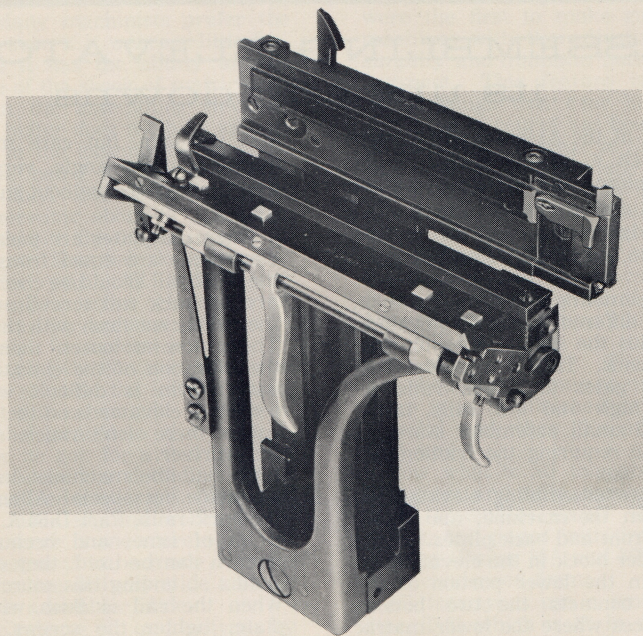


VOLUME 3

NUMBER 2

SHOP TALK

Published by Star Parts, Inc., South Hackensack, N. J. in the interest of those who maintain typesetting machines.



A WORD FROM YOUR EDITOR...

One of the gratifying rewards of editing Shop Talk is the letters we receive from all over the country expressing appreciation for the information we try to pass along to the men who maintain typesetting machines.

We receive many letters requesting suggestions to eliminate a specific problem. These letters are answered immediately. We certainly are sincere and honest in our attempt to help solve your machine problems and you can help us by giving us as much background as possible. Many of the ideas for Shop Talk articles come from these requests.

If you have a problem—whether it is a 1-machine shop or a large plant, don't hesitate to give us every bit of information you can, and we will do our best to help you. We realize that the smaller your plant, the more important these problems are to you.

Shop Talk is dedicated to be of service to you.

Cordially,

Guido E. Herman

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SHOP TALK

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Text of this issue of SHOP TALK set in 8 pt. StarNews

ASSEMBLING ELEVATOR ...its ups and downs.

Let's look at the Assembling Elevator—even though it is only a part of the entire assembling mechanism, it has its adjustments and problems. Many of us know the adjustments, but in the rush of production, they are frequently overlooked.

Not all assembling elevators are alike. Star has 23 different kinds of elevators, complete, plus the special ones for special adaptations. This is occasioned by the various gates and back rails required for high and low rails, large, medium and small assembler stars, as well as those requiring the friction rail for quadder use.

To check an assembling elevator, remove it from the machine, and re-assemble the front and back plates. Place a 30-em border block in the elevator and make certain the lower portion of the block fully contacts the two bottom milled surfaces where the lower matrix lugs normally rest. This check indicates if the plates are parallel from end to end, and whether the front and back plates are even. If the block is not making full contact, the plates are doweled incorrectly, and should be re-doweled or replaced.

To check the castings further, remove the border block, and using a spaceband as a gauge, check the clearance between the front and back plates. Hold the elevator to a light and move the spaceband slowly from end to end. Most elevators are slightly wider at the right end because the constant opening of the gate has a tendency to distort the castings. At no point should there be a bind when checking with a spaceband. There should be some clearance all the way across, or the spacebands will not seat properly on the spaceband buffer finger. Use a wide matrix and again check for clearance.

A good machinist can sometimes drawfile the back casting to take up some of

this warpage, but care must be used. Because of the angle, very little metal can be removed without misaligning the plates.

When the plates are parallel, and the clearances are equal from end to end, the back rail should be checked. Chances are the back rail screws are loose, and the rail is not flush with the back plate. These screws loosen themselves from the vibration of the elevator and tightening them is difficult when the assembling elevator is on the machine, because there isn't much space for a screwdriver.

