

# **Ultra Clean**

## **Installation and Operation Manual**



### **LAMBTON CONVEYOR LIMITED**

102 Arnold Street  
Wallaceburg, ON N8A 3P4  
Canada

Telephone: (519) 627-8228  
Toll free: (888) 239-9713 (North America)  
Fax: (519) 627-0250  
[www.lambtonconveyor.com](http://www.lambtonconveyor.com)



**ONE SOURCE • ONE SOLUTION**

Revised: 19/02/2013

# Contents

<b>Warranty.....</b>	<b>4</b>
<b>Section 1. Safety.....</b>	<b>5</b>
<b>Section 2. Decals .....</b>	<b>8</b>
<b>Section 3. Product Information.....</b>	<b>9</b>
Ultra Clean System Features.....	8
Ultra Clean System Information .....	8
Ultra Clean System Specifications.....	9
<b>Section 4. System Installation .....</b>	<b>13</b>
<b>Section 5. Scheduled Maintenance .....</b>	<b>16</b>
<b>Section 6. Troubleshooting.....</b>	<b>16</b>
<b>Section 7. Component Dimensions.....</b>	<b>18</b>
<b>Section 8. Spare Parts (Screen Specifications).....</b>	<b>Error!</b>
<b>Bookmark not defined.</b>	
Employer/Employee Training Sign -Off.....	21
Quality Analysis Report .....	22

## Warranty

LAMBTON CONVEYOR LIMITED WARRANTS ALL PRODUCTS MANUFACTURED BY LAMBTON CONVEYOR TO BE FREE OF DEFECTS IN MATERIAL AND WORKMANSHIP UNDER NORMAL USAGE AND CONDITIONS FOR A PERIOD OF 1 YEAR AFTER RETAIL SALE TO THE ORIGINAL END USER OF SUCH PRODUCTS. LAMBTON CONVEYOR'S ONLY OBLIGATION IS, AND PURCHASER'S SOLE REMEDY SHALL BE FOR LAMBTON CONVEYOR, TO REPAIR OR REPLACE, AT LAMBTON CONVEYOR'S OPTION AND EXPENSE, PRODUCTS THAT, IN LAMBTON CONVEYOR'S SOLE JUDGMENT, CONTAIN A MATERIAL DEFECT DUE TO MATERIALS OR WORKMANSHIP. ALL DELIVERY AND SHIPMENT CHARGES TO AND FROM LAMBTON CONVEYOR FACTORY WILL BE PURCHASER'S RESPONSIBILITY. EXPENSES INCURRED BY OR ON BEHALF OF THE PURCHASER WITHOUT PRIOR WRITTEN AUTHORIZATION FROM AN EMPLOYEE OF LAMBTON CONVEYOR LIMITED SHALL BE THE SOLE RESPONSIBILITY OF THE PURCHASER.

EXCEPT FOR THE ABOVE STATED EXPRESS LIMITED WARRANTIES, LAMBTON CONVEYOR LIMITED MAKES NO WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE OR USE IN CONNECTION WITH (i) PRODUCT MANUFACTURED OR SOLD BY LAMBTON CONVEYOR LIMITED OR (ii) ANY ADVICE, INSTRUCTION, RECOMMENDATION OR SUGGESTION PROVIDED BY AN AGENT, REPRESENTATIVE OR EMPLOYEE OF LAMBTON CONVEYOR LIMITED REGARDING OR RELATED TO THE CONFIGURATION, INSTALLATION, LAYOUT, SUITABILITY FOR A PARTICULAR PURPOSE, OR DESIGN OF SUCH PRODUCT OR PRODUCTS.





IN NO EVENT SHALL LAMBTON CONVEYOR LIMITED BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOSS OF ANTICIPATED PROFITS OR BENEFITS. PURCHASER'S SOLE AND EXCLUSIVE REMEDY SHALL BE LIMITED TO THAT STATED ABOVE, WHICH SHALL NOT EXCEED THE AMOUNT PAID FOR THE PRODUCT PURCHASED. THIS WARRANTY IS NOT TRANSFERABLE AND APPLIES ONLY TO THE ORIGINAL PURCHASER. LAMBTON CONVEYOR LIMITED SHALL HAVE NO OBLIGATION OR RESPONSIBILITY FOR ANY REPRESENTATIVE OR WARRANTIES MADE BY OR ON BEHALF OF ANY DEALER, AGENT OR DISTRIBUTION OF LAMBTON CONVEYOR LIMITED.

LAMBTON CONVEYOR ASSUMES NO RESPONSIBILITY FOR FIELD MODIFICATIONS OR ERECTION DEFECTS, WHICH CREATE STRUCTURAL OR STORAGE QUALITY PROBLEMS. MODIFICATIONS TO THE PRODUCT NOT SPECIFICALLY COVERED BY THE CONTENTS OF THIS MANUAL WILL NULLIFY ANY PRODUCT WARRANTY THAT MIGHT HAVE BEEN OTHERWISE AVAILABLE.

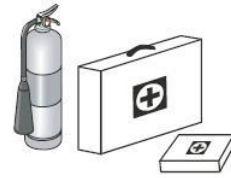
THE FOREGOING WARRANTY SHALL NOT COVER PRODUCTS OR PARTS, WHICH HAVE BEEN DAMAGED BY NEGLIGENT USE, MISUSE, ALTERNATION OR ACCIDENT. THIS WARRANTY COVERS ONLY PRODUCTS MANUFACTURED BY LAMBTON CONVEYOR LIMITED. THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED. LAMBTON CONVEYOR LIMITED RESERVES THE RIGHT TO MAKE DESIGN OR SPECIFICATION CHANGES AT ANY TIME.

