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USERGUIDE
IMA-003 Rev. C
12/85

Conomix

⚠ **WARNING - Reliance on this Manual Could Result in Severe Bodily Injury or Death!**

This manual is out-of-date and is provided only for its technical information, data and capacities. Portions of this manual detailing procedures or precautions in the operation, inspection, maintenance and repair of the product forming the subject matter of this manual may be inadequate, inaccurate, and/or incomplete and cannot be used, followed, or relied upon. Contact Conair at info@conairgroup.com or 1-800-654-6661 for more current information, warnings, and materials about more recent product manuals containing warnings, information, precautions, and procedures that may be more adequate than those contained in this out-of-date manual.

CONTENTS

CONOMIX BLENDER INSTRUCTIONS

BLENDER DESCRIPTION

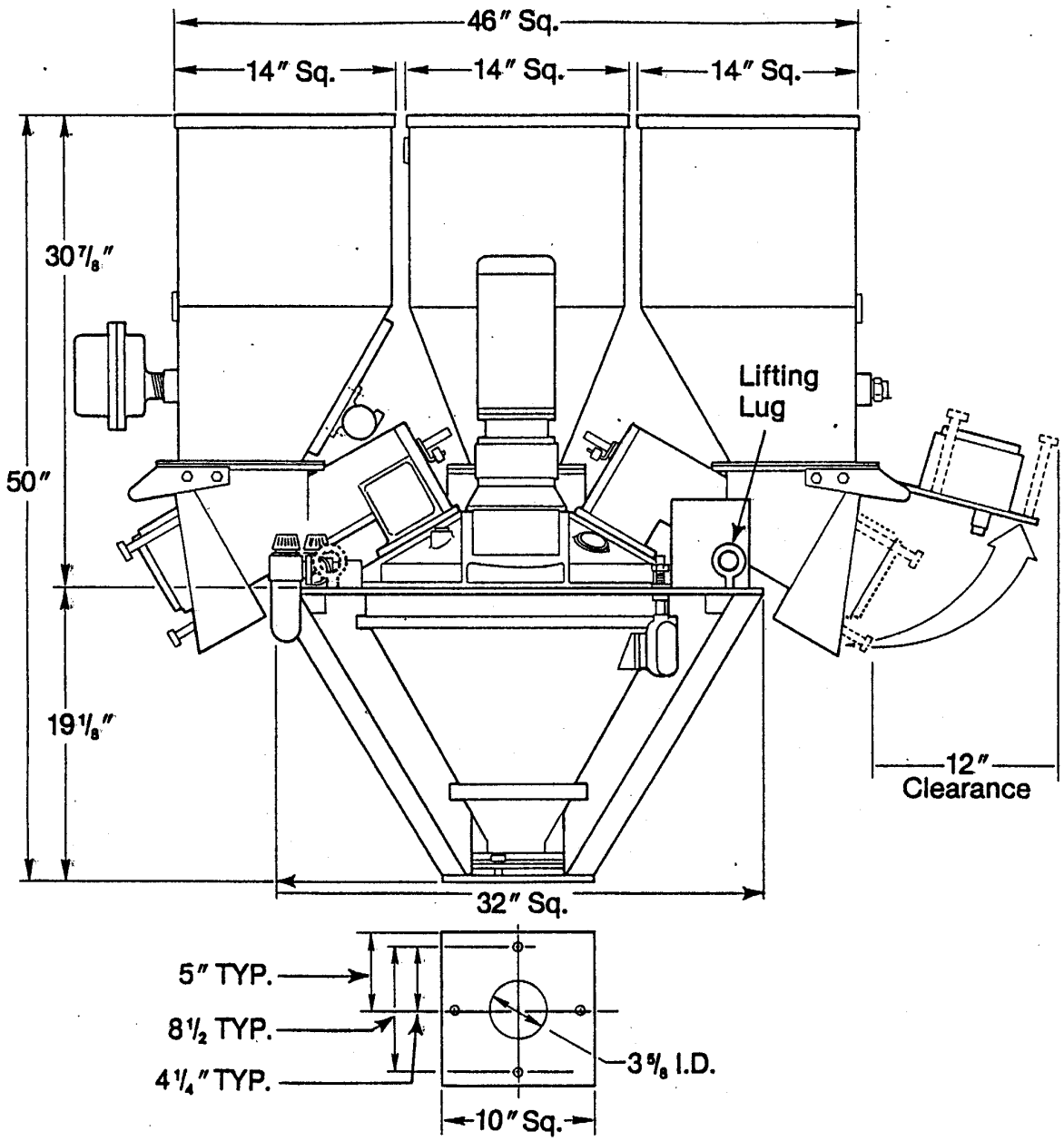
Four-component Volumetric Blender designed for on-the-machine or remote central applications powered by a programmable microprocessor control.

BLENDER SPECIFICATIONS:

Voltage:	120V AC 1Ø 15 amps
Mixer Motor:	1/2 hp TEFC, 120VAC, 7.8 amps, 1750 rpm
Gear Reducer:	35:1 Ratio 50 rpm output
Metering Motors:	0-24VDC, 2.8 amps D.C., 45 watts 25:1 Ratio 0-120 rpm output (variable)
Mixing Chamber Capacity:	1.5 cu ft
Metering Auger Sizes:	3/4" O.D. x 3/4" Pitch 1" O.D. x 1" Pitch 1-1/2" O.D. x 1-1/2" Pitch 2" O.D. x 2" Pitch 2-1/2" O.D. x 2-1/2" Pitch 3" O.D. x 3-1/2" Pitch
	NOTE: Augers are available in both polished and satin finishes.
Blender Weight:	500 lbs.
Compressed Air Supply (min.)	80 PSI

APPLICABLE MATERIALS:

1. Powders (PVC, P.P., P.E., ABS)
2. Granular (LLDPE)
3. Pelletized Resins
4. Regrinds
5. Fillers (talc, mica, calcium carbonate, Wollastonite)
6. Additives (pelletized/free flowing powders)
   a. Color concentrate (no dry color)
   b. Fire retardants
   c. U/V inhibitors
   d. Stabilizers
   e. Processing/flow aids


46″ Sq.
14″ Sq.
14″ Sq.
14″ Sq.
30 7/8″
50″
19 1/8″
Lifting Lug
12″ Clearance
32″ Sq.
5″ TYP.
8 1/2 TYP.
4 1/4″ TYP.
3 5/8 I.D.
10″ Sq.

