

Edition 672

Instructions for  
No. 322 MANUAL  
OPERATED ROASTER

Serial No. \_\_\_\_\_

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## DESCRIPTION

### DESIGN FEATURES

The Bauer Ray-O-Matic No. 322 is a radiant ray, gas fired roaster designed to process in shell or shelled peanuts, almonds, filberts and similar nuts and seeds.

Product uniformity with maximum quality assurance is provided by the recording Color Control Unit. This unit provides consistent, precision temperature control from batch to batch, eliminating production waste, and quality variation due to human error.

Nuts roasted by the radiant energy process have a comparatively dry surface and a very uniform penetration of color. This is produced by a special multiple arrangement of radiant burners inside the roaster cylinder. Individual burners type and size are specified to suit the type of gas and B. T. U. content. The units are adaptable to natural, manufactured, mixed and compressed gases such as propane and butane. Precise air and gas mixing at optimum pressure over a wide range of heats is provided by a special air-fuel mixer. Heat loss is held to a minimum by blanket type insulation.

The roaster is compact, saves floor space and can be charged from bulk storage or elevator. Automatic charging and discharging as well as manual operated models are available.

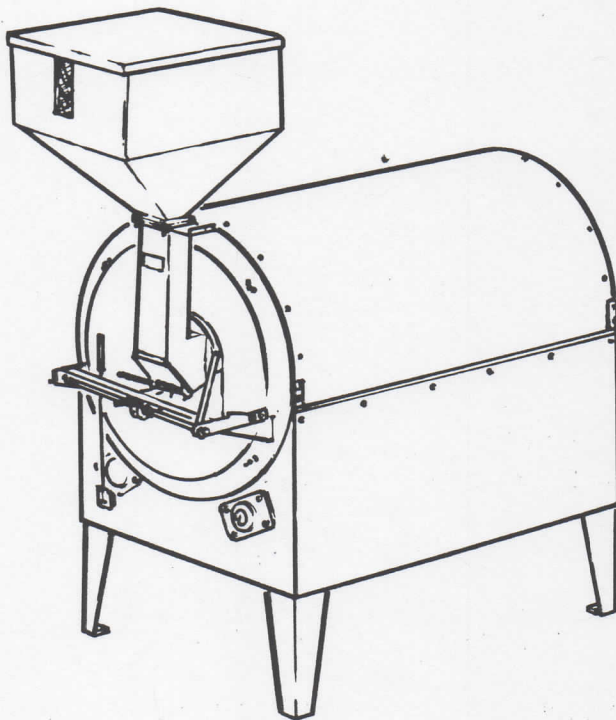


Figure 1A. No. 322

## DESCRIPTION

### THEORY OF OPERATION

The roaster drum is driven by a 3/4 horsepower electric motor through a ring and pinion gear and normally turns at 11 rpm in a clockwise direction as viewed from the hopper end of the roaster.

The peanuts are constantly stirred by the bilateral flighting vanes welded to the cylinder walls of the drum. The majority of the load remains in the lower left hand quadrant of the roaster as the drum turns. The radiant burners are offset from the horizontal plane 45 degrees in a clockwise direction so that the full radiation of the burners is directed at the load during the roasting.

The gas-air mixture is carburetted by a mixer and fed to the burners under pressure by a blower which is driven by a 1/3 horsepower motor. Flame intensity is selected from 8 preset burner heats.

Each roaster supplied is designed and constructed to be compatible with the customers electric requirements and available service.

