

POWER FEED INSTALLATION

Model M-9514 Cross Feed

Bridgeport Series II Mill



REFERENCE DRAWINGS ENCLOSED

NA-5444	Bevel Gear Installation
NB-57486	Power Feed Installation
NB-1538	Limit Switch Installation
ND-6292	Type 150 Servo Drive
ND-6293	Type 140 Servo Drive
0800-80001	Servo Power Feed Operation

PREPARATION

- Step 1:* Remove the nut, handcrank, dial assembly, and key from the lead screw.
- Step 2:* Slide the bearing race onto the lead screw and slide the power feed over the bearing race.
- Step 3:* Line up the feed so that it sits square to the bearing housing of the mill. Using the power feed as a template, spot two mounting holes onto the bearing retainer.
- Step 4:* Remove the power feed and bearing race from the lead screw.
- Step 5:* Remove the three screws holding the bearing retainer. Then remove the bearing retainer from the mill.
- Step 6:* Drill and tap two holes 1/4-20 through the bearing retainer. Or mount the bearing retainer on a mill and machine two 1/4-20 through holes at the locations shown in Section A-A of drawing #NB-57486.
- Step 7:* Put the bearing retainer back onto the mill.
- Step 8:* Screw the shaft extension to the lead screw and tighten.
- Step 9:* At the midpoint of the threaded joint, drill 1/8" diameter hole through the lead screw and pin the shaft extension in place using the 1/8 diameter x 5/8" long roll pin. File smooth.

POWER FEED INSTALLATION

- Step 1:* Slide spacer #57489 and then the bearing race onto the lead screw.
- Step 2:* Place the feed spacer over the lead screw and against the mill. Register the shallow pilot diameter on the spacer into the bearing retainer hole of the mill.
- Step 3:* While holding the feed spacer, slide the power feed over the bearing race and secure using the 1/4-20 x 2" long cap screws.

BEVEL GEAR INSTALLATION

Step 1: Install two Woodruff keys #00791.

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 dial locking nut.

Step 3: Slide on clutch followed by sleeve and existing spring.

Step 4: Install the existing handcrank.
Secure using the washer and the 5/16-18 x 1" long socket head cap screw.

LIMIT SWITCH INSTALLATION

Step 1: See the limit switch installation drawing NB-1538.

NOTE *For mills equipped with the Bridgeport optical measuring system or the measuring attachment, install the 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

CALIFORNIA BRANCH

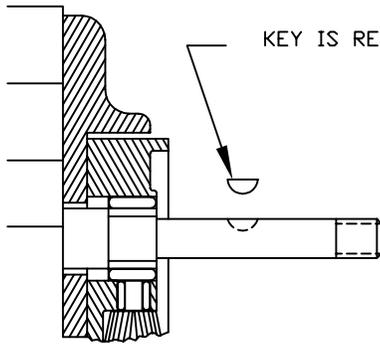
14254 Valley Blvd., Unit A
City of Industry, CA 91746
Ph. 626.961.7800 Fax 626.961.2444

HEADQUARTERS

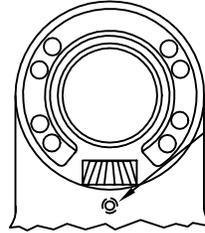
34940 Lakeland Blvd.
Eastlake, OH 44095
Ph. 440.942.9999 Fax 440.942-9100

FLORIDA BRANCH

8950 131st Ave. N.
Largo, FL 33773
Ph. 727.585.8555 Fax 727.585.6555

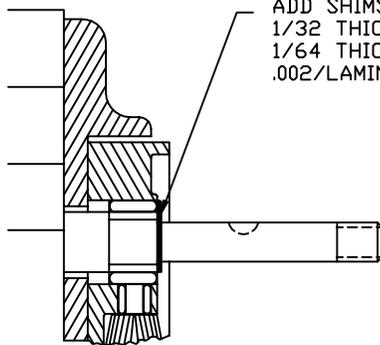


KEY IS REMOVED DURING SHIMMING

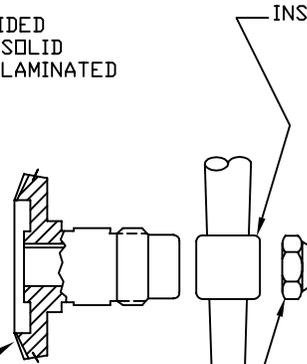


TIGHTEN SLIGHTLY (HOLDS BEVEL PINION STATIONARY DURING SHIMMING.)

