Manual and Parts L

GAS MONOMI

FOR LINOTYPE and INTER

MAINTENANCE

OPERATION, CARE AND SERVICE OF YOUR MONOMELT

The Monomelt System of single melting of type metal, entirely eliminating pigging and the metal furnace, substitutes direct melting of slugs at the type-casting machine and automatically-controlled feeding of hot metal. Monomelt provides automatic control of temperatures, maintains fixed metal levels, preserves the tin and antimony in the metal and reduces dross to a negligible powder.

This catalog has been prepared to give you a thorough understanding of the Monomelt and how it functions. If these instructions on its operation, care and service are followed carefully, your Monomelt will give you years of trouble-free service.

HEAT CONTROL

Temperatures. The machine pot should be kept at a temperature of not less than 500° F. nor more than 520° F. Hold it as near 510° F. as possible. Temperature of the Monomelt pot should not be under 600° F. and should be maintained between 600° F. and 625° F. as burner goes down or heat decreases.

After a few days' use, take a temperature reading of both pots and readjust governor if necessary. The governors will require a few days'—and sometimes weeks'—use before they are permanently seated. Once seated, they should require very little attention.

Thermometers. Good slugs, or type, are produced only at a certain definite temperature. Paper browning or burning tests are inaccurate. A good thermometer is the only positive means of determining temperatures and will save time. The Monomelt Company has available a very practical metal testing thermometer. Write us for information.

METAL FEEDING

Filling the Pot with Metal. For perfect performance of your Monomelt, much depends on keeping the Monomelt pot or crucible properly filled with metal.

1. The molten metal should *not be higher than one inch from the top of the crucible.*

2. If there is a good supply of molten metal at the time of replenishing, *be careful not to put too many slugs into the hopper* as they may overflow when melted.

3. Do not permit the metal to accumulate on or around pot covers.

4. Be sure to keep metal chips away from working parts of Monomelt.

5. Do not let the Monomelt run dry or get too low. A small piece of dirt may get under the valve seat and cause the lower pot to overflow, or the dross may bake into the bottom of the crucible.

6. *Replenish the Monomelt at first sound of the low metal alarm*—DO NOT WAIT!

Increasing Capacity of Metal Flow. If your Monomelt fails to supply enough metal to the lower pot when casting furniture or large, heavy slugs, loosen the spring which pulls upward against the float and valve lever. Move it out of the way so valve will be free to remain open and metal can flow continuously from the Monomelt to lower pot. The float will automatically close the valve and shut off the flow of metal when the lower pot becomes full. *When you are through casting the heavy slugs,* BE SURE TO REPLACE THE SPRING!

Low Metal Alarm. There is very little chance of trouble with the low metal alarm if the Monomelt is cleaned at regular intervals. See that all dirt, metal chips and frozen crusts of metal are cleared away from the float and working parts in the crucible and that the bell hammer operating trigger has plenty of freedom.

Flooding. There is little danger of flooding, and if it occurs it is likely to be from neglect or overloading.

DO NOT FILL THE MONOMELT *FULL*! The molten metal should not be higher than *one inch* from the top of the crucible. Likewise, it should not be permitted to run dry nor should the dross and dirt be allowed to accumulate in the Monomelt crucible until it is so thick that the heat cannot penetrate the mass and reach the new slugs as they are introduced.

Remove the Monomelt hopper by loosening the ¼" round head screw on the side. See that all dirt and metal crusts are cleared away from upper end of valve rod and that the rod has freedom of action.

Examine the float rod. If the pump plunger rod pin has slipped through too far, it will catch the float rod, bend it and cause it to bind. Also see that the float has no interference from plunger well or side of lower pot.

When Metal Does Not Feed. When the metal does not feed from the Monomelt to the machine pot it is due to too low a temperature in the Monomelt pot. Temperature of the Monomelt pot must be between 600° F. and 625° F., or the metal will freeze in the Monomelt crucible spout. This condition is not due to dross.

THE MONOMELT COMPANY, INC.
1611 N. E. POLK STREET MINNEAPOLIS 13, MINNESOTA

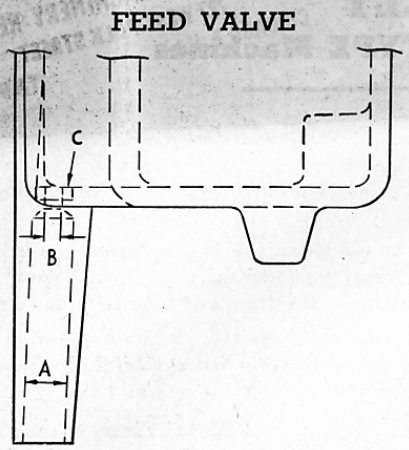


Figure 1.

How to Install New Valve Seat:

1. Remove crucible from Monomelt by first taking out Monomelt burner. Under burner you will find two screws which must be removed.

2. Clean out hole "A" with $^{19}/_{32}$" drill. (Figure 1)

3. Clean out hole "B" with ¼" drill to valve seat "C". Do not drill through valve seat.

4. Using a ¼" punch inserted in hole "B", drive valve seat out.

5. When driving in the new seat, use a brass rod so as not to injure seating surface.

6. The flat side—*not* the bevelled side—of the seat is the seating side. Be sure the flat side is *UP*.

Feed Valve Care. About once a month insert a long, narrow screwdriver in the slotted end of the feed valve and rotate it clockwise and counter clockwise for 8 to 10 turns. This will re-seat the valve and remove any small specks of dross that may have accumulated on the valve seat.

ROUTINE CARE

Skimming the Dross. Remove the dross from the Monomelt pot EVERY MORNING. Open the lid and with the dross paddle draw the dross towards the front of the crucible, or towards yourself. Squeeze against crucible with rubbing motion, forcing dross through holes in paddle. Almost at once you will see a dark, greyish powder form. In less than a minute all the dross will be reduced to powder and the free metal has returned to metal in the crucible. With the dross spoon—which is full of ⅛" holes to let the metal drain through—lift the dross out and put it into your dross container.

(NOTE: Leave sufficient dross or powder to flip back over top of metal to cover it. This will help to prevent dross from forming and will make further savings in metal.)

Sticking Plungers Cause Poor Slugs. Plungers should be cleaned regularly, although these cleaning periods will not be as frequent with the Monomelt System. Do not use oil, tallow, graphite or any other substance on them. CLEAN THEM DRY AND USE THEM THAT WAY.