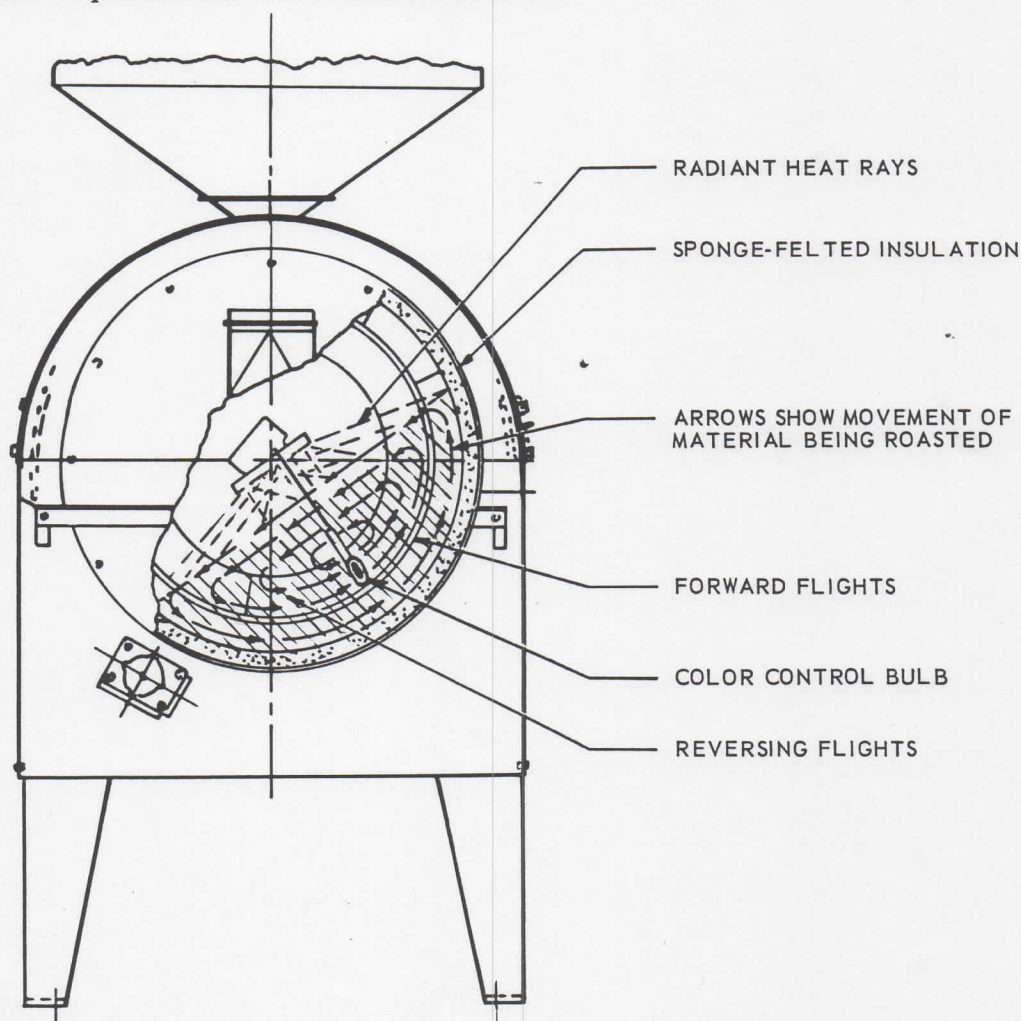


Figure 2A. Rearview of Roaster

## INSTALLATION

### ROASTER INSTALLATION

Select an area that will afford access to the charging hopper, the discharge opening and the controls. The Color Control should be placed in a position to permit the operator to observe the control panel, the charging hopper and the discharge operation from one position. Allow a space of 4 feet to each side and to the rear for service and maintenance access. The roaster, with a full load of nuts in the drum and with the charging hopper loaded, will weigh approximately 2550 pounds.

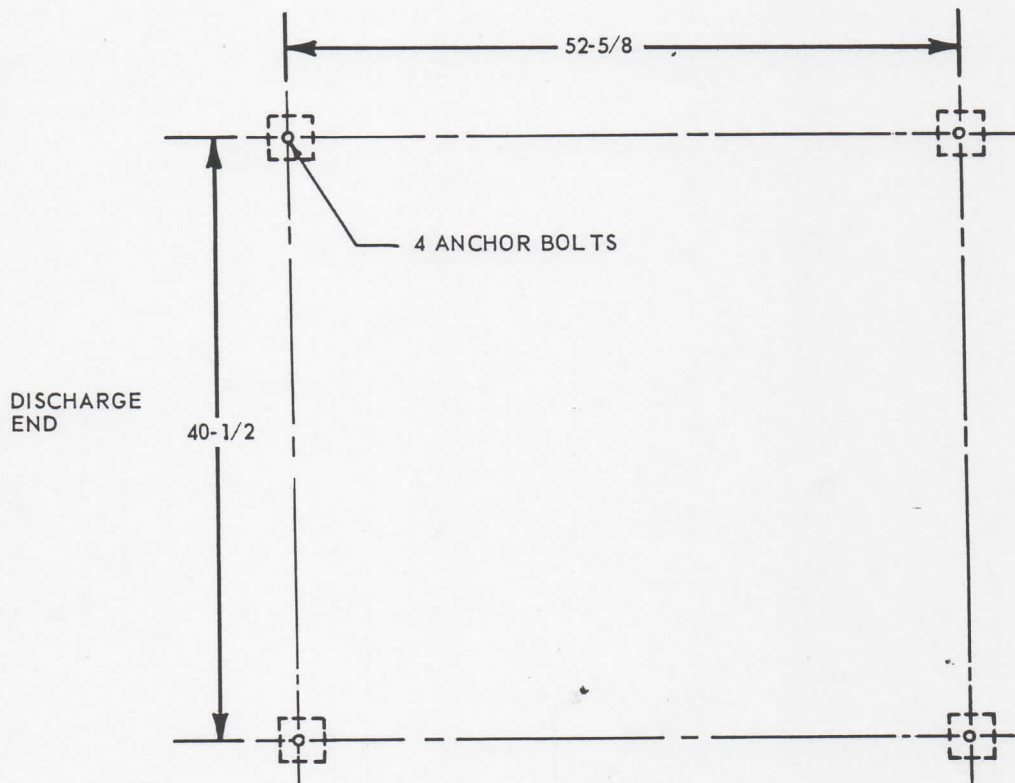


Figure 1B. Floor Dimensions

Lift the roaster into place by using slings under the body of the roaster. The empty weight of the roaster is approximately 2150 pounds and the weight distribution is slightly off center in the direction of the discharge door. Adjust sling length and position so that the roaster will be lifted in a level attitude.

After the roaster has been positioned, level in all axes. Use the underside of the body for leveling. Leveling may be accomplished by the use of shimming washers under the feet. Shims should have a minimum area equivalent to the area of the feet (16 sq. in.). Secure the roaster with nuts and lockwashers after leveling.

## INSTALLATION

Connect the cord and plug from the roaster to the panel. Connect the Color Controller to a single phase, 50/60 cycle, 115 volt circuit. It is desirable to have a 5 ampere fuse and switch in line feeding the instrument.

### FUEL SERVICE INSTALLATION

The following recommendations should be followed carefully when running the gas line to the roaster.

#### PIPE SIZE

The gas supply line should be large enough to maintain a pressure of 3 oz. (5 inch water column) at the ratio valve while the roaster is operating at maximum heat.

As a rule-of-thumb, when the fuel is low pressure natural gas the supply line should be one pipe size larger than the ratio valve inlet connection.

Wherever low pressure manufactured gas is the fuel (or where the gas is supplied at a pressure less than 6" w.c. through a gas line more than 30 ft. in length), the supply line should frequently be twice the pipe size of the gas inlet of the ratio valve. For specific recommendations based on local conditions, consult the gas company supplying the fuel.

#### MAIN GAS SHUT-OFF COCK

Provide a main gas shut-off cock in the supply line leading to the roaster, locating it on the inlet side of the regulator. This is used for shutting off the fuel to the main burner and pilot during overnight or weekend shut-downs.

#### NOTE

The gas valve in the ratio valve of the blower mixer is NOT a shut-off valve. It is a throttling device and not intended to provide tight shut-off service.

Closing of the electric shut-off valve shuts off the main burners but allows gas to the pilot system. Closing the main cock turns off both the main burners and the pilot.

#### ELECTRICAL CONNECTIONS

The No. 322 Roaster is supplied with various electrical requirements designed to be compatible with the electrical service available at the customers facility.

The roaster drum drive motor and the gas premixer blower require 50 or 60 cycle, less than 600 volt, 3 phase electrical power. Electric service to these motors should be capable of providing 1 KVA continuously.

## START UP AND OPERATION

Your new Model 322 Manual Controlled Roaster with Burdett Burners has been adjusted at the factory using the following procedure. All adjustment steps should be checked after the installation to allow for any differences in the system. Note: Read and understand section on "Things to Observe When Adjusting Burdett Burners". Reference Figure 1C.

