

# BIO-CIRCLE™



## Parts Cleaning System Model IO-200 Owner's Manual

## BIO-CIRCLE™ Model: IO-200 Parts Cleaning System

TITLES	PAGE	TITLES	PAGE
Safety Instructions	2	Operating Instructions	6
Introduction	3	Recommended Maintenance	8
Voltage	3	Annual Maintenance	9
Extension Cord	3	Waste Disposal	9
Model Illustration	4	Troubleshooting Guide	10
Aeration	5	Accessories	11
Solution temperature	5	Technical Data	12
Start-up Instructions	5	WALTER Sales & Service	13
		Warranty Policy	14

### SAFETY INSTRUCTIONS

**BIO-CIRCLE™** Parts Cleaning Systems are produced in accordance with applicable standards governing the manufacture, performance and safety of industrial products.

**WARNING:** Before using this machine, read all safety and operating instructions carefully and save this owner's manual for future reference.

When using this parts cleaning system, basic safety precautions should always be observed to reduce the risk of fire, electric shock and personal injury, including the following:

1. Read this owner's manual to familiarize yourself with the unit's operation, its particular features, applications and limitations.
2. Parts that are damaged or otherwise defective should be repaired or replaced.
3. Adequate ventilation should be provided when operating the unit. Keep work areas clean. A cluttered environment invites accidents.
4. Keep children and other persons at a safe distance from the work area. Do not let unqualified persons handle this machine.
5. Your **BIO-CIRCLE** machine is equipped with a magnet inserted underneath the grated receptacle in the sink. Always handle it with care, as it will shatter if dropped and may cause injuries. Keep magnet away from electronic devices and magnetic media such as floppy discs, credit cards and computer monitors. **Keep magnet away from pacemakers.**
6. Do not contaminate the cleaning solution with any flammable or combustible substances such as gasoline, alcohol, mineral spirits, solvents etc. Drain parts to be cleaned of any flammable or combustible material before placing them into cleaning sink. Even small quantities can create a fire hazard.
7. The liquid and circulation pumps must always be immersed. Failure to keep the solution at the proper level can result in a burned-out pump thereby creating a potential fire hazard. To help prevent this, the unit is equipped with a low liquid level sensor and a pressure switch which will shut off both pumps when the liquid level is low.
8. **CAUTION:** Cleaning solutions may be irritating to skin and eyes. While working, always wear appropriate gloves and approved safety goggles.

**First Aid:** If cleaning solution is splashed on clothing, change promptly. Thoroughly wash any body areas that have been in contact with the solution. Saturated clothing must not remain in contact with skin.

**Eye Contact:** Flush with water for 15 minutes, lifting eyelid often. See a physician if required.

**Ingestion:** Rinse mouth and drink plenty of water. See a physician if required.

**Please refer to WALTER Bio-Circle L MSDS No.: L-78E for complete safety data information.**

9. This unit is equipped with a 3-conductor power cord and 3-prong grounding plug. It must be connected to a correspondingly grounded power outlet protected by **a class A Ground Fault Circuit Interrupter (GFCI)** to prevent electric shock hazard. (Trip current < 6 mA)
10. Should you encounter any problems within the first year of purchase, contact the **BIO-CIRCLE** Technical support center. See page

## INTRODUCTION

Your **BIO-CIRCLE™** Parts Cleaning System is precision built to meet the highest industrial standards. For maximum performance and longest life, follow the operating instructions and maintenance procedures outlined in this manual.



This unit is **CSA** certified for both Canada and USA.



It is supplied with a 3-conductor power cord and a 3-prong grounded plug. It must be connected to a grounded **receptacle protected by a Class A Ground Fault Circuit Interrupter (GFCI)**.

## VOLTAGE

Before connecting this unit, check that the voltage shown on the rating plate is the same as that of the power source.

Operating this unit on a voltage other than specified on its rating plate may result in personal injury to the user and damage to the unit.

## EXTENSION CORD

The use of an extension cord is not recommended, however if one must be used, use one that is heavy enough for the power requirement of the unit. Extension cords of inadequate wire size cause a serious drop in voltage and possible electrical component damage.