(Figure 1)

INSTALLATION:

Machine Mounting (Fig. 1)

Blender is designed for mounting directly to the throat of an injection molding machine or extruder. The mounting plate contains four holes for 3/8 - 16 NC flat head countersunk bolts. An adapter plate with holes matching the Conomix and your processing machine should be fabricated. This plate should be .625 thick or greater. Bolt this adapter plate to machine throat before mounting the Conomix Blender. The mounting plate bolt hole pattern of the Conomix is square, so rotate the blender, as needed, to position the mixing chamber drain port to the desired location.

Two eye bolts are located on the top plate of the Blender for use with a lifting strap for lowering the Conomix onto the processing machine.

If extreme machine vibration or screw break action occurs in your process, it may be necessary to stabilize the Blender with auxiliary bracing. You, the customer, are responsible for the integrity of the final installation.

Central Blending Mounting (See Figure 2)

For central blending applications, the Conomix is mounted on a fill stand or surge bin. To provide for adequate residence time within the mixing chamber, the blended material is metered from the Conomix through a discharge auger bolted between the receiving bin or stand and the blender. The location of the bin or gaylord fill stand should be central to your operation and provide optimum access for lift truck traffic (gaylord fill) or piping from the distribution box (surge bin).

When installing the system, first bolt the discharge auger assembly to the surge bin or fill stand. Then mount the Conomix directly to the discharge auger assembly. A matching bolt pattern is provided and no adaptor plate is necessary. Be sure to carefully consider the orientation of all components for operation, cleanout, and service.

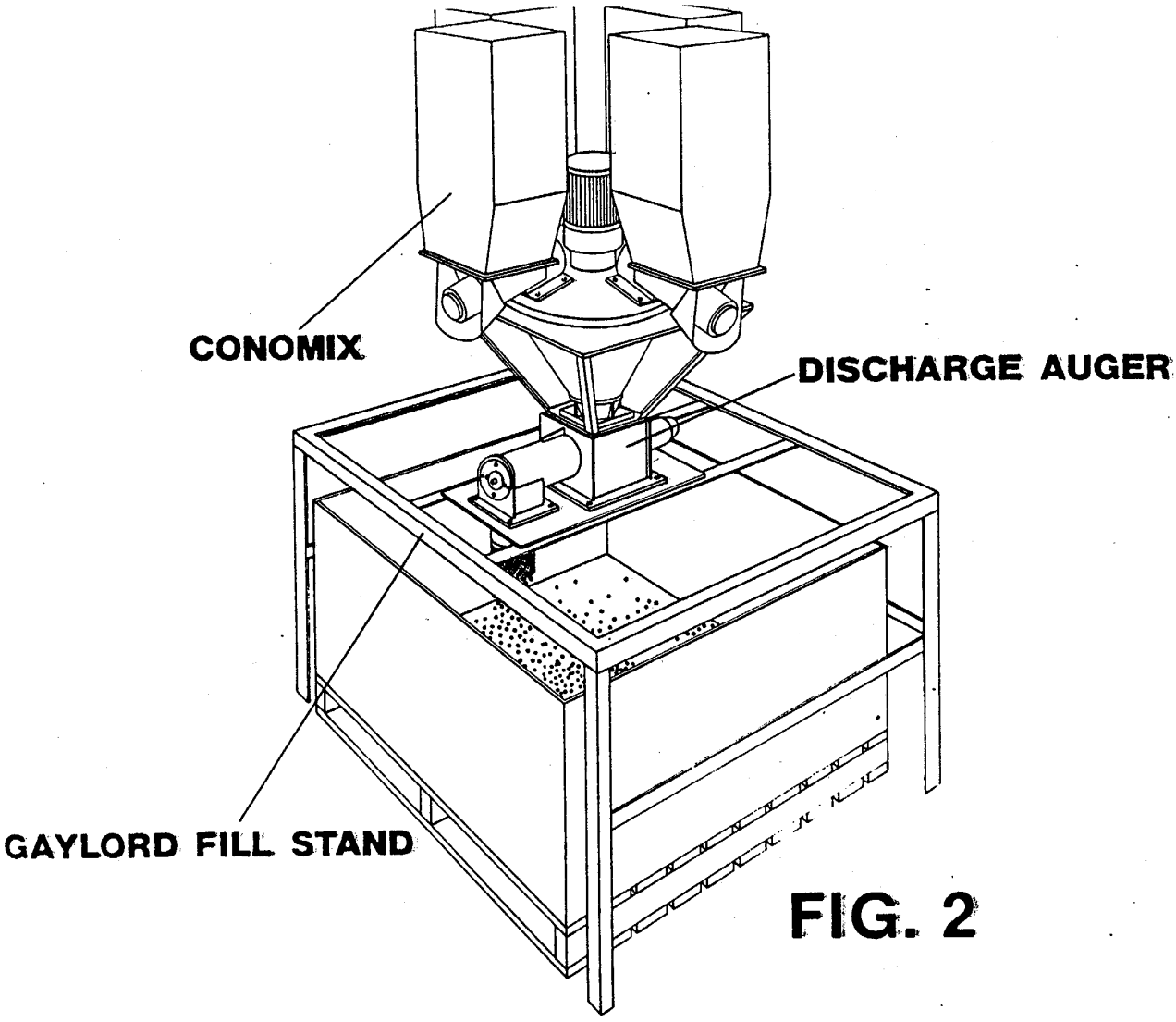


FIG. 2

FIGURE 2

Control Box Mounting/Electrical

120 volt/single phase/15 amp grounded service is required. Be sure to follow all local and national electrical codes.

Mount main control on a vibration free surface at machine operator level. (Mounting the control on an injection machine or extruder is not recommended.) 15 ft. of cable is provided with an amphenol connector on the control box. Circuit protection is provided in the main control enclosure in the two illuminated power switches labeled "Power On/Off" (15 amp), and "Mixer Motor On/Off" (12 amp).

On central blender installations, mount the additional control on a vibration free surface within the 20 foot length of supplied cables for the discharge auger and bindicator(s). Close proximity to the main Conomix control is recommended. Refer to wiring diagram number 614-027 for proper connection of the motor and Hi-level switch for fill stand models and the additional Lo-Level switch for surge bin models. 120 volt/single phase/ 5 amp grounded service is required.