PRIOR TO INSTALLATION, PURCHASER HAS THE RESPONSIBILITY TO RESEARCH AND COMPLY WITH ALL FEDERAL, PROVINCIAL/STATE AND LOCAL CODES WHICH MAY APPLY TO THE LOCATION AND INSTALLATION.

## Section I. Safety

<p style="text-align: center;"><b>Follow Safety Instructions</b></p> <p>Carefully read all safety messages in this manual and safety signs on your machine. Keep signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from the manufacturer. Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction. Keep your machinery in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life. If you do not understand any part of this manual or need assistance, contact your dealer.</p>	 <p style="text-align: center;"><b>Read and Understand the Manual</b></p>
<p style="text-align: center;"><b>Operate Motor Properly</b></p> <p>In an emergency, shut down the power source. Turn OFF and lock out all power sources before performing any maintenance. Do not operate electric motor equipped units until motors are properly grounded. Disconnect power on electrical driven units before resetting motor overloads. Do not repetitively stop and start the drive in order to free a plugged condition. Jogging the drive in this manner can damage the equipment and/or drive components.</p>	 <p style="text-align: center;"><b>Electric Shock Hazard</b></p>
<p style="text-align: center;"><b>Stay Clear of Moving Parts</b></p> <p>Entanglement in rotating impeller arms will cause serious injury or death.</p> <p style="text-align: center;">Keep all shields and covers in place at all times.</p> <p>Wear close fitting clothing. Stop and lock out power source before making adjustments, cleaning, or maintaining equipment.</p>	 <p style="text-align: center;"><b>Stay Clear</b></p>
<p style="text-align: center;"><b>Practice Safe Maintenance</b></p> <p>Understand service procedures before doing work. Keep area clean and dry.</p> <p>Never lubricate, service, or adjust machine while it is in operation.</p> <p style="text-align: center;">Keep hands, feet and clothing away from rotating parts.</p> <p style="text-align: center;">Keep all parts in good condition and properly installed. Fix damage immediately.</p> <p style="text-align: center;">Replace worn or broken parts.</p> <p style="text-align: center;">Remove any built up grease oil and debris.</p>	 <p style="text-align: center;"><b>Maintain Equipment and Work Area</b></p>

Prepare for Emergencies  
 Be prepared if fire starts.  
 Keep a first aid kit and fire extinguisher handy.  
 Keep emergency numbers for doctors, ambulance service, hospital  
 and fire department near your telephone.



**Keep Emergency Equipment  
 Quickly Accessible**

- Wear Protective Clothing
- Wear close fitting clothing and safety equipment appropriate to the job.
- Remove all jewelry.
- Long hair should be tied up and back.
- Safety glasses should be worn at all times to protect eyes from debris.
- Wear gloves to protect your hands from sharp edges on plastic or steel parts.
- Wear steel toe boots to help protect your feet from falling debris.
- Tuck in any loose or dangling shoe strings.
- A respirator may be needed to prevent breathing potentially toxic fumes and dust.
- Wear hard hat to help protect your head.
- Wear appropriate fall protection equipment when working at elevations greater than six feet (6').

**Eye Protection**



**Gloves**



**Steel Toe Boots**



**Respirator**



**Hard Hat**





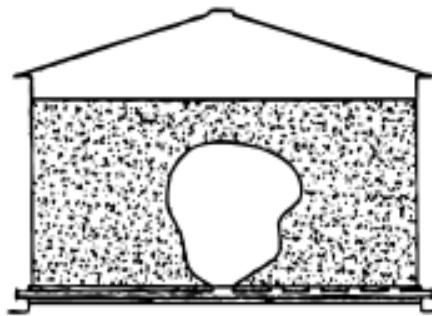
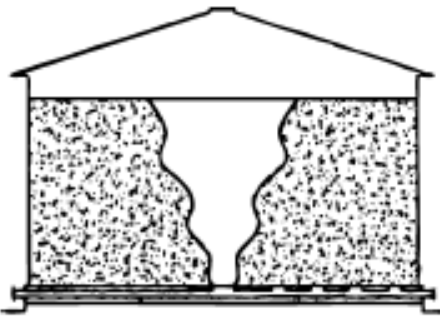
**DO NOT ENTER A GRAIN BIN UNLESS POWER IS LOCKED OUT TO ALL BIN EQUIPMENT.**



**DO NOT ENTER A GRAIN BIN WHILE GRAIN IS BEING REMOVED. FLOWING GRAIN CAN TRAP, BURY AND CAUSE SUFFOCATION.**



**DO NOT ENTER A GRAIN BIN IF THE GRAIN HAS BRIDGED OR STOPPED FLOWING NORMALLY. THE GRAIN CAN COLLAPSE WITHOUT WARNING AND CAN TRAP, BURY AND CAUSE SUFFOCATION.**



## Section 2. Decals



## Section 3. Product information

### Ultra Clean System Features

**The Lambton Ultra Clean** is a gravity screen cleaner that is designed to clean a wide range of materials. By aggressively reversing the direction of the grain as it falls through the cleaner the unwanted materials are sifted out through the screens. The Ultra Clean is a bolted assembly constructed of galvanized steel that ensures a long service life and easy maintenance. The mounting position is very flexible allowing you to mount to the top of a dryer, directly under a bucket elevator or under a dedicated spout on your distributor. The use of the Lambton Ultra Clean System on materials prior to bin storage is beneficial in more than one way: it reduces the risk of hot spots forming in the grain mass, reduces aeration costs, and reduces wasted bin storage capacity occupied by foreign, unwanted material.