STEP 1
PREPARATION



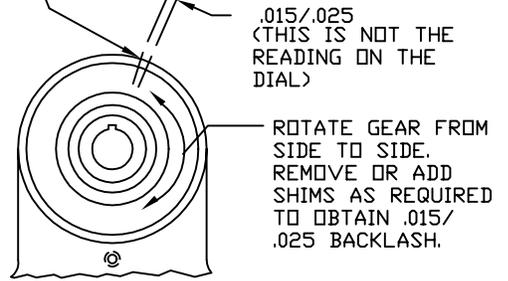
ADD SHIMS PROVIDED
1/32 THICK ARE SOLID
1/64 THICK ARE LAMINATED
.002/LAMINATION



PUSH BEVEL GEAR AGAINST SHIMS.

INSTALL HANDCRANK.

MARK HOUSING AND BEVEL GEAR WITH PENCIL TO CHECK BACKLASH.



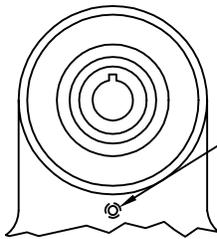
.015/.025
(THIS IS NOT THE READING ON THE DIAL)

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

STEP 2
SHIMMING BEVEL GEAR

TIGHTEN NUT.

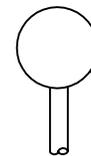
CAUTION: IF BACKLASH IS NOT PROPERLY SET BEFORE TURNING UNIT ON, BEVEL GEAR MAY BE DESTROYED.



LOOSEN SETSCREW

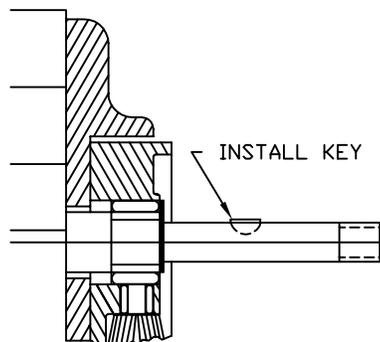


WITH POWER FEED IN NEUTRAL POSITION, TURN HANDCRANK. IF EXCESSIVE GEAR NOISE OR BINDING OCCURS, SHIMS NEED TO BE ADDED. WHEN ADDING SHIMS, REPEAT STEPS 1 AND 2.



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

STEP 4
LUBRICATION

#05162 1/4-20 X 2" S.H.C.S. SHORTEN AS REQ'D

EXISTING LEADSCREW SHAFT

#57489 SPACER

#57493 BEARING RACE
#1388 BEVEL GEAR SEAL

#04867 & #04871 SHIM WASHERS
#57492 BEVEL GEAR

#01251 & #01252 SHIM WASHERS, DIAL
#05966 1/8"SQ.X1" KEY

EXISTING CLUTCH ASS'Y

LINE-UP THE CLEARANCE SLOT ON THE SLEEVE WITH THE KEY
#57863 WASHER

#00627 3/8-16 X 1" S.H.C.S.

#57862 SHAFT EXTENSION

EXISTING HAND CRANK

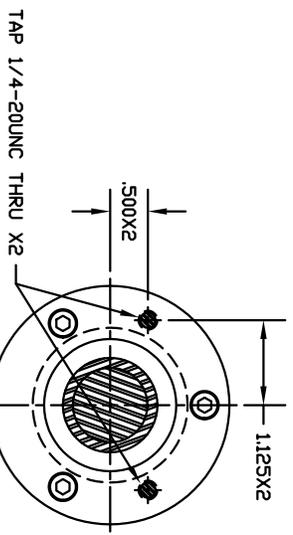
#59254 DIAL NUT
#00596 3/16 DIA. ROLL PIN

#00655 DIAL

#57488 SPACER, FEED

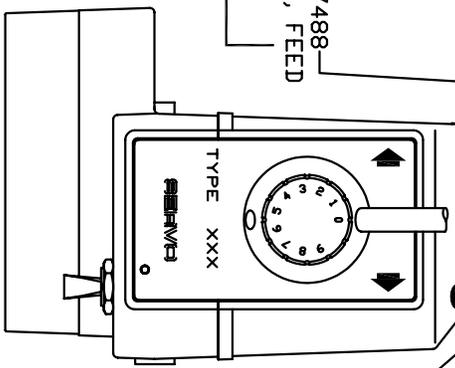
EXISTING BEARING RETAINER & SCREWS

REVISION		DATE	DRAWN	CHECKED
ECD	LTR			
DESCRIPTION				



SECTION A-A

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



THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF SERVO PRODUCTS COMPANY WHICH MAY NOT BE DISCLOSED TO OTHERS WITHOUT THE WRITTEN PERMISSION OF SERVO PRODUCTS COMPANY.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES & FRACTIONS DECIMALS & ANGLES ± 1/64 .XX ± .005 ± 1/2° MATERIAL XXX ± .005

