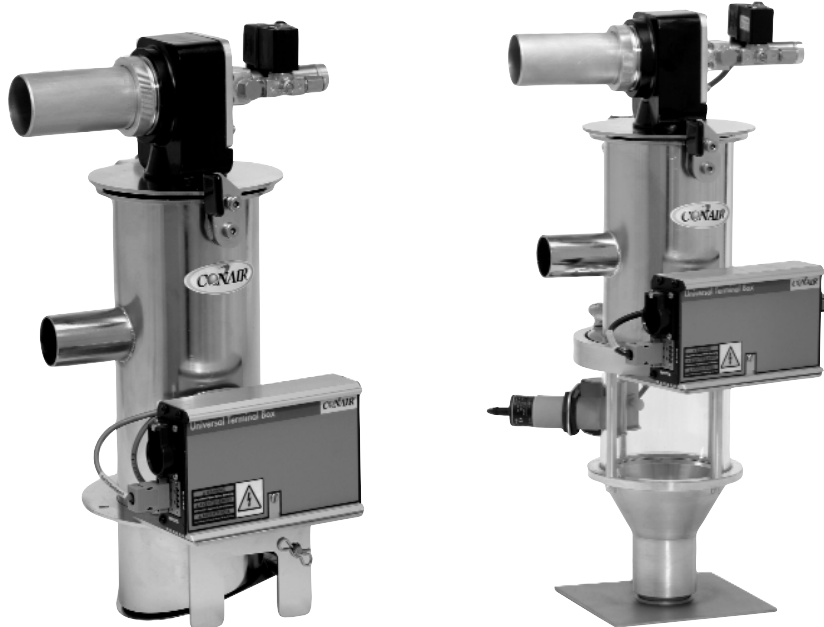


USER GUIDE

UGC014/0903

# TLR Model Tube Loaders

Hopper Loading and Direct Feed Configurations



**DESCRIPTION** • Typical applications • Features and options • **INSTALLATION** • Unpacking the boxes  
Installing the direct feed configuration • Installing the hopper loading configuration • Connecting  
the control • Connecting a compressed air supply • Connecting material lines • Loader operation  
• **OPERATION** • How it works • Types of feed tubes • Vertical feed tubes Horizontal feed tubes  
• **MAINTENANCE** • Preventative maintenance schedule • Removing the filter for cleaning • Inspecting  
the filter • Cleaning the compressed air filter bowl (optional) • **TROUBLESHOOTING**

Please record your equipment's model and serial number(s) and the date you received it in the spaces provided.

It's a good idea to record the model and serial number(s) of your equipment and the date you received it in the User Guide. Our service department uses this information, along with the manual number, to provide help for the specific equipment you installed.

Please keep this User Guide and all manuals, engineering prints and parts lists together for documentation of your equipment.

Date:

Manual Number: UGC014/0903

Serial Number(s):

Model Number(s):

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# Introduction

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# Purpose of the User Guide

This User Guide describes the Conair TLR Loaders with hopper or direct feed configurations. It explains step-by-step how to install, operate, maintain and repair this equipment.

Before installing this product, please take a few moments to read the User Guide and review the diagrams and safety information in the instruction packet. You also should review manuals covering associated equipment in your system. This review won't take long, and it could save you valuable installation and operating time later.

# How the Guide is Organized

Symbols have been used to help organize the User Guide and call your attention to important information regarding safe installation and operation.



Symbols within triangles warn of conditions that could be hazardous to users or could damage equipment. Read and take precautions before proceeding.



Numbers indicate tasks or steps to be performed by the user.



A diamond indicates the equipment's response to an action performed by the user.



An open box marks items in a checklist.



A circle marks items in a list.



Indicates a tip. A tip is used to provide you with a suggestion that will help you with the maintenance and the operation of this equipment.



Indicates a note. A note is used to provide additional information about the steps you are following throughout the manual.

# Your Responsibility as a User

You must be familiar with all safety procedures concerning installation, operation and maintenance of this equipment. Responsible safety procedures include:

- Thorough review of this User Guide, paying particular attention to hazard warnings, appendices and related diagrams.
- Thorough review of the equipment itself, with careful attention to voltage sources, intended use and warning labels.
- Thorough review of instruction manuals for associated equipment.
- Step-by-step adherence to instructions outlined in this User Guide.

