



MANITOWOC HERALD-TIMES

LINOTYPE FINISHING PROCEDURE

Part No. 1

1. All parts necessary for Final Erection of machine to be delivered to Finisher's station. Machine to be complete from Sub-Erection.
 - (A) Compare Machine Order Specifications with equipment on machine and parts delivered. Check customer's order step by step for major items such as - Electric Pot Voltage, Gas Pot, "EE" Thermo Blo, etc. Check order for ENGLISH OR DIDOT measure specifications. Compare relative parts such as - mold slide, and ejector blades, mold disk, molds and liners, mouthpiece, magazines and escapements and all measure units such as - ejector blade selector, assembler slide and scale and assembling elevator gate scale. These items are important and must be checked carefully.
 - (B) Finisher to examine machine for damaged parts.
2. Apply the following parts with machine in NORMAL POSITION.
 - (A) Pi Stacker and Sorts Tray.
 - (B) Lamp holder and fiber washers. Quad Tray.
 - (C) Nameplates to faceplates and Intermediate Channel.
 - (D) Mold slide safety hook bracket and pot advance safety operating bar to pot cover.
 - (E) Assembling elevator raising handle without spring. Check stop bite and shaft end play.
 - (F) Two letter filling piece. Adjust for free movement.
 - (G) Slug lever operating cam to 1st elevator slide. Set Square.
 - (H) Remove crucible face guard and drop guard from crucible. Clean face of crucible and back of mouthpiece with smooth stone. (Remove Burrs).
 - (I) Check for crucible casting flaws (May cause future leaks). Apply light coat of grease to back of mouthpiece. Apply mouthpiece to crucible and tighten with mouthpiece to extreme left of movement. This enables easy movement to right in the event of hole alignment difficulty. Tighten mouthpiece screws from center outward, left and right. Mouthpiece must bank on crucible pins.
 - (J) Apply factory number to base Intermediate Shaft Bracket. Apply Serial Number to base on pad above vise shaft, column pad and Intermediate Shaft Bracket. Number Distributor Box and beam with number corresponding to Machine Order. EXAMPLE: A-1 B-2 C-3 etc.

3. Machine to be in NORMAL POSITION

- (A) Remove large nails from justification and vise closing lever springs.
- (B) Adjust .006 to .008 clearance between pot pump lever roller and pot pump cam. Use adjusting screw under pot pump lever support rod. Lock adjustments.
- (C) Open and close vise carefully. Check for bump or spring in either vise stud. Check for interference of vise closing and justifications levers to spaceband driver shafts.
- (D) Check normal alignment of matrix delivery between line delivery channel and 1st elevator jaw. Use adjustments on 1st elevator cam roller lever and line delivery channel. Adjust 1st elevator slide gibs to obtain .004 clearance between line delivery channel and intermediate channel boxes to 1st elevator slide. Use brass matrix block for this check.
- (E) Check for freemovement to left hand vise jaw adjusting rod to vise closing attachment rod. Check for proper locking detent.

4. Check transfer slide for free movement in ways of faceplate. Remove excessive play from slide if needed. Check free movement of spaceband and transfer levers. Watch for casting interferences to faceplate and column. Correct if needed. Check spaceband lever and pawl for alignment to intermediate channel.

- (A) Apply transfer slide, transfer lever and link, stud and nut screw.
- (B) Apply transfer lever tension spring to column hook and lever hook.
- (C) Adjust 5 5/8" setting from edge of transfer slide finger to edge of Intermediate Channel. Remove end play from shafts and lock bolts.
- (D) Adjust clearance of spaceband pawl to spaceband box stop latch with spaceband and transfer lever turnbuckle. Lock turnbuckle nuts and check for interference to L.H. stationary front bracket after setting is established.
- (E) "Back-UP" Machine to EJECTION POSITION: Adjust spaceband lever and transfer lever for spaceband pawl pick-up. Set 1/8" space between cut-out of transfer slide finger and groove of spaceband pawl. Lock adjusting screw nut on transfer slide casting. Check for proper tension of transfer lever spring and centralization of spaceband pawl by manual movement of levers.

5/ Return Machine to NORMAL POSITION: Open Vise.

- (A) Check line delivery slide for free movement in faceplates. See that stop catch lever has proper tension and function.

5. (B) Check free movements of line delivery "long finger and Clamp".
 - (C) Check waiting action of long finger on delivery stroke of slide and proper ratchet action on return stroke.
 - (D) Move delivery slide to extreme left or delivery point to bank against stop screw bracket on faceplates. Adjust stop screw to obtain $1\frac{3}{32}$ " from inside face of "short" line delivery finger to outside edge of line delivery channel. Lock adjusting screw.
 - (E) Return delivery slide to normal position. Apply line delivery slide tension spring to column hook and line delivery lever hook.
 - (F) Close vise and lock tightly. Turn machine forward until line delivery lever roller reaches highest point of line delivery cam. At this point adjust short finger to have from .006 to .020 clearance to spaceband box chute. Tighten bolts on line delivery lever and remove all end play in shaft.
 - (G) Turn Machine back to NORMAL POSITION: Open vise.
 - (H) Disassemble line delivery slide air cylinder. Apply light coat of oil to piston washer. Reassemble and apply to machine. Open air valve completely and set slide spring tension for minimum tension at extreme limit of delivery stroke. Adjust air cylinder valve to obtain proper cushion of delivery slide.
6. Set-Up Mold Slide on Bench Rest:
- (A) Comet ejector blades - ~~3~~ OEM for REGULAR 28 - CIG for DIDOT.
 - (B) Use mold slide lever roller and check for proper fit to mold slide tail. Clean dovetail of slide with smooth file. Check Mold Disk stud for fit into Mold Disk Stud locating blocks.
 - (C) Check for free movement of ejector blades and proper fit of ejector blade controller link.
 - (D) Apply special ejector blades if specified on customer's order.
 - (E) Clean all mold pockets, molds and liners.
 - (F) Assemble all liners to molds.
 - (G) Apply molds to mold disk pockets.
 - (H) Check mold disk retaining plate for proper fit to face of disk. A .002 feeler gauge must not pass the retaining plate screws.

LINOTYPE FINISHING PROCEDURE

Part No. 2

1. Turn machine to CASTING POSITION. 1st elevator slide to be resting on vise cap with 1st elevator lever roller free of cam.
 - (A) Engage mold slide lever. Apply back mold wiper. Set wiper to bank against mold with $1/8$ " of overthrow. Disengage mold slide lever.
 - (B) Adjust mold slide column space with adjusting screw. Set for .002 "go" .003 "no go". Maximum of .004 "no go". Lock nut carefully. Re-check.
 - (C) Remove 1st elevator back jaw close vise and check squareness of vise jaws to molds. Check with .002 feeler gauge. Vise to be square within .003 of mold. Check banking blocks for clearance to mold when 1st elevator slide is in casting position, and vise jaws holding on mold. Check for mold to bank on banking blocks and jaws to be free when 1st elevator jaw is raised from vise cap.
 - (D) Open vise. Apply ejector blade controller link and rod to mold slide. Align ejector selector lever to locate in segment and adjust for easy movement of 30 Ems of ejector blades. Set locking safety of selector handle.
 - (E) CHECK R.H. pull-up block for free movement. Apply a few drops of oil to plunger felt. Clean banking face of vise and block. Apply R.H. block to vise with 8 x 32 screw hole to left. This is for later application of front mold wiper. Do not tighten block.
 - (F) Close and lock vise tightly. Bring mold disk forward onto R.H. pull-up block. Move 30 Ems of ejector blades forward to front edge of mold. Pivot mold disk until ejector blades are parallel to body of mold. Check space with feeler gauge and set parallel within .002. Blades to be within .002 of cap of 5 point mold. Hold pullup block parallel with vise and lock bolts tightly. Push mold disk off of block and test for drop. Try all locating studs.
 - (G) Check L.H. pull-up block for freedom of float. Clean vise and block banking faces. Apply block to vise loosely. Pull-up mold disk onto both blocks. Pivot L.H. block until it is square and has equal "float" in both directions. Tighten blocks. Try pull-up on all locating studs. Re-check blade alignment.
2. OPEN VISE: Set play of .002 in square pinion shoe and gear. Apply mold turning shaft to mold arm with shaft collar and set screw in collar. Check for proper hearing of gear and shaft hub to mold arm bearings. Apply set screw to mold turning shaft pinion gear.
 - (A) Close vise and pull disk onto locating blocks.
 - (B) Align mold turning shaft handle to mold disk and lock pinion gear set screw. Remove all end play from shaft. Check pull-up in all positions and for snap of mold turning handle.
 - (C) Finish taper reaming pinion gear and drive taper pin to fit properly in gear. Re-check pull-up.

3. Disassemble mold turning shaft brake:
 - (A) Check that brake leather rivets are below leather.
 - (B) Apply light coat of oil to brake leathers.
 - (C) Fit bracket to mold turning shaft and mold arm to that lugs on brake housing bank against mold arm and space between brake halves is equal top and bottom.
 - (D) Apply brake screws, springs, washers, and lock nuts.
 - (E) Set brake spring tension.
 - (F) Set mold turning shaft collar against brake and tighten screw.
 - (G) Re-check pull-up.
4. OPEN VISE: Apply mold disk safety hook to upper mold disk gib bolt and set for proper bit to hook stop bracket stud. Apply 1st elevator back jaw (small screw to right side).
 - (A) Close vise. Pull mold disk onto locating blocks and use adjusting screw in 1st elevator slide to enable mold disk to advance all the way forward.
 - (B) Tap slide back slightly to relieve forward pressure on face of matrix.
 - (C) Pull up on 1st elevator slide and check to see that both matrix toes are banking evenly on mold keeper. If only one matrix banks adjust 1st elevator slide gibs to obtain a parallel relation between matrix toes and mold keeper.
 - (D) Set .008 "up and down" shake in 1st elevator slide with slide adjusting screw after matrix alignment is satisfactory. .005 on 24 point 2 letter mold.
 - (E) Push disk off of locating pins. Lift 1st elevator slide up and check space between 1st elevator jaw and line delivery and intermediate channel boxes. Space to be a maximum of .004 at line delivery channel and .010 at intermediate channel. Adjust slide sideways and evenly with gibs and use sideways movement of line delivery channel rails to obtain this condition.
 - (F) Tighten gib screw thoroughly. First elevator slide must move up and down freely with a maximum of .003 shake between slide gibs.
5. Clean banking surfaces on face of vise frame for application of galley bracket. Grind R.H. galley bracket edge for clearance to slug buffer. Grind for clearance of pull-up block wrench.
 - (A) Apply and tighten L.H. galley bracket. Do not apply star washers until after doweling of parts.

- (B) Apply R.H. galley bracket to vise and tighten with vertical slug guide surface slightly to left of vise frame.
 - (C) Apply slug lever stop screw and nut to vise frame.
 - (D) Apply Slug lever to vise frame and check for free movement.
 - (E) Apply adjustable slug lever stop to R.H. galley bracket.
 - (F) Apply slug lever assembly to vise frame and connect linkage to slug lever. Align linkage bracket square to vise frame. Apply 8 x 32 set screw to slug lever link arm.
 - (G) Lift 1st elevator slide and insert 5/16" block under 1st elevator slide banking screw. Lower slide on block.
 - (H) Set eccentric adjusting screw of slug lever link for half adjustment.
 - (I) Set slug lever arm cam rider to clear actuating cam on 1st elevator slide by 1/8" with rider turned for maximum rotation. Tighten set screw at this position.
 - (J) Check for free movement and interference of slug lever.
 - (K) Lift 1st elevator slide to highest point of throw of slug lever cam and adjust slug lever stop to obtain 1/32" play in lever.
 - (L) Return 1st elevator jaw to vise cap. Drill and dowel slug lever cam to 1st elevator slide with 3/16" dowel pins. Use No. 14 Drill.
 - (M) Drill and dowel slug lever bracket to vise frame with 1/8" dowel pins. Use No. 31 Drill.
 - (N) Drill & taper ream slug lever arm with No. 29 Drill & 0 Taper reamer.
 - (O) Apply galley tray and fit to lay flat.
 - (P) Drill locating pin hole for tray dowel with No. 14 Drill.
 - (Q) Spot mold disk pocket for timing location between disk and mold turning handle gears. Use no 31 drill. Remove 1st elevator back jaw.
6. Open vise and pull mold slide forward to stop on safety hook.
- (A) Clean face of mouthpiece with a smooth stone.
 - (B) Remove mold from pocket. Disassemble mold cap from mold. Apply and set mold without cap in mold disk pocket. Use 30 EM liners to set hole alignment.
 - (C) Push mold slide back into position.
 - (D) Close vise. Lock tightly.

- (E) Pull mold disk onto locating blocks to locate mold disk properly. Carefully push mold disk back off of blocking.
 - (F) Open vise. Advance pot carefully so that mouthpiece contacts half mold. Shim pot with blocks or slugs to remain in this position. Examine relation of mouthpiece holes to body of mold and liners. Adjust pot with vertical pot leg adjusting screws to obtain proper hole alignment. All mouthpiece holes must be contained within area between liners. Holes must be tangent with or slightly above body of mold.
 - (G) Release pot from shims and let pot return to its normal position. Remove half mold from disk and reassemble. Re-apply to mold slide.
 - (H) Apply a light coat of red lead to the back of mold. Push mold disk back, close vise and lock tightly. Push left hand vise jaw to close against right hand jaw. Pull mold disk onto locating blocks. Use a steel rod and carefully press pot against mold. Push mold disk back off of locating blocks. Open vise and withdraw mold slide to safety stop. Examine lock up impression on mouthpiece. "Lock-up" when completed must show even impression of mold body and cap on mouthpiece. Adjustment for this result is obtained by using front and back adjusting screws on both pot legs. To obtain lock up impression on bottom of mouthpiece, pot must be moved forward on bushings to decrease arc of pot movement. This is done by backing off back adjusting screws and turning in and front adjusting screw. If pot "Lock-up" requires an impression on top of mouthpiece, pot must be moved back on bushings to increase arc of movement. Adjustments may also be made on one leg at a time, depending on the condition of the "lock-up". When adjusting pot leg adjusting screws, top and bottom screws within legs. After "lock-up" is completed, one full turn of adjustments must be left available for future use by the customer. When "high spots" exist on mouthpiece during "lock-up" check, they must be stoned off with a smooth stone. Use oil or kerosene with stone. When "lock-up" is satisfactory, tighten all adjusting screw lock nuts.
 - (I) Pot washers to be applied after corrections are completed. Pot lever roller must be aligned to overhang cam on both sides.
 - (J) Apply mouthpiece drip guard.
7. Adjust pot compression spring eyebolt nut and compression spring adjusting nut on "high hat" to bank against eyebolt sleeve.
- (A) Remove 1st elevator back jaw from 1st elevator jaw, and close vise and lock tightly. Engage mold slide lever to mold slide.
 - (B) Turn machine forward to 2nd shoe on mold cam. Stop forward movement of machine at a point where pot starts to advance toward mold disk.
 - (C) Examine space between mold and L.H. vise jaw. This space or "mold slide shake" must be from .003 to .006. Adjustment to obtain this condition is obtained by using adjusting screw on mold slide resilient lever. Turn screw counter-clockwise for more space and clock-wise for less space. After adjusting carefully lock nut.

