

COMPRESSED AIR LOADER

MODEL: AL-1



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Document: AL-1 IM 7 FEB 2018



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NOTES:

Please record the following information, which is specific to this piece of equipment, in the space provided. Our Parts/Service Department will need these numbers to properly respond to any of your requests.

Instruction Manual: AL-1 IM 7 FEB 2018

Model #: _____

Serial # _____

DISCLAIMER: NOVATEC, Inc. shall not be liable for errors contained in this Instruction Manual nor for misinterpretation of information contained herein. NOVATEC shall not, in any event, be held liable for any special, indirect or consequential damages in connection with performance or use of this information.

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IMPORTANT NOTICE

Read this manual before operating equipment. Do not operate unless this instruction manual is completely understood.

WARNING

Disconnect power and compressed air before servicing equipment. Only qualified technicians should service equipment.

CAUTION

Check all mounts and connections to ensure that equipment is properly secured before operation. Only qualified technicians should install and operate equipment.

1.0 QUICK INSTALLATION

1. Mount the chamber and filter/regulator with gauge assemblies.
2. Connect the material pick-up device.
3. Connect the compressed air.
4. Plug the power cord into a 115-volt outlet.

For full installation details, refer to the *Installation* section beginning on page 7.

2.0 PRODUCT DESCRIPTION

NOVATEC Model AL-1 loaders are automatic compressed air venturi loaders designed to convey virgin pellets and regrind material from storage containers to drying hoppers or directly to process machines, using compressed air.

The AL-1 is shipped complete, ready for quick set-up and use.

NOVATEC compressed air loaders only require a 14.0 SCFM @ 40 PSIG compressed air supply and 115 volt outlet for a typical operation.

The loader cyclone and sight glass are hopper or machine mounted with a single inlet, supplied with a 4" or 6" square blank mounting flange. The flange is normally supplied undrilled to allow the user to drill the appropriate mounting pattern for a particular machine.

The AL-1 loader utilizes a "slip-fit" design for easy assembly. The receiving hopper slips into the sight tube which in turn slides onto the mounting adapter; this process requires no tools and little time for both installation and cleaning.

3.0 PRINCIPLE OF OPERATION

NOVATEC Model AL-1 loaders utilize compressed air in conjunction with an air amplifier to convey material into a chamber. A small flow of compressed air passing through the amplifier creates a large discharge flow by entraining the surrounding air. The machine or hopper mounted cyclone utilizes a clear sight tube directly below it, and a photoelectric sensor consisting of an infrared light source and an infrared sensor. See Figure 1 on next page for photoelectric sensor installation and configuration details. The sensor controls loader on/off operation based upon the level of material within the sight tube. Material is continuously drawn into the chamber as long as the dual photoelectric sensor elements determine there is no material between them. The material level can be adjusted by sliding the photoelectric sensor mount bracket up or down along the sight tube rods. Loading is discontinued any time the material level within the sight tube reaches the sensor, and then is enabled again once the material level drops. This process ensures a steady, consistent level of material.

The loading operation is generated by a solenoid valve, which operates in response to the photoelectric sensor. When material is present in the sight tube, the sensor de-energizes the solenoid valve, which shuts off the compressed air and stops loading. Once the material level has dropped, the sensor energizes the solenoid, allowing the compressed air to flow through the air amplifier.