CONTRACT NO.	APPROVALS	DATE
	T. KU	01/15/99

APPLICATION	USED IN	DID NOT SCALE DRAWING

SIZE	CODE	IDENT NO.	DRAWING NO.
B		0800-80496	NB-57486
SCALE	5/8		
REV.			D

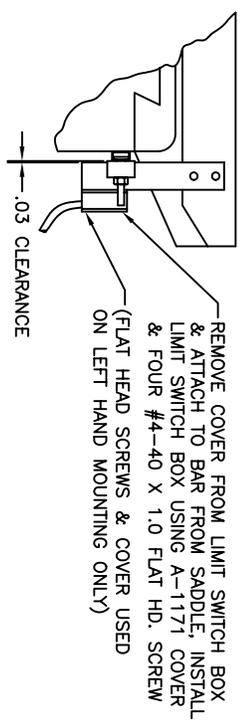
INSTALLATION DRAWING
MODEL 9514 B'PORT S2

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

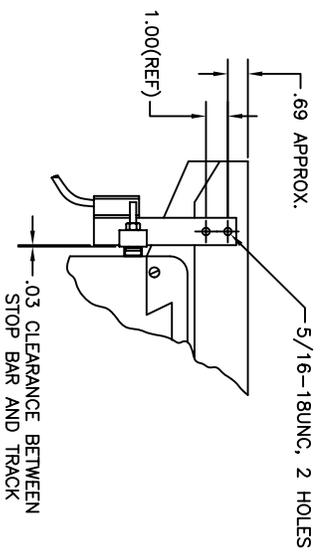
UNLESS OTHERWISE SPECIFIED, PERPENDICULARITY SHALL BE WITHIN .01 CONCENTRICITY TO BE WITHIN .01 REMOVE SHARP EDGES AND CORNERS .005 MIN. DRAFTING STANDARD PER ANSI Y14.3M-1992

4 3 2 1

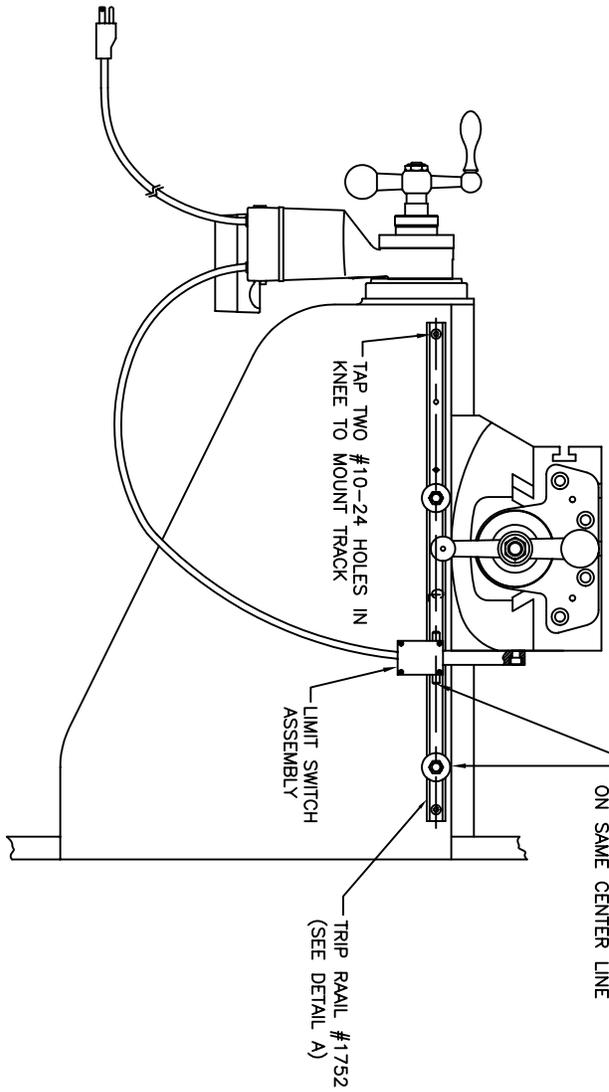
REVISION		DATE	DRAWN	CHECKED
ECC	LTR			
DESCRIPTION				



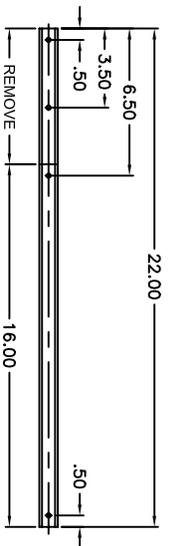
VIEW FROM BACK SIDE OF SADDLE (MOUNTED ON LEFT SIDE OF KNEE & SADDLE)



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

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

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