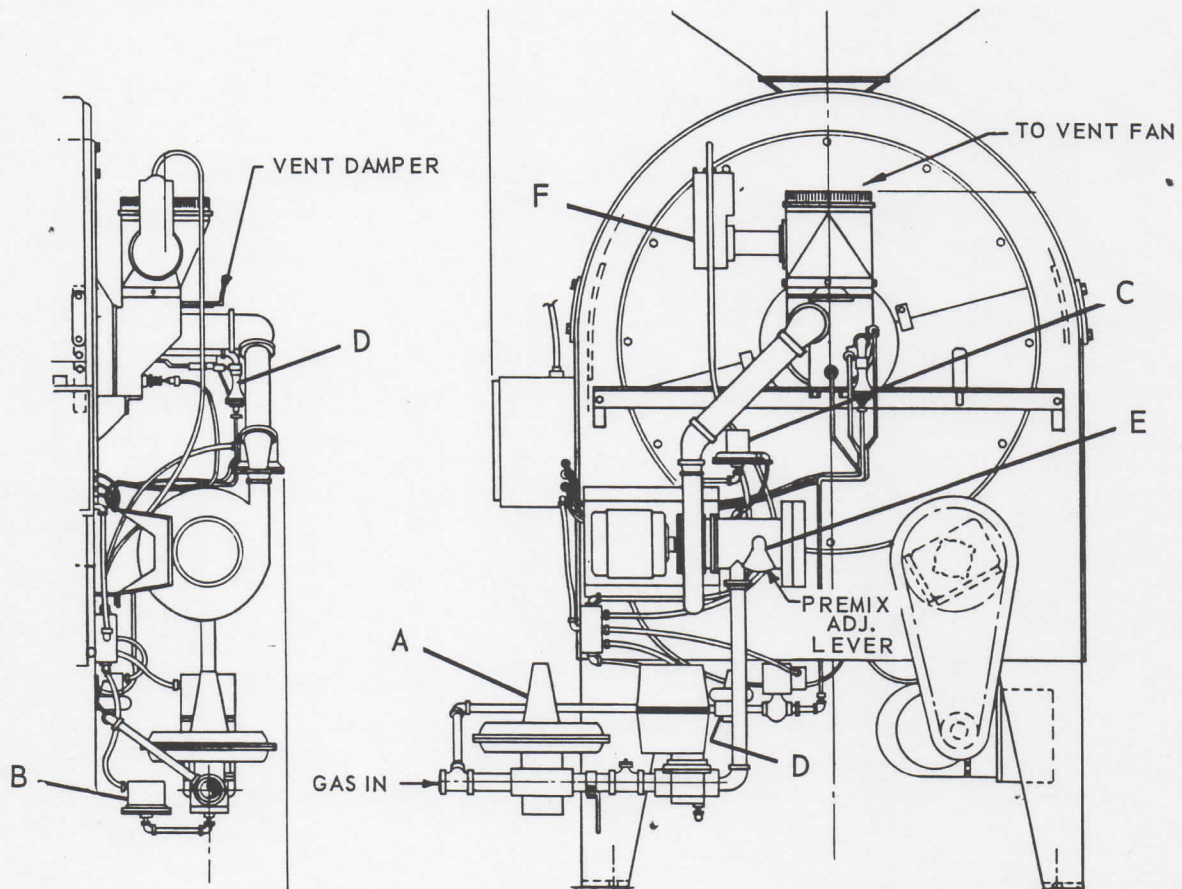


Figure 1C.

### STEP 1. PRESSURE REGULATOR "A".

Check gas supply pressure into pressure regulator "A". This should read 6 to 8 inches of water on a manometer. Check gas pressure on roaster or outlet side of pressure regulator. This reading should be 1 inch of water lower than the gas supply pressure. The pressure regulator can be adjusted by removing the top cap and changing the position of the adjusting ferrule. This adjustment can be made with a screw driver. In-More Gas, Out-Less Gas. Reference Figure 2C.

STEP 3. PREMIX BLOWER DIFFERENTIAL SWITCH "C".

Make sure gas supply valve is closed. Start roaster drum and premix blower motors. Start roaster vent fan motor. Connect continuity test leads to terminals "R" and "W" on switch "C". Open "vent damper" wide open by sliding gate out to maximum of slot. Set the premix adjustment lever to the No. 8 position. The meter should show that switch "C" is closed. If the switch is not closed, move "Pressure Adjusting Screw" down scale until switch closes. Note this setting on the 2---20 scale when the switch closes and continue adjustment down for one (1) graduation. Test this setting by moving the vent damper in and out and moving the premix adjustment from 1 through 8 setting. Switch should remain closed with any combination of premix and damper setting. Shut off the premix blower and roaster drum and leave roaster vent fan on. Switch "C" should show "open" on the continuity meter. Reference Figure 3C.

NOTE

Switch "C" is the same as switch "B" as shown in Figure 3C except it does not have the lock out feature and manual reset lever.

STEP 4. PILOT ASSEMBLY AND PILOT GAS REGULATOR "D".

Make sure flame and ignition rods do not come in contact with the rear entry plate. The pilot is adjusted at the factory but may require readjustment to suit field conditions. To adjust the amount of gas remove the pressure regulator cap. Move adjusting ferrule in for more gas, out for less gas. Adjust air to gas mixture by moving air adjustment disc on pilot assembly mixer in or out until a blue flame engulfs the entire flame rod tip. Reference Figure 4C.

STEP 5. LIGHTING BURNER AND ADJUSTING PREMIX BLOWER "E".

- A. Open main gas cock. (Main line to roaster).
- B. Start roaster drum motor and premix blower.
- C. Start roaster vent exhaustor motor.
- D. Place chart in color control and move chart motor switch to "on". (See Figure 9C)
- E. Adjust color control high set point to 250° on chart. (See Figure 8C)
- F. Turn color control power switch to "on".
- G. Set premix blower adjustment lever to No. 1 setting.
- H. Set rear vent damper to approximately 1/3 open.
- I. Turn color control gas switch to on.