## ATTENTION:

### Read this so no one gets hurt

We design equipment with the user's safety in mind. You can avoid the potential hazards identified on this machine by following the procedures outlined below and elsewhere in the User Guide.

 **WARNING: Improper installation, operation or servicing may result in equipment damage or personal injury.**

This equipment should be installed, adjusted, and serviced by qualified technical personnel who are familiar with the construction, operation and potential hazards of this type of machine.

All wiring, disconnects and fuses should be installed by qualified electrical technicians in accordance with electrical codes in your region. Always maintain a safe ground. Do not operate the equipment at power levels other than what is specified on the machine serial tag and data plate.

 **WARNING: Voltage hazard**

This equipment is powered by single-phase alternating or direct current, as specified on the machine serial tag and data plate.

Use with a Conair connecting cable that includes a properly sized conductive ground wire from the control power supply is required. Improper grounding can result in severe personal injury and erratic machine operation.

Always disconnect and lock out the incoming connecting cable before opening the electrical enclosure or performing non-standard operating procedures, such as routine maintenance. Only qualified personnel should perform troubleshooting procedures that require access to the electrical enclosure while power is on.





# Description

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# What is the TLR Loader?

The Conair model TLR Tube Loader is a compact, central vacuum receiver designed to transfer typical plastic pellets and regrind, by vacuum, from boxes, bins or hoppers to end-use destinations like molding machines, extruders or other hoppers or bins. The tube body shape of the Tube Loader family eliminates material bridging, common to loaders with conical shapes.

## Typical Applications

The tube loader is available in two configurations:



**Direct Feed**



**Hopper Loading**

The operation of both loaders is very similar.

Here's the difference :

The **Direct Feed Model** is equipped with a cylindrical sight glass on the bottom to allow mounting directly to a machine throat (if the machine throat is not vacuum tight, an isolator valve is included below the base of the receiver section). The sight glass chamber includes a small funnel at the bottom to direct the flow of material from the sight glass to the machine throat.

The **Hopper Loading Model** is intended to be mounted through a hole in flat-top of a bin or hopper and material will be discharged into them.

# Overview of Features and Options

## Features


The standard TLR is provided in either 120 or 24 Volts AC or 24 Volts DC and is equipped with a "Universal Terminal Box" to allow all electrical input and output connections to be made with convenient mini-plugs. In addition, the "UTB" also provides a singular plug-in connection to the control system that operates the TLR.

Compressed air must be provided if the TLR is equipped with a vacuum sequencing valve on its hinged lid, or incorporates a ratio valve. The sequencing valve does double duty by not only providing the TLR with the ability to operate within a central vacuum system with other receivers, but also aids in the cleaning of the TLR's internal filter screen. The motion of the valve closing off vacuum air at the end of a loading cycle creates a "popping" action as the receiver switches from vacuum to ambient air, cleaning off the filter screen.

## Options

The **ratio valve** option allows the loading of regrind and virgin material.

Options available on the UTB include: **indicating lights for "power" and "load" conditions and a remote on/off switch.**

 **NOTE:** The TLR may also be provided without the UTB and without a vacuum sequencing valve for use in "non-central" conveying systems.



# Installation

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# Unpacking the Boxes

The TLR Loader comes fully assembled in a single container.

- 1 Carefully uncrate the TLR Loader** and its components.
- 2 Remove all packing material**, protective paper, tape and plastic. Compare contents to the shipping papers to ensure that you have all the parts.
- 3 Carefully inspect all components** to make sure no damage occurred during shipping. Check all wire terminal connections, bolts, and any other electrical connections, which may have come loose during shipping.
- 4 Take a moment to record serial numbers** and specifications in the blanks provided on the back of the User Guide's title page. The information will be helpful if you ever need service or parts.
- 5 You are now ready to begin installation.**

# Installing the Direct Feed Configuration

TLR direct feed models may be supplied in three ways: **1.** Clamped directly to a small glass chamber and utilizing no discharge valve. **2.** The TLR may be equipped with a small funnel and an 'isolator valve' above the sight glass to provide a vacuum seal for non-vacuum tight machine throats. **3.** A full-size TLR discharge valve may be provided that is located down inside of a large sight glass. These different variations provide the user with the proper material inventory and a selection of ways of providing vacuum isolation for loading.

