

# POWER FEED INSTALLATION

## Model M-9530 Cross Feed

### Kalamazoo and others



#### REFERENCE DRAWINGS ENCLOSED

NA-5444	Bevel Gear Installation
NB-58331	Power Feed Installation
NB-1538	Limit Switch Installation
ND-6293	Type 150 Servo Drive
ND-6292	Type 140 Servo Drive
0800-80001	Servo Power Feed Operation

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#### PREPARATION

- Step 1:* Move the saddle to the front of the mill.
- Step 2:* Remove the nut, handle, dial assembly, and key from the lead screw. Save the key for installation later.
- Step 3:* Slide the bearing race onto the lead screw.
- Step 4:* Slide the adaptor over the bearing race and against the front of the knee.
- Step 5:* Orient and transfer three mounting holes from the adaptor to the existing bearing retainer. Remove the bearing race.
- Step 6:* Remove the bearing retainer to drill and tap 1/4-20 thru. Then reinstall.
- Step 7:* Screw the shaft extension onto the lead screw.
- Step 8:* Slide the bevel gear onto the lead screw to ensure proper fit. Then remove the bevel gear.
- Step 9:* Using the hole provided as a pilot, drill 1/8" diameter through the lead screw. Pin the shaft extension to the lead screw with the 1/8 diameter x 5/8" long roll pin. File smooth.

#### POWER FEED INSTALLATION

- Step 1:* Slide the adaptor onto the lead screw (counterbore facing outside).
- Step 2:* Slide the bearing race onto the lead screw and into the adaptor for proper alignment of the adaptor.
- Step 3:* Secure the adaptor to the bearing retainer using three 1/4-20 x 1" long socket head cap screws.
- Step 4:* Remove the bearing race.
- Step 5:* Slide the spacer and bearing race onto the lead crew.
- Step 6:* Slide the power feed onto the bearing race and secure to the adaptor using two 1/4-20 x 1" long socket head cap screws.

## BEVEL GEAR INSTALLATION

*Step 1:* Use the 3 mm parallel key you saved before for the bevel gear installation.

*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. 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 NB-1538 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!

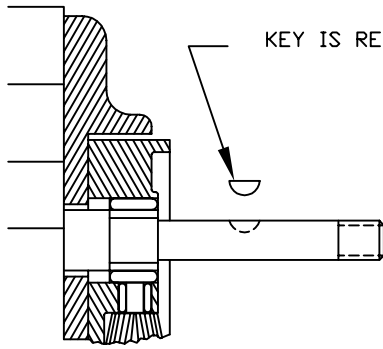
Prevent contact during fast traverses.

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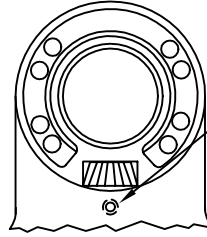
433 North Fair Oaks Avenue, Pasadena, CA 91103 USA  
Phone: 800.521.7359 or 626.796.2460 Fax: 626.796.3845

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

Call for the location of our regional Service Centers.

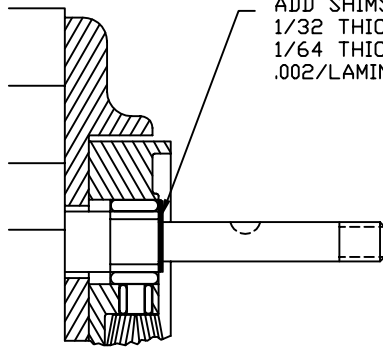


KEY IS REMOVED DURING SHIMMING

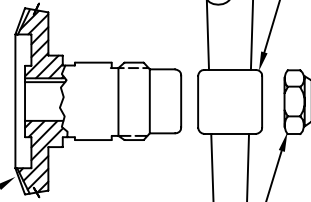


TIGHTEN SLIGHTLY (HOLDS BEVEL PINION STATIONARY DURING SHIMMING.)

STEP 1  
PREPARATION



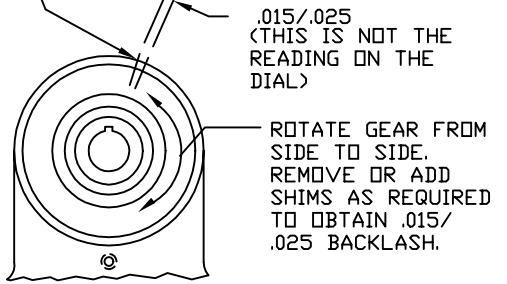
ADD SHIMS PROVIDED  
1/32 THICK ARE SOLID  
1/64 THICK ARE LAMINATED  
.002/LAMINATION



PUSH BEVEL GEAR  
AGAINST SHIMS.