We had the machinist in mind when we made up special Allen screws for the back rails, Part D-86-A. These save a lot of time, and because an Allen wrench can be used, they can be tightened . . . ending this source of trouble. When the rail is flush with the back plate, tighten the screws. Check the pawls and pin, so the pawl does not protrude beyond the rail or plate, or it will be impossible to adjust the gate properly. Replace the pawl and pin, if necessary, as well as the little stop pin in the back plate, which locates the forward position of the back rail pawl.

To check the gate, remove it from the front plate. Inspect the gate rod for wear on either end. If it is worn, replace it with a new one, D-82 or T-1316. Check the gate for wear in the holes through which the rod passes. If there is wear, there isn't much that can be done to get a good gate location. It may, in this case be necessary to install a new assembling elevator gate.

The assembling elevator gate stop pin, on the left end of the front plate, should now receive attention. This is the pin against which the gate banks at its closed position. Chances are it has either been peened or filed and will require replacing, D-570.

When these points have been checked,

inspect the roller and pin on the gate (D-923 and D-924) and replace if there is any wear, also check the gate pawl, the detaining plates, see that the duplex rails work freely and are not broken and assemble the elevator, before attempting to put it on the machine.

During the foregoing operations you have no doubt checked the matrix buffers, front and back. The back is steel, while the front can be either steel, fibre, or nylon. Many machinists prefer the fibre buffer, even if it wears a little faster, because it has the ability to help absorb some of the shock of matrices as they seat in the assembling elevator. Be sure the buffer does not bind against spacebands in the assembling elevator. This will be noted if the spaceband, during assembly, does not seat until it is into the elevator about $\frac{1}{2}$ ". It must be fitted flush with the front casting . . . and here again Star has done some of the work for you. All buffers are beveled to allow more clearance of spacebands as they are assembling . . . been doing this for several years.

When replacing the elevator, it may be necessary to relocate the left hand gib, or replace it with a new gib. The elevator should be located to the right so there will be no gap for a thin mat lug to wedge between the detaining plates and the assembler chute rails. When the elevator is installed, and works freely in the gibs, there is one more very important adjustment to be made . . . the trip-off of the line delivery slide and the return of the assembler slide.

Adjust the release pin on Linotypes by the small screw D-99 under the releasing rod or wire on Linotypes, or bend the T-816 Delivery Pawl in Intertypes so that the assembling elevator will follow this sequence; first, release the assembler slide; second allow the Assembling Elevator Latch D-72 to latch and hold the elevator . . . then release the line delivery slide. This is a fine adjustment, but the latch must work before the slide is released, or it will not hold the elevator in position while the line is transferring to the delivery channel rails. If this adjustment is not correct, there is unnecessary wear and damage to matrix lugs, spaceband sleeves, and both front and back delivery channel rails.

Use a very small amount of grease on the releasing pawl for easy release of the delivery slide. If you can't raise the assembling elevator and have it release by only the pressure of one finger, better check through the mechanism and find out why. Sometimes it is a bind in the

assembler slide brake mechanism, or the springs on the brake operating lever are either too strong or require lubrication. A hard release means extra operator effort, and raising the elevator with a "bang" will sometimes give a "double-black" character or a spilled line of matrices.

Might mention something of interest about gates. We pride ourselves in being practical people at Star Parts, and were the first to make gates for both machines with the adjusting screws to simplify and maintain positive gate adjustment. This feature is one of the nicest things that ever happened to a gate, and of course has been duplicated. To eliminate the wear in the gate holes, ALL Star gates are made with the rod threaded on the left end, and it screws into the left end of the gate itself. This eliminates the wear in the rod and gate . . . taking advantage of the long bearing surface in the front casting. There is no wear in the ends of a Star gate. Now here is something you'll appreciate . . . all Star gates are made from one solid piece of steel. That's right—we use about three times as much metal as there is in the finished gate . . . but it is solid and when it's adjusted—stays that way.

Now what is all this about high and low gates and rails, medium, large and small assembler stars? We've covered this in two pages with drawings in the catalog (Pages 35A and 35B) but here it is in condensed form:

All Intertypes use a small assembler star, T-61 which is 1" in diameter, and the low gate and rail, therefore there is no problem in ordering correctly.

Linotype machines use either of three sizes of assembler stars, D-2031, large, $1\frac{1}{8}$ " diameter; D-5912, medium, $1\frac{3}{16}$ " diameter (Comet and late machines); or D-6 or D-5910 small, which are approximately 1" in diameter. Each of these sizes require different gate and back rail pawls, and page 42 of the Star catalog shows which is required.

