Models E and F ELROD

MANUAL OF INSTRUCTIONS WITH PARTS LIST NUMBER 8 (Revised)

Instructions

for Operating ELROD Strip-Casting Machine, with List of Parts. Models E and F

8th Edition (Revised)

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How to Order Parts

- Look up part wanted on Plates 1 to 38 in order to obtain part number.
- Look up part number in numerical index at back of book. This will refer to page number of parts list containing name of part, and code name if ordered by cable or telegraph.
- 3. Small parts not illustrated are a part of a larger unit which is illustrated. Look up the larger unit per instructions in 1 and 2 above. The small part will be found listed with the larger unit. Plate 35 shows style numbers of bolts, screws, nuts, dowels and

washers. This illustration will assist in identifying these small parts.

- 4. When ordering parts, give part number and name, and serial number of machine.
- When ordering electrical parts, give the voltage, and state whether the current is alternating or direct. Also give cycles of alternating current.
- Please specify whether shipments are to be forwarded by firstclass mail, air mail, parcel post, express or freight.

Place your machine Serial Number here, for convenience in ordering parts:

Serial No.

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Installation of The Elrod

The minimum space requirements for the Elrod are as follows: Total space required, 6 feet by 9 feet. In this space the Elrod should be placed the long way to leave a space of at least 18 inches between the back of the machine and any obstruction, to provide for cleaning and oiling. A space of at least 2 feet should be allowed at the left end in order to provide room for opening the electric panel box. Also allow a space of 1 foot at the right end. The operator works in front of the machine and requires a minimum of $2\frac{1}{2}$ feet of space. If possible, more room in which to work is desirable.

Electrical Connections: For electric heated machines, the power wires are connected to the control panel box located on the left leg of the machine. Use No. 8 gauge wire for 110 volts, and No. 10 gauge wire for 220 volts. For gas heated machines a No. 14 gauge wire is required for the motor.

Gas Connections: A ^{1/2} inch pipe is used for the gas heated suchines, and this should be connected to a supply line of sufficient capacity to prevent pressure fluctuation, particularly if other machines are connected to the line. The pressure regulator on the Elrod reduces the incoming pressure to a uniform low pressure, but it cannot function if the main line pressure is reduced suddenly below this low pressure.

Water and Drain Connections: Connections for both inlet

and outlet are made at the rear of the machine. A shut-off should be provided on the main water supply pipe line. The water supply line should be $\frac{1}{2}$ inch pipe, which is reduced to $\frac{1}{6}$ inch at the machine. The drain pipe should be $\frac{3}{4}$ inch pipe or larger.

The Elrod is shipped assembled, except for the following parts: motor pulley, metal drip cup, mold cover, molds, pressure oiler weight, water drain sight glass and starting strips. Accessories are separate. In the case of some export shipments the motor is separate.

The Elrod should be placed on a sheet metal plate, preferably on an Elrod Base Tray EC1000, Plate 2, which is furnished as an accessory. This base tray has reinforced edges to keep it flat and to hold oil drippings so they do not spread on the floor and create a slipping hazard.

In placing the Elrod in position, take care to see that there is no twist in the frame as it rests on the floor. The right end of the machine should be lifted about 1% inch off the floor by means of a jack or a block and wedge placed under the center of the cross member of the right leg. Place a piece of paper under each foot of the right leg and then lower the machine until one of the papers is lightly gripped by one foot. Then place shims of leads or slugs under the opposite foot. Do not force this shimming material in place. Then remove the jack or block and wedge.

Installation of The Elrod

Motor: Except in the case of some export shipments, the motor is mounted in place with the motor lead wires connected. The motor pulley should be placed on the motor shaft with the smaller diameter of the pulley toward the motor. The set screw in the pulley should bear against the flat surface of the motor shaft and be firmly tightened.

In those cases where the motor is shipped separately, the motor should be fastened to the Motor Table EC1126C, Plate 8, with the four screws provided, the pulley side of the motor being away from the crucible end of the machine. The screw connections on the lead wires should be taped with rubber and friction tape.

Direction of Rotation: The motor armature must rotate in a clockwise direction, when facing the motor pulley.

Speed: When the belt runs from the small pulley on the motor to the large pulley on the counter shaft, a speed of approximately 56 strokes per minute will be obtained. When the belt runs from the large pulley on the motor to the small pulley on the counter shaft, a speed of approximately 84 strokes per minute will be obtained.

Metal Drip Cup: The metal drip cup should be kept on the top of the main table, under the mold housing, to catch metal drippings.

Mold Cover: The mold cover drops over the outer end of the mold chamber and should always be in place when material is being produced, for protection in the event the strip breaks. This mold cover supports a sliding plate that is held in place by the material as it passes through the machine. When the material breaks inside of the mold, this plate automatically slips down by gravity and prevents the molten metal from splashing out, When the strip of material breaks outside of this cover, no metal will splash out,

Molds: Each mold bears a serial and a style number. The intake end of the mold has a short slot, a round hole, or several holes. The opposite end has a long, beveled slot and this opening corresponds to the shape of the material to be produced.

The intake end of the mold should be inserted in the mold chamber, with the heads of the screws on the side of the mold facing toward the front of the machine. The mold protrudes about 34 inch when placed in position.

When casting 18 point or smaller on a Model F, the mold should be placed in the Mold Adapter EC13101/2B, Plate 13.

The molds should be kept in the Mold Container, AEC1020A, Plate 19, and Elrod mold oil should be poured in until it just covers the mold baskets.

Pressure Oiler Weight: This is placed in position as shown in illustration on Plate 16. The pressure oiler comes filled with oil. See that sufficient Elrod mold oil is in oil cup.

Sight Glass: This is placed in position over the water drain cup as shown in Plate 14.

Starting Strips: Starting strips are furnished with each machine. These strips are not samples, but are required for the starting operations. When the machine is in operation it is impor-

tant to set aside several full length strips for use as starting strips before the machine is shut down.

Testing: After the machine is set up and all electric, gas and water connections are made, remove the Plunger Pin EC1318B, Plate 7. Turn the machine over by hand a few times and if everything seems to be functioning properly, turn on the motor switch and allow the machine to run for a few minutes.

Observe the action of the machine and the function of each part. See that all bearings and moving parts are thoroughly lubricated. For bearing lubrication use a good grade of machine oil, S.A.E. 20 is a good viscosity to use. NEVER USE ELROD MOLD OIL FOR BEARING LUBRICATION.

If the machine operates smoothly and without effort, turn off the motor switch and replace the Plunger Pin.

Heating Crucible: As the machine is shipped, there is sufficient metal in the electric crucible to just cover and protect the crucible heaters. In the gas crucible no type metal is included. Molten type metal should be put in the gas crucible, if possible, before lighting the gas burners.

Before turning on the heat be sure the machine is in the regular idle position, with the plunger at the bottom of its travel, and that the zero mark on the front of the Puller Slide Cam Housing EC1485, Plates 6 or 12, is in alignment with the zero mark on the puller slide immediately above it. This position of the machine will also bring the zero marks on the hand wheel and on the left end of the table in alignment. The Sealing Valve EC1396D, Plate 2, should be in the closed position—which means turning it to the right, or clockwise—in order to prevent the metal flowing out through the mold housing after it becomes molten.

On the electric heated machine turn on the crucible heater by closing the switch on the control panel box located on the left leg.

On the gas heated machine, light the "Crucible Burner,"

The metal level in the crucible should be about 3/4 of an inchfrom the top. It takes about 1 hour and 20 minutes to melt a full crucible of type metal on the electric heated machine, and 1 hour and 30 minutes on the gas heated machine.

Fifteen to 20 minutes can be saved in melting out a full crucible of type metal by turning on the "Bottom Throat" and "Side Throat —High" switches on the electric heated machine, or the "Throat Burner" on the gas heated machine, in addition to the crucible heater. After the metal has attained the proper temperature, turn off all heaters except the crucible heater, until ready to begin actual production.

The thermostat on the electric heated machine is adjusted when it leaves the factory and should automatically maintain the temperature of the metal in the crucible between 590° and 600° Fahrenheit when heated and the machine is idle. Use a thermometer to check the operation of the thermostat when machine is installed. If the thermostat is out of adjustment it may be readjusted as explained in the section "Fixed Adjustments of The Elrod."

The Gas Heated Elrod: The gas crucible, which is shown on Plate 3, has a crucible burner, a throat burner and a mold housing

Installation of The Elrod

burner. The arrangement of the gas supply and heating system is shown in its entirety on Plate 15. The crucible burner is automatically controlled by a thermostat which maintains the temperature between 585° and 600° Fahrenheit.

The gas thermostat is adjusted at the factory, but may have to be readjusted for local gas conditions by turning the Gas Governor Adjusting Screw ECI816, Plate 3, as desired, using a thermometer to check the thermostat.

The throat burner is used to maintain the temperature of the metal in its passage from the crucible through the throat to the mold. All variation in heat is by manual control of the throat burner,

The mold housing burner is used for scaling and unsealing the mold and should not be used when material is being produced. To avoid overheating the mold and consequently damaging it, the operator should never leave the machine during the scaling or unsealing operation. A pilot light is located within the crucible casing. The crucible burner may be lit by opening its valve and depressing the Pilot Light Valve 397, Plate 3.

The spud in each of the burners calibrates the quantity of gas. Two extra spuds are furnished for each burner, so exact control of gas can be made. The air mixer sleeve on the burners controls the amount of air. The proper mixture of air and gas is one that will burn clean without "popping," and that will direct the hottest portion of the flame to the surface to be heated. A piece of $\frac{1}{2}_{16}$ inch iron wire placed in the path of the flame will disclose the hot and dead portions of the gas flame.

Aside from the fact that perhaps a little closer attention must be given to the proper regulation of heating and cooling conditions, which the nature of gas fuel makes necessary, the operation of the gas heated and electric heated machines is very similar, and instructions for the operation of the electric heated machine will apply to the gas heated machine.

Following are condensed instructions to be used as a guide for sequence of operations. Complete instructions for performing each of these operations are on following pages. These instructions have the same consecutive numbers as below.

- 1. Prepare mold.
- 2. Turn on heaters,
- 3. Check following operating adjustments:
 - (a) Cutter adjustments.
 - 1a. Cutter head guide plate.
 - 2a. Material guide plate.
 - 3a. Material gauge.
 - 4a. Material stacker.
 - 5a. Tension lever.
 - 6a. Material holding catch.
 - 7a. Stationary knife.
 - (b) Material clamp plate.
 - (c) Puller mechanism.
 - Gauge blocks.
 - 2c. Release plate and puller wedge shim.
 - 3c. "No Pull" adjustment.
 - 4c. Intermittent stroke.
 - (d) Motor pulley.
 - (c) Plunger pressure.

- 4. Prepare starting strip.
- 5. Clean mold housing, insert mold.
 - (f) For sizes below 6 point insert puller wedge shim and release plate after mold is inserted.
- 6. Insert starting strip and put on mold sealing plate.
- 7. Open sealing valve and seal mold.
- 8. Pump air from mold chamber.
- 9. Adjust heaters.
- 10. Set plunger lever lock for 6 point and larger.
- 11. Turn on motor.
- 12. Gradually adjust pull to maximum.
- 13. Remove plunger lock after running 2 or 3 strips.
- 14. Adjust pressure oiler.

1-Prepare Mold

The Mold Container AEC1020A, Plate 19, is mounted on the rear of the machine. Elrod Mold Oil AEC1250A is poured in this container until it just covers the Mold Baskets AEC1022 and AEC1023. The molds are placed in these mold baskets when not in use. To prepare a mold for use, remove it from its mold basket and set it upright, small end down on top of the remaining molds. It will be drained and ready for use if this is done as the first operation in starting the Elrod.

Additional information on molds is contained in section on "Maintenance,"

2-Turn on Heaters

When the type metal in the crucible is cold, the crucible heater should be turned on 1 hour and 30 minutes before starting the Elrod,

On the electric heated Elrod the switch on the Panel Box A302EC, Plate 2, should be turned on to heat the crucible. On the gas heated Elrod the "Crucible Burner" is turned on.

When the type metal in the crucible is molten, turn on the "Bottom Throat," "Side Throat—High" and "Sealing" switches on the left front of the electric heated Elrod. On the gas heated Elrod light the "Throat Burner" and "Mold Housing Burner."

If the metal is cold and the machine is not set at zero, it would

mean that the mold has been carelessly left in when the motor was turned off. In this case turn on the heat in the crucible only, and as soon as the type metal is melted, set the machine to the zero position and see that the sealing valve is closed before turning on any other heaters. If this is not done, the metal will flow out of the crucible.

The metal level in the crucible should be kept to about ³/₄ of an inch from the top. A metal feeder is desirable in order to maintain proper metal level, even temperature, uniform product and saving of operator's time.

The temperature of metal in the crucible is maintained between 590° and 600° Fahrenheit by the thermostat. Instructions on adjustment of thermostat are in "Fixed Adjustments" section, and on care of thermostat in "Maintenance" section of this book.

3-Check Operating Adjustments

By referring to the following table, select the parts necessary for the material to be produced, if they are not already on the machine.

(a) CUTTER ADJUSTMENTS:

1a. The Cutter Head Guide Plate EC1622F, Plate 26, is adjusted to the size of the material to be produced, by raising the Knurled Knob EC1622½B, Plate 26, and turning to size wanted. This is shown on numbered dial just below the knob.

2a. Material Guide Plate EC1604B, Plate 25, is located at the rear of the material table, and is adjusted by means of two knurled

MACHINE CHANGES FOR DIFFERENT POINT SIZE MATERIALS Model F									
Material Sizes	Release Plate	Material Clamp Plate	Stationary Knife	Material Holding Catch	Puller Wedge Shim				
1 Pr. Twin	EC1498C	AEC15421/2C	EC1619½A	EC1625C	AEC14511/2A				
11/ Dr	EC1498C	AEC15421/2C	EC16191/2A	EC1625C	AEC1451				
11/ Dr Twin	EC1498C	AEC1542 %C	EC1619½A	EC1625C	AEC1451 %				
2 Dr	EC1498C	AEC15421/2C	EC1619½A	EC1625C	AEC14511/2A				
2 Dr. Turin	EC1498C	AEC15421/C	EC16191/2A	EC1625C	AEC14511/4				
2 Dr	EC1498C	AEC15421/C	EC1619½A	EC1625C	AEC14513/4				
2 Dr. Thuin	EC1497C	AEC1542%C	EC1619½A	EC1625C	AEC14501/2A				
4 De	EC1498C	AEC15421/5C	EC16191/2 A	EC1625C	AEC14511/4				
6- to 18-Pt.	EC1497C	AEC15421/2C	EC1619½A	EC1625C	AEC1450½Λ				
	1	Model F							
I-Pt. Twin	EC1498C	AEC15421/2C	EC1619½A	EC1625C	AEC1451½A				
11/2-Pt	EC1498C	AEC1542½C	EC1619½A	EC1625C	AEC1451				
1%-Pt Twin	EC1498C	AEC1542½C	EC1619½A	EC1625C	AEC1451 %				
2.Pr	EC1498C	AEC15421/2C	EC1619½A	EC1625C	AEC1451½A				
2-Pt. Twin	EC1498C	AEC15421/2C	EC1619½A	EC1625C	AEC14511/4				
3-Pt	EC1498C	AEC15421/4C	EC16191/2 A	EC1625C	AEC1451%				
3.Pt. Twin	EC1497C	AEC1542½C	EC1619½A	EC1625C	AEC1450½A				
4-Pt.	EC1498C	AEC1542½C	EC1619½A	EC1625C	AEC145114				
6- to 18-Pr	EC1497C	AEC15421/2C	EC1619½A	EC1625C	AEC1455A				
24-Pt.	EC1495C	EC1538	EC1607½A	EC1624C	AEC1455A				
30 Pt.	EC1491C	EC1539	EC1616A	EC1624C	AEC1455A				
36-Pt.	EC1491C	EC1539	EC1616A	EC1624C	AEC1448C				

wheels located at the rear of the guide plate. The material table is marked in point sizes from 2 to 18 point just in front of the guide plate. Adjust each end of the guide plate to the point size material to be run. For sizes larger than 18 point adjust the guide plate as far to the rear as possible. Then as soon as a strip is made, adjust the guide plate to the strip being produced,

3a. The Material Gauge, Plate 28, is adjusted to the length of material wanted by pressing on the Plunger EC1664B, and sliding the gauge on the Operating Rod EC1628C to pica length wanted. Points plus or minus are obtained by turning the Knurled Gauge Dial EC1665C. The material gauge is used as shown on Plate 28 for measures over 120 picas. By loosening Knurled Clamp Screw EC1671B, the Gauge Stop AEC1670D can be removed, turned upside down and replaced for lengths below 120 picas. It has been found that the minimum amount of metal is used when strip material is cut in long lengths and sawed to length as required. When running 1-point material, cut a strip of 12 point or larger of the length desired, and place it between stacker and material guide plate to prevent buckling of the thin material.

4a. The Material Stacker AEC1743D, Plates 2 and 8, consists of a guide sliding on the material table. It is attached to two chains, which keep the stacker parallel to the outcoming material, A slight tension is exerted upon the stacker, to keep it against the material. This tension is varied by regulating the spring adjustment knob located on Shaft EC1740A, Plate 5, at rear of material table. Very little pressure is required for the thicker sizes, more pressure being used to prevent buckling when cutting off long strips of thin material. 5a. The Cutter Head Tension Lever EC1770, Plate 2, is adjusted by means of a handle located under the material table and behind the Brace EC1640B. For small sizes or slow machine speed, very little tension is necessary. For large sizes or high machine speed, increase the tension on the cutter head by pulling the lever to the right. Use only as much tension as is necessary to insure return of the cutter head to the left or starting position, before the next strip moves the cutter head to the right.

6a. The Material Holding Catch EC1624C, Plate 26, must be used on the Model F when running 24 or 36 point. This catch is stamped "24 Point" on one edge and "36 Point" on opposite edge, and the proper size must be face up. When running sizes below 24 point, the Material Holding Catch EC1625C must be used. The material holding catch holds the strip that has been cut off out of the way of next strip that is being made.

7a. The Stationary Knife must be changed on the Model F machine if sizes 24 point and larger are to be made. For 24 point material use Stationary Knife EC1607½ A, and for 30 and 36 point material use Stationary Knife EC1616A, Plate 26. In order to make this change, first disconnect the Movable Knife Spring EC1620F, Plate 26, from the spring stud attached to Movable Knife Operating Lever AEC1613½B, and let the spring hang from the rear spring stud.

Next back off the Stationary Knife Adjusting Screw EC1618½A. Then remove the two screws EC1219 and remove the stationary knife. Then put the stationary knife that is to be used in position and put the EC1219 screws back in position, but do not tighten

them. Next, push the Movable Knife EC16201/2, Plate 26, all the way forward. Now bring the stationary knife up against the movable knife, so they barely touch. In this position bring the Stationary Knife Adjusting Screw EC16181/2A, Plate 26, to just bear against the angular side of the stationary knife. Then tighten the two Screws EC1219 and work the movable knife back and forth a few times to make sure that it does not strike the stationary knife, yet will just shear a piece of cigarette paper held between the two knives, Readjust as necessary to obtain this smooth action. Then give the two Screws EC1219 another tightening to be sure they will hold. Then reconnect the Movable Knife Spring EC1620F. Caution: See that the cut-off eccentric stud is properly adjusted, per instructions under "Fixed Adjustments."

(b) THE MATERIAL CLAMP PLATE AEC15421/2C, Plate 6, is used on Model E and F for sizes up to 18 point. On the Model F, EC1538 is used for 24 point and EC1539 is used for larger sizes. Table on page 7 also shows plates to use.

To change plates, first remove Material Guide Roller Adjusting Screw EC1554A, Plate 6, and swing material guide roller to a vertical position, A spring on the lower end of the adjusting screw is also to be removed.

There are two small screws just below the material guide roller, which hold the material clamp plate. Back these off and remove the plate and put in material clamp plate that is to be used for the size material to be run. Put parts back in reverse order to the way they were taken off.

(c) PULLER MECHANISM:

1c. Gauge Blocks: The puller mechanism, illustrated on Plates 6 and 12, must be set to accommodate the size of material to be produced. This is done by placing the numbered gauge blocks on the front of the puller slide so the number that corresponds to the size of the material to be produced is just at the left of the Puller Wedge Housing Hinge AEC1463A or AEC1463½A. All other blocks are placed to the right of the hinge.

For example, to produce 12 point material, all the blocks up to and including the 12 point block would be placed at the left side of the hinge, and the others at the right side.

The Gauge Block Lock AEC16661/2 that covers the gauge blocks serves to hold them securely in place. It is swung out or into locked position by movement of handle, located on left side.

2c. The Release Plate and the Puller Wedge Shim for sizes 6 point and larger are now changed if necessary. Refer to table on page 7 for correct parts to be used for size of material to be produced. The Release Plate, shown as EC1497C and EC1498C on Plate 5, and EC1491C and EC1495C on Plate 11, is easily removed by pushing both ends toward the rear, and is put in place by reversing the operation.

The Puller Wedge Shim, illustrated in position on Plate 7 as AEC1448C, is easily removed from the Puller Wedge AEC1460C by either lifting the puller wedge out and lifting the shim off and exchanging it, or the shim can be pushed off and replaced with the puller wedge in position. The shim cannot be put in backwards.

Release plate and puller wedge shims for sizes below 6 point are inserted after the mold is in position, as the mold cannot be inserted or taken out when these parts are in position.

Caution: When lowering puller wedge on Model F, see that Ratchet Pawl AEC1075, Plate 12, is set in "Off" position.

3c. To adjust for "No Pull," first loosen Lock Screw EC1479A, Plate 12, and turn Knurled Knob AEC1477, Plate 12, until the figure 1 on the Stroke Adjusting Slide EC1475A is a little to the right of the point size being run on the Point Size Index Plate EC1496B, Plate 12.

For example, if 12 point is being run, adjust the figure 1 on the stroke adjusting slide so that it is about $\frac{1}{5}$ of an inch to the right of the figure 12 on the index plate.

This setting is for starting only. Later the stroke should be gradually increased to approximately the length of stroke listed in the operating table on page 14. For example, if 12 point is being made, and a 6 pica stroke is wanted, the Knurled Knob AEC1477 is turned until the figure 6 on the stroke adjusting slide is opposite the figure 12 on the index plate.

Note: After adjusting puller mechanism, open the puller wedge housing by releasing the Wedge Lock Knob EC1466, Plate 12, and swing out the gauge blocks to the right of the hinge, and push the housing to the right and swing upward. This must be done before inserting starting strip.

4c. The Intermittent Stroke Mechanism is adjusted to the "On" position on the Model F machine for sizes 24 point and larger. When in the "On" position, the pulling mechanism is idle for two strokes, then pulls one stroke, then idles again, etc. This is necessary to allow the larger sizes of material sufficient time to cool before being pulled from the mold.

In order to set to "On" position, lift the knob on the Ratchet Pawl AEC1075, Plate 12, and push toward the left. To set to "Off" position push toward the right and see that the knob is fully seated.

Caution: The pawl must be in "Off" position when puller wedge is lowered, also when running material below 24 point.

(d) MOTOR PULLEY: Use slow speed for 6 point rule, and 12, 18 and 36 point cored molds, by placing belt over small pulley on the motor, and the large pulley on the counter shaft. All other material is run at high speed, by placing belt over large pulley on the motor, and the small pulley on the counter shaft.

(e) PLUNGER PRESSURE: The distance between the bottom of Plunger Rod Clevis EC1316A, Plate 19, and the top of Plunger Spring EC1323, Plate 19, is 3³/₈ inches for all ordinary operations.

The Adjusting Nut EC1113^{1/2}, Plate 19, which is on top of the plunger spring, is adjusted up or down for the following conditions:

Sometimes conditions are improved on 1 point material and 2 point hairline by increasing the plunger pressure. When this is required, turn adjusting nut down, so there is a clearance of about 3¼ inches between the bottom of the plunger rod clevis and the top of plunger spring.

When new cored molds are used it is advisable to reduce the

plunger pressure. When this is required, turn adjusting nut up, so there is a clearance of about $2\frac{3}{4}$ inches between the bottom of the plunger rod clevis and the top of plunger spring. When cored molds have been in use for some time, use the standard $3\frac{1}{6}$ inch adjustment.

4-Prepare Starting Strip

ALL STARTING STRIPS MUST BE SHAVED UNDER-SIZE so they will enter the mold easily, thereby avoiding any possibility of damage to the inner surface of the mold.

The strip of material is laid on a flat surface and an Elrod Material Scraper AEC1582, Plate 34, is pulled over the material three or four times, removing a slight amount of material on the two sides, and the top and bottom, for a distance of about 4 inches from the end.

For 18, 24 and 36 point cored molds, proceed as follows: Using the proper reamer, ream the core holes for a distance of at least two inches and scrape off about one-half point of material from each of the four sides of the material for a distance of about four inches from the reamed end.

When properly prepared, the starting strip should slide easily into the mold for about two inches. If it doesn't, the starting strip has been improperly prepared, NEVER FORCE THE START-ING STRIP INTO THE MOLD. Cored molds are particularly easy to damage if force is used. When Starting Strip Is Not Available: Use two or more smaller size strips that will total the point size of mold. Shave the outsides of the combined strips.

For 12 point hollow slug mold, use a 2 point lead and 6 point slug for the center and a 2 point lead for each side. Scrape the side leads and push them into the mold. Push the two middle strips against end of core. After the mold is heated, keep shoving the two outside strips into the mold as you open the scaling valve, meanwhile be sure the center strips are kept firmly pressed against the core.

5-Clean Mold Housing, Insert Mold

When metal in Cooling Indicator, Plate 1, is molten, clean out the mold housing with the Mold Housing Scraper AEC1715B, Plate 31.

Take the mold which has been draining, wipe off excess oil, and insert in mold housing, with the intake end pushed lightly against the diffusion tube, and the heads of the screws facing toward the front of machine. If it does not slide in freely, use the mold housing scraper again.

On Model F machines, 18 point and smaller molds must be inserted into the Mold Adapter Plate EC13101/2B, Plate 13, before inserting the mold into the mold housing. The bottom of the mold should be even with or slightly below the adapter plate.

(f) Puller wedge shims and release plates for sizes below 6 point are made longer than for sizes 6 point and larger. The

mold cannot be inserted when these parts are in place, so these parts have to be inserted after the mold is in place, and they must be taken out before the mold is removed.