- (D) Check pot for "pot shake". Pot must have at least $1/32$ " of free movement when mold slide shake is satisfactory. If there is no shake, remove pot eyebolt adjusting nut and take down on banking surface about $1/16$ ". Reassemble and check. Lock all nuts.
- (E) When both mold slide and pot shake are satisfactory turn machine forward slightly to the point where the pot mouthpiece comes in contact with the mold. At this point, compression on the pot eyebolt spring assembly takes place and a "lock-up" occurs. There should be at least $3/16$ " of overthrow between the inside edge of eyebolt adjusting nut and side of pot lever. If pot compression exceeds $5/16$ " more will have to be taken off of eyebolt adjusting nut. If there is too little pot compression, the eyebolt nut may be too short. Check for undersized parts and correct where needed until pot compression is satisfactory.
8. Return machine to normal position. Open vise and re-apply 1st elevator back jaw, close vise. Clean surface on faceplate to which 1st elevator slide guide will be attached. Lock spaceband lever with spaceband box locking pawl. Back machine into TRANSFER POSITION so that 1st elevator slide is at its highest position and 2nd elevator lever descends to faceplate. Lift 2nd elevator up and rest lever on 2nd elevator safety lever.
- (A) Disengage mold slide lever and push mold slide off of locating blocks. Check square pinion gear and mold turning cam shoe for play. Set for .002 shake with adjusting bushings. Pull disk on blocks and engage mold slide.
- (B) Use adjusting screw on bottom of 1st elevator slide to adjust Height of 1st elevator jaw to intermediate channel. Set temporary height relation of spaceband rail of jaw to channel box rail. Insert spaceband in 1st elevator jaw and check for clearance on sides of spaceband "ears" at point where spaceband enters channel box. Remove spaceband.
- (C) Release 2nd elevator lever from safety lever and carefully allow 2nd elevator to set onto intermediate channel and into guide post. Adjust 2nd elevator roller with adjusting bolt and nut so that roller clears cam by .010 to .015. Second elevator bar must lay flat on channel box and have freedom of movement on elevator yoke and guide post.
- (D) Insert a thin "pi mat" into 1st elevator jaw. Place a piece of white paper and a lamp at spaceband box for back light. Position matrix at a point before it enters onto 2nd elevator bar. Examine relation of matrix combination teeth to 2nd elevator bar combination. Use adjusting screw on 1st elevator slide and adjusting screw bushings on intermediate channel box to obtain clearance between matrix and bar combinations. Move matrix to a point where it now enters onto 2nd elevator bar. Examine alignment and refine adjustment if necessary to obtain proper "Christmas Tree" of clearance. When adjustment is completed, lock slide adjusting screw nut. Adjusting plate on intermediate channel box must be adjusted parallel within .001. Check with micrometer. Move matrix into channel box. Check for clearance between back toe of matrix and back plate of intermediate channel. Check tension of channel box buffer springs.

Remove "pi mat" and insert a matrix block onto 1st elevator jaw and slide back and forth onto 2nd elevator bar to check for smooth delivery of matrix line.

- (E) Remove duplex rail adjusting bar from 1st elevator slide top guide. Clean banking surface at top guide and apply to faceplate. Snug bolts so that top guide is adjustable. Insert a slip of .004 paper between each intermediate bar plate and 1st elevator jaw front rail. Adjust top guide with banking screws so that paper may be withdrawn with a slight drag. Set space between intermediate bar and 2nd elevator bar from .004 to .006. Tighten top guide bolts and check set screws for bank against faceplate.
- (F) Check for proper bite of transfer slide stop block and safety lever. Set adjusting screw of 2nd elevator lever to allow safety lever to lift $1/32$ " above slide block when 2nd elevator is seated on intermediate box.
- (G) Adjust intermediate bar point to be even with the bottom of 2nd elevator bar combination when bar point is lifted to its highest limit.
Bar point must be free moving and in center of 2nd elevator bar. Lower 1st elevator slide slightly and put even size mats at each end of 1st elevator jaw under intermediate bar. Lift jaw to contact intermediate bar. Check for bar to bank on both mats. Correct as necessary by moving intermediate bar adjusting screws. Tighten bolts.
- (H) Apply duplex rail adjusting strip to top guide. Return 1st elevator slide to transfer position. Adjust strip to release duplex rail in 1st elevator jaw so that matrix will drop to regular position. Lock bolts.
- (I) Release spaceband pawl and carefully let transfer slide move forward 2nd elevator bar. Check for interference of casting of slide and top guide. Check for interference of slide finger to 1st elevator jaw and 2nd elevator bar. With levers at full stroke, adjust automatic stopping pawl stop screw so that pawl clears upper stopping lever by .010. Adjust stroke of lever roller when in contact with pawl plunger so that cut-out of transfer slide finger is in line with end face of 1st elevator jaw. Use 6" scale for straight edge.
- (J) Apply recast block and check for clearance. COMET Set recast safety lever on faceplate.
- (K) Apply line stop and fit for free movement COMET Set line stop return finger to pick up line stop and to clear 1st elevator jaw. Apply line stop return lever and check for alignment to line stop. Check for interference of return lever and intermediate bar. Stake return lever screw. Apply line stop return lever safety cover. Apply spaceband nameplate.
9. Move machine to NORMAL POSITION:
- (A) Disengage mold slide lever and push mold disk off of locating blocks. Check square pinion gear and mold turning cam shoe for play. Set for .002 play with adjusting bushings. Pull mold disk back onto blocks & engage mold slide lever.

- (B) Open vise. Fit ejector blade selector indicator to selector handle. Fit for free movement and align indicator to window of line delivery channel box. Check for proper function of selector handle lock with selector locating segment.
 - (C) Fit ejector lever blade link to mold slide plate and ejector lever. Check for proper latch function.
 - (D) Back machine into EJECTION POSITION:
Check for free movement of ejector blades from 30 Em to 4-Em.
10. Return machine to NORMAL POSITION
- (A) Clearance ream knife block holes in vise frame with .188 reamer.
 - (B) Check knife block for free movement and fit of liners. Set trim knife screws even with liners.
 - (C) Check cutting edge of trim and side knives for damage and sharpness. Apply pin to side knife.
 - (D) Apply trim knife and spring to vise frame. Tighten bolts with knife cutting edge below edge of vise frame.
 - (E) Apply side knife to knife block. Apply knife block to vise frame and tighten bolts. Check for free movement of knife block slide and check for interference of slug guide to galley bracket, and lower banking block.
 - (F) Check for clearance of ejector blades to trim knife.
 - (G) Check and set vise balance spring.
11. Disassemble knife wiper operating rod assembly. Apply rod and spring to R.H. 1st elevator slide gibs. Dowel pin head to face out.
- (A) Apply knife wiper operating rod actuating cam and spring to 1st elevator slide. Close vise. Apply brass shoe and 8 x 32 set screw to 1st elevator slide.
 - (B) Adjust knife wiper operating rod so that roller of rod has 1/32" clearance to actuating cam. Lock nut. Check for good alignment of roller to cam.
 - (C) Open vise and apply knife wiper operating rod link and spring to knife wiper shaft with knife wiper assembled to it. Close vise and open knife block to 45 point. Adjust height of knife wiper so that it is higher than a 30 Em slug. Check to top of mold liner. Lock adjusting nuts.
 - (D) Open vise. Check for free movement of knife wiper rod assembly in gibs and for knife wiper to lay flat on both knives. Apply cotter pins to knife wiper shaft and lower banking block.
12. Apply front mold wiper and spring to R.H. pull-up block. Adjust for free movement with minimum of side play.

13. Fit slug buffer to vise cap. File slot in R. H. vise handle stop stud to obtain proper bank and alignment of slug buffer. Check to lay flat on galley bracket and knife block slug guide.
14. Oil cups on machine and fill grease cups. Turn grease cups down a few turns for proper lubrication.
 - (A) Remove vise automatic stopping rod from vise frame.
 - (B) Adjust vise automatic rod pawl for .005 play.
 - (C) Apply vise automatic rod to vise frame and adjust rod height to be even with top of vise cap when vise is closed with starting handle in. Adjust height of rod by using vise automatic rod operating roller lever.
 - (D) Turn down on vise automatic rod operating screw in first elevator slide.
 - (E) Turn machine motor on.
 - (F) Run machine. Let machine run a few revolutions and watch carefully for interferences and unusual noises. Stop machine with handle if something does not look right. Check for play in ejector shoe lever and transfer dam. Set space between lever shoe and cam shoe in normal position. Maximum .030 set ejector lever pawl.
COMET: Set 2nd elevator lever safety lever to open 3/32" when actuating by button screw on delivery cam. Counter Bore Cam if necessary.
 - (G) Back off vise automatic rod operating screw in slide.
 - (H) Pull handle to start machine. Machine will stop since adjusting screw will not push vise automatic rod clear of vise automatic mold disk dog. Press down on 1st elevator and adjust screw until vise automatic rod clears dog, machine will run. Lock adjusting screw nut. Check for play in vise automatic horizontal lever.
 - (I) Apply 1/32" washer to vise cap. Pull starting handle out. Machine will stop on vise rod. Remove washer from vise cap. Carefully let 1st elevator slide down on vise cap. Push starting handle in to release pressure of drive clutch. First elevator slide should drop free to vise cap. Check function of vise automatic with both flappers for proper action with one and then two flappers. Check for vise opening safety with starting handle out.
15. Apply two letter safety shoe to line delivery and transfer lever cam. Run machine to casting position and shut off motor. Open vise and remove 1st elevator back jaw. Move L.H. vise jaw to contact R.H. jaw. Close vise. Adjust upper screw on mold slide safety lever to push slide on upper stopping lever clear of shoe on cam. Rotate machine by hand with drive clutch.
 - (A) Run machine back to normal position.
 - (B) Use a .054 feeler gauge and insert carefully between L.H. vise jaw and mold.

- (C) Run machine. Machine will stop on two letter safety shoe due to interference of gauge preventing mold disk to advance properly.
 - (D) Remove gauge from jaw and run machine back to normal position.
 - (E) Lock adjusting screw nuts on safety lever.
16. Apply 1st elevator back jaw to 1st elevator. Run machine around and let it stop in normal position. Let starting handle out.
- (A) Insert a 6 pt. slug against line delivery slide stop screw on faceplate. Allow line delivery slide to come against slug. Hold line delivery slide with left hand and remove slug from stop. Use slug and carefully tap line delivery slide to the left. Check for machine to start when inside edge of R.H. line delivery finger is even with cut of 1st elevator jaw. This enables complete delivery of line of mats within retaining pawls of 1st elevator jaw.
 - (B) If machine does not start, pull handle and run machine until 2nd elevator descends onto faceplate. Stop machine. Adjust starting and stopping pawl adjusting plate for quicker "kick-off" of line delivery slide. Run machine back to normal position.
 - (C) Repeat check of line delivery "kick-off" until proper condition is obtained.
17. Check rollers of vise closing and justification levers to see that both rollers contact cam on return stroke of levers after casting takes place. Grind levers where necessary and check spaceband drive for parallel condition in 2nd justification position.
18. Run machine to normal position, Turn off motor.
- (A) Adjust vise closing wedge to conform with edge block of vise closing attachment. Use adjusting screw on wedge. Lock adjusting screw nut.
 - (B) Remove ejector blade lever link and disengage mold slide lever. Pull mold disk onto locating blocks. Keep a 30 em mold in the top pocket so that a reasonably good margin may be set before casting.
 - (C) Push R.H. vise jaw against knife block margin adjusting screw. Examine relation of R. H. jaw edge to R.H. mold liner. Use adjusting screw to obtain .005 overhang of R.H. jaw to R.H. taper.
 - (D) Push L.H. vise jaw against L.H. jaw adjusting rod block. Examine relation of L. H. jaw to edge to L. H. mold liner. Use vise closing attachment adjusting knob and line rod to obtain .005 overhang of L.H. jaw to L.H. liner. After adjustment is made, there must be a full turn of adjustment left in vise closing attachment knob both "in and out".
 - (E) Push mold disk back off of locating blocks push R.H. Jaw against knife block adjusting screw and check pot safety opening. Adjust opening with screw on lever so that there is ~~1/32~~ 1/32" of opening between safety lever and pot pump

- lever blocks. Check for overthrow of lever for proper safety action of lever when holding closed to prevent casting.
- (F) Engage mold slide lever and start machine motor. Run machine and check pot advance safety for proper opening. Adjust so that safety lever opens and clears pot pump lever block by $1/4"$ to $1/2"$. Lock adjusting screw nut. Check for interference of line delivery lever and adjusting screw.
19. Apply a 30 EM line of matrix with about 6 or 7 spacebands to 1st elevator jaw.
- (A) Add type metal to pot so that crucible is about $1/2"$ of being full. Adjust pot pump lever spring tension with adjustable handle under column.
- (B) Clean pot plunger with fine paper. Adjust relief valve opening of plunger for about $1/32"$. Insert plunger into crucible. When plunger has been heated thoroughly insert plunger into crucible well. Do not connect plunger to pump lever.
- (C) Apply spark guard. Check for interference to pot safety lever.
20. Lock spaceband pawl to allow for recasting of slugs. Run machine around and check for proper justification of matrix line. Set knife block to point size to be cast.
- (A) Engage pot plunger to pump lever stud with spring.
- (B) Run machine and examine slug. Check for hole alignment and make corrections if necessary.
- (C) Check right and left hand margins and lock adjusting screw on knife block when margins are satisfactory. Set collar on vise closing attachment adjusting knob so that "0" mark align with split opening of casting. Set line rod indicating pointer to line rod scale after L.H. margin is satisfactory.
- (D) Apply R.H. vise jaw stop block and fit so R.H. jaw has about .006 play.
- (E) Check slug trim. Adjust trim knife so that all matrix overhang is trimmed by knife. Trim must be even from one end to the other.
- (F) Check slug size at ribs of slug. Slug must be cut to proper size according to size chart. Adjust knife carefully to obtain proper size. Size from end to end of slug must be parallel. Lock trim and side adjusting screw nuts when satisfactory.
- (G) Check type height with micrometer. If correction is needed, disengage mold slide and pull mold disk forward. Apply red lead to back of mold. Set back knife, careful not to rub red lead too hard. Clean mold and push mold disk back. Engage mold slide lever. Re-check slug and lock adjusting screw nuts when satisfactory. Slug must be parallel within .002

from end to end on 30 em slug. .0005 on short slugs.

- (H) Check all other molds in disk for proper trim size, etc.
- (I) Remove line of matrix from 1st elevator jaw. Set L.H. vise to cast blank. Adjust detent block in L.H. vise jaw block to hold jaw tight against R.H. vise jaw.
- (J) Remove pot pump plunger spring from pump.
COMET: Apply alternate casting if called for on customer order. Set shoe parallel to square pinion.
- (K) Apply accelerating and de-accelerating shoes to mold segment gears. Check for maximum of .006 space between shoes and square pinion gear vertical guide rails.

PROTOTYPE FINISHING PROCEDURE

Part No. 3

1. Turn machine motor off. Remove assembler cover from assembler. Remove front assembler rail. Remove firing pin from assembling elevator.

- (A) Check for free movement of assembling elevator within faceplate gibs. Elevator must move up and down without a bind. Elevator hook must latch onto elevator stop rail freely with a maximum of .006 up and down play. Check alignment of elevator to line delivery channel box with matrix block. Adjust elevator height if necessary with adjustable hook stop. Adjust line delivery in and out with adjustable bushings in line delivery box. Check for interference of elevator to knife block when open to 45 point.

COMET:

1. Check for maximum of .010 space between elevator back plate and assembler back plate.
2. Assembler plate to be even with or no more than .005 ahead of elevator back plate.
3. Check for interference of Idler pulley washer and Reed rack.
- (B) Apply assembler elevator connecting link to elevator. Apply elevator balancing spring to raising handle and keyboard hook. Adjust elevator balance so that elevator drops smoothly from delivery position to assembling position. Lock balance spring hook nut.
- (C) With assembling elevator in assembling position, apply a thin matrix to elevator. Adjust elevator gate so that matrix is free all the way across assembling elevator with adjusting screw on lug of elevator gate.
- (D) Lift elevator up and away from elevator gate banking shoe. Adjust gate to hold matrix across full length of gate. Set with slight taper so that matrix to the left is always tight. First matrix in any length line must always hold as elevator ascends to delivery position. Check elevator matrix pawls for tension.

COMET: Bevel elevator gate shoe to clear matrix when opening gate.

- (E) Check duplex rail safety block for alignment to actuating arm on line delivery channel box. Block must clear arm when rail is in normal position, and should contact arm when in "upper" "rail" position. Re-check elevator for free movement and balance. Set for star wheel tension.

