

# POWER FEED INSTALLATION

## Model M-0250/251/252 Cross Feed

### Bridgeport Mill and others



#### REFERENCE DRAWINGS ENCLOSED

NA-5444	Bevel Gear Installation
NB-0332	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 table to the front of the knee.
- Step 2:* Remove the nut, crank, dial assembly, and key from the lead screw.
- Step 3:* Slide the bearing race onto the lead screw. Then slide the power feed over the bearing race.
- Step 4:* Line the feed up so that it sits square to the bearing housing. Using the power feed as a template, spot two mounting holes.
- Step 5:* Remove the power feed and bearing race from the lead screw.
- Step 6:* Remove the four screws holding the bearing housing and remove from the mill. Clean the mounting face. (The lead screw can be used to jack the housing off the pins. The lead screw does not have to be removed from the mill.)
- Step 7:* Drill and tap two holes 1/4-20 x 7/8" deep. Take special care to prevent contaminating the bearings.
- Step 8:* Put the bearing housing back onto the mill.
- Step 9:* Screw the shaft extension to the lead screw and tighten.
- Step 10:* Using the hole provided as a pilot, drill 1/8 diameter hole thru and pin using 1/8 diameter x 5/8" long roll pin. File smooth.

#### POWER FEED INSTALLATION

- Step 1:* Slide the bearing race onto the lead screw.
- Step 2:* Slide the power feed onto the bearing race and secure with two 1/4-20 x 1-1/2" 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.

## 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. Plastic and metal washers are provided for this. Shim as required.

*Step 2:* In the following sequence, replace dial and dial locking nut, slide the crank onto shaft extension and secure with 1/2-20 lock nut. (A smaller diameter crank is supplied in order to have clearance between the cross feed crank and the knee crank.)

## LIMIT SWITCH INSTALLATION

*Step 1:* See the limit switch installation drawing NB-1538. Check Note 4 and Detail A on the drawing to modify the trip rail for various cross travel distances.

**NOTE** *For mills equipped with the Bridgeport optical measuring system or the measuring attachment, install limit switch assembly on the left-hand side of the mill.*

## 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

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

### CALIFORNIA BRANCH

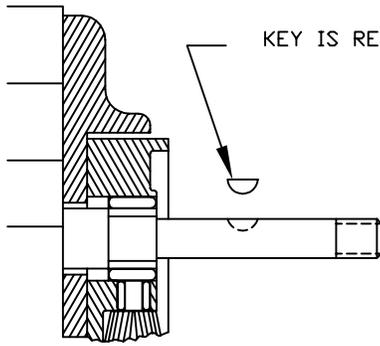
14254 Valley Blvd., Unit A  
City of Industry, CA 91746  
Ph. 626.961.7800 Fax 626.961.2444

### HEADQUARTERS

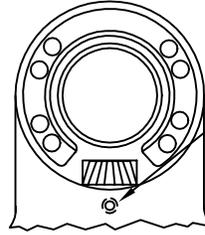
34940 Lakeland Blvd.  
Eastlake, OH 44095  
Ph. 440.942.9999 Fax 440.942-9100

### FLORIDA BRANCH

8950 131<sup>st</sup> Ave. N.  
Largo, FL 33773  
Ph. 727.585.8555 Fax 727.585.6555

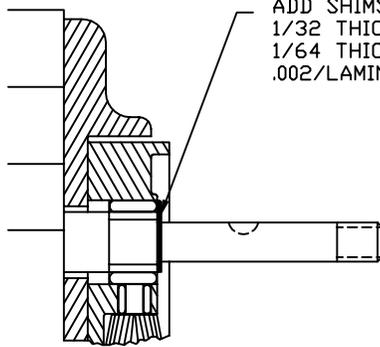


KEY IS REMOVED DURING SHIMMING

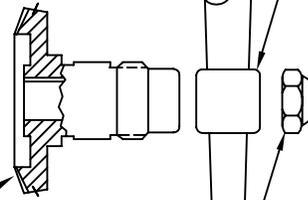


TIGHTEN SLIGHTLY (HOLDS BEVEL PINION STATIONARY DURING SHIMMING.)

