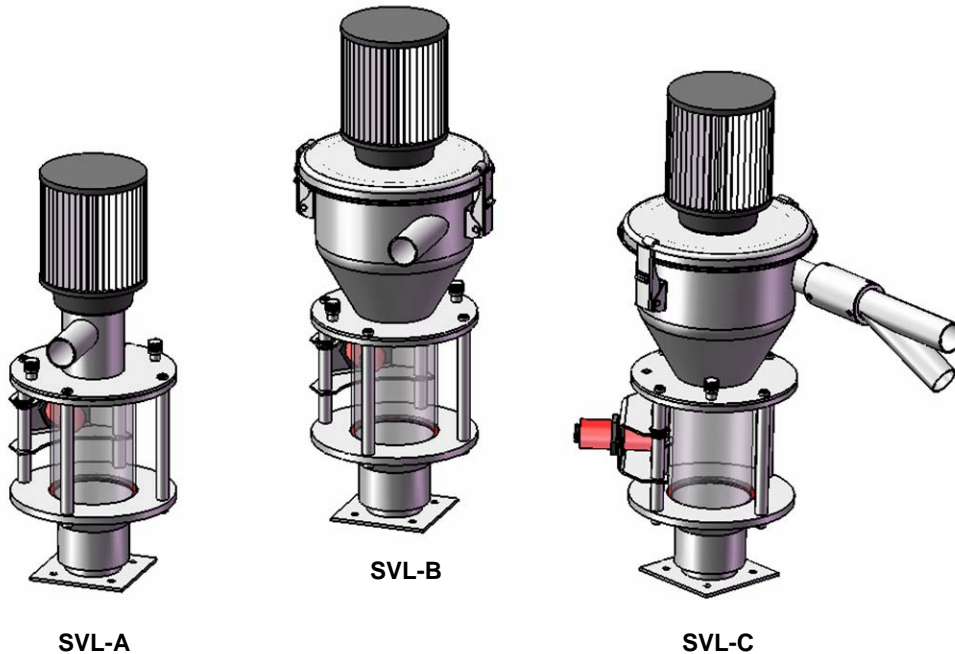




Operation and Installation Instructions

**Self-Contained Material Loader
(Compressed Air Venturi Type)**

SVL-A, SVL-B, SVL-C, & SVL-D



Bulletin No.: CV6-600
Part No.: 882.00685.00

Effective: 7/2007

This operation manual is for*:

(* Please fill in personally)

Serial number: _____

Built in: _____

Date of delivery: _____

Number of delivery: _____

Date of commissioning: _____

Location: _____

Group of machines: _____

The manufacturer retains all rights to change the information in these operating instructions at any time without notice.

We assume no liability for any errors or direct or indirect damage resulting in context with these operating instructions.

Copying, translation or publication in any form except for personal use of purchaser requires approval from the manufacturer.

All rights reserved.

Shipping Information

Unpacking and Inspection

You should inspect your equipment for possible shipping damage. Thoroughly check the equipment for any damage that might have occurred in transit, such as broken or loose wiring and components, loose hardware and mounting screws, etc.

In the Event of Shipping Damage

According to the contract terms and conditions of the Carrier, the responsibility of the Shipper ends at the time and place of shipment.

Notify the transportation company's local agent if you discover damage

Hold the damaged goods and packing material for the examining agent's inspection.

Do not return any goods before the transportation company's inspection and authorization.

File a claim with the transportation company. Substantiate the claim by referring to the agent's report. A certified copy of our invoice is available upon request. The original Bill of Lading is attached to our original invoice. If the shipment was prepaid, write us for a receipted transportation bill.

Advise customer service regarding your wish for assistance and to obtain an RMA (return material authorization) number.

If the Shipment is Not Complete

Check the packing list as back-ordered items are noted on the packing list. In addition to the equipment itself, you should have:

- .. Bill of lading
- .. Packing list
- .. Operating and Installation packet
- Electrical schematic and panel layout drawings
- .. Component instruction manuals (if applicable)

Re-inspect the container and packing material to see if you missed any smaller items during unpacking.

If the Shipment is Not Correct

If the shipment is not what you ordered, **contact the parts and service department immediately** at (262) 641-8610 Have the order number and item number available. *Hold the items until you receive shipping instructions.*

Returns

Do not return any damaged or incorrect items until you receive shipping instructions from the shipping department.

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Chapter 1: Safety Instructions

1-1 How to Use This Manual

Use this manual as a guide and reference for installing, operating, and maintaining your loading system. The purpose is to assist you in applying efficient, proven techniques that enhance equipment productivity.

This manual covers only light corrective maintenance. No other maintenance should be undertaken without first contacting a service engineer.

The Functional Description section outlines models covered, standard features, and safety features. Additional sections within the manual provide instructions for installation, pre-operational procedures, operation, preventive maintenance, and corrective maintenance.