Compressed Air

Depending on the type of materials to be blended, some supply bins on the Conomix may have vibrators, air fluidizing pads or both. These are provided to induce flow in poor flowing materials to the metering augers. A compressed air manifold comprised of a filter and solenoid valve is supplied for these applications. If compressed air is needed, use clean, dry air at 80 PSI, free of any lubricants. Right angle flow control valves are mounted on the manifold to control air flow to the flow aids.

The solenoid valve located at the inlet to the air manifold is energized each time the metering cycle begins and is de-energized at the conclusion of the metering cycle.

Auxiliary Equipment

1. Automatic Conveying Equipment can be used to convey and load pelletized materials, regrinds, and powders to the Conomix Blender supply bins. These may be 8, 12, 15, or 20" diameter vacuum loaders for pellets and regrinds or 10 and 15" diameter Gemini Loaders for powder. See separate instruction manuals for this equipment.

   NOTE: Material/vacuum lines and compressed air lines to auxiliary equipment should be flexible. Controls for auxiliary loaders are best mounted remote, near the Conomix Blender control.

2. Warning Light, Horn, or Siren can be connected to blender control. This will provide a warning signal if any of the four supply bins or auxiliary surge bin hoppers run empty. The signal for this external alarm function is provided at the blender terminal box. Terminals #2, #22, and ground, (identified at "G"). The signal output is 120 VAC. See terminal box wiring diagram.

Level Sensor Adjustment for Mixing Chamber (Figure 3)

Located within and extending from the cast top of the mixing chamber is a capacitance type sensor. This sensor must be adjusted to de-energize the metering motors when mixer is full, to prevent mixing chamber overfill and metering motor overload. The adjustment procedure is as follows:

Sensor Adjustment: Without material in mixing chamber and mixer motor on, turn adjustment screw clockwise (increase sensitivity) until the rotating mixer agitator trips the sensor relay, (energizing "mixer full" light). Now turn sensor adjustment counterclockwise until the relay trips, ("mixer full" light off . This is the maximum sensitivity at which material will trip sensor.

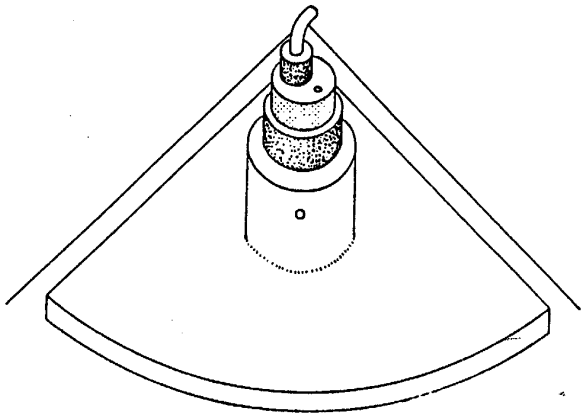


FIGURE 3

Mixing Chamber Removal (Figure 4)

1. Disconnect Power to mixer motor
2. Remove small lower band clamp (A)
3. Tighten two thumb screws (B) - this will lower the seal plate (C)
4. Aluminum cast slide gate (D) can now be removed
5. Remove large upper band clamp
6. Lower the mixing chamber to allow access to the agitator
7. Turn agitator counterclockwise (as loosening a bolt)
8. Remove agitator and then mixing chamber.

To assemble, reverse above procedure.

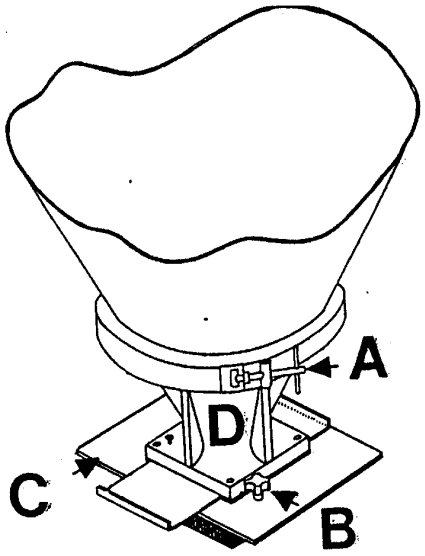
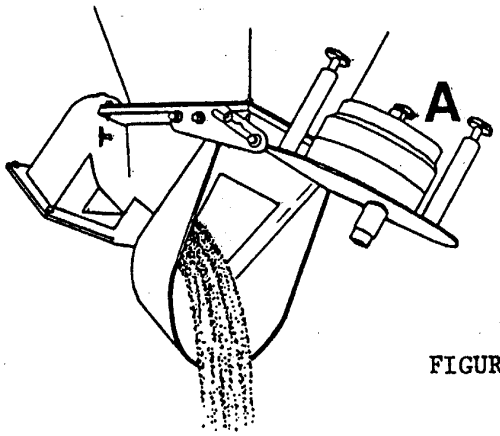


FIGURE 4



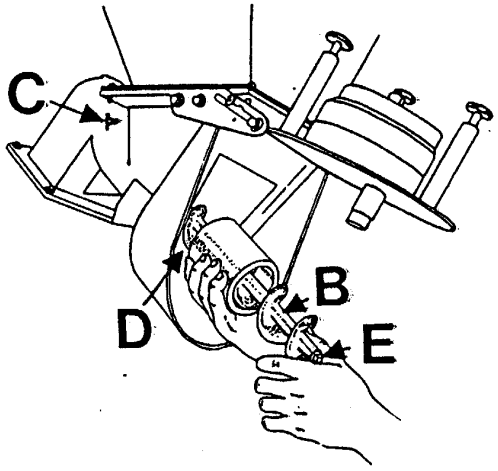


FIGURE 5

Auger/Sleeve Removal/Installation (Figure 5)

1. Remove material from supply hopper as follows:
   --set container/drum under drain spout beneath metering motor
   --loosen three motor mounting knobs
   --hold exposed auger shaft at upper end by knurled grip
   --pull auger drive motor out from auger
   --swing motor up and lock in position (A)
   --remove auger (B)

2. Loosen set screw on side of cast housing (C)

3. Slide out aluminum sleeve (D). Clean out auger housing thoroughly.

4. Install new sleeve and tighten thumbscrew.

5. Insert auger (knurled end) through bushing in upper end of auger housing as far as possible. Hex end of shaft should point toward motor end (E).

6. Swing motor mounting plate down and fasten in place.

7. Grasping the knurled end of the auger shaft, rotate and push until the auger drive is seated in the motor drive hex bushing.

CONTROL COMPONENTS/FEATURES:

1. Programmable Microprocessor Control

2. Variable D.C. Drive Speed Control

   0-100% setting = 0-120 RPM max.