## START UP AND OPERATION

1. With the ratio valve in position No. 1, turn No. 1 adjusting screw in until main burner lights and maintains the desired flame. Turn all the higher numbered screws in until they are all the same depth as No. 1 screw just set. Then turn No. 2 screw in one full turn.
2. Now, with your screw driver engaging No. 2 screw, turn the ratio valve very slowly toward position No. 2 and, while turning, adjust the No. 2 screw to maintain the type of flame desired. With the ratio valve set at exactly at position No. 2, complete the adjustment of No. 2 screw to the flame character desired.

CAUTION: If, during this initial setting of the screws, the valve is shifted too rapidly from one screw to the next, without carefully adjusting as you go, the flame on the main burner may be extinguished. If it is, for any reason, turn gas switch on color control to off at once. After allowing roaster to purge of gas vapors for at least 5 minutes turn back to No. 1 position. Turn the color control gas switch to "on" and the main burner should light. Then procede with premix adjustments.

3. With the ratio valve still at position No. 2, turn all the higher numbered screws in until they are all the same depth as the No. 2 screw just set. Then turn the No. 3 screw in one full turn.
4. Turn the ratio valve slowly toward position No. 3, adjusting the No. 3 screw as you go.
5. Repeat the above procedure for all the remaining screws, each time turning all the higher numbered screws in until they are the same depth as the screw previously set, before moving the ratio valve toward the next position.

If the proceding adjustments takes more than 5 minutes or the color control shuts off the gas due to high temperature, turn gas switch to "off" on the color control panel and leave roaster drum, premix blower and vent fan run with inspection door open to cool down roaster before further adjustments are made.

You are now ready for the first roast. Charge the roaster with the proper amount of nuts, turn color control gas switch to "on"! The burner should ignite regardless of where the premix ratio valve is set. It is suggested you start on No. 3 or No. 4 setting at first.

## START UP AND OPERATION

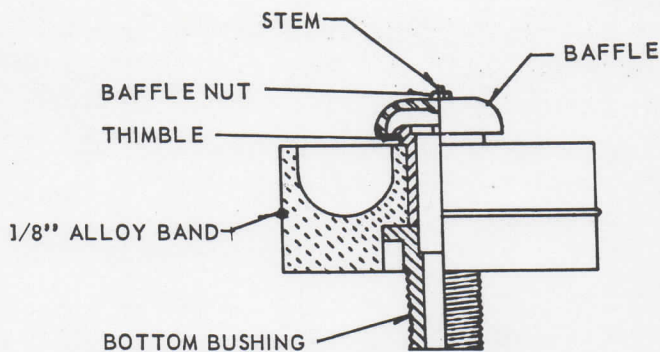


Figure 6C.

1. Burner baffle gets red hot - The gas mixture is burning inside the burner and manifold. Shut gas off immediately and cool down roaster before making further adjustments. Correct this condition by increasing velocity at all burners either by increasing gas pressure or reducing opening between baffle and thimble of burner. Adjust all burner baffle clearance the same even though one or two baffles glow red. (Normally 12 burners per manifold).
2. Burners fail to light - The mixture is too lean. Correct by adjusting premix for more gas.
3. Extremely yellow flame - The mixture is too rich. Correct by decreasing gas.
4. Extremely blue flame - The mixture is too lean. Correct by increasing gas.
5. Refractory doesn't get hot enough - not burning enough gas or mixture isn't right; correct by increasing opening between baffle and thimble burner or correct mixture per above.
6. One side of refractory gets hotter than other side - threaded stem on thimble may be bent or baffle may not be threaded square; correct by first opening baffle 1/2 turn, if no improvement then bend stem to get uniform opening between baffle and thimble.

### AIR FLOW SWITCH "F".

The purpose of the air flow switch is to prove the roaster vent system is on and functioning properly. It is tied electrically into the gas circuit to prevent the burner from igniting without the vent system on.

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FIGURE 10

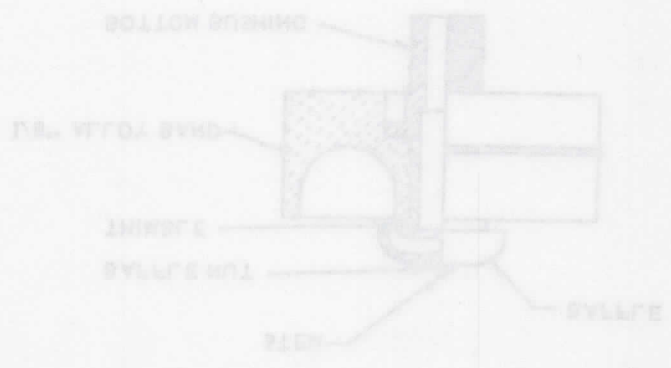


FIGURE 11

If the white indicating light does not come on or it flickers - turn off the gas switch and check electrical connections and gas valves. For pilot flame and manifold flame problems see pages

During the first roast, using the color controller, the operator should sample the peanuts frequently.

If the desired color is obtained before the temperature reaches the preset assumed high point, note should be made of that temperature and the high point setting adjusted to it for the desired color before the next roast.

If the desired color is not reached by the time the temperature reaches the preset assumed high point, then the high set point must be advanced to a higher temperature setting until desired color is obtained. Adjustment can be made during this roast operation.

Assume now you have gone through above sequence, the nuts have reached the desired color, the "high" point indicator is reading correct high temperature. The recorder pen, recording true nut load temperature via the RTD probe, is coincident with the green high point indicator. As the temperature pen continues past the green high point the main gas shuts off, the white gas light goes out and the red indicating light for roaster door comes on. This red light gives visual warning to the operator to open the roaster door and dump the roasted nuts from the roaster into the cooler charge hopper.

A fresh charge load of unroasted nuts can now be released manually into the roaster cylinder.

Meanwhile the temperature recording pen which had continued past the green high point indicator now will begin to drop indicating reducing temperature with roaster plus load. When the pen reaches the green high point indicator, on its way down, the red roaster door indicating light will go out and the main gas will come on and be ignited in the manifold also the white gas indicating light will come on to indicate same.

## START UP AND OPERATION

- Step 1. Swing pen arm upscale and place it on pen arm rest.
- Step 2. Remove used chart. Slip a new chart over chart hub and time index pin.
- Step 3. Rotate chart and chart hub by means of time index pin until correct time line on chart is opposite time index.
- Step 4. Replace pen on chart.