The Installation chapter includes required data for receiving, unpacking, inspecting, and setup of the drying system. We can also provide the assistance of a factory-trained technician to help train your operator(s) for a nominal charge. This section includes instructions, checks, and adjustments that should be followed before commencing with operation of the drying system. These instructions are intended to supplement standard shop procedures performed at shift, daily, and weekly intervals.

The Operation chapter includes a description of electrical and mechanical controls, in addition to information for operating the equipment safely and efficiently.

The Maintenance chapter is intended to serve as a source of detailed assembly and disassembly instructions for those areas of the equipment requiring service. Preventive maintenance sections are included to ensure that your equipment provides excellent, long service.

The Troubleshooting chapter serves as a guide for identification of most common problems. Potential problems are listed, along with possible causes and related solutions.

The Appendix contains technical specifications, drawings, schematics, parts lists, and available options. A spare parts list with part numbers specific to your machine is provided with your shipping paperwork package. Refer to this section for a listing of spare parts for purchase. Have your serial number and model number ready when ordering.

Safety Symbols Used in this Manual

The following safety alert symbols are used to alert you to potential personal injury hazards. Obey all safety messages that follow these symbols to avoid possible injury or death.

DANGER! *DANGER indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.*

WARNING! *WARNING indicates a potentially hazardous situation or practice that, if not avoided, could result in death or serious injury.*

Caution! *CAUTION indicates a potentially hazardous situation or practice that, if not avoided, may result in minor or moderate injury or in property damage.*

1-2 Explanations and Information

Various terms and designations are used frequently in these operating instructions to ensure clarity. Therefore, please note that the terms used in the text are defined as follows:

- **Equipment**

Equipment can mean an individual unit, a machine, or an installation.

- **Operating Personnel**

Operating personnel are individuals who are responsible for operating the equipment. All personnel engaged in the use of the machine should become familiar with its operation as described in the manual. Each individual must take responsibility for understanding and following all safety rules. Operating personnel should be at least 16 years old.

- **Operator**

The operator of the equipment (production manager, foreman, etc.) is the person responsible for all production sequences. The operator instructs the operating personnel on what should be done.

- **Operating Instructions**

The plant operating instructions describe the interaction of the equipment, production sequences or methods. The plant operating instructions must be compiled by the operator of the equipment.

- **Equipment Foreman**

When several operating personnel work on one machine, the equipment foreman arranges the order. The equipment foreman must be appointed by the operator.

- **Trained Personnel**

Trained personnel are persons who, due to their training, are authorized to perform the required work.

1-3 For Your Safety

How to Use This Manual

- Please read this manual carefully before initial operation. Understanding the instructions and equipment will help to avoid injuries as well as damage to equipment. If you have questions, contact the manufacturer.
- The operators of this unit must be at least 16 years old.
- Store this manual near the site of the machine so that it is readily available to the operators. Faulty operation may lead to accidents!
- The manual is provided on a CD making it possible to reprint the manual should an existing copy be damaged or destroyed.
- Note that, for reasons of brevity, not every possible case of operation or maintenance can be mentioned in this manual.
- Be aware of all safety instructions and danger signs on the unit. This will avoid injuries and damage to material.
- Prepare precise instructions of the unit using this manual. Faulty operation can lead to accidents!

Warnings and Precautions

- Only **PROPERLY TRAINED** individuals familiar with the information in this manual should use this equipment.
- Proper clothing should be worn at all times in order to avoid injuries.
- Compare the connected loads to those of the main supply to avoid electrical shock.
- When using lifting gear, pay close attention to the corresponding instructions to avoid accidents.
- Operate this equipment within the local regulations and requirements of the plant.
- **NEVER** modify or alter the unit without the manufacturer's permission.
- If the unit has been switched off for safety reasons, it must be protected from unauthorized use.
- The unit is exclusively intended for conveying plastic granules and regrind. Any other usage is not permitted.
- This unit is not suitable for processing foods.
- Attachments that are not delivered by the manufacturer must be constructed according to the safety standard EN 294.
- Check all lines, hoses, and coupling pieces regularly for leakage and damage. Any errors must be eliminated immediately.
- The unit may only be used if all corresponding components have been properly connected and are in accordance with relevant regulations.

- Observe the safety instructions for the connected units.

Maintenance Responsibility

- Before beginning maintenance work:
 - Assign a supervisor.
 - Inform all other responsible operating personnel.
 - Turn off the main power supply.(If required)
 - Set all compressed air lines on the unit at zero pressure.
 - Repair work should **ONLY** be done by qualified personnel.
- **ALWAYS** turn off the main supply for all electrical work to avoid risk of death or injury.
- **NEVER** operate on a unit that is partially disassembled. This can cause serious injuries including amputation and electric shock.
- In case of functional disturbances, switch the unit off **IMMEDIATELY**. Any errors must be eliminated to avoid accidents.