### Ultra Clean System Information

- Dual purpose adjustable cushion spreader cushions incoming grain and spreads it evenly across the whole width of the screen for more efficient and controlled cleaning and reduces wear on the unit.
- Full or partial by-pass capability.
- Separate flow path for screenings.
- No power requirements.
- Easy to install and maintain.
- Bolted, Galvanized construction.
- Easy access door for cleaning and screen replacement.
- Reduce costly dockages for foreign material.
- Reduce drying time and increase storage capacity.



## Ultra Clean System Specifications

MODEL TYPE	CAPACITY	PART NO.	DESCRIPTION
A	1,500 BPH 38 MTPH	<b>SCR-1500</b>	<b>1,500 BPH ULTRA CLEAN (5)</b>
		SCR-1500-218	.218 CORN SCREENS
		SCR-1500-156	.156 SOYBEAN SCREENS
		SCR-1500-096	.096 WHEAT SCREENS
	3,500 BPH 89 MTPH	<b>SCR-3500</b>	<b>3,500 BPH ULTRA CLEAN (5)</b>
		SCR-3500-218	.218 CORN SCREENS
		SCR-3500-156	.156 SOYBEAN SCREENS
		SCR-3500-096	.096 WHEAT SCREENS
	5,000 BPH 127 MTPH	<b>SCR-5000</b>	<b>5,000 BPH ULTRA CLEAN (5)</b>
		SCR-5000-218	.218 CORN SCREENS
		SCR-5000-156	.156 SOYBEAN SCREENS
		SCR-5000-096	.096 WHEAT SCREENS
B	6,000 BPH 152 MTPH	<b>SCR-6000</b>	<b>6,000 BPH ULTRA CLEAN (10)</b>
		SCR-6000-218	.218 CORN SCREENS
		SCR-6000-156	.156 SOYBEAN SCREENS
		SCR-6000-096	.096 WHEAT SCREENS
	10,000 BPH 254 MTPH	<b>SCR-10000</b>	<b>10,000 BPH ULTRA CLEAN (10)</b>
		SCR-10000-218	.218 CORN SCREENS
		SCR-10000-156	.156 SOYBEAN SCREENS
		SCR-10000-096	.096 WHEAT SCREENS
C	12,000 BPH 305 MTPH	<b>SCR-12000</b>	<b>12,000 BPH ULTRA CLEAN (20)</b>
		SCR-12000-218	.218 CORN SCREENS
		SCR-12000-156	.156 SOYBEAN SCREENS
		SCR-12000-096	.096 WHEAT SCREENS
	16,000 BPH 407 MTPH	<b>SCR-16000</b>	<b>16,000 BPH ULTRA CLEAN (20)</b>
		SCR-16000-218	.218 CORN SCREENS
		SCR-16000-156	.156 SOYBEAN SCREENS
		SCR-16000-096	.096 WHEAT SCREENS

Note:

- 1) Capacities in MTPH are based on 56 lbs/ bushel of shelled corn at 15.5% moisture.
- 2) Number in ( ) shows the number of screens per unit.

ULTRA-CLEAN SYSTEM PERFORMANCE DATA

The charts below should be used as guide only, grain moisture have a very important effect on the cleaning system performance. Grain with high moisture content does not clean well, does not flow well through the cleaner and will likely plug the screens.

This type of cleaner will remove only the foreign particles with a size under the screen openings.