STEP 1  
PREPARATION



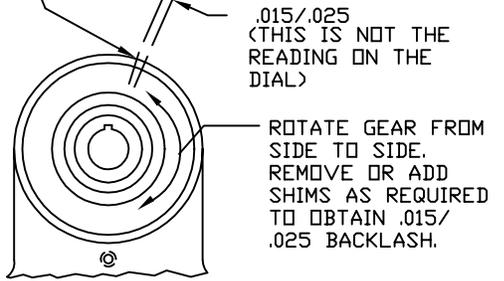
ADD SHIMS PROVIDED  
1/32 THICK ARE SOLID  
1/64 THICK ARE LAMINATED  
.002/LAMINATION



PUSH BEVEL GEAR AGAINST SHIMS.

INSTALL HANDCRANK.

MARK HOUSING AND BEVEL GEAR WITH PENCIL TO CHECK BACKLASH.



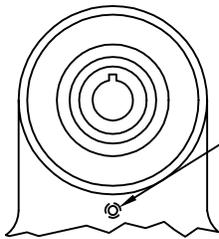
.015/.025  
(THIS IS NOT THE READING ON THE DIAL)

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

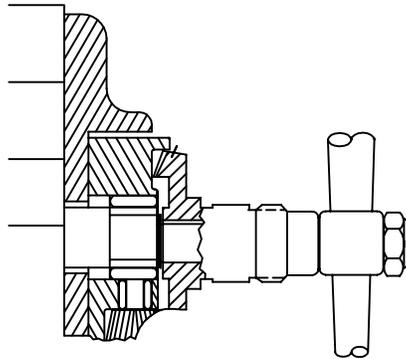
TIGHTEN NUT.

STEP 2  
SHIMMING BEVEL GEAR

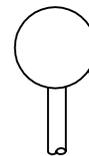
**CAUTION:** IF BACKLASH IS NOT PROPERLY SET BEFORE TURNING UNIT ON, BEVEL GEAR MAY BE DESTROYED.



LOOSEN SETSCREW

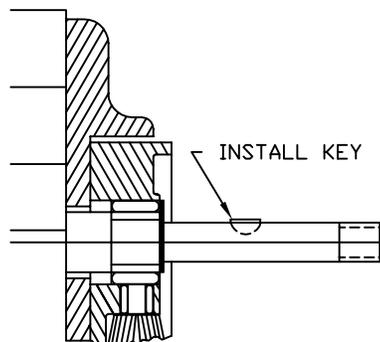


WITH POWER FEED IN NEUTRAL POSITION, TURN HANDCRANK. IF EXCESSIVE GEAR NOISE OR BINDING OCCURS, SHIMS NEED TO BE ADDED. WHEN ADDING SHIMS, REPEAT STEPS 1 AND 2.

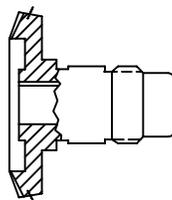


CONTROL HANDLE @ NEUTRAL POSITION

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.