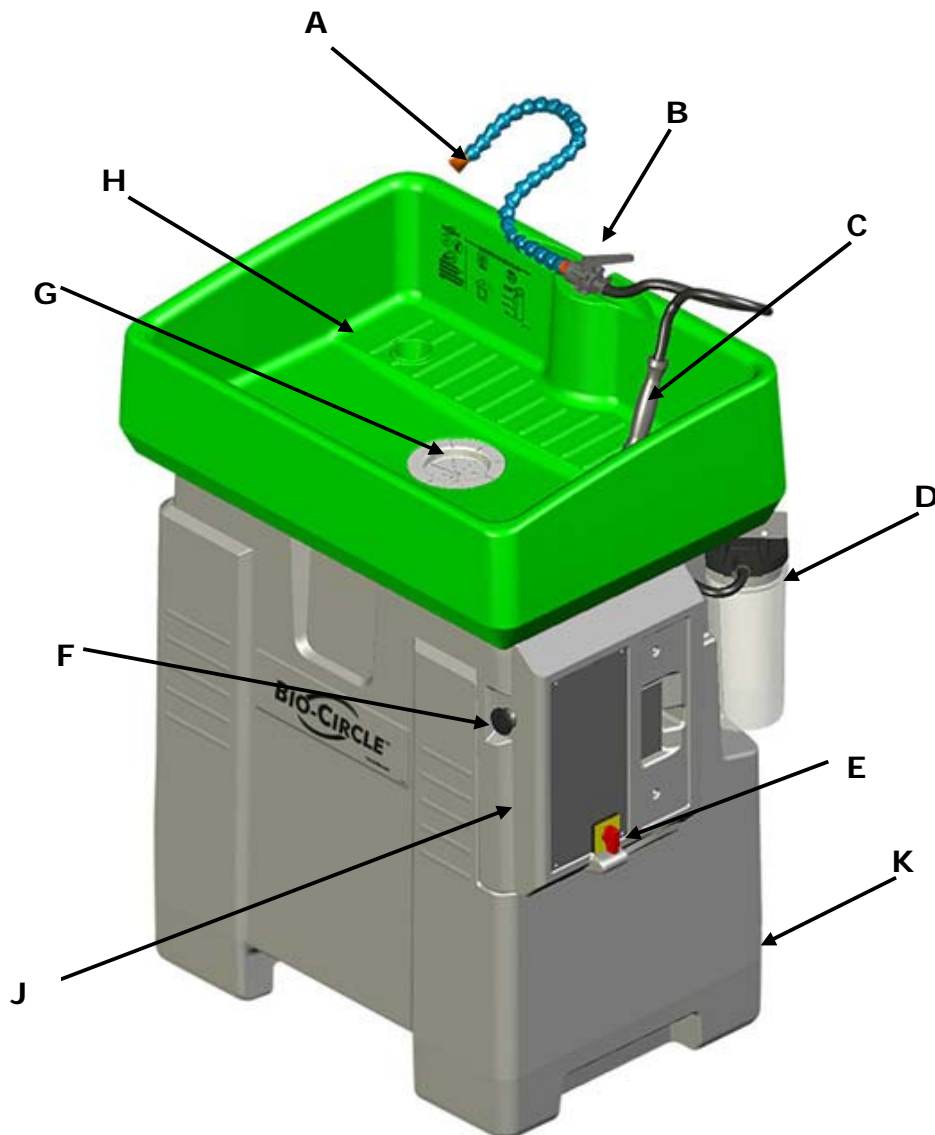
To limit line voltage drop to a safe level, refer to the following table:

<b>Length in Meters</b>	<b>8</b>	<b>15</b>	<b>23</b>	<b>30</b>
<b>Length in Feet</b>	<b>25</b>	<b>50</b>	<b>75</b>	<b>100</b>
<b>Wire Size AWG</b>	<b>14</b>	<b>14</b>	<b>12</b>	<b>10</b>

**Note:** Extension cords that are used outdoors must be approved for outdoor use.

## IO-200 MODEL ILLUSTRATION

- A) Nozzle
- B) 3-way control valve
- C) Flow-through brush
- D) Filter
- E) Main ON/OFF power switch
- F) Cleaning pump switch
- G) Grated receptacles & magnet
- H) Sink
- J) Control module
- K) Drain valve



## AERATION

The air pump should always be heard and air bubbles should be visible at the surface of the liquid when the machine is under power. This built-in aeration feature is vital to the high-quality performance of the bioremediation process.