CHART 1.  
APPROXIMATE PRFORMANCE CHART FOR OPTIMUM, OR 70% OF THE RATED FLOW CAPACITY

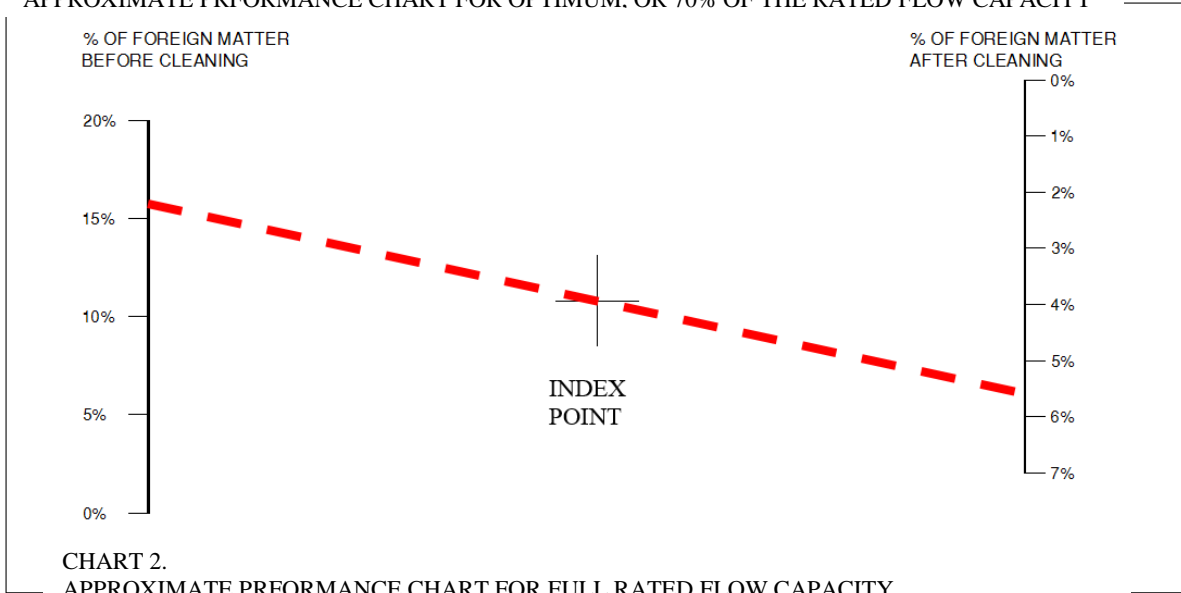
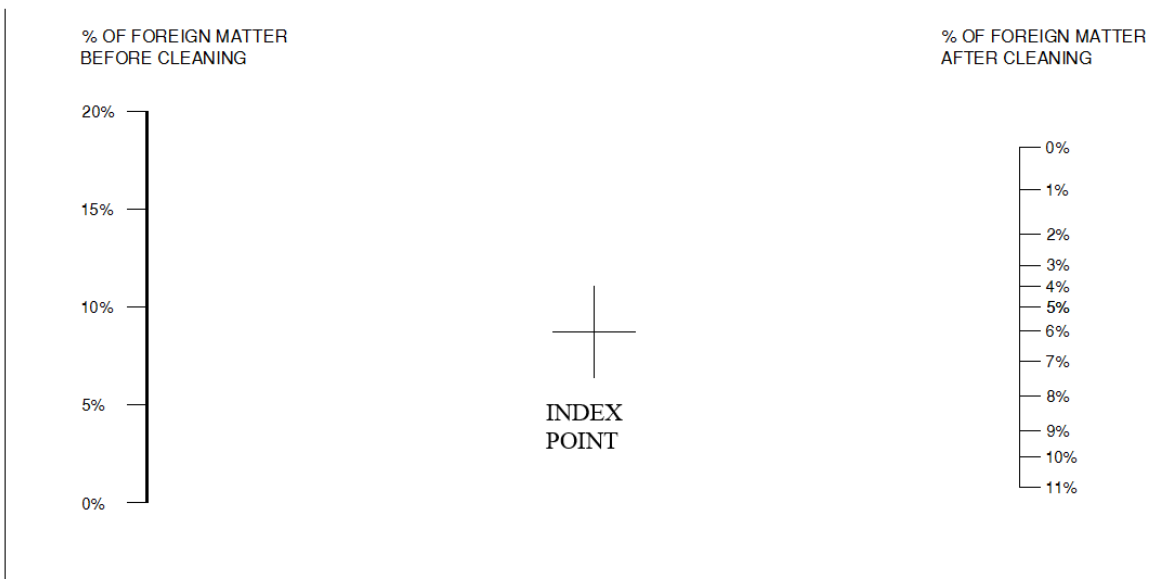


CHART 2.  
APPROXIMATE PRFORMANCE CHART FOR FULL RATED FLOW CAPACITY



The above charts show the approximate performance of the cleaner, when used at the optimum flow of 70% of rated capacity and when used at full rated capacity. With red dotted line is shown how to estimate the percentage of foreign matter after cleaning when its value is known before the cleaning.

Unite with a line the value of the percentage of foreign matter before cleaning with the index point and the value after cleaning is found at the intersection with the scale on the right.

## Section 4. System Installation and setup

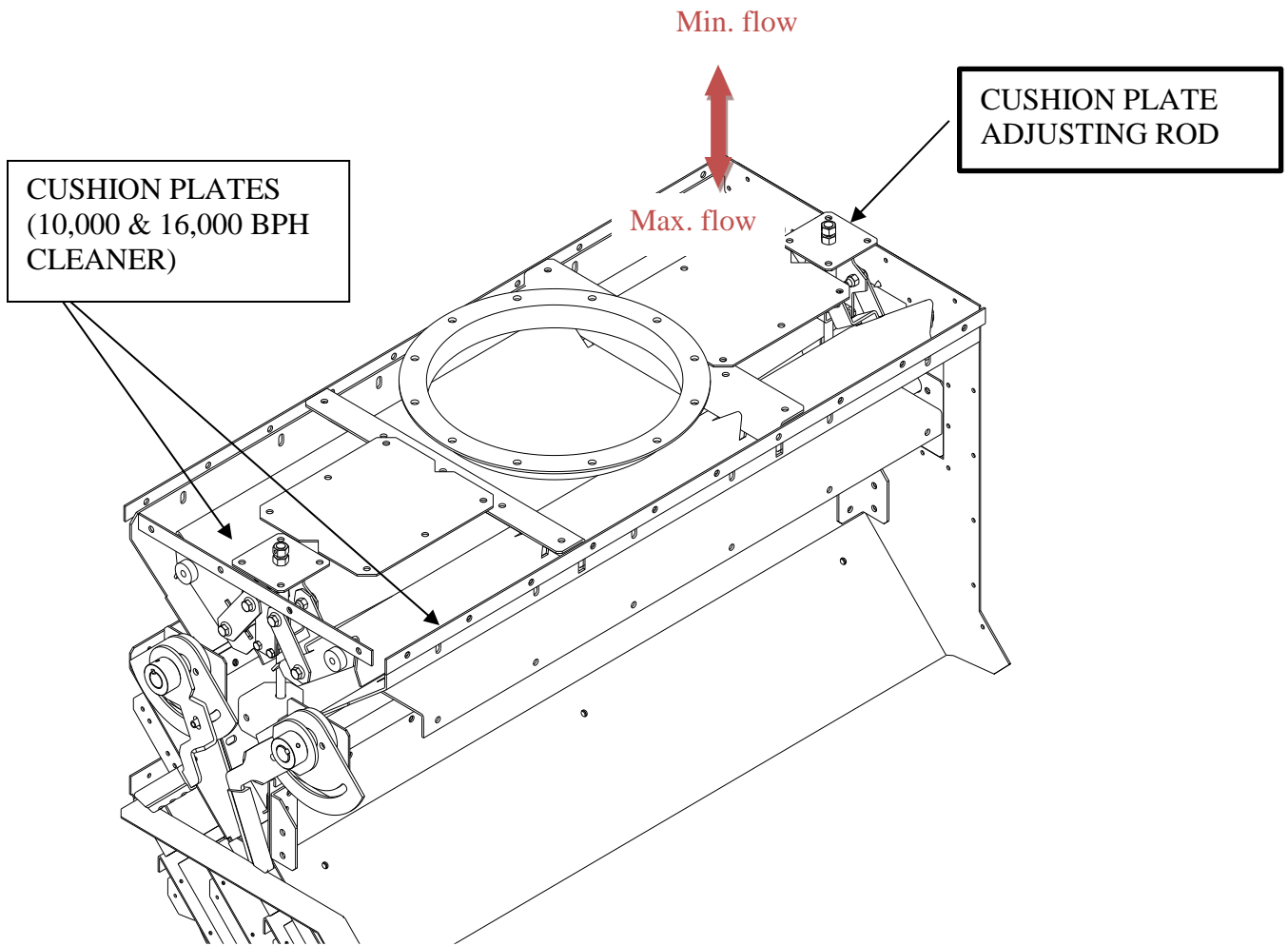
Each Ultra Clean unit is delivered fully assembled. The structures/storage or handling equipment that will support the Ultra Clean unit should be checked for their capability of bearing the weight of the full loaded unit.