COMET: Remove duplex rail safety when equipped with T.T.

2. Apply matrix delivery belt to assembler pulley and Idler pulley.

USE STOP BELT. Set belt for minimum tension. Set assembler chute rails to clear belt. Re-apply front assembler rail and check for belt clearance. Check for squareness of assembler rails. Rails to be square or front rail higher. Turn belt by hand. Check for interference of Idler Pulley to Assembler Entrance Cover.

- (A) Check space between front and back assembler rail to elevator duplex rail and elevator back plate. Check for height of chute rail to duplex rail. Check elevator for free movement. Maximum of .015 space.

COMET: Set duplex rail adjusting screw for proper space on T.T. elevator. Connect T. T. duplex rail mechanism and set for proper throw from regular to auxiliary rail.

- (B) Remove assembler entrance chute finger, spring and screw.
- (C) Form assembler entrance guides to proper shape to enable proper assembly of matrix.

COMET: Use chart and metal guard to form guides.

- (D) Re-apply assembler entrance chute finger, spring and screw. Adjust $3/32$ " of space between chute finger and assembler rails.

COMET: Use 10 point "Cap W" to set chute finger. Set adjusting screw to be snug.

- (E) Check assembler catch spring for centralization and to extend $1/32$ " beyond back plate of assembler on regular models only.

3. Check assembler slide for freedom of movement.

- (A) Check assembler slide adjusting clamp for ease of movement and remove excessive side play.
- (B) Align clamp stop with 30Em indication on assembler slide scale.
- (C) Use a 30 Em slug and adjust assembler clamp stop screw so that slug fits between assembler slide finger and star wheel. Lock adjusting screw. Set assembler elevator gate scale.
- (D) Set assembler slide faceplate stop bracket so that there is about .015 space between star wheel and assembler slide finger.
- (E) Set assembler slide release lever to be parallel to assembler slide and check for interference to slide clamp when depressing lever. Adjust return spring tension so that assembler slide returns smoothly. With minimum of tension.
- (F) Check assembler slide brake for proper action. Brake must hold assembler slide in position when slide is moved to left. Slide should not chatter when matrix are assembled. Brake must release when release lever is depressed.

- (G) Check spaceband buffer for play. Fit for minimum of play and free movement. Check that assembler slide does not interfere with spaceband buffer when slide is at 30 Em and elevator is lifted to delivery point. Check for interference when opening keyboard with elevator raised.

COMET: Set spaceband buffer eccentric bank for 1/2" adjustment.

4. Check assembler door cover for free movement of roller. Apply cover to assembler. Open Cover.

- (A) Check for fit of assembler entrance cover and good fit to latch. Cover latch must have good bite on cover and hold tightly. Check hinge pins for tight fit in cover blocks.

COMET: Set assembler entrance cover lugs to be within .010 of front matrix guard. Maximum space of .020 between top of assembler cover and bottom inside surface of assembler entrance cover.

- (B) Fit assembler entrance and assembler cover. Assembler cover must fit to entrance cover with easy movement. Cover must snap onto entrance cover. Examine space between elevator gate and assembler cover. Use stop screw on assembler cover to obtain proper space of .010 to .015. Hand fitting of cover may be necessary to obtain proper condition. After covers are fitted, check for interference of assembling elevator when lifting elevator up to delivery point. Remove interference where necessary. Care must be taken not to increase space between cover and elevator gate. Check for interference of cover to assembler starting button shaft.

5. Push assembler slide over to bank on clamp stop at 30 Em. Lift assembling elevator to stop block in delivery position. Adjust assembler slide return with brake lever adjusting screw so that assembler slide returns to its normal position, before elevator hook latches on stop block. Lock adjusting screw nut. Check for play in brake lever with elevator raised. Let elevator down.

- (A) Apply line delivery slide releasing pin to assembling elevator.

COMET: Check for back elevator pawl to bank against firing pin bushings.

- (B) Lift assembling elevator into delivery position so that elevator latches onto stop block. Adjust "Firing Pin" adjusting screw in elevator back plate to a point where line delivery slide is released from stop latch. Spread slot of adjusting screw to hold adjustments.

- (C) Re-check sequence of action of all parts as follows:

1. Assembler slide to release.
2. Assembling elevator to latch.
3. Line delivery slide to release.

COMET: After line delivery release is set, check for proper action of assembling elevator hook return delaying latch. Check for safety to prevent latching of assembling elevator when line delivery has moved to deliver a line into 1st elevator. Adjust "EE" actuating

roller on line delivery lever for proper throw.

6. Open Distributor swinging screw and lock in detent rest. Check Distributor screws for damage and peeled plating. Check for Rust.
 7. (A) Use steel matrix block gauge and adjust matrix guard to gauge for .010 to .015 space. Lock adjustments.
 - (B) Remove matrix block gauge. Set matrix guard for clearance to distributor bar and screw when guard moves forward. Check for clearance of matrix guard to front upper and lower screws with piece of paper. Use adjusting screw on matrix guard. Bracket and lock adjusting screw nut when satisfactory.
 - (C) Back in EJECTOR POSITION: Check distributor box rails for height and bar point length with gauges. Check height of distributor bar to distributor box rails with steel gauges. If satisfactory, apply distributor box and check height of bar to box rails.
 - (D) Check for clearance of distributor box rails to distributor screws. Correct if necessary. If the distributor runs with such an interference the plating of the screws may be damaged. Check matrix guard and screw clearance. Check font distinguisher for clearance to screw.
7. Align 2nd elevator bar to 2nd elevator top guide. Set distributor box bar for .002 play to 2nd elevator bar. Set clearance of 2nd elevator yoke to guide. Set clearance between distributor box bar and 2nd elevator bar. Return machine to normal position. Set 1 1/2" space between 2nd elevator and shifter slide.

COMET: Set top guide to clear pin in 2nd elevator lever by .006 to .008.

8. Use brass matrix block and check alignment between 2nd elevator bar and distributor box bar. Adjust 2nd elevator top guide shoes for proper condition of alignment. Set shoes parallel.
9. Check distributor shifter slide for free movement and for interferences to second elevator and distributor box bars. Adjust stop screw of slide so that shifter pusher clears vertical face of distributor box rails by .004 to .010. Check for clearance of shifter to automatic screw.
10. Close swinging distributor screw. Make sure screw is properly timed with timing pin. Oil distributor screw bearings.

DO NOT OIL EXCESSIVELY.

- (A) Apply thin matrix to 2nd elevator bar and push matrix against vertical face of distributor box rails.
- (B) Turn distributor by hand until distributor box lift lever roller is on low spot of lift cam on swing screw.
- (C) Adjust lever for .010 play between matrix and shoulder on distributor box lift. Lock nut on lever.

- (D) Push matrix back from vertical face of distributor box rails far enough to allow movement of font distinguisher flag.
 - (E) Set font distinguisher dial bracket for point size to conform with size of matrix in distributor box.
 - (F) Push matrix up to font distinguisher flag.
 - (G) Adjust font distinguisher lever screw to align flag to center of font slot in matrix. Lock adjusting screw nut.
 - (H) Turn matrix off of distributor.
 - (I) Apply distributor drive belt and intermediate shaft drive belt to intermediate shaft pulleys. Check for interference of intermediate gear guard to intermediate shaft. Turn on motor. Check distributor box lift rest.
11. Apply distributor box safety to distributor beam. Adjust to align safety finger with cut out in matrix guard.
- (A) Allow the shifter to come in contact with safety finger.
 - (B) Locate safety bracket so that finger just clears matrix guard when shifter is banking against stop screw. Lock bracket in this position.
 - (C) Check safety for free movement and play when entering matrix guard with shifter out.
- COMET: Apply shifter slide snubber and set air chamber for proper stroke.
12. Check height of front matrix guard to magazine. Check proper action and throw of cannon latch releasing turnbuckle.
- (A) Adjust position of matrix guard operating lever so that lever has .006 play in its normal resting position. Set throw of lever so that actuating arm of releasing lever just clears hardened shoe on operating lever. Lock adjusting nuts and dowel hardened shoe to operating lever. Use No. 31 Drill for 1/8" dowel pins.
 - (B) Position actuating arm of releasing lever for about 1/16" of clearance to operating lever. Remove play from shaft. Lock set screw on hub of releasing lever. Check bite of safety. Drill and taper ream lever. Apply dowel pin.
 - (C) Set clearance of .005 to releasing lever link with guide bracket set screw. Lock nut.
 - (D) Pull shifter out of distributor box. Set against stop latch. Depress magazine elevator release lever. Matrix guard operating lever actuating arm should bite into operating lever block and prevent release of cannon latch.
 - (E) Set shifter back into distributor box. Check for play in matrix guard.

(F) Check operation of large lever safety, and check for interference of front matrix posts to magazines.

13. Apply keyboard drive belt to intermediate shaft pulley and keyboard pulley. Apply pi stacker drive belt.

(A) Check position of pi chute on channel entrance for clearance when opening and closing channel entrance.

(B) Apply pi tube and pi tube clip to pi stacker. Check tube for delivery of 1/2" pi mat.

(C) Apply a set of at least 12 spacebands to spaceband box.

CUMET: Set spaceband buffer in intermediate channel with eccentric studs so that spacebands have a slight drag when spaceband lever carries bands to spaceband box.

(D) Turn magazine shift mechanism and locate main magazine in operating position. Open magazine lock. Repeat on all other magazines until top magazine is in operating position. This magazine should contain limit size matrix to be tested for circulation. 18 point 97.

(E) Space and drop of magazines and channel entrance to be correct when machine is received from Sub-Erection.

14. Open keyboard locking latch. Circulate matrix.

(A) Depress one keyboard button and release one matrix from a channel at a time.

ASSEMBLER:

All Models

Note: 1. Any damaged or defective parts must be questioned.

2. Righten all screws and check for function after tightening.

1. Assembler Chute Rails

- (A) Front rail should be approximately $1/32''$ higher than the back rail. May be parallel.
- (B) Chute rails must clear Matrix Delivery Belt (Maximum clearance not to exceed .015)
- (C) Chute rails must be parallel to each other within .015 at point of Matrix Delivery Belt.
- (D) Front Chute Rail should be from $1/64''$ to $1/16''$ above the Short Duplex Rail.
- (E) Chute Rail plating must be intact.

2. Assembler Matrix Delivery Belt Pulley (D-3245)

- (A) End play must not exceed .006. Comet .032.
- (B) Pulley eccentricity must not exceed .010.
- (C) Pulley (face run out) must not exceed .010.
- (D) Pulley must not contact chute rails at any time.

3. Assembler Matrix Catch Buffer Spring (D-18)

- (A) Spring must extend beyond Assembler Plate. Minimum .020. Maximum .040.
- (B) When the spring is depressed to a flush condition with the assembler plate, the spring must return to normal position without any interference.

4. Star Wheel (D-5912)

- (A) All star wheels are medium size $1-3/16''$ diameter.
- (B) Check friction, adjust to minimum friction. (Minimum friction should assemble a full 30 Em line without slipping.)

5. Assembler Drive Belt Shifter

- (A) Action must be free of any binds including excessive spring pressure detens.

6. Assembler Cover

- (A) Assembler cover stop screw must bank on assembler plate.
- (B) Clearance between assembler cover and assembling elevator gate should not exceed .015 nor be less than .00.
- (C) Clearance between assembler cover and assembling elevator gate pawl should not exceed .015 nor be less than .005.
- (D) Clearance between assembler cover and aligning piece and assembler entrance cover aligning piece must not exceed .005.
- (E) Horizontal alignment of both aligning pieces must not exceed 3/32".
- (F) Clearance between assembler cover and assembler entrance cover must not exceed .020 on Comts only. 1/32" on others.
- (G) Assembler cover must open to maximum position without interference.
- (H) Assembler cover must snap into normal or closed position with the aid of the tension spring when cover is approximately 1/2" away from closed position.
- (I) Assembler cover retaining lever roller must rotate.
- (J) When closing assembler cover, its aligning piece must engage with assembler entrance cover aligning piece without any distortion of assembler cover.

7. Assembler Chute Finger

- (A) Assembler Chute Finger must not come in contact with assembler entrance plate or cover.
- (B) Adjust to clear chute rails by approximately 3/32".
- (C) Assembler chute finger tension spring should be adjusted so that it cannot become disengaged from contact with the chute finger.
- (D) Chute finger, D-5446 (old style) pivoting screw and adjusting screw must be applied to lower set of holes in assembler plate.
- (E) Assembler chute finger, D-3318 (new style) pivoting screw and adjusting screw must be assembled to upper set of holes in assembler plate.
- (F) Noisy assemblers to be questioned.

ASSEMBLER SLIDE

All models

1. Assembler Slide

- (A) Must move horizontally freely.
- (B) Space between star wheel and assembler slide stop finger must not exceed $1/32''$ nor less than .005.
- (C) Assembler slide brake facings must hold assembler slide from moving toward the right.
- (D) Assembler slide brake hand release Ext. finger should be adjusted so that bar is parallel to assembler slide.
- (E) Assembler slide brake trip should be adjusted to release assembler slide when assembling elevator is in its highest position.
- (F) Assembler slide brake latching projection should not be fitted to allow brake facings to contact assembler slide when hand lever is depressed.
- (G) Assembler slide anti-friction rollers must rotate freely.
- (H) Assembler slide must clear assembling elevator L.H. gib.
- (I) Assembler slide must clear assembling elevator back plate casting, when elevator is in normal position.
- (J) Assembler slide return spring must be adjusted to return assembler slide to normal position when assembler slide is set at 4 ems.
- (K) Assembler slide clamp, clamp must move freely on assembler slide.
- (L) With assembler slide clamp set for 30 ems (using a 30 em slug between star wheel and assembler slide finger as a gauge) an additional $1/2$ em forward movement of assembler slide must be available when assembling slide bracket pawl is depressed.
- (M) Set assembler slide scale to align with L.H. face of assembler slide clamp.

ASSEMBLER ENTRANCE PLATE ASSEMBLED

All models

- 1. All plating on guides must be intact.
- 2. All guides when properly formed must not contact assembler entrance plate.
- 3. Assembler entrance plate must be parallel or extend forward not more than $1/32''$ from surface of assembler plate.

4. Further trimming of assembler guides to be made only if necessary for proper circulation of matrices.
5. Assembler cover must contact matrix delivery belt support plate within .020.
6. Side play in assembler entrance cover must not exceed .015.
7. Assembler entrance cover hinge pins must not be loose.
8. Assembler entrance cover support must have a friction fit.
9. Assembler entrance cover latch must permit cover to close freely and hold securely.
10. Magazine name plate holders must lay flat on cover.
11. Inside surface of cover should be clean and smooth.
12. Clearance between assembler entrance plate and assembler plate - Minimum .005 - Maximum .070.
13. Matrix delivery belts - adjustable pulley to be set in lowest position before applying new belt.
14. Matrix delivery belt idler pulley - must be free of all interferences and sufficient tension to keep matrix delivery belt taught.

ASSEMBLER ELEVATOR, SAFETY LEVER CAM AND BAR

All Models

1. Assembling Elevator

- (A) Must rise and fall freely - side play not to exceed .005.
- (B) Balance spring to be adjusted to allow elevator to return completely to normal position.
- (C) Assembling elevator gate tension should be adjusted to not less than 8 ozs. nor more than 12 ozs. Roller must rotate freely.
- (D) Assembling elevator gate must be free from any interference when opened to maximum position.
- (E) With assembling elevator in normal position - clearance between matrix bars (at 30 em position) and assembling elevator gate should not be less than .002 nor more than .015.
- (F) When assembling elevator is raised to the position where gate adjusting screw leaves cam, the elevator gate must always contact or hold the first matrix of any length of line.
- (G) Assembling elevator must open and close without interfering with spacebands.