## SOLUTION TEMPERATURE

The temperature control is factory set to maintain the solution at  $41^{\circ}\text{C} \pm 1^{\circ}$  ( $106^{\circ}\text{F} \pm 2^{\circ}$ ). At this temperature the bioremediation process is at its most efficient level, cleaning is faster and operator comfort is at its best.

## START UP INSTRUCTIONS

Please be sure to read and observe, the "SAFETY INSTRUCTIONS" at the beginning of this manual.

1. Remove the **BIO-CIRCLE™** Parts Cleaning System from its packaging and check for any shipping damage. Should any be detected, DO NOT connect the machine but report the damage to the transport carrier and to J. Walter. The original packaging must be retained.
2. - Remove all packaging material inside the tank.
  - Ensure that drain valve (K) is closed.
  - Connect supplied drain hose barb with PTFE tape to drain valve (K).
  - Unpack liquid filter (D) and insert the bracket inside the slot that is molded into the corner of the base of the unit.
  - Connect both hoses and secure them with the hose clips supplied.
  - Ensure filter bowl (D) is tightened. (Hand tighten only).



Place unit on a smooth level surface away from exposure to direct sunlight. Use only genuine **Bio-Circle L™** cleaning solution (55-A 007, 20 liters/5.3 gal.). Fill to normal operating capacity of 80 liters/21.1gal. to 100 liters/26.5 gal. Refer to level lines shown on p. 7.

**Note:** Fill unit slowly to prevent splashing and excessive foaming of Bio-Circle L liquid.

3. Plug power cord into properly grounded 3-prong, 120V, 60Hz, outlet protected by a class A GFCI.
4. Turn main power switch (E) to "I".  
**Note:** Do not turn ON the main power switch (E) with no liquid inside the machine.

5. Allow heater to warm **Bio-Circle L™** solution to working temperature for optimal cleaning efficiency. A red light will come on on the control module (J) indicating that the heater is ON.

When the solution has reached its proper working temperature of 41°C/106°F (this will take approx. 2 hours with a liquid at 20°C/68°F), the red light will go off. Periodically, the heater will turn itself ON to maintain the proper working temperature. The red light will come on during the heating cycle.

You will hear liquid splashing from the heater discharge, this is part of the normal operation of the machine.

**Never turn off the BIO-CIRCLE™ unit except for servicing.**

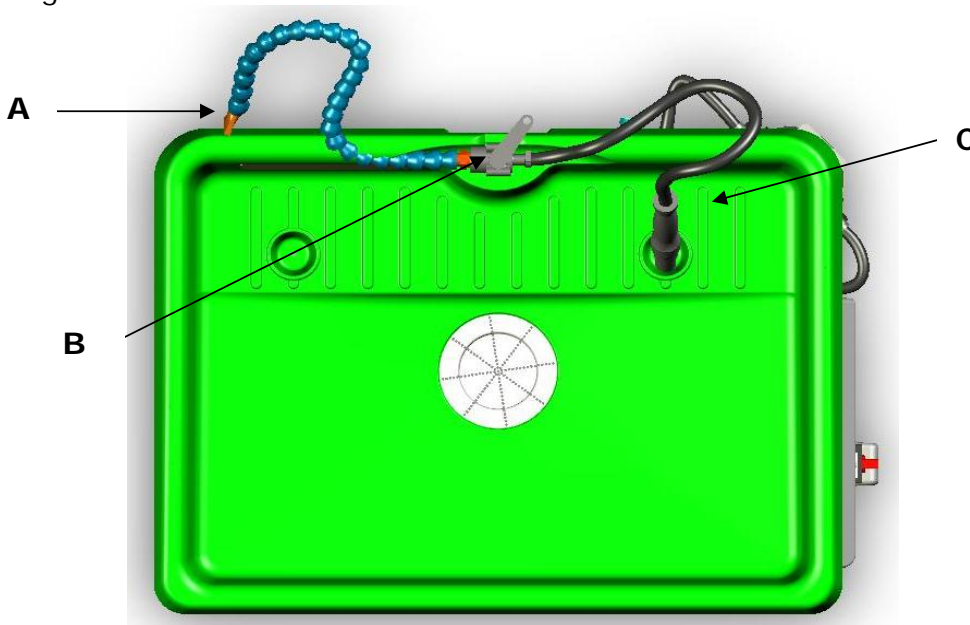
## OPERATING INSTRUCTIONS

The **BIO-CIRCLE™** Parts Cleaning System is designed for the removal and bioremediation of oil and grease from ferrous and non-ferrous parts and other washable surfaces. It is NOT recommended for cleaning other non-biodegradable substances.