To ensure correct flow of material into the Ultra Clean, **a minimum of 24” straight vertical fall** should be provided at inlet during installation.

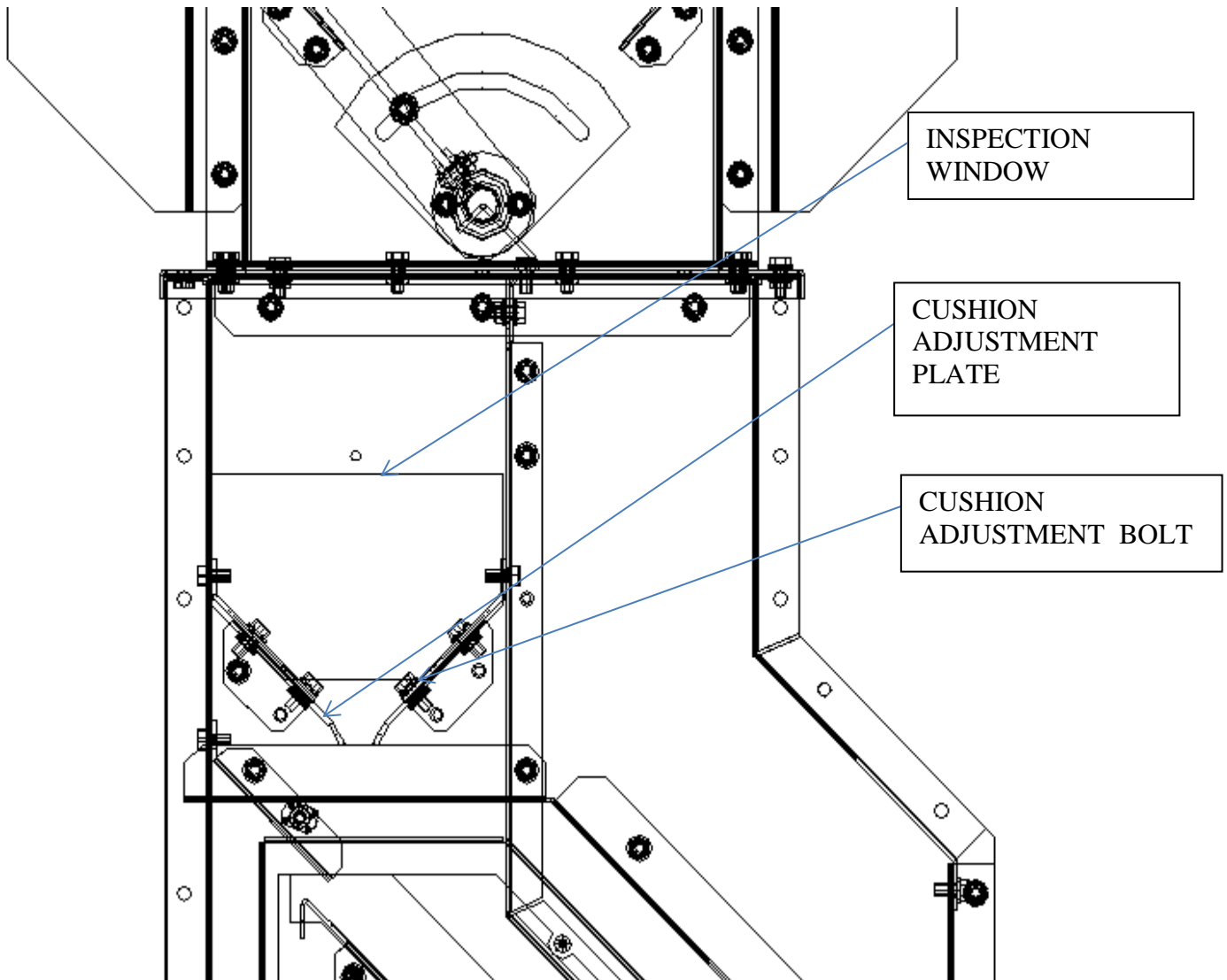
To ensure even distribution of product over the screens and to reduce the wear on the unit by cushioning grain on grain as it enters the unit; the Ultra Clean is built with two spreader cushion plates with adjustable position to regulate product flow. The first step for proper function of the Ultra Clean is to adjust the spreader cushion plates to the optimum position so that: grain should build up slightly on the two plates to cushion the incoming grain on a “pillow” of grain sitting on the plates and there is a continuous flow of grain on the entire screen width otherwise the product would not be cleaned to maximum effect and capability.

