

# POWER FEED INSTALLATION

## Model M-1580 Knee Feed

### Lagun Mill



#### REFERENCE DRAWINGS ENCLOSED

NA-5444	Bevel Gear Installation
NB-57730	Power Feed Installation
NB-57658	Limit Switch Installation
ND-6292	Type 140 Servo Power Feed
0800-80001	Servo Power Feed Operation

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#### PREPARATION

- Step 1:** Remove the handle, key, dial, dial nut, and dial carrier from the elevating jack shaft. (Turn counter-clockwise to unscrew the dial carrier.)
- Step 2:** Remove the screws from the bearing retainer.
- Step 3:** Pull the jack shaft out of the knee. **Hold inboard end up** while removing to avoid damage to the pinion gear.
- Step 4:** Remove the bearing housing and press the bearing off the shaft. **Do not** press across the balls of the bearing as this will damage the bearing.
- Step 5:** Drill and tap the end of the jack shaft 3/8-24 UNF x 13/16" deep. The threads must be concentric to shaft o.d. within .002 TIR. The end of the jack shaft must be square with the shaft centerline within .001". **For best results, machining should be done in a lathe.**
- Step 6:** Screw the shaft extension into the jack shaft and tighten. Use the handwheel and key on the shaft extension to apply torque. Drill 1/8" diameter through the shaft and pin the extension with 1/8 diameter x 5/8" long roll pin. File smooth.
- Step 7:** Reassemble the jack shaft.
- Step 8:** Replace the jack shaft in the machine.

#### POWER FEED INSTALLATION

- Step 1:** Replace the bearing retainer.
- Step 2:** Slide the spacer #6740 followed by the bearing race onto the jack shaft.
- Step 3:** Place the shroud onto the power feed and slide the unit onto the bearing race and against the boss.
- Step 4:** Transfer three hole centers to the bearing retainer. Remove the power feed, shroud, and bearing race.
- Step 5:** Drill and tap 1/4-20 thread through the bearing retainer. Clean out all metal chips.
- Step 6:** Replace the bearing race.

*Step 7:* Install the shroud and the power feed using three 1/4-20 x 1-3/8" 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.

*IF:* If the key to bevel gear engagement is less than 3/16" after getting proper backlash, drill 3/16 diameter through the bevel gear at the pilot hole and pin with the 3/16 x 1-1/4" long roll pin provided .

## **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, put on the dial locking nut and spacer #57728. Place the woodruff key in the shaft extension. Then slide the handwheel #1685 in place. Add the washer and the 1/2-20 lock nut and tighten.

## **LIMIT SWITCH INSTALLATION**

*Step 1:* See the limit switch installation on drawing NB-57658 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!

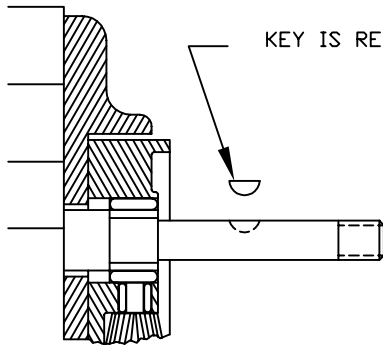
Prevent contact during fast traverses.

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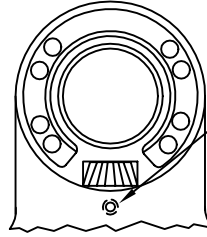
433 North Fair Oaks Avenue, Pasadena, CA 91103 USA  
Phone: 800.521.7359 or 626.796.2460 Fax: 626.796.3845

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

Call for the location of our regional Service Centers.

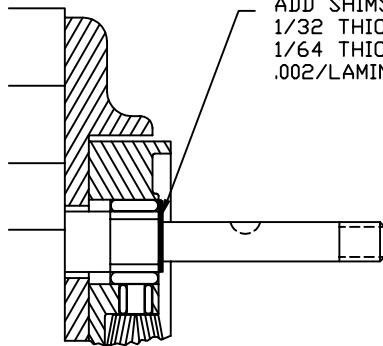


KEY IS REMOVED DURING SHIMMING

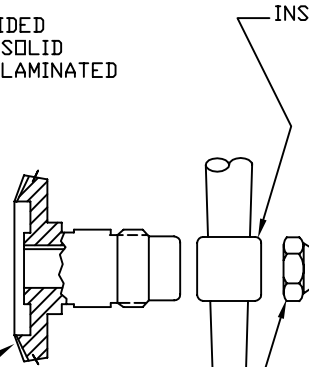


TIGHTEN SLIGHTLY (HOLDS BEVEL PINION STATIONARY DURING SHIMMING.)