**DO NOT INTRODUCE DISINFECTANTS, SOLVENTS, BRAKE FLUID, ENGINE COOLANT, CHLORINATED, ACIDIC OR ALKALINE SOLUTIONS INTO THIS SYSTEM. DO NOT ADD WATER.**

1. Place parts to be cleaned into sink (H). Maximum load capacity is 100 kg/220 lbs. Do not plug drain to fill cleaning sink. Use optional Parts Washing Basket (55-B 004) to contain small parts.

Note: Any parts susceptible to oxidation should not be left in the sink after cleaning.



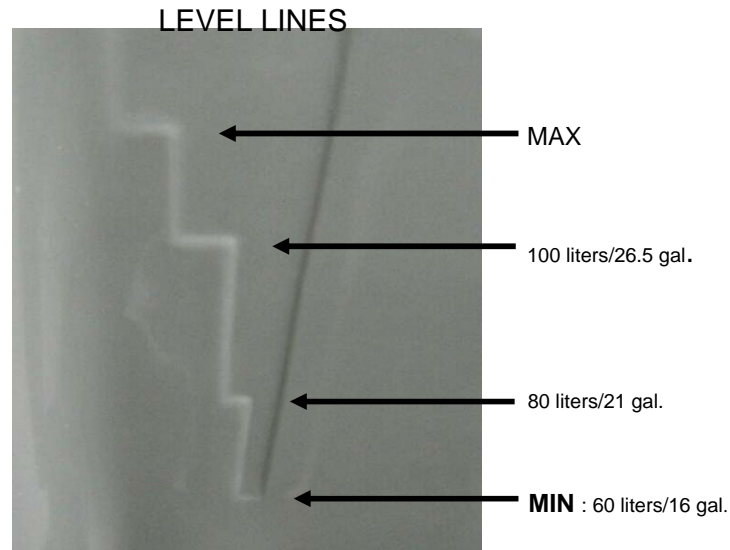
2. Position 3-way Control Valve (B) toward desired direction of solution flow.

3. Turn the cleaning pump ON by pressing ON/OFF switch (F).

Wet the sink, parts to be cleaned and any brushes prior to cleaning; this will prevent grease and dirt from sticking to the surfaces.

The **BIO-CIRCLE™** unit is supplied with an efficient multi-jet flow-through brush, which is well suited for most cleaning applications. However, for best results, when cleaning smaller or intricate parts, it is recommended to run the cleaning solution through the flexible faucet (A) and use brushes that are well adapted to the shape of the part being cleaned. Always clean parts while holding them under the flow of liquid.

4. For optimum performance, always keep unit topped-up to the proper working level of 80 liters/21 gal. to 100 liters/26.5 gal., do not overfill. Do not allow solution level to fall below 60 liters/16 gal. Observe fluid level lines molded in the tank wall. When the solution level falls below minimum, the float switch will cut power to the cleaning pump. The air pump and heater, however will continue running. **Check the fluid level weekly.**



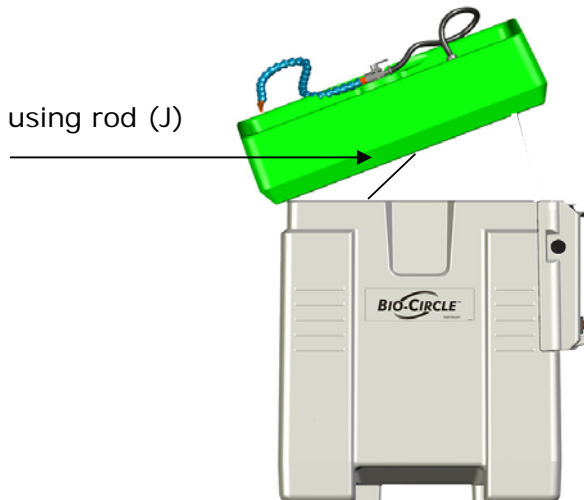
5. The bioremediation process requires a favorable environment at all times, even when the unit is not in use. **Always keep the solution level topped-up and the unit turned on** to maintain proper temperature and oxygen supply through the built-in aeration feature- and heater.
6. As with all parts cleaners, excess grease and oil should be disposed of prior to washing. **Do not use this unit as a waste dump.**
7. Inspect the grated receptacle (G) daily, it should be emptied of accumulated solid waste and disposed of outside the parts washer in order to extend the life of the solution.
8. A magnet is located underneath the grated receptacle (G) to separate all the ferrous particles thus enhancing the bioremediation process. The magnet should be cleaned periodically with a clean rag to maintain its efficiency and ensure rapid draining of the sink.

