



BURR KING MFG. CO., INC

1220 Tamara Lane

Warsaw, MO 65355

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AUTO COMPOUND DOSING SYSTEM INSTRUCTION MANUAL





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August 29, 2007

LETTER OF AUTHENTICITY

This letter is to certify that all Burr King Belt grinders, Disc grinders, Polishing machines Vibra King Chambers and Bowls are manufactured and assembled in the United States of America.

(Tariff number 847990 criterion A)

A handwritten signature in black ink, appearing to read "Don Mac Carthy".

Don Mac Carthy
President

See our catalog at www.burrking.com

contact us at info@burrking.com

Package Contains:

1. Proportioner with U-clamp for mounting
2. Float with chain
3. Suction tube with foot valve -- 9 ft.
4. Discharge tube -- 2 ft.
5. Metering tip kit (14 tips)
6. Production information sheet

THANK YOU FOR YOUR INTEREST IN OUR PRODUCTS

manufactures quality chemical proportioners. Please use this equipment carefully and observe all warnings and cautions.

NOTE

- | | |
|---------------|--|
| WEAR | protective clothing and eyewear when dispensing chemicals or other materials. |
| ALWAYS | observe safety and handling instructions of the chemical manufacturers. |
| ALWAYS | direct discharge away from you or other persons or into approved containers. |
| ALWAYS | dispense cleaners and chemicals in accordance with manufacturer's instructions. Exercise CAUTION when maintaining your equipment. |
| KEEP | equipment clean for proper operation. |
| WEAR | protective clothing and eyewear when working in the vicinity of all chemicals, filling or emptying equipment or changing metering tips. |
| ALWAYS | re-assemble equipment according to instruction procedures. Be sure all components are firmly screwed or latched into position. |
| ATTACH | only to tap water outlets (85 PSI maximum). |

Through proper care and maintenance, this equipment will serve your toughest cleaning jobs.

Installation:

1. Mount the unit in a level position on the side of a reservoir. The U-clamp may be repositioned or removed as necessary.
2. Install a minimum 1/2" ID water hose between the inlet threads and the water spigot. Minimum water pressure required to properly operate the proportioner is 25 PSI (flowing).
3. Attach the end of the discharge tube with the clamp and flooding ring to the discharge barb on the eductor.
4. Insert the foot valve end of the suction tube into the concentrate container. (The level of the concentrate must be below the level of the eductor, or the proportioner will continue to siphon concentrate after it is turned "off".)
5. Select a metering tip (see next two sections) and screw it into the suction stub on the eductor body.
6. Slide the open end of the suction tube over the suction stub.
7. Adjust the bead chain length to position the float at the desired level of solution. To prevent foaming, be certain that the solution level will always be above the point of discharge. Be sure float mechanism is not hampered by water turbulence caused by discharging solution. It may be necessary to baffle the float from the discharge in order for the unit to work properly.

Metering Tip Selection:

The final concentration of the dispensed liquid is related to both the size of the metering tip opening (orifice) and the viscosity of the liquid being siphoned. If product viscosity is noticeably greater than that of water, consult the procedure for Measurement of Concentration on the next page to achieve your desired water-to-product ratio. For water-thin products, use the chart below as a guideline. Because such factors as inlet water pressure and temperature can affect dilution ratios, the figures listed below are only approximate. Test the actual dilution you are achieving using the Measurement of Concentration procedure for best results. Two undrilled, clear tips are supplied for drilling sizes not listed.

