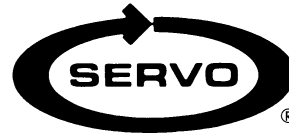


POWER FEED INSTALLATION

Model M-0280 Knee Feed

Bridgeport Mill & Others



REFERENCE DRAWINGS ENCLOSED

NA-5444	Bevel Gear Installation
NC-0792	Limit Switch Installation
NB-1620	Power Feed Installation
ND-6292	Type 140 Servo Power Feed
0800-80001	Servo Power Feed Operation

PREPARATION

Step 1: Gather together the following items that you will need to complete this installation.

- a) lathe
- b) 3/8" electric hand drill
- c) #7 drill, 1/8" drill, .4375 drill
- d) 9/32" diameter transfer punch
- e) 1/4-20 tap
- f) flat file
- g) 3/4" socket wrench
- h) set of inch hex wrenches
- i) grease
- j) clean shop rag

Step 2: Clean the power feed mounting area completely.

Step 3: Remove the drive clutch from the elevating jack shaft. (The clutch is push-fit on the shaft.)

Step 4: Remove the dial and nut.

Step 5: Remove the screws from the bearing retainer.

Step 6: Pull jack shaft out of the knee (easy pull). **Hold inboard end up** while removing to avoid damage to the pinion gear.

Step 7: Hold the dial hub in soft jaws and unscrew.

Step 8: Remove the bearing retainer and press the bearing housing and the bearing off the shaft.

Step 9: Drill and ream the end of the jack shaft .4375" diameter by 13/16" deep. The .4375" diameter must be concentric to the shaft O.D. within .002" T.I.R. Chamfer 1/32" x 1/2" diameter. **For best results, machining should be done in a lathe.**

Step 10: Place the shaft extension into the end of the jack shaft. Using the hole provided as a pilot, drill 1/8" diameter through the shaft and pin the extension with the 1/8" diameter x 5/8" long roll pin. File smooth.

Step 11: Reassemble the jack shaft.

Step 12: Replace the jack shaft in the machine.

POWER FEED INSTALLATION

- Step 1:* Slide the bearing race over the jack shaft such that its counterbored end bears against the ball bearing of the jack shaft.
- Step 2:* Slide the power feed over the bearing race and against the bearing retainer of the mill. Spot the mounting holes in the bearing retainer. Drill and tap 1/4-20 thread.
- Step 3:* Secure with 1/4-20 x 1" long socket head cap screws provided. If the screws bottom out against the bearing housing, shorten them as required. Don't use any washers, they may cause the screw heads to hit the bronze bevel gear teeth.

BEVEL GEAR INSTALLATION

- Step 1:* Follow the drawing NA-5444 for installation of the bevel gear. Adjust for proper gear backlash.

DIAL AND HANDWHEEL INSTALLATION

- Step 1:* After getting the proper gear 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. Three plastic (.030" thick) and five brass (.005" thick) washers are provided for this. Shim as required.
- Step 2:* In the following sequence, put on the dial lock nut, place the key in the shaft, and slide the handwheel in place. Add the washer and tighten with 1/2-20 locknut #01115.

LIMIT SWITCH INSTALLATION

- Step 1:* See limit switch installation drawing NC-0792.

OPERATION

See separate *Servo Power Feed Operation* sheet. Plug the unit into a source of 120 volt, 50 or 60 cycle power.

Please read **WARNINGS** on the following page.

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

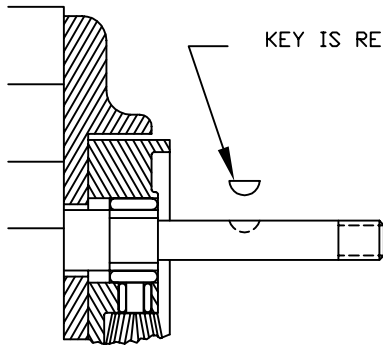
14254 Valley Blvd., Unit A
City of Industry, CA 91746
Ph. 626.961.7800 Fax 626.961.2444

HEADQUARTERS

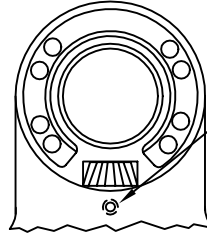
34940 Lakeland Blvd.
Eastlake, OH 44095
Ph. 440.942.9999 Fax 440.942-9100