INSTALL HANDCRANK.

MARK HOUSING AND BEVEL GEAR  
WITH PENCIL TO CHECK BACKLASH.



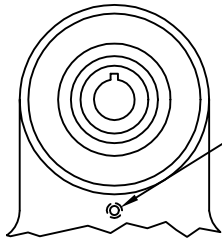
.015/.025  
(THIS IS NOT THE  
READING ON THE  
DIAL)

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

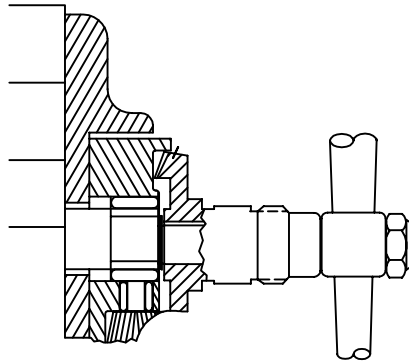
TIGHTEN NUT.

STEP 2  
SHIMMING BEVEL  
GEAR

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



LOOSEN SETSCREW

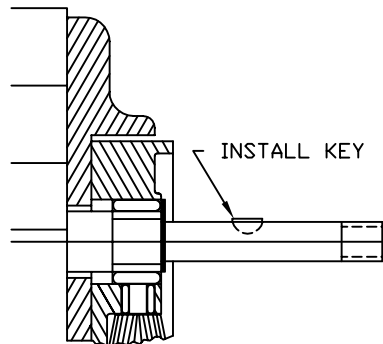


WITH POWER FEED IN  
NEUTRAL POSITION, TURN  
HANDCRANK. IF EXCESSIVE  
GEAR NOISE OR BINDING  
OCCURS, SHIMS NEED TO BE  
ADDED. WHEN ADDING SHIMS,  
REPEAT STEPS 1 AND 2.

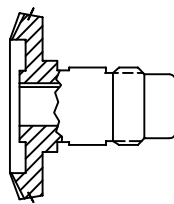


CONTROL HANDLE @  
NEUTRAL POSITION

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.