Where plungers fit snugly there is likely to be an accumulation of dirt around the side walls of the well near the bottom, so that the well looks smaller at the bottom than at the top. Care must be taken that this accumulation is scraped off so that the plunger will continue on its descent until picked up by the cam. If plunger settles to bottom of well before the cam picks it up, it is too loose and in either case a poor slug will result.

Late style Mergenthaler plungers have an adjustable port in the bottom and with this you can regulate for proper relief of compression. When operating properly, a plunger should settle to within ¼" of the bottom of the stroke and you should regulate the adjustable port so as to accomplish this result. Solid plungers that do not settle enough should be drilled through the bottom with a drill of sufficient size to let the plunger settle as described above. Usually about a No. 45 to 52 hole is sufficient, but in no case should the compression be relieved enough to let the plunger hit the bottom of the well.

Safety Spring Tension. Check tension of safety spring once a month. If there is too little tension, bend arm holding upper end of spring slightly upward; if too stiff, bend downward.

Lower Pot Cover. ALWAYS keep the lower pot cover closed. Remove any accumulation of metal that may have splashed up to its edges.

Hold-Down Bolts. The hold-down bolts secure the base of the Monomelt to the top of the machine pot jacket. Check once in a while and tighten if necessary—not *too* tight. *Do not force.*

GAS BURNERS

Care of Gas Burners. To clean Monomelt burners and crucible bottom, remove three (3) screws that hold burner to body of Monomelt, take burners off and clean accumulation of soot. Then scrape soot off of bottom of crucible, but don't disturb adjustments. You will now get better and quicker heating.

For the lower pot burner use wire brush to remove accumulation of soot from orifice of this burner. Brush it when unlighted. Then turn on gas full force for a few seconds to blow out the soot from the holes. Light and operate.

Care of Heat at Mouthpiece or Throat. See to it that the mouthpiece burner is burning with a ½-inch flame. Do NOT try to regulate the mouthpiece heat with the pot governor, THIS IS NOT POSSIBLE. The mouthpiece burner regulating valve is for that purpose and is handy to get at.

Turning Out Fire to Save Gas. There is no good reason why the Monomelt can not be turned off at night because it will melt down a full pot of metal in about 40 minutes. The quantity of metal can be allowed to run a little low toward the close of the day so that less time will be required to melt it down in the morning.

It is not good practice to turn out the gas under the main pot of any gas-heated metal pot because of the danger of cracking the pot as it heats up in the morning. Also, all thermostats work at their best when under constant heat.

In shops where the gas is turned off at night under the lower pot, *it is advisable to withdraw the cotter pin that connects the float rod to the valve lever because the shrinking of the metal in the lower pot as it cools off has a tendency to pull down on the float and open the valve. This may result in a little flooding because the metal in the Monomelt will melt down and become fluid before the metal in the lower pot. The valve lever spring will hold the Monomelt valve closed. DO NOT TURN THE MACHINE OVER UNTIL YOU HAVE REPLACED THE COTTER PIN!*

If Burner Flame Fails to Decrease. Should the burner flame fail to decrease, it may be from one of the following causes:

1. The valve and valve sleeve may be dirty, in which case remove them and clean until they work freely. USE NO OIL.

2. Some carbon may have accumulated on the valve seat.

3. The lock nut on the governor adjustment may be loose and the governor out of adjustment. If governor can not be adjusted with index wheel, it should be sent back to the factory, as extreme care is required in readjusting these units. As a final measure of precaution, we subject all governors to 72 hours of continuous heat, after which they are checked again for accuracy before they leave the factory.

VENTILATOR PIPES

There are laws in many states requiring installation of vent pipes on all machines or devices using gas burners for the purpose of carrying away poisonous carbon monoxide gas. Whether there is a compulsory law or not, vent pipes *should be installed.*

Installing a Monomelt on a typesetting machine does not make the ventilation any more important than with a machine without Monomelt, but provision is made in the hopper casting of the Monomelt for vent pipe connections to carry off gas fumes from the burners and will at the same time carry off any smoke or fumes that may arise from metal in the Monomelt. However, there is nothing injurious in fumes or gases that can arise from molten metal which is carried at as low a temperature as metal in the Monomelt or typesetting machines is carried.

In providing vent pipes for typesetting machines, and especially those on which Monomelts have been installed, care must be taken in arranging the system.

The best known system of ventilation is one which provides for a uniform artificial draft by a motor driven fan located in the pipe line. But without a fan, the line can be carried into any good flue or chimney with a good free draft.

The lower end of the vent pipe, or that part which extends down to the Monomelt, should have an oblong funnel shape. It should not be extended down over the Monomelt flue, but should set above it with sufficient space so that a hand can be passed over the Monomelt flue under the vent pipe with ease. The oblong, funnel-shaped vent immediately over the Monomelt should be about 5 inches long and 3 inches wide to allow for travel of the pot. This section of the pipe must be offset enough to let the second elevator bar pass the pipe on its ascent and descent without interference.

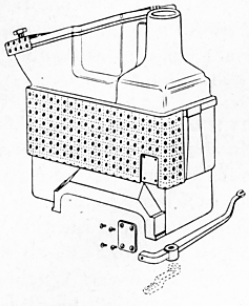
Test the vent system for draft. If there is too little draft noticeably to draw the flame of a burning match toward the open end of the vent pipe with the match held about an inch from the edge of the pipe, it is not a good vent. The other end of the pipe may be extending into the flue too far, or it may be reaching through the flue and up against the opposite side, which will cut off the draft.

Also examine the outlet of the flue on the roof. If the top of the chimney is below the level of some roof nearby, the air current may be passing over this roof and down into the chimney, which will kill the draft. If such is the case, the chimney must be extended either by building higher or putting an extension pipe on it. By all means do *not* overlook the importance of a good draft, as a poor draft will make your ventilating system worthless.