FLORIDA BRANCH

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

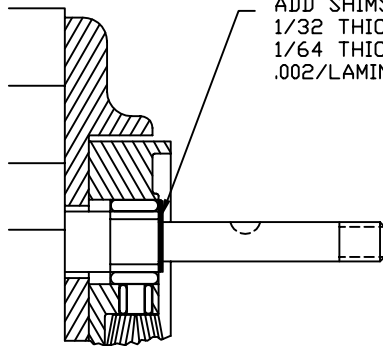


KEY IS REMOVED DURING SHIMMING

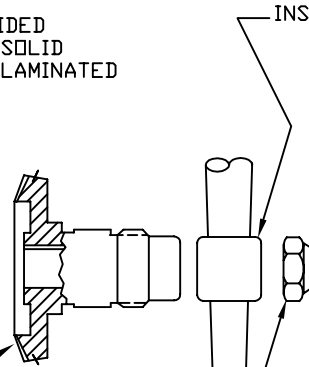


TIGHTEN SLIGHTLY (HOLDS BEVEL PINION STATIONARY DURING SHIMMING.)

STEP 1
PREPARATION



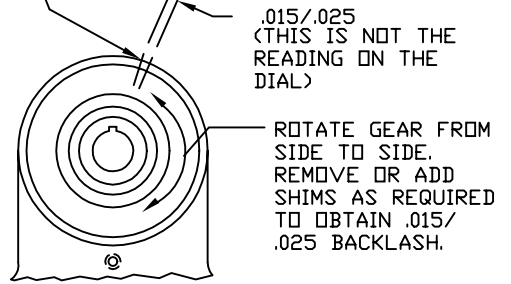
ADD SHIMS PROVIDED
1/32 THICK ARE SOLID
1/64 THICK ARE LAMINATED
.002/LAMINATION



PUSH BEVEL GEAR AGAINST SHIMS.

INSTALL HANDCRANK.

MARK HOUSING AND BEVEL GEAR WITH PENCIL TO CHECK BACKLASH.



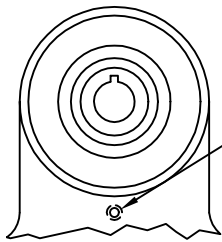
.015/.025
(THIS IS NOT THE READING ON THE DIAL)

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

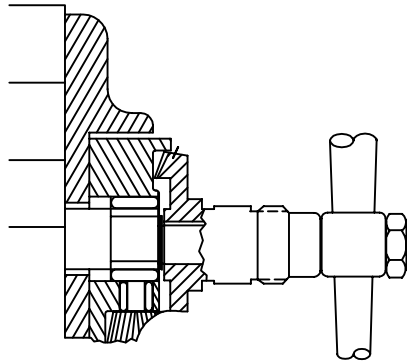
STEP 2
SHIMMING BEVEL GEAR

TIGHTEN NUT.

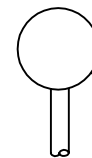
CAUTION: IF BACKLASH IS NOT PROPERLY SET BEFORE TURNING UNIT ON, BEVEL GEAR MAY BE DESTROYED.



LOOSEN SETSCREW

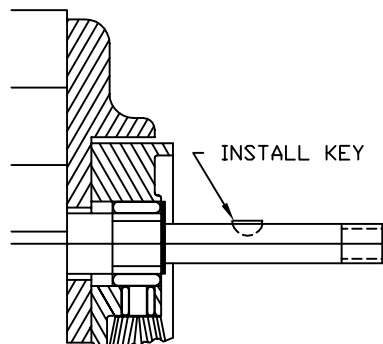


WITH POWER FEED IN NEUTRAL POSITION, TURN HANDCRANK. IF EXCESSIVE GEAR NOISE OR BINDING OCCURS, SHIMS NEED TO BE ADDED. WHEN ADDING SHIMS, REPEAT STEPS 1 AND 2.

