



## OPERATION MANUAL KP4041 POLY SCRAP COMPACTOR



Thank you for purchasing the KP4041 Poly Scrap Compactor. IBIS appreciates your confidence in our product, and promises to support its operation to the utmost as it serves your requirements.

The KP4041 is a simple machine to install and start up. However, some points must always be addressed. This manual is intended to explain these issues, and to insure trouble-free operation for many years.

## 1.0 Equipment

### 1.1 Basic Equipment

Compactor, on levelling pads or castors, integrated suction device with 4" OD, square or rectangular tube inlet.

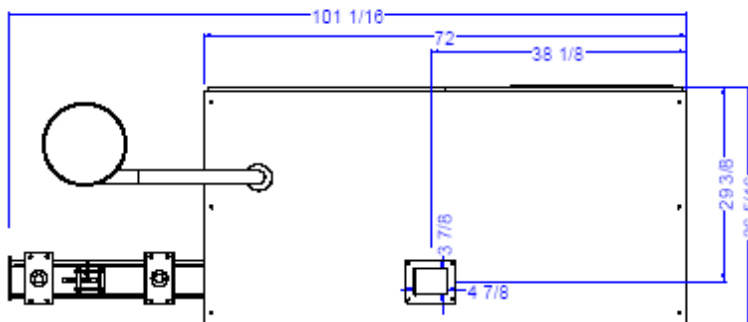
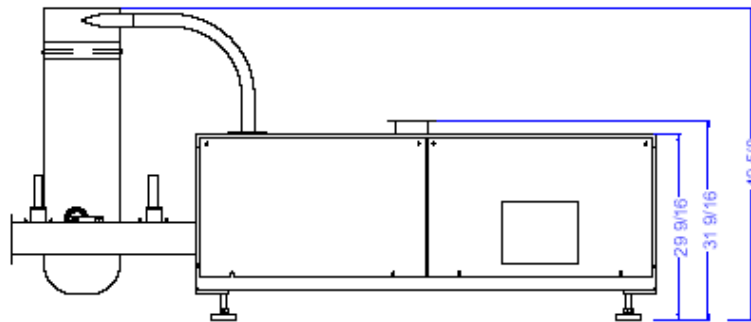
### 1.2 Optional Equipment

Scrap collection basket/hopper. Trim or Scrap Receiver. Trim/Scrap Conveying System.

Integrated compressed air device.