**TIP:** The loader should be placed with the inlet tube oriented towards the material source, so that the conveying hose follows the shortest, straightest route possible. Orient the UTB so that it is both visible and easy to access.

**1 Drill the direct feed mounting base and gasket provided as needed to match the molding machine throat or extruder's bolt pattern.**

**NOTE:** To make installation easier, the tube loader separates from the glass chamber with three perimeter clamps located just above the glass section.

**2 Bolt the base plate directly to the processing machine throat.**

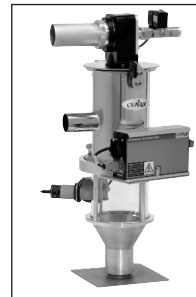
**3 Install the gasket you drilled earlier between the TLR's base plate and the machine throat.**

**4 Bolt the glass direct feed chamber onto the mounting base.**

**5 Secure the loader onto the glass chamber.** The loader may be oriented as needed. Secure the three perimeter clamps to hold the loader securely.

**NOTE:** An additional adapter may be required to funnel the outlet of the sight glass down to the size of the processing machine throat.

**CAUTION:** To avoid personal injury or damage to the loader, the loader must be mounted firmly to the machine it is filling. If the unit is not mounted firmly the loader could be accidentally moved out of position or come loose when the loader lid is tilted back for typical filter maintenance or cleaning.



For direct feed TLR's mounted on machine throats that are not vacuum tight, the isolator valve option assures a good vacuum seal.

# Installing the Hopper Loading Configuration

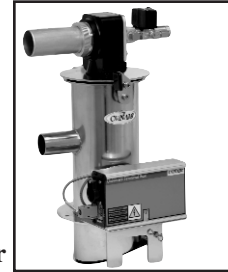


**CAUTION:** To avoid personal injury or damage to the loader the loader must be mounted firmly to the hopper or bin it is filling. If the unit is not mounted firmly the loader could be accidentally moved out of position or come loose when the loader lid is tilted back for typical filter maintenance or cleaning.

• **TIP:** We recommend the loader be placed with the inlet tube oriented towards the material source, so that the conveying hose follows the shortest, straightest route possible. Orient the UTB so that it is both visible and easy to access.

• **TIP:** Gasket material (not supplied) may be installed between the mounting flange of the loader and the receiving hopper to assure a dust-free seal, but it is not required for normal loader operation.

The **Hopper Loading Model** is equipped with a discharge valve on the bottom that allows the loader to be vacuum sealed while it is loading. This model is intended to be mounted through a hole in the flat top of a bin or hopper.



**1 Place the discharge valve down into the top of the hopper to be filled.** Use the loader's mounting flange, as the interfacing surface with the hopper the loader will fill. A 6-5/8 inch diameter clearance hole in the destination hopper is required for mounting. Make sure the loader's discharge valve can move freely once it is in its mounted position.



**NOTE:** If the discharge valve does not move freely because of the close clearances with the hopper, a riser (available from Conair) may be used to mount the tube loader above the hopper lid.

**2 Secure the loader into its mounting hole.** The loader can be secured with bolts (holes are provided in the mounting flange) or hold-down clips. Use the pre-drilled holes in the mounting flange to bolt the loader into position OR use the hold-down clips (supplied with most Conair hoppers), tightened against the outer edge of the mounting flange.



**NOTE:** Most Conair hoppers are supplied with hold down clips (and an appropriately sized hole) for easy mounting. If the loader is to be used in a hole that is too large an adaptor plate must be used for secure mounting.



# Connecting the Control

The TLR is designed to operate with a wide variety of Conair or other central loading controls. The instructions for the loading control package being used should be referred to for all loader settings.



**WARNING:** Improper installation could result in equipment damage and severe personal injury from electrical shock.

Electrical connections should be made only by qualified personnel.

In most cases, control signals will be connected to the TLR via a Conair connection cable that plugs into the UTB (Universal Terminal Box). This cable is keyed for the specific voltage of the TLR. Alternative voltage cables will not match the connector on the UTB to prevent improper connections. Never attempt to modify a non-fitting cable or electrical damage could result.