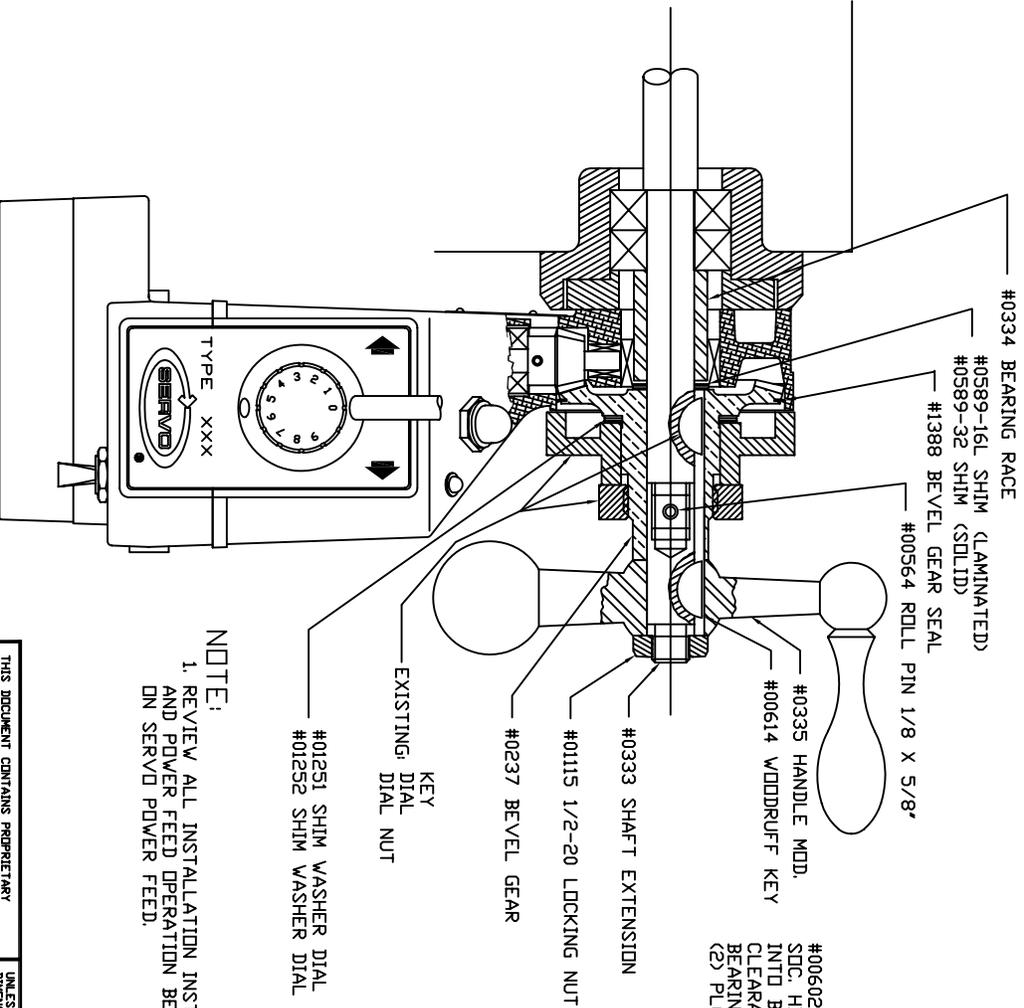
SERVO PRODUCTS COMPANY

BEVEL GEAR INSTALLATION

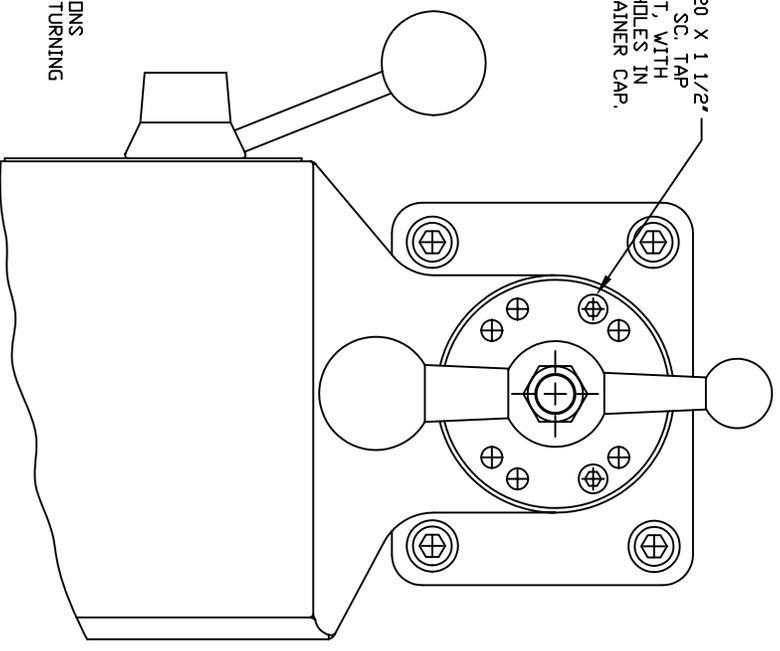
NA-5444 C

STEP 4  
LUBRICATION

REVISION		DATE	DRAWN	CHECKED
ECD	LTR			
DESCRIPTION				



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



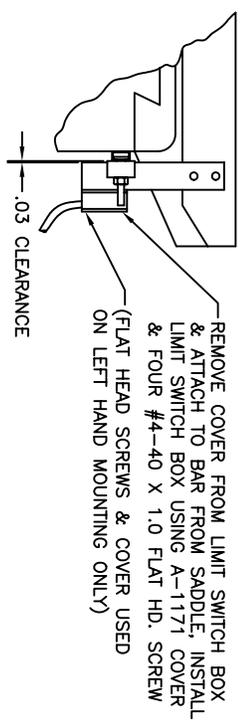
UNLESS OTHERWISE SPECIFIED, FINISHES ARE TO BE WITHIN 0.1 FLATNESS TO BE WITHIN 0.1 CONCENTRICITY TO BE WITHIN 0.1 REMOVE SHARP EDGES AND CORNERS 0.05 MIN. DIMETING STANDARD PER ANSI Y14.5M-1992

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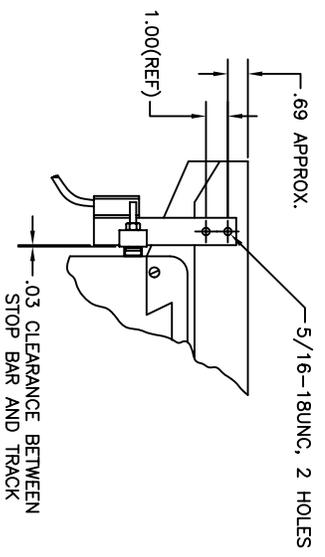