9. This unit is equipped with a damper located underneath the grated receptacle (G) to slow down evaporation. If too much evaporation occurs, verify that the damper moves freely.
10. The **BIO-CIRCLE™** Parts Cleaning System is designed for removing oil and grease from parts and then remediating those substances. Any other use of this system, such as dumping waste oil, is not recommended and will cause damage to the system.
11. For stubborn grime and other hard to clean spots, first spray or soak parts using **WALTER X-Force™** (53-X 002, 500ml aerosol) or (53-X 003, 500ml trigger spray) prior to cleaning with **Bio-Circle L™** solution.  
**Do not use any other types of cleaners**, as they will reduce or prevent the bioremediation process. Adding water will considerably reduce the bioremediation process as well as the solution's ability to clean.
12. The built-in thermostat has been factory set to maintain an ideal environment for the bioremediation process as well as preventing skin burns to the user and damage to the pump. Do not attempt to alter this unit in any way.
13. Condensation will accumulate underneath the sink top. This is normal due to the temperature of the cleaning solution.

**Note:** After a power interruption, the machine will restart automatically, including the cleaning pump if the cleaning pump switch is in the ON position.

## RECOMMENDED PREVENTIVE MAINTENANCE

Lift sink (H) and hold it in place using rod (J) as illustrated.



1. If unit is to be idle during weekends or for several days, it should be topped up and **the machine must remain under power**.
2. If the unit is to be idle for more than one week, it is recommended to turn the unit off. Before doing so, lift sink (H) and skim off or absorb any accumulation of oil from the surface of the liquid.
3. If a high concentration of non-digestible contaminants remains in suspension inside the liquid, turn on the cleaning pump and let the fluid circulate for a

couple of hours. The liquid will flow through the filter (D), which will remove the contaminants.

4. Liquid filter (D) should be inspected periodically. If filter is clogged or very dirty, (no or weak liquid flow through brush and flexible faucet) replace it. See the section "ACCESSORIES" for a listing of available filter cartridges.
5. Ensure that float switch floats freely on the liquid.
6. The pH of the cleaning solution should always be between 6 and 9. If the pH of the solution is outside this range, please contact the **BIO-CIRCLE** technical support line. See page 14 for contact information.
7. Inspect the electrical cord and plug regularly.

## **ANNUAL MAINTENANCE**

Walter recommends that your **IO-200** be inspected and cleaned annually to perform at optimal efficiency.

Depending on the application, non-digestible matter can accumulate as sludge at the bottom of the tank over time, which can negatively affect the bioremediation activity.

To facilitate the removal of the sludge, the tank bottom is tapered towards the drain valve.

- Turn main power switch (E) to "0" and unplug unit.
- Connect a 1 in. hose to the barbed fitting drain valve (K). Fully open the valve, wait a few seconds and then close the valve. Repeat these steps 3 times to remove most of the sludge.

If the sludge cannot be removed with this method, follow the instructions below: Open sink (H) and empty the unit of all the cleaning solution using a hand pump until the sludge becomes visible. If cleaning solution is still cleaning well, save it for re-use.

- Remove the sludge using a scoop and clean the tank walls and pumps.
- Visually inspect pumps, tubing and connections. Rinse the inside of the machine with clean water. Replace parts that show excessive wear.
- When everything appears to be in good working condition, fill unit to working level with **Bio-Circle L**, turn it on and allow solution to warm-up to its proper working temperature of 41° C (106° F) before cleaning parts.

**Note:** A CLEANING KIT (No. 55-B 020) is available, which contains all the necessary items and instructions to make it easy to clean your Bio-Circle unit.