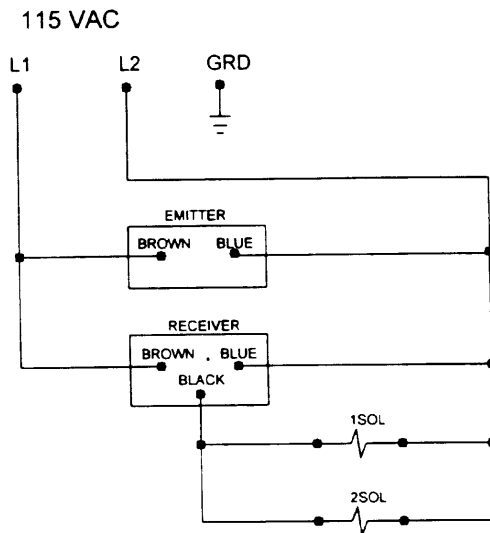
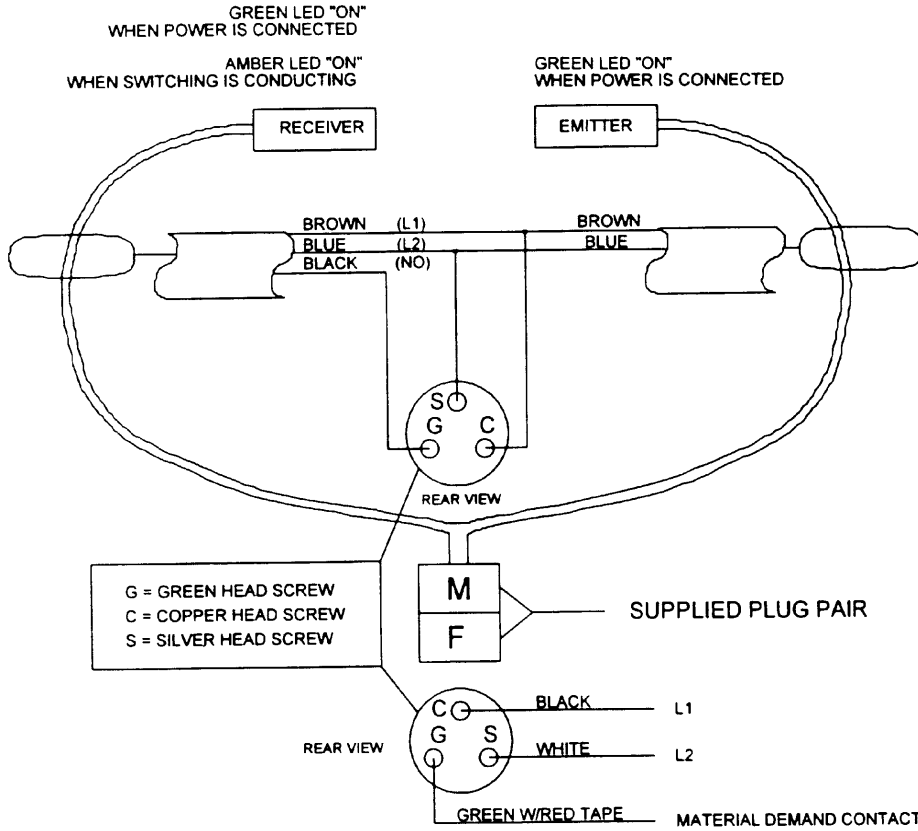
Unlike capacitance types of sensors, dust build-up on the sight tube does not typically effect the operation of the photoelectric sensor. The infrared beam of light will still pass through a layer of dust. There are no sensitivity adjustments to be made to the sensor.