6-Insert Starting Strip

Place the prepared starting strip in position by first swinging the Material Holding Catch EC1624C or EC1625C, Plate 26, upward, then press the Handle EC1549A, Plate 12, to the rear, which pulls the Material Clamp Plate (movable) EC1545C with it. When this is done the strip can be pushed through the puller mechanism with the puller wedge housing in the open position as shown in Plate 7.

Then swing the puller wedge housing into position by swinging it toward the back and down, and then push it toward the left while holding the wedge lock, and lock it with the Wedge Lock Knob EC1466. Swing the gauge blocks on the right of the hinge into position, and then push the starting strip gently into the mold. NEVER DRIVE THE STARTING STRIP, AS THIS WILL ALWAYS DAMAGE THE MOLD. If starting strip does not go in easily, remove it and scrape it some more.

Lay a 2 point strip on the material table and let the right-hand end of the starting strip rest on it when scaling the mold, This helps to keep the mold parallel during the scaling operation.

If a twin mold is being used, insert the Twin Lead Separator EC1536A, Plate 34, between the strips and then slip it onto the stud protruding toward the rear of Material Clamp Plate AEC1542½C, Plate 6. Push the material holding catch down into operating position. Now place the scaling plate over the end of the mold, pressing it against the mold housing. AEC1019, Plate 13, is used for Model E machine, and AEC1069 is used for Model F machine.

7-Open Sealing Valve, Seal Mold

At this point the metal in the Cooling Indicator, Plate 1, should be entirely melted.

Wait until the mold is hot enough so that the starting strip which is held gently against the mold begins to melt. When this point is reached the starting strip will slide in freely.

Then, while pressing the strip slowly and constantly into the mold, open the Sealing Valve EC1396D, Plate 2, by turning it counter-clockwise, one-quarter of a turn.

After a few seconds the molten metal will start to flow around the top and sides of the mold and trickle into the Metal Drip Cup AEC1337B. Then slowly turn the Water Valve EC1195, Plate 14, to the "On" position. This will allow a stream of water to flow around the mold chamber and will stop the flow of metal by "freezing" it.

8-Pump Air from Mold Chamber

As soon as the metal is "frozen" around the front end of the mold, close the sealing valve and then pump air from the mold chamber by operating the Plunger Lever Handle EC1315C, Plate 2, up and down once or twice by hand.

If this is not done, with the sealing valve closed, air trapped between the mold and the mold housing may prevent the proper solid sealing-in of the mold which is so important, or trapped air inside the mold may prevent proper joining of the starting strip, which would necessitate starting over again with operation 7.

When the water flows evenly in the Water Drain Sight Glass EC1294, Plate 14, reduce the flow so that the housing will not chill too quickly.

Adjust the water as indicated on chart on page 14. This chart is based on unusually cold water, so it may be necessary to use a slightly larger stream of water. The matter of water regulation is very important, so after experience is gained as to the best regulation under the particular conditions in the plant, a special chart should be made up to fit these conditions. See "Correct Appearance of Strip" on page 15 for information on how to recognize the best operating condition.

Now remove the sealing plate, and put Mold Cover AEC1328C in place. This covers the end of the mold, and has a sliding plate that rests on the strip.

Note-Never leave the machine during scaling operation.

9-Adjust Heaters

Turn off the "Sealing" switch on electric heated machines and shut off "Mold Housing Burner" on gas heated machines.

Adjust "Bottom Throat" and "Side Throat Heaters" on electric heated machines as shown in table on next page.

Adjust "Throat Burner" on gas heated machines approximately the same as indicated for "Side Throat Switch" in table on next page. The exact adjustment is obtained by observation of the cooling mark on the strip of material. See "Correct Appearance of Strip" on page 15.

10-Set Plunger Lever Lock

Setting the lock is done by pressing down on the plunger lever handle with the left hand and turning the Plunger Lever Lock EC1316½, Plate 9, into position with the right hand. This holds the plunger in an inoperative position at the top of its stroke, and metal flows into the mold chamber by gravity through the port hole.

The use of the plunger lever lock is a safety measure on sizes 6 point and larger, because if too large a part of the metal in the indicator is molten, the congealing point of the strip is near the front of the mold, and if the plunger is operating when starting, it is possible that the down stroke of the plunger will push the strip out of the mold.

Do not use the plunger lever lock for sizes smaller than 6 point.

11-Turn on Motor

Before turning on motor, see that instructions in (d), page 10, have been carried out in regard to motor speed.

The time interval between turning on water and turning on

Material	Speed	† Stroke în Eras	Bottom Throat Switch	Side Throat Switch	Diameter of Water Stream	of Indicator Which Is Melted
1 Pt, Lead	High	3	On	High	1/8 inch	14 inch
1½ Pt. Lead	High	4	On	High	1/8 inch	1/4 inch
1½ Pt. Lead (Twin)	High	41/2	On	High	1/2 inch	1/2 inch
1½ Pt. Rule	High	4	On	High	1/2 inch	1/2 inch
2 Pt. Lead	High	6	On	High	1/s inch	1/2 inch
2 Pt. Lead (Twin)	High	5	On	High	1/8 inch	5% inch
2 Pt. Rule	High	5	On	High	1/8 inch	34 inch
3 Pt. Lead	High	7	Off	Low	1/s inch	1/4 inch
3 Pt. Lead (Twin)	High	6	Off	Medium	1/1 inch	3% inch
3 Pt. Rule	High	6	Off	Low	1/4 inch	1/4 inch
4 Pt. Lead	High	51/2	On	Low	15 inch	3% inch
4 Pt. Rule	High	5	On	Low	1/s inch	3% inch
6 Pt. Slug	High	5-6	Off	Medium	1/4-5/16 inch	1/4-3% inch
6 Pt. Rule	Low	4-51/2	Off	High	1/4 inch	1/4 inch
12 Pt. (Cored)	Low	31/2-6	Off	Low	3/16-5/16 inch	3/16-1/4 inch
18 Pt. (Cored)	Low	3-5	Οff	Low	14-5/16 inch	3/16-1/1 inch
*24 Pt. (Cored)	High	4.6	Off	Low	5/16 inch	3/16-1/4 inch
*30 Pt. (Cored)	Low	4-6	Off	Low	5/10 inch	14.316 inch
*36 Pt, (Cored)	Low	4-6	O₩	Low	5 inch	1%-14 inch

Operating Conditions

Think

*NOTE: The 24, 30 and 36 Point sizes are run with intermittent stroke.

Due to variations in water temperature, metal and heating conditions, the stroke and water should be adjusted to individual plant conditions so that correct appearance of strip is obtained as explained on Page 15.

motor is critical for each size of material, and operating judgment is required for best results, as temperature of mold housing and temperature and volume of water affect results. Following is a guide for judging proper time to start the motor:

Observe the metal in the cooling indicator. For 1 and 2 point material, the motor should be started as soon as there is any indication of freezing on the right end of the indicator. For 6 point material start motor when indicator is $\frac{1}{2}$ frozen. For 12 point start motor when indicator is $\frac{1}{2}$ frozen, and for larger sizes start motor when indicator is $\frac{3}{4}$ frozen.

Correct Appearance of Strip

The best way to judge correct heat is by observing the shape of the cooling mark on the strip of material,

When heat is too low, the cooling mark will be almost straight. When heat is just right, the cooling mark will be a crescent, When heat is too high, the cooling mark will be arrow-shaped.

12-Gradually Adjust Pull to Maximum

After several revolutions of the machine, turn Knurled Knob AEC1477, Plate 12, until the figure 1 on the Stroke Adjusting Slide EC1475A is a little to the left of the point size being run, and then gradually increase the pull of the puller wedge to the specified ems indicated on the chart on page 14. The smaller sizes of material can be brought up to the maximum pull faster than is possible with the larger sizes of material.

After the maximum pull has been obtained, tighten the Lock Screw EC1479A, Plate 12.

Sometimes when starting, the first few strokes will carry too much oil. Frequently this causes the puller wedge to slip. If it continues to slip, the puller wedge can be helped along by pressing toward the right on the Wedge Crank AEC1470, Plate 6, at each stroke until the oil disappears from the puller wedge and from the strip of material.

13-Unlock Plunger Lock

After running two or three strips of 6 point or larger material, unlock the Plunger Lever Lock EC13161/2, Plate 9, by swinging it out of locked position while the machine is running.

14-Adjust Pressure Oiler

Allow the machine to operate long enough to use up the excess oil in the mold housing, and then turn on the Pressure Oiler Shut-Off Valve EC1259, Plate 17. Then set the Pressure Adjust

ing Lever EC1277A, Plate 17, so that the proper amount of oil appears on the strip.

Move the pressure adjusting lever to the left (as one faces the front of the machine) to decrease the pressure, and to the right to increase it. Larger materials, with greater shrinkage, require less oil than smaller materials with less shrinkage.

Too little oil or the absence of oil are indicated by the material having an excessively bright, dry appearance, particularly at the top of the sidewalls of the strip. This condition is very injurious to the mold, and the machine must not be operated without oil on the strip.

Excessive oil appears as a heavy, greasy film on the material, and the printing surface will probably have a ragged and irregular edge, or may be marked at intervals with a "break" or "pit" in the face.

The ideally lubricated material shows a uniform gray sheen on the upper part of the sidewalls of the strip, the balance of the strip being smooth and bright, with a smooth, unbroken printing face.

With a little practice the operator will be able to gauge quickly and correctly the proper setting of the otler to obtain the ideally lubricated material.

As the oil under pressure is consumed, the pressure adjusting lever will be pulled downward by the weight until it reaches the bottom limit of its travel. Just before this takes place, close the shut off valve, raise the lever to the top of its travel, and again open the shut off valve. This recharges the oiler for several hours. Keep the oil reservoir in the outer section of the oiler full. Do this twice a day,

If the level of oil is allowed to fall below the port in the pressure cylinder, air will be drawn into the cylinder when the piston is raised for recharging. An air bubble will interfere with the proper functioning of the oiler.

To remove air from the oiler, close the shut-off valve, put oil in the cup and pump the pressure adjusting lever up and down, and continue putting oil in the cup until it remains full, after pumping. Then loosen the union at the top of the diffusion tube one turn and open the shut-off valve slowly so that the oil and bubbles of air will be forced out of the end of the oil feed line. As soon as the bubbles stop coming out, close the shut-off valve and tighten the union.

Then open the shut-off valve two or three turns so that a very small quantity of oil is forced out of the bottom of the oil diffusion tube. This will be visible in the form of smoke coming out of the mold chamber. Then close the shut-off valve, and the oiler is now ready to operate.

It is exceedingly important that the right kind of oil be used. The use of any other oil than Elrod mold oil will result in poor material, damaged molds and unsatisfactory results. THE NECESSITY OF USING THIS PARTICULAR OIL CANNOT BE STRESSED TOO MUCH. The Ludlow Typograph Company carries a supply for the convenience of its customers, packed in one and five gallon cans.

How to Stop The Elrod

Following are condensed instructions to be used as a guide for the sequence of operations. Complete instructions for performing each of these operations are on following pages. These instructions have the same consecutive numbers as below.

- 15. Shut off motor after setting aside starting strips.
- 16. Turn hand wheel to zero position.
- 17. Open and close scaling valve.
- 18. Change heaters to maximum heat, and turn on sealing heaters.

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- 19. Shut off water.
- 20. Shut off oil.
- 21. Wait for mold seal to melt out.
- 22. Remove and clean mold and put in oil.
- 23. Shut off heaters, except crucible heater.
- 24. Clean mold housing.

EMERGENCY STOP:

25. Pull plunger rod clevis pin,

26. Shut off motor.

27. Pull plunger lever all the way up by hand,

How to Stop 'The Elrod

15-Shut Off Motor

Motor switch is located on left end of panel on front of machine. Be sure that several full length starter strips have been laid aside before stopping the machine.

16–Turn Hand Wheel to Zero Position

Turn hand wheel located at left end of machine until zero mark on hand wheel is in alignment with zero mark on the left end of the table immediately above it. At this point the zero mark on the Puller Slide Cam Housing EC1485 must be in alignment with the zero mark on the puller slide immediately above it.

17-Open and Close Sealing Valve

When the machine is stopped on zero position as previously instructed, the plunger is on the downward stroke and there is metal under pressure between the mold and the bottom of the plunger.

To relieve this pressure, open up the Sealing Valve EC1396D, Plate 2, by turning it one-quarter turn counter-clockwise.

Then pull upward on the Plunger Lever Handle EC1315C, Plate 2, which will force the Plunger EC1327A, Plate 1, to the bottom

of its travel and will relieve the pressure below it. If this is not done, a considerable quantity of metal will flow out of the mold chamber with the removal of the mold.

Then close the sealing valve by turning it one-quarter turn clockwise, or toward the rear of the machine. If this is not done, the metal in the crucible will flow out when the mold is unsealed.

Remove Mold Cover AEC1328C and leave the Metal Drip Cup AEC1337B in place.

18-Change Heaters to Maximum Heat

On the electric heated Elrod turn on the "Bottom Throat," "Side Throat—High" and "Sealing" switches on the left front of the machine.

On the gas heated Elrod turn the "Throat Burner" and "Mold Housing Burner" to maximum.

19-Shut Off Water

Turn the Water Valve EC1195, Plate 14, to the OFF position. At this time the sealing heaters are on and the water is drained out of the machine.

The operator must not leave the machine until the mold is removed and the heaters shut off.

20-Shut Off Oil

Shut off the Pressure Oiler Shut-Off Valve EC1259, Plate 17, and move the pressure adjusting lever all the way to the left to relieve pressure.

21-Wait for Mold Seal to Melt Out

When the cooling indicator is entirely melted the metal seal will also be melted and will run into the drip cup.

As mentioned before, do not leave the machine at this time.

22-Remove and Clean Mold and Put it in Oil

If the mold does not come out readily, do not try to force it, but wait a minute or so until it is hotter and the metal around the sides of the mold is more liquid. The mold can then be pulled out easily with the special Pliers AEC1520, Plate 34.

Holding the mold with the pliers, immerse the mold in the crucible with the large opening downward and hold it there until the chilled metal is melted. Pour some of the Elrod mold oil into the small opening and dip the mold up and down a number of times in the metal. Then, with the large end downward, tap the mold gently on a block of wood to remove the metal and dirt. Hold the mold up to the light, look through the small end of the mold cavity to see if there is any metal or foreign substance adhering to the inner surfaces. If there is, reheat, oil, and tap on wood until the inside of the mold is absolutely clean.

Wipe off the outer surface of the mold with a clean rag and immerse the mold, while still hot, in Mold Container AEC1020A, Plate 19. This container should have sufficient Elrod mold oil in it to cover the baskets at all times.

If the mold should stick in the housing so it cannot be removed with the pliers, the special Mold Remover AEC1655A, Plate 34, can be used. If this has to be done, there is an accumulation of dirt and dross in the mold housing that must be cleaned out.

The crucible throat behind the mold housing should be cleaned every three months to keep the METAL PASSAGE free from dirt and dross, Remove the diffusion tube and remove the dirt and dross with a long, flat metal tool.

Note: DO NOT LEAVE MOLD IN MACHINE OVER NIGHT.

23-Shut Off Heaters Except Crucible Heater

As soon as the mold is removed, shut off the "Sealing" heater on electric heated machines, and turn off the "Mold Housing Burner" on gas heated machines, unless another mold is to be inserted immediately.

How to Stop The Elrod

If the machine is to stand for some time, turn off all switches except control panel switch on the electric heated machine, and turn off all burners except the "Crucible Burner" on the gas heated machine.

If machine is to be shut down, then turn off all switches on the front of the machine, and the control panel switch on electric heated machines, and all burners on the gas heated machine.

24-Clean Mold Housing

After the mold is removed the mold housing is well heated up, and this is the best time to use the Mold Housing Scraper AEC1715B, Plate 31, for thorough cleaning,

EMERGENCY STOP

It sometimes happens that the machine is stopped with the

plunger in a raised position, or a mold loosens from improper sealing in the starting operation. The metal in the crucible will drain out through the mold chamber or the mold under these conditions unless this emergency stop is used promptly.

25—Pull Plunger Rod Clevis Pin. The quick removable Plunger Rod Clevis Pin AEC1319A, Plate 2, has been designed to permit the plunger to be lowered, regardless of the position of the machine. It is only necessary to grip the knurled head of the clevis pin and pull the pin out.

26-Shut Off Motor,

27—Pull Plunger Lever All the Way Up by Hand, By pulling the handle of the Plunger Lever EC1315C, Plate 2, up, the plunger is forced down, closing the port. If the scaling valve is also closed, no metal can escape through the mold chamber

Fixed Adjustments of The Elrod

Following are the fixed adjustments that are covered in this section: Clamp mechanism adjustment, page 22. Cut-off eccentric stud adjustment, page 22. Electric circuits: Electric crucible circuit, page 22. Motor circuit, page 22. Switch and panel circuit, page 23. (Throat and Sealing heaters.) Thermostat circuit, page 23, 100 to 150 volt equipment, page 23. 200 to 250 volt equipment, page 23. Plunger height adjustment, page 23. Plunger spring adjustment, page 24. Positive pull-back adjustment and safety mechanism, page 24 Puller slide gib adjustment, page 24. Stationary knife adjustment, page 25. Thermostat adjustment, page 25. (For thermostat on left side of crucible.) Gas thermostat adjustment, page 26,

Fixed Adjustments of The Elrod

Clamp Mechanism Adjustment

Set machine to zero position. See that Material Clamp Plate EC15421/2C, Plate 6, is in the machine.

The amount of travel given the Material Clamp Plate (movable) EC1545C, Plate 6, is controlled by the Material Clamp Lever Fulcrum Pin EC1510, Plate 7.

The fulcrum pin may be turned after loosening the Set Screw EC1322, Plate 7.

The proper adjustment is one that enables the clamp to just grip a piece of the thinnest material to be produced. Then lock the set screw.

Cut-Off Eccentric Stud Adjustment

Set machine to zero position. Pull out Plunger Clevis Pin AEC1319A, Plate 2. See that Movable Knife Spring EC1620F, Plate 26, is connected to its spring studs. Move the Cutter Head, Plate 26, to the right ¼ inch and block it there with a strip of 18 point material inserted between the cutter head and its left stop.

The Model E has only one stationary knife, but before making this adjustment on the Model F, see that the 36 point Stationary Knife EC1616A, Plate 26, is in position.

Now turn the machine over until the Cut Off Lever AEC15221/2, Plate 10, has pushed the Movable Knife EC1617C or EC16201/2, Plate 26, as far toward the front as it will go. In this position the bottom of the movable knife should pass the stationary knife approximately 1/16th of an inch.

If this adjustment is not correct, loosen Set Screw EC1322, Plate 4, and turn the Fulcrum Pin EC1510, Plate 4, until the bottom of the movable knife passes the stationary knife approximately 1/16th of an inch. Then lock the set screw.

Electric Crucible Circuit

Refer to Plate 23 for the crucible heater circuit. The main feed wires enter the bottom of the control panel and are connected to the terminals at the bottom of the control panel hand switch as shown on Plate 23.

From the two upper terminals of the control panel hand switch, the current passes through the crucible heater fuses, the magnetic switch and then from terminals No. 3 and No. 4 to the two crucible heaters. The opening and closing of the magnetic switch is controlled by the action of the thermostat.

All terminals and wires are plainly marked to correspond to the markings as shown in the diagrams on Plates 22 and 23. Plate 22 shows only the parts affected by the hookup necessary for 110 volt circuits.

Motor Circuit

From the two upper terminals of the control panel hand switch, the current passes through the motor fuses, the motor switch and then to the motor. See Plate 23.

Switch and Panel Circuit (Throat and Sealing Heaters)

From terminals No. 1 and No. 2 in the control panel, there are two wires which lead to the five tumbler switches (throat and sealing heater switches) of the switch panel, and from there the circuit includes: Four resistors which are mounted in a housing just below the switch panel. Two side throat heaters. One bottom throat heater. Two sealing heaters.

Thermostat Circuit

Refer to Plate 23. The thermostat circuit is connected to terminals C, L and H in the control panel.

100 to 150 Volt Equipment

In the 100 to 150 volt equipment, the resistors, side throat and sealing heaters are connected in parallel as shown on Plate 22, otherwise the wiring is the same as for 200 to 250 volt equipment shown on Plate 23.

200 to 250 Volt Equipment

In the 200 to 250 volt equipment, the resistors, side throat and scaling heaters are connected in series as shown on Plate 23.

Plunger Height Adjustment

The correct setting of the Plunger EC1327A, Plate 1, is with the bottom of the plunger 3/16ths of an inch above the top edge of the port in the well, when the plunger is at the highest point of the stroke.

Turn the machine until the plunger is at the top of its stroke, with a mold in the machine, and the water turned on.

Disconnect the Plunger Connecting Rod EC1321½A, Plate 7, by pulling out Plunger Connecting Rod Pin EC1318B, Plate 7,

Take a piece of 1/16th inch rod and bend a right angle at one end about 5/8ths inch long. Push the rod down in the molten metal between the heating element and the rear wall of the well. Turn the rod so it enters the port hole,

Pull the rod up tightly against the top edge of the port hole and push the plunger down so it touches this rod. This lines up the bottom of the plunger with the top of the port hole.

In this position check the hole in the lever. The upper edge of the hole in the plunger connecting rod should be in the middle of the hole in the lever. If it is in this position, the plunger will be 3/16ths of an inch above the port hole when the connecting rod and lever are connected.

If the holes are not in position as described above, loosen the Check Nut EC1113¹/₂, Plate 19, at the top of the Plunger Lever Rod EC1332, and screw the Plunger Rod Clevis EC1316A, up or down as required.

*Fixed Adjustments of The Elrod

Plunger Spring Adjustment

The distance between the bottom of Plunger Rod Clevis EC1316A, Plate 19, and the top of Plunger Spring EC1323, Plate 19, is 31/8 inches for all ordinary operations.

The Adjusting Nut EC1113½, Plate 19, which is on top of the plunger spring, is adjusted up or down for the following conditions:

Sometimes conditions are improved on 1 point material and 2 point hairline by increasing the plunger pressure. When this is required, turn adjusting nut down, so there is a clearance of about 33% inches between the bottom of the plunger rod clevis and the top of plunger spring.

When new cored molds are used it is advisable to reduce the plunger pressure. When this is required, turn adjusting nut up, so there is a clearance of about $2\frac{1}{6}$ inches between the bottom of the plunger rod clevis and the top of plunger spring. When cored molds have been in use for some time, use the standard $3\frac{1}{8}$ inch adjustment.

Positive Pull-Back Adjustment and Safety Mechanism

Positive Pull-Back Bracket EC1755, Plate 5, is attached to the right end of the puller slide and the Guide Sleeve EC1759A, Plate 4, is attached to it in such a way that the cutter head will be automatically returned to normal position after it has moved to the right during the cut-off operation.

When properly adjusted, the Knurled Screw EC1756A, Plate 4, should leave a gap of about 1/32nd of an inch between the knurled screw and the bracket, when the puller slide has moved to the end of its travel nearest the crucible. This adjustment may be obtained by loosening the Set Screw EC1682¹/₂, Plate 4, and turning Knurled Screw EC1756A in or out as required.

The safety mechanism is provided so that the Gauge Rod AEC1628C, Plate 25, upon which the Material Gauge, Plate 28, is mounted, will open up at the closed joint in the gauge rod if the moving strip material jams at the gauge. This telescoping rod is held together by Spring FC16331/2A, Plate 25.

Puller Slide Gib Adjustment

Push the two Puller Slide Spring Plungers EC1482C, Plate 4, as far to the left as they will go, and turn the Lock Screws EC1482½ alongside the plungers so as to hold and lock the plungers in place.

Remove the following parts, which will allow the puller slide to slide freely: Puller Slide Release Plate Adapter EC1490B, Plate 12, which has three bolts holding it; Material Clamp Plate (movable) EC1545C, Plate 12, which is held in place with a cotter pin; Positive Return Bracket Retainer Screw EC1758A, Plate 12; and Puller Slide Cam Roll Stud EC1240A, Plate 11.

Back up the four Gib Screws 625A and EC1487^{1/2}, Plate 12. Then tighten up the right and left gib screws first. Screw in until they bear lightly against the gib and then back them up a triffe, about 1/16th of a turn. Then push the puller slide back and forth

Fixed Adjustments of The Elrod

and see that it slides freely at both ends of its stroke. Readjust the right and left screws as necessary to get a smooth action. The gib adjustment must not be tight, because the puller expands in operation as it gets heated up, and will get too tight and cause undue wear. After properly adjusting the right and left screws, bring the two middle screws up to bearing. Push the puller slide back and forth to see that a smooth action is obtained, and that the gib adjustment is a little on the loose side.

After making this adjustment, put the cam roll stud in first, and then replace the other removed parts and release the spring plungers by turning their lock screws. Then disconnect the plunger lever and turn the machine over by hand a few times to be sure that it turns freely.

Stationary Knife Adjustment

This adjustment is usually made when the knife needs sharpening. On the Model F machines this adjustment is also made when the stationary knife is changed, per chart on page 7.

First disconnect the Movable Knife Spring EC1620F, Plate 26, from the spring stud attached to Movable Knife Operating Lever AEC1613½B, and let the spring hang from the rear spring stud.

Next back off the Stationary Knife Adjusting Screw EC1618½ A. Then remove the two Screws EC1219 and remove the stationary knife. Then put in position the stationary knife to be used and put the EC1219 screws back in position, but do not tighten them. Next, push the Movable Knife EC1620½, Plate 26, all the way forward. Now bring the stationary knife up against the movable knife, so they barely touch. In this position bring the Stationary Knife Adjusting Screw EC1618¹/₂A, Plate 26, to just bear against the angular side of the stationary knife. Then lock the two Screws EC1219. Then work the movable knife back and forth a few times to make sure it does not strike the stationary knife, yet will just shear a piece of cigarctic paper held between the two knives. Readjust as necessary to obtain this smooth action. Then give the two Screws EC1219 another tightening to be sure they will hold. Then reconnect the Movable Knife Spring EC1620F, Plate 26,

Caution: See that the cut-off eccentric stud is properly adjusted so that the bottom of the movable knife just passes the stationary knife at the farthest point of its travel.

Thermostat Adjustment

(For Thermostat on Left Side of Crucible)

Turn off all switches except the control panel switch. Remove mercury tube cover from top of crucible. Put a thermometer through the slot in the top of the crucible so it rests near the bulb of the thermostat.

Take cover off the thermostat box. Loosen the clamp screw so the knurled screw can be turned.