Universal Terminal Box (UTB)

**IMPORTANT:** Have a qualified electrician check the loader's data plate that gives voltage and amperage and make sure it matches your control system.

**1 Wire the control being used to the connecting cable either directly or via a terminal box.** Refer to accompanying wiring diagrams for connection details.



**NOTE:** If your TLR is equipped with a ratio valve, control for that valve is likely to be provided from the control system being used. In some cases, however, a "Remote Ratio Control" may be used. The remote ratio control operation is covered in a separate manual.

# Connecting a Compressed Air Supply

Compressed air is required if the TLR is equipped with a vacuum sequencing valve on its hinged lid, or includes a ratio valve.

If the TLR is equipped with only the vacuum sequencing valve on the lid of the receiver, then the valve is equipped with a 5 foot long, 1/8 inch diameter clear hose that may be easily plumbed to a nearby supply of compressed air.

**1 Connect the compressed air to the 1/8 inch NPT female inlet (quick disconnect fitting).** The compressed air source must deliver a maximum of 125 psi of clean, dry (non-lubricated), air pressure. The fitting may be removed from the hose and once installed into your air supply line, the air hose may be simply inserted into the fitting to complete the installation. The hose should be cut to length and routed in such a way that does not restrict the hinged motion of the TLR lid, nor come in contact with hot or moving parts that may harm the tubing.

- ◆ **TIP:** If you would like to use this quick disconnect feature after the loader is in use, then an air-line shut-off valve should be provided on the compressed air supply line.
- ◆ **TIP:** If more than just the vacuum sequencing valve operates with compressed air we recommend installing a compressed air filter (available from Conair, 800-458-1960) in the compressed air line to remove moisture and minor contaminants from the line. It should be installed in the compressed air line leading to the loader and in a location that accommodates frequent servicing. **NOTE:** If a vacuum sequencing valve was chosen as an option when you purchased your TLR along with other optional compressed air powered devices, such as a ratio or material shut-off, the vacuum sequencing valve will be pre-plumbed to a compressed air filter that was included with your purchase.

# Installing Vacuum Tubing


The TLR is connected to a remote vacuum source via vacuum hose, connected to the TLR lid.

**If the lid is equipped with a vacuum sequencing valve:**

- 1 Clamp the flex hose around the exposed tubing stub of the valve assembly with a hose clamp.** To route the tubing efficiently, the valve can be re-oriented to any direction by loosening the large nut below the lid that holds the cast valve housing to the lid. Once re-oriented, be sure to tighten the nut securely to prevent vacuum leaks or loosening of the valve by the tension of the hose or lid opening. Double check to make sure that the hinged action of the lid is not limited by the flex hose.

**If the TLR is not supplied with a vacuum sequencing valve on the lid:**

- 1 Use flex hose to connect the tube stub on the loader lid to a vacuum sequencing valve located elsewhere, or directly to the vacuum source.** Curved vacuum outlet stubs can be re-oriented as described above for efficient hose routing.

 **NOTE:** Be sure to clamp all hoses securely and assure that hoses are installed amply onto tubing stubs. As the vacuum system operates, hoses will flex, which can lead to loosening of their connections.

# Connecting Material Lines

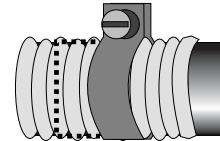
Typical TLR Tube Loader installations use flex hose to connect the material inlet stub of the loader to the material source.



**IMPORTANT:** The material line should be as straight as possible. Avoid loops and S-curves in flexible hose. This can hurt conveying performance.

• **TIP:** Rigid tubing like aluminum and stainless steel will last much longer and provide a straighter path for material flow, usually increasing the loader's ability to convey material. When used, rigid tubing should be coupled tightly to prevent air leaks, should be routed to minimize bends, and should be connected to the loader with flex hose to allow quick disconnection of the loader, if needed.

**1 Connect the material inlet of the loader to the material source.** Attach flex hose over the inlet stub of the loader and secure the hose with a hose clamp. The hose should be fitted over the inlet stub at least 1-1/2 inches. Position the hose clamp at least 1/4 inch from the end of the inlet.