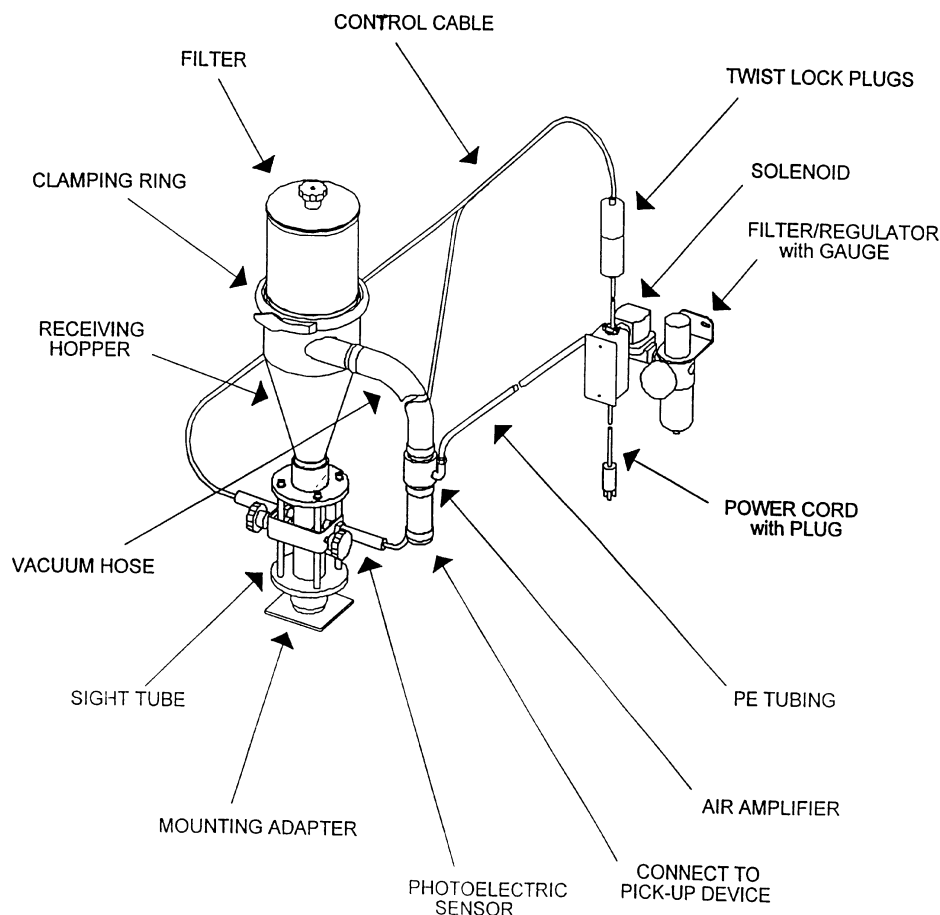
4.0 UNPACKING & INSPECTION

Caution should be exercised to see that the equipment is not handled roughly. The packaging must be removed carefully. The equipment must not be used to pry against when removing the packaging. Equipment is sent as completely assembled as possible so that there is little or no further attention required prior to installation.

Once unpacked, visually inspect units for missing parts or damage received during shipment. All electrical and mechanical connections should be checked for tightness, as vibration during transit may cause them to loosen.

5.0 FIGURE 1 - PHOTOELECTRIC SENSOR DIAGRAM





6.0 INSTALLATION

Mount the loader so that the material inlet is directed towards the material pick-up point. Secure the receiving hopper to ensure a safe installation as required. While mounting the receiving hopper, adjustment of the photoelectric sensor can be done. The face of the sensor should be approximately 1/16" from the sight tube. Additionally, tighten down the filter hold-down knob and make sure the clamping ring holding the filter is secure.

CAUTION: Do not over tighten the filter hold-down knob; excessive torque could damage the filter element.

All connections should be vacuum tight. Use the 15 foot section of 1 1/2" OD vacuum hose to connect the receiving hopper to the air amplifier and the 4 inch section to connect the air amplifier to the material pick-up device; additionally, use the 3/8" OD PE tubing to connect the filter/regulator with gauge assembly to the air amplifier. All lengths should be only as long as needed since excess hose will reduce loader efficiency.

Check the air amplifier (see Figure 2, below) and ensure that the index is set at 6 (factory setting). The index setting is marked with a red dot. The air amplifier setting should never need adjustment under normal conditions.