Turn the knurled screw down, or clockwise, a few turns,

When the rising temperature reaches 600° F., turn the knurled screw up, or counter clockwise, until the magnetic switch in the control panel opens. Then tighten the clamp screw.

Fixed Adjustments of The Elrod

Wait until the thermostat completes a cycle of closing and opening the magnetic switch to be certain that it shuts off at 600° F. Readjust if necessary.

Gas Thermostat Adjustment

Turn off all burners except the crucible burner. Place a thermometer in the crucible and adjust the Gas Governor Adjusting Screw EC1816, Plate 3, as necessary to obtain a temperature between 585° and 600° F.

Maintenance of The Elrod

Following are the maintenance items that are covered in this section:

Crucible throat cleaning, page 28. Diffusion tube care, page 28 Gas burners, page 29. Mold care, page 30. Mold cooling chamber care, page 30. Plunger, well, and sealing valve cleaning, page 31. Pressure oiler care, page 32.

Maintenance of The Elrod

Crucible Throat Cleaning

The crucible throat behind the mold housing should be cleaned every three months to keep this metal passage free from dirt and dross.

Remove the diffusion tube, and with a long, flat metal tool remove the dirt and dross. Also use the Mold Housing Scraper AEC1715B, Plate 31, to scrape as far back as it will reach.

When molds are difficult to insert or remove, a thorough cleaning of the mold housing is indicated.

Diffusion Tube Care

Installing a Diffusion Tube: The Diffusion Tube AEC1281C, Plate 30, fits into a standpipe on the right of the crucible. The top of this standpipe is above the level of the metal in the crucible. There is an Adapter EC1332¹/₂D, Plate 2, between the diffusion tube and the standpipe that serves as an inexpensive wearable piece.

The diffusion tube should be put in when the crucible is hot, and the inside threads of the adapter should be well graphited. Then insert a wire into the hole at the top of the tube and keep filling this hole with Elrod mold oil, slowly removing the wire until the tube is entirely full. Connect the Feed Line AEC1279½, Plate 17, at the oiler and the diffusion tube. With the shut-off valve closed, raise the end of the pressure adjusting lever until it stops. This will charge the oiler. Now loosen the union at the top of the diffusion tube one turn and open the shut-off valve slowly so that oil and bubbies of air will be forced out of the end of the oil feed line. As soon as the air stops coming out, close the shut-off valve and tighten the union. The diffusion tube is now ready to operate.

Removing a Diffusion Tube: The best time to do this is just after a mold has been removed, as the standpipe is at its hottest and all metal in the standpipe is molten. Close the shut-off valve, disconnect the union on top of the diffusion tube, and loosen the union at the other end of the feed line, and swing the feed line out of the way. Then unscrew the diffusion tube.

Cleaning a Diffusion Tube: After a diffusion tube has been in service for some time, there will be a deposit of dross and dirt around the lower end of the tube, which may interfere with the proper flow of oil, requiring higher oil pressure to operate.

When this condition exists, remove the diffusion tube, scrape off the deposit from the outside of the tube, remove the screw in the bottom of the tube and clean out the threads in the screw as well as the threads in the lower part of the tube, using Tap EC1727, Plate 30. Replace the screw and tighten firmly. Do not disturb the asbestos packing in the tube.

Packing a Diffusion Tube: After the diffusion tube has been in steady service for some time (usually a matter of several weeks) it may develop that the oil does not feed quite fast enough. When this happens, return the diffusion tube to the Ludlow Typograph Company at Chicago, Illinois, for repacking, or repack it with a Repacking Set AEC1720A, Plate 30. Instructions are sent with the repacking set. Have spare tubes on hand for replacement.

Oil to Use in Diffusion Tube: Use Elrod mold oil only. It is sold by the Ludlow Typograph Company in 1 and 5 gallon cans, is red in color, and specially prepared for the purpose. Keep oil can closed, as dirt seriously interferes with the operation of the diffusion tube.

Prevent Drying Out of Diffusion Tubes: If the Elrod is kept heated, but not operating, the diffusion tube should be removed. The tube dries out with prolonged heating without oil flowing through it.

Diffusion tubes should be well oiled before being placed in storage,

Gas Burners

On account of the varying quality of gas used in different areas, a routine of regular inspection of the gas burners must be determined in each plant.

A spud in each of the burners calibrates the quantity of gas. These seldom need to be changed after installation, but the hole in them gradually becomes smaller after a year or two, and they should be cleaned or replaced.

The air mixer sleeve on the burners controls the amount of air. The proper mixture of air and gas is one that will burn clean without "popping," and that will direct the hottest portion of the flame to the surface to be heated. A piece of 1/16 inch iron wire placed in the path of the flame will disclose the hot and dead portions of the gas flame. The "Throat Burner" and "Mold Housing Burner" screens should be frequently inspected in some areas where the gas plugs up the screens. The screens can be lifted off and cleaned with an air blast or with a wire.

If the screens cannot be thoroughly cleaned, it is best to replace them in order to obtain high gas efficiency.

Machine Lubrication

Regular lubrication is imperative if the machine is to give good results for any length of time. Use a good grade of machine oil. S.A.E. 20 is a good viscosity to use.

There are three main cam shaft bearings which should be oiled through the tubes extending from the bearings up through the table top. Two of these oil cups are located at the rear of the table, and one at the left end near the hand wheel. The counter-shaft bearing is lubricated by a grease cup, in which a good grade of cup grease should be used.

The oil cup at left end of table should have kerosene put in it once a month to clean the bearing. After running a short time with the kerosene, put in regular machine oil. This bearing needs this special attention on account of heat from the crucible.

The puller slide may be lubricated by putting oil in the nine small oilers located on top, and the puller slide cam and roller is lubricated by the oil cup on the right of the puller slide. The vertical shaft is oiled by oil cup on front of puller slide cam housing.
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The gear housing under the table should be packed with grease once every six months. Remove six screws which fasten the gear housing cover, thoroughly clean the gears and housing with a brush and kerosene, and then fill the cover up to the overflow with Special Elrod Gear Housing Grease AEC1042.

Other moving surfaces and cam faces can be lubricated directly or by means of the oil holes provided in these parts.

NEVER USE ELROD MOLD OIL FOR BEARING LUBRI-CATION, as it is absolutely unfitted for this type of service.

Mold Care

The sides of Elrod molds are made of fine grain cast iron. They require a thin oil film on the inner surface of the mold to permit the material to pass through the mold smoothly. This oil film will not stand up indefinitely, but will dry out if exposed to the air any length of time, or if the mold is subjected to excessive heat in sealing or unscaling operations.

The mold should be cleaned thoroughly after removal from the mold chamber, per instruction 22 on "How to Stop The Elrod." When cleaning a mold, do not tap it on any other surface than wood. Failure to handle the mold with care in the cleaning operation is the most frequent cause of damage.

Mold trouble is also caused by forcing starting strips into the mold, which causes damage to the inner surfaces, or by overheating the mold when it is being removed from the machine. A mold should never be left in the mold chamber more than a very short time after the inside reaches a metal-melting temperature. When the water is turned off, and the throat and sealing heaters are turned on, the operator should not leave the machine.

Molds may be easily damaged by carcless handling, resulting in the production of imperfect strip material, or in extreme cases, the inability to produce any material at all from the damaged mold.

If satisfactory material cannot be obtained from a mold, it should be sent to the factory at Chicago for reconditioning. The mold should not be opened except at the factory, because of the difficulty in reassembling without the necessary tools.

Mold Cooling Chamber Care

The water in some sections of the country is highly alkaline and will in time clog the cooling chamber. If this is allowed to happen, the only remedy is to remove the water jacket blocks on the sides of the mold housing and scrape the deposit out.

In order to prevent this happening, the following method will work if it is regularly done each week-end. It will not clean out deposits that have accumulated, but will prevent deposits from forming.

The first thing to do in alkaline areas is to insert a globe valve in the upright supply pipe, at the union, shown on Plate 14.

Then obtain a bottle of cider vinegar, or in areas that have a

very bad alkaline condition obtain some "boiler compound" from a plumbing supply house, power house or factory having steam boiler installations. These compounds are made to suit local conditions.

Turn the Supply Valve EC1195, Plate 14, to "Off" position. Close globe valve on supply pipe. Then turn supply valve to "On" position.

Remove the Water Outlet Pipe EC1188¹/₂A, Plate 14, by disconnecting the Union EC1194A, Plate 14. Insert a small funnel in the opening on top of the mold housing, and fill with eider vinegar or boiler compound and leave it in over the week-end.

Before starting, turn the supply valve to "Off" position, replace the water outlet pipe and open the globe valve on supply pipe.

Plunger, Well and Sealing Valve Cleaning

The Crucible Well EC1303D, Plate 1, and Plunger EC1327A, Plate 1, must be cleaned at least twice weekly.

Upon completion of a run of material, shut the machine off, turn it to zero position, turn off the scaling and throat heaters and let the water run. It is necessary that the mold and material be in the mold chamber when the plunger is pulled out of the well, otherwise the metal in the crucible will drain out.

Lift the lock holding the Connecting Rod Pin EC1318B, Plate 2,

and pull out the pin. Raise the hinged portion of the pot cover and open the scaling valve. Pull straight up on the plunger link until the plunger is nearly out of the well, then pull the plunger link slightly to the right so it will clear the plunger lever, and then lift the plunger out of the crucible. It may be necessary to press down on plunger lever handle while doing this to make it easier.

While the plunger is still hot, wipe or brush it off. If all metal and dross does not come off readily, dip the plunger in the metal, swab on some Ludlow "Lubriclean" Fluid A945, and then wipe or brush again.

Place the Crucible Well Cleaning Tool AEC1290^{1/2}, Plate 31, in the molten metal until it is thoroughly heated, and then swab some "Lubriclean" on the surface of the tool, and insert it in the crucible well. Operate the cleaning tool with an oscillating and up-anddown motion the full length of the crucible well, removing the cleaning tool frequently to wipe off the accumulated dross. Apply more "Lubriclean" each time the tool is wiped. Repeat this operation until no trace of dross remains.

Skim the dross and "Lubriclean" residue from the metal in the crucible, and apply a thin coat of "Lubriclean" to the outer surface of the plunger and replace it in the well. Move the plunger up and down a few times by hand to see that it moves freely. If it does not, repeat the cleaning process.

If the turning of the Scaling Valve EC1396D, Plate 2, becomes sluggish or difficult, clean it when the plunger is cleaned.

To remove the sealing valve, back off the retaining screw as far as it will go. This screw faces toward the front of the sealing valve

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bracket. Then remove the scaling valve, clean it with a rag, and coat with "Lubriclean" and replace it in position in the well, rotating it several times until it turns freely. Remove and repeat the process, and then screw in the retaining screw as far as it will go.

The Plunger Cleaning Outfit AEC1015 consists of a heatproof Swab 946A, a stiff Brush 943, a Mold Housing Scraper AEC1715B, and a quart of "Lubriclean" A945. See Plate 31.

These tools, together with the Crucible Well Cleaning Tool AEC1290¹/₂, should be used for cleaning the plunger, well and mold chamber.

"Lubriclean" may be used to lubricate all of the hot parts on the Elrod, as it is especially made for use at high temperature.

Pressure Oiler Care

After the pressure oiler has been in service for some months, it may be necessary to replace the leather packing at the bottom of the piston.

With the Shut-Off Valve EC1259 closed, remove the Adjusting

Lever Fulcrum Screw EC12761/2, Plate 17, to permit sliding the Adjusting Lever EC1277A, Plate 17, through the slot in the Piston Pin AEC1268, Plate 17.

Remove the three screws which fasten the cover to the oiler body, and the piston may be pulled out of the cylinder. Remove the screw, retaining washer and worn leather packing from the lower end of the piston. Put on a new leather packing and re assemble, tightening the screw very lightly.

Insert the piston in the well and move it up and down a few times to centralize the packing. Pull the piston out and tighten the screw firmly, being careful not to move the leather packing.

Replace piston, cover, screws, adjusting lever and weight. Put Elrod mold oil in the oil cup and pump the adjusting lever up and down, and continuing to put oil in the cup until it remains full, after pumping. Then loosen the union at the top of the diffusion tube one turn and open the shut-off valve slowly so that the oil and bubbles of air will be forced out of the oil feed line. As soon as the air stops coming out, close the shut-off valve and tighten the union. The oiler is now ready to operate.

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Test Lamp

A Test Lamp A932A, as illustrated, is the most convenient and time-saving tool for locating electrical trouble in the crucible. This test equipment consists of a red prod containing a neon glow lamp, and a black prod and attachment plug. When plug is in the receptacle as shown in illustration, it is short-circuited. Plug is taken out of this receptacle and plugged into 110 volt line for some tests, as indicated in following instructions.

The red prod containing the neon glow lamp is the live test point.

How to Use the Test Lamp

The test lamp may be used to locate a "ground," an "open circuit," a "short circuit," or a "dead" heating element. An explanation of these terms follows:

Ground: An electrical connection between an electrical circuit and the crucible or frame of the machine.

Short Circuit: A connection between the two sides of a circuit so that the current takes a shorter path than intended.

Open Circuit: An incomplete circuit, one broken at any point, so that current does not flow through any part of it. A broken wire or loose connection can cause an open circuit.

Dead Heater: A heater that has an open circuit.



A932A-Test Lamp

Fuse Test

Place the fuse to be tested on a piece of dry paper or wood. Connect test lamp to lighting circuit, and place a test point on each end of the fuse. If test lamp lights, the fuse is o.k.

Caution: In making the tests described on pages following, note carefully as to whether the test points are to be placed on "wires" or "terminals."

Preliminary Tracing of Electrical Trouble

Indication of electrical trouble will be variations of temperature or stopping of machine,

Variations of temperature have to do with the crucible heater

and throat heater circuits. Stopping of machine has to do with the motor circuit.

Fuses: The first source of trouble to look for is in the fuses. There are three sets of fuses: the motor fuses; the throat heater fuses; and the crucible heater fuses—the latter also control the thermostat circuit. There are also fuses on the main line, before it enters the machine.

When a fuse in the control panel blows out, it indicates a ground, a short circuit, a faulty fuse, or fuse fits too loosely in the fuse clips.

To find out if the fuses in the machine are at fault, turn off the panel switch and remove the fuses and test them as described under fuse test.

To find out if the main line fuses are at fault, turn off the panel switch, place plug of test lamp in short-circuiting receptacle and place the test points on terminals L-1 and L-2 just below the panel switch. If lamps do not light, these fuses are at fault.

In replacing the fuses, see that they are held firmly in their fuse clips. If a replaced fuse of proper amperage burns out again, this shows the trouble is not in the fuse, but in the circuit that the fuse controls. Check the circuit for a ground or a short, as explained on pages following.

Crucible Heater and Circuit: If the metal in the crucible fails to melt out, it is an indication of an open circuit in the heaters or connections, or the magnetic switch in the control panel box has failed to close.

If the metal in the crucible is too cold it will be indicated by a

chilled-looking strip, or by the need of using higher than normal temperature on the throat heaters. If the metal is too hot it will be indicated by the appearance of the strip, or by breaking of the strip, or by the need of excessive water.

To check on variations of temperature, insert a thermometer in the crucible and see if the temperature is held within the recommended range. If it is much higher or lower than recommended, the trouble is either in the thermostat or crucible heater circuits. If magnetic switch will not close on low temperature, or if it remains closed on too high temperature, the trouble is in the thermostat circuit. If the temperature continues dropping, the trouble is in the crucible heater circuit.

If magnetic switch has an audible chatter, this is an indication of trouble in the thermostat circuit. Usually this indication means that the contact points of the thermometer on top of the crucible need cleaning.

Throat Heater Circuit: If it suddenly takes longer than ten minutes to melt out a mold with the throat and scaling heaters on, it is an indication that one or more of the heaters has an open circuit in the heater or connections. Look for a faulty fuse, or a fuse fitting too loosely in the fuse clips, a loose connection, a broken wire, a broken switch or a dead heater.

If it is noticed that the heating out of the mold is gradually taking longer to melt out, the screws that hold the heaters in close contact may have loosened. There are five headless screws which screw in to tighten the heaters. Two of these are located on the right side of the crucible casing in front of the diffusion tube, and

Electrical Troubles of The Elrod

two are directly opposite at the rear of the diffusion tube. One is located on the bottom of the crucible, and is reached through a hole in the table below the throat heater.

Motor Circuit: If the motor fails to start, or slows down, or stops, or overheats, it is an indication of trouble in the motor or motor circuit. Before making any tests, take off the belt and see if trouble persists. If motor runs satisfactorily with the belt off, then look for trouble in the machine.

CONTROL PANEL TEST

Before making any of the tests on the following pages, make sure the trouble is not in the control panel.

If the test lamp fails to light in the following tests, it indicates there is a broken wire or loose connection on the back of the panel, or that the control panel switch is broken.

Place plug of test lamp in short-circuiting receptacle for each of the following tests.

To Test the Throat and Sealing Heater Circuit: Turn off the panel switch, Disconnect the wires from terminals 1 and 2, Turn on panel switch. Place one test point on terminal 1 and the other on terminal 2. The lamp should light,

To Test the Crucible Circuit: Turn off the panel switch. Disconnect the wires from terminals 3 and 4. Turn on the panel switch. Place one test point on terminal 3 and the other on terminal 4. Close the magnetic switch by hand. The lamp should light. If magnetic switch does not stay closed on this test, see "Magnetic Switch" test on page 38.

To Test the Motor Circuit: Turn off the panel switch. Disconnect the wires from terminals T-1 and T-2. Turn on the panel switch, Place one test point on terminal T-1 and the other on terminal T-2. The lamp should light.

Locating Trouble

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Following tests are for the purpose of locating trouble after preliminary tracing has indicated where to look.

Crucible Heater and Circuit

Tests to be made are for ground, short circuit and open circuit. Ground: Turn switch off. Disconnect wires B-1 and B-2 from terminals 3 and 4, at bottom of panel. Connect test 'amp to light socket and with the live test point touch wire B-1 and B-2. If a light shows it indicates a ground in the crucible heater or in wire B-1 or B-2.

Short Circuit: Turn switch off. Disconnect wires B-1 and B-2 from terminals 3 and 4, at bottom of panel. Connect test lamp to light socket and place one test point on wire B-1 and the other on B-2. If lamp lights, the crucible heater is o.k.

Open Circuit: If no light shows on above test for short circuit, then there is an open circuit. This can be a broken wire, loose connection or dead heater.

Thermostat Circuit (For Thermostat on Left Side of Crucible)

Tests to be made are for open and short circuit in the thermostat, magnetic switch, resistor and magnet coil.

Open Circuit: Turn switch off, Disconnect wires "C," "L" and "H" from terminals "C," "L" and "H" at bottom of control panel. See that temperature of metal in crucible is below 600° F. Connect test lamp to light socket and place one test point on wire "C" and the other on wire "L" in the control panel box. If circuit is o.k., the lamp will light. No light indicates an open circuit. This can be a broken wire or loose connection.

Remove the cover of the thermostat case. Raise the micro switch lever and place a small piece of 6 point material between the top of the mercury-actuated plunger and the micro-switch. A click can be heard when the micro-switch lever is lowered. Now place one test point on wire "C" and the other on wire "H" in the control panel box. If circuit is o.k., lamp will light. No light indicates an open circuit. This can be a broken wire or loose connection.

Short Circuit: With switch off and wires disconnected as for above open circuit test, disconnect the "C," "L" and "H" wires on the micro-switch. Place test points on wires "C" and "L" and on wires "C" and "H." The lamp should not light. If lamp does light, it shows a short circuit.

Testing Micro-Switch: Remove micro-switch from thermostat case and with the test lamp connected to the light socket, place one test point on terminal "C" and the other on terminal "L." If this switch circuit is o.k., the lamp will light. Then place one test point on terminal "C" and the other on terminal "H" and press downward until the switch clicks. If this switch circuit is o.k., the lamp will light. If lamp does not light on these tests, replace microswitch.

Magnetic Switch: Turn control panel switch off. Remove wires from terminals "C," "L" and "H" at bottom of panel. Then turn control panel switch on. Use a short length of insulated wire, the ends of which are bared. Place one end on terminal "C" and the other end on terminal "L." If the magnetic switch does not close automatically, then test the resistor and the magnet coil. If the magnetic switch does close, then it should stay closed when the test wire is removed. If the magnetic switch fails to stay closed, turn switch off and adjust the Retaining Contact A360EA, Plate 18, by adjusting Post A354½E to make contact slightly in advance of the Breaker Contacts 356E, Plate 18, as the switch closes.

The magnetic switch should open when the test wire is brought in contact with terminals "C" and "H." If it fails to open, it may be due to a broken wire or to an open circuit in the Kick-out Coil 329E, Plate 18. If Breaker Contacts 356E, Plate 18, are not clean, remove them from armature and rub lightly on a piece of fine sandpaper. To remove the breaker contacts, pull out the Armature Retainer 354E, Plate 18, which allows the movable part of the magnetic switch to be removed from its seat. The breaker contacts can then be removed by depressing the spring which holds them in place.

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Resistor: Turn panel switch off. Remove Resistor 328E, Plate 18, and place on paper or a board and connect test lamp to lighting circuit and place a test point on each end of the resistor. The lamp will light if o.k.

Magnet Coil: Turn panel switch off, Connect test lamp to lighting circuit and place a test point on the terminals of the Magnet Coil 327E, Plate 18. The terminals are just above the magnet coil. The lamp will light if coil is o.k.

Motor Circuit

Tests to be made are for ground, short circuit and open circuit.

Ground: Turn off panel switch. Remove motor belt. Disconnect wires T-I and T-2 from terminals T-1 and T-2, at bottom of panel. Turn on motor switch. Connect test lamp to lighting circuit and place the live test point on each of the wires T-1 and T-2. If lamp lights, it indicates a ground. If a ground is indicated, then trace its location as follows: Disconnect and separate the motor lead wires, at the motor. Place the live test point on the wires T-1 and T-2. If lamp lights, the ground is in the wires to or from the motor switch, or in the motor switch. If lamp does not light on this last test, then the ground is in the motor.

Short Circuit: Turn off panel switch. Remove motor belt. Disconnect wires T-1 and T-2 from terminals T-1 and T-2, at bottom of panel. Disconnect and separate the lead wires at the motor. Turn on motor switch. Connect test lamp to lighting circuit and place one test point on wire T-1 and the other test point on wire T-2. If lamp lights, there is a short circuit in the wires to or from the motor switch, or in the motor switch. If, after connecting the motor lead wires, fuses continue to burn out, there is a short circuit in the motor.

Open Circuit: Turn off panel switch. Remove motor belt. Disconnect wires T-1 and T-2 from terminals T-1 and T-2, at bottom of panel. Turn on motor switch. Connect test lamp to lighting circuit and place one test point on wire T-1 and the other test point on wire T-2. If lamp does not light, it indicates an open circuit. If this is indicated, then trace its location as follows: Disconnect the motor lead wires at the motor, and bring the ends of the lead wires together. Then place test points on wires T-1 and T-2. If lamp does not light, the open circuit is in the wires to or from the motor switch, or in the motor switch. If lamp lights, then the open circuit is in the motor.

Throat and Sealing Heater Circuit

Tests to be made are for ground, short circuit and open circuit.

The procedure to follow is to first test for ground, trace the ground, and then fix it. Next test for short or an open circuit Trace to a particular circuit. Then test this circuit for a heater that is open or shorted.

Note: The instructions below apply to 110 to 150 volt equipment. In order to trace the exact side throat or scaling heater that is

grounded on 200 to 250 volt equipment it will be necessary to remove the crucible throat covers shown on Plate 8, and remove the asbestos tape wrapped around the heater terminal connections, and test the heaters directly on their terminals. It will be necessary to remove the water piping from the mold housing to remove any one of the heaters.

Ground: Turn switch off. Disconnect wires D-1 and D-2 from terminals 1 and 2 at bottom of panel. Connect test lamp to lighting circuit, and with the live test point touch wires D-1 and D-2. If a light shows, it indicates a ground in one of the circuits.

When a ground is indicated, trace it to a particular circuit as follows: Remove the pressure oiler and terminal housing located at the back of the crucible, thereby exposing the wiring shown on Plate 7. Disconnect the two ST-1 wires (front side throat heater), the two ST-2 wires (rear side throat heater), one BT-1 wire and one BT-2 wire (bottom throat heater), the two S-1 wires (front sealing heater) and the two S-2 wires (rear sealing heater). Do not allow the wires to touch anything.

With test lamp connected to the lighting circuit touch each of the wires with the live test point. If a light shows, it indicates that the wire or the heater to which it is connected is grounded.

Tracing a Short Circuit or an Open Circuit to a Particular Circuit

On each of the following tests, proceed as follows: Turn panel

switch off. Disconnect wires D-1 and D-2 from terminals 1 and 2 at bottom of panel. Turn switches on and off as directed in each of the following tests. Connect test lamp to lighting circuit and place one test point on wire D-1 and the other on wire D-2. If lamp lights, the heater is o.k. No light indicates a broken wire, a loose connection, a broken switch, a dead heater unit or an open resistor.

Bottom Throat Circuit: Turn on bottom throat switch and turn off all other switches. Proceed as above.

Sealing Heater Circuit: Turn on sealing switch and turn off all other switches. Proceed as above.

Side Throat Circuit: Turn on "High" side throat heater switch and turn off all other switches. Proceed as above.

Side Throat Circuit: Turn on "Medium" side throat heater switch and turn off all other switches. Proceed as above.

Side Throat Circuit: Turn on "Low" side throat heater switch and turn off all other switches, Proceed as above.

Side Throat Resistor: There are resistors in the "Medium" and "Low" circuits, and if the tests show there is an open circuit, it may be necessary to remove the wires from the right end of the resistors in order to find the open resistor.

Remove the switch box cover from the front of the machine, and the resistors shown on Plate 24 will be in a housing below the switches. There is a curved baffle plate at the top of the housing which protects the resistors. By working from the rear of the

Electrical Troubles of The Elrod

machine, the two bolts holding the bafile plate can be removed and the baffle plate slipped out.

Remove all wires from the right end of the resistors (Place a tag on the terminals and on the wires as they are removed, so they may be properly replaced.) Place the test points of test lamp on the opposite ends of each resistor in turn. No light will show the open resistor, which must be replaced.