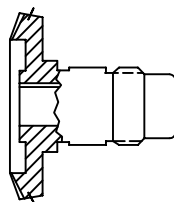


CONTROL HANDLE @ NEUTRAL POSITION

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)

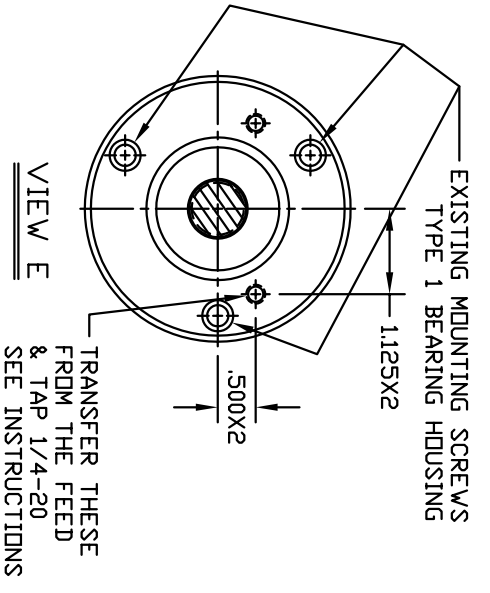
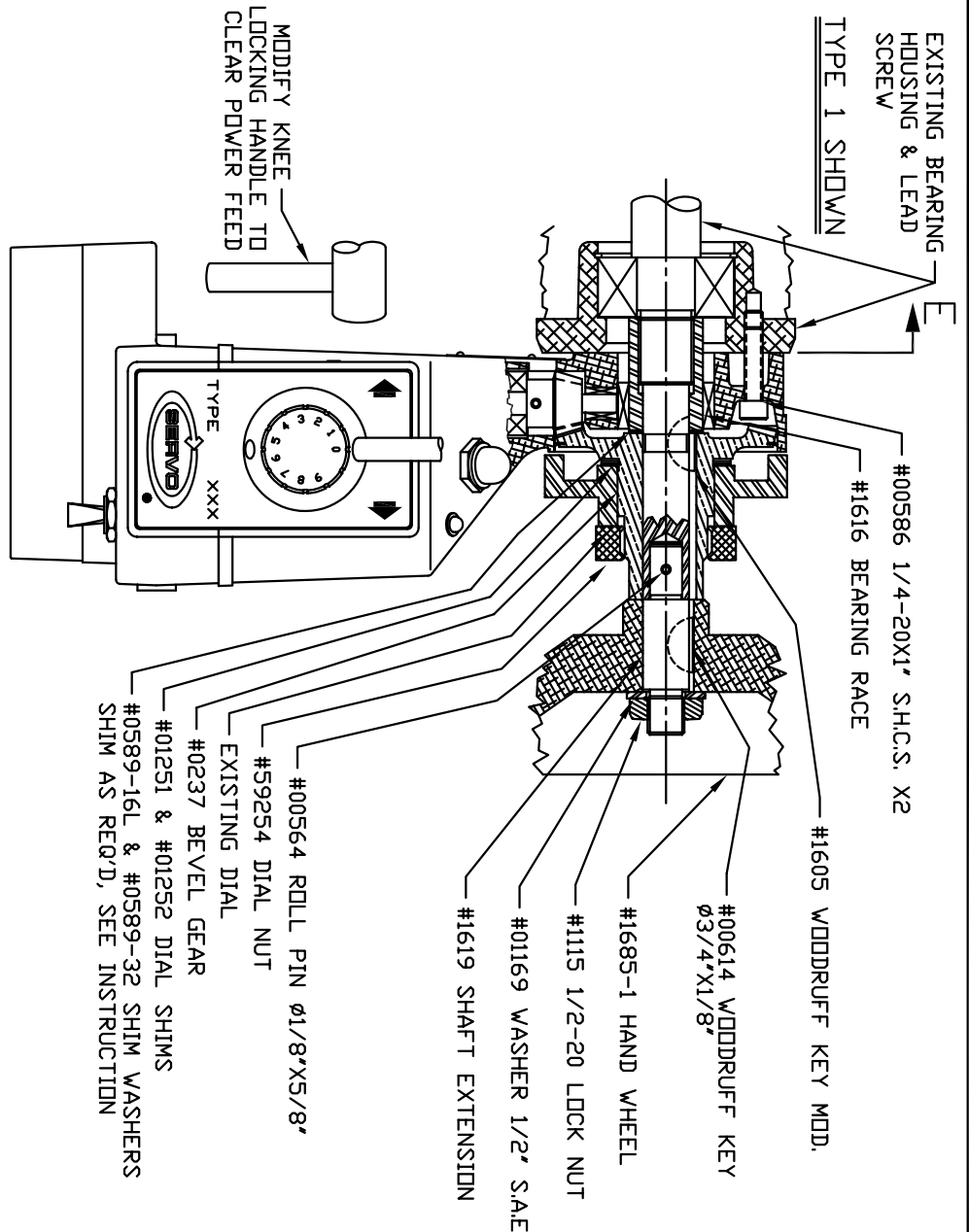
PICTURES IN THIS DRAWING ARE FOR REFERENCE ONLY. SEE INSTALLATION DRAWING OF CORRESPONDING MODEL FOR EXACT PARTS CONFIGURATION.

