

## LUDLOW TYPOGRAPH MACHINE

	Price	Code Word
<b>Completely Equipped Ludlow Typograph Machine includes:</b>		
Water-cooled mold (21 or 22½ ems)		
Motor (standard single-phase electrical specifications)		
Crucible (gas or electric)		
Self-contained water system		
Extra pressure parts (plunger spring regulator, table lock and equalizing bar lock combination)		
Slotted mouthpiece combination		
Prices of machine equipped with:		
Electric-Heated Crucible and 12-Pt. 21-em Mold.....	\$4,595.00	Abela
Electric-Heated Crucible and 12-Pt. 22½-em Mold.....	4,595.00	Abhor
Electric-Heated Crucible and 24-em Mold.....	4,595.00	Abcal
Gas-Heated Crucible and 12-Pt. 21-em Mold.....	4,195.00	Abash
Gas-Heated Crucible and 12-Pt. 22½-em Mold.....	4,195.00	Abase
Gas-Heated Crucible and 24-em Mold.....	4,195.00	Abaze
If the mold specifications are special as to length and/or height, the price of the machine is increased.....		
	\$88.00	

The following are standard Ludlow electrical specifications:

115 volt D.C.....	Abana
115 volt A.C. 60 cycle, single phase.....	Abbas
115 volt A.C. 50 cycle, single phase.....	Abear
230 volt D.C.....	Aboma
208 to 240 volt A.C. 60 cycle, single phase.....	Abcon
208 to 240 volt A.C. 50 cycle, single phase.....	Abram

If the electrical specifications are 3-phase or other than Standard, the price of the machine is increased .....

\$87.00

This \$87.00 charge covers not only the additional cost of special electric equipment and special motor, but also the additional wiring costs on three-phase equipment.

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According to the manufacturer, motors used on Ludlow machines will operate satisfactorily on an approximate 10% variation plus or minus in voltage. In other words, a 115 volt motor is designed to operate satisfactorily on any line voltage between 103 volts and 126 volts, and a 230 volt motor is designed to operate satisfactorily on any line voltage between 207 and 253 volts.

Where composition in small sizes only is required (not above 18 point) a 6-point mold can be substituted and shipped with the machine in place of a 12-point mold, without extra charge .....

**Action**

The following tools and consumable supply items are included in the price of a completely equipped Ludlow Typograph Machine:

- 1 No. A-850 Mouthpiece Cleaning Outfit
- 1 No. A-857 Gauge for Testing Height of Ludlow Molds
- 1 No. 1255 Wrench (9/16 inch by 3/4 inch)
- 1 No. 958 Mold Remover Handle
- 1 No. M179 1/2 B Wrench (3/4 inch by 3/4 inch)
- 1 No. M180 1/2 A Wrench (5/16 inch by 7/16 inch)
- 1 Box No. A805D Mouthpiece Wipers (25 Wipers)
- 1 Can AM254 Soluble Oil (1/2 Pint)
- 12 No. 155B Driving Gear Safety Keys
- 2 No. 676D Mold Wipers
- 12 No. 684A Slug Support Felts
- 1 No. A823 1/2 Socket Wrench
- 1 AFG-700 Pressure Oil Can
- 1 Set AFG-125 Hexagon Socket Key Wrenches
- 2 Fuses for Motor

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**MOTORS AND CRUCIBLES FOR  
LUDLOW TYPOGRAPH MACHINES**


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<b>Ludlow Motor with Pulley and Set Screw</b> (1/8 H.P. 1140 R.P.M.) (Standard electrical specifications.)		
Alternating Current, Single Phase.....	\$ 49.25	
Direct Current.....	81.50	
Special Voltages and 3-Phase, additional charge.....	40.75	
<b>Electric-heated Crucible</b>		
In standard voltages .....	\$920.00	Abbey
This price is for complete crucible, including panel box and rheostat. All necessary parts that are required for replacing a gas crucible with an electric crucible on machines in the field are included in above price.		
Price, without panel box.....	\$780.00	Aline
Price, without panel box or rheostat....	698.00	Altat

Can be installed by a competent mechanic on any machine in the field, but price does not include installation.

Electric power consumption (8 hour day average including full flow for heating out time of approximately 1 1/4 hours) equals 1 KWH per hour. Maximum demand of the Ludlow crucible and motor is 2500 watts.

Many of the electric power companies have at least three different rates which they charge for their electrical service—the lighting rate, the power rate and the heating rate. The heating rate is generally the lowest of all the rates.

When an electric-heated Ludlow equipment is sold, particularly to the smaller plant, this should be pointed out to the user, as the heating rate should of course apply to the Ludlow equipment.

If a user complains about the cost of heating his electric-heated crucible, a check of the bill from the electric supply company will generally disclose the class of service for which he is paying, as the standard rates for the various classes of service are in most cases printed on the bills.