3. Data Recall

   a. Revolutions of each auger for previous metering cycle.
   b. Totalizer - (Similar to gas meter reading) records total revolutions for each auger over a production run - from this data the total amount of blended material process can be calculated.

4. Master Speed Control: Provides for increase or decrease in speed of all metering augers while maintaining the original blend ratio selected during setup.

5. Microprocessor is pre-programmed to automatically maintain a constant metering speed, regardless of changes in metering torque, caused by material differences.

6. Microprocessor monitors all auger revolutions over several metering time periods during the process cycle and automatically makes slight adjustments to auger speed to maintain consistant metering.

7. The Microprocessor is pre-programmed to automatically adjust the "metering off-time". From a ten-second minimum to a maximum of 255 seconds, the maximum metering off-time can be manually adjusted, within this range to trim the microprocessor's automatic adjustment limits.

   By controlling the metering off-time, the metering on-time will be maintained to a 60 to 90 second time span; regardless of changes in the processing rate. If the processing rate increases to the point where the Conomix runs continuously (maximum on-time/"0" off-time), material starve-out is likely and the Conomix "master speed" should be increased.

8. The microprocessor program will be sustained by EE PROM in case of power failure.

9. Low supply hopper level alarm system - Program to:

   a. Shutdown Blender and signal alarm
   b. Alarm only

10. Self diagnostics - If a control problem develops, the data output will display a set of numbers. This reading can be given to Conair Service; the problem diagnosed and a solution recommended.

11. Separate mixer motor on/off switch.

12. Circuit Breaker Switches:

    a. Power on
    b. Mixer motor on/off

13. Individual DC drive outputs are fused for motor and control protection.

14. The microprocessor senses DC drive overload conditions through a current limiting device which automatically shuts down the blender and gives an alarm indication.

15. The microprocessor senses DC drive failure (motor burn out) or a non-rotating metering auger (if programmed to meter) and automatically shuts down blender and gives an alarm indication.

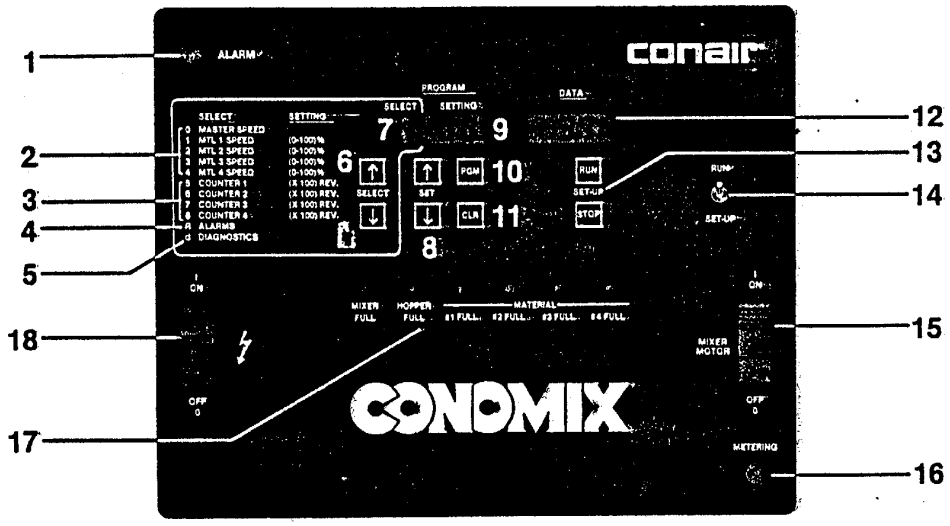


FIGURE 6
Conomix Control Panel (See reference below)

1. Alarm light; indication of low material supply or control/motor failure.

2. Select 0 thru 4; blender throughput and auger speed selection. Overall throughput and individual auger speed expressed as a percentage.

3. Select 5 thru 8; accumulative auger revolution selection. Shows number of auger revolutions during last metering cycle.

4. Alarm Select; programs alarm only, or alarm with blender shutdown for low material supply conditions.

5. Diagnostics Select; in the event of a problem, code numbers are displayed. Code determines the problem.

6. Program Select Buttons; selects up or down the program menu.

7. Select Window; single digit shows which program is selected, 0 thru 8, "A" or "d".

8. Set Buttons; change information in the "setting" window.

9. Setting Window; programming information changes with the Set Buttons is displayed here, or the first three digits of accumulative auger revolutions when values exceed 9,999.

10. Program Button; sets value in setting window into program.

11. Clear Button; sets value in setting window to "0".

12. Data Window; displays current auger revolutions for selected augers, accumulative revolutions when selected and diagnostics codes.

13. Run/Stop Buttons; for control of the metering motors in the set-up mode.

14. Run/Set-up Switch; for determining the set-up (calibration) for Run modes of the Blender.

15. Mix Motor Switch; combination switch and circuit breaker for the mixer motor.

16. Metering Light; indicates operation of the metering cycle.

17. Level Lights; indicate when the supply hoppers, blending chamber, or receiving hopper are full.

18. On/Off Switch; combination switch and circuit breaker for the entire Blender.

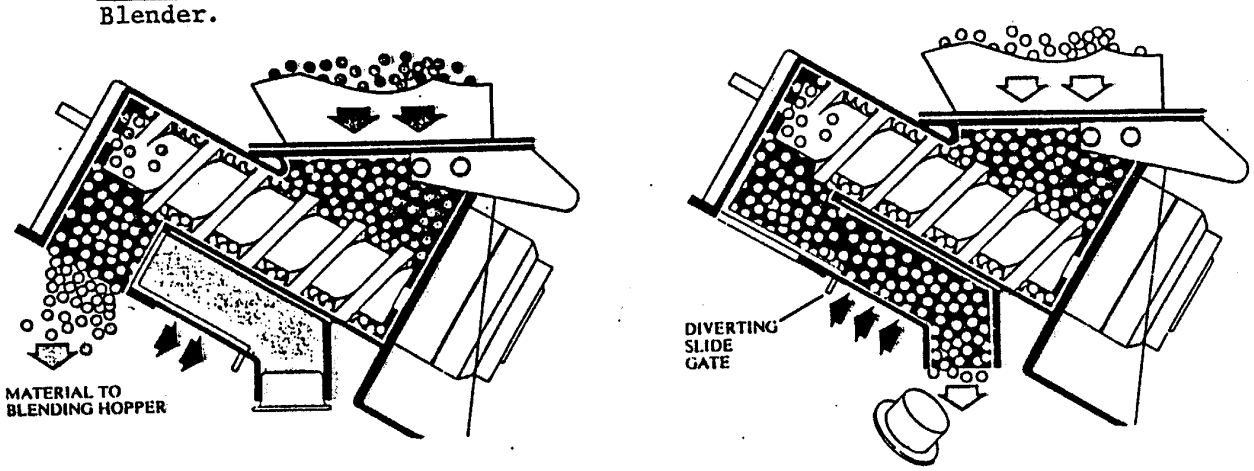


FIGURE 7

Obtaining Samples for Calibration (See Figure 7)