Now, about those high or low rails and gates. A low back rail, which is used on older machines, measures $\frac{1}{4}$ ". A high rail, used on later machines, measures .291" or is .041" higher than the low rail. We know you are busy people, so here is a quick way to check for high or low rails . . . run out about 8 or 10 ems of mats in the assembling elevator. If the rails are higher than the top of the mats, you have high rails. If the rails are even with the top of the mats, you have low rails. There's .041" difference, and you can see this without

measuring the rails. I have found, however, that somebody sometimes goofs, and mixes them up beautifully, so check both the gate and back rail.

A word of caution: Don't attempt to change to the high gate and back rails, or vice-versa, unless you replace the corresponding Assembling Elevator Stop Bar and Banking Plate, Assembled. Here are the part numbers: D-716 for low rails and D-4207 for the high rails. (See page 44). This is the unit which limits the upstroke of the assembling elevator, and it must match the gate and

back rail. It's not the stop pin, but the entire unit which must be changed, as it aligns the assembling elevator to the delivery channel rails as well.

This gives some idea of what to look for in your assembling elevator. If yours shows wear in the milling of the plates because the long finger has been rubbing, or if there is other wear or warpage, maybe you'd be better off to have us send you a brand new one, and we'll give you a Replacement Allowance when your old one is returned to us. We'll be pleased to give you more information.

HAIRLINES and SLIC

Of the thousands of users of STAR'S Slic, several have written to say that after using it they had noticed hairlines in their type. Coming from the company which markets Slic, this may seem like a startling statement. It is, but we are raising this point only so that we may present the facts, and thus give our readers a proper perspective of the problem.

In order to understand what has happened in these few cases, it is necessary to understand the basic facts.

Hairlines occur either when the sidewalls of matrices are broken down, or when defective machine adjustments and careless operators permit loose lines to be cast. In both cases it means that type metal flows between the matrix sidewalls and spaceband casting points, and shows up on the surface of the slug. But what has happened before this?

The cause of hairlines which occur from setting loose lines can be corrected quickly by the operator and the machinist. Those which are the result of broken down sidewalls, however, require more extensive treatment, first to alleviate the symptoms, and second, to locate and cure the cause.

It is not our purpose here to go into all the possible causes of sidewall breakdown, but to refer only to the principal cause which we might call normal wear, and then to show what happens when this type of wear occurs. (An extensive treatise on the cause of hairlines is available for those who are interested. Just drop us a line and we will be glad to send it to you.)

When a matrix falls into an assembling elevator, its angle of fall, as it

leaves the chute rails, causes the back toe of the matrix to scrape the character sidewall of the preceding matrix. The amount of impact varies with the size of the matrix, its finish, the imperceptible difference in pitch, and the adjustments of the assembler. But it is always present to some degree. Pick up a new matrix after a few days or even hours of use, and you will see the signs of this impact under a magnifying glass, and many times even without this aid.

Although the use of excessive graphite in the lubrication of spacebands is not recommended because of other troubles it causes, its presence in this case is beneficial. This excess graphite from the spacebands combines with moisture and dust in the air and compresses into the sidewalls of the characters during casting, filling in any areas which have been scraped away. This serves as a temporary barrier to the entry of metal. As the wall damage extends, however, from the constant pounding, type metal begins to seep in and replaces the compressed graphite to begin the building of what is known as a "false sidewall". Then, in the course of time a complete type-metal sidewall is built up.

In the intermediate state, when the graphite false wall remains as the only protector, it is important that no liquid reach it, as it will then be dissolved. This is exactly what has happened in the few cases previously mentioned. Slic was used in excess on the back or front mold wipers and the excess came through the mold cavity, or was deposited on the mold lips, and dissolved the soft graphite material.

If these matrices had type-metal side-

walls no harm would have come because of the excess liquid. Since Slic is chemically inert and has no effect on metals, it could not remove the metal sidewall.

Slic is a pure silicone product and is used as a mold release agent in foundries, and is also used as a high temperature lubricant between non-ferrous metals. In the case of the linecasting machine mold, only a light film on the mold surfaces is necessary, so that the slugs will release easily during ejection from the molds. Metal, in any form, will not adhere to a surface which has a film of silicone on it, therefore back and front surfaces also remain free of metal adhesion. Only a very light film is required, and if Slic is applied in accordance with instructions, there can never be an excess coming through the mold cavity.

