OFFICER OF SERVOD PRODUCTS COMPANY.

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

CONTRACT NO.	APPROVALS	DATE
	J. TUCKER	05/20/98
FINISH	DRAWN	CHECKED
NOTED	J. TUCKER	
APPLICATION	USED ON	DID NOT SCALE DRAWING
NEXT ASSY		

**SERVOD PRODUCTS COMPANY**  
 433 N. FAIR OAKS AVE., PASADENA CALIFORNIA 91103

**INSTALLATION LIMIT STOP**  
 SIZE CODE IDENT. NO. DRAWING NO. NC-0792  
 SCALE SHEET 1 OF 1