Each auger housing of your Conomix is equipped with an internal calibration gate that diverts the material metered by the auger from the mixing chamber to the calibration port. To use the calibration gate, remove the plastic plug that closes off the port. Then, hang a bucket beneath the port on the hook provided. Push the gate levers, on either side of the auger housing up, to close off material flow to the mixing chamber, and open flow to the discharge port. Press the run button to "prime" the auger with material. Once material is flowing from the port, stop the auger, discard the material collected, and begin your timed sampling. Upon conclusion of your tests, return the calibration gate to its lower, normal position; then, replace the plastic plug.

CALIBRATION/PROGRAMMING PROCEDURE

Note: Use of the "Calibration/Set-up Record Sheet" located at the rear of this manual is strongly suggested. Make copies of that page and use all of your material blends.

Listed below is the recommended supply bin/metering auger combination for materials to be blended:

Bin #1	Virgin/Base Resin
Bin #2	Virgin/Base Resin #2 or Regrind
Bin #3	Regrind/Color/Other additive
Bin #4	Additive

If working with materials other than listed above, record those on the Calibration/Set-up Record.

1. Determine Material Percentages:

   Example:

Virgin Powder	at	45%
Virgin Pellets	at	30%
Regrind	at	20%
Color	at	5%
Total		100%

2. Determine Processing Rate in pounds/hour.

3. Select a blending rate by multiplying processing rate times 1.2. This will prevent the processing machine from ever "starving out" for material.

   Example: Process rate of 500 lbs./hr. x 1.2 = 600 lbs./hr.
   Select 600 lbs./hr. as blend rate.

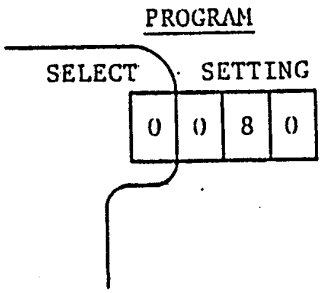
4. Calculate metering rates for each material in lbs/hr according to material percentages selected.

Example:	Virgin powder @ 45% of 600	=	270 lbs/hr
	Virgin pellets @ 30% of 600	=	180 lbs/hr
	Regrind @ 20%	=	120 lbs/hr
	Color @ 5%	=	30 lbs/hr
	TOTAL		600 lbs/hr

5. Place run/set up switch in set up position. Place mixer motor switch in off position. Select 0 (master speed setting). Set 70-80% speed range (minimum is 50%, maximum is 100%).

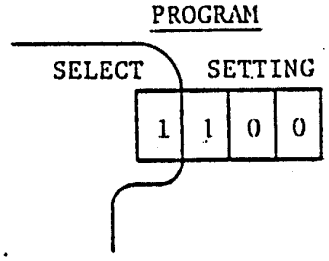
NOTE: Do not change this setting until the calibration procedure for all the metering augers is completed.

Example:



6. Select auger (1 thru 4) for material requiring highest metering rate. Set at 100% speed range. Place container under calibration discharge chute and slide the calibration gate forward. Push "run" button and "prime" the auger. Push stop and discard material from container. Run sample of material for 60 seconds, weigh and calculate pounds/hr.

Example:



NOTE: 100% speed range for metering augers represents maximum auger capacity for calibration purposes.

6. Continued...

a. Assume sample weighed 3.5 pounds
3.5#/min. x 60 min./hr = 210#/hr

This is less than the 270#/hr required at this point: The master speed must be increased or a larger auger installed. (A master speed of 100% and auger speed of 100% will give maximum output).

Increase auger size and rerun sample at 100%. Try to maintain a 70-80% master speed setting to allow for variations in processing thruputs.

b. Assume sample weighed 6.0 pounds.
6.0#/min. x 60 min/hr = 360#/hr.
This is more than required, 270#/hr.

To determine % speed setting required to meter 270#/hr, use the following formula: 280#/hr ÷ 4.5#/min.

$$\frac{\text{Rate (\#/hr)}}{100\%} = \frac{\text{Desired \#/hr}}{X\%}$$

Example:

$$\frac{360\text{\#/hr}}{100\%} = \frac{270\text{\#/hr}}{X}$$

$$360X = 100(270)$$
$$360X = 27000$$
$$X = 27000 \div 360$$
$$X = 75\%$$

Note: The above formula can be used along with trial readings to calculate the auger speed percentages, or trial and error readings can be taken to achieve the calculated lbs/min. and lbs/hr results necessary for your specific blends. Use the calibration/set-up record sheet to record all results.

6. Continued....

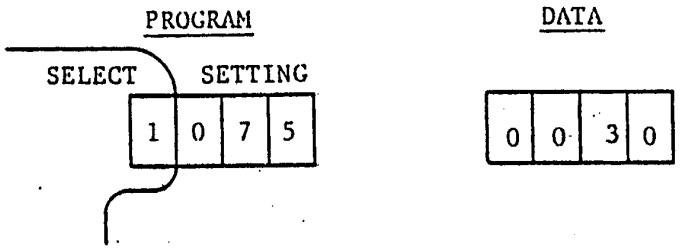
c. Reset speed setting for Auger #1 at 75%, run sample for 60 seconds and weigh. Desired weight is 4.5#/min. Readjust speed up or down 75% to give 4.5%. Record this setting.

d. To determine RPM

Record reading from data display. This number will be the number of auger rev. If test run was for 60 seconds, this number will be actual RPM. If test run was shorter than 60 seconds, use below formula to calculate RPM:

$$\frac{60}{\text{metering time}} \quad x \quad \text{Rev. (data reading)}$$

Example:



Metering time 20 seconds
Data indicates 40 Rev.

$$\frac{60}{20 \text{ secs.}} \quad x \quad 30 \text{ Rev.}$$

3 x 30 = 90 RPM

e. To determine pounds/revolution metered

Sample Weight ÷ Auger Revolutions

Example: 4.5#/min. sample
90 Rev./min.