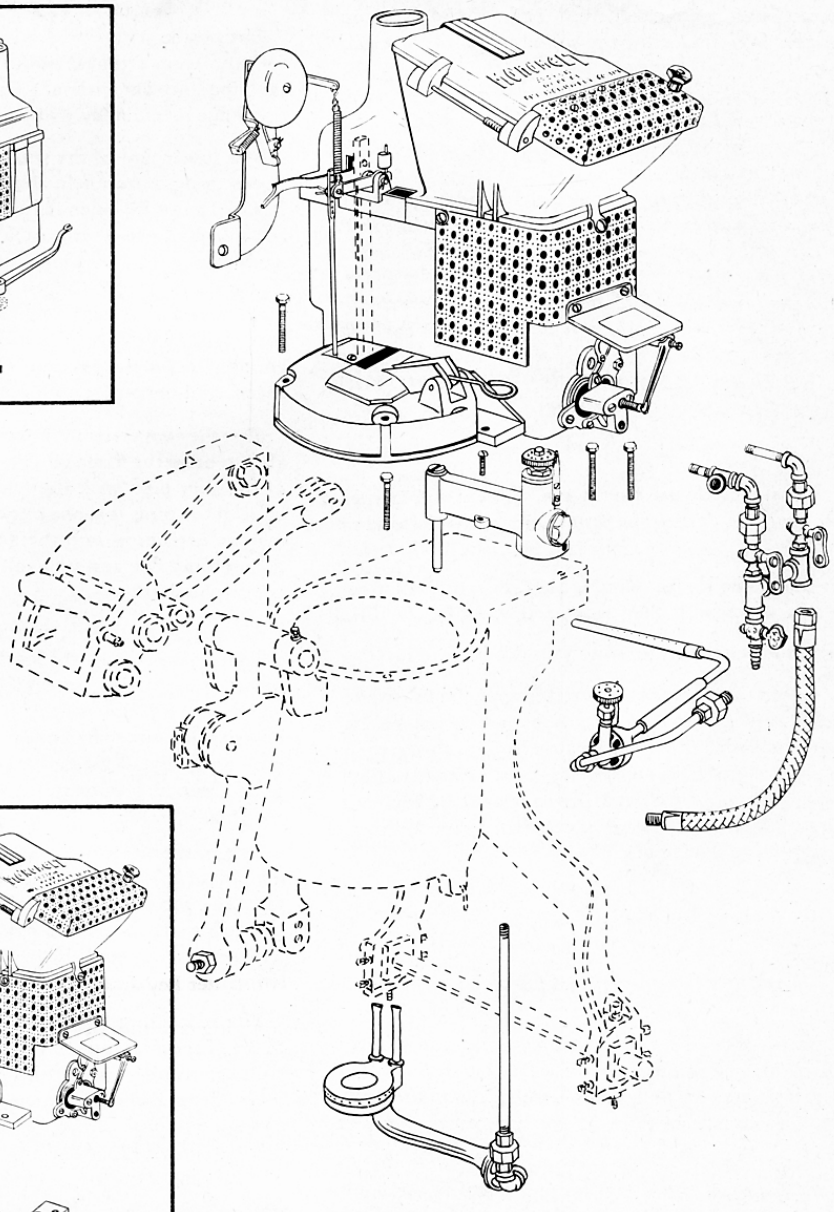
One of the signs of a poor ventilating system is sweating of the pipes. This causes an accumulation around the joints of the pipe and formation of crusty matter along the outside of the pipe where moisture has run down. A pipe with a good draft will remain dry and, if no dampness is present in the ventilating system, there is practically no deterioration.

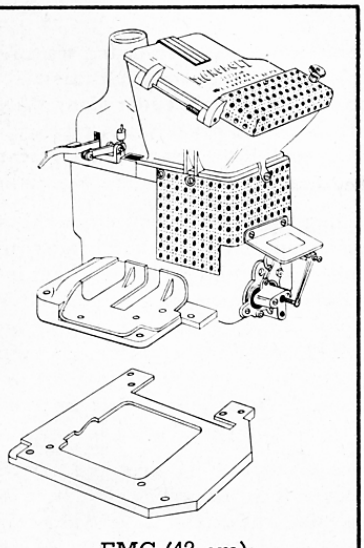
The ventilating pipe must be kept slightly above the top end of the Monomelt pipe so that the draft in the ventilating system will not create a pull on the gas burners, thus interfering with their proper burning. On the other hand, if the draft were poor and the vent pipe connected tightly around the Monomelt pipe, this would tend to smother the gas fire. If a ventilating system of this kind were connected direct to a flue or chimney, the effect of various drafts or wind would be transmitted to the Monomelt and machine pots.

For instance, on days of high wind velocity there would be so much draft that it would be difficult to keep the gas burners lit. At the same time, the excessive draft would tend to draw the heat away from around the pots. On days with no wind at all, there would not be enough draft to permit proper burning of your fires and the burners would be smothered.



DMG2L





EMG (42-em)

Exploded view showing
DMG installation (Linotype)

HOW TO INSTALL A GAS MONOMELT ON A LINOTYPE MACHINE

1. Check your machine pot leg bushings and cam roller assembly. If these parts are worn, they should be replaced *before* the new Monomelt is installed. The parts should be obtained from the manufacturer of your machine.

2. Remove thermostat, burners, pot cover and plunger.

3. Apply blowtorch under pot to keep metal from freezing up.

4. Clean vents, clean out well (with Monomelt well scraper) and skim machine pot.

5. Punch a hole through asbestos at each end of mouthpiece to provide vent for mouthpiece burner.

6. Remove hopper from Monomelt and mount Monomelt on top of machine pot. Cement around mouthpiece with new asbestos cement.

7. Install new burner furnished for lower pot.

8. Install Type "D" Governor and attach pipe with elbows and union to lower pot burner.

9. Install gas cock (inlet) assembly.

10. Mount the new mouthpiece burner.

11. Attach armored hose and pressure regulator to gas line. (NOTE: No Monomelt regulator furnished for bottled gas—regulator is on each tank of gas.)

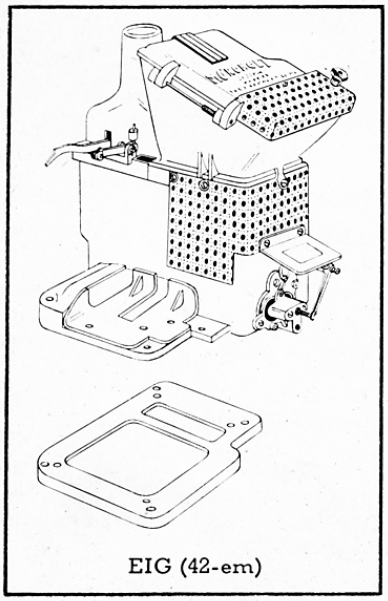
12. Insert metal float and fasten with cotter key at upper end.