• **NOTE:** Flex hose is typically considered a wear item, so it should be routed or secured in such a way as to make replacement easy. Flex hose should not be routed close to hot surfaces . . . electrical wires, especially control signal wires since static electricity, commonly generated by conveyed material can be discharged to the wires, fouling electrical operation.

**2 Connect to the material source's vertical feed tube or distribution box.** Attach the flex hose in the same manner as described above.

## When connecting to vertical feed tubes or wands:

(used for conveying out of open-top boxes) sufficient slack should be left to allow movement of the feed tube when the material supply gets low, but "valleys" or droops in the hose should be avoided.

## When connecting to horizontal feed tubes:


(use for conveying from surge bins, silos or granulators) less slack will be needed, but flex hose is still suggested to allow easy disconnection in the event of trouble. A hose clamp should be installed to prevent disconnection of the hose from the feed tube.


# Installing Ratio Lines

Ratio valves are provided with similar inlet stubs as the TLR loader itself and may be connected via flex hose, in a similar manner as described in *Section 3, Connecting the Material Lines*.

**1 Install the ratio valve directly to the inlet on the Tube Loader.** Secure the ratio valve with a tightening screw located between the twin cylinders on top of the valve's material outlet. The valve may also be mounted elsewhere, if desired, by installing a short stub of tubing into the valve outlet and installing hose/pipe from that stub to the inlet of the TLR receiver.

**2 Use flex hose to make the final link of the conveying line to the ratio valve, this ensures that the valve may be opened up for service, and the material flow may be observed through the clear flex hose.** Release the dual inlet lid section of the valve with twist clamps, provided on either side of the valve body for cleaning. When released, the lid section with its connected hoses separates from the rest of the valve body. Care should be taken that the attached flex hoses do not create a strain on the valve lid that will make it difficult to replace the lid following cleaning or service. Check this fit as hoses are installed and if necessary, provide more or less hose at greater or lesser angles to prevent unworkable tension of the valve lid.

 **NOTE:** The ratio valve is equipped with a special "lid catch" below the inlet tubes. The lid catch is designed to minimize the possibility of the lid falling due to the weight of flex hoses when the lid is released, if hoses are plumbed from below the loader. This feature is not needed if hoses come from above, since the hoses will adequately keep the lid from falling.

 **NOTE:** If compressed air is already plumbed to the ratio valve, the air must be disconnected to allow the valve lid to be opened and closed. This can be easily done by simply releasing the clear hose from its connector by pushing back the ringed tip of the connector. The supplied connector is the type that will shut off supply air when the hose is removed.



The compact ratio valve mounts directly on the TLR or it can be remote mounted. It opens easily with no tools for complete, easy cleanout.



# Operation

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# How it Works

Once the TLR is turned on at the loading control being used, the need for loading is triggered by a demand signal, created by a reed switch, integrated into the gravity discharge valve on the bottom of the loader, or by a capacitive sensor.

## Hopper loading models:

When the discharge flapper of a hopper loading version of the TLR swings closed by its own counterweight, it is an indication that no material is blocking the path of the flapper and that material is required. The loader then 'calls' for material by creating a demand signal. The demand switch, located on the loader flange, is a "reed" type that magnetically interacts with a small magnet, located on the flapper weldment. As the flapper closes and the magnet gets close to the reed switch, the reeds of the switch close, providing a demand signal to the loader control. From that point, the loader control's timed vacuum function takes over, providing an automated, timed load cycle.

 **NOTE:** In central vacuum systems where multiple loaders are operating on a central vacuum pump, the loader control only allows one loader to operate at a time, so the loading function may have to wait for other loaders in the system before loading can begin.

After discharging material into the receiving hopper below the loader, the cycle may repeat or the discharge flapper may be held open with the material that was discharged from the loader. If the flapper is held open by the material, it is an indication that there is no need for another load cycle and the loader will wait until the material level falls, the flapper closes, the magnet comes close to the reed switch and triggers another load cycle.

The TLR hopper loader may be equipped with a "remote demand sensor" that replaces the material sensing function of the discharge valve and allows the user to place the demand sensor wherever desired (at a lower position on a drying hopper, for instance). With this option, the TLR's reed switch is disconnected from the UTB and the remote demand sensor is plugged in.