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES & TOLERANCES ARE IN FRACTIONS. DECIMALS ± 1/64 ANGLES ± 1/2°	CONTRACT NO.
MATERIAL	APPROVALS
FINISH	DATE
NOTED	3/20/95
DID NOT SCALE DRAWING	CHECKED
USED IN	DRAWN G. BUINN
APPLICATION	DATE
NEXT ASSY	COMPUTER NO.
	NB0332.DWG


**SERVO PRODUCTS COMPANY**  
 34940 LAKELAND BLVD, EASTLAKE, OH 44095  
**BRIDGEPORT**  
**INSTALLATION DRAWING**  
**MODEL 250/251**  
 SIZE CODE IDENT NO. DRAWING NO. SHEET  
 B 0800-80050 NB-0332 A  
 SCALE 5/8 DF

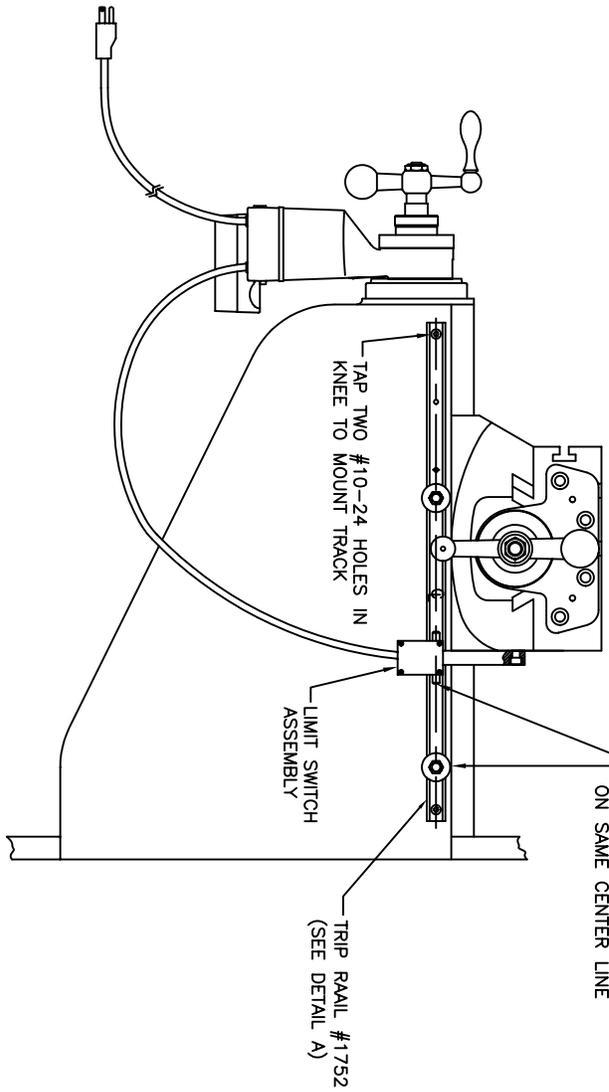
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ECC	LTR			
DESCRIPTION				