- (H) Assembling elevator gate and back rail rails with (over surface) tenon to prevent matrices from falling back.
- (I) Assembling elevator latch and short duplex rails should move backward and forward freely and locate in detents.
- (J) Space between assembling elevator back plate and front plate - Minimum .566 - Maximum .572.
- (K) Space between assembling elevator back plate and assembler plate should not exceed .010.
- (L) Assembler elevator gate matrix retaining rail must not interfere with matrices when gate is opened.
- (M) Spaceband buffer finger (D-5441) should operate freely, and must not interfere with assembler slide when assembling elevator is raised to maximum height. Lower end of spaceband must not bind on spaceband buffer when spaceband moves from right to left in assembling elevator. Spaceband slide ears must not absorb shock when spaceband drops in assembling elevator.

2. Auxiliary Line Safety Lever Cam (D-2919)

- (A) When duplex rails are moved forward and when the first elevator slide filling piece is in operating position, the assembling elevator should be prevented from being raised to its maximum height.

3. Assembling Elevator Stop Bar (D-4207)

- (A) With assembling elevator raised to its maximum height (banking on stop pin, (D-97)), assembling elevator upper and lower rails should align with intermediate channel rails for free delivery of matrices.
- (B) Space between assembling elevator latch (D-72) and stop pin (D-79) should not exceed .010.
- (C) Space between duplex rail and delivery channel rail should not exceed .020.
- (D) Assembling elevator gate matrix fender should be in line with inner surface of assembler gate.
- (E) Assembling elevator gate em scale strip (D-6529) must be positioned high enough to permit grasping with fingers.

LINE DELIVERY CARRIAGE AND CHANNEL

All Models

1. Line Delivery Carriage

- (A) Check free movement of line delivery carriage and line delivery lever when line delivery link is disconnected.
- (B) Adjust line delivery lever when roller is on highest point of line delivery cam so that line delivery slide short finger returns to within .005 to .020 of spaceband box.

- (H) Line delivery carriage must maintain its original position when Comet is in the 1st elevator jaw.
- (I) Line delivery carriage must maintain its original position when slide is delivered to 1st elevator jaw.
- (J) Delivery slide must stop in its original position in the 1st elevator jaw.
- (K) Line delivery carriage must move freely and without interference in 1st elevator jaw and first elevator jaw.
- (L) Line delivery carriage must remain in its original position until contacted by nutcase being delivered to 1st elevator jaw.
- (M) Adjust delivery slide and wire (Flying Pin) to release delivery slide, as follows:
1. Assembler slide returns to normal.
 2. Assembler elevator latch engages.
 3. Line delivery carriage is released.
- (N) Line delivery latch telescopic screw (1-4043) (Comet type only) must have full contact with latch.
- (O) Line delivery latch safety arm (D-7088) must have sufficient tension to return latch to normal position which prevents latch from re-engaging with assembling elevator.
- (P) Line delivery latch safety arm must have a minimum of side play. (When end of latch is pulled forward, it must not rest on stopping bar.)
- (Q) Line delivery slide stop adjusting screw (D-1548) must be adjusted to permit line delivery short finger to enter 1st Elevator Jaw 13/32".
- (R) Line delivery carriage tension to be adjusted to insure complete movement of line delivery carriage to its stop position without any cushioning by air cylinder.
- (S) Adjust air cylinder to permit smooth movement of line delivery carriage to stop position.
- (T) Line delivery carriage long finger block must not interfere with first elevator jaw line stop.
- (U) On return of line delivery carriage to normal position, the line delivery nut must disengage from line delivery carriage when a slide is placed between short finger and spaceband box.
- (V) (On Comet) - Raise safety latch to interfere with return of line delivery carriage.
- (W) On the return of the line delivery carriage, the line delivery long finger must maintain its original position.

2. Line Delivery Channel

- (A) Line delivery channel back rail must not bank against face plate
- (B) Line delivery channel back and front rails must align with 1st elevator back and front jaws. Check lock nuts on line delivery channel adjusting bushings.

Use matrix block to test normal alignment between 1st elevator jaw and line delivery channel.

- (C) Space between 1st elevator jaw and line delivery channel should be not more than .006.
- (D) Space between line delivery channel back rail and front rail - Minimum .566.- Maximum .572.
- (E) Line delivery channel back and front rails to contact seat on castings.
- (F) Check for application of ejector blade scale bar plate.

KEYBOARDS

All models

1. Check keyboard layout and type as per specifications.
2. Key levers must operate freely, and return to normal position after being depressed.
3. Check for missing and damaged key buttons.
4. With keyboard pivoting stud and spring tightly secured, keyboard must contact both base pads without the aid of keyboard locking screw (H-2496). When swung open keyboard may drop not more than 1/32".
5. If excessive effort is required to open and close keyboard, its condition must be questioned.
6. Keyboard lever locking plate (H-2368) must return to normal position when latch is released.
7. Keyboard lever locking plate latch (H-2367) must operate freely with a minimum of play between latch and holding screw.
8. With keyboard lever locking plate in the locked position all key levers and spaceband lever must be inoperative.
9. Em, En and thin space knobs must be free of interferences and function freely.
10. Keyboard stop screw bracket adjusting screw (H-6801) must bank against base.

11. Assembling Elevator Lever, assembled (BB-716) (BB-480) must have maximum contact with assembling elevator detent, (I-3554).
12. All keyboard covers must be fitted for easy removal or application.
13. Keyboard cam roll shaft gear guard must be tight and free from interference with gears.
14. Keyboard pulleys (double pulleys for Model 31 and Comet, single pulley for all other models unless otherwise specified).
15. Check condition of rubber rolls for damage and oil with removing the roll.
16. End play in rubber roll shafts must not exceed .010. Shafts must rotate freely when bushing set screw (H-144) is tightened.
17. Keyboard cam rubber roll shaft gears must be the nylon type.
18. Clearance between cam yoke plungers and cam yokes must not be less than .004 nor more than .01.
19. Check for sufficient "bite" between cam yoke and triggers by jarring keyboard. (If "bite" is insufficient, cams will rotate.) Maximum "bite" .045.
20. Check alignment of keyboard triggers and weights, weights must have full "bite" on triggers.
21. Check overthrow: When cam is rotated to its highest position, keyboard cam yoke spring plunger should rise not less than .030 or more than .093.
22. Check rise of short keyrod: When cam is rotated to its highest position, keyboard short keyrod should rise not less than .320 nor more than .340 when keyboard is open.
23. The keyboard cam stop strips front and back must not interfere with free rotation of cams. The stop strip must have sufficient contact with the cam stop pin to prevent the cam from rotating until key lever is depressed. All machines equipped with teletype units must have double thickness stop strips.
24. Spring bar latches (H-2436) must operate freely and hold firmly.
25. If it becomes necessary to alter the space between the short keyrods and long keyrods or for any other alignment purposes, the short keyrod banking bars must not, under any circumstances, be used or moved in any direction to accomplish the necessary adjustments.

MOLD SLIDE ASSEMBLY

All Models

1. Mold Disk

- (A) Mold disk guides, (upper and lower) front surface must contact Mold disk at all surfaces existing between the L.H. end of the one mold and the R.H. end of the following mold.
- (B) At least 80% of guide contact surface should be parallel to mold disk surface.
- (C) Use "Red Lead" to check contact. Guides must be set close enough to remove "Red Lead" from mold disk surface without causing the disk to bind when rotated.
- (D) A .002 feeler must not enter between mold disk guides and mold disk at points of inspection indicated in paragraph (A).
- (E) Mold disk guides must slide freely in keyway of mold slide. Maximum clearance not to exceed .0015 between key and keyway.
- (F) Mold disk plate (# 692) must not interfere with free movement of mold disk when mold disk plate screws are tightened. A .002 feeler must not enter between mold disk plate and mold disk in excess of 1/2 inch at the points in line with holding screws.

2. Fit of Molds

- (A) Molds must fit freely in mold disk pockets with a maximum end play of .002. If molds do not enter mold disk pockets, check alignment of mold body with mold cap. Mold cap must not extend beyond mold body. If mold body and mold cap alignment is according to specifications, remove metal from L.H. side banking surface of mold disk pockets. Removal of metal shall not exceed .002.
- (B) All molds must seat squarely on mold disk pocket surfaces.
- (C) R.H. and L.H. Mold Cap screws to be tightened securely. Center screw to be brought up to touch lightly.
- (D) First Elevator slide safety stops. (Headletter Block) must not extend beyond face of mold and must not be more than .004 nor less than .002 above the Mold Cap surface when using 36 pt. liners.
- (E) Spotting of Mold Disk for proper timing with Mold Disk Pinion (Handle) must be uniform. Use a #29 Drill.

3. Fit of Mold Slide and Column

- (A) Space between Mold Slide and Column at lower end of Mold slide should not exceed .003 nor be less than .0015.
- (B) Up and Down play between Mold slide and Column dovetail after Column

space between blades, must not exceed .020 and must be less than .006 in either direction.

4. Ejector Blades

(A) Ejector Blade alignment with respect to Mold.

(A-1) Advance all blades (30 em) to a point flush with face of mold for the first check and then to a point two inches beyond face of mold for an additional check.

CAUTION: Tolerances permit blade thickness to vary from .052 to .054. A combination of these various thicknesses in any one set of blades may affect the final parallel setting of blades with respect to constant side of mold. In such cases individual blades may be changed in order to obtain a more uniform condition in the final adjustment. It is recommended that your immediate supervisor be consulted.

(B) Ejector Blades shall be parallel, vertically, with respect to constant or cap side of mold. A .002 out of parallel condition will be acceptable.

(C) A minimum of .002 clearance between ejector blades and constant side of mold will be acceptable.

(D) A minimum of .002 clearance between ejector blades and cap of mold (when using 5 point liners) will be acceptable.

(E) Ejector blades (all 30 ems) when pushed forward to a point flush with the face of mold shall be parallel to face of mold within .004.

(F) Irregularity in length of Ejector Blades, with respect to each other, shall not vary more than .002.

(G) Face of Ejector Blades (Pushing surface) must be square. A .010 bevel or radius will be acceptable.

(H) Space between Ejector Blades and Ejector Blade Guide must not be more than .002. A .003 feeler should not enter more than 1/2 inch when Ejector Blades are flush with face of mold slide.

(I) Peening of Ejector Blade Guide or Mold Slide Facing piece, will not be acceptable.

(J) Ejector Slide (F-2606) must move back and forth freely. Clearance between Ejector Slide and Ejector Slide keeper (F-1468) must not exceed .004.

5. Mold Disk Locking Studs and Blocks (Pull-up)

(A) Mold disk locking stud keeper (F-1265) and Screw (F-1266) must not extend beyond back surface of Mold Disk. Screws must be staked.

(B) Check diameter of Mold disk locking stud and blocks (use mold disk locking stud block (E-996) and stud (F-1264 as gauge.) Alignment of Mold Disk locking studs and Mold Disk Locking stud blocks. "Pull-Up."

- (C) Mold Disk Locking Stud Block and Wiper Locating Blocks Set (E-10)
- (D) Side motion (E-10) must be centralized.
- (E) Both Locating Blocks must be square with side of the vise frame.
- (F) Mold Disk Locking Stud Block - R.H. wiper (E-2061), when in normal position must extend approximately 1/32" beyond top of Block.
- (G) Depress wiper and make certain it returns to normal position.
- (H) Wiper must be lubricated.

6. Mold Turning Shaft Drive Pinion and Brake

- (A) Mold Disk Pinion: When mold disk is forward (engaged with mold disk locating studs), the Mold Disk Pinion, when pulled forward should return to its normal position freely with no interference from Mold Disk pinion driving pin. (Check in all positions of Mold Disk)
- (B) Play between Mold Disk teeth and Mold Disk Pinion teeth must not exceed .010.
- (C) End play in Mold Turning Shaft after Mold driving pinion (F-68) has been positioned and leveled must not exceed .006.
- (D) Mold Disk Pinion Flange (F-829) must be square with face of Mold Arm within .006.
- (E) Mold Driving Pinion and Mold turning Shaft must be reamed so that the small end of taper pin (F-215) extends approximately 1/32" beyond the outside diameter of Mold Driving Pinion.
- (F) Mold Disk Pinion flange (F-829) must be in a vertical position.
- (G) Mold turning cam shoes must be adjusted to a parallel position. (Use Micrometer to check). Space between Mold turning cam shoes and Square Pinion facings must be present but should not exceed .002.
- (H) Mold-turning Bevel Pinion set screw (F-202) must be on top when machine is in normal position.
- (I) Space between Mold Turning Bevel Pinion and Mold turning segment should not exceed .020 on all models except Comets and Model 31 for which the space should be approximately .080.
- (J) Mold turning shaft Brake - friction should be adjusted sufficiently to prevent Mold Disk from rebounding after Mold Disk has been rotated to casting and Ejection positions.
- (K) Mold turning shaft Brake friction Clamp Banking Lugs must be fitted to band on the side and lower surfaces of mold arm. When brake is completely assembled to Mold turning shaft and friction is properly adjusted the opening between each clamp must be reasonably parallel.

- (L) Mold ~~cap~~ must be against leveling clamp roller (H-1074) must be against front surface of brake friction clamp.
- (M) Back Hold wiper must be adjusted to Mold Disk when machine is in normal position (Wiper should be depressed approximately 1/16".)

7. Back Knife

- (A) Back Knife - Cutting edge must be free of any damage. Back knife to be adjusted primarily to remove coating of "Red Lead" applied to back surfaces of all molds without damage to surfaces of molds. Further adjustment of back knife to be made only if type height indicates a change is necessary.

First Elevator Slide Filling Piece

All Models

1. The first elevator slide filling piece (E-4376 two (2) letter flapper) (long) or lower one must lay flat on vise cap. The first elevator slide piece (long) or upper one must lay flat on lower one. Both upper and lower pieces must operate freely.
2. E-4366 - First elevator slide filling piece hinge block must lay flat on vise cap when clamping screws are tight.

Note:

- (A) The double (flapper) is applied to all models except Comets.
- (B) The single (flapper) is applied to all manually operated Comets.
- (C) No (flapper) is applied to Comets equipped with Teletype keyboards.
- (D) These standards apply in all cases except as otherwise specified on Customers' Order.

Slug Lever and Galley Bracket

All Models

1. (B-773)
 - (A) Slug lever must operate freely in vise frame when Slug Lever Shaft Screw (E-161) is tightened.
 - (B) Slug Lever Buffer (B-641) must, when pushed back, be parallel or slightly back of slug lever slug pushing surface.
 - (C) Slug Lever Buffer Spring (B-644) must always be in contact with Slug Lever Buffer (B-641). Tension on Slug Lever Buffer Spring must not be excessive. Buffer spring and buffer should yield sufficiently to permit slug pushing surface of slug lever to advance slugs on galley tray. With first elevator jaw down in headletter position (both flappers in operating position) Slug Lever Operating Arm Sliding Piece (B-786) must clear Slug Lever Operating Cam (B-778)

from 1/32" to 1/8" when sliding piece is rotated. Prior to doweled Slug Lever Link Arm (B-776) make certain that Slug Lever Link Eccentric Stud (B-781) is in a position to allow adjustment in either direction.

Note:

Make certain that all screws are tight and mechanism is free from all binds before doweled.

(D) Raise First Elevator Slide to a point where Slug Lever Operating Cam Sliding piece is opposite the highest operating point of slug operating cam. Adjust Slug Lever Adjusting Screw (B-774) to permit a clearance of 1/32" to 1/16" between sliding piece and operating cam. At this point check overthrow, it must be possible to push slug lever back until it banks on slug lever stop bracket. (B-776).

(E) End play in Slug Lever Operating Arm Shaft (B-780) not to exceed .006.

2. Galley Tray and (E-2051)

(A) Galley tray must contact both galley brackets. Galley tray to bank against R.H. galley bracket stop pin. Galley tray to fit snugly on locating dowel. Lower left hand side of galley tray to bank on L. H. galley bracket. Galley tray slide (E-864) must have sufficient tension to prevent slugs from shifting on galley tray. Tension should not interfere with movements of slugs on galley tray by slug lever.

(B) R. H. Galley Bracket (E-2055). This bracket must be positioned to align vertically with edge of Knife Block surface on vise frame. (Bracket may be set back a maximum of .015 from edge of vise frame surface.)