## 2.0 Technical Details

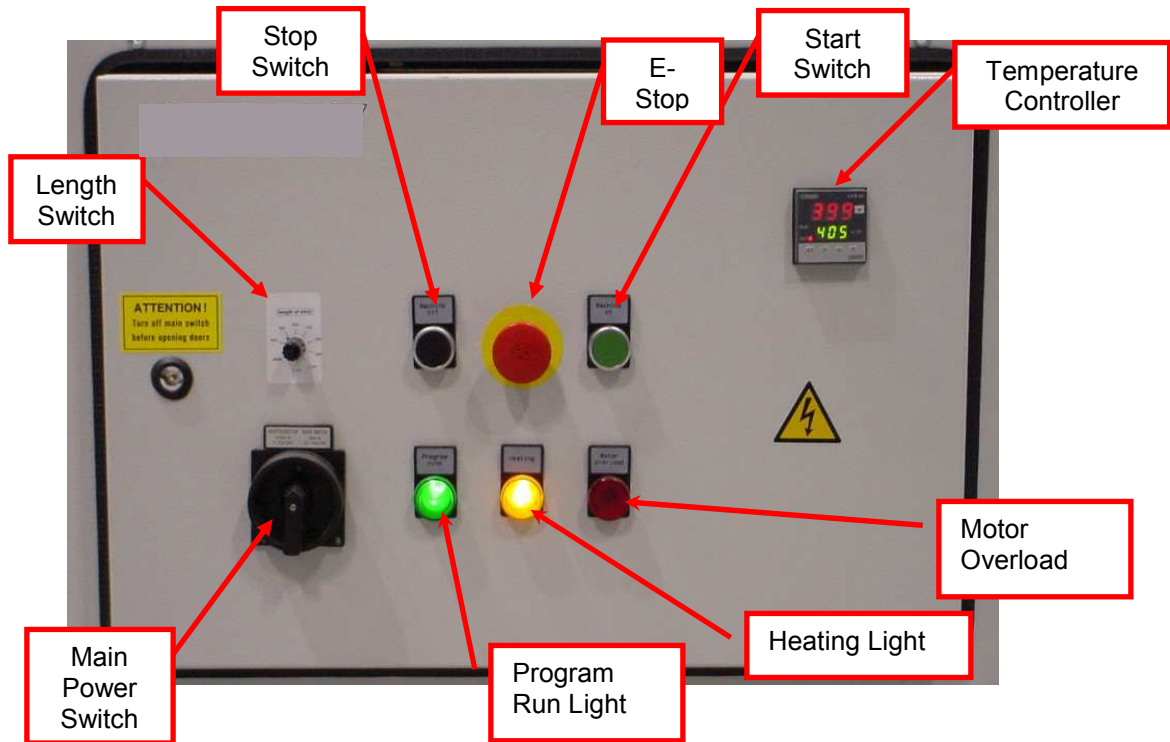
|                  |   |
|------------------|---|
| Power Supply     | : 480 V, 3 ph, 60 cycles, 17 A, approx.               |
| Compressed Air   | : 80 – 120 psi  |
| Dimensions       | : 101" L x 36" W x 33" H<br>(2,565mm x 940mm x 801mm) |
| Weight           | : approx. 1,200 lb (550 kg)                           |
| Output           | : Up to 400 lb/hr, depending on material.             |
| Brick Dimensions | : 4" x 4" (100 x 100 mm) (W x H)                      |
| Brick Length     | : Adjustable from 8" – 48" (200mm – 1,220mm)          |



### 3.0 Operation

#### 3.1 Switch On

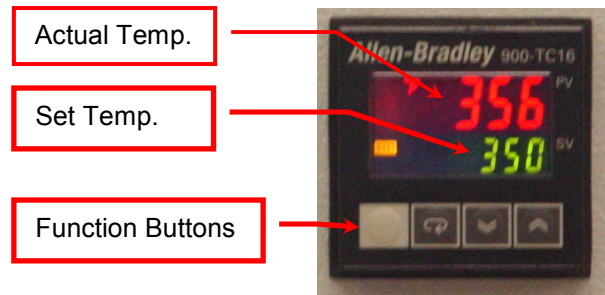
3.1.1 Switch on main switch.




3.1.2 Activate button "machine on". The lamp "programme in operation" lights and the machine starts automatically after it has reached the preselected temperature.

#### 3.2 Temperature-Selection

3.2.1 The KP4041 is equipped with a digital temperature control device, which is pre-programmed at the factory (A complete manual of digital temperature control device is available on line).



3.2.2 Prior to operation, set the processing temperatures according to the type of material to be compacted, targeting the material's softening or melting point (Note, temperatures are set prior to shipment for testing. These temperatures may not relate to your specific application, and may need to be changed).

3.2.3 To set process and standby temperatures, start by pressing the  button for less than one second.


Press the  button to page to the “SP-0” (Operating Temperature) screen:

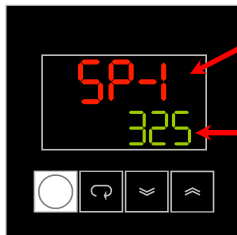


SP-0 Screen

Factory Set Temperature  
(Value may vary)

Press the  or  buttons to adjust operating (SP-0) temperature.


Press the  button to page to the “SP-1” (Standby Period 1) screen:




SP-1 Screen

Factory Set Temperature  
(Value may vary)

Press the  or  buttons to adjust Standby Period 1 (SP-1) temperature.

Press the  button to page to the “SP-2” (Standby Period 2) screen and repeat procedure until SP-0 through SP-3 temperatures are set.

Press the  button for less than one second to exit.

