

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. Use the washer #04964 to avoid bottoming out.

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

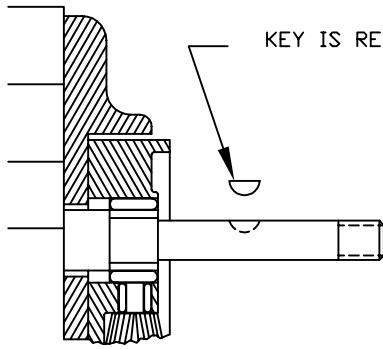
14254 Valley Blvd., Unit A
City of Industry, CA 91746
Ph. 626.961.7800 Fax 626.961.2444

HEADQUARTERS

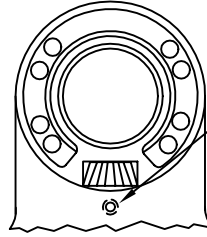
34940 Lakeland Blvd.
Eastlake, OH 44095
Ph. 440.942.9999 Fax 440.942-9100

FLORIDA BRANCH

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

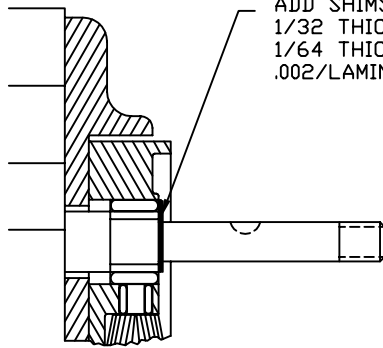


KEY IS REMOVED DURING SHIMMING

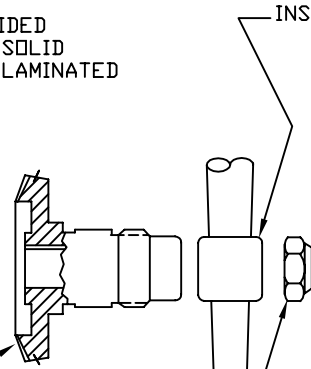


TIGHTEN SLIGHTLY (HOLDS BEVEL PINION STATIONARY DURING SHIMMING.)

STEP 1
PREPARATION



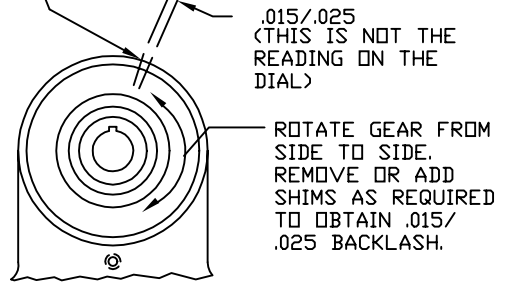
ADD SHIMS PROVIDED
1/32 THICK ARE SOLID
1/64 THICK ARE LAMINATED
.002/LAMINATION



PUSH BEVEL GEAR AGAINST SHIMS.

INSTALL HANDCRANK.

MARK HOUSING AND BEVEL GEAR WITH PENCIL TO CHECK BACKLASH.



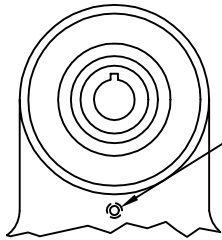
.015/.025
(THIS IS NOT THE READING ON THE DIAL)

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

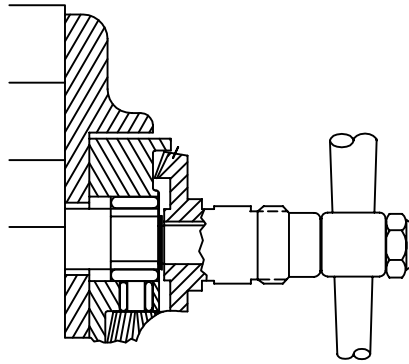
STEP 2
SHIMMING BEVEL GEAR

TIGHTEN NUT.