## Direct feed models:

Direct feed TLR's work in a similar manner to hopper loading models, but have no discharge flapper and their demand signal is created with a capacitive level sensor located on the side of the sight glass chamber. This sensor is adjusted to 'see' material inside the glass, but to ignore the glass itself. When material is present adjacent to the sensor, no demand is created and the loader is 'satisfied'. As the material level drops and moves away from the sensor, a demand signal is sent to the control, initiating a load cycle. *See Section 4, Sensor Adjustments.*



# Adjusting the Load Time

Load time is adjusted through the control system being utilized, and the instructional materials for that control should be referenced.

**You can use this as a general guideline to determine where to set your load time:**

Load time should be set with enough seconds to “just fill” the vacuum loader. 'Just full' is indicated by the moment when material no longer flows in the material conveying line.

Too much load time will pack material in the loader and conveying line, prematurely blind the filter and possibly cause material shortages by clogging up the system by attempting to fill a loader that is already full.

Too few seconds set on the control may starve your process with numerous on and off cycles that yield too little material transfer.

Load time may be best adjusted by trial and error, to provide sufficient vacuum-on time to “just fill” the loader before the vacuum shuts off.

# Types of Feed Tubes

Feed tubes may be provided in a variety of styles made to match the needs for your production. Whether they are horizontal types like distribution boxes (take off boxes) or horizontal bin tubes, or vertical types like wands that are made to be hand inserted into material bins, they need to be adjusted for their air to material ratio. Conair offers a vertical feed tube that provides a fixed amount of material entry with an adjustment provision for air flow. Horizontal types are also available, that feature fixed air flow and adjustments for regulating material entry.

## Vertical Feed Tube Adjustments

Smooth material flow is controlled by opening or closing the holes at the top of the feed tube

- 1 Insert the feed tube into the material supply and observe its conveying action.**
- 2 If the material surges (“gulps”) as it is conveyed,** clear the line by lifting the feed tube out of the material supply and allow the line to clear.
- 3 Cover holes on the feed tube and retest until the material conveys smoothly.** Use flex hose connected to the feed tube or strong tape (duct tape is commonly used) to cover the holes.
- 4 Test several cycles.** Cover and uncover the feed tube holes to achieve the desired results.
- 5 Once conveying is fine tuned,** the feed tube should be twisted in its conveying hose to place the open feed tube holes up, so that material cannot fall out of the holes when conveying stops.

◆ **TIP:** Covering all holes conveys the maximum amount of material with minimal air, producing the highest volume of material flow but at the slowest possible conveying speed (a low air to material ratio). This can make conveying over longer distances or through bends more difficult. With holes uncovered, a ‘thinner’ flow of material is achieved and the greatest conveying speeds are realized. This is a high air to material ratio and can create undesirable material fracturing in the loader, “angle hair” in the conveying lines and material dust.

# Horizontal Feed Tube Adjustments

- 1 Close off material flow to the loader.** Loosen the thumb screw next to the adjustable air inlet tube and push it all the way in to close off material flow and allow 100% air to flow through to the loader.
- 2 Adjust the air tube to achieve optimum conveying.** Over the course of several cycles, pull the air tube out slowly until optimum conveying is achieved with minimal surging (gulping).
- 3 If surging does occur,** clear the conveying line by pushing the air inlet tube all the way in until the line clears and then trial and error settings may be attempted again.
- 4 Once optimum settings are achieved,** the air inlet position may be locked into position with the thumb screw.



**NOTE:** As described in *Section 4, Types of Feed Tubes*, different types of feed tubes feed material mixed with air in different ways. Conair horizontal feed tubes (distribution boxes, etc.) provide adjustments for material flow with a fixed amount of conveying air for optimum material flow. Competitive units may not work in the same manner.

# Sensor Adjustments

Capacitive level sensors use their own on-board electronics to sense the presence or absence of material located in front of the flat face of their cylindrical bodies and trigger loader control functions as a result.

Typical uses are : 1. “fill sensors,” to indicate a full loader condition and terminate the loading cycle and 2. “demand sensors,” to start loading by indicating the absence of material in a bin or sight glass.

Before use, sensors must be set to detect the material being conveyed and to ignore the sensor’s surroundings (metal, sight glasses, etc). Sensors must also be set to ignore material dust that may collect on the sensor face. In some cases, sensors must be reset for each new material being conveyed.