Tip Color	Drill Size	Approx. Ratio @ 40 PSI, water-thin viscosity	Tip Color	Drill Size	Approx. Ratio @ 40 PSI, water-thin viscosity
No tip		4:1	Tan	65	36:1
Gray	30	5:1	Green	70	48:1
Black	40	6:1	Orange	72	64:1
Beige	50	8:1	Brown	74	75:1
Red	55	17:1	Yellow	76	90:1
White	57	23:1	Purple	80	120:1
Blue	60	25:1	Pink	87	240:1

Measurement of Concentration:

You can determine the dispensed water-to-product ratio for any metering tip size and product viscosity. All that is required is to operate the primed dispenser for a minute or so and note two things: the amount of dispensed water/product mixture, and the amount of concentrate used in preparation of the solution dispensed. The water-to-product ratio is then calculated as follows:

$$\text{Dilution (X)} = \frac{\text{Amount of Mixed Solution} - \text{Amount of Concentrate Drawn}}{\text{Amount of Concentrate Drawn}}$$

Dilution ratio, then, equals X parts water to one part concentrate (X:1). If the test does not yield the desired ratio, choose a different tip and repeat the test.

Alternative methods to this test are 1) pH (using litmus paper), and 2) titration. Contact your concentrate supplier for further information on these alternative methods and the materials required to perform them.

Operation:

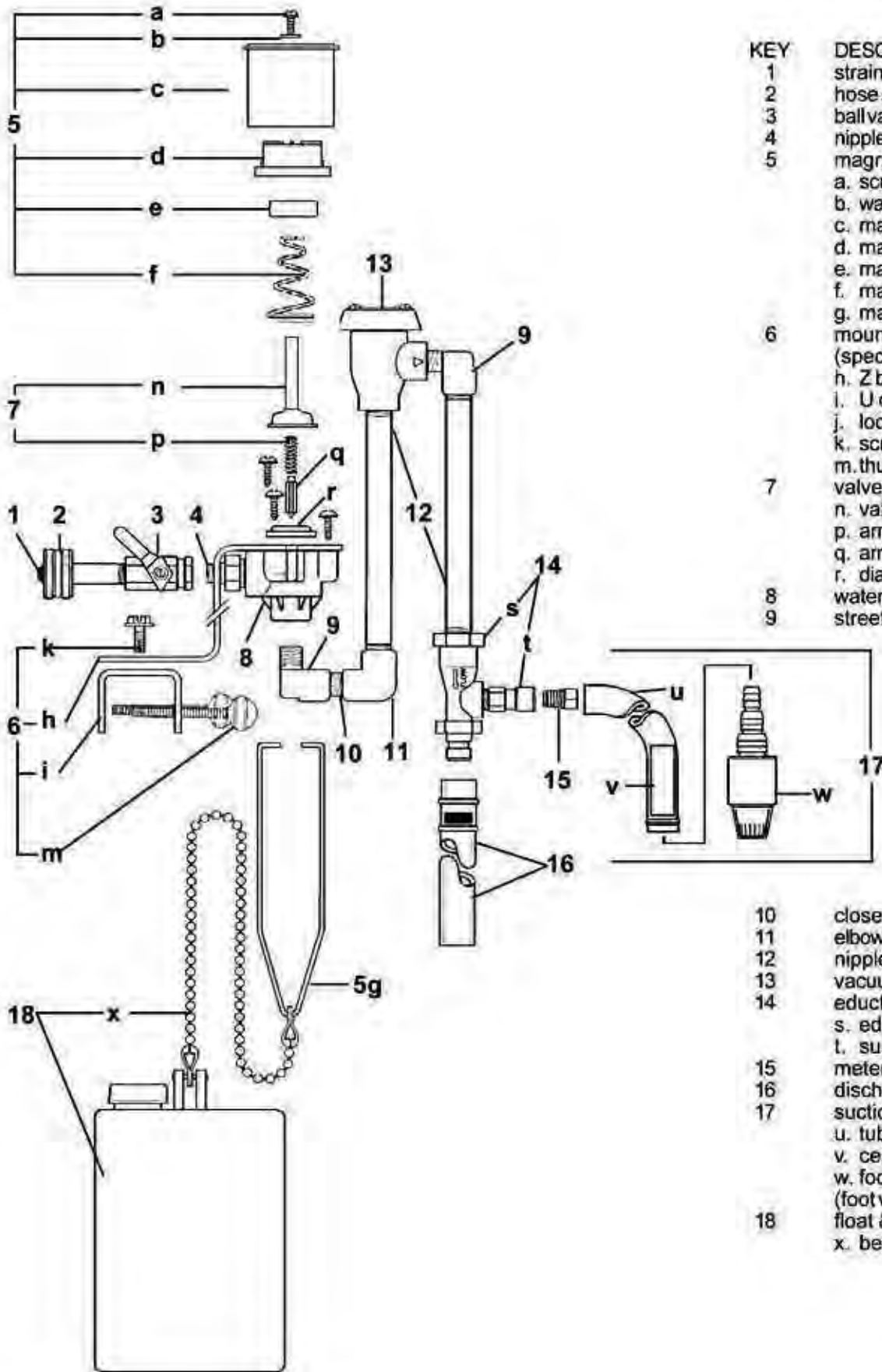
Open the water supply ball valve. When the solution in the reservoir reaches the level set by the float, the valve will close. This will stop the water flow and siphoning of concentrate. When withdrawal of solution from the reservoir causes the level to drop more than 1-1/2 inches, the valve will open, and the reservoir will be refilled to the previous, pre-set level. This cycle will be repeated automatically until the supply of concentrate is depleted. The ball valve should be **fully closed** when changing metering tips or concentrate container, when reservoir is drained, or when the unit is not in use.