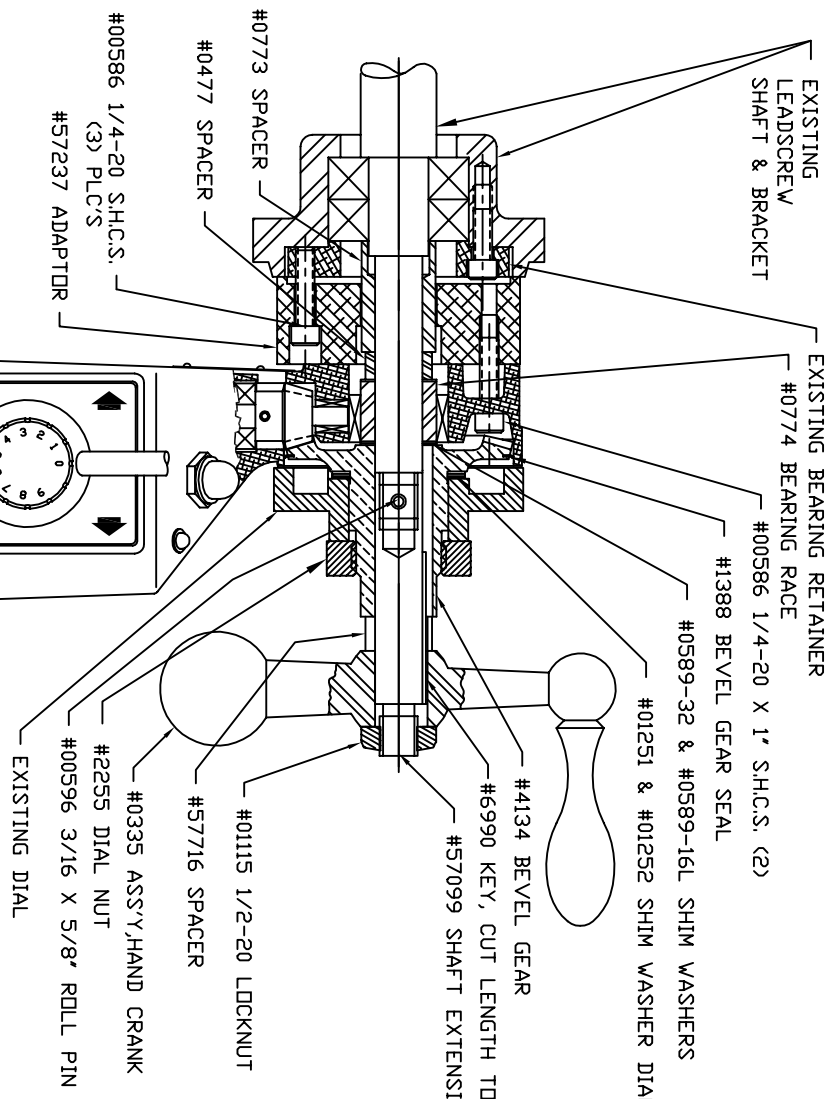
SERVO PRODUCTS COMPANY

BEVEL GEAR INSTALLATION

NA-5444 C

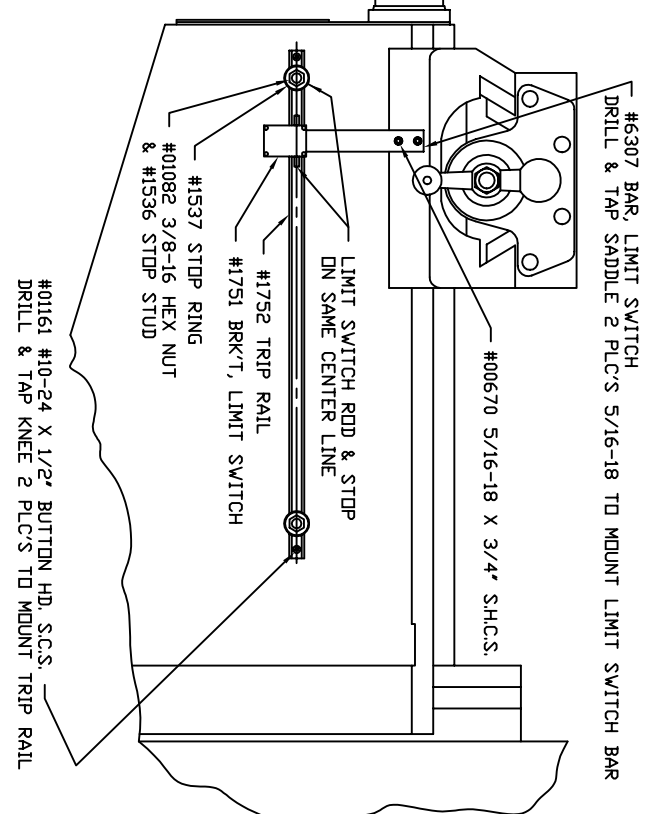
STEP 4  
LUBRICATION

REVISION		DATE	APPROVED
ECD	LTR	DESCRIPTION	



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

LIMIT SWITCH INSTALLATION FOR CROSS



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	TOLERANCES ARE	ANGLES
FRACTIONS	DECIMALS	± 1/2 DEG.
± 1/64	± .005	± 1/2
± .005	± .005	± 1/2
MATERIAL		CHECKED