The clean product outlet is located on the access door side of the cleaner for cleaner models SCR-1500, SCR-3500, SCR-5000, SCR-10000 and SCR-16000.

The clean product outlet is located opposite the access door side of the cleaner for cleaner models SCR-6000 & SCR-12000.



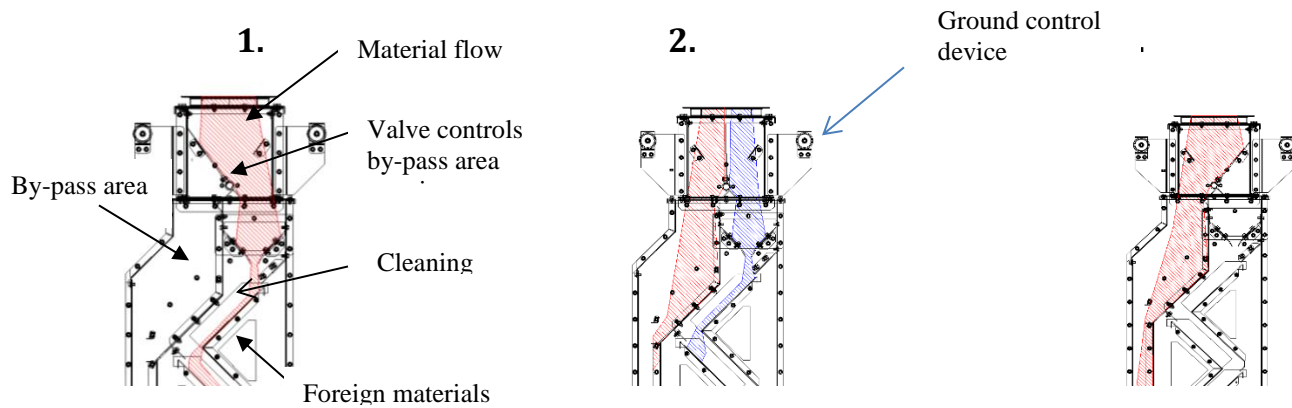
At the highest position, the adjusting rods completely close the cushion plates opening, no flow of product is allowed. At the lowest position, the flow of product would be at maximum value. Adjustment of the cushion plates should be done while monitoring the product flow through the opened inspection panels. After correct setting is achieved, the adjusting rods should be locked in position using the locking nuts provided. Both adjusting rods should be locked at the same level; the height of the rod s above the unit's roof should be measured to be the same on both rods prior to locking. The importance of correct setting the product flow is shown in the charts on page 10 (Chart 1 & 2).



CLEANERS (3,500, 5,000, 6,000 & 12,000 BPH)

In our new cleaner design cushion gap change is done by moving cushions adjustment plates in and out to the desired distance. After opening inspection windows on both sides of the cleaner, cushions can be adjusted by loosening bolts, setting cushion plates in the desired position, making sure that both plates are at the same height and tightening back 4 bolts for each plate. Please note that that in order to achieve full capacity of the cleaner, the cushion adjustment plates should be open to the maximum gap.

The Ultra Clean can be used in three different ways, depending on the necessities:



Option 1.  
Clean 100% of the product circulated.

Option 2.  
Partially cleaning of the product circulated.

Option 3.  
No material circulated is cleaned. (By-pass mode).

Option 1. - Valve diverts material to the cleaning area. All the material flow is channeled over the screens for 100% cleaning.

Option 2. - Part of the material is channeled over the screens, part through by-pass. This option is used when only a certain amount of foreign materials needs to be removed.

Option 3. - Valve diverts material through the by-pass area. This option is used when the product does not require cleaning or it is wet.

The most new Lambton Conveyor Limited cleaners are equipped with ground control devices. This allows an operator to control set up of cleaner from the ground level. With this device all 3 options are now possible to set or change at the ground level with additional linkages.

**IMPORTANT!**

- The screen size has to be selected as required by the product to be cleaned. The wrong openings in the screen may lead to ineffective cleaning or product exiting on the bypass side as foreign material. For more information about screens please see section # 8 of this manual.

## Section 5. Scheduled Maintenance

It is important to clean passages from any deposits of cleaned product and foreign material. Due to difference in temperatures especially between night and day, drops of water might occur inside of the cleaner. Humid air being in contact with cold shell of the cleaner might form drops of water due to the humid air condensation. This would draw any dust particles and even cleaned grain to bond to the steel walls, over time creating unwanted deposit. This deposit could restrict grain flow, cleaner efficiency and even clogging some passages of the cleaner.

Lambton Conveyor is recommending cleaning their cleaners every 40 hours of continuous operation and every time the product has been changed. Cleaning can be done by using compressed blowoff nozzle. Used nozzle should be long enough to reach inside of the cleaner. For the best cleaning results screens should be removed, cleaned and placed back after the described operation is finished.