- ⊗ **The KP Compactor is designed to operate with Polyolefin-based materials only. Do not set temperatures above typical melting range of this material!**
- ⊗ **Standby Period 1 (SP-1) temperature should be set below melting point of material, with SP-2, SP-3 set progressively lower to insure against meltdown over extended periods! Refer to paragraph 3.4 for details on standby process.**

### 3.3 "Heating" Light

The heating process is indicated by flashing of the yellow light. As soon as the preselected temperature is reached, the signal light stays lit. During idle run the light goes out, when the heating impulse is paused.

### 3.4 Automatic Heat Reduction During Standby Run

The photosensor B4 detects if there is any material inside the suction channel. If no material is fed for a period longer than one minute, the piston automatically stops and the temperature controller adjusts to the SP-1 setting. During a longer period of idle run the unit sequences to the next standby period every five minutes, with the temperature settings adjusting automatically. After feeding new material, the piston starts again and the temperature controller returns to the SP-0 setting.

**For safety reasons, if the idle run exceeds 15 minutes, all output signals of the control device are locked and the "program Run" light goes out. In this case the machine has to be started again: 1. button "machine off", 2. button "machine on".**



☒ **Check the function of the photosensor B4 regularly!**

Photosensor

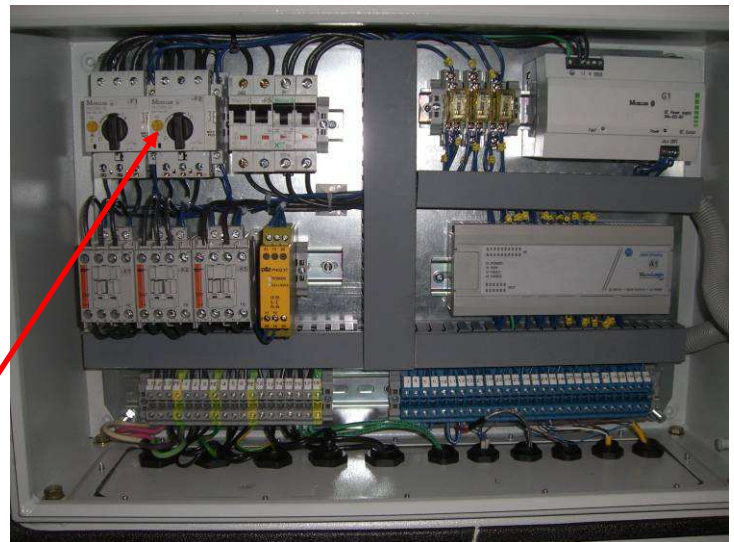
### 3.5 Set Brick-Length

The designated brick-length can be pre-set by a switch at the control panel. The machine cuts off the bricks automatically. The brick is cut off immediately, if a length is selected, which is shorter than the already produced brick.

### 3.6 "Motor Overload" Light

The red light indicates that one of the motor protective switches F1 or F2 has been activated. Open the control panel door after disconnecting the power supply and reset the switch. Afterwards the machine has to be started again: 1. button "machine off", 2. button "machine on".

Reset  
Switches



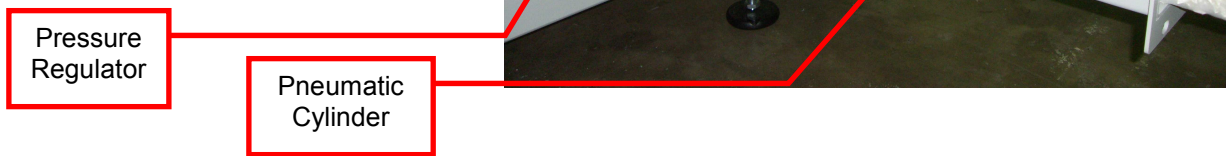
### 3.7 Emergency-Off

After emergency-off has been activated, reset the switch. Afterward, the machine has to be started again: 1. button "machine off", 2. button "machine on".

### 3.8 Pressure Adjust

The resistance pressure is adjusted by the pneumatic cylinders on the cooling tray. If the brick is too loose, the pressure should be increased (and/or perhaps raise the temperature). Loosen the pressure if the motor protective switch F2 activates or the piston jams.

Adjustments are made via the pressure regulator near the cooling tray.