13. Attach alarm bell to bolt on typesetting machine and attach safety spring from feed valve lever to alarm bell arm.

14. Replace Monomelt hopper and attach vent hood.

15. Adjust throat tube flame with valve screw underneath lower pot burner.

16. Check to see that all parts work properly, then light all fires and test for leaks. Replace plunger.



EIG (42-em)

Exploded view showing
DIG installation (Intertype)

HOW TO INSTALL A GAS MONOMELT ON AN INTERTYPE MACHINE

1. Check your machine pot leg bushings and cam roller assembly. If these parts are worn, they should be replaced *before* the new Monomelt is installed. The parts should be obtained from the manufacturer of your machine.

2. Remove thermostat, burners, pot cover and plunger.

3. Apply blowtorch under pot to keep metal from freezing up.

4. Clean vents, clean out well (with Monomelt well scraper) and skim machine pot.

5. Punch a hole through asbestos at each end of mouthpiece to provide vent for mouthpiece burner.

6. Remove hopper from Monomelt and mount Monomelt on top of machine pot. Cement around mouthpiece with new asbestos cement.

7. Install new burner furnished for lower pot.

8. Install Type "D" Governor and attach pipe with elbows and union to lower pot burner.

9. Install gas cock (inlet) assembly.

10. Mount the new mouthpiece burner.

11. Attach armored hose and pressure regulator to gas line. (NOTE: No Monomelt regulator furnished for bottled gas—regulator is on each tank of gas.)

12. Insert metal float and fasten with cotter key at upper end.

13. Attach alarm bell to bolt on typesetting machine and attach safety spring from feed valve lever to alarm bell arm.

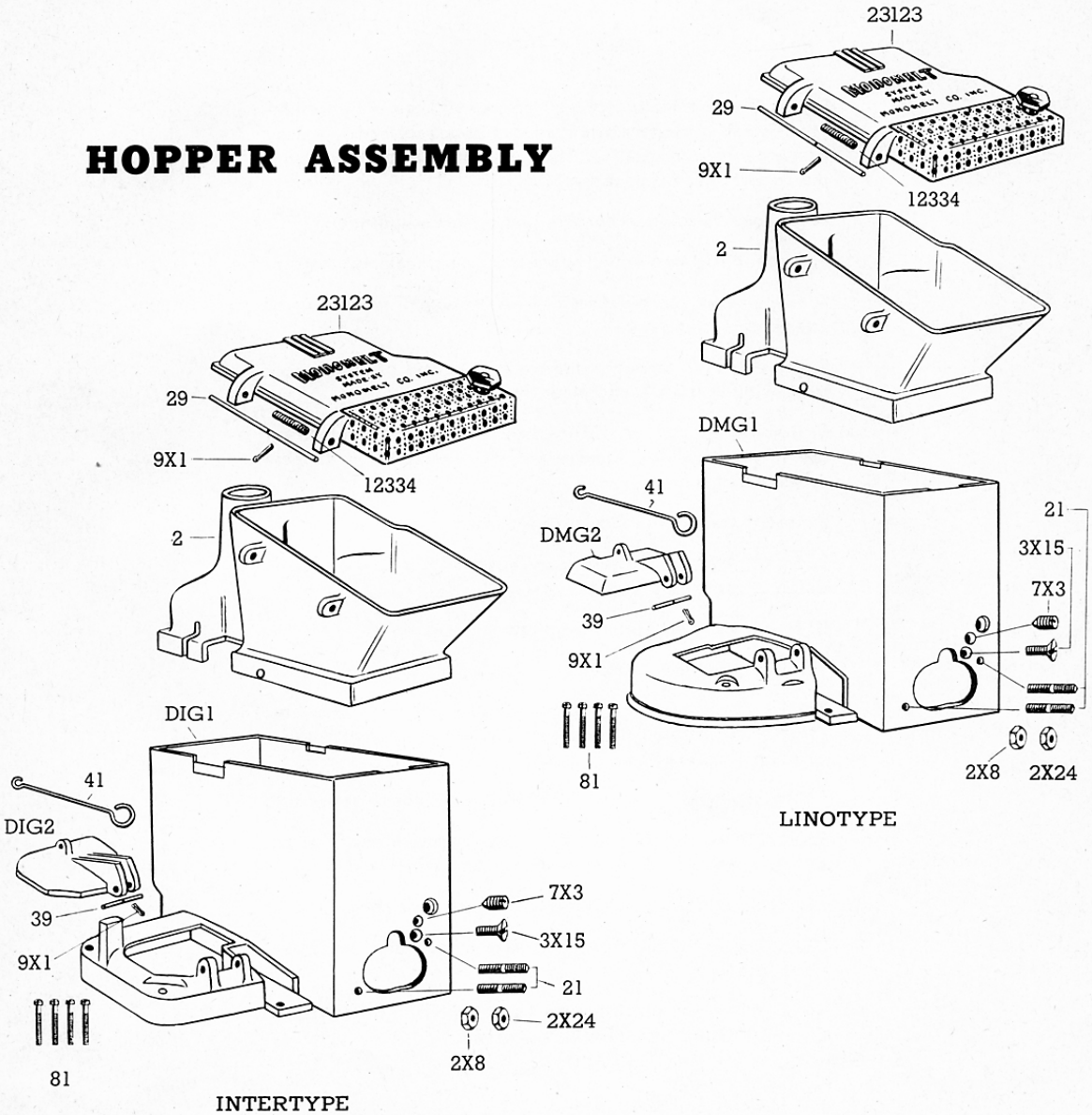
14. Replace Monomelt hopper and attach vent hood.

15. Adjust throat tube flame with valve screw underneath lower pot burner.

16. Check to see that all parts work properly, then light all fires and test for leaks. Replace plunger.

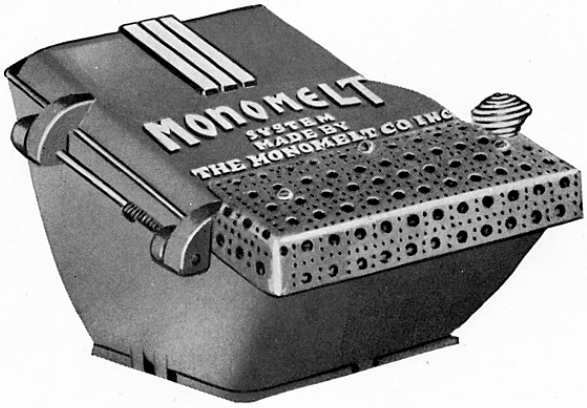
PARTS for GAS MONOMELT
for LINOTYPE and INTERTYPE