Testing Circuits for an Open or Shorted Heater

After the previous tests have located the circuit that has an open heater, it may be necessary to find out which heater is at fault, as the side throat and sealing circuits have two heaters each. Locate the faulty heater as follows:

110 TO 150 VOLT EQUIPMENT: Turn panel switch off. Remove the pressure oiler and terminal housing located at the back of the crucible, thereby exposing the wiring shown on Plate 7. Disconnect the wires of each circuit, as explained below. Connect test lamp to lighting circuit and place one test point on one of the disconnected wires, and the other on the other disconnected wire. If lamp lights, the heater is o.k. No light indicates a broken wire, a loose connection or a dead heater.

Bottom Throat Heater: Disconnect the BT-1 wire and the BT-2 wire. Test these wires as explained above.

Front Sealing Heater: Disconnect the two S-1 wires. Test these wires as explained above.

Rear Sealing Heater: Disconnect the two S-2 wires. Test these wires as explained above.

Front Side Throat Heater: Disconnect the two ST-1 wires. Test these wires as explained above.

Rear Side Throat Heater: Disconnect the two ST-2 wires. Test these wires as explained above.

See page 42 for "Removal or Replacement of Throat and Scaling Heaters."

200 TO 250 VOLT EQUIPMENT: Turn panel switch off. Remove the pressure oiler and terminal housing located at the back of the crucible, thereby exposing the wiring shown on Plate 7. Disconnect the wires of each circuit, as explained below. Connect test lamp to lighting circuit and place one test point on one of the disconnected wires, and the other on the other disconnected wire. If lamp lights, the heater is o.k. No light indicates a broken wire, a loose connection or a dead heater.

Bottom Throat Heater: Disconnect the BT-1 wire and the BT-2 wire. Test these wires as explained above.

Front and Rear Sealing Heaters: Disconnect the S-1 wire and the S-2 wire. Test these wires as explained above.

^{*} Front and Rear Side Throat Heaters: Disconnect the ST-1 wire and the ST-2 wire. Test these wires as explained above.

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If an open circuit is indicated by above tests, it will be necessary to test the heaters directly on their terminals to determine which heater requires replacing. This is done as follows:

Removal or Replacement of Throat and Sealing Heaters

To test or replace a throat or sealing heater requires removal of Crucible Throat Covers EC1326½EA, EC1327½E, EC1330½E, EC1361½, Plates 7 and 8; front and rear Water Jacket Covers EC1882B, Plate 9; and water piping from the mold housing.

The heaters can then be pulled out, the asbestos tape taken off the heater terminal connections, and the heater can be tested and replaced with another heater if necessary. In putting heaters back in place, be sure they have a good contact with the surfaces they heat.

When putting the water jacket covers back on, clean all surfaces with a brass rule, never with an abrasive. Put graphite on the screw threads and hold the covers tight when putting in screws, so graphite will not get between the contact surfaces. Tighten screws evenly.





Mechanical Troubles of The Elrod

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Mechanical Troubles of The Elrod

Cutter Head Sluggish

When the cutter head is sluggish in its return, adjustment of Tension Lever EC1770 is usually indicated. However, a sluggish return can be caused by dry and dirty bearings. Clean and oil the three bearings of the Material Cut-Off Operating Rod EC1628C, Plate 5, Material Cut-Off Safety Rod AEC1628¹/₂, Plate 5, and the Cutter Head Guide Rod EC1627, Plate 5. Also check the operating rod for straightness.

Hairline Rule Broken

Occasional breaks may be noticed in the face of rules. The cause of this may usually be determined by noticing whether the breaks are sharp or round in character.

Rounded edges indicate that too much oil is being used or that the oil is not properly distributed over the entire surface of the strip. This may be corrected by shutting off the oil supply for a short time, or by a reduction of heat or by an increase in water flow.

Sharp breaks are caused by a lack of oil or too long a stroke. Other causes may be from a damaged mold, or from improper heating or cooling conditions.

Machine Jams and Stops

It sometimes happens that the machine jams or stops with the plunger in a raised position, or a mold loosens from improper scaling in the starting operation. All the metal in the crucible will drain out through the mold chamber or the mold under these conditions, unless prompt action is taken.

When this happens grasp the knurled head of the Plunger Rod Clevis Pin AEC1319A, Plate 2, and pull the pin out. Then pull the handle of the Plunger Lever EC1315C, Plate 2, all the way up by hand, and shut off the motor.

By pulling the plunger lever up, the plunger is forced down, closing the port. If the scaling valve is also closed, no metal can escape through the mold chamber.

Material is Bowed

The operator should be careful to clean off the underside of the mold and the bottom of the mold chamber before inserting the mold, and hold the mold firmly against the bottom of the mold chamber and parallel to the sides of the mold chamber while the sealing is taking place, and thereby avoid the experience of producing "bowed" material.

When sealing a mold, it is advisable to lay a strip of 2 point on the material table and let the right end of the starting strip rest on it. This tends to keep the mold parallel to the bottom of the mold chamber.

A defective mold or improper lubrication can cause bowed material. If either the top or bottom of the strip is lubricated while the opposite edge is dry, this will cause a stretching of the material along the dry edge and will produce a bowed strip.

An abnormal amount of water will cause the material to bow. Check water flow to the proper amount.

If the material is bowed down or concave as delivered, and the lubrication and water are apparently o.k., it is an indication that the mold is improperly scaled, and this operation will have to be done over.

If the material is bowed up, or convex as delivered, and lubrication and water are apparently o.k., it will be necessary to adjust the Material Guide Roller EC1550, Plate 6, by means of the Adjusting Screw EC1554A, Plate 6, so the roller will press down on the material and straighten it.

Material Buckles

When producing the thinner point sizes, such as 2 point twin, and one or both of the strips buckle between the mold and the pulling mechanism, it indicates that the pulling mechanism is not releasing properly after the material has been pulled to the right. This may be due to metal or other material adhering to the Puller Wedge AEC1460C, Plate 7, or to the sliding Release Plate EC1498C, Plate 11.

These parts should be removed and thoroughly cleaned, making certain that the release plate slides freely back and forth.

If the trouble continues after cleaning, the Material Clamp Plate (movable) EC1545C, Plate 6, may not be properly adjusted.

Check the instructions for "Clamp Mechanism Adjustment" on page 22, If the trouble continues after cleaning, and the material clamp plate adjustment is o.k., it may be that one or more of the Puller Slide Gib Screws 625A and EC1487¹/₂, Plate 12, are out of adjustment. Instructions for their adjustment are on page 24 of "Fixed Adjustments of The Elrod." Another possibility is that Material Clamp Spring EC1504 is broken. This is housed within Material Clamp Bracket AEC1541A, Plate 6.

Puller Slide Removal

To remove the puller slide for replacement of Puller Slide Springs EC1481A, Plate 5, or for any other reason, it may be done as follows:

Remove the following parts: Puller Slide Release Plate Adapter EC1490B, Plate 12, which has three holts holding it; Material Clamp Plate (movable) EC1545C, Plate 12, which is held in place with a cotter pin; Positive Return Bracket Retainer Screw EC1758A, Plate 12; Puller Slide Cam Roll Stud EC1240A, Plate 11; Puller Slide Guard EC1486C, Plate 11, which has two screws holding it; Guard Plate EC1486¹/₂, which is a vertical plate underneath the puller slide guard, containing two screws.

After the above parts are removed, back off the four Gib Screws 625A and EC1487¹/₂, Plate 12, and remove the Gib EC1487, Plate 5, by pulling it out from the right end of the puller slide.

The puller slide can then be moved toward the left, and pulled straight up and out when it reaches the proper position.

Mechanical Troubles of The Elrod

The Puller Slide Plungers EC1482C, can now be easily removed, and springs inside can be replaced. After replacing, push the plungers in as far as they will go, and lock them in place with the Lock Screw EC14821/2.

When reassembling, be sure that all parts are cleaned and oiled. Then insert the Gib EC1487 and adjust the gib per instructions on "Puller Slide Gib Adjustment," page 24. Then reassemble parts in reverse order as listed above. After parts are in place unlock the puller slide plungers by turning the lock screws.

Puller Wedge Locks

If the puller wedge should become locked, due to a splash of metal, do not use force on the puller wedge crank handle to release the puller wedge, but remove the puller wedge as follows:

Remove the four screws and clamp knob holding the cover. Remove shaft from hinged base and push base toward front of machine. The puller wedge will then be accessible for easy removal. If puller wedge is not easily removed, it may be necessary to remove the Release Plate Adapter EC1490B, Plate 12, which has three bolts holding it.

Puller Wedge Slips

Sometimes when starting, the first few strokes will carry too

much oil. Frequently this causes the puller wedge to slip. If it continues to slip, the puller wedge can be helped along by pressing toward the right on the Wedge Crank AEC1470, Plate 6, at each stroke until the oil disappears from the puller wedge and from the strip of material.

Shearing Pin Breaks

The Shearing Pin EC1318B, Plate 7, which connects the plunger lever and the plunger connecting link, is made of soft steel and is so designed that should the machine be turned on while the metal in the crucible is solid, this pin will be sheared, thereby preventing damage to the machine. If this pin is sheared while the metal in the crucible is molten, it is an indication that the plunger and well need cleaning, and this should be done before another shearing pin is used.

Stationary Knife Jamming

If instructions for adjusting the stationary knife are not carried out as shown in "Fixed Adjustments," it may result in the Model E machine suddenly stopping on account of the movable and stationary knives jamming. On the Model F it may result in breaking the Cut-Off Lever EC1522¹/₂,



DESCRIPTION OF PROCESS

Showing how the type metal is melted, lubricated and cast in the electric Elrod.



PLATE 2-Front View of Model E Electric Heated Elrod

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PLATE 4-Puller and Cutter Mechanism (Model E)



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Puller and Cutter Mechanism (Model E)-PLATE 5



PLATE 6-Puller Slide (Model E)





Rear View Model E Electric Heated Elrod-PLATE 7

PLATE 6-Puller Slide (Model E)





Rear View Model E Electric Heated Elrod-PLATE 7



AEC1059-1140 H.P.M.

PLATE 8-Front View of Model F Electric Heated Elrod





PLATE 10-Puller and Cutter Mechanism (Model F)

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Puller and Cutter Mechanism (Model F)-PLATE 11

PLATE 12-Puller Slide (Model F)



Intermittent Stroke Mechanism Parts (Model F)-PLATE 13



PLATE 14-Water Cooling System





Gas Heating System-PLATE 15

PLATE 16—Pressure Oiler


Pressure Oiler Parts-PLATE 17 0 0 EC1272 EC1271 EC1267 es EC1262A AEC127912 昬 Ų 0 Ŷ 0 EC1280 AEC1260-1 EC1269 EC1270 EC1243 EC1265 EC126212 AEC1268 EC1282 8 6 Į 1271% EC1276 EC1275 1 EC128212A AEC1281C P L EC1274 EC127612 1 EC1382 ECI258A EC1264A Ð 0 741 230 EC1278A EC1259 EC1277A



Left End View Electric Heated Elrod (Model E)-PLATE 19





PLATE 20-Wiring Diagram of 200-250V. A.C. Single Phase Equipment

Electric Thermostat (On Left Side of Crucible)-PLATE 21





PLATE 22-Wiring Diagram of 200-250V. A.C. 3-Phase Equipment



Wiring Diagram of 220V. Single Phase Electric Heated Machines Shipped Prior to 3-13-57-PLATE 23







PLATE 26-Cutter Head



Cutter Head Parts-PLATE 27



PLATE 28-Material Gauge



Material Gauge Parts-PLATE 29 C ADD AD TO SCALE WHEN AEC1670D EC16628 EC16630 Canal 0 뵹 EC1679 EC135415 EC1672%A EC166219 3 旨 0 EC1667 EC1673A 366 EC1674 EC167112 EC1708 EC1665% EC16668 EC 06648 EC16718 EC1665C EC1668B

- 2

PLATE 30-Diffusion Tube and Diffusion Tube Repacking Set



Elrod Crucible Cleaning Tools-PLATE 31



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PLATE 32-Margach Metal Feeder for Elrod







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PLATE 34-Elrod Accessories Box and Contents

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Style Chart of Screws, Nuts, Pins and Washers-PLATE 35



PLATE 36-Elrod Molds

1-Point

Leads

Leads

Leads

Tie-up



12-Point Slug

18-Point Base

30-Point Base

24-Point Base

Body 36-Point Base

73-31 =		
10-01	One and one-half point with Half point	S pt.
74-04 =	Cut-off Ruls	4 pi.
76-46 =	Double Haitline centerfore	0 pt.
76-11 =	Double Huisline (on side)	- 6 pt.
76-47 =	Double Half-point centerlace (152 Pt. white space)	= 5 pt.
76-54 =	Double Hall point centerlace (2 Pt. white space)	6 pt.
76-30 =	Double Half-point (on side)	6 pt.
76-19 =	Double One-point (on side)	6 pl.
76-28 =	Double One point (on side)	6 pt
76-13 =	Double Cne-point	6 pt.
76-31 =	One and one-half point with Half point (on side)	6 pt.
76-32 =	Two-point with Hall-point (on side)	d pt.
76-33 =	Two-point with One-point (on side)	6 pt.
76-10 =	Double Two-point	8 pl
76-12	Tariff Rule	6 pt.

Standard Elrod Combination Rule Faces-PLATE 37



Information on above molds, and other single rule molds, as well as lead, slug and base molds are on following pages.

PLATE 38-Some Standard Elrod Rule Faces

Haisline	Tweive Point
 One-half Point	
On Table	Linkteen Palmi
One Point	Lighted rout
Two Point	
 Three Point	Twenty-four Point
Four Point	
Six Peint	Thirty Point
Eight Paint	
One Point Two Point Three Point Four Point Six Paint Eight Paint	Eighteen Point

Initty-siz Point

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ELROD MOLDS-RULES

Mold No.	Face	Body	Code Word	
	Solid Body, .918 High (See Plate 37 for Parallel and Combination Rules)			
71-00	Hairline Centerface	1½ pt.	Mudge	
72-01	Hairline Centerface	2 pt.	Score	
72.20	One-point Centerface	2 pt.	Scour	
72.21	One-point Sideface	2 pt.	Scrap	
77.77	Two-point Fullface	2 pt.	Sorew	
72.39	Half-point Sideface	2 pt.	Shari	
73.02	Hairline Centerface	3 pt.	Sripc	
73.03	One-point Sideface	3 pt.	Scrub	
72.72	Three-point Fullface	3 pt.	Scuff	
73 31	One and one half point with One-half point (on side)	3 pt.	Houff	
74.04	Two-point and One-point (on side)	4 pt.	Sends	
74.24	Hairline Centerface	4 pt.	Scull	
76.05	Column Rule Centerface (918)	6 pt.	Scurf	
76-55	Tapered body Column Rule (.918) Column Rule 915 or other special heights, additional charge.	5½-6 pt.	Hutch	
76.06	One-point Sideface	6 pt.	Seats	
76.07	Two-point Sideface	6 pt.	Sebum	
76.08	Three-point Sideface	6 pt.	Sects	
76.09	Four-point Sideface	6 pt.	Sedan	
76-10	Two-point Parallel	6 pt.	Senna	
76-11	Hairline Parallel (on side)	6 pt.	Sense	
76-12	Two-point and One-point (on side)	6 pt.	Sepoy	
76-13	One-point Parallel	6 pt.	Serge	
76-14	Two-point with 3 Hairlines	6 pt.	Serum	
76-15	Six-point Fullface	6 pt.	Seedy	

ELROD MOLDS-RULES

Mold No.	Face	Body	Code Word
	Solid Body, .918 High		
76-19	One-point Parallel (on side).	6 pt.	Serfs
76-27	Three One-point	6 pt.	Shawm
76-28	One point Parallel (on side)	6 pt.	Sharp
76-29	Three-point with One-point.	6 pt.	Shawl
76-30	Half-point Parallel (on side)	6 pt.	Sharn
76-31	One and One-half point with Half-point (on side)	6 pt.	Shaul
76-32	Two-point with Half-point (on side)	6 pt.	Shaup
76-33	Two-point with One-point (on side)	6 pt.	Saith
76-34	Four-point with Half-point	6 pt.	Stull
76-35	Two and One-half point with two Half-points	6 pt.	Socks
76-36	One-point with two Half-points	6 pt.	Sheal
76-37	Two-point with two Half-points	6 pt.	Shear
76-44	Half-point Centerface	6 pt.	Shirk
76-45	One-point Centerface	6 pt.	Shive
76-46	Double Hairline Centerface	6 pt.	Shams
76-47	Double Half-point Centerface (11/2 points white space)	6 pt.	Shand
76-48	Hairline Sideface	6 pt.	Shool
76-54	Double Half-point Centerface (2 points white space)	6 pt.	Shone
78-25	Hairline Centerface	8 pt.	Scine
78-38	Four-point with two One-points	8 pt.	Sheat
79-16	Twelve-point Fullface	12 pt.	Seize
79-17	Six-point with two One-points	12 pt.	Serve
79-18	Six point with two One points	12 pt.	Shack
79-40	Three One-half point rules	12 pt.	Jougs
79-41	Six One-half point rules	12 pt.	Howff
79.42	Two Two-point rules with four Half-point rules	12 pt.	Jundy

When ordering parts, always give serial number of the machine.

ELROD MOLDS - RULES

Mold No.	Face	Body	Code Word
	Hollowed Body, .918 High		
79-49	Hairline Sideface	12 pt.	Shiel
714-50	Hairline Sideface	14 pt.	Serbs
716-51	Hairline Sideface	16 pt.	Shill
718-26	18-point Fullface (3 round cores)	18 pt.	Shade
718-52	Hairline Sideface (3 round cores)	18 pt.	Shily
724-43	24-point Fullface (2 round cores)	24 pt.	Sheth
724-53	Hairline Sideface (2 round cores)	24 pt.	Shamo
730-56	30-point Fullface (2 round cores)	30 pt.	Sailo
736-55	36-point Fullface (2 round cores)	36 pt.	Sajou

Special Elrod Rule Molds Other Elrod rule molds can be made to specifications as to rule face, height or body size (to 36 pt.)

When ordering parts, always give serial number of the machine.

ELROD MOLDS-LEADS AND SLUGS

Mold No.	Thickness	Height	Code Word
	Single Solid Body		
51-11	1½-point	.750	Kekle
51-12	1½-point	.765	Kelty
51-13	1½-point	.875	Kiver
51-14	1½-point	.854	Knoit
52-11	2-point	.750	Sacks
52-12	2-point	.765	Safer
52-13	2-point	.875	Sagas
52-14	2-point	.854	Krame
53-11	3-point	.750	Sager
53-12	3-point	.765	Sagum
53-13	3-point	.875	Sahib
53-14	3-point	.854	Kyloe
54-11	4-point	750	Sales
54-12	4-point	765	Saint
54.13	4-point	875	Saker
54-14	4-point	854	Kythe
56-11	6-point	750	Salad
56-12	6-point	765	Salen
56-13	6-point	875	Salic
56.14	6 point	854	Lavne
59.11	12-point	750	Sally
59,12	12-point	765	Salon
59.13	12-point	875	Salts
50.14	12 point	854	Lecin
22.14	Sizele Changel Tie up	10.5.1	Leen
0.01	Single Channel Tie-up	750	C 11
59-21	12-point	.750	Scald
59-22	12-point	./05	Scamp
59-25	12-point and a second sec	.8/2	Scant
59-24	12-point	,854	Lyard

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When ordering parts, always give serial number of the machine.

ELROD MOLDS-TWIN LEAD MOLDS

Mold No.	Thickness	Height	Code Word
Inold the	Twin-solid Body (Casts two leads at once.)		0
60.11	Looint	.750	Sapro
60.12	L point	./65	Saran
60-12	1 plants	.875	Saris
00-15	i-point	.854	Manty
60-14	1-point	.750	Mawne
61-11	1½-point	.765	Mease
61-12	1½-point	875	Meith
61-13	1½-point	854	Micht
61-14	1½-point	750	Sapid
62-11	2-point	765	Samor
62-12	2-point	.707	Catin
62.13	2 noint	.872	Mada
62.14	2 point	,829	NIODIS
63 11	3 point	./50	Satyr
67.12	2 Solution	.765	Sauce
03-12	S-point	.875	Saved
03-13	5-point	.854	Mooth
63-14	3-point		

35.

When ordering parts, always give serial number of the machine.

ELROD MOLDS-SLUGS AND BASE

Mold No.	Thickness	Height	Code Word	
	Hollow Body			
59-01	12-point (Rectangular core)	.750	Scape	
59-02	12-point (Rectangular core)	.765	Scars	
59-03	12-point (Rectangular core)	.875	Scath	
59-04	12-point (Rectangular core)	.854	Moyen	
518-61	18-point (3 round cores)	.750	Scaup	
518-62	18-point (3 round cores)	.765	Scene	
518-63	18-point (3 round cores)	.875	Scoup	
518-64	18-point (3 round cores)	.854	Sabin	
524-61	24-point (3 round cores)	.750	Shend	
524-62	24-point (3 round cores)	.765	Shesl	
524-63	24 point (3 round cores)	.875	Sairy	
524-64	24-point (3 round cores)	.854	Sairs	
530-51	30 point (2 round cores)	.750	Sacky	
530-52	30-point (2 round cores)	.765	· Sadly	48 (#)
530-53	30-point (2 round cores)	.875	Safes	
530.54	30-point (2 round cores)	.854	Saffi	
536-51	36-point (2 round cores)	.750	Sages	
536.52	36-point (2 round cores)	.765	Sagos	
536-53	36-point (2 round cores)	.875	Saida	
536-54	36-point (2 round cores)	.854	Saily	

When ordering parts, always give serial number of the machine.

1

Part No.	Name of Part	Plate No.	Code Word	
15A	Oil Cup (spring cap) 5/16"-32 thread	5-6-11-12	Maims	
24	Style 55, No. 5 Taper Pin x 2½" long	35	Coomb	
25	Style 14, 41/64" Woodruff Key x 1/8" thick		Mangy	
42	Style 3, 1/2"-13 Hexagon Head Screw x 1" long	35	Corns	
1231/2	Motor Wire 1/2" Unilet Gasket		Vanil	
1241/2	Motor Wire 1/2" Unilet Cover		Vanis	
168	Style 3, 5/16"-18 Hexagon Head Screw x 1/2" long	35	Niest	
257	Style 201, 7/8" x 35/64" Flat Washer x 3/69" thick	35	Tells	
279	Style 56, 1/4" Dowel Pin x 2" long	35	Orean	
290E	Style 4, 5/a"-18 Headless Cup Point Set Screw x 1" long	35	Shard	
451	Style 8, 1/4"-20 Flat Head Screw x 1/4" long	35	Deach	
562	Style 102. 5/4"-18 Hexagon Nut x 3/4" thick	35	Damaa	
584	Style 201, 11/19" x 5/19" Washer x 1/19" thick	35	Fnoch	
731	Style 55 No. 2 Taper Pin x 1" long	25	Datan	
741	Style 202 56 " Plain Lock Washer	17.25	Peech	
915	Style 3 3%". 16 Heragon Head Screw v 1" long	25	Dalua	
EC1001D	Main Frame (Table)	22	T II	
AEC1002D	Lar (Pight Hand)	0.7	Lolls	
THE TOOLD	Leg Mounting Screws—Use EC1116 Grease Cup—Use EC1129	2-7	Lones	
EC1003EB	Leg (Left Hand) Leg Mounting Screw—Use EC1116	2	Longs	
EC1005 ·	Style 56, 1/4" Dowel Pin x 3/4" long	35	Tame	
EC1006C	Main Shaft Bearing Bracket (Left) Main Shaft Bearing Bracket Mounting Screw—Use 42 Main Shaft Bearing Bracket Dowel—Use EC1005 Main Shaft Bearing Ol Taba Use EC1050A		Taids	
EC1008	Style 7 No. 10.32 Round Head Screw v.1" long	25	Taina	
	stream and the second stream of the second stream second stre	37	raiga	

When ordering parts, always give serial number of the machine.

Part No.	Name of Part	Plate No.	Code Word
EC1009	Main Shaft Bearing Bracket (Center and right) Main Shaft Bearing Bracket Mounting Screws—Use 42 Main Shaft Bearing Bracket Devel 1 Use FC1005	7	Tails
	Main Shaft Bearing Oil Tube (Center)—Use EC1049A Main Shaft Bearing Oil Tube (Right)—Use EC1050A		
EC1010B	Drive Shaft Bushing Drive Shaft Bushing Set Screw Nut—Use 562		Taine
	Drive Shaft Bushing Set Screw-Use EC1024		
EC1011	Drive Shaft Bushing Collar		Taint
EC1024	Style 4, 5/16 -18 Bristo Halt Dog Point Set Screw x 1 Tlong	35	Stirk
EC1027	Main Conduit (141/4" long) (for Electric machine)	8	Radom
EC1028	Rectangular No Thread Unilet	8	Rafie
EC1029	Motor Unilet Nipple (for AC motors).		Rains
EC1031A	Three-way Rectangular No Thread Unilet (for Gas machine)		Rakes
EC1032A	Main Conduit (16 ¹ / ₂ " long) (for Gas machine)		Rakee
EC1033B	Straight Conduit (103/16" long) (for Gas machine)		Ralph
EC1034A	Straight Conduit (43/16" long) (for Gas machine)		Ranee
EC1035	90° No Thread Elbow (for Gas machine)		Ramie
EC1036	45° No Thread Elbow (for Gas machine)		Ramon
EC1049A	Main Shaft Bearing Oil Tube (Center)	7	Longe
and the second	Main Shaft Bearing Oil Tube Oiler-Use 15A		
EC1050A	Main Shaft Bearing Őil Tube (right and left hand). Main Shaft Bearing Oil Tube Oiler—Use 15A	8	Taler
EC1056A	Main Shaft Hand Wheel (for Model F)	8	Rands
	Main Shaft Hand Wheel Woodruff Key—Use 25		
AFOIOTO	Main Shatt Hand wheel Taper Pin—Use EC1215/2A		P
AECI059	Motor Pulley (for 1140 rpm motor) (½ hole) (Model P)		Kamps

When ordering parts, always give serial number of the machine.