STEP 1  
PREPARATION



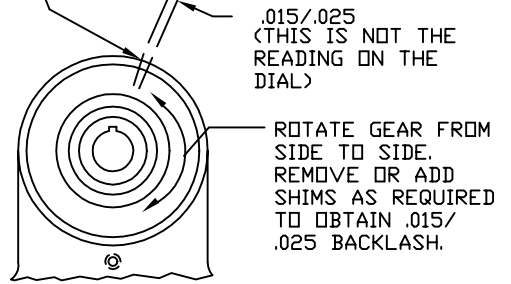
ADD SHIMS PROVIDED  
1/32 THICK ARE SOLID  
1/64 THICK ARE LAMINATED  
.002/LAMINATION



PUSH BEVEL GEAR AGAINST SHIMS.

INSTALL HANDCRANK.

MARK HOUSING AND BEVEL GEAR WITH PENCIL TO CHECK BACKLASH.



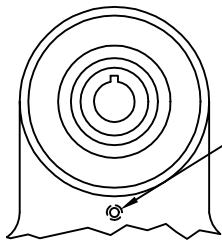
.015/.025  
(THIS IS NOT THE READING ON THE DIAL)

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

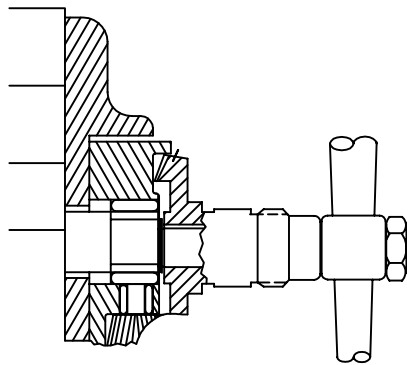
STEP 2  
SHIMMING BEVEL GEAR

TIGHTEN NUT.

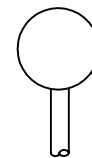
**CAUTION:** IF BACKLASH IS NOT PROPERLY SET BEFORE TURNING UNIT ON, BEVEL GEAR MAY BE DESTROYED.



LOOSEN SETSCREW

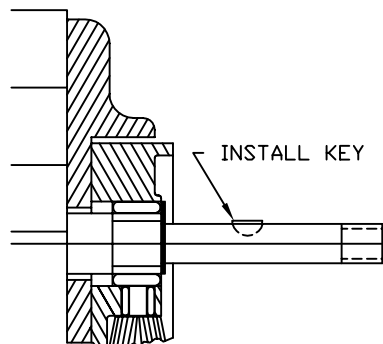


WITH POWER FEED IN NEUTRAL POSITION, TURN HANDCRANK. IF EXCESSIVE GEAR NOISE OR BINDING OCCURS, SHIMS NEED TO BE ADDED. WHEN ADDING SHIMS, REPEAT STEPS 1 AND 2.

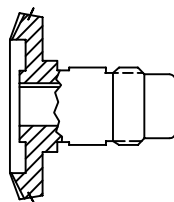


CONTROL HANDLE @ NEUTRAL POSITION

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)