SERVO PRODUCTS COMPANY

BEVEL GEAR INSTALLATION

NA-5444 C

REVISION		DATE	DRAWN	CHECKED
ECD	LTR	DESCRIPTION		



- #00564 ROLL PIN $\phi 1/8 \times 5/8$ "
- #S9254 DIAL NUT
- EXISTING DIAL
- #0237 BEVEL GEAR
- #01251 & #01252 DIAL SHIMS
- #0589-16L & #0589-32 SHIM WASHERS SHIM AS REQ'D, SEE INSTRUCTION

NOTES:
 1. REVIEW ALL INSTALLATION INSTRUCTIONS AND OPERATION SHEETS BEFORE TURNING ON SERVO POWER FEED.
 2. SEE SHEET 2 OF 2 FOR TYPE 2 & 3 BEARING MOUNT.
 3. SEE DRAWING C-0792 FOR INSTALLATION OF LIMIT SWITCH.

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

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES & DECIMALS ARE IN THIRDS FRACTIONS DECIMALS ARE 1/64 XX ± .05 ANGLES ARE 1/2° MATERIAL FINISH DID NOT SCALE DRAWING

CONTRACT NO.	APPROVALS	DATE
	G. BUNN	3/16/95

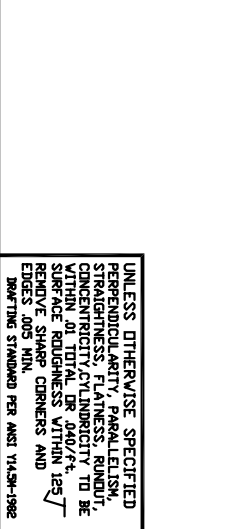
SERVO PRODUCTS COMPANY
 3490 LAKELAND BLVD., EASTLAKE, OH 44095

INSTALLATION
 MODEL 0280
 BRIDGEPORT

SIZE CODE IDENT. NO. DRAWING NO. REV.
 B 0800-80010 NB-1620 C

SCALE 5/8 SHEET 1 OF 2

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



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CONTRACT NO.	APPROVALS	DATE
	G. BUNN	3/16/95