Anytime an inspection window is opened a new sealant should be reapplied to avoid any rain water leakage.

## Section 6. Troubleshooting

### **1. Low Capacity.**

- a) *Cushion Plates not set to the required gap.*  
Check the distance between cushion plates and increase their gap if needed.
- b) *Clogged product passages.*  
Check for cleanliness and follow process described in the section #5
- c) *Product too wet.*  
Make sure that grain is not wet, so as to restrict or slow flow of the grain..

### **2. Excessive grain in the foreign material,**

- a) *Use of the wrong screens for the product.*  
Check the opening size of the screens and make sure it is appropriate for the cleaned product.
- b) *Screens were misplaced or fall of the supporting panel.*  
Make sure screens are placed in the proper position and are tight against supporting panels.
- c) *Screens are worn out or with the holes.*  
Replace the faulty screens.

### **3. Product is not cleaned.**

- a) *Use of the wrong screen for the product.*  
Check the opening size of the screens and make sure it is appropriate for the cleaned product.
- b) *Grain is too moist.*  
Make sure that moisture in the grain is not restricting and slowing flow through the cleaner.

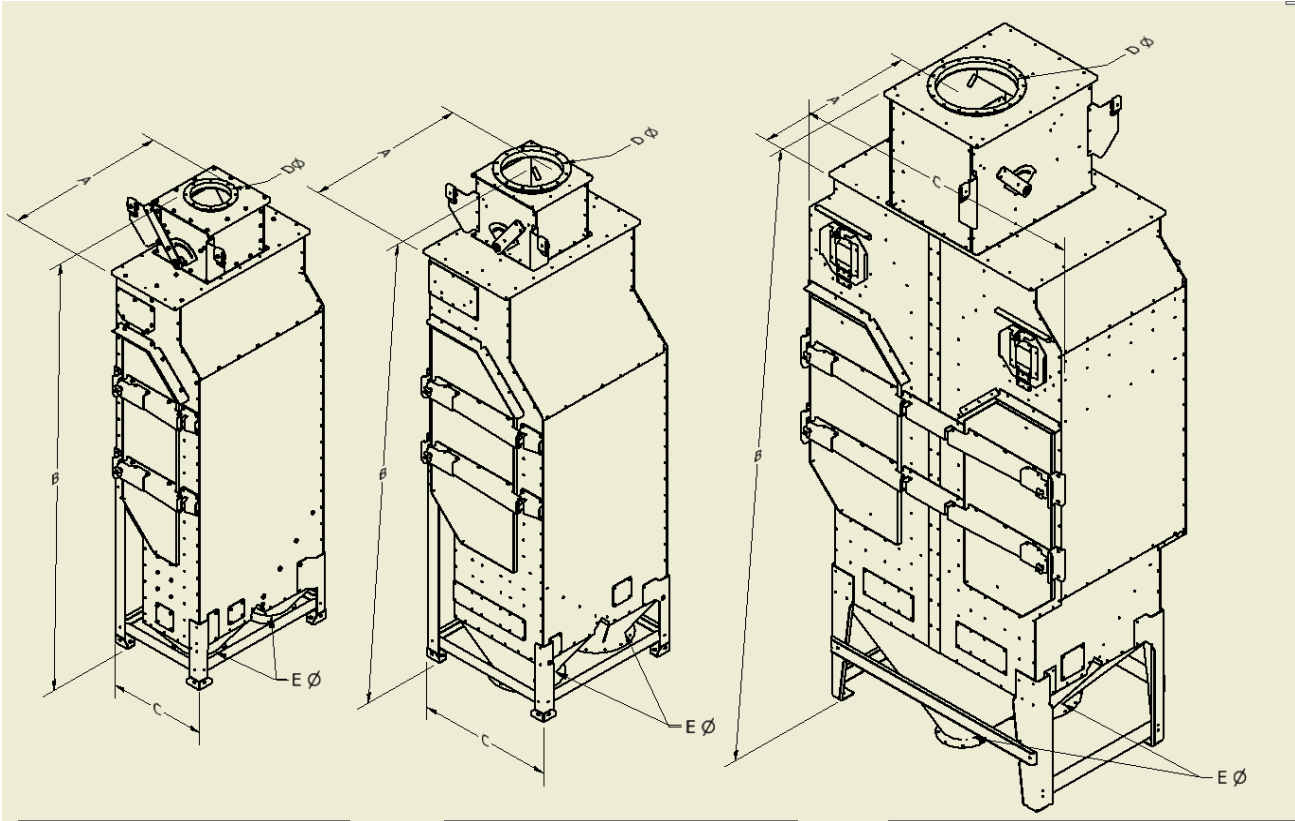
### **4. Water leakage.**

- a) *Rain water is leaking to the product or foreign material through doors or inspection windows.*  
Make sure that weather seals on the doors and on the inspection windows are still attached and in good condition. Glue separated seals and replace damaged with a new one.
- b) *Rain water is leaking to the product or foreign material.*  
Make sure that all screws are tight and all the external panels exposed to the rain are silicone sealed.

If you experience a problem that is difficult to solve, even after reading this manual and troubleshooting chapter, please call your local dealer or directly Lambton Conveyor at 1-888-239-9713 for more help.