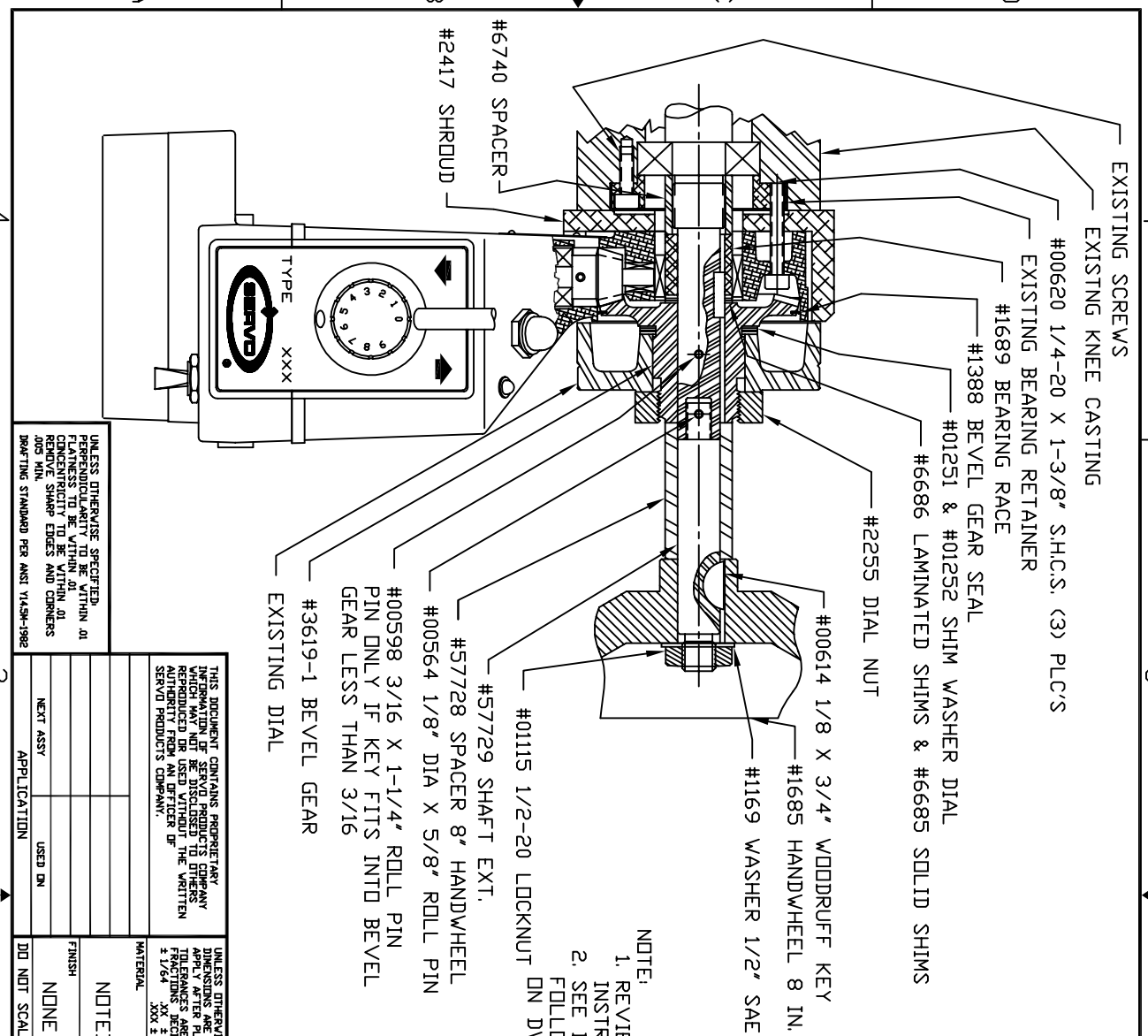
PICTURES IN THIS DRAWING ARE FOR REFERENCE ONLY. SEE INSTALLATION DRAWING OF CORRESPONDING MODEL FOR EXACT PARTS CONFIGURATION.

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BEVEL GEAR INSTALLATION

NA-5444 C

REVISION		DATE	DRAWN	CHECKED
ECD	LTR			
DESCRIPTION				



- EXISTING SCREWS
- EXISTING KNEE CASTING
- #00620 1/4-20 X 1-3/8" S.H.C.S. (3) PLCS
- EXISTING BEARING RETAINER
- #1689 BEARING RACE
- #1388 BEVEL BEARING SEAL
- #01251 & #01252 SHIM WASHER DIAL
- #6686 LAMINATED SHIMS & #6685 SOLID SHIMS
- #2255 DIAL NUT
- #00614 1/8 X 3/4" WOODRUFF KEY
- #1685 HANDWHEEL 8 IN.
- #1169 WASHER 1/2" SAE
- #01115 1/2-20 LOCKNUT
- #57729 SHAFT EXT.
- #57728 SPACER 8" HANDWHEEL
- #00564 1/8" DIA X 5/8" ROLL PIN
- #00598 3/16 X 1-1/4" ROLL PIN
- PIN ONLY IF KEY FITS INTO BEVEL GEAR LESS THAN 3/16
- #3619-1 BEVEL GEAR
- EXISTING DIAL

NOTE:  
 1. REVIEW ALL INSTALLATION INSTRUCTIONS AND POWER FEED OPERATION INSTRUCTION BEFORE TURNING ON SERVO POWER FEED.  
 2. SEE DRAWING NB-57658 FOR KNEE LIMIT SWITCH INSTALLATION. USE FOLLOWING TABLE TO RELATE PART NUMBERS WITH LETTER SYMBOLS DN DWG NB-57658.