HOPPER ASSEMBLY



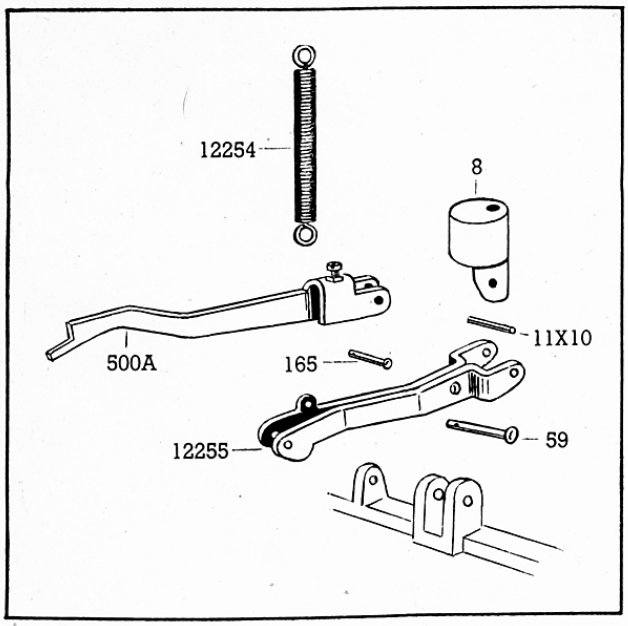
(Please specify the gas you use — artificial, natural, mixed or bottled.)

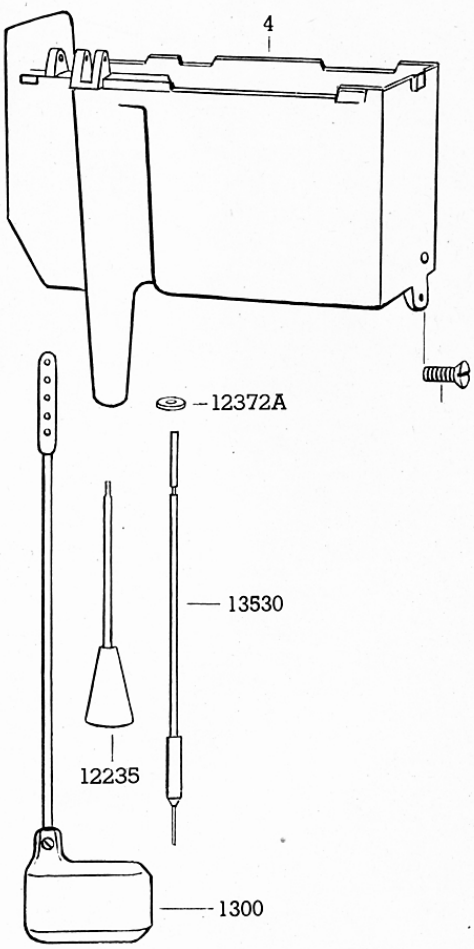
MONOMELT HOPPER ASSEMBLY PARTS LIST



Catalog Number	NAME OF PART
900	Hopper Assembly with Cover
2X1	Burner Holding Nut
2X24	Burner Body Locknut
3X15	Hopper Clamping Screw
7X3	Crucible Holding Set Screw
9X1	Cotter Pin
2	Hopper
23123	Hopper Cover
21	Burner Body Studs
29	Hopper Cover Hinge Pin
39	Lower Lid Hinge Pin
41	Lower Lid Handle
81	Crucible Holding Screw
12334	Hopper Cover Tension Spring
DIG1	DIG Body (Intertype)
DIG2	Lower Lid (Intertype)
DMG1	DMG Body (Linotype)
DMG2	Lower Lid (Linotype)
	(Please specify the gas you use—artificial, natural, mixed or bottled.)