It takes time to see results after the resistance pressure is adjusted. Make adjustments incrementally, no more 5 – 10 psi at a time, then await results before making further adjustments. Once the desired resistance is set, it will typically not be necessary to make further adjustments.

- ⊗ **Do not over-tighten the pressing power. Maximum brick density should be no greater than 40 lb/ft<sup>3</sup>, as it may cause damage to the machine!**

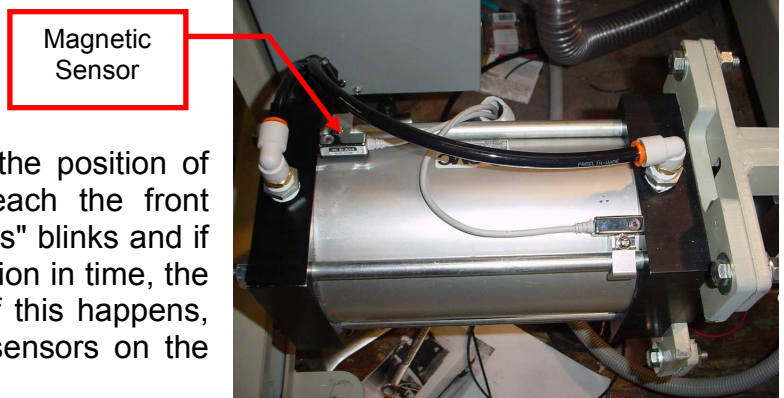
### 3.9 Material/Purity

The KP Compactor is designed to operate with Polyolefin-based materials only. In order to achieve a failsafe operation of the system, it is very important, that only pure material is fed. Alien elements such as textile-remnants, different plastics or other waste components are not allowed at all.

- ⊗ **Damage due to feeding of alien elements will cause immediate loss of warranty!**

### 3.10 Safety-Control for Blade

An integrated control system checks the position of the blade. If the blade does not reach the front position in time, the lamp "program runs" blinks and if the blade does not reach the rear position in time, the machine switches off automatically. If this happens, check the positions of the magnetic sensors on the blade cylinder.



- ⊗ **Be careful when working at the blade-cut device! Even if the air is disconnected, there still may be pressure at the blade-cylinder!**

## 4.0 Maintenance

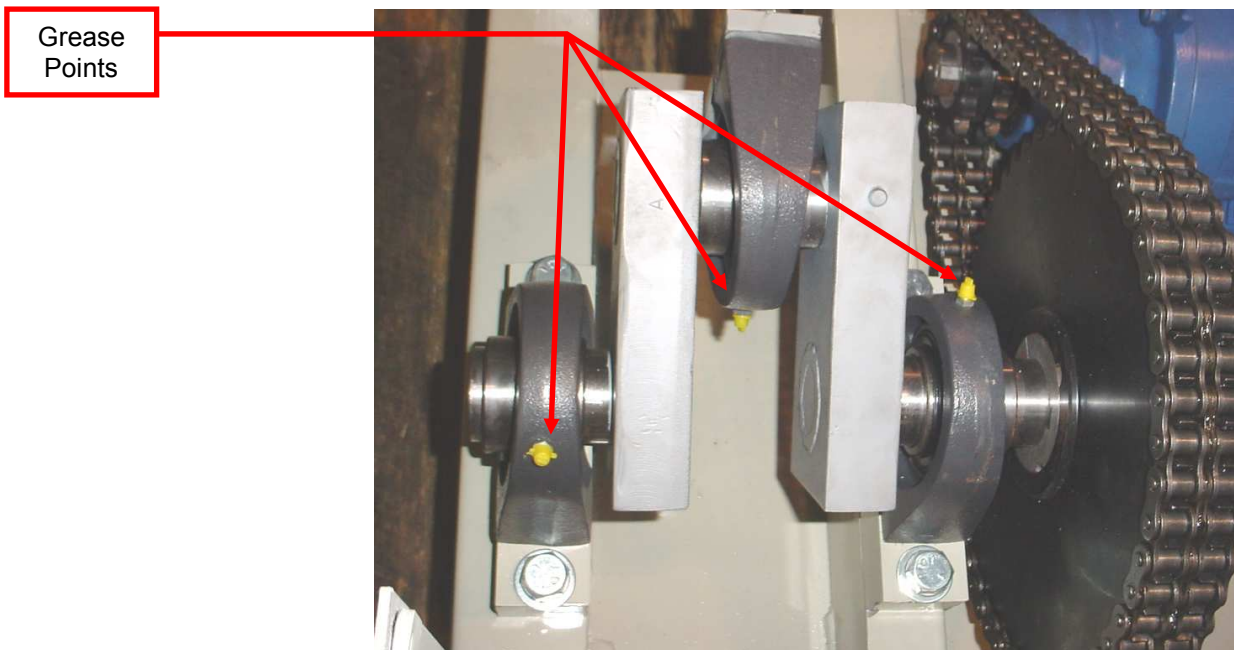
- ⊗ **ATTENTION! Before starting maintenance, turn off the main switch and remove the power and air pressure connections!**