## **WASTE DISPOSAL**

Refer to WALTER Material Safety Data Sheet for **Bio-Circle L**<sup>TM</sup> solution, MSDS No.: L-78E.

Used **Bio-Circle L** can usually be added to your other oil-water waste (such as water soluble cutting fluids) for disposal.

Always dispose of residual waste in compliance with Federal, Provincial, State and local environmental regulations. Check with local authorities for any special regulatory considerations.

Analyses have been performed on used solution and found to be non-hazardous in most cases. However, we strongly recommend that the above-mentioned regulatory bodies be consulted before proceeding to discard the used material.

J. Walter accepts no responsibility or liability for user's failure to comply with governmental and other safety regulations.

## **TROUBLESHOOTING GUIDE**

### **SINK FILLS UP**

The sink will fill up if the grated receptacle or magnet (G) are dirty or clogged. Remove grated receptacle and clean all parts. Ensure the drain damper moves freely.

### **NO OR WEAK LIQUID FLOW FROM NOZZLE OR FLOW-THROUGH BRUSH**

The rubber hose may be pinched along its length. Ensure the hose is not kinked or squeezed.

Also, filter (D) could be dirty or clogged, remove filter cartridge and replace with a new one. See the section "ACCESSORIES" for a listing of available filter cartridges.

### **CLEANING PUMP STOPS**

The built-in float switch will cut power to the cleaning pump when solution level has reached the minimum of approx. 60 liters/16 gal.

- Top-off tank to the proper working level of 80 liters/21.1 gal. to 100 liters/26.5 gal. with **Bio-Circle L** (No. 55-A 007, 20 liters).
- Lift the float switch vertically to reset it.
- 

### **THE HEATER DOES NOT WORK**

In no liquid flows from the heater discharge tube, press the red reset button on the heater cover located on the side of the control module.

- Ensure that the heater pump intake is not blocked and that the hoses are not pinched or kinked.
- If the liquid temperature is below 10°C/50°F, the heater will no be energized (however, liquid will be circulated). Wait until the liquid has warmed up for the heater to come on.
- 

### **NO MORE AERATION**

Aeration has stopped but air pump is still running.

- Check if the air hose is pinched somewhere along its length.
- Check the air diffuser attached to the end of the air hose next to the pumps and clean or replace if necessary.
- Turn power switch (E) to "0", unplug the unit, remove the cover of control module (J) and check whether the air hose is not disconnected from the air pump or pinched somewhere along its length.

### **SOLUTION DOES NOT CLEAN WELL ANYMORE**

If solution is dirty, refer to section "RECOMMENDED PREVENTIVE MAINTENANCE" and "ANNUAL MAINTENANCE".

The bioremediation process may have been reduced or prevented by the introduction of harmful substances or an unfavorable environment. Depending on the situation, replacing all or part (approx. 40 liters of the cleaning solution to re-start the system may be required.

Please contact the **BIO-CIRCLE** technical support before proceeding. See page 14 for contact information.

## SOLUTION ODOR

It is normal that the solution may emit a strong apple odor at start-up. As oil and grease are introduced into the cleaning solution, this odor will quickly diminish leaving only a faint, pleasant scent.

If the solution emits a strong foul odor, ensure that the aeration system is functioning properly.

## ACCESSORIES:



### Bio Clean Express™

Natural cleaner/degreaser, industrial cloth 7" x 14"

- Ideal to remove excess grease and kept the equipment clean.
- Order No.: 55-G 514 (35 cloths)
- Order No.: 55-G 515 (100 cloths)
- MSDS L-104



### X-Force™

Cleaner/degreaser, protects against corrosion

- 500ml trigger sprayer
- Order No.: 53-X 003
- MSDS L-74



### 45° angled multijet flow-through brush

- Order No.: 55-B 007



### Replacement multijet flow-through brush

- Order No.: 55-B 005



### Washing basket

- 1/4" galvanized wire mesh (W9" x H 8-1/4")
- Order No.: 55-B 004



### Re-usable filter cartridge 350 microns

- in Bio-Circle L
- Requires filter housing 55-B 010
- Order No.: 55-B 011



**Disposable filter cartridge 100 microns**

- For removing non-digested particles in suspension in Bio-Circle L
- Requires filter housing 55-B 010
- Order No.: 55-B 012



**Disposable filter cartridge 200 microns**

- For removing non-digested particles in suspension in Bio-Circle L
- Requires filter housing 55-B 010
- Order No.: 55-B 021



**Bio-Circle work lamp**

- 24" flexible arm
- Compatible with lid 55-B 008
- Fits on all Bio-Circle machines
- \* *Bulb included*
- Order No.: 55-B 014.