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



LOOSEN SETSCREW

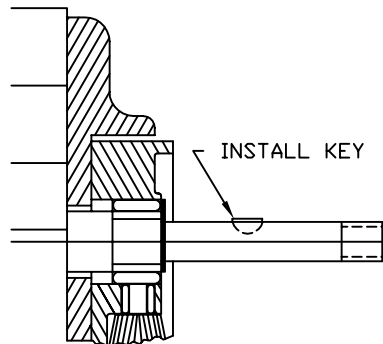


WITH POWER FEED IN NEUTRAL POSITION, TURN HANDCRANK. IF EXCESSIVE GEAR NOISE OR BINDING OCCURS, SHIMS NEED TO BE ADDED. WHEN ADDING SHIMS, REPEAT STEPS 1 AND 2.

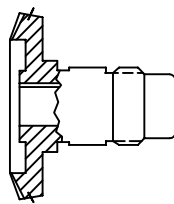


CONTROL HANDLE @ NEUTRAL POSITION

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)

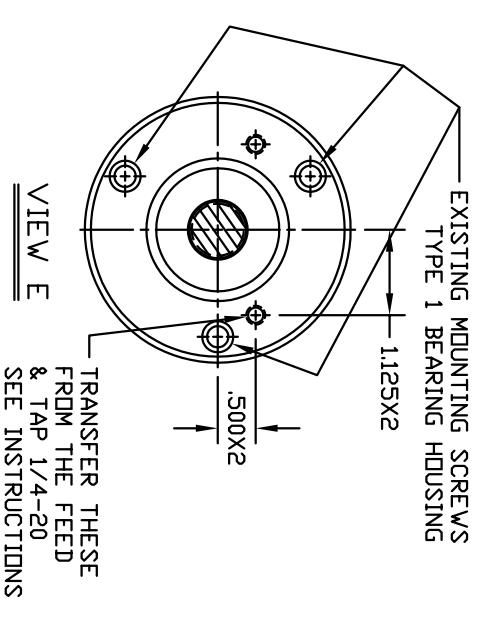
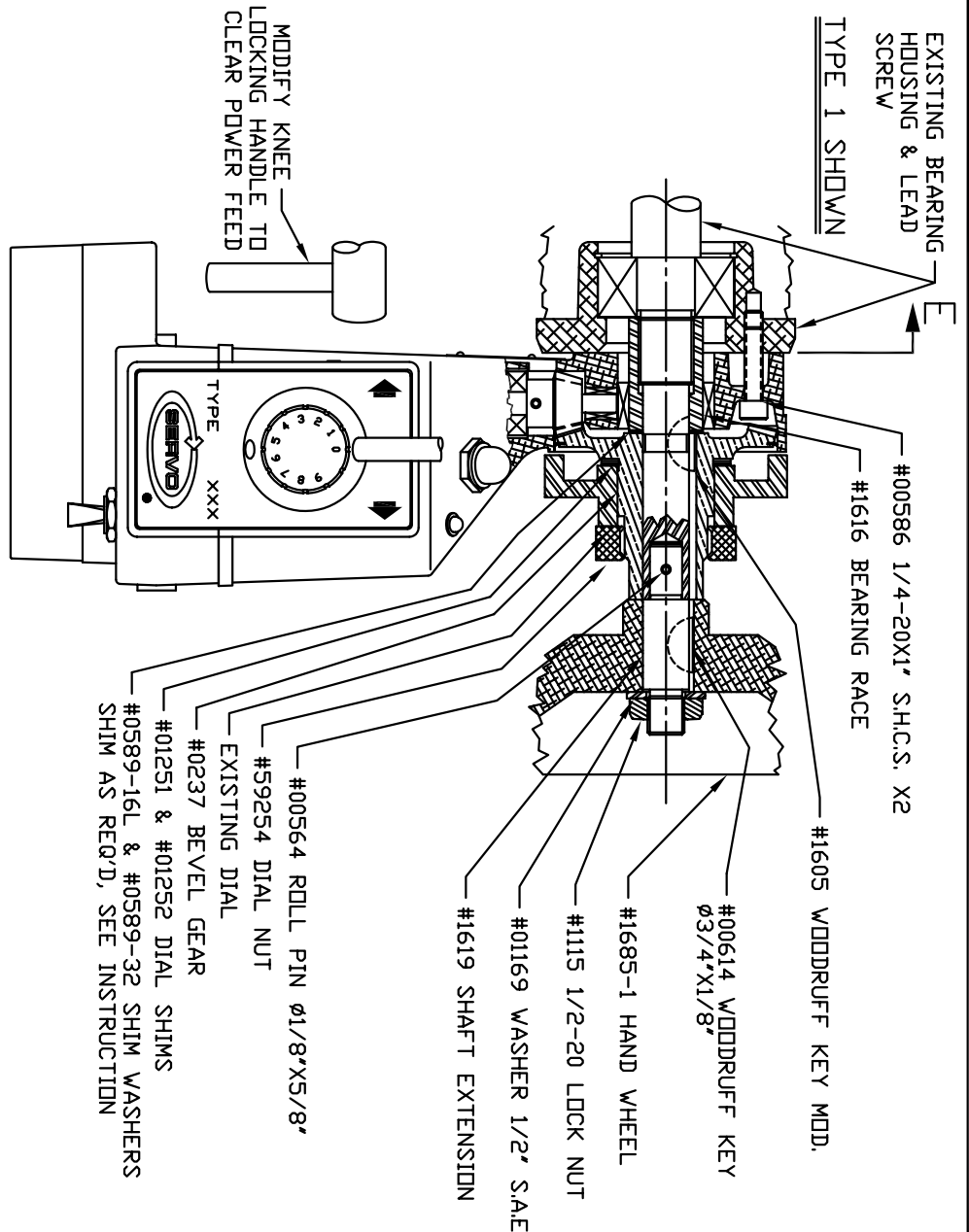
PICTURES IN THIS DRAWING ARE FOR REFERENCE ONLY. SEE INSTALLATION DRAWING OF CORRESPONDING MODEL FOR EXACT PARTS CONFIGURATION.