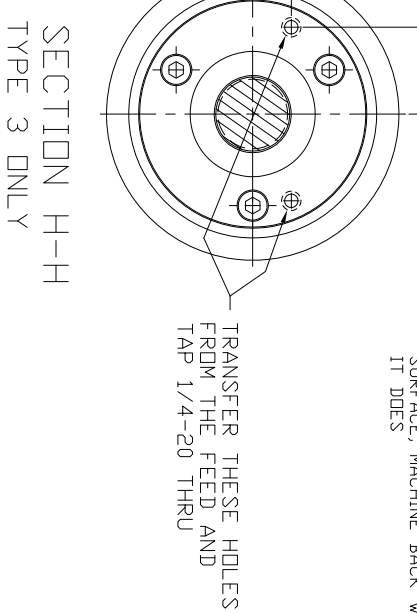
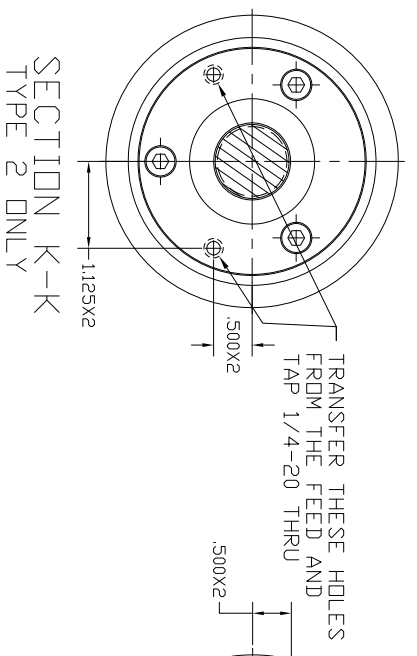
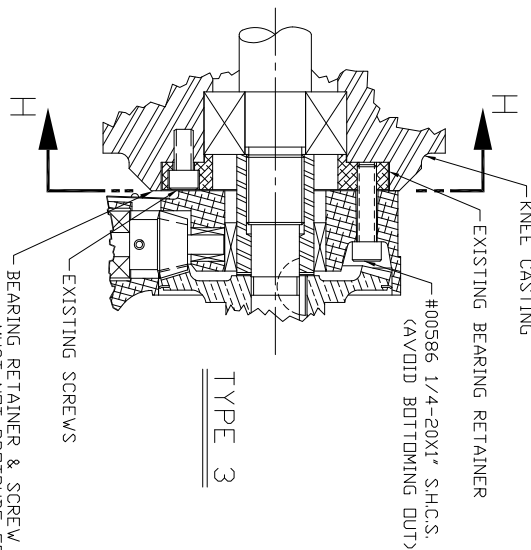
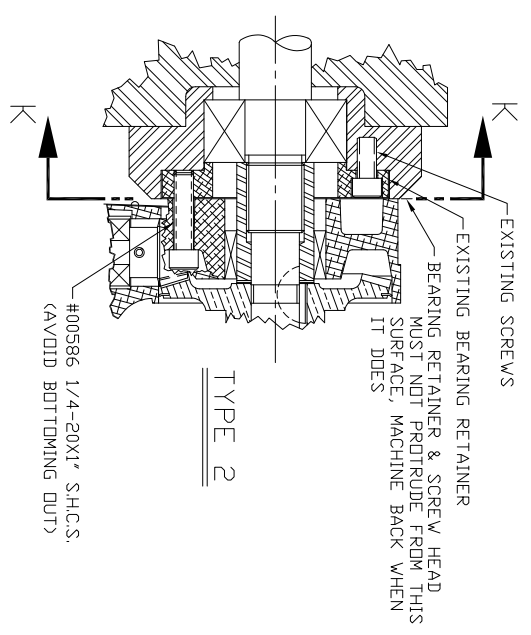
SERVO PRODUCTS COMPANY
 3490 LAKELAND BLVD., EASTLAKE, OH 44095

INSTALLATION
 MODEL 0280
 BRIDGEPORT

SIZE CODE IDENT. NO. DRAWING NO. REV.
 B 0800-80010 NB-1620 C

SCALE 5/8 SHEET 1 OF 2

REVISION		DATE	DRAWN	CHECKED
ECD	LTR			
DESCRIPTION				




- NOTES:
1. REVIEW ALL INSTALLATION INSTRUCTIONS AND OPERATION SHEETS BEFORE TURNING ON SERVO POWER FEED.
 2. SEE SHEET 1 FOR MORE DETAIL.

UNLESS OTHERWISE SPECIFIED PERPENDICULARITY, PARALLELISM, STRAIGHTNESS, FLATNESS, ROUND, CYLINDRICITY, CIRCULARITY, TO BE WITHIN .005 MIN. SURFACE ROUGHNESS WITHIN .125 REMOVE SHARP CORNERS AND EDGES .005 MIN. DRAFTING STANDARD PER ANSI Y45M-1982

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES & APPLY AFTER PLATING TOLERANCES ARE: ANGLES ± 1/2° FINISH ± .01 MATERIAL ± .005

CONTRACT NO.	APPROVALS	DATE
DRAWN G. BUINN		3/16/95
CHECKED		
APPLICATION	USED ON	
DD NOT SCALE DRAWING	FINISH	
	COMPUTER NO.	

