POWER FEED INSTALLATION
Model M-4650 Cross Feed
Brute 10x50, Webb Champ
and others

REFERENCE DRAWINGS ENCLOSED
NA-5444  Bevel Gear Installation
NB-5898  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

PREPARATION

Step 1: Remove the nut, crank, dial assembly, and key from the lead screw.

Step 2: Slide the bearing race onto the lead screw. Slide the power feed over the bearing race.

Step 3: Line up the feed so that it sits square to the bearing housing. Using the power feed as a template, spot two holes in the bearing retainer plate. Make sure the holes clear the bearing retainer screws.

Step 4: Remove the power feed and bearing race.

Step 5: Remove the three screws holding the bearing housing and then remove the bearing housing. (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 6: Drill and tap two holes 1/4-20 x 7/8" deep.

Step 7: Put the bearing housing back onto the knee.

POWER FEED INSTALLATION

Step 1: Screw the shaft extension to the lead screw and tighten.

Step 2: Using the hole provided as a pilot, drill 1/8 diameter through. Pin the extension in place using the 1/8 x 5/8 long roll pin. File smooth.

Step 3: Slide the spacer and then the bearing race onto the lead screw.

Step 4: Slide the power feed over the bearing race and secure using 1/4-20 x 1-1/4" long socket head cap screws provided.

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. Four washers are provided for this, two solid and two laminated. Shim as required.

**Step 2:** In the following sequence, put on the dial locking nut, spacer, and place the YA-1605 woodruff key in the shaft extension as shown. Slide the handcrank onto the shaft extension and secure using the locking nut provided.

- **NOTE** A smaller diameter handcrank is supplied in order to have clearance between the cross feed crank and the knee crank.

LIMIT SWITCH INSTALLATION

**Step 1:** See 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.

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**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.
STEP 1
PREPARATION

STEP 2
SHIMMING BEVEL GEAR

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

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.

PUSH BEVEL GEAR AGAINST SHIMS.

TIGHTEN NUT.

STEP 3
DOUBLE CHECK OF SHIMMING

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

LOSEN 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.

STEP 4
LUBRICATION

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.

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BEVEL GEAR INSTALLATION

NA-5444 C
Feed operation before turning on servo power feed.

Review all installation instructions and power.

NOTE:

1/8 x 5/8
#00654 roll pin

#0332 spacer

#0333 shaft extension

1/2-20 SAE
#01115 locking nut

#1128 spacer

#0334 dial nut

#01255 Shim washer dial

#01252 Shim washer dial

#0589-32 solid shim

#0589-161 laminated

#1388 bevel gear seal

#1605 woodruff key

#0335 cross handle assy.

#0335 cross handle assy.
**SERVO PRODUCTS COMPANY**

**LIMIT SWITCH, CROSS FEEDS**

**INSTALLATION DRAWING**

**Part No:** 9000-0002

**Sheet No:** 3 of 4

**Drawn By:** [Signature]

**Print:** 3/16/84

**Revision:** 0

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**NOTES:**

1. CROSS TRAVEL STOP ASSEMBLY MAY BE MOUNTED ON THIS SIDE OF TABLE, STOP AT TRAVEL LIMIT.

2. STOP TYPE SHOWN FOR TABLE SIDE;
   - STOP AT TRAVEL LIMIT, STOP AT LIMIT SWITCH LIMIT SWITCH.
   - STOP AT TRAVEL LIMIT.

3. CROSS TRAVEL STOP ASSEMBLY MAY BE MOUNTED ON THIS SIDE OF TABLE.

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**REFERENCES:**

1. INSTALLATION DRAWING IS A REPRESENTATION.
2. REFER TO DRAWING 1752 FOR CROSS TRAVEL LIMIT SWITCH (SEE DETAIL A).