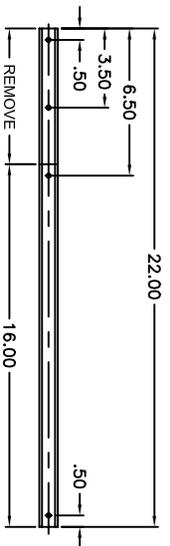
VIEW FROM BACK SIDE OF SADDLE (MOUNTED ON LEFT SIDE OF KNEE & SADDLE)



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



- 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.  
 4. TRIP RAIL IS DESIGNED FOR 16" CROSS TRAVEL. IT CAN BE MODIFIED FOR 12" CROSS TRAVEL (SEE DETAIL A)



DETAIL A (MODIFICATION FOR 12" CROSS TRAVEL)

UNLESS OTHERWISE SPECIFIED PERPENDICULARITY, PARALLELISM, STRAIGHTNESS, FLATNESS, ROUNDNESS, 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 Y14.3M-1982

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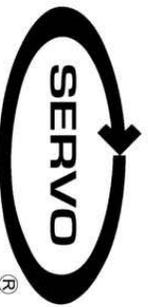
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES & TOLERANCES ARE: ANGLES ± 1/2° MATERIAL ± .005 FINISH ± .005	CONTRACT NO.	APPROVALS	DATE
FINISH	DRAWN T. KU	CHECKED	02/01/01
DO NOT SCALE DRAWING	COMPUTER NO.		
APPLICATION	USED ON		
NEXT ASSY			

**SERVO PRODUCTS COMPANY**  
 34940 LAKELAND BLVD., EASTLAKE, OH 44095

INSTALLATION DRAWING  
 LIMIT SWITCH, CROSS FEEDS

SIZE B CODE IDENT NO. 0800-8002-1 DRAWING NO. NB-1538 REV. B

SCALE NONE SHEET OF



# M-0250 CROSS FEED PARTS IDENTIFICATION LIST

00579	Clamp Qty = 1	01050	Clamp Qty = 1	01095	Phill Flat Head Screw Qty = 1	1171	Limit Switch Bracket Qty = 1	0266	Limit Switch Gasket Qty = 1	0361	Limit Switch Bracket Qty = 1	00613	Phill Flat Head Screw Qty = 2	06928	Phill Pan Head Screw Qty = 4	1750	Limit Switch Bar Qty = 1	00670	Soc Head Cap Screw Qty = 2

1752	Trip Rail Qty = 1	01161	Button Head Cap Screw Qty = 2

00614	Key Qty = 1	00564	Roll Pin Qty = 1

01115	Lock Nut Qty = 1	0333	Shaft Extension Qty = 1

1536	Stop Stud Qty = 2	1537	Stop Ring Qty = 2	01082	Hex Nut Qty = 2

0335	Handcrank Assembly Qty = 1	01251	Brass Shim Qty = 5	01252	Plastic Shim Qty = 2	0237	Bevel Gear Qty = 1	0589-32	.032 Shim Qty = 2	0589-16L	.016 Shim Qty = 2	0334	Bearing Race Qty = 1	00602	Soc Head Cap Screw Qty = 2