## Section 7. Component dimensions



**MODEL A**  
Single set  
of screens (5 screens).

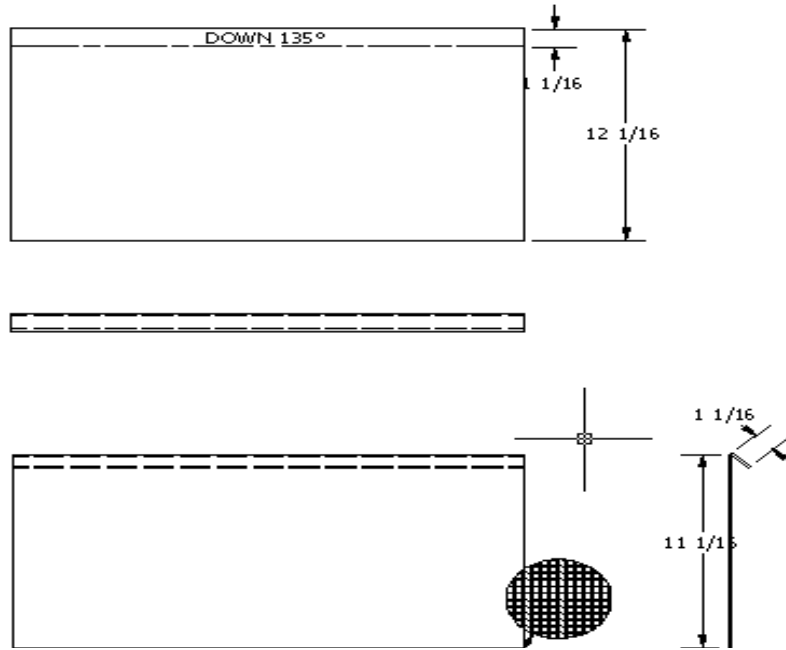
**MODEL B**  
Double sets  
of screens (10 screens)

**MODEL C**  
Double sets of screens and  
units (model B) are back-to-  
back (20 screens)

MODEL TYPE	PART NO.	A	B	C	D (INLET FLANGE )	E (OUTLET FLANGES)	WEIGHT (LBS)
A	SCR-1500	26-5/8	85	20-7/8	8	6	550
	SCR-3500V1	38-5/8	90-3/4	20-7/8	10	8	880
	SCR-5000V1	50-3/8	98-1/2	20-7/8	12	10	1120
B	SCR-6000V1	34-5/8	101-3/4	30	12	12	1290
	SCR-10000	48	107-7/8	29-3/4	14	14	1800
C	SCR-12000V1	37	154	70	16	16- product/ 8- foreign material	3010
	SCR-16000	46-1/2	125	58	18	18- product/ 10- foreign material	3280

## Section 8. Spare parts

The screens are the parts that are exposed to most wear during function. They will need to be replaced periodically. Drawings of the screen and screen selection information are shown below.



SEE TABLE BELOW FOR SCREEN SPECIFICATIONS

PART NUMBER	DESCRIPTION	LENGTH	SCREEN SIZE	Material
SCR-096-22	22" X .096" WHEAT SCREEN	22 in	0.096 in	SCR-R-3, 3/32" OPG X 0.047 WDIA.HC INTCR
SCR-096-34	34" X .096" WHEAT SCREEN	34 in	0.096 in	SCR-R-3, 3/32" OPG X 0.047 WDIA.HC INTCR
SCR-096-46	46" X .096" WHEAT SCREEN	46 in	0.096 in	SCR-R-3, 3/32" OPG X 0.047 WDIA.HC INTCR
SCR-156-22	22" X .156" SOYBEAN SCREEN	22 in	0.156 in	SCR-R-5, 5/32" OPG X 0.063 WDIA.HC INTCR
SCR-156-34	34" X .156" SOYBEAN SCREEN	34 in	0.156 in	SCR-R-5, 5/32" OPG X 0.063 WDIA.HC INTCR
SCR-156-46	46" X .156" SOYBEAN SCREEN	46 in	0.156 in	SCR-R-5, 5/32" OPG X 0.063 WDIA.HC INTCR
SCR-218-22	22" X .218" CORN SCREEN	22 in	0.218 in	SCR-R-7, 7/32" OPG X 0.080 WDIA.HC INTCR
SCR-218-34	34" X .218" CORN SCREEN	34 in	0.218 in	SCR-R-7, 7/32" OPG X 0.080 WDIA.HC INTCR
SCR-218-46	46" X .218" CORN SCREEN	46 in	0.218 in	SCR-R-7, 7/32" OPG X 0.080 WDIA.HC INTCR

## Employer/Employee Training Sign-Off

Lambton Conveyor has included this training sign-off sheet for the owner/operator to make use of in the training, installation, and operation processes of the equipment described in this manual. Read the entire manual, sign-off and date the chart below.

Date	Employee Signature	Employee Name Printed

## Quality Analysis Report

RA#: \_\_\_\_\_ Date: \_\_\_\_\_ Originator: \_\_\_\_\_

Distributor: Lambton Conveyor Phone #: 519-627-8228 Fax #: 519-627-0250

Account #: \_\_\_\_\_ Contact: \_\_\_\_\_ Salesman: \_\_\_\_\_

Sales Order #: \_\_\_\_\_ Invoice #: \_\_\_\_\_ Purchase Order #: \_\_\_\_\_

Qty.	Part #	Reason for Return

FOR WARRANTY EVALUATION, THE FOLLOWING APPLICATION INFORMATION MUST BE COMPLETED

**Application Information:**

Type of Application: \_\_\_\_\_

Environment (wet, dusty, etc.): \_\_\_\_\_

Operating Temperature: \_\_ Length of Service: \_\_\_\_\_

Probable Cause or Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_