Initially, Slic was made as an emulsion of water and silicone on the theory that the water would dissipate under heat after conveying the silicone to the desired surfaces. This theory proved correct, but there were minor exceptions.

For one thing, those who were a little careless could easily use an excess of this free-flowing fluid. In a few cases this caused the washing away of the false graphite sidewall as previously described.

In two or three cases a second problem arose. This happened in areas of salt water humidity, and especially where pot heat was turned off in winter over the week-end. When a back mold wiper was of the type to stay in contact with the mold and disk surfaces, any of the aqueous type of Slic could cause corrosion. If left for a complete week-end, without pot heat to evaporate the water, it might cause pitting of the steel surfaces through the quick action of salt water corrosion.

It was for this reason that we discontinued the emulsion, and adapted the pure silicone of a heavier viscosity. Pure silicone does not break down in temperatures lower than about 650 degrees F. Consequently, Slic if fed in proper quantities to replace the film which is carried off by the slug, it will last a relatively long time in the felt which holds it. If you have a Star Back Mold Wiper, or the type with holes in the back of the felt holder, a fair amount of Slic may be

fed, with the pointed nozzle of the dispenser, through the holes into the back of the felt. The Slic will then dampen the front of the felt and feed a moderate amount to the mold surfaces.

Each plant varies in the amount of Slic required, because the use of individual machines varies. Therefore it is desirable to experiment, in order to find out how much Slic is required for the mold wiper felt on your machines. Begin with small amounts, and gradually increase the amount until a very light film is present on the mold surfaces. After casting a number of slugs, feel the front surfaces of the mold to see if any excess is evident. When you have determined the ideal amount for your conditions, note how long the material lasts before it requires replenishment. Then put it on your regular maintenance schedule at the interval shown by your experiment. Most plants find that a once-a-week application does the job.

The safest course to follow, especially where there are false graphite sidewalls, is to apply Slic to the mold wipers by finger, rubbing it well into the felt.

Whichever method is used for the application of Slic, judicious use eventually makes all users enthusiastic. They find that even where there is a tendency for metal to accumulate on mold surfaces because of warping or rounded edges, the metal is more easily removed. In fact, it should rarely, if ever, become necessary to take a mold out of a machine for polishing, and thus one of the chief causes of rounded mold edges is eliminated. For it is the combination of the "elbow grease" used in the action of polishing combined with the small bur necessary abrasive in the mold polish, which does most to round the mold edges.

* * *

Some copies of the last issue of Shop Talk (Volume 3 Number 1) were defectively glued. If you should desire a replacement please let us know. A handy binder is also available to help keep your back issues of Shop Talk as a permanent reference. It is available from Star Parts Inc., South Hackensack, N. J. at a cost of 20 cents.

* * *



the YOUNGER SET

Sometimes I get quite a bang out of the signs over the machinist bench, like the one the other day that simply said: "It's what you learn after you know it all, that counts".

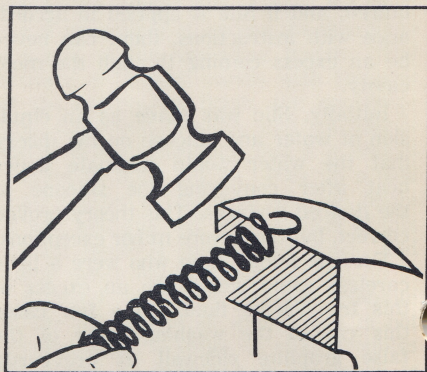
Have you ever tried to bend a new hook on an old spring and needed three hands to hold the spring, the duckbill pliers and a screwdriver while you try to fix the old spring?

A fellow machinist was trying to do this very thing when the apprentice walked over and saw him fighting it. After watching nervously, he asked if he could show him an easy way to put a hook on a spring.

George said he'd been doing it that way for a long time, but he wasn't too old to learn, so go ahead and take a stab at it.

The kid took the spring, a hammer from the bench, and put the first coil of the spring on a sharp corner of the vise. After he got it lined up the way he wanted it for a full coil, he hit the spring with the little hammer, and it bent out as neat a hook as you've ever seen. Said it didn't make much difference if it was a small or large spring. Just use a larger hammer, or in the case of a small spring, a sharper edge.