Part No.	Name of Part	Plate No.	Code Word
AEC1060	Motor Pulley (for 1425 rpm motor) (1/2" hole) (Model F) (see EC1059 and		an a
	EC1060A)	8	Ramse
AEC1060A	Motor Pulley (for 1425 rpm motor) (3/8" hole) (Model F).		Acrid
EC1108C	Motor Table	2-8	Tamal
	Motor Table Screw—Use EC11081/2		A STREET
EC11081/2	Style 3, 1/2"-13 Hexagon Head Screw x 11/2" long	35	Stook
EC1109A	Drive Shaft Pulley (for Model E)	2	Tames
	Drive Shaft Pulley Set Screw—Use EC1138		
EC11091/2	Drive Shaft Pulley (for Model F)	8	Ramus
	Drive Shaft Pulley Set Screw-Use EC1138		
EC1110	Drive Pinion		Tammy
	Drive Pinion Dowel-Use EC1612		Por annual de
EC11101/2	Motor Table Front Nut Handle Ball	8	Stoor
ECIIIIA	Drive Shaft	2	Tamps
3 10 10 10	Drive Shaft Screw—Use 451		2.200.000
EC1112A	Leg Brace	8	Tampa
	Leg Brace Nut Pin—Use 731		
	Leg Brace Nut (outside)—Use EC1112½		
	Leg Brace Nut (inside)—Use EC11131/2		
EC11121/2	Style 101, 1/8 "-11 Special Drilled Hexagon Nut x 1/8" thick	35	Tarns
EC11131/2	Style 101, %"-11 Hexagon Nut x %" thick	19-35	Stoup
EC1114A	Motor Table Bracket	2	Tamra -
	Motor Table Bracket Screw—Use EC11081/2		
	Motor Table Bracket Screw Lock Washer-Use 257		
EC11141/2	Motor Table Ball Socket Washer		Tana
EC1115½	Motor Table Rear Screw Nut		Stour
ECI116	Style 3, 1/2"-13 Hexagon Head Screw x 11/4" long	35	Taney
ECIII7	Motor Table Front Screw		Ranas

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When ordering parts, always give serial number of the machine.

Part No.	Name of Part	Plate No.	Code Word
EC1118	Motor Table Front Nut Motor Table Front Nut Lock Washer—Use 257 Motor Table Front Nut Pin—Use 279 Motor Table Front Nut Handle Ball—Use FC1110½	2	Tangs
EC1119	Motor Table Rear Screw Motor Table Rear Screw Washer—Use 741 Motor Table Rear Nut—Use EC1416		Tango
EC1126C	Motor Table Plate Motor Table Plate Screw—Use 915	2	Tanks
EC1129	Drive Shaft Grease Cup.		Tansy
EC1133	Style 7, No. 8-32 Round Head Screw x 3/8" long	35	Tapes
EC1136	Drive Pinion Key		Taper
EC1138	Style 5, %-16 Square Head Cup Point Set Screw x %" long	35	Tapet
EC1142	Drive Pinion Flange (right hand)		Tardo
EC1143	Drive Pinion Flange (left hand)		Tardy
EC1151	Style 2. 5/ a"-18 Fillister Head Screw x 1" long	35	Sturt
EC1161	Style 7 No. 10-32 Round Head Screw x 1/1" long	35	Tares
EC1184	Style 7 No. 8-32 Round Head Screw x 3/" long	35	Trees
EC1186	Style 56 4" Dougl Pin x 1" long	25	Relat
AEC1201C	Main Shaft Assembled (Model E), consisting of hand wheel and shaft with cams	22	Keine
1000 (Control 10)	in place. Sold separately	7	Targe
AEC12011/2	Main Shaft Assembled (Model F), consisting of hand wheel and shaft with cams	44	11 M
	in place. Sold separately		Randy
EC1202A	Main Shaft Hand Wheel (Model E) Main Shaft Hand Wheel Pin—Use EC1211	19	Tarif
EC1203	Main Shaft Collar Main Shaft Collar Pin—Use EC1211	7	Tarto
EC1204	Material Clamp Cam Material Clamp Cam Pin—Use EC1211	7	Tarry

When ordering parts, always give serial number of the machine.

Part No.	Name of Part	Plate No.	Code Word	
EC1205	Plunger Cam Plunger Cam Pin—Use EC12111/2	19	Tarts	
EC1208C	Drive Gear Drive Gear Key—Use EC1231 Drive Gear Screw—Use EC1245		Tates	
EC1209	Gear Guard Gear Guard Screw—Use EC1008		Tatie	
EC1210	Gear Guard Bracket Gear Guard Bracket Screw—Use EC1184	5	Tatou	
EC1211	Style 55, No. 5 Taper Pin x 2" long	35	Tatty	
EC12111/2	Style 55, No. 5 Taper Pin x 17/8" long	35	Tushs	
EC1212A	11/2" Dia. x 7/8" long Cam Roll	7-19	Taube	
EC1215A	Style 55, No. 5 Taper Pin x 2¼" long	35	Sumph	
EC1217	Cut Off Cam (Model E) Cut Off Cam Pin—Use EC1211	7	Taunt	
EC12171/2	Cut Off Cam (Model F) Cut Off Cam Pin—Use EC1211		Rangs	
EC1219	Style 7, No. 10-32 Round Head Screw x 1/4" long	7.25.35	Tauro	
EC1231	Style 14, No. 23 Woodruff Key-%29" x 5/16" thick	1 21 22	Taulo	
EC1237½B	Main Shaft Spiral Mitre Gear Main Shaft Spiral Mitre Gear Taper Pin—Use 24 Main Shaft Spiral Mitre Gear Key—Use EC1231		Teals	
EC1245	Style 4, 5/16"-18 Bristo Half Dog Point Set Screw x 3/4" long	35	Teath	
AEC1348A	Table Apron Assembled, consisting of front plate, hinges and catches. Not sold	55	reem	
	separately Table Apron Mounting Screws—Use EC1133	2	Thews	
AEC1410½E	Motor Terminal Conduit Assembly (Westinghouse motors)	7	Actor	
EC1416	Style 101, 5/16"-18 Hexagon Nut x 5/16" thick	25	77	
EC1612	Style 56, 1/4" Dowel Pin x 1/4" long	25	Torns	
When ordering p	arts, always give serial number of the machine.	33	Turis -	

Part No.	Name of Part	Plate No.	Code Word
AEC1641	Motor Assembled (Specify voltage and cycles)	2	Labor
AEC1642A	Motor Pulley (for 1725 rpm motor) (1/2" hole) (Model E)	2	
AEC1642B	Motor Pulley (for 1725 rpm motor) (%" hole) (Model E)		Adage
AEC16431/2	Motor Pulley (for 1425 rpm motor) (½" hole) (Model E) Motor Pulley Set Screw—Use EC1614½		
AEC1643½A	Motor Pulley (for 1425 rpm motor) ([*] / ₈ " hole) (Model E) Motor Pulley Set Screw—Use EC1614 ¹ / ₂		Addax
AEC16441/2	Motor Pulley (for 1140 rpm motor) (½" hole) (Model E) Motor Pulley Set Screw—Use 290E		
EC1649B	Motor Belt (for Model E)	2	Lazar
AEC16501/2	Motor Pulley (for 1725 rpm motor) (1/2" hole) (Model F)	8	Rance
AEC16501/2A	Motor Pulley (for 1725 rpm motor) (3/8" hole) (Model F)		Addle
EC1654A	Motor Belt (for Model F)	8	Ranch
AEC16601/2	Motor Pulley (for 1725 rpm DC motor) (1/2" hole) (Model E)		Gland
AEC16611/2	Motor Pulley (for 1725 rpm DC motor) (1/2" hole) (Model F)		Snout
AEC16611/2 A	Motor Pulley (for 1725 rpm DC motor) (3/8" hole) (Model F)		Vinie

When ordering parts, always give serial number of the machine.

PLUNGER MECHANISM

Part No.	Name of Part	Plate No.	Code Word	
15A	Oil Cup (spring cap) (5/16"-32 thread)	5-6-11-12	Maims	Berl
40	Style 3, 5/16"-18 Hexagon Head Screw x 1" long	35	Marks	
59	Style 101, 1/2"-13 Hexagon Nut x 5/18" thick	7-35	Matin	
918	Plunger Rod Pin Retainer Stud		Acric	
EC11131/2	Style 101, 1/2"-11 Hexagon Nut x 1/2" long	19-35	Stoup	
EC1161	Style 7, No. 10-32 Round Head Screw x 3/2" long	35	Tanes	
EC1207A	Plunger Lever Rod Yoke Plunger Lever Rod Yoke Cam Roll Stud Nut—Use 59	19	Tatar	
EC1212A	1½" Dia. Cam Roll x %" long	7-19	Taube	
AEC13141/2	Plunger Lever Bracket Assembled Plunger Lever Bracket Oiler—Use 15A	8	Hicht	
EC13141/2	Plunger Lever Bracket . Plunger Lever Bracket Mounting Screws (short)—Use 40 Plunger Lever Bracket Mounting Screws (long)—Use ECI 329½	2	Albit	
AEC1315C	Plunger Lever Assembled, consisting of lever oiler and dowel pin (not sold			
	separately)	2	Album	
EC1316A	Plunger Rod Clevis	19	Thief	
EC13161/2	Plunger Lever Lock Plunger Lever Lock Set Screw—Use EC1614½	3-8-9	Algat	
EC13181/2 A	Plunger Lever Lock Shaft		Algol	
AEC1319A	Plunger Rod Clevis Pin Assembled, consisting of pin and ball (not sold		and an	
	separately)	2	Thins	
EC1320	Plunger Lever Bracket Pin Plunger Lever Bracket Pin Set Screw—Use EC16141/4	2	Thine	
EC13201/2	Plunger Rod Pin Retainer Plunger Rod Pin Retainer Stud—Use 918 Plunger Rod Pin Retainer Washer—Use EC13221/2	3.9	Tawsc	

When ordering parts, always give serial number of the machine.

PLUNGER MECHANISM

Part No.	Name of Part	Plate No.	Code Word
EC13211/2A	Plunger Connecting Rod Plunger Connecting Rod Lift Pin—Use EC1380	7	Think
EC13221/2	Plunger Rod Pin Retainer Washer		Teugh
EC1323	Plunger Spring	19	Thirs
EC13231/2	Plunger Lever Rod Sleeve	19	Aller
EC1324	Plunger Spring Washer	19	Thirl
EC13241/2	Valve Wheel Valve Wheel Mounting Screws—Use EC1161	8	Thole
AEC1327A	Plunger Assembled, consisting of plunger, connecting rod, pin and lift pin	1-2	Thoom
EC1327A	Plunger Plunger Pin—Use EC13281/2	1	Thors
EC13281/2	Style 56, 1/4" Dowel Pin x 111/16" long	4-7-35	Thorp
EC13291/2	Style 2, 5/16"-18 Oval Fillister Head Screw x 2" long	35	Thoth
EC1332	Plunger Lever Rod	19	Thrap
EC1363	Style 101, 1/8"-11 Hexagon Nut x 3/8" thick	19-35	Tinos
EC1380	Style 56, 5/16" Dowel Pin x 21/8" long	7-35	Tolas
EC1512A	Plunger Lever Rod Yoke Cam Roll Stud	7-19	Troth
EC16141/2	Style 4, 5/16"-18 Bristo Cup Point Set Screw x 1/2" long	35	Tushs

When ordering parts, always give serial number of the machine
PRESSURE OILER PARTS

Part No.	Name of Part	Plate No.	Code Word	
230	Style 102, 1/4"-20 Hexagon Check Nut x 1/4" thick	13-15-17-35	Travs	
337	Style 6, 1/8" Pipe Elbow	15	Evile	
342	Style 6, 1/4" Street Elbow	14.15	Polan	
6151/2	Style 202, 3/4" x 1/4" Plain Lock Washer x 3/40" thick	35	Prune	
741	Style 202, 5/16" x 1/4" Plain Lock Washer x 1/16" thick	57	Lulas	
EC1243	Style 2, 1/4"-20 Fillister Head Cap Screw x 1/4" long	567111217	Tasha	
EC1258A	Pressure Oiler Oil Cup	15	Massa	
EC1259	Pressure Oiler Shut Off Value	17	Macao	
AEC1260	Pressure Oiler Body Assembly (complete as shown on Plate 16)	1/	Maces	
11201200	Pressure Oiler Body Assembly Lock Washers—Use 615½	10	Maced	
	Pressure Oiler Body Assembly Mounting Bushings—Use EC12623/2 Pressure Oiler Body Assembly Mounting Bushings—Use EC1265			
AEC1260-1	Pressure Oiler Body Only Assembled	17	Makin	
EC1262A	Pressure Oiler Bracket	17	Macro	
	Pressure Oiler Bracket Lock Washer—Use 741 Pressure Oiler Bracket Mounting Screws—Use FC12711/		Macro	
EC126214	Style 3 3/4"-16 Hexagon Head Cap Screw x 23/2" long	17	Country	
EC1264A	Pressure Otler Cover	17	Swats	
DOILOIN	Pressure Oiler Cover Screws—Use EC1382	17	Mana	
EC1265	Pressure Oiler Mounting Bushing (Not used with metal feeder)	17	Mages	
EC12661/2	Style 6, 1/8" Black Iron Pipe Nipple x 7" long		Ament	
	Pressure Otler Feed Line Elbow—Use 357			
	Pressure Otler Feed Line Street Elbow—Use 342			
FOIDCE	Pressure Otler Feed Line Shut Off Valve-Use EC1259			
ECI20/	Pressure Oiler Piston Stop Stud	17	Magog	
AEC1268	Pressure Oiler Piston Assembly, consisting of piston, stop and pin (Sold only as			
	assembled) Pressure Oiler Piston Screw—Use EC1269	17	Magus	

PRESSURE OILER PARTS

Part No.	Name of Part	Plate No.	Code Word
EC12681/2	Pressure Oiler Piston Scal		Sweal
EC1269	Shoulder Screw (for Pressure Oiler Piston and Roller)	17	Mahan
EC1270	Pressure Oiler Packing	17	Mahat
EC1271	Pressure Oiler Packing Retainer Pressure Oiler Packing Retainer Screw—Use EC1243	17	Mahdi
EC1271½	Style 3, 5/16"-18 Hexagon Head Cap Screw x 7/8" long	17	Anoly
EC1272	Pressure Oiler Piston Roller Pressure Oiler Piston Roller Screw—Use EC1269	17	Mahon
EC1273	Style 202, 5/16" x 1/8" Lock Washer x 3/64" thick	35	Swear
EC1274	Pressure Oiler Adjusting Lever Link Pressure Oiler Adjusting Lever Link Fulcrum Nut—Use 230 Pressure Oiler Adjusting Lever Link Fulcrum—Use EC1275	17	Maids
EC1275	Shoulder Screw (for Adjusting Lever and Weight Link)	17	Maiks
EC1276	Pressure Oiler Weight Link Pressure Oiler Weight Link Screw Nut—Use 230 Pressure Oiler Weight Link Lock Washer—Use EC1273 Pressure Oiler Weight Link Screw—Use EC12761/2	17	Mains
EC12761/2	Shoulder Screw (for both ends of Pressure Oiler Adjusting Lever)	17	Mainz
EC1277Å	Pressure Oiler Adjusting Lever Pressure Oiler Adjusting Lever Fulcrum Nut—Use 230 Pressure Oiler Adjusting Lever Fulcrum—Use EC12761/2	17	Maist
EC1278A	Pressure Oiler Weight Pressure Oiler Weight Screw Nut—Use 230 Pressure Oiler Weight Screw—Use EC1275	17	Malar
EC12781/	Pressure Oiler Feed Line Close Nipple		Sweer
AEC12791/2	Pressure Oiler Feed Line Assembly	17	Malis
EC1280	Pressure Oiler Feed Line Connector	17	Malms
AEC1281C	Pressure Oiler Diffusion Tube Assembled	1-2-17-30-34	Malts

PRESSURE OILER PARTS

Part No.	Name of Part	Plate No	Code Word
AEC12811/2	Pressure Oiler Diffusion Tube Packing (asbestos) (box of 20 packings)	30	Hooly
EC1282	Pressure Oiler Diffusion Tube Packing Retainer	17	Malty
EC12821/2A	Pressure Oiler Diffusion Tube Packing Retainer Screws	17	Mamey
EC13321/2D	Pressure Oiler Diffusion Tube Adapter	2-7	Thraw
EC1382	Style 2, No. 10-32 Fillister Head Machine Screw x 1/8" long	3-9-17-26-35	Tolds

When ordering parts, always give serial number of the machine.

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Part No.	Name of Part	Plate No.	Code Word
361/2	Style 14, No. 2 Name Plate Drive Pin x 1/4" long	28	Vanad
40	Style 3, 5/18"-18 Hexagon Head Screw x 1" long.	35	Marks
761/2	Style 3, 1/4"-20 Hexagon Head Screw x 3/4" long	35	Turco
79	Style 9, No. 10-30 Oval Flat Head Screw x 1/2" long	3-9	Merit
158A	Style 202, 1/4" x 3/20" Lock Washer x 1/16" thick	15-35	Newsy
M185	Style 7, 1/4"-20 Round Head Screw x 3/8" long	21-35	Tachy
200	Gas Pressure Regulator Gas Pressure Regulator Nipple—Use 6074	3-9-15	Vario
210E	Style 7, 1/4"-20 Round Head Screw x 1" long	15-35	Prate
230	Style 102, ¼-20 Hexagon Check Nut 1/8" thick	13-15-17-35	Trays
282	Sight Hole Cover Mounting Stud	9	Orris
300	Gas Burner Spud—Specify size by number or complete gas specifications, such as		
	kind, calorific value in BTU, specific gravity and pressure	15	Roke]
A320C	Gas Governor Assembled Gas Governor Mounting Screws—Use EC1646½ Gas Governor Street Elbow—Use EC1828	15	Okuma
327	Style 6, 1/8" Close Nipple x 3/4" long	15	Eupon
337	Style 6, 1/8" Pipe Elbow	15	Exile
342	Style 6, 1/8" Street Elbow	14-15	Polan
370	Gas Governor Lever	15	Polla
371	Gas Governor Lever Fulcrum		Fanar
372	Gas Governor Lever Spring	15	Palmy
374	Gas Governor Valve		Palsy
375	Gas Governor Valve Washer		Panes
376	Gas Governor Valve Spring		Farad
377	Gas Governor Valve Spring Washer		Panne
392	Gas Burner Mixer Spud Adapter	15	Archi
393	Gas Governor Adjusting Screw Spring	15	Drape
397A	Crucible Gas Lighter Complete	3-9-15	Duple
398	Gas Lighter Orifice	15	Duran

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Part No.	Name of Part	Plate No.	Code Word	
399	Gas Lighter Nipple	15	Durst	
419	Style 102. No. 10-30 Hexagon Nut x 1/4" thick	35	Party	
453	Style 6, ¹ / ₄ " Pipe Nipple x 2" long	15	Vedan	
454	Style 6, 1/2" Street Elbow	15	Vedet	
5041/1	Crucible Charging Door Wire Coil Handle Crucible Charging Door Handle Screw—Use 783 Crucible Charging Door Handle Nut—Use 230 Crucible Charging Door Handle Lock Washer—Use 158A	8	Arter	
556	Style 1, 5/16"-18 Fillister Head Screw x 3/4" long		Perky	
607	Style 56, 5/1e" Dowel Pin x 19/29" long	35	Poilu	
783	Style 7. 1/4"-20 Round Head Screw x 1/4" long	35	Relet	
EC10611/4	No. 2 Drive Screw x 1/4" long	3.9	Volca	
EC1116	Style 3. 1/2"-13 Hexagon Head Screw x 11/2" long	35	- Taney	
EC1123	Style 6. ³ / ₄ " Nipple x 2 ¹ / ₆ " long	15	Aside	
EC1124A	Crucible Burner Elbow Union	15	Stown	
EC1133	Style 7. No. 8-32 Round Head Screw x 3/4" long	35	Tapes	
EC11841/	Style 2 No 8-32 Oval Fillister Head Screw x %" long	35	Astir	
EC1191%A	Gas Lighter Inlet Coupling	14	Atlas	
EC11921/	Valve Handle Stem Wheel Can Nut	14-15	Atman	
EC1195	Burner Valve Handle	15	Hindi	
EC1243	Style 2 1/4"-20 Fillister Head Can Screw x 1/4" long	5-6-7-11-12-17-35	Techy	
EC1303D	Crucible Well Crucible Well Mounting Screws—Use ECI311	1	Tetra	
EC1305ED	Mold Housing (for Model E) (must be fitted to crucible at factory)	2	Thacs	
EC13051/ED	Mold Housing (for Model F) (must be fitted to crucible at factory)	8	Radio	
EC1311	Style 3, 1/4"-20 Hexagon Head Screw x 11/4" long	35	Thens	
EC1330½A	Diffusion Tube Adapter Shield Diffusion Tube Adapter Shield Mounting Screws—Use EC1243	7-8	Audio	

Part No.	Name of Part	Plate No.	Code Word
EC13321/2D	Diffusion Tube Adapter	2.7	Bater
EC13431/2	Style 2, 5/16" Fillister Head Screw x 11/4" long	35	Waeco
EC1345	Style 6. 1/2" Railroad Union	15	Thurse
ECI3541/2	Style 4, No. 6-32 Cup Point Headless Set Screw x 14" long	15 20 35	Tigon
EC1361 ¹ / ₂	Crucible Throat Cover (upper) Crucible Throat Cover Screws—Use EC1382	8	Vultu
EC1367½	Crucible Cover (hinged half) Assembled Crucible Cover (hinged half) Hinge Pins—Use EC1380	3-7-9	Batik
EC1368A	Crucible Charging Door	3.9	Toads
EC1368½B	Crucible Cover Lock Stay	2-3-9	Toady
EC1369	Crucible Charging Door Hinge Pin	3.9	Tobit
EC13691/2	Crucible Cover Lock Stay Screw	2	Tobol
EC1373A	Crucible Governor Tube Housing Crucible Governor Tube Housing Screws—Use EC1374	19	Toils
EC1374	Style 2, No. 10-32 Fillister Head Screw x 13/4" long	35	Toirs
EC1379A	Crucible Cover Hinge		Tokay
EC1380	Style 56, 5/16" Dowel Pin x 21/8" long	7-35	Tolas
EC13801/1A	Water Jacket Cover Screw	3-8-9	Whilk
EC1382	Style 2, No. 10-32 Fillister Head Screw x 3/8" long	3-9-17-26-35	Tolds
EC1388	Style 2, No. 10-32 Fillister Head Screws x 2" long	35	Tonal
EC13911/2A	Water Jacket Cover Screws (15/16")		Begem
EC1394½A	Sealing Valve Stem Handle	2-3-8-9	Binet
EC13951/2	Style 8, No. 8-36 Flat Head Screw x 3/8" long	35	Biped
EC1396F	Sealing Valve Stem	2-3-8-9	Blond
AECI398F	Scaling Valve Retainer Assembled (sold only as assembled) Scaling Valve Retainer Assembled Mounting Screws—Use EC11841/2		Blurb

When ordering parts, always give serial number of the machine.

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Part No.	Name of Part	Plate No.	Code Word	
EC14491/5	Sight Hole Cover Stop Pin	3-9	Swink	
EC16271/2	Style 102, No. 10-32 Hexagon Nut x 1/4" thick	15-35	Unear	
EC1646 ¹ / ₂	Style 7. No. 10-32 Round Head Screw x 3/4" long	35	Lawks	
EC1648	Style 7. No. 10-32 Round Head Screw x 1/2" long	15-26-35	Laver	
EC1732	Gas Lighter Tube	15	Gyges	
AEC1733	90° 3/8" O.D. Tube x 1/4" IPT Brass Elbow and Bushing	15	Gyrus	
FC1799	Throat and Mold Scaling Burner Mixer Fiber Washer		Videt	
EC1801	Crucible Cas Burner Complete (no parts sold separately)	15	Looms	
1301001	Crucible Gas Burner Mounting Screw—Use 761/2	100		
AEC1802A	Gas Crucible Assembled (for Model E)		Botry	
	Gas Crucible Mounting Screws—Use 556			
1.000001/1	Gas Grucible Dowel Pin—Use 60/		D.J.	
AEC1802 1/2 A	Gas Crucible Assembled (for Model P) Gas Crucible Mounting Screws—Use 556		Drise	
ECIECID	Gas Gruciple Dowel Pin—Osc 007	2.0	Dulas	
EC1805B	Gas Crucible Cover (fixed hair) Gas Crucible Cover Assembled Mounting Screws—Use EC1343½	3-9	Buige	
AEC1806B	Crucible Burner Gas Mixer Assembled—sold only as assembled	15	Lords	
EC1807A	Crucible Burner Gas Valve	15	Lores	
EC1810A	Gas Governor Cover Gas Governor Cover Mounting Screws—Use EC13791/2	3-9	Loses	
AEC1811	Gas Governor Expansion Tube Assembled	15	Carge	
EC1812	Gas Governor Carbon	15	Loshs	
EC1816	Gas Governor Adjusting Screw	3-9-15	Lotze	
EC1817A	Crucible Gas Line Tube	15	Lough	
EC1818A	Gas Governor Line Tube	15	Louse	
AEC1870B-1	Throat and Mold Scaling Burner Assembled, consisting of scaling burner, mixer			
and a second part	and washer		Camit	
EC1820B	Throat and Mold Sealing Burner	15	Carel	

1

Part No.	Name of Part	Plate No.	Code Word
EC18201/2	Throat and Mold Sealing Burner Mixer Throat and Mold Sealing Burner Mixer Washer—Use EC1799	15	Usbeg
EC1822A	Throat Burner Valve Shaft	15	Lowly
EC1823A	Throat and Mold Heater Cock	15	Lowne
EC1825A	Sealing Burner Valve Shaft	15	Usher
EC1827	Burner Valve and Shaft Connecting Pin	15-35	Lucas
EC1828	1/4" Street Elbow	15	Vacan
EC18281/2	Gas Tube Compression Coupling Elbow Assembled	15	Colex
EC1829	Gas Governor Adjusting Stop Screw	15	Lucea
EC18291/2	Governor Gas Line Union	15	Dacty
EC18301/2	Style 3, 1/3"-13 Hexagon Head Screw x 23/4"	15-35	Lucid
EC18311/2	Crucible Assembled Mounting Collar	15	Victo
EC1833A	Sight Hole Cover Sight Hole Cover Mounting Screw—Use 282 Sight Hole Cover Mounting Screw Nut—Use 419	3-9	Decal
EC1835A	Gas Manifold Gas Manifold Mounting Screw—Use EC1116	15	Lunch
EC1836	Style 6, 1/4" Pipe Nipple x 4" long	15	Lungs
EC1837	Gas Supply Cock	3-9-15	Lunts
EC1838	Throat and Mold Burner Adjusting Bushing Clamp Screw	15	Lupin
EC1839	Throat and Mold Burner Adjusting Bushing	15	Lurch
EC1840	Gas Inlet Pipe Mounting Bracket	15	Lures
EC1841A	Gas Inlet Pipe	15	Lurid
EC1842	Crucible Gas Burner Elbow Connecting Nipple	14-15	Lorks
EC1846	Manifold Adjusting Bushing		Luzon
EC18461/2A	Gas Crucible Casing Front Cover	3.9	Decre
EC1847	Manifold Adjusting Bushing Clamp Screw	15	Lving
EC1848	Crucible Burner Adjusting Bushing	15	Recty
EC1849	Crucible Burner Adjusting Bushing Clamp Screw	15	Recur

When ordering parts, always give serial number of the machine

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Part No,	Name of Part	Plate No.	Code Word
EC1852A	Gas Inlet Pipe Pedestal and Plug Gas Inlet Pipe Pedestal Mounting Screw—Use 40	15	Diode
EC1854	Burner Valve Indicator	15	Lyric
EC1855	Burner Valve Stem Bracket	3-9-15	Dober
EC1857	Style 6, 1/2" x 1/2" x 1/2" Pipe Tee	15	Vican
AEC1858A	Fuse and Switch Box Assembled (Single Phase) Fuse and Switch Box Mounting Screw—Use M185 Fuse and Switch Box Mounting Screw—Use 76 ¹ / ₂	3-9	Lyssa
EC1859	Motor Switch Flush Plate and Screws (Single Phase)	3.9	Lytta
EC1861	Gas Burner Valve Stem Bracket Name Plate Gas Burner Valve Stem Bracket Name Plate Screw—Use 36½	3-9-15	Udder
EC1862	Fuse Box Name Plate Fuse Box Name Plate Pins—Use EC1061½	3.9	Ukase
EC1863	Motor Name Plate Motor Name Plate Pins—Use EC1061½	3.9	Ulcer
EC1866B	Throat and Mold Sealing Burner Cap	15	Drath
EC1874	Crucible Gas Line Cover Crucible Gas Line Cover Mounting Screws—Use EC1388		Drive
EC1875	Throat Burner Grid	15	Wauff
EC1882B	Water Jacket Cover (specify whether 6 or 10 mounting screw holes. Ten hole	111	i. and it
	type will also fit 6 hole type) Water Jacket Cover Screw (13/16")—Use EC1380½A	3-9	Dural
FOIGHT	Water Jacket Cover Screw (1916) — Use EC13911/2 A		12212
EC1885	Mold Scaling Burner Grid	15	Edams
EC1012	Style 6, 1/8 x 1914 long, Nipple	223	Indic
6074	Style 0, 1/4 to 1/8 Reducer	15	Valis
0074	Style 6, ½ Pipe Nipple x 1% long		Endue

When ordering parts, always give serial number of the machine.