### 4.1 Empty Dust Bag

The KP4041 employs an external cyclonic exhaust filter as standard. Check the bag daily for particulate buildup. Remove and empty the bag as necessary and reuse.

### 4.2 Grease Bearings

Check and grease the piston and crank assembly bearings once a month.



Technical alterations reserved!

## 5.0 Parts List

| Item       | Qty. | Description                                    |
|------------|------|--|
| K41.01.000 | 1    | Vacuum Chamber Weldment                        |
| K41.01.018 | 2    | Side Guide                                     |
| K41.01.022 | 1    | Bottom Guide                                   |
| K41.01.032 | 1    | Photo Sensor, Inlet, Adjustable                |
| K41.01.034 | 1    | Cable, Photo Sensor                            |
| K41.02.000 | 1    | Piston, KP4041                                 |
| K41.02.008 | 1    | Mounting Plate                                 |
| K41.03.000 | 1    | Crank Assembly, Keyed                          |
| K41.03.016 | 1    | Crank Connecting Arm                           |
| K41.03.018 | 3    | Bearing, 50mm                                  |
| K41.03.020 | 2    | Bearing, 20mm                                  |
| K41.03.024 | 1    | Sprocket, Crank, Taper Bushing                 |
| K41.03.026 | 1    | Bushing, Taper 50mm                            |
| K41.04.000 | 1    | Heat Zone Assembly                             |
| K41.04.004 | 2    | Heat Isolation Flange                          |
| K41.04.006 | 2    | 500 Watt 220V Mica Strip Heater with leads     |
| K41.04.008 | 2    | 600 Watt 220V Mica Strip Heater with leads     |
| K41.04.014 | 1    | RTD Temperature Sensor                         |
| K41.04.016 | 1    | Heat Zone Cover, Top                           |
| K41.04.018 | 1    | Heat Zone Cover, Bottom                        |
| K41.05.000 | 1    | Cooling Zone Weldment                          |
| K41.06.000 | 1    | Gearmotor 5HP, 8.13:1                          |
| K41.06.004 | 1    | Sprocket, Gearmotor                            |
| K41.06.006 | 1    | Bushing, Taper 1.5"                            |
| K41.06.008 | 7    | Chain, ft                                      |
| K41.07.000 | 1    | Blade Guide Weldment                           |
| K41.07.002 | 1    | Blade  |
| K41.07.006 | 1    | Blade Holder                                   |
| K41.08.001 | 1    | Pneumatic Cylinder, 5"x7", with mounting plate |
| K41.08.004 | 2    | Micro Position Switch                          |
| K41.08.010 | 1    | Solenoid Valve Assembly                        |
| K41.09.002 | 1    | Vacuum Blower                                  |
| K41.10.002 | 1    | Cooling Tray Weldment                          |
| K41.10.022 | 1    | Pneumatic Air Regulator w/ bracket & gauge     |
| K41.10.024 | 2    | Spring-Return Pneumatic Cylinder               |
| K41.10.034 | 1    | Prox Sensor, Length Counter                    |
| K41.10.036 | 1    | Cable, Prox Sensor                             |
| K41.11.000 | 1    | Transformer 230/460 3 KVA 60 Hz 1ph            |
| K41.12.002 | 1    | DC Power Supply, 2.5 amp                       |
| K41.12.006 | 1    | Micrologic 1000 PLC                            |
| K41.12.010 | 1    | Temperature Controller                         |
| K41.12.012 | 1    | Event Input Option Board for T/C               |
| K41.12.014 | 3    | Relay, 10A 24VDC                               |
| K41.12.016 | 3    | Relay mount                                    |
| K41.12.018 | 3    | 24VDC Contactor & 24V DC Coil                  |
| K41.12.020 | 1    | Breaker, Heat Supply                           |