**Annual maintenance kit**

- Contains a pump, absorbent pads, scoop, pH paper and cleaners.
- Step-by-step instructions with photos
- Makes sludge removal quick and easy
- Order No.: 55-B 020

## TECHNICAL DATA

<b>MODEL:</b>	IO-200
VOLTAGE:	120V AC, 60 Hz
AMPERAGE:	10 A
HEATER:	1,260 Watts max.
PUMP:	380 liters/hr or 100 gal./hr
FLUID TEMPERATURE:	41°C (106°F) - Factory set
OVERALL DIMENSIONS W x D x H:	90 cm x 60 cm x 112 cm (35 x 24 x 44 in.)
WORKING HEIGHT:	104 cm (41 in.)
SINK DIMENSIONS W x D (INSIDE):	74 cm x 54 cm (30 x 20 in.)
MAX. LOAD CAPACITY:	100 kg (220 lbs)
MAX. FLUID LEVEL:	110 liters (29 gal.)
MIN. OPERATING FLUID LEVEL:	60 liters (16 gal.)
WEIGHT (EMPTY):	45 kg (100 lbs.)

## **WALTER SALES AND SERVICE**

### **CANADA**

**MONTREAL:** 5977 Trans Canada Hwy. Tel: (514) 630-2801  
Pointe-Claire, QC H9R 1C1 Fax: (514) 630-2825

**TORONTO:** 151 Superior Blvd., Unit 12 Tel: (905) 795-8555  
Mississauga, ON L5T 2L1 Fax: (905) 795-8558

**VANCOUVER:** 1-1595 Cliveden Avenue Tel: (604) 540-4777  
Delta, BC V3M 6M2 Fax: (604) 540-4778

### **U.S.A.**

**HARTFORD:** J. Walter Inc. Tel: (860) 724-0321  
810 Day Hill Road Fax: (860) 560-7300  
Windsor, CT 06095

### **MEXICO**

**ZAPOPAN** Blvd. La Carreta #835 Tel: (52) 33 1199-1515  
Parque Industrial Belenes Norte Fax: (52) 33 1199-5119  
Zapopan, Jalisco 45145

### **BIO-CIRCLE TECHNICAL SUPPORT:**

Should you have any trouble with the operation of your **BIO-CIRCLE** Parts Cleaning System, please refer to the section "TROUBLESHOOTING". Should you require further assistance:

In Canada: CALL TOLL FREE **1-877-BIO-DRUM** (1-877-246-8736)

In the USA: CALL TOLL FREE **1-866-JWALTER** (1-866-592-5837)

In Mexico: CALL (33) 1199-1515

Visit us at: [www.biocircle.com](http://www.biocircle.com) for additional information.

## **WARRANTY POLICY**

All **BIO-CIRCLE™** Parts Cleaning Systems and accessories are inspected and tested before shipment and are warranted to be free from any defect in material and faulty workmanship. Should any malfunction occur within one year from the date of original purchase please call **WALTER** TOLL FREE at 1-888-JWALTER (1-888-592-5837). In the USA: TOLL FREE at 1-866-JWALTER (1-866-592-5837). Should a component examination reveal that the malfunction was caused by defective material or faulty workmanship, **WALTER** will repair (or at our option, replace) without charge. This warranty does not apply when; normal maintenance is required, repairs or replacements have been made or were attempted by anyone other than **WALTER** authorized service personnel, and does not cover any damage caused by accidents, modifications, use of improper solutions, accessories, abuse or misuse as well as continued use after partial failure. No other warranty, written or verbal, is authorized.

In no event shall **WALTER** be liable for any indirect, incidental or consequential damages from the sale of the product. This disclaimer applies both during and after the term of this warranty.

This warranty gives you specific rights. The provisions contained in this warranty are not intended to limit, modify, take away from, disclaim or exclude any warranties set forth in any provincial or state legislation. To the extent required by law, the provisions in any provincial, state or federal legislation with respect to warranties take precedence over the provisions in this warranty.