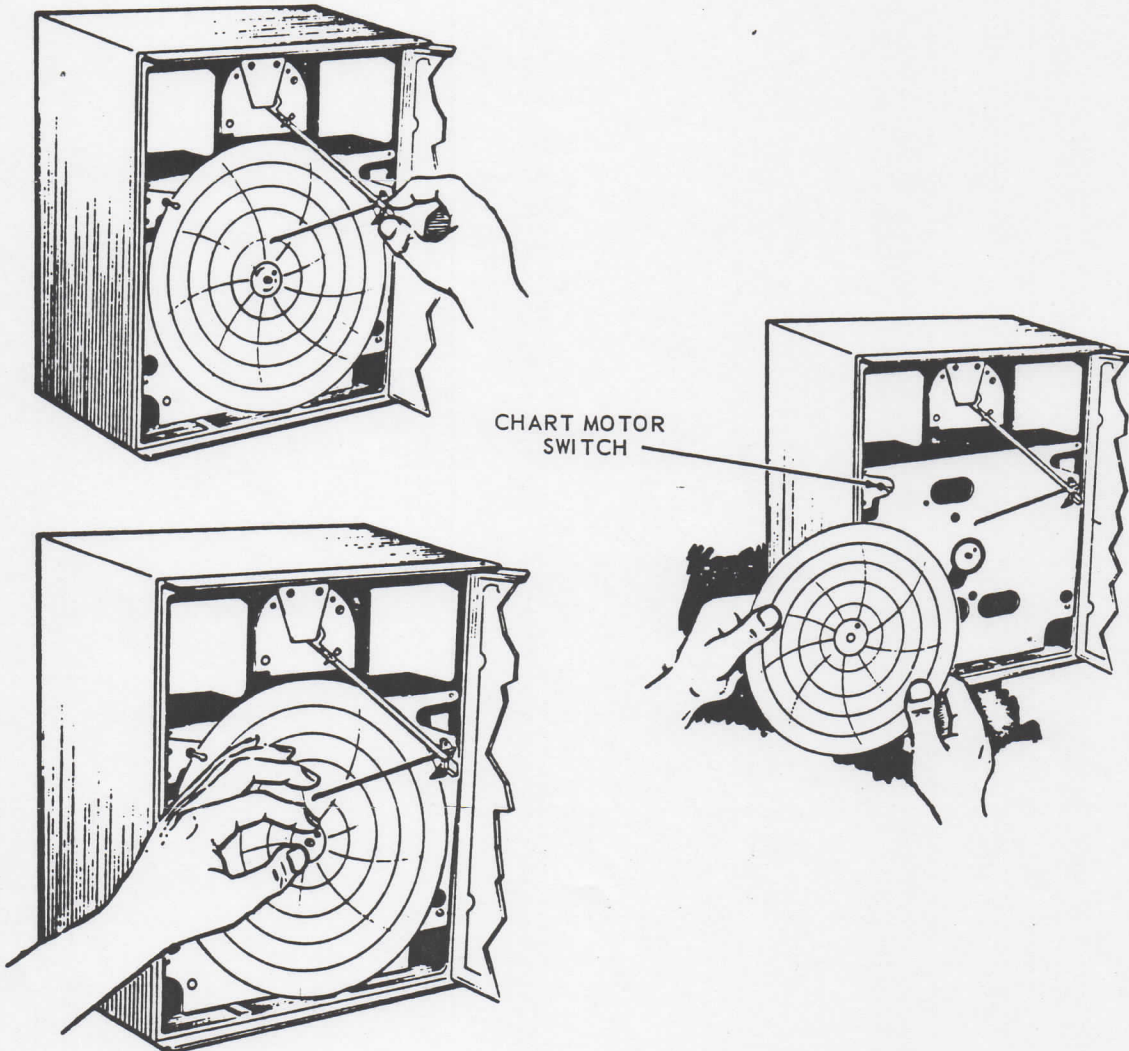


Figure 8C. Chart Installation Procedures.

Figure 10. Open Installation Procedures



BOTTOM TRAY



1. Pull the target out of the box and hold it up. 2. The target will be held in place by the internal components. 3. The target will be held in place by the internal components. 4. The target will be held in place by the internal components.

INSTALLATION AND OBSERVATION

3. Heavy Sub-Plate. Carries all component parts and is drilled and tapped for units which can be added later. Insures correct alignment and proper instrument operation even if the case should be distorted in mounting. No need to remove the plate for repairs or component changes.

4. Connecting Link. The link between spiral and pen arm or pointer has two-way spring overload release which is not normally under compression or tension. Protects against damage when pen or pointer is manually moved in either direction, also returns pen or pointer to correct position. Improved clip-type ends eliminates binding and assures smooth operation of the link.

5. Chart Plate and Scale Plate. Easily removed by finger-tip release for access to components. Most adjustments and settings are immediately accessible when door is opened. These components are solidly and positively supported from the sub-plate.

6. Pen Lifter and Time Index Pointer. When door is closed, pen lifter is depressed, automatically returning pen to chart. Time index pointer simplifies setting of charts so that record corresponds with time marking on chart.

7. Non-Corroding Pen. Easily removed for cleaning, easy to replace, and slides readily into the correct position. Produces a crisp clean record on the 12-inch diameter charts, which conform to rigid specifications for both paper and printing.

8. Chart Drive. Available in many types and speeds: electric, explosion-proof, or hand wound. Tapered hub and locating pin assure correct alignment when chart is renewed. Two-point chart hub automatically lines up new chart with time index. Chart drive has clutch for initial setting, or resetting in case of power interruption.

9. Die-Cast Case. The one piece die-cast case can be flush, or surface mounted. Dust ledge above door protects internal components from dust when door is opened. One piece die-cast door is completely gasketed and cam-action door latch seals gasket tightly against case. Door lock is standard equipment and prevents tampering with instrument settings. Door stop prevents open door from striking adjacent instrument.

Figure 9C. Legend.

322 Operation C-13

Figure 8C. Chart Installation Procedures.

322 Operation C-11

between baffle and thimble.

#### AIR FLOW SWITCH "F".

The purpose of the air flow switch is to prove the roaster vent system is on and functioning properly. It is tied electrically into the gas circuit to prevent the burner from igniting without the vent system on.