SERVO PRODUCTS COMPANY

BEVEL GEAR INSTALLATION

NA-5444 C

REVISION		DATE	DRAWN	CHECKED
ECD	LTR	DESCRIPTION		



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

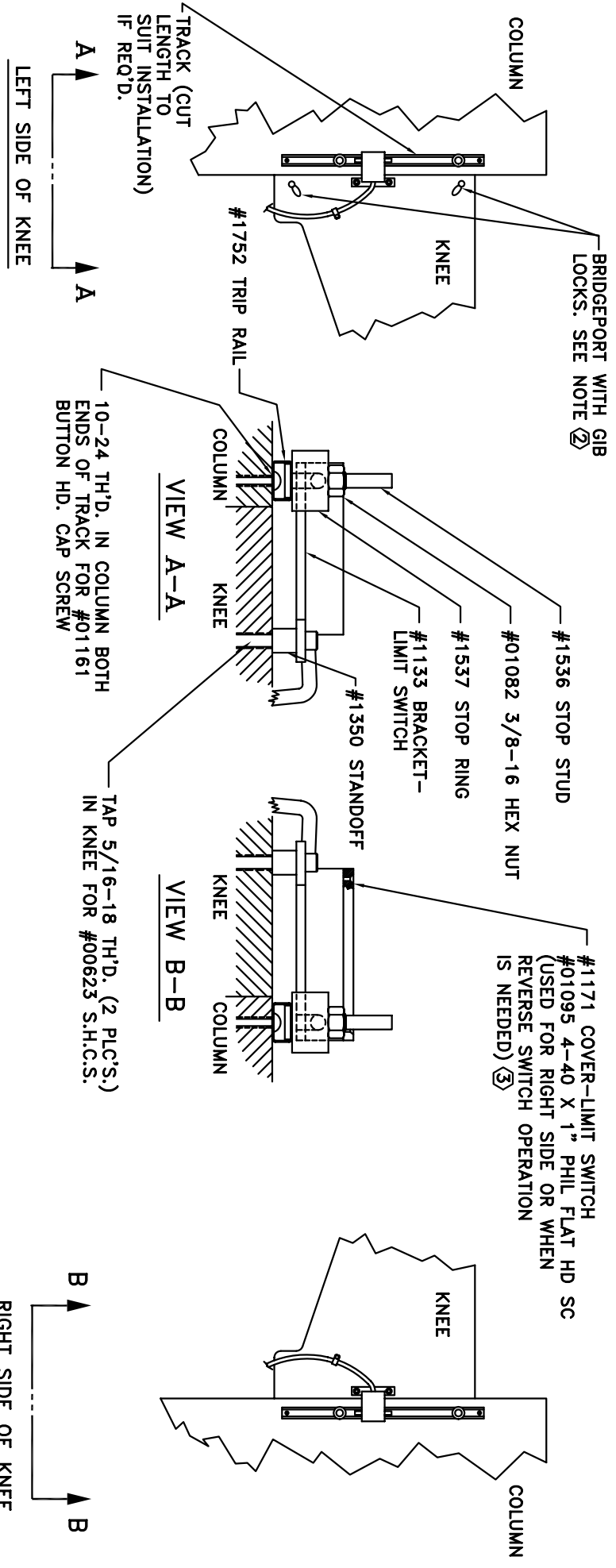
SIZE CODE IDENT. NO. DRAWING NO. REV.
 B 0800-80010 NB-1620 C