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Part No.	Name of Part	Plate No.	Code Word	
42	Style 3. 1/2"-13 Hexagon Head Screw x 1" long	35	Corns	
158A	Style 202, 1/4" x 3/6" Lock Washer x 1/16" thick	15-35	Newsy	
230	Style 102, 1/2"-20 Hexagon Nut x 1/8" thick	13-15-17-35	Trays	
290E	Style 4, 5/18"-18 Headless Cup Point Set Screw x 1" long	35	Shard	
293E	Style 7. 1/2"-20 Round Head Screw x 1/8" long	35	Lofts	
304E.	Style 7, No. 8-32 Round Head Screw x 1/4" long	35	Redit	
305E	Style 102, No. 8-32 Hexagon Nut x 359" thick	35	Redot	
311E	Asbestos Listing (50")	7	Logan	
316E	Wire Markers (specify markings)	7	Logic	
5041/2	Crucible Charging Door Wire Handle	8	Erase	
	Crucible Charging Door Wire Handle Screw—Use 783 Crucible Charging Door Wire Handle Lock Washer—Use 158A Crucible Charging Door Wire Handle Nut—Use 230			
556	Style 1 54.0"-18 Fillister Head Screw x 34" long	35	Perky	
607	Style 56 5/" Dowel Pin x 19/" long	35	Poilu	
698	Style 1. 14"-20 Fillister Head Screw x 14" long	175	Rails	
734	Style 7 1/ "-20 Round Head Screw x 1/1" long	35	Relet	
741	Style 202, 54 c'' x 1/4" Lock Washer x 1/4 c'' thick	17-35	Reach	
754	Style 56 34 " Dowel Pin x 74 " long	35	Rebut	
783	Style 7 1/2"-20 x %" long Round Head Screw	35	Kench	
EC1161	Style 7 No. 10-32 Round Head Screw x 3/" long	35	Tares	
EC11841/4	Style 7 No. 8-32 Oval Fillister Head Screw x %" long	35	Erode	
EC1219	Style 7, No. 10.37 Round Head Screw x 3/4" long	7-35	Tauro	
EC1243	Style 2, 14"-20 Fillister Head Screw x 1/5" long	5-6-7-11-12-17-35	Techy	
EC1284E	Side Throat Heater Pad (asbestos)		Tempo	
EC1285E	Bottom Throat Heater Pad (asbestos)		Tempe	
AFC1300FB	Cartridge Scaling Heater Complete (specify voltage)	22-23-24	Eruct	
	Cartridge Sealing Heater Screw—Use 304E	200200000		
	Cartridge Sealing Heater Check Nut—Use 305E			

Part No.	Name of Part	Plate No.	Code Word	
AEC1302EC	Electric Crucible and Casing Assembled Complete (for Model E)(specify voltage)	19	Testa	
AEC13021/2EA	Electric Crucible and Casing Assembled Complete (for Model F) (specify voltage) Electric Crucible and Casing Assembled Mounting Screw—Use 556 Electric Crucible and Casing Assembled Mounting Pin—Use 607		Radas	
EC1303D	Crucible Well (for Model E or F) Crucible Well Mounting Screw—Use EC1311	1	Tetra	
AEC1304E	Crucible Heater (specify voltage) Crucible Heater Mounting Screw—Use 42	1-7-21-23-24	Thack	
EC1305ED	Mold Housing (Model E) (must be fitted to crucible at factory)	2	Thaes	
EC1305½ED	Mold Housing (Model F) (must be fitted to crucible at factory)	8	Radio	
EC1307EA	Style 4, 3/8"-16 Round Point Headless Set Screw x 11/2" long	35	Thane	
EC13091/2	Bottom Throat Heater Clamp Screw		Swoor	
EC1310½B	Mold Adapter (Use with 3/8" mold in 36-point machine)	13-34	Redun	
EC1311	Style 3, 1/2"-20 Hexagon Head Screw x 11/4" long	35	Thens	
EC1312EA	Bottom Throat Heater Clamp Support Bottom Throat Heater Clamp Support Screw—Use EC1309½ Bottom Throat Heater Clamp Support Lock Washer—Use 741		Escad	
EC1313EA	Bottom Throat Heater Clamp Heater Clamp Adjusting Screw—Use 1307EA		Thera	
EC1325½EC	Water Jacket Cover (specify whether 6 or 10 mounting screw holes. Ten hole			
	type will also fit 6 hole type) Water Jacket Cover Screw—Use EC1380½ A	8	Theek	
	Water Jacket Cover-Sealing Heater Screw Plug—Use EC1378½E Water Jacket Cover Screw—Use EC1391¼ A			
EC13261/2EA	Crucible Throat Cover (lower)	8	Waile	
	Crucible Throat Cover Screw-Use EC1382	5	tranc.	
EC13271/2E	Crucible Throat Cover (left center) Crucible Throat Cover Screw—Use FC1382	8	Tousy	

Part No.	Name of Part	Plate No.	Code Word	
EC1330½A	Diffusion Tube Adapter Shield Diffusion Tube Adapter Shield Mounting Screw—Use EC1243	7-8	Voile	
EC133214D	Diffusion Tube Adapter	2-7	Thraw	
EC13431/2	Style 2. 5/16"-18 Fillister Head Screw x 11/4" long	35	Waese	
EC1359	Style 4, 1/4"-20 Headless Set Screw x 1/4" long	8-35	Timor	
EC1361½	Crucible Throat Cover (upper) Crucible Throat Cover Screws—Use EC1382	8	Evert	
EC1362	1/2" Jiffy Clip Jiffy Clip Mounting Screw—Use EC1161		Tinks	
AEC1367EC	Crucible Cover Assembled (fixed half) Crucible Cover Mounting Screw—Use EC1343 ¹ / ₂	7	Evoke	
AEC13671/2	Crucible Cover Assembled (hinged half) Crucible Cover Hinge Pins—Use EC1380	3-7-9	Feter	
EC1368A	Crucible Charging Door	3-9	Toads	
EC13681/B	Crucible Cover Lock Stay	2-3-9	Femin	
EC1369	Crucible Charging Door Hinge Pin	3-9	Tobit	
EC13691/4	Crucible Cover Lock Stay Screw	2	Tobol	
EC1371 ¹ / ₂ E	Sealing Unit Conduit Sealing Unit Conduit Set Screw—Use EC1359		Veter	
EC1373A	Crucible Terminal Housing Crucible Terminal Housing Mounting Screw—Use EC1374	19	Toils	
EC1374	Style 2, No. 10-32 Fillister Head Screw x 13/4" long	35	Toits	
EC1378½E	Water Jacket Cover-Sealing Heater Screw Plug		Freud	

Part No.	Name of Part	Plate No.	Code Word	-
EC1379A	Crucible Cover Hinge Crucible Cover Hinge Screw—Use 698		Tokay	
EC13791/2	Style 2, No. 10-32 Fillister Head Screw x 1/2" long	35	Token	
EC1380	Crucible Cover (hinged half) Hinge Pin (See FC1379A)	7 35	Tolar	
EC13801/2A	Water Jacket Cover Screws	380	While	
EC1382	Style 2, No. 10-32 Fillister Head Screw x 3/4" long	3 0 17 76 35	Tolds	
EC1383EA	Side Throat Heater Clamp Side Throat Heater Clamp Set Screw—Use 290E	5-5-17-20-35	Toles	
EC1386½E	Crucible Condulet Terminal Box Cover Condulet Terminal Box Cover Screw—Use EC13791/2	7	Tomes	
EC1387EB	Crucible Condulet Terminal Box Crucible Condulet and Cover Screw (long)—Use EC1374 Crucible Condulet and Cover Screw (short)—Use EC1388	7	Tomsk	
EC1388	Style 2, No. 10-32 Fillister Head Screw x 2" long	35	Tonal	
AEC1391EA	Side Throat Heater Assembled (specify voltage)	77.73.74	Tonga	
EC13911/A	Water Jacket Cover Screws (15/ c" long)	Care and the 1	Icily	
AEC1392EA	Bottom Throat Heater Assembled (specify voltage)	22.23.24	Tonic	
EC1394½A	Sealing Valve Stem Handle Sealing Valve Stem Handle Mounting Screw-Use EC13951/A	2-3-8-9	Idler	
EC13951/2	Style 8, No. 8-36 Flat Head Screw x %" long	35	Inaly	
EC1396F	Sealing Valve Stem	2-3.8.9	Toons	
AEC1398F	Scaling Valve Retainer Assembled (sold only as assembled) Sealing Valve Retainer Assembled Mounting Screw—Use EC1184 ¹ / ₂		Iliad	
AEC1399EA	Heater Terminal Lead Wire Group for 200 to 250 volt crucibles (consisting of two wires, terminals and markers, S1 and S2) Heater Terminal Lead Wire Jiffy Clip—Use EC1362		Topes	
AEC1405EA	Heater Terminal Lead Wire Group for 100 to 150 volt crucibles (consisting of six wires, terminals and markers, one ST1, one ST2, two S1, and two S2) Heater Terminal Lead Wire Jiffy Clip—Use EC1362		Toque	

Part No.	Name of Part	Plate No.	Code Word
AEC1410E	Terminal Block Assembled (110 volt)	7	Torah
AEC1411E	Terminal Block Mounting Screw—Use EC1219 Terminal Block Assembled (220 volt) Terminal Block Mounting Screw—Use EC1219	23	Torch

ELECTRIC ELROD CONTROL PANEL, SWITCH AND RESISTOR PARTS

Part No.	Name of Part	Plate No.	Code Word
761/2	Style 3, 1/4"-20 Hexagon Head Screw x 3/4" long	35	Turco
134A-1	Cartridge Fuse (10 amp.) (box of 10)	18	Myrrh
134A-2	Cartridge Fuse (6 amp.) (box of 10)	18	Mathe
M185	Style 7, 1/4"-20 Round Head Screw x 3/4" long	21.35	Tachy
230	Style 102, 1/4"-20 Hexagon Nut x 1/4" thick	13,15,17,35	Trave
A302EC	Panel Box	2 10	Ingree
	Panel Box Mounting Screw Nut-Use 701	2-19	Inariii
	Panel Box Mounting Screw Nut-Use FC1351F		
304E	Style 7, No. 8-32 Round Head Screw x 1/1" long	25	Dedit
3041/E	Terminal Block	10	Redit
305E	Style 102 No 8.32 Heragon Nut v 37," thick	10	Pabri
311F	Ashestos Listing (22" long)	32	Redot
316E	Wire Markers (merify markings)	/	Logan
A327E	Magnetic Switch Coll (specify unlesses and and a 1 a)	1	Logic
A 377E A	Magnetic Switch Coll (Specify voltage, current and cycles)	10	Sirup
ASTOR	Bragnetic Switch Coll (Specify voltage and frequency)	18	Fabul
AZIOE	Frotective Resistance Coll (specify voltage, current and cycles)	23	Situs
221E	Nickout Coil (specify voltage, current and cycles)	23	Slade
22215	Magnetic Switch Coil Liner for DC ("U" shape)		Slash
332E	Magnetic Switch Coil Liner for DC (flat shape)		Sleid
552EA	Magnetic Switch Coil Clamp	18	Facti
334½E	Fuse Block	18	Facto
542E	Asbestos Twine (6 ft. long)		Vangs
343E	Cartridge Fuse (110 volt, 20 amp.) (box of 10)	18	Shred
348E	Cartridge Fuse (30 amp.) (box of 10)	18	Magda
349E	Cartridge Fuse (15 amp.) (box of 10)	18	Magen
351E	Main Switch	23	Misio
A351EA	Control Panel Main Switch (Single Phase)	18	Garbo
A351½EB	Control Panel Main Switch (3-Phase)	18	Pedic
A352EA	Magnetic Switch Complete	23	Mical

ELECTRIC ELROD CONTROL PANEL, SWITCH AND RESISTOR PARTS

Part No.	Name of Part	Plate No.	Code Word
A352EB	Control Panel Magnetic Switch complete	18	Factu
3521/5E	Main Switch Insulating Cover	18	Pepto
A353EA	Magnetic Switch Removable Armature	18	Mixen
A353EB	Magnetic Switch Movable Contact Board Assembly	18	Facul
354A	Magnetic Switch Removable Armature Retainer	18	Moche
354EA	Magnetic Switch Removable Armature Retainer Yoke	18	Fadel
A3541/E	Magnetic Switch Stationary Contact Point Assembled	18	Incur
355E	Magnetic Switch Removable Armature Retainer Spring		Modus
355EA	Magnetic Switch Removable Armature Retainer Yoke Spring		Fader
3551//EA	Magnetic Switch Movable Contact Bar	18	Fadge
356E	Magnetic Switch Removable Armature Spring Contact	18	Mofet
356EA	Magnetic Switch Movable Contact	18	Fagen
357E	Magnetic Switch Removable Armature Contact Spring	18	Monad
357EA	Magnetic Switch Movable Contact Spring	18	Faina
358E	Magnetic Switch Stationary Contact	- 18	Monta
358EA	Magnetic Switch Stationary Contact (R.H.)	18	Falco
3581/ EA	Magnetic Switch Stationary Contact (L.H.)	18	Fanti
359E	Magnetic Switch Stationary Contact Screw	18	Indol
A360EA	Magnetic Switch Retaining Contact and Wire Assembled	18	Inept
A360EB	Magnetic Switch Interlocking Assembly (D.C. only)	1.10	Fanto
A3601/EB	Magnetic Switch Interlock Contact Replacement Set (D.C. only)		Permu
3601/4 E	Magnetic Switch Retaining Contact Retainer Spring		Inert
361%E	Magnetic Switch Retaining Contact Retainer Spring Washer		Infer
3621/5 E	Magnetic Switch Retaining Contact Retainer Spring Washer Cotter Pin		Inlaw
363E	Panel Box Cover		Jessa
3631/4 E	Magnetic Switch Removable Armature Spring Contact Porcelain Insulator	18	Jeste
3651/E	Terminal Block Plug		Perpe
A3661/2 E	Terminal Block Connector	18	Petar
1161	Style 7, No. 10-32 Round Head Screw x 3/8" long	18	Tares

ELECTRIC ELROD CONTROL PANEL, SWITCH AND RESISTOR PARTS

Part No.	Name of Part	Plate No.	Code Word	
701	Style 4, 1/4"-20 Headless Oval Point Set Screw x 1" long	35	Reaks	
734	Style 7, 1/4"-20 Round Head Screw x 1/2" long	35	Relet	
AEC1301E	Cage Type Resistor (complete as shown) Resistor Mounting Screw—Use M185 Resistor Mounting Screw Nut—Use 230	24	Tests	
AEC1316E	Mold Sealing or Throat Switch (complete as shown) Flat Head Mounting Screw—Use EC1317½	2-19-24	Inter	
AEC1317E	Motor Switch (complete as shown) Flat Head Mounting Screw—Use EC1317½	2-24	Thigs	
EC13171/2	Style 8, No. 6-32 Flat Head Screw x ¼" long	35	Thigh	
EC1351E	1/4"-20 Hexagon Cap Nut		Ticht	
EC13521/2E	Panel Box Guard		Ticks	
EC1353EA	Panel Box Bracket (top) Panel Box Bracket Screw—Use 734		Tides	
EC1354EA	Panel Box Bracket (bottom) Panel Box Bracket Screw—Use 734		Tiffs	
AEC1358EC	Fuse and Switch Box Assembled (specify voltage) Fuse and Switch Box Mounting Screw (hexagon head)—Use 76½	2	Irred	
	Fuse and Switch Box Mounting Screw (round head)—Use M185 Mounting Screw Nuts for above—Use 230			
EC1359EA	Fuse and Switch Box Bracket Fuse and Switch Box Bracket Screw—Use 76½	8	Tinct	
AEC1404EA	Switch Box Wire Group, consisting of seventeen wires, B1, B2, D1, D2, D3, D4, A, J, ST3, ST4, E, F, BT, S and M with wire markers		Topic	
EC1436	Style 7, No. 6-32 Round Head Screw x 5/16" long	35	Torus	
AEC4000E	6 ohm Resistor	23-24	Locus	
AEC4001E	4 ohm Resistor.	23-24	Lodge	

ELECTRIC THERMOSTAT (ON TOP OF CRUCIBLE)

Part No.	Name of Part	Plate No.	Code Word
304E.	Style 7, No. 8-32 Round Head Screw x 1/4" long	35	Redit
305E	Style 102 No. 8-32 Hexagon Nut x 369" thick	35	Redot
311E	Asbestos Listing (22" long)	7	Logan
316E	Wire Markers (specify markings)	7	Logic
EC1339EA	Thermostat to Control Panel Conduit	19	Thuds
EC13401/4E	Contact Lever Adjusting Roller		Ivied
EC1343E	Thermostat Flexible Conduit	19	Thumb
EC1400EA	1/4" No Thread Conduit Coupling	4-19	Toper
EC1401EA	"/4" No Thread Conduit Connector	19-21	Topek
AEC1403E	Thermostat to Coutrol Panel Lead Wire Group, consisting of three wires, C, L		Contraction of the second
	and H with wire markers Wire Markers for above (specify markings)—Use 316E Control Panel Lead Wire Clamp Screw—Use 304E Control Panel Lead Wire Clamp Screw Nut—Use 305E Asbestos Listing (22" long)—Use 311E	21	Торее
EC1648	Style 7, No. 10-32 Round Head Screw x 1/2" long	15-26-35	Layer



ELECTRIC THERMOSTAT (ON LEFT SIDE OF CRUCIBLE)

Part No.	Name of Part	Plate No.	Code Word
M132	Style 2, No. 8-32 Oval Fillister Head Screw x 1/4" long	21	Serru
M185	Style 7, 1/4"-20 Round Head Screw x 3/4" long	21-35	Tachy
309E	Thermostat Flexible Conduit 90° Angle Connector	21	Vehic
316E	Wire Markers (specify marking)	7	Logic
412E	Thermostat Mercury Element Mounting Screw	21	Genet
421E	Thermostat Mercury Element Flange	21	Ymirs
AEC1340EC	Thermostat Complete Thermostat Mounting Screws—Use M185	21	Ixtle
EC1343EA	Thermostat to Control Panel—Flexible Conduit	21	Ketos
AEC1343EA	Thermostat to Control Panel-Flexible Conduit Assembled, consisting of conduit,		Matro
	three wires and markers H, C and L, 90° angle connector and straight connector	21	
EC1401EA	Thermostat to Control Panel-1/2" No Thread Connector	19-21	Topek
AEC1403EA	Thermostat to Control Panel-Lead Wire Group, consisting of three wires and		1000
	markers H, C and L	21	Modul
EC14211/2E	Thermostat Bracket Thermostat Bracket Mounting Screws—Use M132	21	Monik
EC14221/2E	Thermostat Mercury Tube Opening Cover Thermostat Mercury Tube Opening Cover Screws—Use M132		Multi
AEC14241/2E	Thermostat Mercury Tube Assembled, consisting of mercury tube, plunger and		
	plunger housing (not sold separately)	21	Nucle
EC14251/2E	Thermostat Switch	21	Panto
EC14261/2E	Thermostat Switch Mounting Screw	21	Patro
EC14271/2E	Thermostat Switch Arm	21	Peeve
EC14281/2E	Thermostat Adjusting Screw Thermostat Adjusting Screw Set Screw—Use EC1429½E	21	Pheno
EC14291/2E	Style 7, No. 6-32 Round Head Screw x 1/2" long	21	Punch
EC14301/2E	Thermostat Switch Arm Pivot Screw	21	Reger
EC14311/2E	Thermostat Switch Arm Spring	21	Revue

ELECTRIC THERMOSTAT (ON LEFT SIDE OF CRUCIBLE)

Part No.	Name of Part	Plate No.	Code Word
EC1432½E	Thermostat Cover		Serol 💡
EC14331/2E	Style 9, No. 6-32 Oval Fillister Head Screw x 3/8" long	21	Slack
EC1434 ¹ / ₂ E	Thermostat Terminal Housing Cover Thermostat Terminal Housing Cover Screws—Use EC1435½E	21	Speec
EC14351/2E	Style 7, No. 6-32 Round Head Screw x 1/2" long	21-35	Swept
EC14361/2E	Style 8, No. 10-24 Flat Head Screw x 1/2" long	21-35	Tight

Part No.	Name of Part	Plate No.	Code Word	
24	Style 55, No. 5 Taper Pin x 21/2" long	35	Coomb	
40	Style 3, 5/16"-18 Hexagon Head Screw x 1" long	35	Marks	
79	Style 9, No. 10-30 Oval Flat Head Screw x 1/2" long.	3-9	Merit	
100½A	Front Plate Oil Cup	17 F	Tuner	
S129	Style 56, 1/8" Dowel Pin x 3/4" long	35	Tacet	
182	Style 56, 5/16" Dowel Pin x 11/4" long	35	Noisy	
M210	Style 3, 5/16"-18 x 3/4" long, Hexagon Head Cap Screw		Stoon	
230	Style 102, 1/4 "-20 Hexagon Nut x 1/8" thick	13-15-17-35	Trays	
2951/2	Ratchet Pawl Plunger Spring	13	Smash	
419	Style 102, No. 10-30 Hexagon Nut x 1/2" thick	35	Party	
517	Style 56, 1/4" Dowel Pin x % 6" long	35	Tread	
557	Style 56, % ₁₆ " Dowel Pin x ¼" long	35	Freak	
624	Oiler (Flush Type)	5.6.10.12	Porch	
625A	Puller Slide Gib Screw (right hand)	2.17	Pores	
6531/2	Style 56, 3/16" Dowel Pin x 1/4" long	35	Valor	
6591/2	Style 4, 1/4 "-20 Headless Oval Point Set Screw x 3/4" long	13.35	Drock	
EC1064	Wedge Release (for Model F)	17	Patels	
	Wedge Release Dowel-Use S129	14	Raten	
EC1065A	Wedge Release Shaft (for Model F)		Rater	
EC1066A	Wedge Release Ratchet (for Model F)		Rathe	
	Wedge Release Ratchet Dowel-Use S129		ivatiis	
AECI066A	Wedge Release Assembly (for Model F) consisting of knob shaft and cam ninned			
	together. Sold separately	8.11.13	Walde	
EC1067	Wedge Release Stop Ball (for Model F)	13	Raton	
EC1068	Wedge Release Stop Ball Spring (for Model F)	13	Raten	
EC1073	Style 4, No. 10-32 Headless Set Screw x %" long	13	Stoit	
EC1074	Stroke Adjusting Screw Bearing Bracket (for Model F)	13	Ratin	
	Stroke Adjusting Screw Bearing Bracket Screw-Use FC14881/	100	a succession of the second	
EC1075	Ratcher Pawl (for Model F)		Raves	
	Ratchet Pawl Stop Screw-Use EC1073		in in	
120	When ordering a	unte alcunar atra	avial number of the -	a a da da da