322 Operation C-7

POSSIBLE CAUSES OF IGNITION FAILURE

1. NO GAS

- a. Check main gas shut-off valve.
- b. Main gas electric shut-off valve possibly sticking closed, coil burned out or not being energized.

2. MIXTURE TOO RICH

- a. Indications--long, lazy flame.
- b. Corrections: Reduce gas entrained at mixer or increasing air input at mixer if the adjustable type. Cold burners when first lighted should have approximately 1 inch of blue flame fringe above edge of burner. When burner becomes radiant no flame will be visible.
- c. Check mixer interior for build-up of accumulated dirt, etc. which would reduce the volume of air.
- d. Too rich a mixture reduces efficiency of burner and does not increase effectiveness. A slightly rich mixture may be necessary to attain highest temperature, also to improve lighting on ignition tube systems.

3. MIXTURE TOO LEAN

- a. A very low and harsh flame.
- b. Ignition failure between burners.
- c. Burner does not become radiant as rapidly.
- d. Burners will possibly go out when throttled to low fire, because flame is not sufficient to satisfy flame rod or insufficient supply of gas to maintain combustion. CORRECTION: Increase gas inlet at mixer by opening gas adjustment and/or decrease air input at mixer if air adjustable mixer is used.



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LUBRICATION CHART

ITEM	LOCATION	FREQUENCY	TYPE GREASE
Ring & pinion gear	Left side at hopper end	Daily with roaster in operation	Hi-temp gear gre-
Premix blower motor	Rear of roaster	None	Grease sealed for bearings
Drive shaft bearing	Left side at each end	Every 25 operating hours	Ball bearing grea-
Trunnion bearings	Two each end under roaster	Every 25 operating hours	Ball bearing grea-
Roaster drive motor bearings	Lower rear-right side	None	Grease sealed for bearings
Main motor gear case	Lower rear-right side	Check oil level every 3 months	SAE, 40 gear oil

322 Lubrication E-1

TO REMOVE DRIVE SHAFT AND BEARINGS

1. Place jack under each end of roaster drum to relieve weight on drive shaft trunions.
2. On drive end of shaft remove end plate and bolt item (49) and sprocket (49).
3. Remove four bolts that attach bearing housing (63) to rear panel of roaster. Pull housing (63), bearing (62) housing cap (56) and spacer (57) from shaft as a unit.
4. Removing the above will expose the rear trunion bearing cap (66). Remove the four screws holding the bearing cap to trunion (67), this will be all at this time on the drive end.
5. Working on the front end of drive shaft remove split drive pinion (69) and four screws holding front trunion bearing cap (66) to front trunion (72).
6. On front panel of roaster remove bearing housing cap (74) and end cap (75) from shaft.
7. With the shaft supported on the under side of roaster, place a brass or bronze bar on the front end of drive shaft and tap with hammer to force shaft to the rear. As the shaft moves to the rear the front end will drop down. The shaft can then be removed.
8. After replacing bearings etc. it should be replaced in the same manner as above.

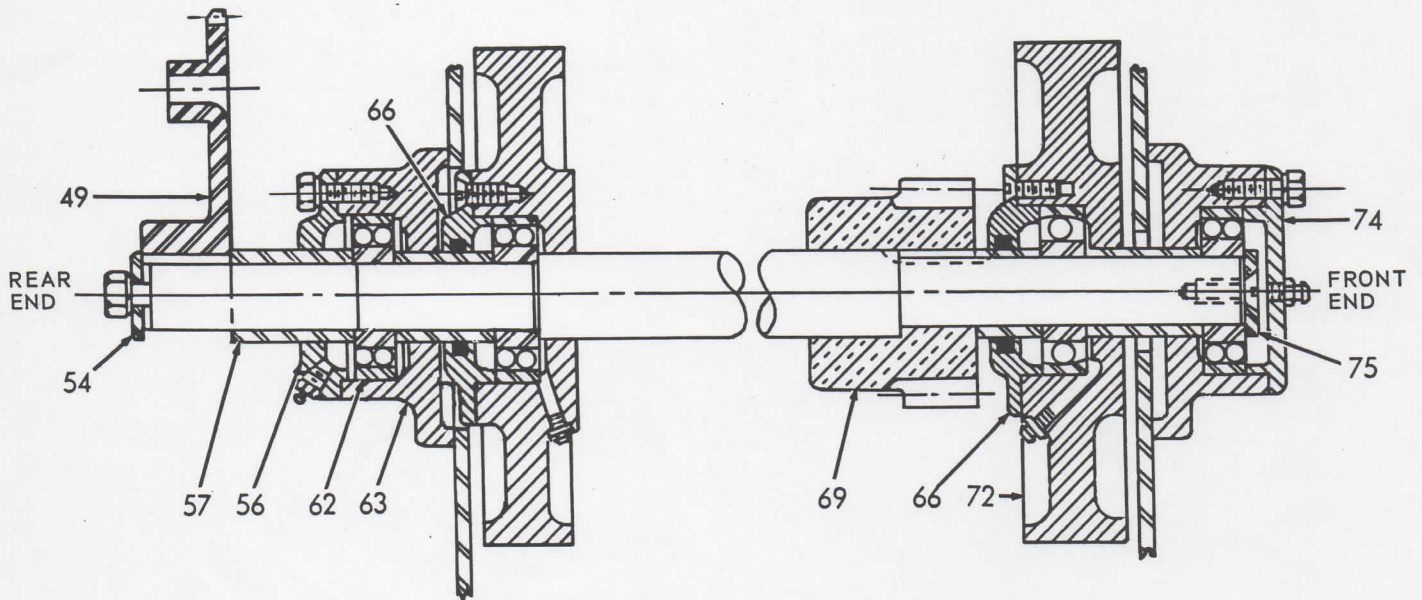


Figure 1F. Drive Shaft and Bearings

## MAINTENANCE

### TO SERVICE SELAS BURNERS

If ever the tip has to be removed, e. g. if the tip has to be changed to another size for different rated gas, it can be unscrewed with a large sized screwdriver. Make sure the tip lock is removed also and replaced when tip is replaced.

When the cup has to be replaced for any reason, it is best if the whole individual burner is removed from the manifold by unscrewing the tip holder using a 1-1/8 wrench.

The whole burner then has to be disassembled - remove tip and tip lock. Unscrew the retaining screws and nuts holding the retaining plates together. When these are sufficiently loose, to clear the cup shoulders, the cup can be slid up off the tip holder. The whole burner assembly can be reassembled and returned to the manifold.