SCALE 5/8 SHEET 1 OF 2

APPLICATION	USED IN

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

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° MATERIAL FINISH NOTED DRAWN J.TUCKER DATE 05/20/98 CHECKED

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

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

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES & TOLERANCES ARE AS FOLLOWS: DECIMALS ± 1/64 XX ± .005 ANGLES ± 1/2° MATERIAL FINISH NOTED DRAWN J.TUCKER DATE 05/20/98 CHECKED

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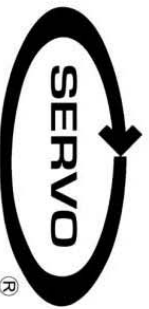
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SERVOD PRODUCTS COMPANY
34940 LAKELAND BLVD., EASTLAKE, OH 44095

INSTALLATION LIMIT STOP

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

SCALE B NC-0792 REV A

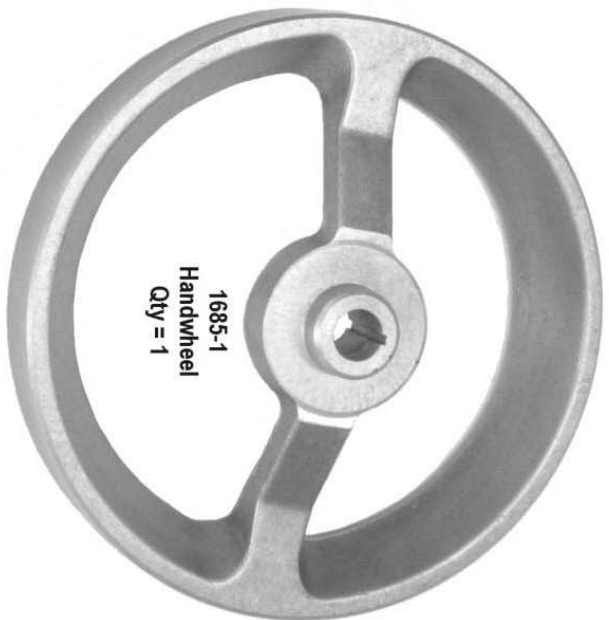


M-0280 KNEE FEED PARTS IDENTIFICATION LIST

- 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



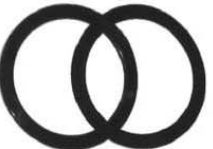
01161
Button Head
Cap Screw
Qty = 2



1685-1
Handwheel
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



1616
Bearing Race
Qty = 1



1536
Stop Stud
Qty = 2



1537
Stop Ring
Qty = 2



01082
Hex Nut
Qty = 2



04964
Hi-Collar
Lock Washer
Qty = 2



00586
Soc Head
Cap Screw
Qty = 2



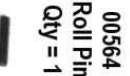
01115
Lock Nut
Qty = 1



01169
SS Washer
Qty = 1



00614
Key
Qty = 1



00564
Roll Pin
Qty = 1



1605
Key
Qty = 1



1619
Shaft Extension
Qty = 1