Part No.	Name of Part	Plate No.	Code Word
	Ratchet Pawl Stop Screw Lock Nut-Use EC16271/5		
AEC1075	Ratchet Pawl Assembly (for Model F) consisting of pawl, two brackets, handle		
	and sleeve assembled. Sold separately	8-11-12-13	Ratun
EC1076	Ratchet Pawl Fulcrum Screw (for Model F)	11-13	Rayon
EC1077	Ratchet Pawl Handle (for Model F)		Razes
EC1078	Ratchet Pawl Handle Knob (for Model F)		Razee
EC1079	Ratchet Pawl Handle Sleeve (for Model F)		React
EC1080	Ratchet Pawl Bracket (for Model F)	13	Reads
	Ratchet Pawl Bracket Adjusting Screw—Use 6591/2		A COLOR
	Ratchet Pawl Bracket Adjusting Screw Nut-Use 230		
EC1081	Ratchet Pawl Bracket Fulcrum Screw (for Model F)	13	Reams
EC1082	Ratchet Pawl Plunger (for Model F)	13	Reaps
	Ratchet Pawl Plunger Spring—Use 295½		
EC1084	Ratchet Pawl Guard (for Model F)		Rears
AEC1084	Ratchet Pawl Guard Assembled (for Model F)	13	Reame
EC1085	Ratchet Pawl Guard Screw (for Model F)		Reast
EC1116	Style 3, 1/2"-13 Hexagon Head Screw x 11/4" long	35	Tanev
EC1161	Style 7, No. 10-32 Round Head Screw x 3/8" long	35	Tares
EC1230A	Puller Slide Cam	1200	Tauto
	Puller Slide Cam Taper Pin—Use 24		(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)
	Puller Slide Cam Key—Use EC1231		
EC1231	Style 14, No. 23 Woodruff Key		Tawie
EC1232	Puller Slide Cam Roll		Taway
	Puller Slide Cam Roll Stud—Use EC1240A		rawiny
AEC1233B	Puller Slide Cam Shaft Assembly, consisting of shaft, cam, bearing, collar and		12 222
TOIDALL	mitre gear		Swall
EC1234A	Puller Slide Cam Shatt Bearing (cast iron)		Tazza
	Puller Slide Cam Shaft Bearing Mounting Screw—Use 40		
	Puller Slide Cam Shaft Bearing Mounting Pins—Use EC1321		N
	Puller Slide Cam Oil Tube—Use EC14751/2 A		

Part No.	Name of Part	Plate No.	Code Word	
EC1235	Puller Slide Cam Thrust Bearing (bronze)		Teach	
EC1238	Puller Slide Cam Shaft and Spiral Mitre Gear Housing Puller Slide Cam Shaft and Spiral Mitre Gear Housing Mounting Screw—Use M210	7	Teams	
EC1239	Mitre Gear Housing Cover	7	Tears	
EC1240A	Puller Slide Cam Roll Stud	4-10-11	Tease	
EC1242	Mitre Gear Housing Felt Packing		Tebet	
EC1243	Style 2, 1/4 "-20 Fillister Head Cap Screw x 1/2" long.	5-6-7-11-12-17	Techy	
EC1247	Puller Slide Cam Roll Stud Washer	5	Teils	
EC1248A	Puller Slide Cam Guard Mounting Screw—Use EC1161	4-5	Teing	
EC1321	Style 56, 5/16" Dowel Pin x 11/8" long	35	Thing	
EC13311/2	Style 3, 1/2"-13 Hexagon Head Screw x 21/4" long	35	Thram	
EC1338	3/16" Ball Bearing	14	Thore	
EC1352E	Style 4, No. 10 x 369" Lock Washer x 364" thick	14-35	Warse	
EC1382	Style 2, No. 10-32 Fillister Head Screw x 1/3" long	3-9-17-26-35	Tolds	
EC1441	5/16" Ball Bearing		Torts	
AEC1448C	Puller Wedge Shim Assembly (Model F—36 pt.) consisting of shim and dowels. Puller Wedge Shim Snap On Stud—Use EC-1705	7-10-13	Nacre	
EC1449A	Puller Wedge Shim Dowel (left hand-36 pt.)		Tough	
EC14491/2	Puller Wedge Shim Dowel (left hand) for 6 to 18 pt. Model E and 6 to 30 pt. Model F	3.9	Swink	
AEC14501/2A	Puller Wedge Shim Assembly (Model E-6 to 18 pt, incl.) consisting of shim and dowels	7	Nagan	
	Puller Wedge Shim Snap On Stud-Use FC1706			
AEC145114	Puller Wedge Shim Assembly (for 2 pt. twin or 4 pt. single—Models E or F) consisting of shim and dowels Puller Wedge Shim Snap On Stud—Use EC1707	7-34	Under	

Part No.	Name of Part	Plate No.	Code Word
AEC14511/2A	Puller Wedge Shim Assembly (for 1 pt. twin or 2 pt. single-Models E or F)		
1.25	consisting of shim and dowels	7-34	Ulter
	Puller Wedge Shim Snap On Stud—Use EC1707		
AEC14513/4	Puller Wedge Shim Assembly (3 pt. tor Models E or F) consisting of shim and		
	dowels	7.34	Wader
EC14521/2	Puller Wedge Shim Dowel (left hand) (1 and 2 nt twin 2 3 and 4 nt single-		
	Models E or F)		Unbal
EC14531/2	Puller Wedge Shim Dowel (right hand) (1 and 2 pt twin, 2 3 and 4 pt single-		Chibar
	Models E or F)		Unbat
EC1454A	Puller Wedge Shim Dowel (right hand) (36 ptModel F)		Touks
EC14541/2	Puller Wedge Shim Dowel (right hand) (6-18 pt. Model E or 6-30 pt. Model F)		Unbern
AEC1455A	Puller Wedge Shim Assembly (6-30 pt, Model F) consisting of shim and dowels	7-10-13-34	Nagas
	Puller Wedge Shim Snap On Stud—Use EC1706		0
EC1459A	Puller Wedge Blocks	10	Touls
	Puller Wedge Block Screw—Use EC1459½		
EC14591/2	Style 2, 1/4 "-20 Fillister Head Screw x 1/8" long	35	Tours
EC1460C	Puller Wedge		Touse
AEC1460C	Puller Wedge Assembled (for Model E) consisting of shim assembly, wedge,		
1/2/10/11/10/06/00/11	guards, balls, together with dowels and screws. Sold separately	7	Towsy
AEC14601/2A	Puller Wedge Assembled (tor Model F) consisting of shim assembly, wedge,		
1000	guards, balls, together with dowels and screws. Sold separately	11	Naker
EC1461	Wedge Crank Springs	4-5-11	Touzl
EC1462B	Wedge Housing (front)	7	Tower
EC14621/2	Wedge Guide Key		Towns
EC1463A	Wedge Housing (rear) (Model E)		Toyon
	Wedge Housing Oiler—Use 624		
	Wedge Housing Mounting Screw—Use EC1243		
	Wedge Housing Dowel Pins—Use EC14691/2		

Part No.	Name of Part	Plate No.	Code Word	
AEC1463A	Wedge Housing Assembled (for Model E) consisting of front and rear housings, wedge assembly, crank assembly, block, spring, bolt, knob, stop plate, rollers and stud, together with screws, dowels and pins. Sold separately	6.7		
EC1463½	Wedge Housing (rear) (Model F) Wedge Housing Oiler—Use 624 Wedge Housing Mounting Screws—Use EC1243 Wedge Housing Dowel Pins—Use EC1469½	13	Urate	
AEC1463½	Wedge Housing Assembly (for Model F) consisting of front and rear housings, wedge assembly, crank assembly, block, spring, bolt, knob, stop plate, rollers	12	Unhor	
POLICIA	and stud, together with screws, dowers and phils, sold separately	7	Trace	
ECI404A	Wedge Crank Spring Stud (short)	2	Track	
EC1464%	wedge Crank Spring Stud (long)	5.11	Track	
EC1465	Wedge Housing Lock Bolt Wedge Housing Lock Bolt Washer—Use EC1465½	5-11	Tract	
EC14654/	Style 202, 21/64" x 13/29" Lock Washer x 1/16" thick	35	Toyte	
EC1466	Wedge Housing Lock Bolt Knob	5-6-11-12	Trags	
EC14661/4	Style 2, 1/2"-20 Fillister Head Screw x 1/4" long	35	Usage	
EC1467A	Wedge Crank Stop Plate	4-10	Traik	
EC14681/2	Puller Wedge Ball Race Guard Puller Wedge Ball Race Guard Screw—Use EC1746	7	Rebel	
EC14691/	Wedge Housing Dowel Pin	6-12	Waift	
AEC1470	Wedge Crank Assembly (for Model E), Sold only as assembled	5-6	Trait	
AEC14701/	Wedge Crank Assembly (for Model F). Sold only as assembled	8-11-12-13	Recal	
FC1472	Wedge Crank Shaft Outside Roller	5-11-13	Trans	
EC1473	Wedge Crank Shaft Outside Roller Stud	5-11-13	Wapen	
EC1474A	Stroke Adjusting Screw Bearing Bracket Stroke Adjusting Screw Bearing Bracket Screw—Use EC1488½	5-11	Treks	
EC1475A	Stroke Adjusting Slide	4-6-10-12	Trets	

Part No.	Name of Part	Plate No.	Code Word	
EC1475½ A	Puller Slide Cam Oil Tube		Warty	
EC1476	Stroke Adjusting Slide Screw Collar Stroke Adjusting Slide Screw Collar Pin—Use 517	4-10	Trews	
AEC1477	Stroke Adjusting Slide Screw Assembly, consisting of screw, collar and knob pinned together. Not sold separately	5-6-11-12	Tripo	
EC1478	Stroke Adjusting Slide Screw Knob Stroke Adjusting Slide Screw Knob Pin—Use EC1653	4-10	Tribe	
EC1479A	Stroke Adjusting Lock Screw	4-6-10-11-12	Trice	
EC1480F	Puller Slide Puller Slide Oilers—Use 624 Puller Slide Oil Hole Plugs—Use 653½ Front Plate Oil Cup—Use 100½A	5-11	Trick	
EC1480 ¹ / ₂	Puller Slide Filler Piece	5-11	Tried	
EC1481A	Puller Slide Spring	5-11	Trier	
EC1482C	Puller Slide Spring Plunger	4-6-10-12	Trigs Unbri	
EC1482 /2 EC1484 EC1485	Style 201, % "Dia. Washer x 3/32" thick. Puller Slide Cam Housing (Models E and F) Puller Slide Cam Housing Mounting Pin—Use 182	4-10-35 4-6-12	Togos Trine	
	Puller Slide Cam Housing Mounting Screw (short)—Use EC1116 Puller Slide Cam Housing Mounting Screw (long)—Use EC1331½ Puller Slide Cam Housing Dowel Pin—Use EC1558			
EC1486C	Puller Slide Guard	2-5-10-11	Loins	
EC14861/2	Puller Slide and Cam Housing Guard Plate Puller Slide and Cam Housing Guard Plate Screws—Use 79 Puller Slide and Cam Housing Guard Plate Screw Nut—Use 419		Washy	

When ordering parts, always give serial number of the machine.

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Part No.	Name of Part	Plate No.	Code Word	
	Puller Slide and Cam Housing Guard Plate Lock Washer-Use EC1352E			
EC1487	Puller Slide Gib	5-11	Tripe	
100100010	Puller Slide Gib Screws (three right hand)—Use 025A	2.12	Triet	
EC148/ 1/2	Puller Slide Gib Screw (left hand)	5.11	Trite	
EC1488A	Stroke Adjusting Index Plate Stroke Adjusting Index Plate Screw—Use EC1488½	2-11	The	
EC14881/5	Style 2. 1/4 "-20 Fillister Head Cap Screw x 1" long	5-11-35	Troch	
EC1489	Puller Slide Wedge Bearing Plate Puller Slide Wedge Bearing Plate Screws—Use EC1466½	4-10	Trods	
EC1490B	Puller Slide Release Plate Adapter Puller Slide Release Plate Adapter Screws—Use EC1500	4-6-10-12	Trogs	
FC1491C	Puller Slide Material Release Plate (30 and 36 pt. Model F)	11-13	Troke	
EC14911/A	Puller Slide Cam Outside Oiler		Waspy	
EC1495C	Puller Slide Material Release Plate (24 pt. Model F)	11-13-34	Reced	
EC1496B	Stroke Adjusting Index Name Plate (for Model E) Stroke Adjusting Index Name Plate Screws—Use EC1499	4-6	Ullex	
EC14961/2 A	Stroke Adjusting Index Name Plate (for Model F) Stroke Adjusting Index Name Plate Screws—Use EC1499	10	Utlin	
EC1497C	Puller Slide Material Release Plate (6 to 18 pt. inclusive)	5-11-13-34	Reces	
EC1498C	Puller Slide Material Release Plate (1 pt. twin, 2 pt. and 2 pt. twin, 3 and 4 pt.)	5-11-34	Unciv	
EC1499	No 10-32 Oven Head Screw x 1/4" long	4-10	Troop -	
EC1500	Style 2. 5% a"-18 Fillister Head Cap Screw x 27/ e" long	2-35	Refid	
EC15441/	Style 2 No. 10.32 Fillister Head Screw x 3/2" long	5-11-35	Truro	
EC1558	Style 56 56 "Dowel Pin x 136 " long	35	Tuffs	
EC16271/	Style 102 No 10-32 Check Nut x 4/4" thick	15-35	Unear	
EC1653	Style 56 1/4" Dowel Pin x 7/4" long.	35	Leaps	
AEC16661/	Material Point Gauge Block Lock Assembled, consisting of frame and plunger		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	
1156100072	handle. Not sold separately	4-6-11-12	Unrig	
EC16781/2	Material Point Gauge Block (6 pt.)	4-10	Wenny	

	Name of Part	Plate No.	Code Word
Part No.		4-10	Lenin
EC1680	Wedge Housing Hinge Block (right hand) Wedge Housing Hinge Block Dowel Pin—Use 557 Wedge Housing Hinge Block Mounting Screw—Use EC1681 ¹ / ₂	4.10.11	Lents
EC1681	Wedge Housing Hinge Block (left hand) Wedge Housing Hinge Block Mounting Screw—Use EC1681½ Wedge Housing Hinge Block Dowel Pin—Use 557	1 6 10 17 25	Lento
EC16811/4	Style 2, 1/4 "-20 Fillister Head Screw x 11/4" long	4.10	Lento
EC1682A	Wedge Housing Hinge Shaft Wedge Housing Hinge Shaft Set Screw—Use EC1694½	4-10	Leons
EC1683A	Material Point Gauge Hinge Shaft	4-10	Lenox
EC1(921/	Strie 4 No. 10.32 Headless Cup Point Set Screw x 3/8" long	4-10-35	Lerin
EC100372	Wedge Housing Rest	7	Letch
EC16851/2	Material Point Gauge Block (for Model F) (1 pt. twin, 2 pt., 2 pt. twin, 3, 4, 18 24, 30 and 36 pt.)	10	Whiny
EC16861/2	Material Point Gauge Block (for Model E) (1 pt. twin, 2 pt., 2 pt. twin, 3, 4 and 18 pt.)	4	Whimp
EC16881/	Material Point Gauge Block (for Models E and F) (8 pt.)	4.10	Leven
EC1689	Material Point Gauge Block (for Models E and F) (10 pt.)	4 10	Levis
EC16891/A	Material Point Gauge Block (for Models E and F) (12 pt.)	4.10	Recki
EC16901/2	Material Point Gauge Block (for Models E and F) (14 pt.)	4.10	Levvs
EC1691	Material Point Gauge Block Spacer	4.10	Recke
EC16911/2	Material Point Gauge Block (for Models E and F) (10 pt.)	4 10 35	Liane
EC16941/2	Style 4, No. 10-32 Headless Cup Point Set Screw x %16 long	4-10-57	Whint
EC1705	Puller Wedge Shim Snap On Stud (Model F) (30 and 36 pt.)		tr nipe
EC1706	Puller Wedge Shim Snap On Stud (Model E-6 to 18 pt. incl., Model P-6 to 30 pt. incl.)		Whame
EC1707	Puller Wedge Shim Snap On Stud (Models E and F) (1 pt. twin, 2 pt., 2 pt twin,		Willy
	3 and 4 pt.)	35	Lilac
EC1746	Style 8, No. 8-52 Flat flead outew x 716 long		

When ordering parts, always give serial number of the machine.

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WATER COOLING SYSTEM PARTS

Part No.	Name of Part	Plate No.	Code Word
M247	Style 6. 1/8" x 1/2" Reducing Bushing		Sylva
A301	Water Drain Compression Coupling Connector	14	Wishy
310	Style 6. 1/4 " Railroad Union	14	Tacks
327	Style 6 1/4" Close Nipple		Eupon
328	Style 6 1/4" Pipe Nipple x 6" long	14	Paddy
347	Style 6 14" Street Flbow	14-15	Polan
381	Style 6, 1/4" Pipe Nipple x 73/4" long	14	Pansy
EC1170	3/" Union	14	Withy
AEC11881/2A	Water Outlet Spout Assembled	14	Salet
EC1189½A	Water Outlet Spout Nipple (over mold housing)	14	Woold
AEC11001/ A	Water Drain Nipple Assembled consisting of nipple and elbow.	14	Vacil
EC11011/	Water Drain Nipple Counting	14	Valer
EC11071/2	Value Handle Stem Can Nut	14-15	Valka
AEC1102	Water Supply Tube Assembled consisting of tube, clow, nipple and nut, sleeve		
AEGI195	water Suppry Tube resetubled; consisting of tube; energy of pro-	11-14	Visco
EC110417	the wave Wreach (5/, " across flats-for 5/," hollow hexagon head set screw)	122020	Value
EC119472	Hexagon Wienen (716 across nats-101 78 nonew new gon new generation 7	14	Visua
ECHIPS	Supply valve francic and an and a second s	14	Vitul
EC1190	Supply Valve Indicator Set Screw—Use EC1669	101	
EC11961/2 A	Supply Valve Stem Support Supply Valve Stem Support Set Screw—Use EC1333	14	Vanir
EC1197	Supply Valve Stem Supply Valve Stem Handle WasherUse EC1352E Supply Valve Stem Pin-Use EC1827	14	Vexat

WATER COOLING SYSTEM PARTS

Part No.	Name of Part	Plate No.	Code Word	
EC1198A	Water Supply Nipple (under mold housing) Water Supply Nipple Wrench—Use EC1194½	14	Viadu	
EC11981/2 A	Water Drain Tee	14	Vasty	
EC1199	1/8" Union Elbow Thread Piece	14	Vatir	
AEC1294	Water Drain Sight Glass Assembly, consisting of glass, top and bottom flanges,			
	gaskets and clamp screws	14	Vault	
EC1294	Water Drain Sight Glass	14	Turía	
EC1295	Water Drain Sight Glass Flange (top)	14	Terms	
EC1296A	Water Drain Sight Glass Flange (bottom)	14	Terns	
EC1297	Water Drain Sight Glass Gasket		Terra	
EC1298A	Water Drain Sight Glass Clamp Screw	14	Terse	
EC1333	Style 4, 1/4 "-20 Bristo Cup Point Set Screw x 1/2" long	35	Thred	
AEC1346F	Water Drain Cup Assembled, consisting of cup and lock pins	14		
EC1352E	Style 202, No. 10, 3/29" Lock Washer x 3/64" thick	14-35	Warse	
AEC1366	Water Supply Valve Assembled	14	Wheep	
EC1669	Style 4, No. 8-32 Headless Cup Point Set Screw x 3/8" long	14-35	Legal	
EC1827	Style 55, No. 0 Taper Pin x 1/2" long	15-35	Lucas	
EC1842	Style 6, 3/4" Pipe Nipple x 31/2" long	14-15	Lurks	

CLAMPING MECHANISM

59 Style 101, ½"-13 Hexagon Nut x 5/16" thick 7-35 68 Style 57, 3/32" Cotter Pin x 3/4" long 6-10-12-35 624 Oiler (Flush type) 5-6-10-12 915 Style 3, 3/4"-16 Hexagon Head Screw x 1" long 35	Matin Locss Porch Relys Taube Teind Veldt
68 Style 57, 3/32" Cotter Pin x 3/4" long 6-10-12-35 624 Oiler (Flush type) 5-6-10-12 915 Style 3 3/4"-16 Hexagon Head Screw x 1" long 35	Locss Porch Relys Taube Teind Veldt
624 Oiler (Flush type) 5-6-10-12 915 Style 3 3/ 16 Hexagon Head Screw x 1/ long 35	Porch Relys Taube Teind Veldt
915 Style 3 3%"-16 Hexagon Head Screw x 1" long	Relys Taube Teind Veldt
	Taube Teind Veldt
FC1212A 11/2" Dia x //" Long Cam Roll 7-19	Teind Veldt
FC1322 Style 5. 5(e"-18 Source Head Set Screw x 3/4" long	Veldt
FC14911/A Material Clamp Lever Oiler	
EC1504 Material Clamp Spring	Trops
FC1508C Material Clamp Lever 7	Trope
Material Clamp Lever Cam Boll—Use EC1212A	
Material Clamp Lever Cam Boll Stud—Use EC1512A	
Material Clamp Lever Cam Roll Stud Nut-Use 59	
Material Clamp Lover Fulcrum Pin—Use EC1510	
Material Clamp Lever Oiler Tube—Use EC1510 ¹ / ₂	
EC1510 Material Clamp Lever Eulerum Pin. 4-7	Trots
Material Clamp Lever Fulcrum Pin Set Screw—Use EC1322	
FC15101/4 Material Clamp Lever Oil Tube	Venom
Material Clamp Lever Oiler—Use EC1491½A	
FC1512A Material Clamp Cam Roll Stud 7-19	Troth
FCI536A Twin Lead Separator 34	Trows
FC1537 Style 2 No. 10-32 Fillister Head Screw x ½" long 35	Refim
EC1538 Material Clamp Bracket Plate (24 and 30 pt, Model F) 11-13-34	Recko
Material Clamp Bracket Plate Screw—Use EC-1537	
FC1539 Material Clamp Bracket Plate (30 and 36 pt. Model F)	Desro
Material Clamp Bracket Plate Screw—Ust EC1537	
EC1540B Material Clamp Plunger 6-12	Trowl
Material Clamp Plunger Pin-Use EC1543	
EC1541A Material Clamp Bracket 4-10	Truce
Material Clamp Bracket Oiler—Use 624	
Material Clamp Bracket Screw (Hex, Head)—Use 915	

CLAMPING MECHANISM

Part No.	Name of Part	Plate No.	Code Word
-	Material Clamp Bracket Screw (Fil, Head)-Use EC1557		
AEC1541A	Material Clamp Bracket Assembled	6-12	Vexed
EC1542	Material Clamp Spring Nut	4-10	Truck
AEC15421/2C	Material Clamp Bracket Plate Assembled consisting of plate and dowels (Not sold separately) (For 11/2 pt., 1 pt, twin, 2 pt., 2 pt. twin, 3 pt., 4 pt. and 6 to		
	18 pt. inclusive) Material Clamp Bracket Assembled Screw—Use EC1537	5-6-34	Walop
EC1543	Material Clamp Plunger Pin		Truly
EC1545C	Material Clamp Plate (Movable)	4-6-10-12	Truss
EC1546A	Material Clamp Plate Plunger Material Clamp Plate Plunger Cotter Pin—Use 68	4-10	Trust
EC1547	Material Clamp Plate Plunger Spring		Truth
EC1548	Material Clamp Plate Plunger Spring Adjusting Nut		Tryon
EC1549A	Material Clamp Plate Plunger Handle Material Clamp Plate Plunger Handle Cotter Pin-Use 68	4-6-10-12	Tryst
EC1550	Material Guide Roller	4-6-10-12	Tubas
EC1551	Material Guide Roller Bracket	4-6-10-12	Tubby
EC1552	Material Guide Roller Bracket Fulcrum Stud	6-12-25	Tubes
EC1553	Material Guide Roller Stud	4-6-10-12	Looks
EC1554A	Material Guide Roller Bracket Adjusting Screw	4-6-10-12	Tucks
EC1556	Material Guide Roller Bracket Spring		Tudor
EC1557	Style 7. 3/ "-16 Fillister Head Cap Screw x 3/4" long	35	Tugas
EC1559	Material Clamp Plate Plunger Handle Guide		Tulas

CUTTING, STACKING AND GAUGE MECHANISM

Part No.	Name of Part	Plate No.	Code Word
13	Style 56, 3/8" Dowel Pin x 13/8" long	35	Mails
361/2	No. 2 Name Plate Drive Pin x ¼" long	28	Vanad
40	Style 3, 5/18 Hexagon Head Screw x 1" long	35	Marks
42	Style 3, 1/2"-13 Hexagon Head Screw x 1" long	35	Corns
59	Style 101, 1/2"-13 Hexagon Nut x 5/4e" thick	35	Matin
761/5	Style 3. 1/4"-20 Hexagon Head Screw x 1/4" long	35	Turco
1714	Style 4 No. 10.32 Headless Oval Point Set Screw x 1/" long	35	Minue
\$129	Style 56 14" Dowel Pin x 34" long	25	Taget
2142	Style 56, 3/, " Dowel Din x 21/, " long	25	Tacet
1584	Style 202, 732 Dowel I III X "732 Tong	32	1 rawi
142	Style 202, $\frac{1}{4}$ x $\frac{32}{32}$ Lock washer x $\frac{1}{16}$ unck	12-32	Newsy
/40 //////	Style 4, 74 -20 Headless Cup Point Set Screw x 78 long	35	Odors
03%	¹ / ₄ Drive Fit Oiler		Yager
00	Style I, No. 5-44 Flat Fillister Head Screw x 9/16 long	28-29	Paean
52	Style 56, $\frac{3}{16}$ Dowel Pin x $\frac{9}{16}$ long	35	Redyt
517	Style 56, 1/8" Dowel Pin x 9/16" long	35	Tread
529	Material Stacker Safety Guide Spring		Pelfs
569	Style 1, No. 8-36 Flat Fillister Head Screw x 1/8" long		Piety
70	Style 1, No. 8-36 Flat Fillister Head Screw x 3/8" long		Pikes
81	Style 56, 14" Dowel Pin x 74" long	35	Pixic
76%	Style 56, 1/4" Dowel Pin x 1/4" long	26-35	Purse
26	Cut Off Lever Shoe Spring	24.46	Hazer
15	Style 3 3/" 16 Heyagon Head Screw x 1" long	35	Relve
C1005	Style 56 1/" Dowel Din x 3/" long	35	Tamic
C106214	Name Plate Din	35	Visai
IC107.2A	Manie Flate Fills Tool Dime (for Model D)	0	v mai
30107 24	Material Table End Piece (for Model P) Material Table End Piece Screw—Use EC1466½ Material Table End Piece Dowel Pin—Use EC1558	0	Recte
EC11151/2	Cutter Head Return Lever Fulcrum Nut		Stour
EC1186	Style 56, 3/8" Dowel Pin x 15/16" long	35	Relut
EC1212A	14" Dia Cam Boll x 7" long	7 10	Tanke

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CUTTING, STACKING AND GAUGE MECHANISM