Troubleshooting:

Problem	Probable Cause	Remedy
1. No discharge	a. No water b. Defective magnetic valve assembly c. Excessive water pressure	a. Open water inlet b. Replace assembly c. Install regulator if pressure exceeds 85 PSI
2. No concentrate draw	a. Clogged foot valve b. Metering tip or eductor clogged c. Low water pressure d. Discharge tube or flooding ring not in place	a. Clean or replace foot valve b. Clean* or replace c. Minimum 25 PSI flowing required d. Check position: Replace discharge tube if flooding ring is missing.
3. Failure of unit to turn off	a. Valve parts dirty or defective b. Magnet spring too short c. Clogged valve orifice	a. Clean or replace b. Replace c. Clean or replace
4. Backflow into concentrate	a. Diluted solution being siphoned into container b. Water being siphoned into container	a. Replace or repair foot valve b. Replace eductor
* In hard water areas, scale may form at the discharge of the eductor. This scale may be removed by soaking the eductor in a descaling solution or by running the descaling solution through the system. If descaling solution is educted through the system, flush the unit by educting water only before returning the system to regular use.		

Auto Compound Dosing System Flow Rates

RATIO	PERCENTAGE	OZ. OF CONCENTRATE INJECTED PER GALLON OF FLOW.	OZ.
1:10	10.00%		12.800 OZ.
1:10.5	9.50%		12.160 OZ.
1:11	9.00%		11.520 OZ.
1:12	8.50%		10.880 OZ.
1:12.5	8.00%		10.240 OZ.
1:13	7.50%		9.600 OZ.
1:14	7.00%		8.960 OZ.
1:15.5	6.50%		8.320 OZ.
1:17	6.00%		7.680 OZ.
1:18	5.50%		7.040 OZ.
1:20	5.00%		6.400 OZ.
1:22	4.50%		5.760 OZ.
1:25	4.00%		5.120 OZ.
1:28.5	3.50%		4.480 OZ.
1:33	3.00%		3.840 OZ.
1:40	2.50%		3.200 OZ.
1:50	2.00%		2.560 OZ.
1:52	1.90%		2.432 OZ.
1:55	1.80%		2.304 OZ.
1:58	1.70%		2.176 OZ.
1:62	1.60%		2.048 OZ.
1:66	1.50%		1.920 OZ.
1:71	1.40%		1.792 OZ.
1:76	1.30%		1.664 OZ.
1:83	1.20%		1.536 OZ.
1:91	1.10%		1.408 OZ.
1:100	1.00%		1.280 OZ.
1:111	0.90%		1.152 OZ.
1:128	0.80%		1.024 OZ.
1:142	0.70%		0.896 OZ.
1:166	0.60%		0.768 OZ.
1:200	0.50%		0.640 OZ.
1:256	0.40%		0.512 OZ.
1:333	0.30%		0.384 OZ.
1:400	0.25%		0.320 OZ.
1:500	0.20%		0.256 OZ.