SYMBOL	A-1	A-2	B	C	D
P/N	57712	-	1133	05176	1752
DESCRIP.	STANDOFF	-	BRACKET	5/16-18 S.H.C.S.	TRIP RAIL
LENGTH	2.50	-	-	3.50	-

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES & TOLERANCES ARE AS SHOWN. ANGLES ± 1/2° UNLESS OTHERWISE SPECIFIED. FINISH NONE. MATERIAL AS SHOWN. CHECKED: T. KU DATE: 9/29/93

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CONTRACT NO. APPROVALS DATE: 9/29/93

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 433 N. FAIR OAKS AVE., PASADENA, CALIFORNIA 91109

INSTALLATION DRAWING  
 MODEL 1580

SIZE: B CODE IDENT. NO.: 0800-80564 DRAWING NO.: NB-57730 REV. A

SCALE: 5/8 SHEET: DF

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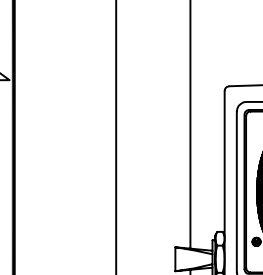
CONTRACT NO. APPROVALS DATE: 9/29/93

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INSTALLATION DRAWING  
 MODEL 1580

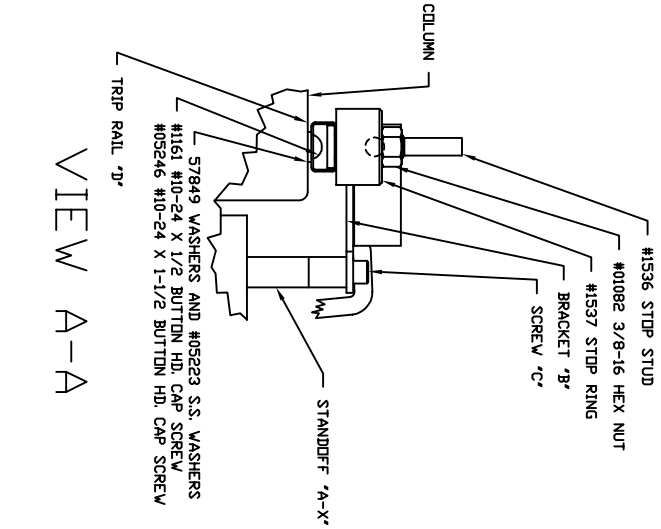
SIZE: B CODE IDENT. NO.: 0800-80564 DRAWING NO.: NB-57730 REV. A

SCALE: 5/8 SHEET: DF

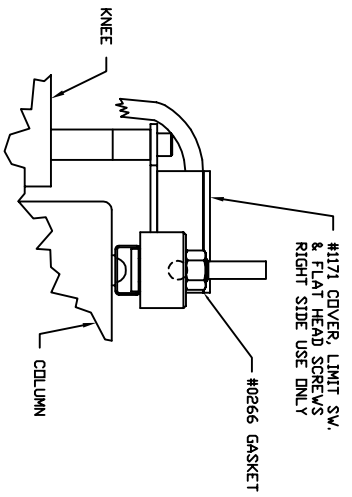


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REVISION		DATE	DRAWN	CHECKED
ECD	LTR			
DESCRIPTION				

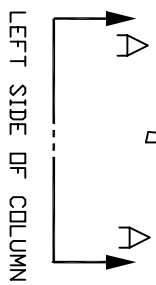


VIEW A-A

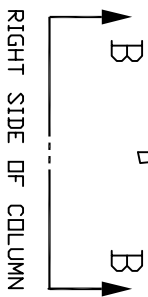


VIEW B-B

SAME COMPONENTS AS IN VIEW "A-A" EXCEPT AS SHOWN



LEFT SIDE OF COLUMN



RIGHT SIDE OF COLUMN

NOTES:


1. LIMIT SWITCH MAY BE MOUNTED ON EITHER SIDE OF THE COLUMN.

UNLESS OTHERWISE SPECIFIED, FINISHES TO BE WITHIN .015 CENTRICITY TO BE WITHIN .01 REMOVE SHARP EDGES AND CORNERS .005 MIN.

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

CONTRACT NO.	APPROVALS	DATE
	T. KU	03/18/93
CHECKED		


**SERVOPRODUCTS COMPANY**  
 433 N. FAIR OAKS AVE., PASADENA CALIFORNIA 91103  
**INSTALLATION DRAWING**  
**LIMIT SWITCH, KNEE**  
 SIZE CODE IDENT. NO. DRAWING NO. REV.  
 B 0800-80540 NB-57658 B  
 SCALE NONE SHEET OF

A B C D 4 3 2 1