## General Sensor Adjustments:


Every sensor is equipped with a multi-turn screwdriver adjustment, located within a small hole on the corded end of the sensor body. Most are also equipped with an indicator light to signal response by the sensor.

With the sensor in the correct position for operation (see below) the adjustment screw can be rotated clockwise for more sensitivity and counter-clockwise for less sensitivity.

## Demand Sensors:

Demand sensors are utilized in two different ways: In direct contact with material or through a sight glass.

When coming in direct contact with material, it is recommended that the sensor be initially adjusted for sensitivity and then re-adjusted, once the sensor becomes coated with typical material fines, common to plastics conveying.

 **NOTE:** The small signal light on the sensor illuminates when the sensor does not “see” material. As a guide, the light will go off, when the sensor detects something in front of its face. It should be adjusted to ignore glass and adjacent surfaces and fine-tuned to respond only to the presence of material. This may require several back and forth adjustments to optimize the setting.

◆ **TIP:** Sensors that sense material through glass or plastic windows must be adjusted to “ignore” the window and sense only the material on the other side. These adjustments must be made with the material to be conveyed, so we recommend that they are made during normal operation. At times the sight glasses may become coated with a build-up of plastic dust (from static electricity attraction, etc) and the sensor should be adjusted and/or re-adjusted to ignore this condition.

Sensors that are mounted in movable brackets that allow different levels to be set must maintain the same distance setting from the sight glass to assure consistent operation, or be reset for sensitivity. Optimum distance from the sight glass for a sensor is the thickness of a piece of paper. This setting permits the closest possible contact with the glass or window, yet is back just enough to be isolated from heat variations that could effect sensor operation.

**(continued)**

## Sensor Adjustments (continued)

### Fill Sensors:

Fill sensors are installed right in the loader body and come in direct contact with material, as it is being loaded. If set correctly, the time the material contacts the sensor is brief, since loading is terminated by the sensor and unloading usually occurs immediately afterwards.

If possible and practical, the loader's unload function may be interrupted by holding the discharge valve closed, long enough to set the sensor's sensitivity. If not possible, trial and error settings may be made during repeated loads to set the sensor to terminate the loading cycle.

- **TIP:** As with other sensor adjustments, Conair recommends checking the setting after the loader has operated for a period of time, and re-adjust if need be, to allow the sensor to 'ignore' material dust that may have collected on the sensor face.



# Maintenance

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# Preventative Maintenance Schedule

- **Weekly, or as needed.**

- Clean the filter screen.**

- Check the screen filter for clogging or holes.**

- Clean or replace.

- Drain the compressed air filter trap (if equipped).**

- Depending on your compressed air system, you may see moisture or oil in the compressed air filter trap. Open the petcock on the bottom of the trap to drain.

- **Monthly, or as needed.**

- Check the seals of the vacuum sequencing valve, optional ratio valve and discharge valve pan**


- **Semi-annually, or as needed.**


- Examine the bolts.**

- Examine the bolts or clips holding the loader to the surface. Make sure the bolts or clips are tight.



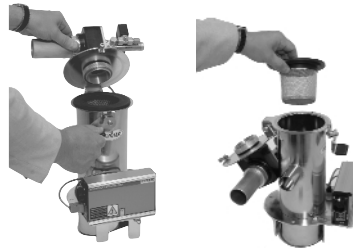
# Screen Filter Cleaning


 **WARNING: Disconnect power and air sources.** Always disconnect the main power source and compressed air source before removing the filter. This prevents the loader from starting during servicing, which could cause injury from flying debris or moving parts.

 **CAUTION: Wear eye protection.** We recommend that you use vacuum air for cleaning filters and other parts of this equipment. If you use compressed air to clean the equipment, you must wear eye protection and observe all OSHA and other safety regulations pertaining to the use of compressed air.

The screen filter of your TLR is typically cleaned when materials are changed and in the event of conveying problems.