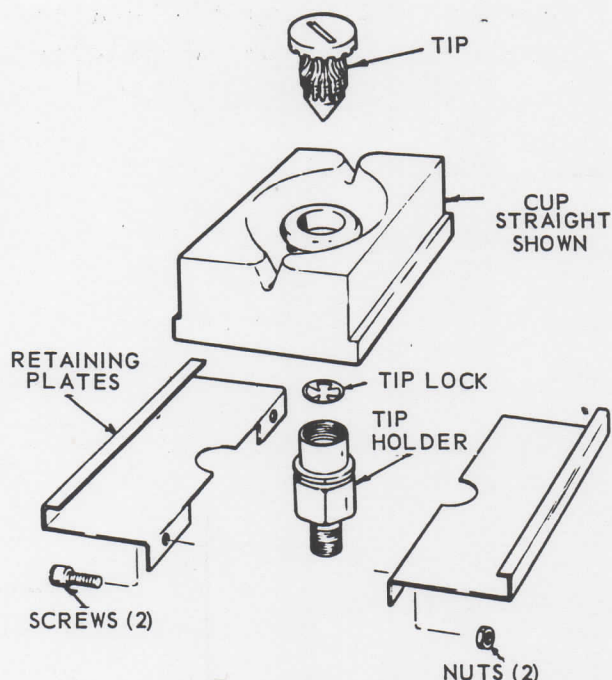


Figure 3F. Selas Burner

### RECOMMENDED TIP SIZES.

500-550	B. T. U. Gas	-	No. 50 tip
700-850	B. T. U. Gas	-	No. 51 tip
1000-1100	B. T. U. Gas	-	No. 52 gas
2500-up	B. T. U. Gas	-	Special

### DISCHARGE DOOR.

The discharge door opens and closes on four linkage assemblies attached to the drum. The linkage can be observed on the underside of the roaster. The four over center springs and linkage holds the door in the closed or open position.

If the discharge door opening handle requires an abnormal amount of force to open or close the door, check the adjustment of the four linkage assemblies to the dimensions shown in Figure F3. Check all four door screws for gaulding where they pass thru the drum casting. The door screws can be removed by removing the clevis and thru the door. Polish door screw with emory cloth and run a hand reamer thru the hole in the drum casting. Reassemble with a light coating of silicone grease onto

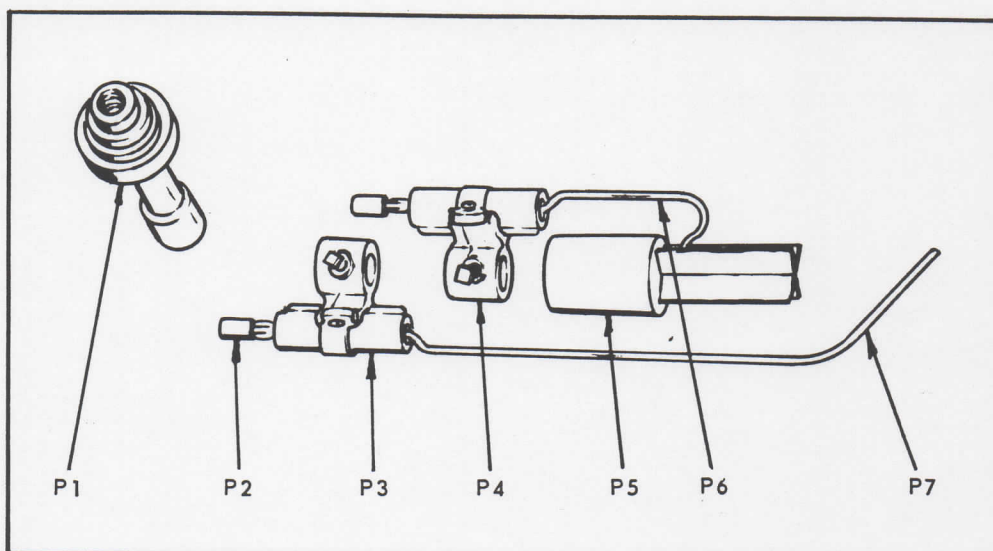


Figure 5F. Pilot Assembly.

DISASSEMBLY OF RTD ASSEMBLY

1. Remove back panel from roaster to give room to work on assembly.
2. Unscrew and remove the compression fitting (E68) on the end of the probe inside the roaster
3. Unscrew the union (E63) on the inside of the roaster.
4. Unscrew and remove the reducer (E67).
5. Unscrew the pipe (E66) and remove by bending the probe outward toward yourself and slip it over the edge of the drum.
6. Unscrew the compression fitting (E13A) and slide it forward away from the roaster as far as possible.
7. Unscrew the coupling (E61) from the roaster. The nipple (E62) may also come with the coupling.
8. Unscrew one or both nipples from the coupling and 90° elbow.
9. Remove the parts inside the roaster by sliding them past the 90° turn and down the probe.

PARTS LIST FOR NO. 322 ROASTER

When ordering parts, give part number and part name  
along with complete serial number of your roaster

Key No.	Quantity Per Machine	Part Name	Suggested Stock
1	1	Frame Assembly	
2	1	Deflector (intake spout)	
3	1	Handle	
4	1	Deflector Extension	
5	3	Cover Plate	
6	4	Splicing Strip	
7	1	Counterweight Bar	
8	1	Pinion Bracket	
9	1	Discharge Pinion	
10	1	Support Angle (front)	
11	1	Shaft (disch. pinion)	
12	1	Tester Scoop	
13	1	Front End Plate	
14	1	Hopper	
15			
16	1	Slide Valve	
17	1	Intake Spout	
18	1	Extension Spring	
19			
20	1	Discharge Lever	
21	1	Inspection Door	
22	1	Discharge Rack	
23	1	Discharge Yoke	
24	1	Pipe Header Support	
25	1	Blower Support Rail-Lower	
26	1	Blower Support Rail-Upper	
27	1	Pipe Support	
28	1	Ring (front end plate)	
29	1	Cover Plate	
30	1	Pilot Assembly	See Page F-4
31	1	Pressure Regulator	
32	2	Clip	
33	1	Cylinder Assembly	
34	2	End Plate (rear)	
35	1	Flange (rear end plate)	
36	1	Transition Piece (exhaust)	
37	1	Exhaust Spout	
38	1	Gate	
39	1	Cross Angle (rear)	
40	2	Side Sheet	
41	1	Premix Blower	