|            |   |                                      |
|------------|---|--------------------------------------|
| K41.12.022 | 1 | Breaker, Power Supply                |
| K41.12.024 | 1 | Overload, Gearmotor, 10 amp          |
| K41.12.026 | 1 | Overload, Blower, 6.3 amp            |
| K41.12.028 | 2 | NO/NC Contact Switch for Overload    |
| K41.12.030 | 1 | Emergency Relay                      |
| K41.12.032 | 1 | Switch, Machine On, Green            |
| K41.12.034 | 1 | Switch, Machine Off, Red             |
| K41.12.036 | 1 | E-Stop                               |
| K41.12.038 | 1 | Contact for Switch (Normally Open)   |
| K41.12.040 | 2 | Contact for Switch (Normally Closed) |
| K41.12.042 | 1 | Indicator Light, Program (Green)     |
| K41.12.044 | 1 | Indicator Light, Heating (Yellow)    |
| K41.12.046 | 1 | Indicator Light, Fault (Red)         |
| K41.12.048 | 3 | Contactor & Bulb for Indicator Light |
| K41.12.050 | 1 | Main Power Disconnect                |
| K41.12.052 | 1 | Length Select Switch                 |
| K41.12.072 | 1 | Horn, Panel front mount              |
| K41.14.000 | 1 | Blower Exhaust Filter Assembly       |
| K41.14.004 | 1 | Filter Bag                           |

## 6.0 Trouble-Shooting Guide

| PROBLEM  | POSSIBLE CAUSE   | SOLUTION  |
|--|--|---|
| Machine does not start or re-start after a standby.                                      | Main Power switch is not on.   | Turn main power switch to “On”.   |
|  | Blower or piston motor is overloaded.  | See causes and solutions for piston and blower problems, below.   |
|  | Unit is not connected to power.  | Ensure that machine is connected to plant power.  |
|  | E-Stop button is engaged.  | Pull E-Stop button out firmly.  |
|  | Machine has timed out past SP3 standby mode and is in <b>SAFETY SHUTDOWN</b> (see paragraph 3.4) | Unit must be re-booted.<br><br><b>Note:</b> Make certain material flow is maintained and machine standbys are shorter than 20 minutes.  |
| Air is blowing out suction inlet.  | Power leads are reversed.  | Stop machine. Unplug power line from power supply and reverse polarity. Change should be made at plug or terminations, not within machine.  |
| Temperature does not reach setpoint.   | RTD temperature sensor is not fastened to heat zone.   | Stop machine. Ensure that RTD sensor is firmly secured into sensor coupling.  |
|  | RTD is damaged or inoperable.  | Stop machine. Replace sensor.<br><br><b>Note:</b> <i>Compactor uses RTD, not thermocouple. If a thermocouple is used to replace RTD, the temperature controller parameters must be changed.</i>   |
|  | Electrical lead between temperature controller and PLC is not connected.                         | Stop machine. Refer to electrical drawings and ensure leads are secure.   |
| Desired setpoint can not be input.   | Temperature controller high-temp parameter is set too low.                                       | Refer to temperature controller manual and follow directions to adjust parameters.<br><br><b>Note:</b> <i>It is important not to set the high parameter too high, permitting setting of operating temperature at a level that can cause a total melt-down of the material within the heat zone, and damaging the machine.</i> |
| Material does not melt sufficiently to create rigid outer shell.<br><br>Log is too soft. | Temperature is not set high enough.  | Incrementally increase temperature setpoint by 10° – 15° F. Allow sufficient time afterward to verify results.  |
|  | Compacting pressure is not high enough.  | Incrementally tighten tray compression plate with (3) compression spring assemblies. Allow sufficient time afterward to verify results.   |
| Melted outer shell is too thick.<br><br>Log is too dense.                                | Temperature is set too high.   | Incrementally decrease temperature setpoint by 10° – 15° F. Allow sufficient time afterward to verify results.  |
|  | Compacting pressure is too high.   | Incrementally loosen tray compression plate with (3) compression spring assemblies. Allow sufficient time afterward to verify results.  |
| Unit does not cut logs to length.  | Length counter prox sensor may be misadjusted.   | Lift length counter sprocket assembly, loosen lock nut and adjust sensor inward. Turn sprocket so that a spoke is in front of sensor. Watch LED: when light turns on, secure  |