- 1 Turn off power.** Turn off TLR loader or disconnect the control connection cable from the UTB.
- 2 Remove the filter.** Open the lid of the TLR by releasing the swing clamp that secures the lid. Once the lid is opened, the screen filter is easily visible, installed in the top of the tube loader body and may be lifted out for inspection or cleaning.
- 3 Inspect the filter carefully.** Check for holes that could allow the passage of pellets or regrind. Replace the filter if it is damaged, excessively worn or too clogged with fines and dust to be cleaned. Be sure to discard and replace any filter that has become hopelessly clogged with material dust. Do not attempt to repair a damaged filter.
- 3 Clean the filter.** A simple wipe down with a clean cloth or vacuuming will typically remove most material dust and fines. Slight tapping of the filter on a hard surface will loosen more embedded fines, but hard banging could distort or ruin the filter media and should be avoided.
- 4 Replace the filter.** Do not attempt to repair a damaged filter. Replace the filter onto the loader. Firmly press down on the filter to make sure there is a good seal around the entire perimeter of the filter module.



 **NOTE:** The filter in your Conair TLR Tube Loader performs double-duty as an effective seal between the hopper body and the lid of the loader, so be sure to examine the integrity of the rubber seal at the top to be sure that the lid will seal effectively when reclamped. Replace the entire filter if the rubber seal is damaged or excessively worn.

## **Cleaning the Compressed Air Filter (Optional)**

You can add a moisture trap to the compressed air supply of your loader. A moisture trap can prevent troublesome moisture, contained in the air, from entering the loader.

The filter bowl of this moisture trap must be emptied regularly to drain the water from the air system. Follow the instructions listed on the filter bowl itself, which usually requires opening a port at the base of the bowl and letting the water in the bowl blow out in a stream of compressed air. Creating a path for this blowout of moisture is usually a good idea, to prevent a stream of moisture-soaked air from contaminating machines or people.

It is also a good idea to inspect the bowl periodically with the compressed air supply turned off, to clean or replace the filter element if need be or to remove contaminant accumulation, if it is present.

# Troubleshooting

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Conveying problems and solutions . . . . . 6-2

# Conveying Problems



**WARNING: Disconnect power and air sources.** Always disconnect the loader from its main power source and compressed air source before servicing. This prevents the loader from starting during servicing, which could cause personal injury.

## Problem

Low or no material flow.

## Possible cause

Does the filter need to be cleaned?

Are there kinks in the flex hose?

Are there holes or cracks in any of the material lines?

Are hose connections too loose?

Are material to air adjustments at the material pickup device correct?

Do you have enough material at the source?

Has material plugged the tubing or flexible hose?

## Solution

Check the filter and clean if it is clogged with dust or fines. Clean the filter. *See Section 5, Cleaning the Filter.*

Check the material flex hose line for loops and “S” curves. Remove any loops and “S” curves in the flex hose. Try to keep the hose as straight as possible.

Check the material line for holes, cracks or other signs of excessive wear. Replace worn flex hose.

Check the material line hose connections for leaks. Hose clamps should be secured near the end of the hose connections.

Check the material to air adjustments at the feed tube or distribution box to make sure they are properly adjusted. *See Section 4, Feed Tube Adjustments.*

Replace/refill the material container or reposition the feed tube.

Remove the conveying line from the material and check for vacuum. If necessary, uncouple the lines, remove blockages and reassemble the lines. Readjust for proper material flow. *See Section 4, Feed Tube Adjustments.*

# Conveying Problems



**WARNING: Disconnect power and air sources.** Always disconnect the loader from its main power source and compressed air source before servicing. This prevents the loader from starting during servicing, which could cause personal injury.

## Problem

Low or no material flow  
(continued).

Loader will not cycle.

## Possible cause

Is there a vacuum air leak?

Are all electrical connections correct?

Is the flapper on the bottom of the loader blocked preventing a demand signal? (hopper loading version)

Is the demand sensor out of adjustment? (direct feed version)

## Solution

Check o-rings and gaskets for damage or leaks.

Check operation of the vacuum sequencing valve.

Check to make sure that the green connectors are secure in the terminal box and that the control system is connected to the loader.

Unblock the flapper and determine the reason for the obstructed flapper motion. A riser may be required for hopper loading installations. *See Section 3, Installing the Hopper Loading Version.*

Check to see if the demand sensor is properly set. *See Section 4, Sensor Adjustments.*



## 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.

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

## 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 control systems 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.

## 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.**