A few printing plants manufacture their own power. Occasionally the power generated by such private plants is as high as 300 or even 440 volts. While special Ludlow

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motors of these high voltages can be supplied, it is not possible to furnish electric-heated crucibles to operate on a voltage higher than 250 volts. The reason for this is that there is not sufficient room in the crucible to properly insulate the electric equipment against such high voltages. In such plants it will be necessary for the user to purchase a step-down transformer which can best be purchased locally.

The power companies in many localities are changing the current they furnish from direct current to alternating current. To change an electric-heated Ludlow machine from direct to alternating current or from alternating to direct current (without changing the voltage), in addition to the motor, the Ludlow panel box must be replaced or changed over.

Three different styles of panel boxes have been furnished with Ludlow machines. Requirements for changing over these panel boxes are outlined below:

**Small Panel Box.** The so-called "small panel box" measures:

Width 9½ inches

Height 11 inches

Depth 8½ inches

This panel box was furnished from 1917 until December 21, 1925. It is not possible to change the current of this panel box, and machines equipped with it require the replacement of the entire panel box if the current is to be changed.

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**MOTORS AND CRUCIBLES FOR  
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<b>Large Panel Box, The so-called "large panel box" measures:</b>		
Width 12 $\frac{1}{2}$ inches		
Height 11 $\frac{1}{2}$ inches		
Depth 9 $\frac{1}{2}$ inches		
This panel box was furnished from January 1, 1936 to April 30, 1934. To convert from direct to alternating current the following parts are required:		
1 A3008E Magnet Coil .....	\$28.70	
1 A378E Resistor unit .....	8.90	
1 A3017E Kickout Coil .....	13.35	
1 3014E Magnet Coil Fiber Washer .....	.65	
<b>Total .....</b>	<b>\$51.00</b>	<b>PLEBS</b>
To convert from alternating to direct current the following parts are required:		
1 A3008E Magnet Coil .....	\$28.70	
1 A378E Resistor unit .....	8.90	
1 A3015E Magnet Coil Fiber Washer .....	7.00	
<b>Total .....</b>	<b>\$44.00</b>	<b>PLDS</b>
Universal Control Panel, Furnished on all new machines shipped after May 1, 1934. The Universal control panel measures:		
Width 9 $\frac{1}{2}$ inches		
Height 15 $\frac{1}{2}$ inches		
Depth 6 $\frac{1}{2}$ inches		
To convert from direct to alternating current, the following parts are required:		
1 A327E Magnetic Switch Coil .....	\$10.45	
1 A328E Protective Resistance Coil ...	8.15	
1 A329E Kickout Coil .....	8.15	
<b>Total .....</b>	<b>\$26.75</b>	<b>PLUCK</b>
To convert from alternating to direct current the following parts are required:		
1 A327E Magnetic Switch Coil .....	\$10.45	
1 A328E Protective Resistance Coil ...	8.15	
1 A329E Kickout Coil .....	8.15	
1 331E Copper Spacer .....	.75	
1 332E Pull-in Liner .....	.95	
<b>Total .....</b>	<b>\$28.45</b>	<b>FLASH</b>
If the voltage is changed from 110 to 220, or from 220 to 110, the rheostat, control panel, and all of the units in the crucible must be changed to the proper voltage.		

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	Price	Code Word
Universal Control Panel for Two-Wire Thermostat, Current Style in Use Since 1956.		
To convert from alternating current to direct current, the following parts are required:		
1 A-327-EA D. C. Magnet Coil.....	\$10.45	
1 A-328-EA Special Resistor.....	4.50	
1500-ohm for 220-volt		
500-ohm for 110-volt		
1 A-360-EB Interlock Assembly.....	13.90	
1 331-EA D.C. Pull-in Liner.....	.95	
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	\$29.90	

To convert from direct current to alternating current, the following part is required:

1 A-327-EA A.C. Magnet Coil..... \$10.45

Remove the four D. C. parts as shown on A.C. to D.C. conversion and replace the magnet coil.

**Gas-Heated Crucible**

Complete with gas pressure regulator and bracket assembly..... \$520.00 Ample  
Without gas pressure regulator..... 475.00 Abart

Can be installed by a competent mechanic on any machine in the field but price does not include installation.

Gas consumption (8-hour day average, including full flow for heating-out time of approximately 1 1/4 hours) equals about 14 cu. ft. per hour. (800 B.T.U. gas.)

Connection: 1/2" gas pipe to machine.

In those localities where neither gas nor electricity for heating is available, a bottled gas (Butane or Propane) may be used successfully with the standard Ludlow Gas Crucible, the only change required being in the size of the spud. The proper size spuds will be included in the Gas Crucible without extra charge provided proper information as to the B.T.U.s. per cubic foot and pressure at the machine are furnished with the order. There are a number of brands of bottled gas available. To our knowledge, Shellane, a product of the Shell Oil Company, is being used successfully on Gas-Heated Ludlow Crucibles.