4.5 ÷ 90 = .05#/rev.

Note: This rate should vary only slightly at various speed ranges.

7. Continue calibration for additional augers as for Auger #1. Record data.

   **Important: Do not change master speed setting during remainder of this set up.

8. Programming:

   With run/set up switch in set up position:

   A. Select 0 for master speed – setting should read value selected for set up procedure. Push Program.

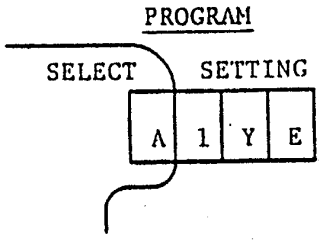
   B. (1) Select 1 for material
   Set speed (% range) from calibration, record data
   Push Program.

   (2) Continue for materials 2 thru 4.

   Note: Clear Feature
   Clear button will clear values to zero in any mode condition for the function selected.

   C. Program Low Level Alarm for Blender shutdown or alarm only.

   Example:



   (1) Select A1 - This is the low alarm programming indication for material #1; push set buttons accordingly to give YE or NO for shutdown feature.

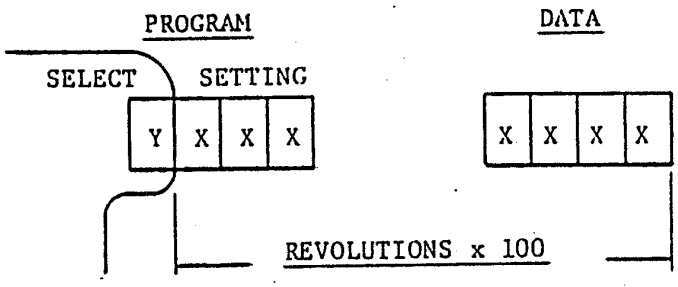
   YE = Blender shutdown/alarm

   NO = Alarm only

   After selection - Push Program

8D. Continued...

(2) Total # of Blend Processed During a Production Run



With select data indicating 5, 6, 7 or 8, the data display becomes a totalizer showing the cumulative revolutions an auger has completed during a production run. This reading is similar to a gas or electric meter in that a reading must be recorded for each auger prior to a production run. At the completion of a production run, a reading is taken from which the previous reading is subtracted.

NOTE: All readings must be multiplied by 100.

From the setup calibration procedure, a reading in pounds per rev for all augers will have been recorded. This value in #/Rev x Total Rev = Total pounds metered for the auger selected. Values for each auger added together equal the total pounds of material blended for a given process cycle.

Example:

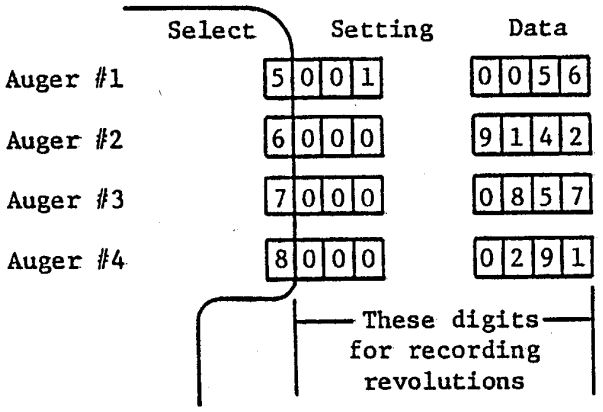
Assume:

		#/Rev.	
Auger #1	Virgin Powder	.150	These values obtained
Auger #2	Virgin Pellets	.110	during calibration/setup
Auger #3	Regrind	.056	procedure.
Auger #4	Color Additive	.013	

8D. Continued

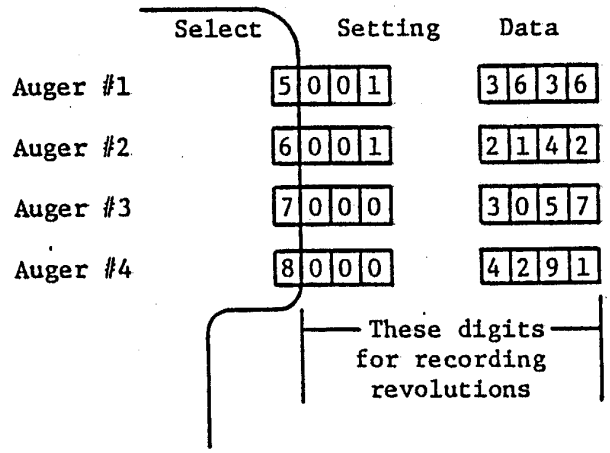
PROGRAM/DATA DISPLAY READINGS

READINGS BEFORE PRODUCTION RUN OF 100 HRS.



	Revolutions Before Production
10056 x 100 =	1,005,600 Rev
9142 x 100 =	914,200
857 x 100 =	85,700
291 x 100 =	29,100

READINGS AFTER PRODUCTION RUN OF 100 HRS.



	Revolutions After Production
13636 x 100 =	1,363,600 Rev.
12142 x 100 =	1,214,200
3057 x 100 =	305,700
4291 x 100 =	429,100

CALCULATIONS OF TOTAL POUNDS PROCESSED

Material	Rev. After Production		Rev. Before Production		Total Revolution		#/Rev.		Total Lbs.
Auger #1 Virgin Powder	1,363,600	-	1,005,600	=	358,000	x	.150	=	53,700
Auger #2 Virgin Pellets	1,214,200	-	914,200	=	300,000	x	.110	=	33,000
Auger #3 Regrind	305,700	-	85,700	=	220,000	x	.056	=	12,320
Auger #4 Color Additive	429,100	-	29,100	=	400,000	x	.013	=	5,200

PRODUCTION RUN OF 100 HOURS GRAND TOTAL 104,220#

NOTE: The total number of digits available for recording revolutions is seven. Three under SETTING and four under DATA.

Maximum reading is 99 9999 x 100 = 999,999,900 revolutions.

At a maximum metering speed of 120 rpms for 24 hours/day, 7 days/wk, 52 wks./yr., the data bank can record cumulative revolutions for 15.9 years.

A set up form sheet has been supplied to record set up data.