## PARTS LIST

Key No.	Quantity Per Machine	Part Name	Suggested Stock
84	4	Arm	
85	1	Ring Gear	
86	8	Shoulder Bolt	
87	4	Spring	
88	4	Shoulder Bolt	
89	4	Spring Plate	
90	1	A336 Alemite Fitting	
91	1	1/8 Pipe Coupling	
92	1	Bearing (idler)	
93	1	Bearing Bracket (idler)	
94	1	Burner Shield	
95	1	Burner Bracket	
96	*	Burners	*
97	2	Idler Trunion	
98	2	Cap (idler trunion)	
99	2	Stud Shaft	
100	2	Stud Shaft Bracket	
101	1	Manifold	
102	2	Upper Bar (disch. yoke)	
103	2	Lower Bar (disch. yoke)	
104	1	Stud	
105	1	Bracket (disch. pinion shaft)	
106	1	Top End (front)	
107	1	Top End (rear)	
108	1	1/4 x 90° Pipe Elbow	
109	1	1/8 x 6 Lg. Nipple	
110	1	Top Cover	
111	5	No. 1610-1/8 STR Alemite Fitting	
112	1	Drip Pan	
113	1	Support - Air Motor	
114	2	Bracket - Rear End	
115	1	Bracket - Front End Plate	
116	1	Felt	
117	4	Strip for Welding	
118	4	Strip for Welding	
119	1	Bracket - Front End Plate	
120	1	1/2 NPT sq. Hd. Pipe Plug	
121	1	Test Scoop Support	
122	1	Name Plate	
123	1	2 NPT to 3 NPT reducing Elbow	
124	1	3 NPT x 13-1/2 Nipple T. B. E.	

154	1	2 м.д. x 12-1/2 м.д. м.д. д. в. в.	
155	1	2 м.д. x 12-1/2 м.д. м.д. д. в. в.	
156	1	м.д. м.д.	
157	1	д.д. д.д. д.д. д.д.	
158	1	1/2 м.д. x 12-1/2 м.д. м.д. д. в. в.	
159	1	м.д. м.д. - д.д. д.д. м.д.	
160	1	д.д. д.д. м.д. д.д.	
161	1	д.д.	
162	1	м.д. м.д. - д.д. д.д. м.д.	
163	1	м.д. м.д. - д.д. д.д.	
164	1	д.д. м.д. - д.д. м.д.	
165	1	д.д. д.д.	
166	1	д.д. д.д.	
167	2	м.д. д.д. - 1/2 м.д. м.д. м.д. д. в. в.	
168	1	д.д. д.д.	
169	1	1/2 x 2 1/2 м.д. м.д.	
170	1	1/2 x 20 м.д. м.д.	
171	1	д.д. д.д. (д.д.)	
172	1	д.д. д.д. (д.д.)	
173	1	м.д. м.д. (д.д. м.д. м.д.)	
174	1	д.д.	
175	3	д.д. д.д. (д.д. д.д.)	
176	3	д.д. д.д. (д.д. д.д.)	
177	1	д.д. м.д.	
178	2	д.д. д.д. м.д. м.д.	
88	3	д.д. д.д.	
89	3	д.д. (д.д. м.д. м.д.)	
90	3	д.д. д.д.	
91	1	д.д. д.д. м.д.	
92	1	д.д. д.д. м.д.	
93	1	д.д. д.д. (д.д.)	
94	1	д.д. д.д. (д.д.)	
95	1	1/2 м.д. м.д. м.д.	
96	1	д.д. м.д. м.д.	
97	1	д.д. д.д.	
98	1	д.д. д.д.	
99	1	д.д. д.д.	
100	1	д.д.	
№ д.д.	№ д.д. м.д.	№ д.д. м.д.	№ д.д. м.д.



167		5/16 x 3/4 Flat Hd. Mach. Scr.	
168		1/4 x 1/2 Rd. Hd. Mach. Scr.	
169		1/2 x 1-1/4 Hex. Hd. Cap Scr.	
170	Quantity	1/2 x 1" Hex. Hd. Cap Scr.	Suggested
171	Per Machine	5/16 x 3/4 Hex. Hd. Cap Scr.	Stock
172		3/8 x 3/4 Flat Hd. Brass Cap Scr.	
173	1	1/4 x 1" Rd. Hd. Mach. Screw	
174	3	3/8 x 1/2 Lg. Soc. Cup Pt.	
175	4	Setscrew	
176	4	1/4 Std. Hex. Nut	
177	1	1/4 Lockwasher	
178	1	5/16 Lockwasher	
179	1	5/16 Std. Hex. Nut	
180	1	3/8 Lockwasher	
181	1	3/8 Flat Washer	
182	1	3/8 Std. Hex. Nut	
183	1	1/2 Lockwasher	
184	2	5/16 Jam Nut	
185	2	1" - 14 Hex. Nut	
186	2	1/4 x 5/8 Rd. Hd. Mach. Screw	
187	1	3/8 x 1" Lg. Rd. Hd. Mach. Screw	
188	2	5/16 x 1-1/4 Lg. Hex. Hd. Cap Screw	
	2	5/16 Flat Washer	

\* Consult Bauer Bros. For Stock Requirements & Replacements.

107	1	Top End (front)	
108	1	Top End (rear)	
109	1	1/4 x 90° Pipe Elbow	
110	1	1/8 x 6 Lg. Nipple	
111	5	Top Cover	
112	5	No. 1510-1/8 STR Aluminite Fitting	
113	1	Drop Pan	
114	1	Support - Air Motor	
115	2	Bracket - Rear End	
116	1	Bracket - Front End Plate	
117	4	322 Parts List G-5	
118	4	Strip for Welding	
119	1	Bracket - Front End Plate	
120	1	1/2 NPT sq. Hd. Pipe Plug	
121	1	Test Scoop Support	
122	1	Name Plate	
123	1	2 NPT to 3 NPT reducing Elbow	
124	1	3 NPT x 13-1/2 Nipple T. B. E.	

322 Parts List G-3