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**MOLDS FOR LUDLOW TYPOGRAPH MACHINES**


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Price Code Word

**STANDARD LUDLOW MOLDS**

## Double Water-cooled

6-point, 21 em .....	\$270.00	Abode
6-point, 22 1/2 em .....	270.00	Abeod
6-point 24-em.....	270.00	Conze
12-point, 21 em .....	270.00	Bruh
12-point, 22 1/2 em .....	270.00	Brust
12-point 24-em.....	270.00	Brsal
Special lengths .....	360.00	
(Special ejector when needed).....	17.25	

**SPECIAL LUDLOW MOLDS**

## Double Water-cooled,

Special 4-point, 21 em .....	\$360.00	Basin
Special 4-point, 22 1/2 em .....	360.00	Blain
Special additional equipment required for use with 4-pt. Ludlow Mold.		
Special 4-point ejector blade A639 1/2	14.00	Bloom
2 special slug holders parts A-663 1/4-H and A-664 1/4-H for attachment to delivery slide A650-J each.....	18.25	

The 4-point special ejector blade can be used with both the 4-point and 6-point molds, but not with the 12-point mold.

Users equipping with 4-point mold must be warned never to use any but 4-point ejector blade with it, as this mold can be very seriously damaged by using a 6 or a 12-point ejector blade.

These users must also be warned that while the 4-point ejector blade can be used satisfactorily with a 6-point mold, with a 12-point the use of 4-point ejector blade should never be attempted, as this is almost certain to result in jamming, with probable breakage to the ejector blade and damage to the mold itself.

## MOLDS FOR LUDLOW TYPOGRAPH MACHINE

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### SPECIAL LUDLOW MOLDS

#### Special Length Molds

Before adopting as standard the 21-em and 22½-em molds for the Ludlow a thorough study of mold length requirements was made. The analysis showed the length of slugs for the general run of display composition that would require the least sawing and handling to be 21 ems.

For obvious reasons, the question of "Why not a 30-em machine?" is often brought up; but the keyboard machine companies have an entirely different problem. Certain classes of straight matter unquestionably require a 30-em slug. Display composition even when used with such straight matter is necessarily on shorter measure because of the white space required on either side of the typefaces. It would not be economical to use a long mold and quad out a great majority of the shorter lines in order to avoid making a second cast on the occasional longer lines. A 30-em mold on the Ludlow would result in much lost time in sawing slugs that would not otherwise have to be sawed in making up forms. The analysis showed that the majority of forms can be printed from 21-em slugs without sawing.

Newspaper offices, with their additional half-pica measure on double columns, where 6-point column rule is used, have a problem that is somewhat different, as many of their double-column heads, etc., must be set to the full double-column measure of 24½, 25½, or 26½ ems. For this reason, the 22½-em mold was adopted as standard for newspaper use permitting the casting of full typeface slugs in these measures by using high spaces to overhang at either end of the body of the 22½-em slug.

Practically all Ludlow machines shipped to date are equipped with a 21-em or 22½-em mold. Although it is likely that at first many users who are now using these length molds asked for a longer length mold, experience has taught them that the proper length mold was supplied. After a user has worked with this length mold for some time he will find that these standard mold lengths are right.

Some specialty plants can use a special mold length to advantage. Printers who specialize in tag work may find that a 24-em mold (the length of their tags) would work to better advantage than a 21 or 22½-em mold. Book match houses find a shorter mold length works to advantage. An analysis of the particular work in such specialty plants should be made before the length of the mold is decided on.



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The maximum length of slugs which may be cast from the Ludlow machine is controlled by the following limitations:

- (a) Length of surface on top of mold — 30 ems.
- (b) Maximum length of opening in delivery slide allowing for clearance — 29 ems.
- (c) Maximum mold slot length possible between the necessary water passages from the shank to the cap of the double-water-cooled mold — 27½ ems.
- (d) Space necessary beyond each end of slug shank to accommodate end-overhang resulting from multiple-slug casts.

Because of limitations "b" and "c" above, the maximum length mold shank recommended for single-slug casts is as follows:

- ¾" Roman Body matrices — 27½ ems
- 1¼" Roman Body matrices — 27½ ems
- ¾" Italic Body matrices — 27½ ems
- 1¼" Italic Body matrices — 27 ems

Because of limitations "b" and "d" above, the maximum length mold shank recommended for multiple-slug work is as follows:

- ¾" Roman Body matrices — 27½ ems
- 1¼" Roman Body matrices — 27 ems
- ¾" Italic Body matrices — 26½ ems
- 1¼" Italic Body matrices — 25 ems

When using multiple-column sticks, care must be taken to break the composition and insert the quads between the lines on the sticks provided for this purpose.

WORDS FOR LUDLOW TYPECASTING MACHINE

The various parts of this machine are as follows:  
 1. The body of the machine is made of cast iron and is finished in a dark color.  
 2. The carriage is made of brass and is mounted on four wheels.  
 3. The type tray is made of brass and is mounted on the carriage.  
 4. The type case is made of brass and is mounted on the carriage.  
 5. The type tray is made of brass and is mounted on the carriage.  
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