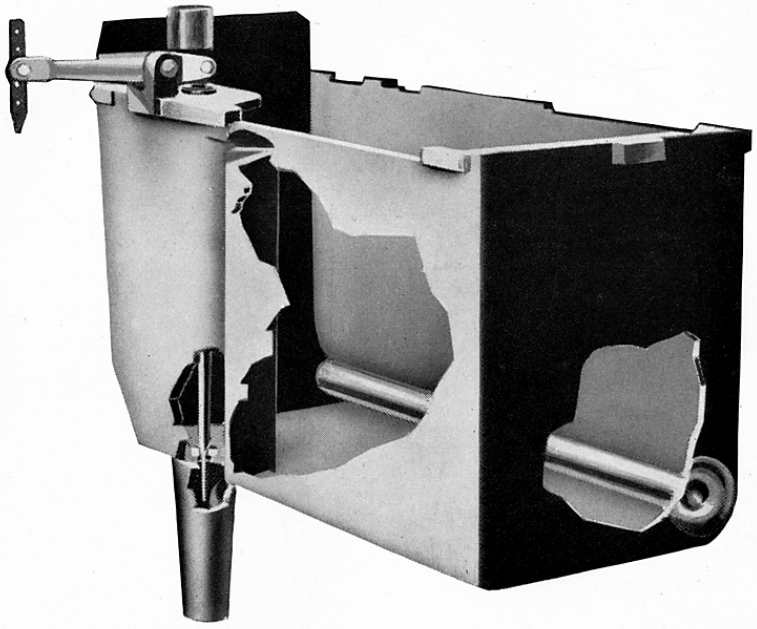
FEED VALVE and ALARM FLOAT ASSEMBLY





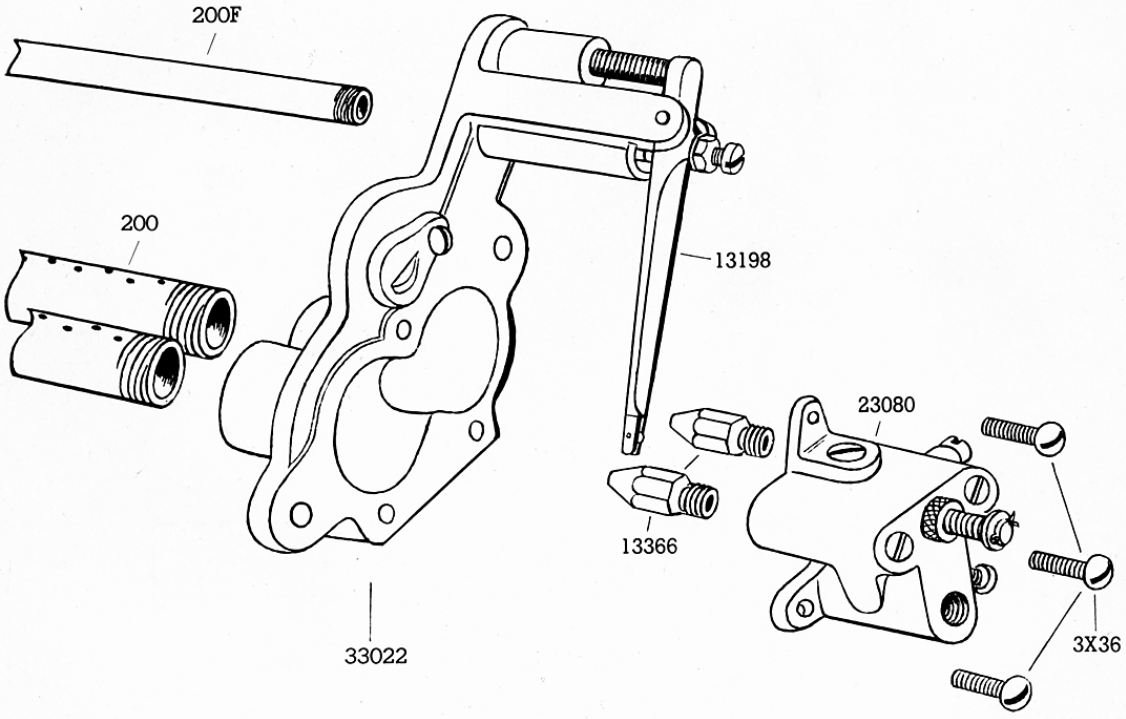
(Please specify the gas you use — artificial, natural, mixed or bottled.)

MONOMELT FEED VALVE and ALARM FLOAT ASSEMBLY PARTS LIST



Catalog Number	NAME OF PART
600A	Crucible Assembly
600B	Feed Valve Assembly
6X4	Crucible Holding Screw
11X10	Feed Valve Pivot Pin
4	Crucible
8	Feed Valve Pivot
59	Feed Valve Hinge Pin
165	Alarm Float Lever Hinge Pin
500A	Alarm Float Lever and Bell Tripper Assembly
1300	Feed Float Assembly
12235	Alarm Float
12254	Alarm Safety Spring
12255	Feed Valve Lever
12372A	Feed Valve Seat
13530	Feed Valve
	(Please specify the gas you use—artificial, natural, mixed or bottled.)

MONOMELT POT THERMOSTATIC BURNER



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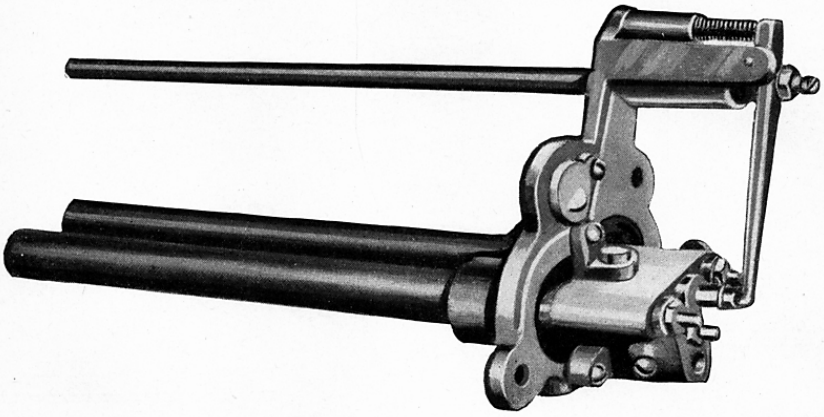
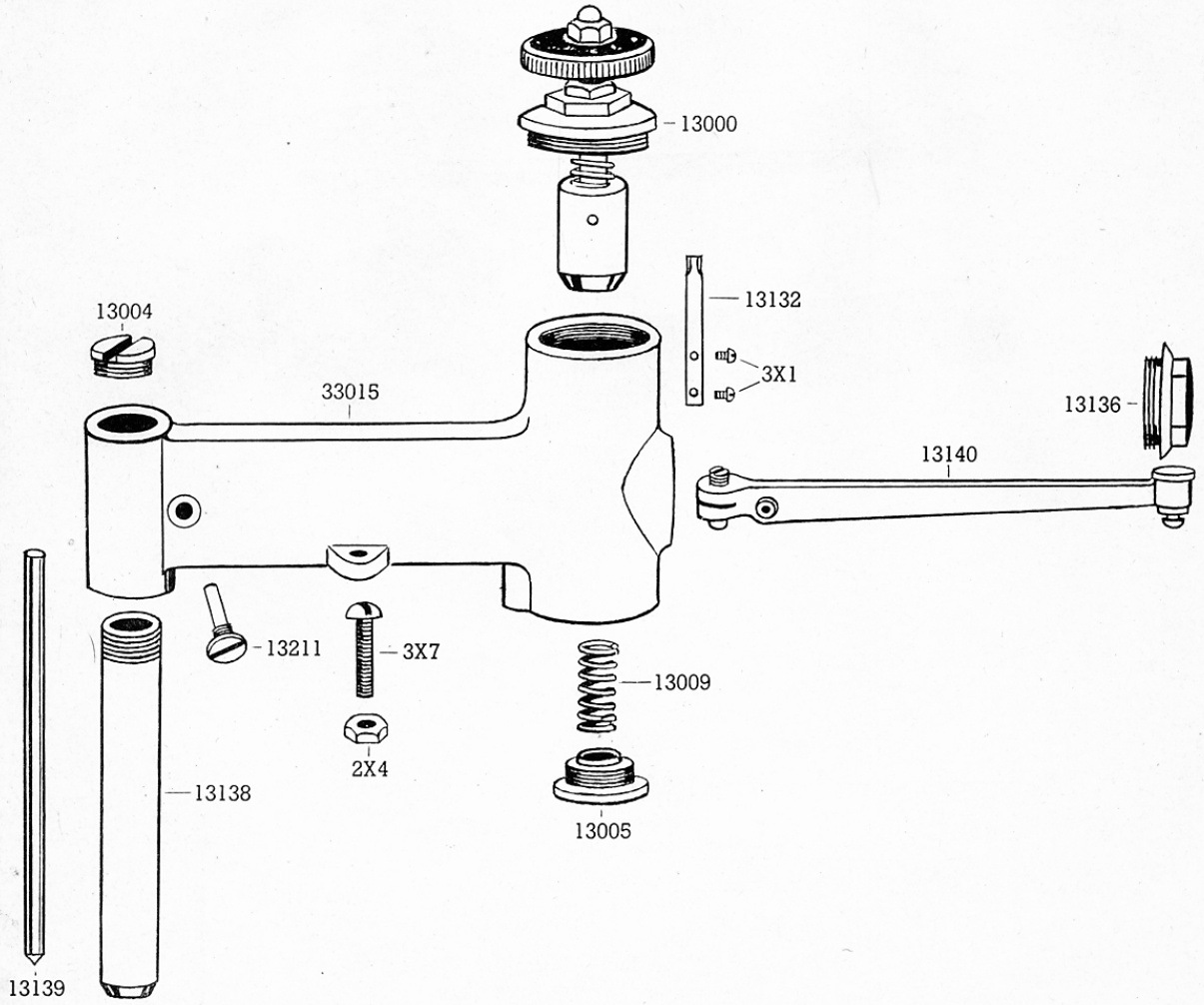
MONOMELT POT THERMOSTATIC BURNER ASSEMBLY PARTS LIST