| PROBLEM  | POSSIBLE CAUSE   | SOLUTION   |
|--|--|--|
|  |  | sensor in position with lock nut. Be sure that sensor is not in contact with sprocket.   |
|  | Length counter prox sensor may be damaged.   | Replace sensor.  |
|  | Knife piston is not functioning.   | Check function of solenoid.  |
|  |  | Check operability of micro position switches.  |
|  | Pneumatic air may not be sufficient.   | Check air supply. Pressure should be 80 – 120 psi.   |
| Pneumatic air may be disconnected.   | Connect plant pneumatic air to machine.  |  |
| Compacting piston stops.   | Suction inlet photo sensor may be misadjusted.   | Stop machine. Adjust photo sensor with flat screwdriver. Watch LED: when light turns on, adjust backward slightly until it turns off.  |
|  | Suction inlet photo sensor may be damaged.   | Replace sensor.  |
|  | Too much material has been fed into the compacting section.  | Too much material has been fed into the unit at one moment. Stop machine and clear the material out of the vacuum section. Reset breaker in panel and restart machine.<br><br><b>Note:</b> The unit is designed for up to 300 lb/hr. Any instantaneous rate above that can over-feed the compacting section. Please be careful not to over-feed. |
|  | Material has forced its way between the piston and the walls of the vacuum chamber. "Motor Overload" light is lit. | Too much material has been fed into the unit at one moment. Stop machine and clear the material out of the vacuum section. Reset breaker in panel and restart machine.<br><br><b>Note:</b> The unit is designed for up to 300 lb/hr. Any instantaneous rate above that can over-feed the compacting section. Please be careful not to over-feed. |
|  |  | Long term: The piston has worn down. Replace piston.   |
| Compacting piston does not stop 1 minute after material is no longer fed into suction inlet (Standby Mode is not engaged). | Suction inlet photo sensor may be misadjusted.   | Stop machine. Adjust photo sensor with flat screwdriver. Watch LED: when light turns on, adjust backward slightly until it turns off.  |
|  | Material may be hung up within suction inlet, causing photo sensor to register a false reading.                    | Stop machine. Clear out any hung up material within the suction inlet.   |
| Blower is not sucking enough air.  | Filter bag may be full.  | Remove filter bag and empty. Bag may be re-used.   |
|  | Plastic material may be blocking vacuum chamber screen.  | Stop machine. Pull piston back and inspect vacuum chamber by looking down suction inlet. If material is blocking screen but is not melted, it can be removed either by scraping it off or reversing the blower air flow. If material is blocking screen and is melted, the vacuum chamber must be fully disassembled and cleaned.                |
| Blower is not operating.   | See above two causes   | See above two solutions. Reset breaker in  |

| PROBLEM                       | POSSIBLE CAUSE                                       | SOLUTION  |
|-------------------------------|--|---|
| "Motor Overload" lamp is lit. |  | panel and restart machine.  |
| Machine stops operating       | Magnetic sensors on pneumatic cylinder may be loose. | Check sensors. If LED's do not light accordingly, adjust and secure sensors into correct positions. |

P.O. Box 670 Δ Hoschton, Georgia 30548 Δ USA  
Tel: (706) 654-3232 Δ Fax: (706) 654-3888  
E-mail: <mailto:sales@ibis-usa.com> Δ <http://www.ibis-usa.com>