Part No.	Name of Part	Plate No.	Code Word
EC1243	Style 2 1/4".20 Fillister Head Cap Screw x 1/2" long	5-6-7-11-12-17	Techy
EC1240	Style 8 No. 10.32 Flat Head Screw x %" long	35	Swank
EC1247	Style 3, 140, 10-52 That Head October 1/8 "Jong"	35	Temps
EC1200	Style 56 1/" Dowel Pin x 9/" long	35	Terry
EC1300	Silie 50, 74 Dower Fin x 716 long	4-7	Teind
EG1522	Style 5, 916 -10 Squale Field Cup Foint Set Screw x 1/4" long	35	Thred
EC1333	Style 4, 74 -20 Bristo Cup Foint Set Strew x 72 Joing	14	Warse
ECI352E	Style 202, No. 10 X 932 Lock washer X 964 unck	15-29	Tiger
EC13541/2	Style 4, No. 6-32 Cup Point Headless Set Screw X 78 long	3.9.17.26	Tolds
EC1382	Style 2, No. 10-32 Fillister Head Screw X 78 long	35	Torus
EC1436	Style 7, No. 6-32 Round Flead Screw x %16 long		Torvs
AEC1443	Tension Lever Handle Assembled (Sold only as assembled)	25	Litter
EC14661/2	Style 2, 1/4 - 20 Fillister Head Screw x 1/4 long	25	Trace
EC14731/2	Style 56, 3/16" Dowel Pin x 11/4" long	47	Trote
EC1510	Cut Off Lever Fulcrum Pin.	7-7	11005
EC1512A	Cut Off Lever Cam Roll Stud	7-19	Troth
AEC1522D	Cut Off Lever Assembly (for Model E) consisting of lever, spring and guide,		
ARCIVIT	shoe, slide and holder, stud and all screws Cut Off Lever Roll Stud—Use EC1512A Cut Off Lever Roll Stud Nut—Use 59 Cut Off Lever Cam Roll—Use EC1212A Cut Off Lever Fulcrum Pin—Use EC1510 Cut Off Lever Oiler—Use 303 ¹ / ₂	4-7	Recka
AEC15221/2	Cut Off Lever Assembly (for Model F) consisting of lever, spring and guide, shoe, slide and holder, stud and all screws	10	Uncli
EC1523B	Cut Off Lever Shoe Cut Off Lever Shoe Screw—Use 570	5-11	Trojs
EC1524	Cut Off Lever Shoe Spring Guide Holder Cut Off Lever Shoe Spring Guide Holder Screw-Use EC1249		Fetro

CUTTING, STACKING AND GAUGE MECHANISM

Part No.	Name of Part	Plate No.	Code Word	
EC1525	Cut Off Lever Shoe Slide Stud		Recoh	
EC1526	Cut Off Lever Shoe Spring Guide Cut Off Lever Shoe Spring—Use 726		Recod	
EC1527	Cut Off Lever Shoe Slide		Recof	
EC1529	Cut Off Lever Spring Cut Off Lever Spring Screw—Use 40		Trout	
EC15441/2	Style 2, No. 10-32 Fillister Head Screw x ¼" long	5-11-35	Truro	
EC1558	Style 56, 5/16" Dowel Pin x 13/16" long	35	Tuffs	
EC1598	Style 4, 5/16"-18 Bristo Half Dog Point Set Screw x 11/4" long	26-27-35	Tulip	
EC1599	Material Holding Catch Plunger		Tulle	
	Material Holding Catch Plunger Spring—Use EC1673 Material Holding Catch Plunger Spring Tension Screw—Use EC1674			
EC1601D	Material Table and Cutter Head Bracket	4-10	Tumid	
	Material Table and Cutter Head Bracket Screw—Use 42 Material Table and Cutter Head Bracket Pin—Use 13			
EC1602E	Material Table (for Models E and E)	2.8	Tumor	
DOTOULI	Material Table Mounting Dowels—Use EC1186 Material Table Mounting Screws—Use 42		1 dillor	
EC1603C	Gauge Rod Bearing Bracket	2-25	Tumps	
1010000	Gauge Rod Bearing Bracket Screw—Use EC1256 Gauge Rod Bearing Bracket Mounting Pin—Use 581		1 and 12	
FC1604B	Material Guide Plate (rear adi)	25	Tunas	
1010010	Material Guide Plate Ston Screw-Use EC1630B		a contract.	
EC16041/2	Material Guide Plate (rear adj.) Extension	25	Tunes	
1.5	Material Guide Plate (rear adj.) Extension Screw-Use EC1746		Tunic	
EC1605B	Material Guide Plate (rear adj.) Screw Knob			
	Material Guide Plate Adj. Screw Knob Dowels-Use \$129			
EC16051/2	Material Guide Plate (rear adj.) Adjusting Screw		Tunis	
EC16061/2	Cutter Head Return Lever Fulcrum		Tuque	
Part No.	Name of Part	Plate No.	Code Word	_
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EC1607½A	Stationary Knife—24 pt. (for Model F) Stationary Knife Guide Pins—Use 452 Stationary Knife Screws—Use EC1648 Stationary Knife Screw Washers—Use EC1609½	26-27-34	Recog	
EC16091/2	Style 202, 3/29" Shakeproof Lock Washer-021" thick	35	Uncro	
EC16111/2	Front Movable Knife Spring Stud	5-11	Undra	
EC1612 ¹ / ₂ AEC1613 ¹ / ₃ B	Rear Movable Knife Spring Stud. Movable Knife Operating Lever Assembled, consisting of lever and stud-sold	4	Undul	
AEC1615J	only as assembled Cutter Head Assembled (for Model E) consisting of main casting with stationary	4-10-26	Turin	
TRALER	complete and ready to add to rods. All parts sold separately	2-5-11	Turks	
AEC1615½A	Cutter Head Assembled (for Model F) consisting of main casting with stationary and movable knives, material size adjustment and holding catch assembled complete and ready to add to rods. All parts sold separately.	8	Recom	
EC1615½A	Cutter Head (for Models E or F) Cutter Head Set Screw ($5/_{16}$ "x 1 ¹ / ₄ ")—Use EC1598 Cutter Head Set Screw ($5/_{16}$ "x 1 ¹ / ₂ ")—Use EC1618 ¹ / ₂ A Cutter Head Set Screw (No. 8-32 x 3 ¹ / ₁₆ ")—Use EC1682 ¹ / ₂	26-27	Turki	
EC1616A	Stationary Knife (30 and 36 pt.) (for Model F) Stationary Knife Guide Pin—Use 452 Stationary Knife Screw—Use ECI648 Stationary Knife Screw Washer—Use ECI609½	26-27-34	Recon	
EC1617C	Movable Knife (for Model E).	5-7-26-27	Tutor	
AEC1617½	Cutter Head Cover Assembled (for Model E) consisting of cover and rear mov- able knife spring stud Cutter Head Cover Assembled Mounting Screw—Use EC1382	26-27	Vibra	
EC1618½A	Stationary Knife Adjusting Screw Stationary Knife Adjusting Screw Check Nut–Use EC1627½ Stationary Knife Adjusting Screw Lock Washer–Use EC1352E	4-10-26-27	Hilam	

When ordering parts, always give serial number of the machine.

Part No.	Name of Part	Plate No.	Code Word
EC1619B	Operating Lever and Cutter Head Bushing	26-27	Twals
EC1619½A	Stationary Knife (1-pt. twin to 18-pt. inclusive) (for Models E and F) Stationary Knife Guide Pin—Use 452 Stationary Knife Mounting Screw—Use EC1648	26-27-34	Tweai
FOLGAD	Stationary Knife Screw Washer—Use EC16091/2		
EC1620F	Movable Knife Spring	4-10-26-27	Tweed
EC16201/2	Movable Knite (for Model F)	11-26-27	Recow
EC1621B	Movable Knife Operating Screw	4-26-27	Twang
AEC1621½A	Cutter Head Cover Assembly (for Model F) consisting of cover and rear mov-		
	able knife spring stud Cutter Head Cover Mounting Screw—Use EC1382	10-11-26-27	Vicar
EC1622F	Cutter Head Guide Plate Cutter Head Guide Plate Pin—Use EC14731/2	5-11-25-26-27	Tweet
EC1622½B	Cutter Head Guide Plate Pinion Knob Cutter Head Guide Plate Pinion Knob Pin—Use 6761/	5-10-11-26	Twier
EC1623D	Cutter Head Guide Plate Rack	27	Twigs
EC16231/3 B	Operating Lever and Cutter Head Bushing Lock Screw		Twill
EC1624C	Material Holding Catch (24 to 36 pt.) (Model F)	10-11-26-27-34	Recoz
EC1625C	Material Holding Catch (1 pt, twin to 18 pt, inclusive) (Models E and F)	1-5-11-25-26-27-34	Twins
EC16251/2A	Cutter Head Guide Plate Pinion Cutter Head Guide Plate Pinion Retaining Screw—Use EC1669		Twine
EC1626C	Material Holding Catch Fulcrum Screw	26	Twire
EC16261/2 A	Material Cut Off Operating Rod Stop Screw	25	Twirl
EC1627	Cutter Head Guide Rod Cutter Head Guide Rod Set Screw—Use 243	5-11	Twist
EC16271/2	Style 102, No. 10-32 Hexagon Nut x 1/8" thick	15-35	Uncar
EC1628C	Material Cut Off Operating Rod	5	Twixt
AEC1628C	Material Cut Off Operating Rod Assembled, consisting of rod, spring post and	5	
	guide pinned together	25	Villa
AEC16281/2	Material Cut Off Safety Rod Assembled (sold only as assembled)	5-11	Tyche

When ordering parts, always give serial number of the machine.

Part No.	Name of Part	Plate No.	Code Word	
EC1630B	Material Guide Plate (rear adj.) Stop Screw.	5	Recti	
EC1631½B	Material Cut Off Safety Spring Post Material Cut Off Safety Spring Post Dowel Pin—Use S129 Material Cut Off Safety Spring Post Screw—Use EC1790	25	1 yler	
EC16331/A	Material Cut Off Safety Spring	2-4-10-25	Tymps	
EC16351/2	Cutter Head Guide Point Size Scale (for Model F) Cutter Head Guide Point Size Scale Pin—Use EC1062 ¹ / ₂	11-26-27	Recta	
EC1636½A	Cutter Head Ratchet Base Cutter Head Ratchet Base Dowel Pin—Use 676½ Cutter Head Ratchet Base Screw—Use EC1637½	7-10-26-27	Typal	
EC16371/2	Style 8, No. 6-32 Flat Head Screw x 5/16" long	35	Tyros	
EC16381/2B	Cutter Head Guide Point Size Indicator	27	Viper	
EC1640B	Material Table Brace Material Table Brace Screw (short)—Use 76½ Material Table Brace Screw (long)—Use 915 Material Table Brace Dowel Pin—Use EC1300 Material Table Brace Tension Lever Pawl Stop Pin—Use EC1062½	2	Lager	
EC1640½B	Cutter Head Guide Point Size Scale (for Model E) Cutter Head Guide Point Size Scale Pin—Use EC1062 ¹ / ₂	5-26-27	Laban	
AEC1642½B	Cutter Head Guide Plate Ratchet Assembled, consisting of ratchet, knob and pinion pinned together. Cutter Head Guide Plate Ratchet—Use 676½	4-26-27	Laura	
	Cutter Head Guide Plate Pinion—Use EC1625½A Cutter Head Guide Plate Pinion Knob—Use EC1622½B			
EC16451/2	Cutter Head Guide Plate Pinion Spring	27	Laver	
EC1648	Style 2, No. 10-32 Round Head Screw x 1/2" long	15-26-35	Layer	
EC16481/2	Safety Spring Post Pin	25	Layte	
EC16491/2	Safety Spring Post Guide	5-11	Lazes	
EC16511/2	Stripper Plate Indicator Pawl Housing	4-10-26-27	Unfee	

Part No.	Name of Part	Plate No.	Code Word	
	Stripper Plate Indicator Pawl Housing Screw—Use EC1654½ Stripper Plate Indicator Spring Retainer Screw—Use 87½			
EC16521/4	Stripper Plate Indicator Stud		Unfol	
EC16531/2	Stripper Plate Indicator Spring	27	Unfor	
EC16541/2	Stripper Plate Indicator Housing Screw	4-10-26	Unglu	
EC1662B	Material Cut Off Gauge Plunger Housing	25-28-29	Lears	
EC16621/3	Material Cut Off Gauge Plunger Housing Guide Screw	25-29	Lerns	
EC1663D	Material Cut Off Gauge Bracket	28-29	Visit	
AEC1663D	Material Cut Off Gauge Assembly, consisting of bracket, housing, guide screw,			
	dial, graduated sleeve, indicator, plunger, screws and dowels	2	Least	
EC1664B	Material Cut Off Gauge Plunger	25-28-29	Leave	
EC1665C	Material Cut Off Gauge Dial	25-28-29	Leavy	
EC16651/2	Material Cut Off Gauge Micrometer Adj, Graduated Sleeve	25-28-29	Leddy	
17.1	Material Cut Off Gauge Micrometer Adj. Graduated Sleeve Set Screw—Use EC1354¼			
EC1666B	Material Cut Off Gauge Locating Pin	29	Ledge	
EC1667	Material Cut Off Gauge Plunger Spring	29	Leech	
EC1668B	Material Cut Off Gauge Indicator Material Cut Off Gauge Indicator Screw—Use 366	25-28-29	Leeks	
EC1669	Style 4, No. 8-32 Cup Point Headless Set Screw x 3/8" long	14-35	Legal	
AEC1670D	Material Cut Off Gauge Assembled, consisting of stop, name plate and pins	8-25-28-29	Leger	
EC16701/2A	Material Cut Off Gauge Stop Pin	28	Leggy	
EC1671B	Material Cut Off Gauge Clamp Screw	28-29	Leith	
EC16711/2	Material Cut Off Gauge Clamp Screw Retaining Screw	28-29	Leman	
EC1672B	Material Table End Piece (for Model E)	25	Lemma	
EC16721/2A	Material Cut Off Gauge Dial Plunger	29	Lemon	
EC1673 -	Material Holding Catch Plunger Spring	27	Vivid	
EC1673A	Material Cut Off Gauge Dial Plunger Spring	29	Lenas	
EC1674	Material Cut Off Gauge Dial Spring Screw	29	Lemur	
EC16741/2A	Material Cut Off Gauge Name Plate (Model E or F)	28	Lends	

When ordering parts, always give serial number of the machine.

Part No.	Name of Part	Plate No.	Code Word	
	Name Plate Screw—Use 361/2			-
EC1679	Style 7, No. 4-40 Round Head Screw x 1/4" long	2-28-29-35	Refiv	
EC16821/2	Style 4, No. 8-32 Cup Point Headless Set Screw x 3/16" long	4-6-10-12	Leper	
EC16831/2	Style 4, No. 10-32 Headless Cup Point Set Screw x 3/4" long	4-10-35	Lerin	
EC16921/2	Material Stacker Sprocket Chain Link		Unsad	
EC1694A	Material Stacker Sprocket (rear) Material Stacker Sprocket Pin (rear)—Use S142 Material Stacker Sprocket Screw (rear)—Use FC169416	4	Lhasa	
EC16941/3	Style 4, No. 10-32 Headless Cup Point Set Screw x 3/, " long	4.10.35	Linne	
EC1695B	Material Stacker Sprocket Chain	5.11.25	Liare	
EC16951/2	Material Stacker Sprocket Chain Link River	2-11-62	Libau	
EC1696	Material Stacker Sprocket Bracket (front) Material Stacker Sprocket Bracket Screw (front)—Use FC15441/2		Libel	
EC16961/2	Material Stacker Sprocket (front)	25	Liber	
EC1697A	Material Stacker Sprocket Bracket (rear right hand) Material Stacker Sprocket Bracket Screw (rear right hand)—Use 761/2	207	Libra	
EC1697½A	Material Stacker Sprocket Bracket (rear left hand) Material Stacker Sprocket Bracket Screw (rear left hand)—Use 76½	5-11	Licht	
EC1698A	Material Stacker Sprocket Stud		Licks	
EC1698½A	Material Stacker Tension Spring Material Stacker Tension Spring Retainer Screw—Use EC1436	5	Lieds	
EC1704	Stacker Tension Spring Sleeve		Voice	
EC1708	Material Cut Off Gauge Indicator Plate Material Cut Off Gauge Indicator Plate Screws—Use EC1679	28-29	Naiad	
EC1740A	Material Stacker Sprocket Shaft	5	Liens	
EC1742B	Material Stacker Spring Housing	25	Lieve	
EC17421/2A	Material Stacker Spring Housing Knob	25	Ligan	
EC1743D	Material Stacker Material Stacker Mounting Screws—Use EC1746		Namer	

Part No.	Name of Part	Plate No.	Code Word
AEC1743D	Material Stacker Assembled, consisting of stacker, housing, spring, knob, pins and	And a state of the	Mar 1 4944
	screws Material Stacker Safety Guide Spring—Use 529	2-25	Light
EC17431/	Material Stacker Spring Pin		Unsto
EC1744F	Material Stacker Safety Guide		Ligny
	Material Stacker Safety Guide Spring-Use 529		01
EC17441/2	Material Stacker Adj, Guide Spring Pin		Likin
EC1745A	Material Stacker Safety Guide Stud	25	Lilac
EC1746	Style 8, No. 8-32 Flat Head Screw x 5/16" long	35	Limps
EC1752A	Material Stacker Chain Stud		÷.
	Material Stacker Chain Stud Nut-Use EC1762		
	Material Stacker Chain Stud Lock Washer—Use EC1763		
EC17521/3B	Material Stacker Tension Spring Clutch Collar		Linen
CHELT THE CLARK STOL	Material Stacker Tension Spring Clutch Collar Screws-Use EC1679		
EC1753A	Material Stacker Tension Spring Clutch		Lings
	Material Stacker Tension Spring Clutch Set Screw-Use EC16831/2		100
EC17531/2	Material Stacker Sprocket Shaft Collar		Lingo
	Material Stacker Sprocket Shaft Collar Set Screw-Use EC16831/2		
EC1755	Positive Return Bracket	5-11	Natal
AEC1755	Positive Return Bracket Assembly	5-11	Lints
	Positive Return Bracket Assembly Mounting Screws-Use EC1243		
EC1756A	Positive Return Bracket Adjusting Screw	4-6-10-12	Lions
	Positive Return Bracket Adjusting Screw Lock Screw-Use EC16821/2		
	Spring Retainer Lock Washer-Use 158A		
EC1757	Positive Return Bracket Adjusting Screw Spring		Lippe
EC1758A	Positive Return Bracket Adjusting Screw Spring Retainer	6-12	Lisle
EC1759A	Positive Return Guide Sleeve	4-6-10-12	Lisps
EC1760	Positive Return Guide Sleeve Key	7	Lists
West and Mark	Positive Return Guide Sleeve Key Screw—Use EC1761		
EC1761	Style 2, No. 3-56 Fillister Head Screw x ½" long	7-35	Lithy

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When ordering parts, always give serial number of the machine.

Part No.	Name of Part	Plate No.	Code Word	
EC1762	Material Stacker Chain Stud Nut	25	Lives	
EC1763	Style 202, No. 6 x 3/64" Lock Washer x 1/10" thick	35	Liver	
EC1770	Cutter Head Return Tension Lever Handle–Use AEC1443	2-25	Livre	
	Cutter Head Return Tension Lever Handle Stud—Use EC17701/2			
EC17701/2	Cutter Head Return Tension Lever Handle Stud		Torso	
EC1771	Cutter Head Return Tension Lever Fulcrum Screw	2	Llano	
EC1773A	Cutter Head Return Tension Lever Pawl	2-25	Llovd	
EC1774A	Cutter Head Return Tension Lever Paw] Fulcrum Screw	2	Loads	
EC1775	Cutter Head Return Tension Spring	2	Loans	
EC1776	Cutter Head Return Intermediate Lever Cutter Head Return Intermediate Lever Fulcrum—Use EC16061/2	1	Loams	
EC1777	Cutter Head Return Lever Guard		Lobby	
EC1790	Style 4, 1/4 "-20 Bristo Cup Point Set Screw x 1/4" long	5-11-35	Local	

When ordering parts, always give serial number of the machine.

Part No.	Name of Part	Plate No.	Code Word
38	Style 3, 1/2"-13 Hexagon Head Cap Screw x 11/2" long.	35	Nadir
63	Style 101, 1/2"-13 Hexagon Nut x 7/16" thick	35	Mavis
115%A	Saftofuse (three phase) (gas machine)		Runed
1161/4	Saftofuse (single phase) (gas machine)		Rupis
134A-1	Cartridge Fuse (10 amp.) (box of 10)	18	Myrrh
134A-2	Cartridge Fuse (6 amp.) (box of 10)	18	Mathe
M1794/B	Mold Removing Wrench (3/" and 1/" inch openings)	34	Stare
M1801/A	End Wrench (5/10" and 7/10" openings)	34	Starn
M208	Style 4. %"-16 Headless Set Screw x 1/2" long	35	Stoat
273	Style 202, 1/2" Plain Lock Washer	35	Orbit
2911/	Style 4. %"-16 Headless Set Screw x %" long	35	Skate
343E	Cartridge Fuse (20 amp.) (box of 10)	18	Shred
348E	Cartridge Fuse (30 amp.) (box of 10)	18	Magda
349F	Cartridge Fuse (15 amp.) (box of 10)	18	Magen
484	Metal Feeder Ingot Mold		Balsa
6151/	Style 202. 3/" Plain Lock Washer	35	Prune
915	Style 3 3/"-16 Hexagon Head Cap Screw x 1" long	35	Relys
A932A	Electric Testing Cord Complete	Page 34	Repri
943	Wire Brush	31	Stupa
A945	1/4 Pr "Lubriclean" Fluid	31	Neath
A945	1 Ot. "Lubriclean" Fluid	31	Strum
A945	1 Gal "Lubriclean" Fluid		Strun
946A	"Lubriclean" Fluid Swab	31	Yeans
963	1/4" Bristo Set Screw Wrench	34	Arbal
EC1000	Flrod Base Tray	2	Taens
EC1008	Style 7 No 10-32 Round Head Screw x 1" long	35	Taiga
AEC1015	Flrod Crucible Cleaning Outfit	31	Needs
AEC1019	Mold Sealing Plate (Model E-%" mold)	13	Redon

Part No.	Name of Part	Plate No.	Code Word	
AEC1020A	Mold Container complete with cover and six baskets Mold Container Screw—Use 29114 (See AEC1022 and AEC1023)	19	Takes	
AEC1022	Mold Basket (small handle)		Talce	
AEC1023	Mold Basket (large handle)		Talds	
AEC1042	Special Elrod Gear Housing Grease (1/2 pint)		Recor	
AEC1043	Cam Roll Stud Screw Driver Assembled	24	Netar	
AEC1069	Mold Sealing Plate (Model F-3/" mold)	12 24	Reden	
FC11941/	Water Supply Union Ningle Wrench	24	Neuen	
AEC1250A-1	Firm Mold Oil (1 gal) for use with pressure oiler	54	Telas	
AEC1250A-5	Elrod Mold Oil (5 gal.) for use with pressure oiler		Talia	
FC1255	End Wrench (9/ a" and 1/" openings)	24	Telle	
AEC12811/	Pressure Oiler Diffusion Tube Parking (her of 20 selectes and king)	20	Haalu	
AEC12901/	Crucible Well Cleaning Tool, complete	21	Nimin	
EC13101/ B	Mold Adapter Plate (for Model E)	12.24	Dadua	
AEC1328C	Mold Cover Assembly	15-54	- ACCIUII	
AEC1337B	Motol Drin Cup Assembly		I norn Nt. J.1	
EC13401/ B	Hollow Material Desmar (19 and 24 at)	24	NODAL	
EC12471/ A	Hollow Material Reamer (16 and 24 pt.)	.54	INomal	
EC12481/ P	Hollow Material Reamer (30 and 36 pt.)	54	Waith	
LG134072D	EC1341/2A, EC1341/2A, EC1341/2A,	20.24	N7 1	
EC12511/A	$E_{A}(D)/2\Delta$	30-34	INOSOI	
ECIDIT/2A	Mult C	54	Nugot	
EGI50IA EGI510	Nold Cover Slide	222	Times	
ECIDI9	Screwdriver	34	Numid	
AECI520	Mold and Strip Grip Pliers	34	Nunch	
ECI536A	Twin Lead Separator for Elrod Molds	34	Trows	
AECI582	Material Scraper Assembled	34	Nylon	
EC1585	No. 10 Flat Head Iron Wood Screw x 1¼" long		Janus	
EC1586	Style 7, No. 10-32 Round Head Screw x 1/4" long	35	Japed	
AEC1590	Accessories Box with Nest (for Model E)		Iasev	

Part No	Name of Part	Plate No.	Code Word
AEC15901/2	Accessories Box with Nest (for Model F) Accessories Box Mounting Screws—Use EC1585	34	Jeans
EC1591	Accessories Box Bracket		Jeers
EC1591½	Mold Container Bracket	19	
EC1595	Accessories Box Cover Knob Accessories Box Cover Knob Mounting Screw—Use EC1008	34	
EC1596	Accessories Box Cover Knob Pin		Jingo
EC1597	Accessories Box Cover Knob Screw Washer		Jinny
EC15981/2	Mold Container Drip Pan Mold Container Drip Pan Mounting Screws—Use EC1586		Joust
EC16161/	5/16" Bristo Set Screw Wrench	34	Tusks
EC1645	Metal Feeder Bracket Mounting Screw		Judge
AEC1655A	Mold Remover Assembly	.34	Redyn
EC1657	Mold Remover Jaw (front) Clamp Screw	35	Unhan
EC1658	Mold Remover Jaw Clamp Screw Washer		Juice
EC1659	Mold Remover Jaw (front) Jack Screws	35	Unrob
AEC1693A	Metal Feeder Bracket (top)		Junco
AEC1693½A	Metal Feeder Bracket (bottom) Metal Feeder Bracket Mounting Screw—Use EC1645 Metal Feeder Bracket Set Screw—Use EC1709	32-33	Jupon
EC1709	Style 4, 5/16"-18 Headless Cup Point Set Screw x 3/16" long	35	Juror
AEC1712	Margach Metal Feeder (complete with ingot mold)	32	Uncap

Part No.	Name of Part	Plate No.	Code Word	
AEC1713	Star Metal Feeder (complete with ingot mold)	33	Undid	
AEC1715B	Mold Housing Scraper Assembled	31	Undue	
EC1720A	Diffusion Tube Repacking Tool Block	30	Upend	
AEC1720A	Diffusion Tube Repacking Set Complete	30	Hoise	
AEC1721A	Automatic Spring Hammer Assembled	30	Unsay	
EC1722A	Automatic Hammer Point (state make of hammer)		Unsea	
EC1724	Diffusion Tube Graduated Tamping Tool	30	Unsha	
EC1725	Diffusion Tube Pin Punch	30	Unsop	
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