Catalog Number	NAME OF PART
33058	Thermostatic Burner Assembly
3X36	Orifice Mounting Screws
200	Burner Body Pipes
200F	Burner Body Tube Assembly
13198	Burner Thermostatic Lever Assembly
13366	Orifice Tip
23080	Orifice Assembly
33022	Burner Body
	(Please specify the gas you use — artificial, natural, mixed or bottled.)

TYPE "D" GOVERNOR ASSEMBLY (For Machine Pot)



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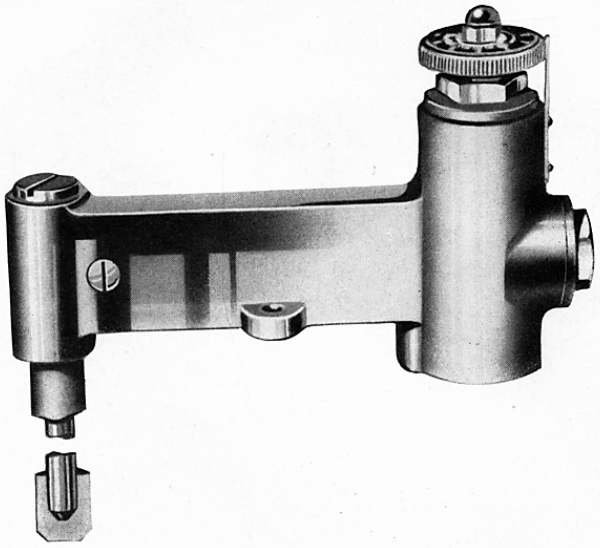
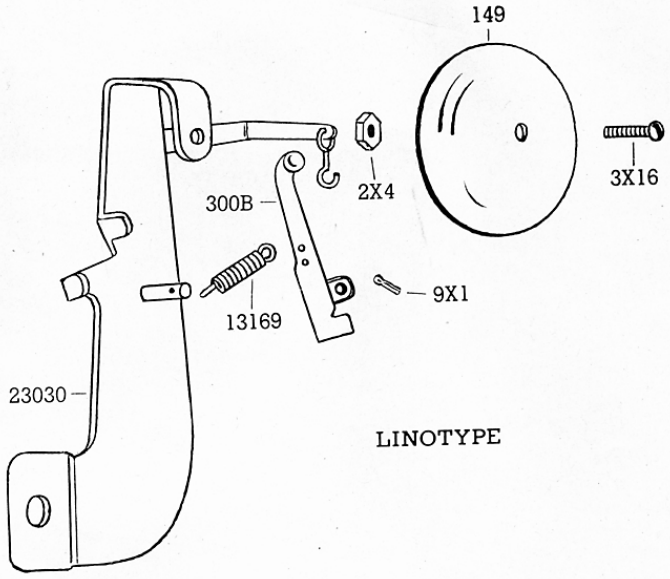
MONOMELT TYPE "D" GOVERNOR ASSEMBLY PARTS LIST

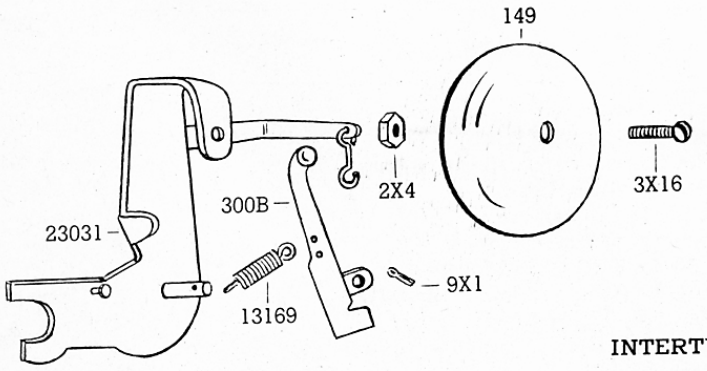


Catalog Number	NAME OF PART
33016	Type "D" Governor
2X4	Governor Holding Locknut
3X1	Adjusting Wheel Index Holding Screw
3X7	Governor Holding Screw
13000	Adjusting Screw Assembly
13004	Governor Body Rear Plug
13005	Governor Body Bottom Plug
13009	Governor Thermostat Lever Spring
13132	Governor Adjusting Wheel Index
13136	Governor Adjusting Wheel Body Plug
13138	Governor Tube
13139	Governor Thermostat Rod
13140	Governor Thermostat Lever Assembly
13211	Governor Thermostat Lever Pivot
33015	Governor Body
	(Please specify the gas you use—artificial, natural, mixed or bottled.)