The silence was broken by a grunt and George was heard to say: "Well, I'll be darned."



A completely modern plant, with all up-to-date facilities for precision manufacture is a must at Star Parts. Our recent modernization program has drawn considerable comment from efficiency experts.

GRANDPA SAYS...



"Yes sir, son, some of them there type-settin' machines are really somethin'. Remember when I got off the case and the Clarion got their first machine, with a coal oil burner, mind you, we had jest two molds on that old baby. Yep, one for the news we was settin; and then we had that other big mold with the recess and them wide ribs, went all the way up to 14-pt., if I recollect, course we only had 8 and 10 pt., but when we got them big 14-pt. mats and cast her on that big mold, we sure had some dern good-lookin' heads. First head I set was about McKinley's assassination. You know we cuddent run that 14-pt. in a magazine cause 11 was as big as she'd take. Kept them 14-pt. in a old type case."

"Look Grandpa, there are still some of those machines running today," I assured him, "and that's the kind of machine I started on myself, don't you remember?"

"That's right, son, you did run one like that fer a spell, didn't you", Grandpa recalled. Then he went on; "just been down to the paper and was lookin' over the machine they just got from over to the Journal . . . It's got 6 molds all on one disk, mind you. And you ought to see them little bitty liners, and them fancy molds that's got the corners chopped off of them."

"That's the kind I was telling you about last fall, Grandpa." I reminded him. "Don't you remember I told you that they bought this machine from the

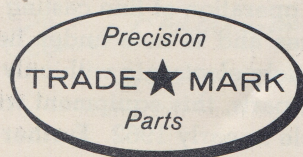
Journal and got a couple of new 6-pocket molds and liners from Star, and also had one of the ribs re-located on their headletter mold?"

"Kinda rings a bell, now that you mentioned it. Oh yes, that's right. That's why George was so happy, you know he's gettin' kind of cranky lately . . . said he'd jest put them 2 new 6-pocket molds and that big one in the machine, and said he got them from that Star Parts feller, and even got a dern good trade-in for the old molds. Son, them's sure nice lookin' molds."

"Yes, they are real nice looking, Grandpa, but any new mold is nice-looking, it's how a mold ejects, and stands up under heat, and how it's tempered, and how accurate it is, that really counts, Grandpa, and with these, George doesn't have to worry about that," I added.

"That's what George told me," said Grandpa with a smile, "said he'd been usin' Star Molds for 20 years, and even sent a couple of other molds back to their factory, someplace back East, and they even straightened them old warped molds and done a nice job on them too."

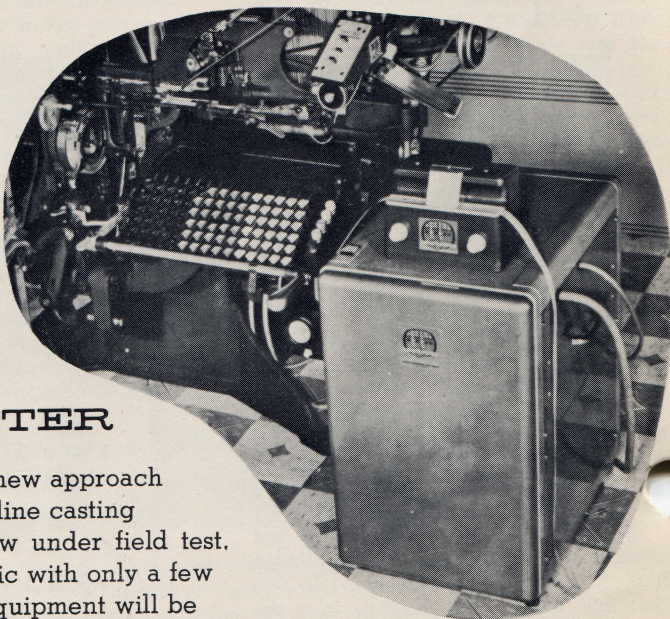
**IT'S SMART TO TRADE
WITH STAR.**



Attention: Linotype Mechanist

STAR PARTS, INC., SOUTH HACKENSACK, N. J.

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THE STAR AUTOSETTER

The AutoSetter is a new approach to tape operation of line casting machines and is now under field test. Completely electronic with only a few moving parts, this equipment will be available in early 1962. Further information on request.