(C) Galley Bracket Guide Fingers (E-861 and E-4308) must rotate and slide with friction when screw is tight.

(D) Galley Bracket slug buffer spring (E-1797) should lay flat on galley bracket.

First Elevator Slide and Jaws

All Models

1. First Elevator Slide (E-4249)

(A) Slide must move from casting position to transfer position freely. (Clearance between slide and guiding gibs must not exceed .002 at any point of travel.)

(B) First elevator jaw back surface must be parallel, horizontally and vertically, with vise cap banking surface. (Clearance between first elevator jaw and vise cap must not exceed .002. Clearance between first elevator jaw and line delivery channel back and front rails must not exceed .006 nor be less than .004. Clearance between

First elevator jaw and immediate channel box must not exceed .012 nor be less than .002).

- (G) When first elevator lever link (B-271) is attached to First elevator slide, it must align with First elevator lever. First Elevator Lever Link Eye Bolt (upper B-91) must be 3/4" from top of First Elevator Lever Link Upper Nut (B-89) to nearest edge of hole in eyebolt. First Elevator Lever Link Eye Bolt (lower B-92) must be 13/16" from first Elevator Lever Link Bushing (B-90) to nearest edge of eye bolt hole.

Note:

1. Make certain that all lock nuts are tight.
2. Do not alter adjustment of First elevator lever link for alignment of First elevator jaw and Delivery Channel.
3. First elevator Lever Link Eyebolt Spring Lower (B-95) must enter Lever Link Bushing notch (B-90) freely.
4. Check space between First elevator Back and front jaws. (use standard .566 - .567 gauge).
5. Check for clearance between First elevator Jaw back and First Elevator Jaw Back Guard (E-1854). (Maximum clearance not to exceed .006 nor be less than .002).
6. Check mat alignment between First Elevator Jaw and Mold. (New six point matrix for testing should be used.)

(A) Insert both matrices into First Elevator Jaw approximately 4 1/2" apart. Move Mold Disk forward to within .010 of vise jaws. Lift First Elevator Slide until matrices contact mold, hold firmly and test each matrix, neither matrix should be loose.

(B) Check up and down movement of First Elevator Slide with same matrices in same positions as referred to for matrix alignment. (Up and down movement must not exceed .010 nor be less than .008).

Note:

Make certain that first elevator slide adjusting screw and nut (E-429 and E-430) are securely tightened.

7. Check space between vise jaws and vise cap. (Use the .681 and .691 parallel bar gauge. When 1st elevator jaw is resting on vise cap, both vise jaws must move freely. When pressed against 1st elevator jaw, vise jaws must lay flat. Check for sufficient side movement of vise jaws with parallel bar gauges .681 and .691. Insert bar gauges between vise cap and vise jaws and in each case the vise jaws must contact, and be parallel vertically and horizontally with parallel gauges. In each extreme the vise jaw must lay flat vertically and horizontally against the .681 and .691 parallel bar gauges.

8. Check squareness of face of mold with vise jaws. When mold disk is pulled forward, mold must bank against vise jaws squarely. (A taper of .003 is permitted.)
9. Check clearance between mold and mold banking blocks (upper and lower) when mold disk is fully forward. (Clearance must not exceed .004 nor be less than .002).

Note:

When pulling Mold disk forward for checking parallelism with respect to vise jaws, make certain that hands are directly opposite each other when disk is pulled forward. Remove or make inoperative the - Vise Automatic Stop, Mold Disk Dog, (E-350) which will interfere with the forward movement of mold disk. Also check for clearance between First Elevator Slide Safety Stop Plate (E-993) and face of mold disk.

Make certain that mold and knife wiper flag do not interfere with each other.

MOLD CAM AND LEVER SETTINGS (BACK AND FORTH SHAKE)

All Models

1. Remove 1st Elevator Jaw, Back Jaw. Rotate cams to a point where the Resilient lever roller is on the highest point of Mold Cam Shoe Small (C-1651) (Second Shoe). At this point there should not be less than .003 nor more than .008 between face of mold and face of vise jaws.
2. At this same point there should be a minimum of 1/32" clearance between Back Face of Mold and Mouthpiece. (Pot shake). Removing 1/32" of material from banking face of - Pot Lever Eyebolt Nut, long (P-25) is permissible.
3. There should be a minimum of .010 between face of mold and face of vise jaws when Resilient Lever roller is on the highest point of the Mold Cams Shoe Large (1st shoe).
4. Side play between Resilient Lever roller and inside face of mold gear cam race must not exceed .015.
5. There must be a minimum of one washer on either ^{side} of the mold slide lever.
6. Mold slide lever (Resilient Lever) must operate freely when locking or unlocking.
7. Mold Cam Lever Handle (BB-249) must clear pot pump bracket and Mold Cam Lever Stop Pin (BB-146) when Handle is in its upper or locked position. Handle must also clear BB-146 Stop Pin when handle is fully depressed.
8. Mold Cam Lever roller must rest on the bottom of roller pocket on the Mold Slide.
9. Mold Cam Lever roller must clear mold slide when mold cam lever handle is fully depressed.

vises

All Models

1. Vise Handles

- (A) must rotate freely in bushings.
- (B) when locked handle must be at an approximately 30° past center.
- (C) handles must not bump or contact vise locking studs when vise is being closed.
- (D) Vise cap must not strike L. H. vise stud when vise is being closed.
- (E) Spring in vise frame when either vise handle is locked must not exceed .006.
- (F) Regular vise handles must be numbered 1 and 2 to correspond with numbers 1 and 2 on vise cap.

2. Vise Automatic Stop Rod (E-201)

- (A) Vise Automatic Stop Screw (E-204) must be adjusted to cause vise automatic stop rod to clear vise automatic mold disk dog when dog moves forward.
- (B) With a $1/32$ " spacer or washer placed on vise cap, at point where 1st elevator slide adjusting screw upper contacts vise cap, the machine must stop.
- (C) Raise 1st elevator slide and remove spacer or washer, lower 1st elevator slide gently, push starting and stopping handle to its in position, 1st elevator slide should then drop to vise cap which should lower vise automatic stop rod sufficiently to permit vise automatic dog to move forward and allow machine to continue its normal rotation.
- (D) On 12 line per minute machines it is necessary to push the 1st elevator slide down manually.
- (E) Vise automatic stop rod to be adjusted to prevent mold disk from advancing to a point where mold will contact lugs of matrices.
- (F) Vise Automatic Stop Lever (E-201) must be free in all positions during a complete cycle of machine.

3. Vise Jaw L. H. Wedge Bracket (E-1962)

- (A) Must be positioned vertically and horizontally to permit the free back and forth movement of vise jaw L. H. adjusting Bar.
- (B) Adjust wedge so that angles of vise jaw wedge block (E-1877) and wedge coincide.
- (C) When Wedge Bushing Clamp Screw (6304) is tightened, the Vise Jaw Adjusting Rod (E-1953) must be free of any binds.

- (D) Vise Jaw Adjusting Rods must move in and out a distance equal to one complete turn in and one complete turn out of the E-582 Vise Jaw Wedge adjusting bushing after L. H. margin is set.
- (E) Vise Jaw Adjusting Rod Locking Pin (E-4671) must engage freely with Vise Jaw L. H. Adjusting Rod (E-1876).
- (F) When rotating Vise Jaw L. H. Adjusting Bar to engage locking Pin with adjusting rod make certain that adjusting bar passes over center which tends to lock the locking pin while it is engaged in the adjusting rod. This condition can be observed by a noticeable snap that takes place after the adjusting bar has passed over center.
4. Spaceband Justification Bar (E-3615)
- (A) When 1st and 2nd Justification Lever are at their maximum height, the Vise Justification Bar must be parallel within 1/16", and both Vise Justification Rod Sleeves must bank on vise frame within 1/32".
- (B) Vise Justification rods must be free of binds.
- (C) Vise Justification Bar when in its highest position must not contact Vise Jaw Blocks (minimum clearance .020 maximum clearance 1/16"). Check by lifting Justification Bar manually.
5. Vise Closing and Justification Levers
- (A) When vise frame is being closed the justification lever must not strike the Vise Justification Rods. (Minimum clearance between rods and lever should not be less than 1/32").
- (B) Lifting surfaces of Vise Closing Lever should contact Vise Justification rod second roller uniformly. (Out of parallel not to exceed .010).
- (C) Vise closing lever roller must be in contact with cam at all times during the downward movement of Vise closing lever.
- (D) Lever rollers must cover cam surface except where cam surface is wider than rollers.
- (E) Clearance between Vise closing lever and mold arm brackets must not exceed .030.
- (F) Vise closing lever spring (light wire) adjusting must set 3/4" from top of nut to beginning of thread on rod.
- (G) Justification lever spring (Heavy wire) 11/16" (adjusting nut set 3/4 from top of nut to beginning of thread on rod.

FIRST ELEVATOR LEVER AND AUXILIARY LEVERS

All Models

First Elevator Lever, BB-276

- (A) Side play between Mold Arm Bracket and Cam Shaft Bracket when 1st Elevator Lever, Ejector Lever and Spacer Sleeve are assembled to shaft should not exceed .025.

- (B) Alignment of 1st Elevator with 1st Elevator Slide Link must be adjusted so that 1st Elevator Slide Link enters 1st Elevator Lever freely.
- (C) When Recast Block (E-792) in recast position, and 1st Elevator Slide in its highest position, there must be at least 1/32" clearance between 1st Elevator Link Eye Bolt (B-92) and 1st Elevator Lever Link Bushing (B-90).

Note: Check for clearance between recast block and 1st Elevator Slide Stop (E-792) when 1st Elevator is in its highest position.

First Elevator Auxiliary Lever

- (A) Normal alignment must be set by adjusting auxiliary lever assembled (BB-171). Roller (B-8) must align with 1st Elevator Cam and also lay flat within .003.

EJECTOR LEVER, BB-420

All Models

- (A) Lever must not be tight on shaft.
- (B) With Ejector Lever Link (BB-386) engaged in Ejector Lever, there should not be more than .035 nor less than .002 between Delivery Cam Shoe (C-1278) and Ejector Lever Shoe (BB-419).
- (C) There must be clearance between Ejector Lever Shoe (BB-419) and Delivery Cam at any point of contact.
- (D) Ejector Lever Adjustable Pawl (BB-165) must clear driving gear cam.
- (E) Side play in adjustable pawl must not exceed .025.
- (F) Ejector Lever Adjustable Pawl when adjusted should permit ejector blades to protrude approximately 1/64" beyond front end of Lower Knife Block Liner.
- (G) When Ejector Lever is fully forward there must be clearance between the lever and Main Cam Shaft.

STARTING AND STOPPING LEVERS

All Models

Vertical Starting Lever, BB-699

- (A) Automatic Stopping and Safety Pawls (C-190) should be set 15/16" from edge of Line Delivery Cam.
- (B) Make certain that shoulder on lower end of Vertical Starting Lever Shaft (BB-149) rests on column surface before set screw (BB-244) is tightened in the Vertical Starting Lever Bracket (BB-389).
- (C) Adjust Vertical Starting Lever assembly so that the automatic stopping pawl (C-190) has a full bite (1/4") on the Automatic Stopping Lever Upper (BB-685).

- (D) Adjust Vertical Starting Lever Stop Screw (BB-175) to allow from 1/64" to 1/32" clearance between automatic stopping pawl (C-190) and the Vertical Starting Lever (BB-392).
- (E) Set Adjusting Screw (BB-116) to permit Vertical Starting Lever Pawl to push or move automatic stopping pawl, not less than 1/32" nor more than 1/16" beyond the edge of Automatic Stopping Lever (BB-685).
- (F) When Stopping Pawl (C-190) has been pushed over to clear Stopping Lever (BB-392) it must not bank on Delivery Cam.

Note: All above settings to be checked with Starting and Stopping Handle in.

Starting and Stopping Levers

- (A) Handle (E-147) must work freely.
- (B) Check for interference between handle and Vise Automatic Stop Connecting Bar (E-406).
- (C) Adjust Vertical Starting Lever assembly so that the automatic stopping pawl (C-190) has a full bite (1/4") on the Automatic Stopping Lever Upper (BB-685).
- (D) Adjust Vertical Starting Lever Stop Screw (BB-175) to allow from 1/64" to 1/32" clearance between automatic stopping pawl (C-190) and the Vertical Starting Lever (BB-392).
- (E) Set Adjusting Screw (BB-116) to permit Vertical Starting Lever Pawl to push or move automatic stopping pawl, not less than 1/32" nor more than 1/16" beyond the edge of Automatic Stopping Lever (BB-685).
- (F) When Stopping Pawl (C-190) has been pushed over to clear Stopping Lever (BB-392) it must not bank on Delivery Cam.

Note: All above settings to be checked with Starting and Stopping Handle in.

Starting and Stopping Levers

- (A) Handle (E-147) must work freely.
- (B) Check for interference between handle and Vise Automatic Stop Connecting Bar (E-406).
- (C) With driving motor turned off, and main cams backed off of normal position slightly, check adjusting of Eccentric Stud (E-250) when Starting and Stopping Handle is in operating position.
- (D) Clearance between Eccentric Stud and Lower Lug of Vertical Starting Lever (BB-392) should be not more than 1/32" nor less than 1/64".
- (E) With driving clutch engaged with driving pulley or gear, check clearance between Automatic Stop Forked Lever (BB-13) and Automatic Stopping Lever, Lower (BB-198). (Clearance between Forked Lever and Stopping Lever must be approximately 1/32".)

- (F) When installed in the shaft, adjust main fork against STOPPING (G-3) first and then DRIVING (G-4).

DRIVING CLUTCH

All Models

Driving Clutch, G-4

- (A) When installed in the shaft, adjust main fork against STOPPING.
- (B) When shaft is in the DRIVING position with pull on STARTING lever, spring not between main fork between DRIVING Clutch Flange (G-5) and DRIVING Start Control Rod in Car Shift Bracket.
- (C) When DRIVING return to normal position, main fork levers become not fully disengage from DRIVING Clutch Flange (G-5) and not contact with DRIVING Clutch Bracket or DRIVING.
- (D) DRIVING Start Control and DRIVING Adjusting Bushing (G-239) not extend beyond the shaft from edge of DRIVING shaft.
- (E) When main clms return to normal position with stopping and starting lever in its normal operating position, the vise when opened, should cause the Vise Automatic Stop Lever (E-201) to contact the Stopping and Starting Lever Connecting Rod (E-112) and prevent the Vise from being opened completely. Vise should not open completely until Stopping and Starting handle is pushed into its non-operating position.
- (F) Starting Handle when pulled down completely, must not contact DRIVING Blade Indicator Switch Bar.

POT

All Models

Final Pot

Note: Check by hand, and use the special instructions.

"Check Up"

Note: When working with the lamp should be attached to a notice where not allowed to use rest of wire clip.

1. Open vise (E-201) and (E-202).
2. Unlock main drive flange.
3. Remove the stop pin.
4. Pull main drive forward.
5. Clean the surface of the main drive flange and the shaft.
6. Completely cover the surface of the main drive flange with the oil.
7. Push main drive back to normal position.
8. Close vise.
9. Move the main drive flange to normal position.
10. Pull main drive completely forward.
11. Insert the S-38 (E-201) into the main drive flange and move it forward. (E-201) should be in the normal (do not slide).

- 13. Pot Pump Lever (1000) 1-25 must be adjusted so that there is approximately 1/8" between shoulder of nut F-5 and pot lever when pot lever is fully compressed. ("In Wink")
- 14. Clearance between mouthpiece and mold must not be less than 1/32" during period of 2nd Justification ("Pot Shake").