LOW METAL ALARM ASSEMBLY



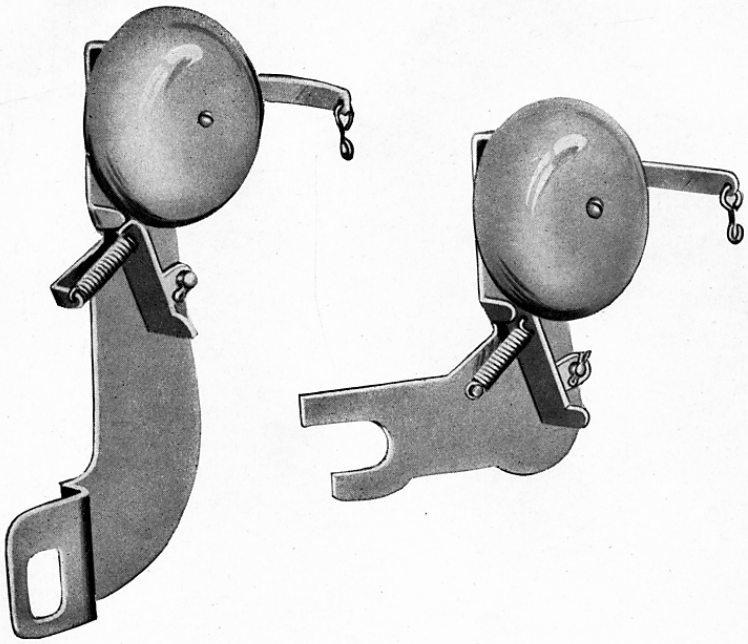
LINOTYPE



INTERTYPE

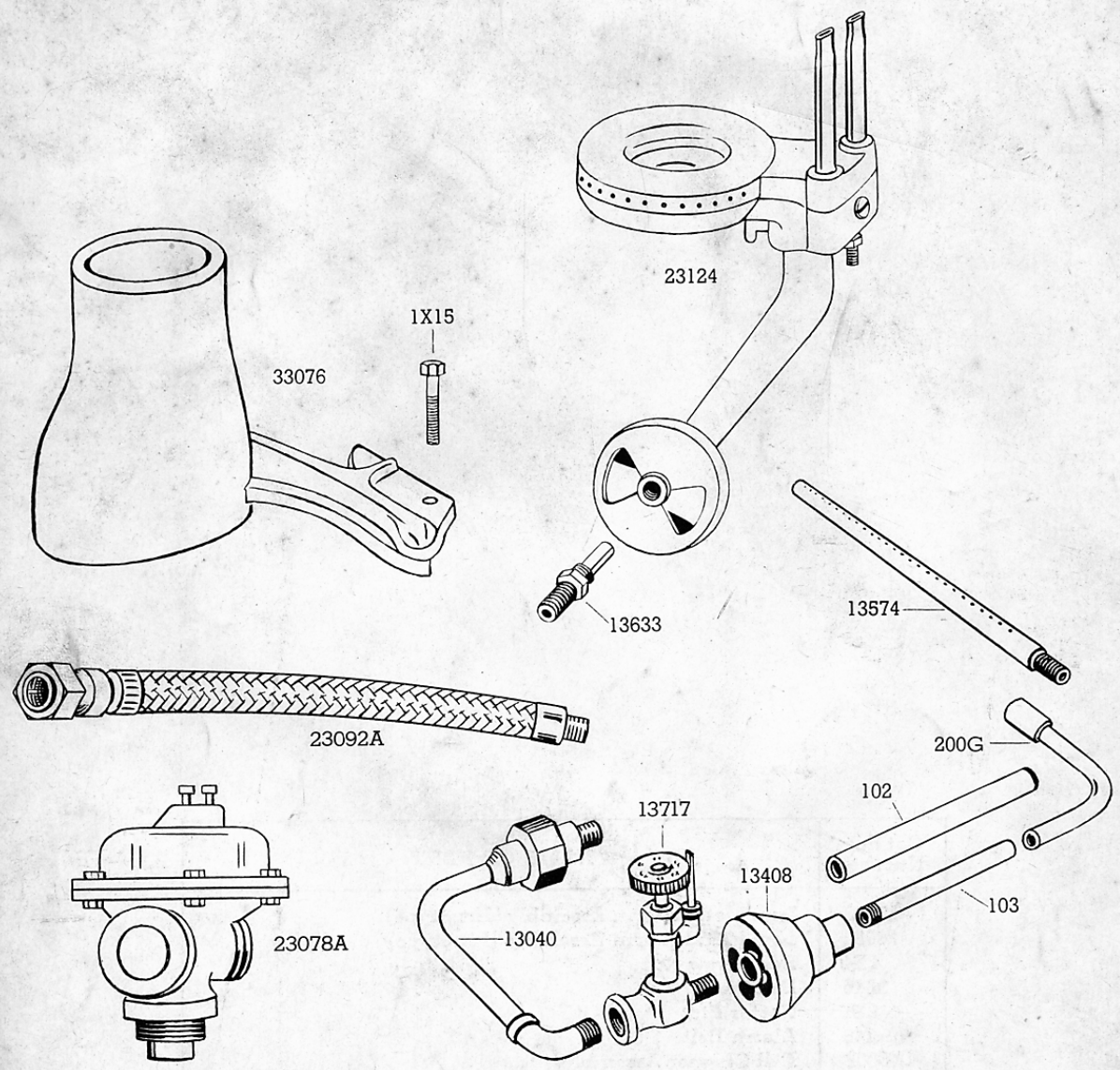
(Please specify the gas you use—artificial, natural, mixed or bottled.)

MONOMELT LOW METAL ALARM ASSEMBLY PARTS LIST



Catalog Number	NAME OF PART
23033	Low Metal Alarm Assembly (Intertype)
23032	Low Metal Alarm Assembly (Linotype)
2X4	Bell Screw Nut
3X16	Bell Screw
9X1	Cotter Pin
149	Alarm Bell
300B	Bell Clapper Assembly
13169	Bell Clapper Spring
23030	Low Metal Alarm Base (Linotype)
23031	Low Metal Alarm Base (Intertype)
	(Please specify the gas you use—artificial, natural, mixed or bottled.)

MISCELLANEOUS PARTS



(Please specify the gas you use — artificial, natural, mixed or bottled.)

MISCELLANEOUS PARTS LIST

Catalog Number	NAME OF PART
1X15	Vent Hood Screw (3/8"x2 1/2")
102	Mouth Piece Burner Outer Slip Connection Tube
103	Mouth Piece Burner Inner Slip Connection Tube
200G	Mouth Piece Burner Inner Sleeve Elbow Assembly
13717	Regulating Valve
13040	Pipe Hookup
13408	Air Mixer
13574	End Pipe Mouth Piece Burner
13633	Lower Pot Burner Orifice Assembly
23078A	Gas Pressure Regulator Assembly
23092A	Armored Gas Hose
23124	Lower Pot Burner
33076	Monomelt Vent Hood
	(Please specify the gas you use—artificial, natural, mixed or bottled.)