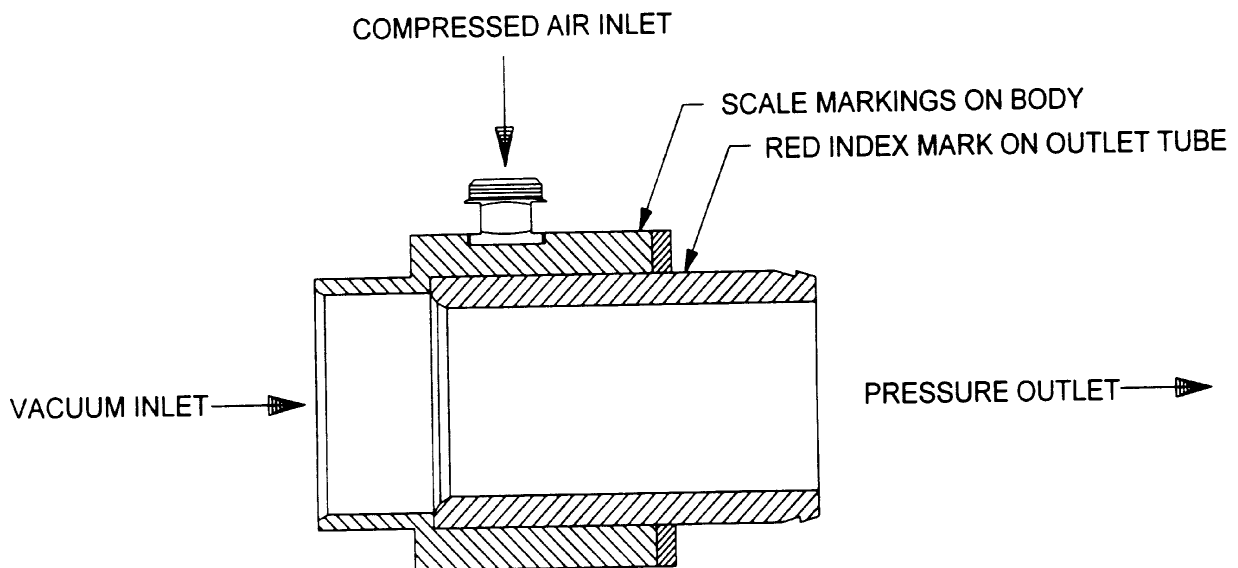
The filter/regulator with gauge and junction box assembly should be mounted in a location that is convenient for the operator, making sure that the position will take into consideration all limitations. The filter/regulator with gauge assembly must interconnect with:

- a 115 volt supply outlet
- the twist lock plug connection for the photoelectric sensor
- the air amplifier for its compressed air connection
- the compressed air supply

Ensure that your compressed air is clean and dry; otherwise it will contaminate the material. If the unit is used on a drying hopper, wet compressed air will cause a high dew point on the dryer. Connect the filter/regulator to your compressed air supply.

NOTE: The compressed air supply must be 3/8" NPT, unrestricted line with a shut off valve. Quick disconnects that restrict the flow of compressed air should not be used for this connection. They are likely to create conveying problems.

6.1 FIGURE 2 - AIR AMPLIFIER



7.0 OPERATION

To begin operation, simply plug the power cord into a 115-volt outlet, turn on the compressed air supply and adjust the regulator gauge to 60 PSI. This setting should provide a relatively good flow for any material. The only adjustment that is needed once the unit is in operation is fine tuning the material flow rate, using the filter/regulator with gauge if necessary. To disable the unit, simply unplug it.

Once in operation, fine-tune the adjustment until a smooth, consistent flow is obtained considering the material characteristics, the distance from your material source and the ability of the system to easily pickup and begin moving the material. If an adjustable pick-up device is being used, make sure the device is set at the position where a smooth flow of material can be obtained.

Pull the knob on the regulator to adjust the compressed air setting. Turn the knob clockwise to increase the pressure and counter-clockwise to decrease the pressure. Once the desired level is obtained, lock the knob back in the place by pushing it down.

Observe the operation to assure it is consistent and responsive and that all components of the installation are tight, dust free and secure.