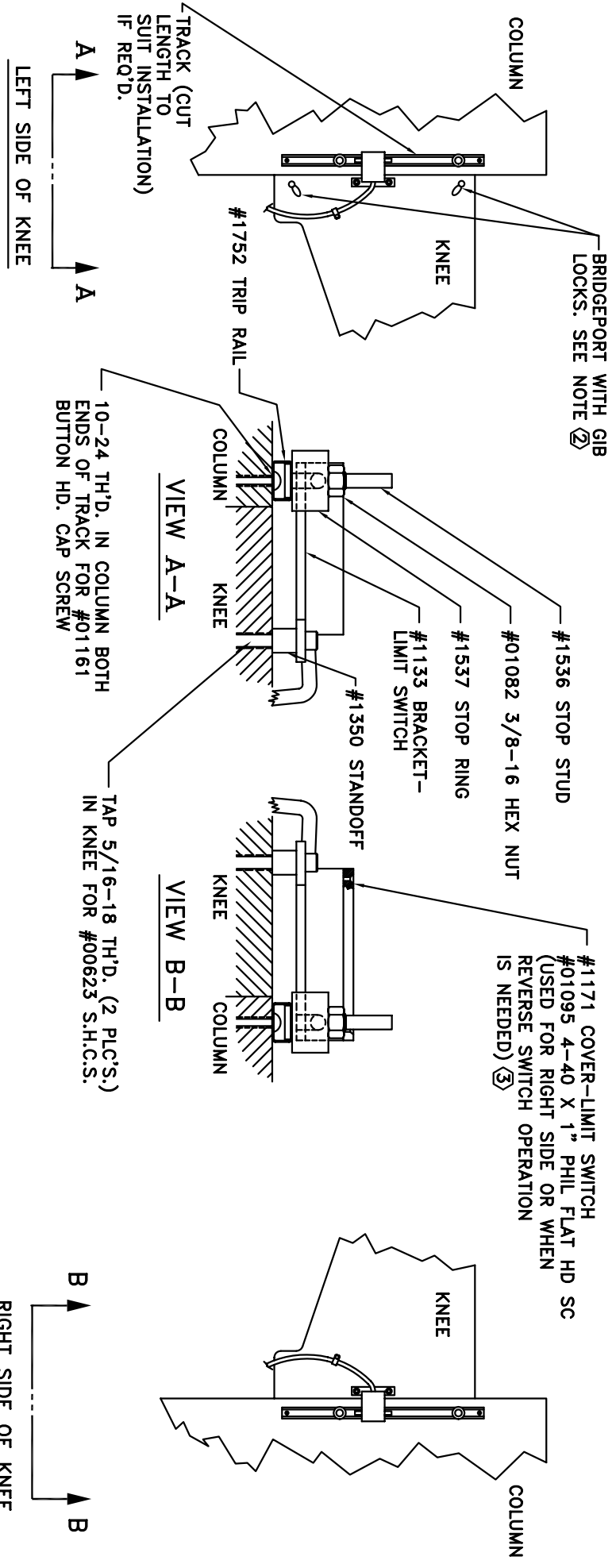

SERVO PRODUCTS COMPANY
 3490 LAKELAND BLVD, EASTLAKE, OH 44095
INSTALLATION
 MODEL 0280
 BRIDGEPORT

SIZE B CODE IDENT NO. 0800-80010 DRAWING NO. NB-1620
 SCALE 5/8 SHEET 2 OF 2

4 3 2 1

A B C D

REVISION		DATE	DRAWN	CHECKED
ECD	LTR	DESCRIPTION		



- NOTES:**
1. LIMIT SWITCH MAY BE MOUNTED ON RIGHT OR LEFT HAND SIDE OF MILL.
 2. BRIDGEPORT WITH GIB LOCKS IN KNEE MOUNT LIMIT SWITCH ON RIGHT HAND SIDE OF KNEE.
 3. LIMIT SWITCH BOX MAY BE TURNED OVER TO REVERSE SWITCH OPERATION IF REQUIRED.

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES & TOLERANCES ARE AS FOLLOWS: DECIMALS ± 1/64 XX ± .005 ANGLES ± 1/2° FINISH UNLESS OTHERWISE SPECIFIED, FLATNESS TO BE WITHIN .01 CONCENTRICITY TO BE WITHIN .01 REMOVE SHARP EDGES AND CORNERS .005 MIN.