Mold Alignment

- (A) Check alignment of moldpiece hole with respect to stop bracket. It is a fit approximately .001 to .002 over and insert in mouthpiece holder. Mouthpiece should seat in both banking pins.
- Note: Care in handling mouthpiece screws
- (B) Check lock-up on mold with largest point size liners in the mold disk equipment.
 - (C) If it is desired to check lock-up of other molds in disk do so by power only.
 - (D) Before banking off lock-up, make certain that liners, pot jacket cover or any other pass by interferences have been checked.
 - (E) If customer molds are not available, or are not used, check lock-up with best mold available in mold disk.
 - (F) Check position of pot legs with respect to pot leg bushings. There must be at least one full turn of adjusting screws available after "Lock-up" has been accepted.
 - (G) Pot leg bushing protrusion should extend into pot leg recess at least 1/16". To verify, check distance between top of pot leg bushing and bottom of pot leg. This space should not exceed 5/16".

Pot Compression

- (A) Pot Lever Eye Bolt Nut (1000) F-3515 to be adjusted so that there is approximately 3/16" between coils of pot compression spring - F-27 - when machine is in normal position.
- (B) Pot Lever Eye Bolt Nut (1000) 1-25 must be adjusted to permit a space of 1/8" to 1/4" between shoulder of nut F-5 and pot lever when pot lever is fully compressed. ("In Wink")
- (C) Clearance between mouthpiece and mold must not be less than 1/32" during period of 2nd Justification ("Pot Shake").

POT PUMP LEVER AND STOP BRACKET ASSEMBLY

All Models

Pot Pump Lever, B-916

- (A) Pot pump lever roller must clear pot pump cam from .005 to .01 when machine is in normal position.
- (B) Pot pump lever spring, B-104 must be engaged in 2nd notch from end

of B-901 pot pump spring (BB-210)

- (C) Pot pump lever spring adjusting nut (I-3721) should be adjusted so that end of B-901 pot pump lever spring adjusting hook enters approximately 2-3/4" into adjusting nut. This is equivalent to end of adjusting hook being in the center of elongated slot in adjusting nut.
- (D) Pot pump lever latch, BB-210, (Quick Drop Latch) must operate freely when screw, BB-211, is tightened. This latch to be used only when casting from 19 pt. up.

Pot Pump Lever Stop Lever Bracket Assembly, BB-704

- (A) Stop levers (BB-512 and BB-564) must operate freely and lay flat on bracket surface when all screws are tightened.
- (B) When pot pump lever roller is resting on cam there should be from .008 to .012 clearance between stop levers and pump lever stop latch block, BB-558.
- (C) When stop lever (short), BB-564, is in normal position and it is lifted to its highest position, a .045 clearance between stop lever and surface of bracket will be acceptable.
- (D) A 1/16" x 45 degree bevel on bracket where stop lever strikes on its return to normal position will be acceptable.
- (E) Stop Lever Bracket should be adjusted so that there is an approximate even contact of pump lever catch block and both stop levers.
- (F) Pot Pump Safety Stop Lever (long), BB-561, should be adjusted to contact Pot Pump Lever Stud, D-1619, squarely and have a full bite.
- (G) Pot Pump Lever Stop Lever, BB-212, should be adjusted so that it opens sufficiently to clear pump lever catch block. This clearance should not exceed 1/32".
- (H) Pot Pump Lever Stop Lever, BB-564, should be adjusted so that stop lever does not open more than 1/2".
- (I) Clearance between RH Vise Jaw and Pot Pump Lever Stop Lever Operating Lever Adjusting Screw, BB-600, must not be less than .005 nor more than .030.

EJECTOR BLADE CONTROLLERS LEVER, F-4679

All Models

- (A) Must be adjusted so that the number of blades that move forward coincides with the Ejector Blade Scale Bar, F-6778.
- (C) Check forward movement of all ejector blades. Start by setting controller lever for 4 Em and continue to 30 Ems. In all positions ejector blades must move freely.
- (E) Adjust ejector blade scale bar so that all numbers are generally 1/2" to 1" in viewing window.

Spaceband Box

All Models

- (A) Spaceband Key Lever Adjusting Screw, D-547, must operate, must have sufficient friction to prevent key lever from slipping.
- (B) Spaceband Pawl, D-186, must operate freely.
- (C) Spaceband Key Lever Adjusting Screw must be adjusted to permit a clearance between adjusting screw and key lever when key lever is in its highest position.
(Clearance not to exceed .015.)
- (D) Spaceband Box Pawls, D-186, must operate freely. Spring tension to be uniform.
- (E) Spaceband Pawls should lift spaceband evenly.
- (F) Spaceband Pawls should lift only one spaceband at a time. Check position of Center Bar, D-487.
- (G) Lower end of Spaceband must bank against spaceband chute plate shott (D-677).

MATRIX AND SPACEBAND TRANSFER

All Models

- (A) Remove 1st Elevator Slide Guide Adjusting Strip, D-582.
- (B) With 1st Elevator Jaw in its highest position (or transfer position) place a thin pi mat in first elevator jaw and slide mat onto 2nd elevator bar. Do not slide pi mat beyond edge of 1st Elevator Jaw.
- (C) Place a strip of white paper into the Spaceband box to the left of Spaceband Pawl. Place an extension light on top of Spaceband Box so it will shine on the left side of paper. Look through the first elevator jaw from its left hand side and observe the position of the pi mat with respect to the 2nd Elevator Bar, the First Elevator Jaw and the Transfer Channel.
- (D) The space between the outer edges of matrix ears and lugs and inner surfaces of the Intermediate Channel Box should be reasonably uniform for the entire length of 2nd Elevator Bar.
- (E) The pi matrix should hang evenly in the first elevator jaw and be perfectly free when engaged with the Second Elevator Bar.
- (F) Make certain 1st Elevator Slide Stop Screw, E-90, is tightened. When Adjusting Screw, BB-175, is set make certain lock nut, I-186, is tightened. Adjusting Screw, BB-175, contact surface must be flat.
- (G) The Intermediate channel front Plate Extension, D-3147, should be parallel within .003 to the back surface of the Intermediate Channel Front Plate, D-3334.

- (H) The 2nd Elevator Bar Plate should lay flat on Intermediate Channel Box within .002. The 2nd Elevator Roller, B-309, must clear cam. (Minimum .003 - Max .015) The 2nd Elevator Bar Plate should be parallel to the Intermediate Channel Front Plate Extension within .002.
- (I) Side play between Intermediate channel pads or bosses and face plate surfaces. A .002 feeler should not enter more than 1/8 on an inch at any point between these surfaces.

First Elevator Slide Guide, D-2262

- (A) Clearance between Intermediate Bar, D-2333, and 1st Elevator Jaw must not exceed .003 (paper pull).
- (B) Clearance between Intermediate Bar Pawl, D-150, and 2nd Elevator Bar must not exceed .010 nor be less than .004.
- (C) Check height of Intermediate Bar Pawl. When manually raised to highest point, the bar pawl should be in the line with or not more than 1/64" below 2nd Elevator Bar.
- (D) Intermediate Bar Pawl should be centralized with respect to the 2nd Elevator Bar.
- (E) Intermediate Bar should be parallel to top of 1st Elevator Jaw.
- (F) Matrix combination teeth must not contact intermediate bar.
- (G) Check 1st Elevator Slide Guide Adjusting Screws, D-99, to see that they back against face plate.
- (H) Check 1st Elevator Slide Guide Adjusting Strip, D-582. This should be adjusted to depress the 1st Elevator Jaw Duplex rail to permit Matrices on the upper rail of 1st Elevator Jaw to drop to the lower rail. When fully depressed the duplex rail should be flush or not more than .010 behind surface of 1st Elevator Jaw Rail.
- (I) 1st Elevator Jaw Duplex Rail Lever Operating Blocks, D-583, should back against side facing of 1st Elevator Slide Guide Adjusting Strip, D-582

Transfer Slide, D-3156

- (A) Right hand edge of Elevator Transfer Slide Finger, D-3154, should be 5-5/8" from left hand edge to intermediate channel box when machine is in normal position.
- (B) Elevator Transfer Slide Finger to be at right angle to top of 1st Elevator Jaw and square with matrices. When transferring matrices on to 2nd Elevator Bar, finger must be clear of all interferences.
- (C) Automatic Safety Pawl Buffer Adjusting Screw, C-194, should be set to cause the right hand edge of elevator transfer slide finger to stop when it has passed the right hand end of 1st Elevator Jaw 1/8", or when the cut out surface of the slide finger is parallel to the edge of the 1st Elevator Jaw.

- (D) The Tread Release Lever, C-410, assemblies in the edge of the slot in the Spaceband Pawl Lever.

Note: To make sure the line slips the cam, rotate until the spaceband lever and elevator transfer slide come together. Adjust the Elevator Transfer Slide Adjusting Screw, E-471, until the requirement is obtained.

- (E) Spaceband Lever Pawl, B-247, must be centralized on the Spaceband Lever.
- (F) Check adjustment of Elevator Transfer Slide Releasing Lever, D-148. The Elevator Transfer Slide Releasing Lever Adjusting Screw, C-910, to be set to permit a clearance of approximately $1/64''$ between transfer slide and releasing lever.
- (G) The Line Stop Lever Finger, E-5229, to be adjusted to clear 1st Elevator Jaw approximately $1/64''$.
- (H) The turnbuckle, 18 ft., to be adjusted to permit Spaceband Pawl Lat h to clear end of Spaceband Pawl approximately $1/32''$.
- (I) Spacebands and notches to transfer freely. Spaceband Pawl should carry a maximum of 30 spacebands when machine is operating at 6-2/3 lines per minute.

KNIFE BLOCK AND SLUG CHARACTERISTICS

All Models

1. Knife Block

- (A) Knife Block (E-97) must be securely tightened.
- (B) Knife Block should open freely to maximum width - (45 Pt.)
- (C) Check for clearance between assembling elevator and (E-2326) right hand slide bracket support when knife is opened fully.
- (D) Both knives to be free of nicks or damage on cutting edges.
- (E) With knife block opened to 18 pts., cutting edges of both knives should be parallel to each other within .006.
- (F) When Rotating Knife Right Sector Turn Knob (E-2344) to various point size positions, make certain Knob returns to its normal position after Knife R.H. sector locating Pin (E-2333) is engaged. When sector locating pin is engaged in point sizes below 18 point, it will be necessary to return Turn Knob to normal position manually.
- (G) Make certain Knife Setting Screw (E-2356) bears on flat surface of Knife R.H. Setting Screw Bush (E-2353).

- (H) Knife R. H. Cutting Edge (L.H.K) must be set and have enough spring pressure on it so that it does not flex when depressed.
- (I) Check for clearance between spring plate and slug. There should be a minimum of .005 clearance between slug and spring plate, when spring plate is fully depressed to avoid undue marking of slugs during ejection.

2. Knife Wiper Attachment

- (A) Must operate freely during its up and down movement.
- (B) Knife Wiper ("flag") (K-5868) must be adjusted to remove chips from cutting edges of both knives.
- (C) Knife Wiper Bar (E-2067) projection must always ride or contact surface of L. H. Knife.
- (D) Check highest and lowest position of "flag", make certain "flag" is adjusted to clear a 30 em slug during ejection.

3. Trimming of Slugs

- (A) Primarily the L.H. Knife should be adjusted to remove overhanging metal from the constant side of slug.
- (B) The Left Hand knife should be adjusted to the one mold specified for this purpose.
- (C) The Left Hand Knife should be adjusted until the overhang of metal on each end of a 30 em slug has been removed. This does not necessarily mean the surface of the constant side of a slug must also be trimmed. Due to variation of molds, Mold Disks Pockets, Mold Disk Studs, and Slug shrinkage, it may develop that the constant side of slug (surface below the overhang of metal) will be trimmed. This trim must never be heavy enough to remove any metal from the printing surfaces of any matrices.
- (D) Overhang of metal in between the ends of a trimmed slug usually is present; this is due to a slight amount of shrinkage of slug at this point or a bowed L.H. Knife. In either case this overhang is acceptable providing it does not exceed .005 when all other slug measurements are within tolerances.
- (E) Slugs must be parallel vertically and horizontally as per tolerances allowed.
- (F) The following dimensions and tolerances allowed are for a 12 point 30 em slug and can be used as a guide for any point size involved. For setting and checking trim use a full line of 12 point mats with a cap at each end of the slug and a cap at the beginning of each word.
- (G) All 4 or 6 molds in a disk may vary with respect to one another so long as they are within the tolerances indicated below.
- (H) Slug Tolerances
Full length (30 em) slug with type face to 18 point.
Nominal - .168 - Minimum - .1670 - Maximum - .1685. (Parallelism must be held within .005.)

The following are examples of acceptable slug readings:

<u>L. H. End</u>	<u>Center</u>	<u>R. H. End</u>
.1685	.168	.1685
.168	.1675	.168
.1675	.167	.1675
.168	.1675	.1675
.1675	.1675	.168
.167	.1675	.167

(I) Top to Bottom of Slug -

	<u>L.H. End</u>	<u>Center</u>	<u>R.H. End</u>
Top	.1685	.168	.1685
Bottom	.168	.1675	.168
Top	.168	.1675	.168
Bottom	.1675	.167	.1675
Top	.1675	.167	.1675
Bottom	.167	.1665	.167
Top	.168	.1675	.1675
Bottom	.1675	.167	.167
Top	.1675	.1675	.168
Bottom	.167	.167	.1675

(J) Type High Tolerances

<u>R.H. End</u>	<u>Center</u>	<u>L. H. End</u>
.917	.917	.917
.917	.918	.919
.918	.919	.920
.919	.918	.917
.920	.919	.918
.918	.918	.918
.919	.919	.919
.920	.920	.920

(K) There are cases where the H. Knife tends to dig into the constant side of a slug along the area where the overhang is removed by the trimming knife. The "digging in" varies in depth and can be caused by a dull knife. Since it is almost impossible to measure this depth in a practical manner, it is suggested that the Inspector consult his immediate supervisor for a decision.

4. Slug Margin

The first and last characters on all slugs should be flush or indented not more than .003 with respect to end surfaces of slug.

5. Slug Face Quality

All character faces must be free of imperfections that would cause poor

is present. Part lines between words should not be present. Place sprue in the Vise Jaw and First Character and between R. H. Vise Jaw and Last Character must not be present. (Note: Use quick drop attachment when casting beyond 14 pt.)

6. Slug Solidity

Slugs when broken for observation must be free to blow holes in an area from the top of type face to a point 5/16" below the top of type face. Bottom face of slug must maintain its solidity when casting 4 - 30 em 12 pt. slugs in 1 minute.

7. Alignment of Mouthpiece

The lower edge of mouthpiece holes should be flush or .005 above constant side of mold. End holes must be completely visible on slug. (Note: A more positive check may be made by inserting a pair of 5 pt. 30 em liners into a mold and casting a slug. All holes should be completely visible on slug. Auxiliary row of holes should be reasonably centralized on respective ribs.)

8. Mouthpiece Venting

Length of sprue will be acceptable from 0 to 3/4" of an inch. Bead or sprue should not exceed maximum width of mouthpiece vent. Type metal must not leak between mouthpiece and crucible face.

CAM ASSEMBLY

All Models

1. First Elevator and Vertical Mouthpiece Wiper Cam

- (A) Roller B-8 must cover the complete width of cam surface and lay flat within .003 of .001 inch.
- (B) First Elevator Cam Roll Stud (BB-118) must be locked in position with oil hole facing upward. Roller must rotate freely when stud is tightened.
- (C) Check for correct cam - (See parts list).

2. Distributor Shifter Cam (C-132)

- (A) The surface of the Distributor Shifter Cam should have a slight coat of grease applied.

3. Mold Turning Cam

- (A) Space between Mold Turning Cam Inner Face and the square pinion face must not exceed .018 nor be less than .006.
- (B) Cam Shaft Collar (C-91) should contact Mold Arm and L. H. Cam Shaft Bracket Banking face squarely. A .005 taper will be acceptable.
- (C) C-91 Collar must have no end play.
- (D) It should be possible to rotate Collar (C-91) by hand.