8.0 MAINTENANCE

The filter element should be cleaned periodically by vacuuming or back flushing it with compressed air.

9.0 TROUBLESHOOTING

If the AL-1 compressed air loader is not functioning correctly, the following items should be checked:

1. Check the filter. If the filter is dirty, it should be cleaned using a vacuum cleaner or compressed air. If the filter is still dirty after cleaning or is damaged, the filter element should be replaced.
2. Ensure that all supply lines are connected. Check the power cord, compressed air supply, and the twist lock plugs for proper operation.
3. Check the solenoid for proper operation.
4. Ensure all adjustable points are set correctly. Check the photoelectric sensor, regulator gauge, and the air amplifier index for correct settings.
5. Check the entire system for leaks. Reconnect any material or compressed air lines, and replace any gasket or sealant as necessary.
6. Check that the air amplifier index mark is set at 6.

10.0 SPARE PARTS LIST

<u>ITEM DESCRIPTION</u>	<u>PART NUMBER</u>
Cable, 18-3 SVO	08233
Cable, power cord w/ plug	08650
Hose Clamp, 1.50" OD	50049
Clamping Ring, 6.88" diameter	08883
Filter/regulator with gauge	08992
Cartridge Filter	07978
Silicone Gasket, 2.05" OD	08891
Vacuum Hose, 1.50" OD	50003
Knob, filter hold-down	08887
Knob, photo eye adjustment	07706
Photo eye Emitter	08343
Photo eye Receiver	08345
Tubing, 3/8" P.E.	08880
Sight Glass Tube, 2" OD	08894
Solenoid Valve, NC	50032
Twist Lock Plug, male	07542
Twist Lock Plug, female	07541

11.0 WARRANTY – Effective 7 FEB 2018

NOVATEC, INC. offers COMPREHENSIVE PRODUCT WARRANTIES on all of our plastics auxiliary equipment. We warrant each NOVATEC manufactured product to be free from defects in materials and workmanship, under normal use and service for the periods listed under **“Warranty Periods”**. The obligation of Novatec, under this warranty, is limited to repairing or furnishing, without charge, a similar part to replace any part which fails under normal use due to a material or workmanship defect, within its respective warranty period. It is the purchaser’s responsibility to provide Novatec with immediate written notice of any such suspected defect. Warranted replacement parts are billed and shipped freight pre-paid. The purchaser must return the suspect defective part, freight prepaid and with identifying documentation to receive full credit for the part returned. Novatec shall not be held liable for damages or delay caused by defects. No allowance will be made for repairs or alterations without the written consent or approval of Novatec.

The provisions in equipment specifications are descriptive, unless expressly stated as warranties. The liability of Novatec to the purchaser, except as to title, arising out of the supplying of the said equipment, or its use, whether based upon warranty, contract or negligence, shall not in any case exceed the cost of correcting defects in the equipment as herein provided. All such liability shall terminate upon the expiration of said warranty periods. Novatec shall not in any event be held liable for any special, indirect or consequential damages. Commodities not manufactured by Novatec are warranted and guaranteed to Novatec by the original manufacturer and then only to the extent that Novatec is able to enforce such warranty or guaranty. Novatec, Inc. has not authorized anyone to make any warranty or representation other than the warranty contained here. Non-payment of invoice beyond 90 days will invalidate the warranty. A renewed warranty can be purchased directly from Novatec.

Please note that we always strive to satisfy our customers in whatever manner is deemed most expedient to overcome any issues in connection with our equipment.

Warranty Periods:

Note: All warranty periods commence with the shipment of the equipment to the customer.