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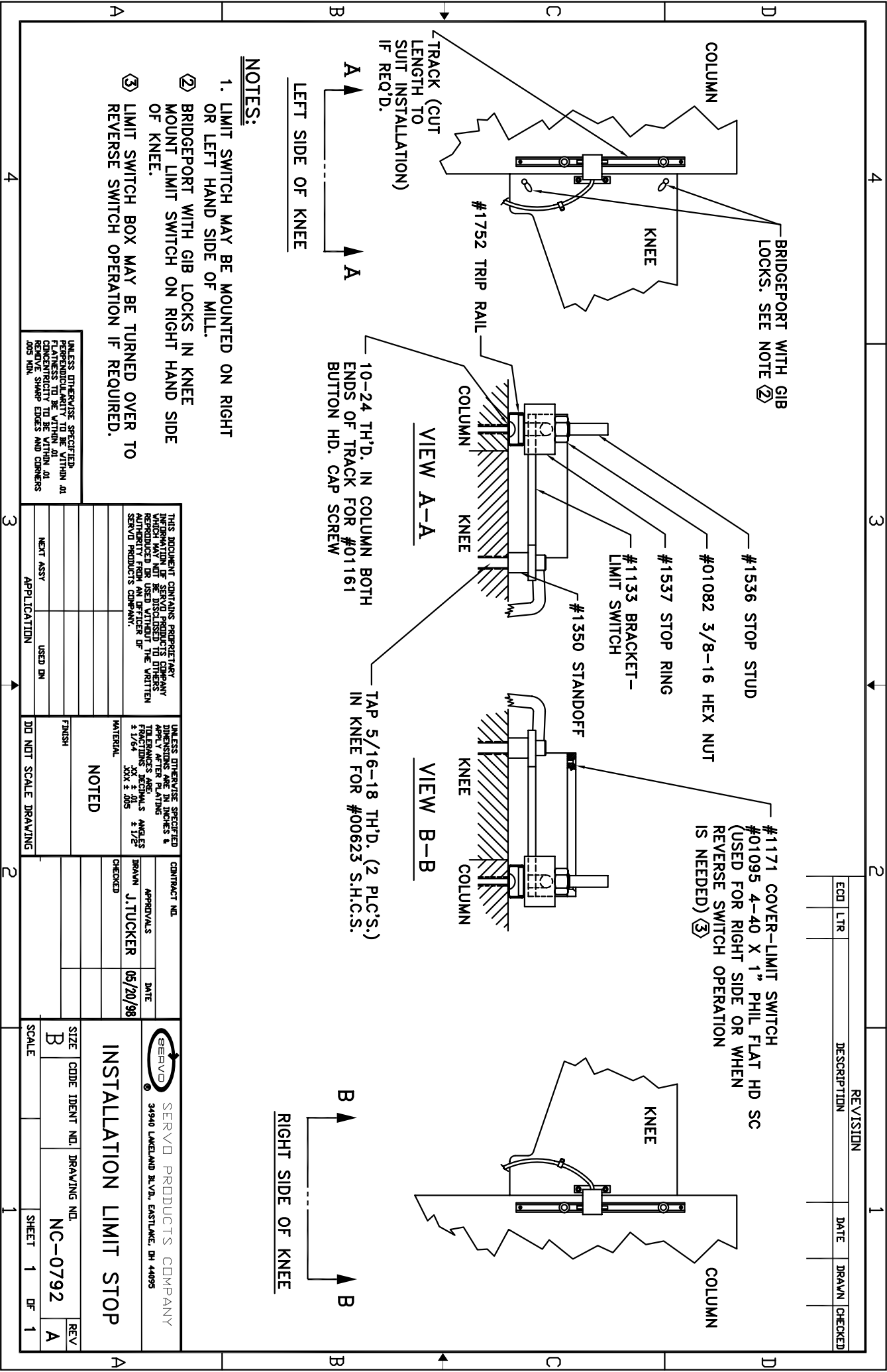
CONTRACT NO.	APPROVALS	DATE
	DRAWN J. TUCKER	05/20/98
CHECKED		

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

INSTALLATION LIMIT STOP

SIZE CODE IDENT. NDL. DRAWING NDL. SHEET 1 OF 1

SCALE B NC-0792 REV A





M-0280 KNEE FEED PARTS IDENTIFICATION LIST

- 00669 Phil Pan Head Screw Qty = 1
- 01050 Clamp Qty = 1
- 01095 Phil Flat Head Screw Qty = 1
- 1171 Limit Switch Bracket Qty = 1
- 0266 Limit Switch Gasket Qty = 1
- 1133 Limit Switch Bracket Qty = 1
- 1350 Standoff Qty = 2
- 00623 Soc Head Cap Screw Qty = 2
- 06928 Phil Pan Head Screw Qty = 4



1752 Trip Rail Qty = 1



1685-1 Handwheel Qty = 1



59254 Dial Nut Qty = 1



1536 Stop Stud Qty = 2



1537 Stop Ring Qty = 2



01082 Hex Nut Qty = 2



01161 Button Head Cap Screw Qty = 2



00586 Soc Head Cap Screw Qty = 2



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



1616 Bearing Race Qty = 1



01115 Lock Nut Qty = 1



01169 SS Washer Qty = 1



00614 Key Qty = 1



00564 Roll Pin Qty = 1



1605 Key Qty = 1



1619 Shaft Extension Qty = 1