4. Vise Closing Cam
Check for damage.
5. Justification Cam
Check for damage.
6. Second Elevator Cam
Check for damage.
7. Pump Lever Cam
Check for damage.
8. Pot Cam
Check for damage.
9. Mold Cam and Driving Gear
Check for damaged teeth.
10. Line Delivery and Elevator Transfer Cam
 - (A) Check for damage and roller alignment.
 - (B) Cam should bank against RH Cam Shaft Bracket side surface.
11. Delivery and Elevator Cam Locating Piece (C-348)
This strip should fit snugly between Delivery Cam and Mold Gear Cam.

DISTRIBUTOR

All Models

1. Distributor
 - (A) Check for damaged Distributor Screw and Distributor Screw and Distributor Bar for example, rust, nicks, burrs, poor plating, etc. Check for free movement of Distributor Screws before and after Distributor Box is applied.
 - (B) Matrix Guard - Clearance between Distributor Screw and Matrix Guard should not exceed .010 nor be less than .005. Matrix Guard clearance between Matrices on Distributor Bar and Matrix Guard should not exceed .015 nor be less than .005.
 - (C) Matrix Guard should not extend beyond Distributor Box Rail.
 - (D) Space between Distributor Automatic Screw outside diameter to face of Distributor Bar must be .509 - .005 - .003. (use gauge).

- (E) Space between outside diameter of Swinging Screw and face of Distributor Bar Brass Strip and top profile of Matrix should be .002 - .002 - .000 (use steel gauge).
- (G) Clearance between lower or Automatic Screw and Matrix Bar Gauge should be .0065 - .005 - .003.
- (H) Timing of Distributor Screws. Back screw upper and swinging screw must be parallel to each other and at right angles to Distributor Bar. Lower Screw or Automatic Screw must be advanced approximately .006 - .006 - .002.
- (I) Clearance between Distributor Screw Journal and Distributor Screw Bearing must not exceed .003.
- (J) There should be no play between Distributor Screw Latch (G-18) and Bearing (G-13) when swinging screw is in operating position.

2. Distributor Box

- (A) Distributor Box should fit snugly in key-way of Distributor Beam.
- (B) Alignment of Distributor Box Rails with respect to Distributor.

Place the Matrix Block or Steel Gauge on the Distributor Bar. This block or gauge must slide freely into Distributor Box. Space between either side of block or gauge and both Distributor Box Rails should be approximately equal. Clearance between top surface of both Distributor Box Rails and bottom surface of Matrix Block or Steel Gauge Ears, when matrix block or steel gauge is raised to its extreme height, should not exceed .006 nor be less than .001.

- (C) Distributor Box Front Plate Lower Rail (G-1460) and Front Plate Upper Rail (G-3582) must never come in contact with Distributor Screws.
- (D) Distributor Box Font Distinguisher Stud Rod, Short (G-2872) must not contact Lower Distributor Screw.
- (E) Distributor Box Lift, when in its lowest position should clear bottom of matrix not more than 1/32" nor less than 1/64".
- (F) Distributor Box Lift ("bite") on lower surface of Matrix should be maximum (.027). (Out of parallelism of lift with respect to matrix should not exceed .005.)
- (G) Timing of Distributor Box Matrix Lift Cam (G-2042).

When Distributor Box Lift is raising a matrix with a .090 lug, there should be a clearance of .032 between ear of matrix and non-carrying side of Distributor Screws when Matrix is at the highest point of the vertical surfaces of Distributor Box Rails. (This is the point where the angular surfaces of box rails begin.)

- (H) Distributor Box Bar (G-3309)

Distributor Box Bar must be free in Distributor Box. Maximum side play.

not to exceed .0015. Distributor Bar point must be centralized with respect to Bar point slot in Matrices Space between bar point and Distributor Box Rails (Matrix banking surface) must not be less than .030 when rear end of Distributor Bar has dropped to its lowest position (when 2nd Elevator is away from Distributor Box Bar). Space between bar point and Distributor Box rails when 2nd Elevator is engaged with Distributor Box Bar must not exceed .038.

(I) Distributor Box Lift Stop (G-3190)

This stop must be adjusted vertically to a point equivalent to the highest point to which it is raised by the Distributor Box Lift Cam. The stop should also be adjusted horizontally so that the slot in the lift will engage with the projection of the lift stop. Caution should be used when adjusting the lift stop horizontally. The lift stop must not prevent the Box Lift from having a full "bite" on the Matrix.

(J) Font Distinguisher and Stud (G-2874) must move in and out freely and lock securely in off position.

(K) There should be sufficient overthrow or yield in Distributor Box Cam Lifting Lever (G-435), to permit the Distributor to continue to rotate without causing any damage to Distributor Box Lift mechanism when any interference prevents Box Lift from rising normally.

(L) Distributor Box Front Plate Upper Rail Spring (G-439) must be adjusted to contact matrices. Pressure of spring against matrices should not be great enough to interfere with normal movement of matrices through Distributor Box.

(M) When 2nd Elevator Bar is engaged with Distributor Box Bar there should be an approximate .002 up and down movement of Distributor Box Bar.

(N) Second Elevator Bar Plate (G-1731) must lay flat against Distributor Shifter Slide Guide (G-241) within .002.

3. Distributor Shifter (G-1589)

(A) Distributor Shifter must slide freely in Distributor Shifter Slide Guide (G-241).

(B) Distributor Shifter Slide Buffer (G-2845) must be square with Matrix and pass through Distributor Box without interference when 2nd Elevator is disengaged from Distributor Box.

(C) Distributor Shifter Buffer must move in and out freely. Spring must keep buffer in its normal operating position.

(D) Distributor Shifter Slide Stop Bracket (G-4067) should be adjusted to permit Shifter Buffer to clear Distributor Box Rails approximately .015.

(E) The Distributor Shifter Slide (G-1589) should clear the L. H. end of 2nd Elevator Bar approximately 1-1/2" when at the point of passing.

4. Distributor Shifter Snubber (G-4898)

(A) Should be adjusted to prevent Distributor Shifter Slide from bouncing back when it contacts Distributor Shifter Slide Stop.

5. Distributor Box Matrix Guard (G-4041)

- (A) When Distributor Shifter is in normal position, Distributor Box Matrix Guard Pawl (G-4034) should clear end of Matrix Guard from .010 to .030.
- (B) When Distributor Shifter is withdrawn from its normal position (G-4034) Distributor Box Matrix Guard Pawl should enter slot in Matrix Guard freely.

6. Second Elevator Guide, Upper (G-3094)

- (A) This guide should be adjusted to permit approximately .004 space between the Second Elevator Bar and the Distributor Box-Bar.
- (B) Second Elevator Bar Adjustable Banks (G-4294 and G-4295) should be adjusted to align second elevator bar with Distributor Box Bar.
- (C) Second Elevator Guide, Upper should be adjusted vertically to permit a clearance of approximately .004 between guide and 2nd Elevator Bar Link Yoke (G-1682) at their closest point.

7. Function of Matrix on Distributor

- (A) Matrix should move along the entire length of Distributor Bar smoothly.
- (B) Matrix should not bind on lower Distributor Screw.
- (C) Place a "pi" mat on Distributor Bar and run Distributor at normal speed, if Matrix does not move smoothly it indicates nicks or burrs in the combination bar.
- (D) Check level of Distributor. Matrix should always lay against carrying side of Distributor Screws. Clutch end of Distributor should always be higher than Distributor Box end.

8. Alignment of Distributor Bar with respect to Channel Entrance

- (A) Place a "t" mat on Distributor Bar and turn Distributor slowly until mat drops. Matrix should drop on top of third partition. This adjustment will have to be altered to accommodate high speed Distributors.
- (B) Clearance between top of Channel Entrance partitions to bottom of Matrix suspended on Distributor Bar should be approximately .045. Caution - Use extreme care when oiling Distributor Bearings. Oil on Distributor Screws will be picked up by Matrices and result in much difficulty when this oil and accumulative dirt is carried to the magazine and escapements.
- (C) The Clutch must disengage when a thin Matrix, which is moving along on the Distributor Bar, comes in contact with Matrices which have accumulated in the channel entrance. This function should not cause the thin Matrix to become bent.
- (D) The pressure of the friction leathers against the driving pulley surface must be sufficient to carry a full 30 em line of Matrices through the distributor box and along the Distributor Bar without any hesitation of Distributor Screws.

- (E) In the case of Models other than Comets, the automatic spirals, when locked, must not lock so hard that it becomes difficult to unlock them with a reasonable amount of effort.
- (F) There should not be more than .001 end play in Distributor Screws to which the spirals are attached.
- (G) When spirals are locked the driving pins should not separate more than 1/8".
- (H) The tension on Distributor Clutch Springs (I-1027) should be sufficient to keep the Distributor Clutch Stops (G-1548 and G-1547) engaged when the Channel Entrance is opened and closed, and when the top magazine is "fanned" and returned to operating position.
- (I) When the Channel Entrance is opened and closed and when the top magazine is "fanned" and returned to operating position the Distributor should stop and start automatically.
- (J) When an obstruction in the path of matrices traveling along the Distributor Bar causes the spirals to lock the Distributor Clutch Stops (G-1548) and (G-1547) must disengage freely.
- (K) The tension of the Spiral Automatic Spring (G-1527) must be sufficient to carry a full 30 cm line of matrices along the Distributor Bar without causing the automatic spirals to lock. Too much tension will tend to cause thin matrix ears or lugs to bend.
- (L) Grasping the Knurled Starting Flange (G-2259) while the Distributor is running, and applying a reasonable amount of pressure, should cause the Distributor Clutch Stops (G-1548 and G-1547) to become disengaged.
- (M) Space between the Distributor Clutch Lever Screw (G-429) and the Distributor Clutch Flange Collar (G-1061) should be approximately 1/32".

10. Font Distinguisher

- (A) Place a Matrix in the Distributor Box either in front of, or directly behind Font Distinguisher. With the Font Distinguisher dial set to coincide with font slot in Matrix, adjust Font Distinguisher Lever Screw (G-1402) until Font Distinguisher (G-614) is centralized with Font Distinguisher slot in Matrix.
- (B) Set all dials to indicate same point size; elevate magazine frames to each position and check relationship between Font Distinguisher and slot in Matrix. Initial adjustment can be altered slightly to accommodate minor variations, from one position to another if the re-adjustment of adjusting screw does not cause the Font Distinguisher to interfere with Matrices passing through.
- (C) Font Distinguisher Lever (G-1069) should be centralized with respect to Dial (G-1065).
- (D) Font Distinguisher Lever (G-1069) must always rest on locating surface of dial.

- (E) There must be sufficient tension on Font Distinguisher Lever Spring to hold both the long and short Font Distinguisher levers in their normal operation position.
- (F) When rotating dials from one position to another, the locating pin must enter the locating hole freely.
- (G) Side play between Dial Locating Pin and Locating Hole will be acceptable providing it does not cause any interference between Font Distinguisher and Font Distinguisher slot in Matrix.

CHANNEL ENTRANCE

All Models

Channel Entrance Settings

- (A) Channel Entrance should open and close freely.
- (B) Side play in Channel Entrance when open should not exceed .025.
- (C) Channel Entrance when closed should have clearance between Channel Entrance Frame and Channel Entrance Side Brackets. A minimum of .005 will be acceptable.
- (D) Clearance between Channel Entrance Locating Slot and (I-3294) Channel Entrance Locating Block must not exceed .002.
- (E) When L.H. and R.H. Channel Entrance Hinge Brackets have been adjusted there should be a minimum of .020 between Hinge Brackets and Hinge Bracket Clamping Screws to allow for further adjustment if necessary.
- (F) When Channel Entrance is opened completely it should rest on (I-2689) Buffer Spring.
- (G) Tension on I-1173 Channel Entrance Spring should be sufficient to disengage (G-1538) Distributor Clutch Lever from G-1061 Distributor Clutch Flange Collar, when returning a "fanned" Magazine to its operating position.
- (H) Space between Channel Entrance and Magazines must not exceed .035 nor be less than .015. A taper of .015 will be acceptable.
- (I) Height of Channel Entrance with respect to Magazine ("Drop") should not exceed .010 nor be less than .000 or line for line. On the Comet the "Drop" should not exceed .005 nor be more than .005 below the line for line position.
- (J) Alignment of Channel Entrance*Partition with respect to Magazine Channel or groove. Standing on the back of a machine, the right hand side of the Channel Entrance Partition should extend approximately .015 to the right of Magazine Channel Wall.

MAGAZINE FEEDER

Model 31

Magazine Frame

- (A) Back of Magazine Frame should be square with respect to Magazine Frame. Back of Magazine Frame should be parallel to Magazine Frame.
- (B) Lower Magazine Frame should be square with respect to Magazine Frame. Any irregularity of Magazine Frame should not exceed .006. Magazine Frame should clear Magazine Frame from .02 to .03.
- (C) Magazine should lay flat at escapement.
- (D) Magazine should drop freely into an lift freely out of Escapement.
- (E) When Magazine is in raised or operating position the center bar should be flush or slightly below surface of Magazine Frame.
- (F) When removing or applying Magazine to machine, make certain Magazine slide into or out of position freely.
- (G) When Magazine is removed from Magazine Remover Arms, make certain Magazine is reasonably parallel to floor.
- (H) Make certain there is sufficient "bite" between Magazine Cross Bar and Magazine Arms to prevent Magazines from falling out of arms. When Magazine is pushed completely to the left or right when hanging on Remover Arms, there should be at least 1/4" "bite" on opposite side.
- (I) When I-5900 Support Arm Ltd. is lowered to position for removing Magazine, make certain that support arm banks solidly on L.H. Stationary Front Guide Bracket. At this point check contact of I-3291 Lifting Bar Cam and E-520 Lifting Bar Step Screw. A slight clearance should exist between these two points when Support Arm is banking on L.H. Stationary Front Guide Bracket. The clearance should not permit the Lifting Bar and Step Screw to become disengaged.
- (J) When Magazine Frame is raised by means of I-5227 (Magazine Frame Elevating Band) and I-5260 (Magazine Frame - Lower) Shaft Lever R.H. Banks against I-1078 Magazine Frame Lower Shaft Lever L. H. Stop Stud, the I-5226 Magazine Frame Lower Shaft must not contact the I-3296 Magazine Lower Lifting Bar.
- (K) Space between Magazine Frame should be .2500". Using Cherk gauge Y-4750 there should not be more than .010 clearance between any two checking points of guide and register for Magazine Frames.

Alignment of Magazine with respect to Assembler Entrance (Back Front)

- (A) Space between Magazine and Back Front should be from .025 to .045. A .010 taper is allowable.
- (B) Drop between Magazine and Back Front should be from .010 to .030. A .010 taper is allowable.

W. No. 1-1111

(A) When in position in a Magazine, make certain Guard Strip (Hayake) clears Magazine Frame.

Magazine Scale - (I-523)

- (A) Should not touch with Magazine Frame when Magazine is in position or lower than magazine in another.
- (B) Magazine should be in position when Magazine Frames have been "rigged" and returned to operating position.
- (C) Magazine should be in position with Magazine Guard when Magazine is applied or removed.

Magazine Monthly Guard Strip (Hayake)

When in position in a Magazine, make certain Guard Strip (Hayake) clears Magazine Frame.

Magazine Frame Guide Rollers - I-6228

Rollers must contact I-1892, I-1893, Magazine Frame Guides when Magazines are in the No. 3 or 4 position. When Magazines are in the No. 1 or 2 position, it is not necessary for contact between guides and rollers in No. 1 and 2 positions should not exceed .010.

Magazine Frame Guide Support Rail Roll, I-3227

Check clearance between rollers and guide rail with Magazines in their highest position, then lower Magazines to their lowest position and again check clearance between roller and guide rail. The Roller should just contact the Guide Rail in one position and should not have more than .004 clearance in the other position.

Magazine Frame Side Adjusting Blocks, I-603

The left hand block is constant and should not be re-adjusted. Clearance between the R.H. block and Lower Magazine Frame should not exceed .004.

Magazine Frame, Horizontal, Adjusting Screw, I-1878

Clearance between Magazine Frame Side Adjusting Block and Adjusting Screw should not exceed .004.