KEY	DESCRIPTION
1	strainer washer
2	hose swivel
3	ball valve
4	nipple
5	magnet parts kit
a.	screw
b.	washer
c.	magnet cover
d.	magnet cap
e.	magnet
f.	magnet spring
6	mounting bracket kit (specify model 511)
h.	Z bracket
i.	U clamp
j.	lockwasher (not shown)
k.	screw
m.	thumbscrew
7	valve parts kit
n.	valve guide ("bonnet")
p.	armature spring
q.	armature
r.	diaphragm
8	water valve body
9	street elbow
10	close nipple, 1/4"
11	elbow
12	nipple, 6"
13	vacuum breaker
14	eductor assembly
s.	eductor body only
t.	suction stub only
15	metering tip (kit)
16	discharge tube assembly
17	suction tube assembly
u.	tubing, 1/2" x 9'
v.	ceramic weight
w.	foot valve, Viton (foot valve & weight)
18	float & chain assembly
x.	bead chain only

2	PO-59017	PVC TUBING	1/2" ID x 5/8 OD	27
1	PO-03008	COVER		26
2	PO-1/4-20 x 3/8	1/4" - 20 x 3/8 BOLT - CAD PLATED		26
3	PO-3606	HOSE CLAMP		24
2	PO-6220	HOSE ADAPTER	1/4" MPT x 1/2" HOSE	23
1	PO-03002	TANK		22
1	PO-511	HYDROMETER		21
1	PO-P-AAA	LITTLE GIANT PUMP		20
1	PO-WB-85-SS-FLOWMETER		1-20 G.P.H.	19
1	PO-511-5043	FLOAT & CHAIN ASSY		18
1	PO-511-5006	SUCTION TUBE ASSY		17
1	PO-511-5007	DISCHARGE TUBE ASSY		16
1	PO-511-990016	METERING TIP KIT		15
1	PO-511-44021	EDUCTOR ASSEMBLY		14
1	PO-511-50630	VACUUM BREAKER		13
2	PO-511-509906	1/4" NIPPLE		12
1	PO-511-506000	ELBOW		11
1	PO-511-519004	1/4" CLOSE NIPPLE		10
2	PO-511-506608	STREET ELBOW		9
1	PO-511-520000	WATER VALVE BODY		8
1	PO-511-5051-K	WAGNET YOKE		7
1	OP-511-5030	MOUNTING BRACKET KIT		6
1	PO-511-5081	MOUNTING PARTS KIT		5
1	PO-511-560900	NIPPLE		4
1	PO-511-502000	BALL VALVE		3
1	PO-511-506500	HOSE SHOVEL		2
1	PO-511-281014	STRAINER WASHER		1

MACK C.C. NO. DET. REQ. MATERIAL STOCK SIZE

NOTES

1. REFERENCE ALL DIMENSIONS TO CENTER OF TUBING UNLESS OTHERWISE SPECIFIED.
2. TOLERANCES UNLESS NOTED OTHERWISE ARE: FRACTIONS - .005" DECIMALS - .005" DIMENSIONS - .005" DIMENSIONS - .005" DIMENSIONS - .005"
3. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
4. MAKE TOOL & ALL LOCK DETAILS WITH TOOL & DETAIL NUMBER.
5. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
6. THIS IS A YEPAGE DRAWING.

TOOL NAME AUTO COMPOUND SYSTEM
OPERATION DESCRIPTION

PART NO. A-C-15
DEPT. NO. 340
OPER. NO.

SHEET NO.	OF
1	2

MACK NO. 6949

DATE	NO. OF	SHEETS
DATE	DATE	NO.
DATE	DATE	NO.