CALIBRATION PROCEDURE FOR CENTRAL BLENDING AUGER DISCHARGE

In central blending applications, the Conomix is mounted above a variable speed discharge auger that meters the blended material away from the mixing chamber at a rate approximately 10% more than the anticipated use rate. Relative speed may be monitored on the Central Auger Control with the digital Voltmeter. To determine the speed for this auger, first meter into the Conomix mixing chamber your desired combination of materials and blend as desired to achieve average density for your mix. Then, turn on the auger control with the combination switch/circuit breaker, and press the start button. While "priming" the discharge auger with material, adjust the speed of the auger to read around 50 on the digital voltmeter readout. This is approximately one half maximum speed. Once the auger is primed and material flows from the discharge auger, turn off the discharge control, discard the collected material and begin a timed weighing test for ten seconds or more. Use this information to calculate approximate lbs./hr. rates for the discharge auger. Set the discharge for approximately 10% above the usage rate of the material. The level switch(s) will regulate operation of the auger.

OPERATION SEQUENCE:

1. Set up and programming completed (see section on set up procedure).

2. Close the slide gate beneath the mixing chamber.

3. Close the calibration slide gates (pull back) and cap the discharge port.

4. Control power on.

5. Supply hoppers full?
   Control panel indicates: "Material" full light on
   "Hopper full" and "Mixer full" lights off
   "Alarm" light off

6. "Mixer motor" switch on.

7. Place "run/set up" switch in run mode.

8. All metering motors are energized simultaneously.

   NOTE: "Metering" indicator light located on control panel should be lit. Unit continues to meter and blend material until the blended material trips the "mixer full" level sensor. At this point, all metering drives are de-energized and the unit continues to blend material.

9. Open the slidegate beneath the Conomix.

   a. On-the-machine applications - begin processing.
   b. Central Blending Applications - start the auger discharge. It should be set to approximately 10% above the usage rate of the material. The discharge auger is started with a pushbutton, and will continue to operate until the Hi-level switch is tripped. On gaylord fill models, the unit may be restarted with the pushbutton. On Surge bin models, the unit will restart automatically when the material level in the bin clears the Lo-level switch.

10. As the blended material moves away from the "mixer full" level sensor, the Microprocessor delays the start of the next metering cycle for a preprogrammed time interval.

11. At the end of the blend delay time cycle, all metering motors are energized, metering material until "mixer full" level sensor is tripped.

12. The computer monitors this metering time and compares it with a preprogrammed minimum metering time of 60 seconds. If the actual metering cycle is longer than 90 seconds, the metering "off-time" is automatically shortened to gradually reduce the metering time to 90 seconds during the next several cycles.

    Remember, the Microprocessor is always seeking to maintain a minimum 60 second metering time, regardless of changes in the processing rate. This feature improves metering accuracy by eliminating many short on/off metering cycles. The minimum metering off time is 10 seconds. The maximum metering off time is 255 seconds.

13. The Metering/Blend cycle continues as long as the material is being used.

14. If the processing rate is increased and the total output of metering augers cannot keep up, the master speed can be increased during the production run without affecting the original set up blend ratio.

15. If the metering/blending rate will not keep up to the process rate at 100% master speed setting, the metering augers are most likely undersized and the calibration procedure was incorrect.

CONOMIX TROUBLESHOOTING GUIDE

1. Augers won't run. Display blank.

   Check:
   - A. Power supply to control box.
   - B. Power cord for broken wire.
   - C. Circuit breaker switch (1SW) tripped. (check for cause)
   - D. Loose wire in control box.
   - E. Fuse 1FU blown. (check for cause)
   - F. +12 volts AC to power board connector J1.
   - G. 1LED and 2LED on power board should be on. If they aren't, check 1FU and 2FU on the power board. If the fuses are okay, replace the power board. If not, carefully solder new fuses in place, disconnect the control board (J10), turn on the power. If the LED's are on now, the control board or the counter board is shorted. If the LED's aren't on, replace the power board.
   - H. All sensors, relays, etc. that operate from +12 VDC for shorts. (this would cause 1FU on the power board to blow)

2. Augers won't run. Display and other lights on.

   Check:
   - A. +24 VDC power to power board connectors J4-J7 and the 2N6287 power transistors.
   - B. Fuses 2FU-5FU blown. (check for cause)
   - C. Amphenol connector to junction box plugged in.
   - D. Power board.
   - E. Mixer high level sensor.
   - F. Auger overload, alarm programmed to shut down.

3. One auger won't run.

   Check:
   - A. Motor wired incorrectly.
   - B. Motor defective.
   - C. Auger or motor binding.
   - D. Output fuse (2FU-5FU) to motor blown. (check for cause)
   - E. 2N6287 output transistor bad.
   - F. Power board.
   - G. Control board.
   - H. Auger overload (nnnX), X=1 - 4 on display.
   - I. Auger check gate open and plug in discharge.

4. Auger runs continuously.

   Check:
   - A. Motor wired incorrectly.
   - B. 2N6287 output transistor shorted.
   - C. Power board. The output LED on the power board should be off (LED12-LED15). If the LED is off, the output transistor (2N6287) is bad. If it is on, the power board is bad.
   - D. Control board.

5. Auger speed erratic.

   Check: A. Motor brushes
   B. Motor defective.
   C. Wiring to motor.
   D. Connector (J4-J7) loose.
   E. Control board.
   F. Ribbon cable between boards.

6. Mixer motor won't run.

   Check: A. Mixer circuit breaker switch (2SW) tripped. (check for cause)
   B. Mixer motor safety switch defective or cover not closed far enough to trip switch.
   C. Relay CR3 defective.
   D. Amphenol connector loose.
   E. Loose wire in control box or junction box.
   F. Mixer motor bad.

7. Counter doesn't work.

   Check: A. Adjust sensor gap.
   B. Magnet not installed in auger shaft.
   C. Sensor wiring.
   D. Amphenol connector loose.
   E. Wiring in control box.
   F. Connector J1 on counter board installed.
   G. Connector J2 between counter board and control board.
   H. Counter board.
   I. Control board.

   NOTE: Each counter on the counter board has a LED. When the sensor is working, the LED will flash on and off as the auger turns.

8. Augers run but won't shut off. (In run mode).

   Check: A. Mixer Hi Level sensor defective.
   B. Connector J3 (pins #10, 11, 12) not plugged in.
   C. Control board.

9. Control won't run in "run" mode.

   Check: A. Run-setup switch defective.
   B. Connector J11 on the control board not plugged in.
   C. Control board.