Magazine L.H. Supporting Arm (I-597)

- (A) I-5977 Banking Screw should be adjusted so that (I-5921) Magazine Lifting Bar Cam Shaft Operating Lever L.H. is in line with (I-5892) Magazine Lifting Bar Cam Shaft Stop Collar L.H.
- (B) (I-5922) Magazine Lifting Bar Cam Shaft Operating Lever L.H. must be free of any binding.

- (C) (I-597) Magazine Lifting Bar Cam Shaft Operating Lever L.H. Spring should be in contact with (I-592) Operating Lever to I-597 Lifting Bar.
- (D) (I-6010) Magazine Supporting Arm L.H. Safety Latch should engage (I-6013) Magazine Supporting Arm L.H. Safety Latch Finger to prevent removal of Magazine when Magazine is not in operating position.
- (E) When (I-6010) Safety Latch is in contact with boss on Magazine Frame there should be approximately 1/32" space between (I-6010) Safety Latch and (I-597) Safety Latch Finger.

Magazine Locking Strip, I-490

- (A) When Magazine Locking Strip is completely closed (J-5549) Escapement End Piece Pawl should clear (I-5921) Magazine Lifting Bar Cam Shaft Operating Lever R.H. to permit Magazine to be raised for removal.
- (B) When Magazine Locking Strip is completely opened there should be an interference of approximately 1/8" to 1/4" between (J-5549) Escapement End Piece Pawl and (I-5921) Magazine Lifting Bar Cam Shaft Operating Lever R.H.
- (C) Magazine Matrix Locking Strip must open and close freely by hand.

Magazine Locking Latch, I-3621 R.H., I-3622 L.H.

- (A) When (I-5904) Magazine Supporting Arm L.H. is returned to its normal resting position, the Magazine Locking Latches L.H. and R.H. should come in contact with top surface of lower Magazine Plate within .004.
- (B) When "fanning" a magazine in any position make certain Locking Latches clear Magazine Lower Plate.
- (C) When Locking Latches are closed they should have at least 1/32" "bite" on Magazine Lower Plate.

MAGAZINE FRAME ASSEMBLY

Comet

Magazine Frame

- (A) Back end of Magazine should not extend more than .005 beyond edge of Magazine Frame nor be more than .008 below edge of Magazine Frame.
- (B) Lower Magazine Plate should rest on upper surface of Magazine Frame. Any irregularity of space between Magazine and Frame should not exceed .006. Magazine Cross Bar should clear Magazine Frame from .002 to .025.
- (C) Magazine must lay flat on Escapement.
- (D) Magazine should drop freely into and lift freely out of Escapement.
- (E) When Magazine is lowered to operating position, the center bar should be flush or slightly below surface of Magazine Frame. At this point

I-8572, Support Arm L.H. stop pin should engage with L.H. Supporting Arm. I-8304, Lifting Bar Lock Stud should fully return to its locked position.

- (F) When removing or replacing magazines to machines, make certain Magazines slide into or out of position freely.
- (G) When Magazine is hanging on Magazine Removing Arms make certain Magazine is reasonably parallel to floor.
- (H) Make certain there is sufficient "bite" between Magazine Cross Bar and Magazine Arms to prevent Magazine from falling off of arms. When Magazine is pushed completely to the left or right when hanging on Removing Arms cam should be at least 1/4" "bite" on opposite Removing Arm.
- (I) When Magazine is in normal operating position, make certain that I-8567 and I-8568 Magazine Locking Levers R.R. and L.H. come in contact with top surface of Magazine, when locked.
- (J) When Magazine Locking Bar is fully locked I-8572 Support Arm L.H. Stop Pin and J-1012 Lifting Bar Lock Stud must be completely disengaged.
- (K) When I-8853 Support Arm L.H. is lowered to the position for removing Magazine, make certain that Support Arm banks solidly on I-8319 Supporting Arm Stop Stud.
At this point check contact of I-9027 Lifting Bar Cam with respect to D-69 Lifting Bar Cam Stop Screws. These banking screws should not prevent Support Arm from banking solidly on I-8319 Support Arm Stop Stud.
- (L) Magazine Frames, upper and lower side, Adjusting Screws should have a maximum of .004 clearance from Magazine Frames.

Magazine Frame Assembly Balancing Spring

This spring tension should be adjusted for maximum ease in shifting from one position to another, however, in either position (upper or lower) Magazine Frame must always bank on four banking screws within .004.

Alignment of Magazine With Respect to Assembler Entrance (Brass Front)

- (A) Space between Magazine and Brass Front should be from .025 to .045.
A .010 taper is acceptable.
- (B) Drop between Magazine and Brass Front should be from .015 to .030.
A .010 taper is acceptable.
- (C) The 7th partition of the "Brass Front" should be aligned evenly within the walls of the 19th Channel and the first Magazine Partition Channel.

Alignment of Keyrods and Escapements

- (A) Keyrods should be adjusted horizontally to obtain a full "bite" of Keyrods with respect to Escapement Plungers.

- (B) Space between Keyrod and Escapement Flanklets should be .010 to .015. A .010 taper is acceptable.
- (C) Clearance between Keyrod and Escapement when Keyrod is in its highest position should be .02 to .050. A .015 taper is acceptable.

Automatic Matrix Guard, I-8378

- (A) Should be adjusted to clear front end of Escapements from .015 to .020. A .005 taper will be acceptable.
- (B) Matrix Guard should contact both projections in center of Assembler Entrance Cover.

Separating Handle Guard, I-8671

This Guard should be adjusted to prevent raising the (I-8285) Magazine Frame Separating Handle when top Magazine is in operating position.

AUTOMATIC MATRIX GUARD

Model 31

Automatic Matrix Guard

- (A) When in normal resting position, the (I-787) Matrix Guard should be approximately .015 above the opening of Magazine.
- (B) When depressed, it should prevent shifting of Magazines from one position to another, if a Matrix is protruding beyond front of Magazine, or if there is a Matrix on the Distributor Bar.
- (C) If an Escapement Lever is raised, depressing of Matrix Guard Lever should Cam Escapement Lever back and allow shifting of Magazines from one position to another.
- (D) When Automatic Matrix Guard Lever is fully depressed, the Magazine Elevating Shaft Stop Pawl, I-5851, should clear the I-5848 Magazine Elevating Shaft Stop Shoe by approximately .015.
- (E) Clearance between I-5851 Magazine Elevating Shaft Stop Pawl and slot in Magazine Elevating Shaft Stop Shoe when engaged must not exceed .006.
- (F) When I-787 Matrix Guard is set, the I-5402 Magazine Locating Lever Stop Screw should bank on Distributor Bracket.
- (G) When I-5402 Magazine Locating Lever Banking Screw is Banking on I-8006 Distributor Bracket, the Magazine Elevating Shaft Stop Pawl Link, Upper (Turnbuckle) must not be banking on I-6721 Screw.

Automatic Matrix Guard and Associated Parts

- (A) Adjust F-5468 Matrix Guard Banking Screw so that Matrix Guard clears Matrix approximately 1/64".
- (B) Adjust B-471 Matrix Guard Stop Screw so that Matrix Guard does not

contact or strike Distributor Bar when I-5204 Automatic Matrix Guard Lever is fully depressed.

- (C) Adjust F-2343 Distributor Screw Guard Lever Stop Screw so that G-4634 Distributor Screw Guard Lever Operating Lever passes G-4127 Distributor Screw Guard Lever without binding.
- (D) Adjust E-2592 Distributor Screw Guard Lever Adjusting Screw to clear Matrix Guard by approximately .010.
- (E) Adjust (G-4633) Distributor Screw Guard Auxiliary Operating Link to permit a clearance of approximately 1/16" between (G-4634) Distributor Screw Guard Lever Operating Lever and (G-4127) Distributor Screw Guard Lever.
- (F) If the Distributor Box Matrix Guard Safety is engaged with the Distributor Matrix Guard or if there is an interference between Matrix Guard and Matrix on Distributor Bar, the (G-4625) Distributor Screw Guard Lever Operating Lever Shoe should engage in (G-4121) Distributor Screw Guard Lever Plate and prevent Magazines from being shifted to any position.

Magazine Elevating Mechanism (Cannon) (I-8581)

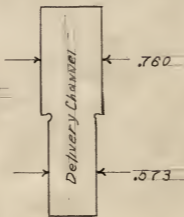
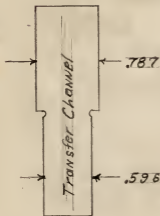
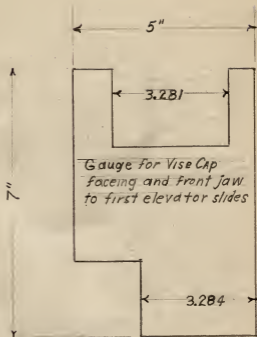
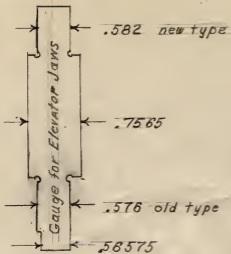
- (A) Should raise and lower without any interference.
- (B) Counter Balance Springs to be adjusted to permit locating of Magazines in all positions with a minimum of effort.
- (C) Tension on R.H. and L.H. Spring Drums should be adjusted uniformly.
- (D) Check diameter and depth of holes provided for adjusting tension of Elevating Shaft Spring Drums. Use (I-5043) Drum Winding Handle for Checking.
- (E) Make certain that Magazine Elevating Shaft Spring Drums Detents (I-5762) operate freely.
- (F) Magazine Elevating Shaft Stop (I-5530) Stop Screw (D-235) must be securely tightened.
- (G) Magazine Elevating Shaft Tie Rod (I-6414) must be free, after machine is doweled.

Magazine Elevating Handle (I-4918)

- (A) Handle should be in a vertical position when Magazine is in normal position.
- (B) (I-5146) Detent must have sufficient spring pressure to permit elevating or lowering of Magazines without becoming disengaged from detent locating spot.
- (C) Use caution in adjusting Detent Spring Pressure, too much spring pressure will prevent detent from being disengaged from its spot and may result in damage if and when any interference may be present.

Magazine Frame Separating Links (I-3307, I-5416, I-5937, I-5938)

- (A) (D-940) Friction Washer should apply enough friction to Separating Links to hold them in position at all times.
- (B) (I-5901, I-5902) Magazine Separating Link Safety Brackets should be adjusted to disengage Separating Links when Magazines are lowered.



New Erection Inspection

ERECTION AND INSPECTION REPORT • MERGENTHALER LINOTYPE COMPANY

NOTE: All items in this report must be checked and found correct before turning machine over to customer. Any comments or complaints should be entered under "Remarks" on back of sheet.

Agency Strip to base Factory strip Date

Office City State

Model and Serial Number Equipment: HY-Q TB M.S. E.P. S.M.D. A.E.S. T.S.

CHECK FOLLOWING ITEMS:

1. Distributor, proper height, position.
2. Alignment of channel entrance partitions with magazines.
3. Alignment of channel entrance lower plate with magazines.
4. Relation between distributor box rails and distributor bar.
5. Alignment of second elevator bar and distributor box bar.
6. Second elevator lever roll to clear cam in transfer position.
7. Proper setting of distributor box lift.
8. Proper setting between distributor box bar point and rails.
9. Distributor shifter clearance while passing through distributor box.
10. Distributor shifter banking for pushing last thin matrix against matrix lift.
11. Distributor Box Matrix Guard.
12. Distributor Screw Guard Lever.
13. Distributor clutch for releasing when entrance is opened, starting when entrance is closed and for throwing off when matrices clog entrance.
14. Distributor front screw lower to be oiled and run freely.
15. Font distinguisher adjustment.
16. Automatic bridge set properly.
17. Pi matrices to distribute properly.
18. Make certain all matrices, including the extra fonts, respond and distribute properly.
19. Proper alignment of magazines with stationary front guides, proper space and drop between magazines and stationary front guide holder.
20. Elevating Cannon, horizontal and vertical adjustment.
21. Proper positioning of stationary front guides to allow matrices to pass to assembler freely and without hesitation.
22. Pivoting front set properly with upper magazines and guides.
23. Oscillating front set properly with lower magazine and guides.
24. Make certain the oscillating front shifts freely and locks in both positions.
25. Alignment of tappets with escapement plungers, upper and lower.
26. Matrices to be free while assembling, tightly held upon raising elevator.
27. Alignment of assembling elevator to delivery channel regular, and on rail.
28. Alignment of first elevator slide to delivery channel.
29. Line delivery carriage for full return.
30. Release of line delivery carriage.
31. Line deliv. carriage banking screw.
32. "Waiting line" in delivery channel.
33. Release of line delivery pawl by line delivery carriage.
34. Proper height of first elevator slide with respect to mold and matrices.
35. Matrix alignment of mold and first elevator jaw.
36. Vise automatic stop rod.
37. Mold slide adjustment (.003" to .005" shake).
38. Lock up of mold and mouthpiece.
39. Mold Slide Safety to stop machine at first and second positions.
40. Proper alignment of mouthpiece holes with molds.
41. Make certain matrices and spacebands transfer properly.
42. Automatic line stop and mechanism.
43. Transfer slide cam pawl.
44. Assembler slide, brake and stop.
45. Spaceband release pawls and proper release of spacebands.
46. Proper pot and mouthpiece temp.
47. Slugs type high, point size parallel, margin at ends of slug.
48. Quality of slug.
49. Plunger for continuous downward travel (adjust if necessary).
50. Pot pump lever operating lever should clear about $\frac{1}{8}$ ".
51. Pot pump safety (duplex display), adjust at point of compression.
52. Mold wipers for contact.
53. Knife wiper must clean trummings from knives and clear ejector blades.
54. Ejector blades must coincide with ejector blade indicator scale. Clearance between ejector blades and constant side of mold (.002" to .007").
55. Galley and slug lever, slugs must stack properly.
56. Vise jaw adj. rod, to slide freely, coincide with indicator pointer.
57. All cam rollers to turn.
58. Main driving clutch.
59. Alignment of escapement levers to escapements.
60. Double "e" for single and alternating action.
61. Adjust counterbalancing spring drums for proper tension.
62. Check the electromagnetic safety system for proper operation.

Hydraquadder

1. L.H. and R.H. vise jaws not binding.
2. Manual Hydraquadder—As the first elevator rises after the cast, vise jaws should remain against the end matrices in the line under reduced pressure until the bottom of the matrices are $\frac{1}{4}$ " from being entirely removed from the contacting surfaces of the vise jaws.
- 2a. Electrically Controlled Hydraquadder—Make certain vise jaws do not move in before the first elevator seats on the vise cap or as the line is withdrawn from vise jaws.
3. Jaws must center correctly.
4. L.H. vise jaw pot pump safety must function properly.
5. No margin variance between quadded and justified lines.
6. Proper mesh of pump pinion or proper belt tension (V-Belt Drive).
7. Justification lockout adjustment.
8. Squareness of vise jaw faces under pressure (shim if necessary).
9. Position of hoses and wiring for possible contact with moving parts of machine or attachments.
10. Check for fluid leakage.
11. Lubricate:
Control valve operating levers
Control valve cam follower lever roller
Selector rack
Centering pinion and shaft
Selector handle operating shaft
L.H. vise jaw banking screw

Customer's Signature

ERECTION AND INSPECTION REPORT · MERGENTHALER LINOTYPE COMPANY

Check customer stock for supplies that might be required.

Notify Owner, Foreman and Operator that this is the machine inspection.

Did you secure a supply or Matrix Order?

Total Brought Forward

Erection Time (Regular Rate)	Charge	Hrs. @			Travel Expense—Incoming	Charge		
Erection Time (Overtime)	Charge	Hrs. @			Travel Expense—Outgoing	Charge		
Travel Time (Regular Rate)	Charge	Hrs. @			Hotel Expense	Charge		
Travel Time (Overtime)	Charge	Hrs. @			Incidental Expense	Charge		
Total Carried Forward					Total			

Remarks:

Service Engineer's Signature