5-Year (Except 1-Year on Non-Novatec Buy-Out Items)

Resin Drying to Include

NovaWheel™ Dryers *
Dual Bed Dryers
NovaDrier *
NDM-5 Membrane Dryer
Gas-Fired Process Heaters
Gas-Fired Regeneration Heaters
Drying Hoppers
Central Drying Hopper Assemblies
Heater/Blower Units and Hot-Air Dryer
Silo Dehumidifiers
NovaVac Dryers *
Nitrogen NovaDriers (Nitro)

Central System Controls to Include

FlexTouch™ Series Controls
FlexXpand™ Series Controls
OptiFlex™ Series Controls
PLC Communications Modules
Greenboard Communications Modules
LOGO! Mini PLC
MCS-600 Series Controls – (Distributed I/O)
MCS-400 Series Controls
CL Silo Manager

Moisture Measurement Equipment to Include

MoistureMaster®

PET Resin Crystallizers

DryTemp Plus

Resin Blending and Feeding to Include

WSB Blenders, MaxiBatch & Feeders *
Gaylord Sweeper Systems

Downstream Extrusion Equipment to Include

C and NC Bessemer Series Cutters
NPS Bessemer Series Pullers
NPC Mini Puller/Cutter
All NS Series Servo Saws
All Cooling and Vacuum Tanks Manufact

Resin Conveying and Systems Components to Include

GSL Series Vacuum Loaders
GlassVu Loaders, Receivers and Hoppers
VL/VLP Series Loaders
VRH, VR, VR-FL & VRP Series Receivers
Compressed Air Loaders
AL-B Barrel Loader
Cyclone Dust Collectors
Conveying System Accessories
Surge Bins
Valves and Accessories
Electronic Metal Separators
Quick Select Manifolds
Tilt Tables
Filter Dust Collectors
Drawer Magnets
Velocity Control Valves

3-Year

Resin Conveying System Components to Include

** VPDB Vacuum Positive Displacement Pumps
** SVP Vacuum Pumps

** MVP Vacuum Pumps
** Railcar Unloading Systems

****5-Year Extended Warranty** - When a MachineSense® data plan is activated for products with **, Novatec automatically extends the warranty to 5 years. The data plan must be activated within 60 days after product shipment, and remain active through the warranty period to maintain extended warranty eligibility. The first 6-months of data plan usage is free from Novatec.

1-Year

Infrared Dryers
UltraVac Vacuum Pumps

Vacuum Regenerative Blower Pumps
Custom Equipment of any kind unless otherwise specified

Exclusions:

Routine maintenance/replacement parts are excluded from the warranty. These include, but are not limited to: hoses, desiccant, filters, filter elements, wiper seals, gaskets, dew point sensors, infrared lamps, motors, internal solenoids, fuses and motor brushes. Use with abrasive materials will void the warranty of any standard product. Wear resistant options may be available to extend usable service life with abrasive materials. Novatec reserves the right to limit the warranty if the customer installs replacement parts that do not meet the specifications of the original parts supplied by Novatec.

***Specific Exclusions:**

1. NovaDrier and NovaDrier-Nitro warranty is void if coalescing filters are not replaced on a 6-month or yearly basis (per instruction manual) and/or membrane has been exposed to ozone.
2. NovaVac Dryer -The ability of the canisters to hold vacuum will be compromised if the vacuum seal edge is damaged from mishandling. We do not warranty canisters damaged from improper handling. We do, however, warranty the seals.
3. LOAD CELLS on our WSB's are covered by Novatec standard warranty as long as they have not been damaged from improper handling.
4. Desiccant Wheel Warranty will be void if the wheel has been exposed to plasticizer, dust or other contaminants as a result of negligence on the part of the processor.

This warranty shall not apply to equipment:

1. Repaired or altered without written approval of NOVATEC unless such repair or alteration was, in our judgment, not responsible for the failure
2. Which has been subject to misuse, negligence, accident or incorrect wiring by others
3. Warranty is void if processing rates exceed manufacturer-recommended levels or if damage is caused by ineffective power isolation and/or power spikes/sags or incorrect installation.

NOTE: All conditions and content of this warranty are subject to changes without notice.