CONTRACT NO.	APPROVALS	DATE
	T. KU	4/08/96

**SERVO PRODUCTS COMPANY**  
 433 N. FAIR OAKS AVE., PASADENA, CALIFORNIA 9103

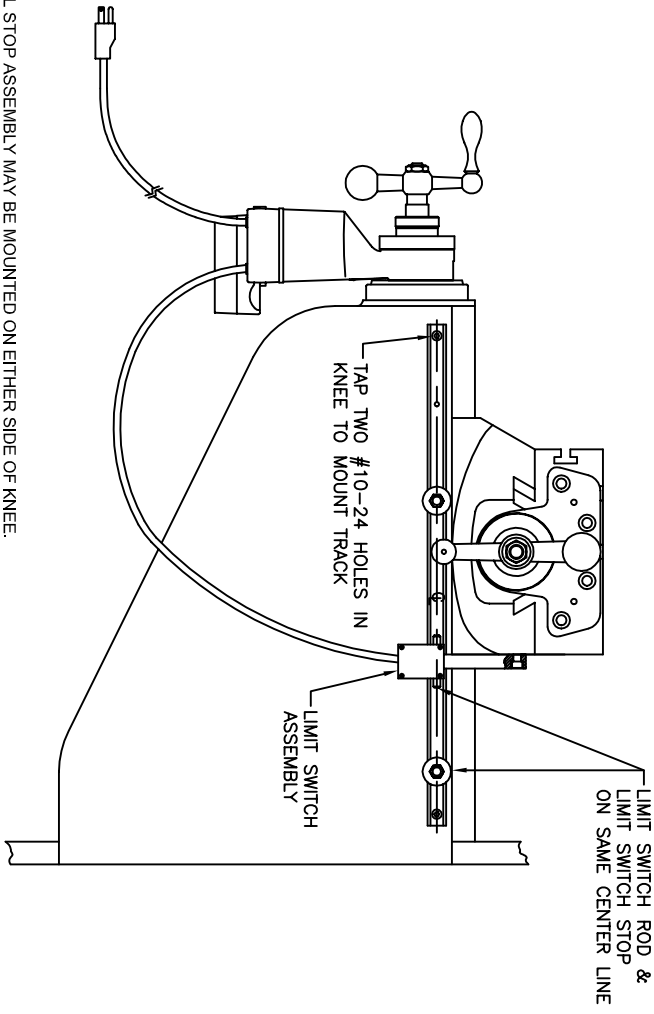
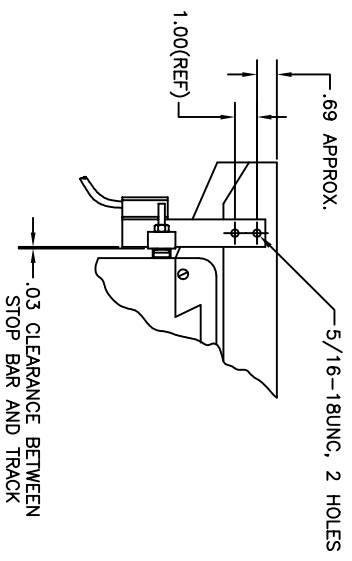
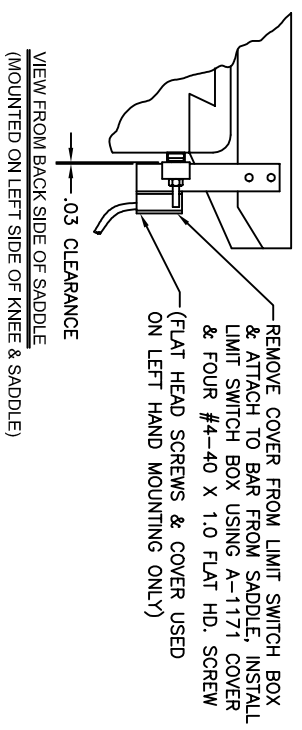
**INSTALLATION DRAWING**  
 MODEL 9530, KALAMAZOO

SIZE: B CODE IDENT. NO.: 0800-80592 DRAWING NO.: NB-58331

SCALE: 5/8 SHEET: 1 OF 1

APPLICATION	USED ON	DID NOT SCALE DRAWING
NEXT ASSY		

REVISION		DATE	DRAWN	CHECKED
ECC	LTR			
DESCRIPTION				



- NOTES:
1. CROSS TRAVEL STOP ASSEMBLY MAY BE MOUNTED ON EITHER SIDE OF KNEE
  2. WHEN MILL HAS MEASURING ATTACHMENT, MOUNT LIMIT SWITCH, STOPS & TRACK ON OPP. SIDE.
  3. REFERENCE DRAWING ONLY. INSTALLATION SHOWN IS A BRIDGEPORT MILL.

VIEW FROM BACK SIDE OF SADDLE  
(MOUNTED ON RIGHT SIDE OF KNEE & SADDLE)

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

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UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES &  
TOLERANCES ARE:  
FRACTIONS DECIMALS ANGLES  
± 1/64 ± .005 ± 1/2

CONTRACT NO.	APPROVALS	DATE	CHECKED
	T. KU	02/01/01	
MATERIAL	FINISH	DO NOT SCALE DRAWING	
APPLICATION	USED ON		

**SERVO** 433 NO. FAIR OAKS AVE., PASADENA CALIFORNIA 91103

INSTALLATION DRAWING  
LIMIT SWITCH, CROSS FEEDS

SIZE	CODE IDENT NO.	DRAWING NO.	REV.
B	0800-8002-1	NB-1538	A
SCALE	NONE	SHEET	OF