   NOTE: nnn1 on "data" display indicates auger motor #1 overload.
   nnn2 on "data" display indicates auger motor #2 overload.
   nnn3 on "data" display indicates auger motor #3 overload.
   nnn4 on "data" display indicates auger motor #4 overload.

   nnnn on "data" display indicates program malfunction.

   "Diagnostics" display is used to trouble shoot the system. Call CONAIR for use.

Blend/Recipe Name: _____

CONDMIX

Set-up Calibration Record

1. Processing Rate (machine throughput): _____ lbs/hr.

2. Blending Rate (throughput x 1.2): _____ lbs/hr.

Set-up Record — Auger Number ⇨	1	2	3	4
3. Materials to be blended				
4. Bulk Density	lbs/ft.^{3}	lbs/ft.^{3}	lbs/ft.^{3}	lbs/ft.^{3}
5. Desired percentage of each	%	%	%	%
6. Metering Rate per Hour **Multiply Desired Percentage (#5) X Blending Rate (#2).**	lbs/hr.	lbs/hr.	lbs/hr.	lbs/hr.
7. Metering Rate per Minute **Divide Metering Rate per Hour (#6) by 60.**	lbs/min.	lbs/min.	lbs/min.	lbs/min.

Calibration Record

8. Auger Size (O.D.)	inches	inches	inches	inches
9. Sleeve Size (I.D.)	inches	inches	inches	inches
10. Master Speed Setting (Recommend 80%): _____% This must remain the same for all tests taken below.				

11. **First Test:**

Auger Speed (% of Maximum)	%	%	%	%
Lbs. per Minute	lbs/min.	lbs/min.	lbs/min.	lbs/min.
Lbs. per Hour (lbs/min. X 60)	lbs/hr.	lbs/hr.	lbs/hr.	lbs/hr.
Auger RPM*	RPM	RPM	RPM	RPM
Lbs. per Rev. (lbs/min. ÷ RPM)	lbs/rev.	lbs/rev.	lbs/rev.	lbs/rev.

12. **Second Test:**

Auger Speed (% of Maximum)	%	%	%	%
Lbs. per Minute	lbs/min.	lbs/min.	lbs/min.	lbs/min.
Lbs. per Hour (lbs/min. X 60)	lbs/hr.	lbs/hr.	lbs/hr.	lbs/hr.
Auger RPM*	RPM	RPM	RPM	RPM
Lbs. per Rev. (lbs/min. ÷ RPM)	lbs/rev.	lbs/rev.	lbs/rev.	lbs/rev.

13. **Third Test:**

Auger Speed (% of Maximum)	%	%	%	%
Lbs. per Minute	lbs/min.	lbs/min.	lbs/min.	lbs/min.
Lbs. per Hour (lbs/min. X 60)	lbs/hr.	lbs/hr.	lbs/hr.	lbs/hr.
Auger RPM*	RPM	RPM	RPM	RPM
Lbs. per Rev. (lbs/min. ÷ RPM)	lbs/rev.	lbs/rev.	lbs/rev.	lbs/rev.

* **To Determine RPM:**
For 60-second calibration tests: TAKE INFORMATION DIRECTLY FROM DATA DISPLAY ON CONTROL (see instruction manual).

For *other than* 60-second calibration tests, use the following formula:

60 ÷ *Seconds* X Revolutions = RPM

Where S is equal to the actual number of seconds, the auger was run for calibration.

The revolutions figure is taken directly from the DATA display.

conair

Franklin, PA 16323
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We're Here to Help

Conair has made the largest investment in customer support in the plastics industry. Our service experts are available to help with any problem you might have installing and operating your equipment. Your Conair sales representative also can help analyze the nature of your problem, assuring that it did not result from misapplication or improper use.

How to Contact Customer Service

To contact Customer Service personnel, call:

From outside the United States, call: 814-437-6861

You can commission Conair service personnel to provide on-site service by contacting the Customer Service Department. Standard rates include an on-site hourly rate, with a one-day minimum plus expenses.

Before You Call ...

If you do have a problem, please complete the following checklist before calling Conair:

- ❒ Make sure you have all model, serial and parts list numbers for your particular equipment. Service personnel will need this information to assist you.
- ❒ Make sure power is supplied to the equipment.
- ❒ Make sure that all connectors and wires within and between loading control and related components have been installed correctly.
- ❒ Check the troubleshooting guide of this manual for a solution.
- ❒ Thoroughly examine the instruction manual(s) for associated equipment, especially controls. Each manual may have its own troubleshooting guide to help you.
- ❒ Check that the equipment has been operated as described in this manual.
- ❒ Check accompanying schematic drawings for information on special considerations.

Additional manuals and prints for your Conair equipment may be ordered through the Customer Service or Parts Departments for a nominal fee.

EQUIPMENT GUARANTEE

Conair guarantees the machinery and equipment on this order, for a period as defined in the quotation from date of shipment, against defects in material and workmanship under the normal use and service for which it was recommended (except for parts that are typically replaced after normal usage, such as filters, liner plates, etc.). Conair's guarantee is limited to replacing, at our option, the part or parts determined by us to be defective after examination. The customer assumes the cost of transportation of the part or parts to and from the factory.

PERFORMANCE WARRANTY

Conair warrants that this equipment will perform at or above the ratings stated in specific quotations covering the equipment or as detailed in engineering specifications, provided the equipment is applied, installed, operated and maintained in the recommended manner as outlined in our quotation or specifications.

Should performance not meet warranted levels, Conair at its discretion will exercise one of the following options:

- Inspect the equipment and perform alterations or adjustments to satisfy performance claims. (Charges for such inspections and corrections will be waived unless failure to meet warranty is due to misapplication, improper installation, poor maintenance practices or improper operation.)
- Replace the original equipment with other Conair equipment that will meet original performance claims at no extra cost to the customer.
- Refund the invoiced cost to the customer. Credit is subject to prior notice by the customer at which time a Return Goods Authorization Number (RGA) will be issued by Conair's Service Department. Returned equipment must be well crated and in proper operating condition, including all parts. Returns must be prepaid.

Purchaser must notify Conair in writing of any claim and provide a customer receipt and other evidence that a claim is being made.

WARRANTY LIMITATIONS

Except for the Equipment Guarantee and Performance Warranty stated above, Conair disclaims all other warranties with respect to the equipment, express or implied, arising by operation of law, course of dealing, usage of trade or otherwise, including but not limited to the implied warranties of merchantability and fitness for a particular purpose.