1-4 Unit Safety

- The unit may **ONLY** be used for conveying plastic granules and regrind on injection molding machines.
- **NEVER** change the settings unless you are able to foresee the consequences.
- Use **ONLY** original manufacturer parts.
- Follow a regular maintenance schedule.
- Keep records of all maintenance and repair work.
- Be aware that electronic subassemblies may be damaged by static discharge.
- Before initial operation and at regular intervals, check all electrical connections for proper fit.
- **NEVER** modify sensors without knowing their precise functions.
- Make sure all plugs are connected properly.
- Note the carrying capacity of the machine flange.
- Read the operating manuals of the connected units.

Chapter 2: Installation

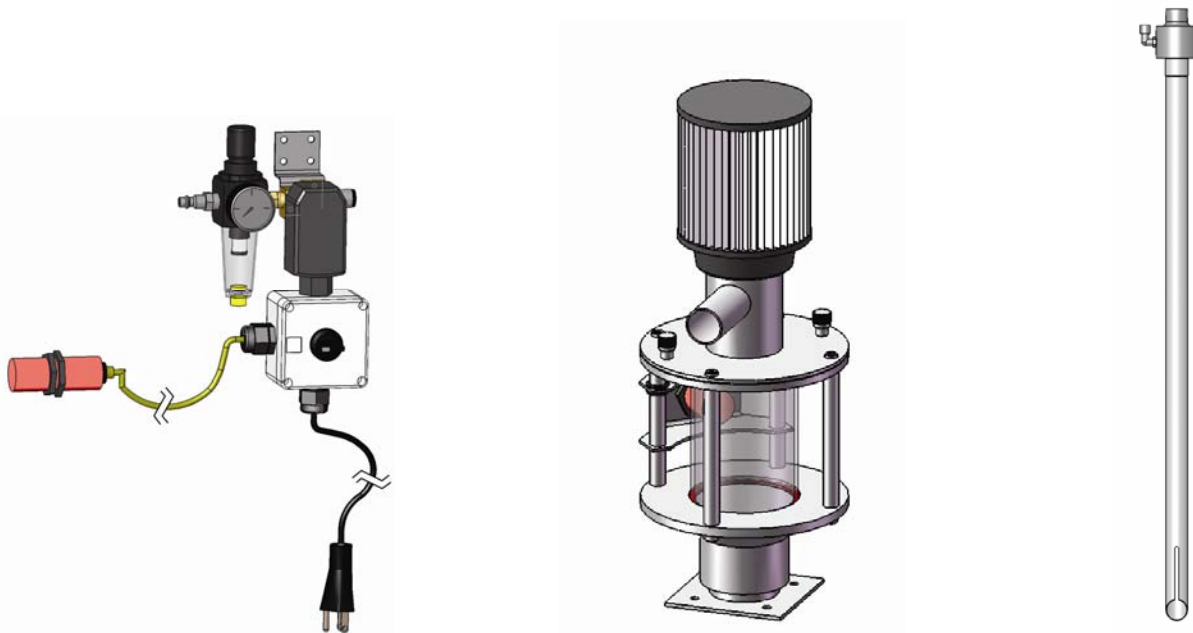
2-1 General Information

Unpack all parts of the single conveyor unit and make sure that every thing is available:

- One material receiver with level sensor
- Correct type of mounting flange (direct mount, bin mount, or sight glass mount)
- Control assembly (one per venturi)
- One venturi assembly (wand or grinder/take-off)
- One section of vinyl flexible hose with two hose clamps (per venturi)
- One length compressed-air poly tubing (per venturi)
- Operating instructions / customer information packet

Note: *The AVL-C comes with two venturi assemblies and two sets of vinyl flexible hose and four hose clamps.*

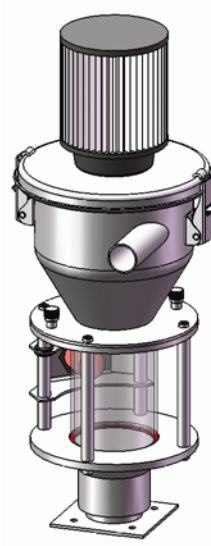
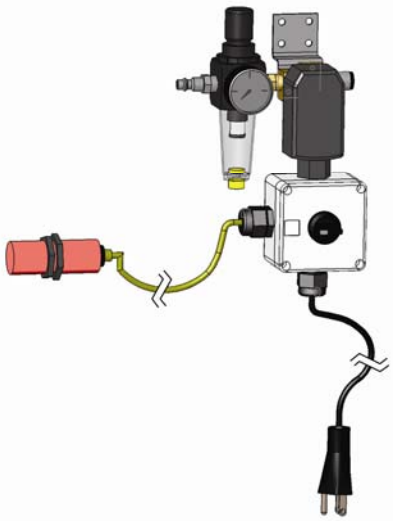
Figure 2.1: SVL-A Parts



Shown with optional sight glass assembly

SVL-A, SVL-B, SVL-C, & SVL-D Self-Contained Material Loaders - Venturi Style 10 of 49

Figure 2.2: SVL-B Parts

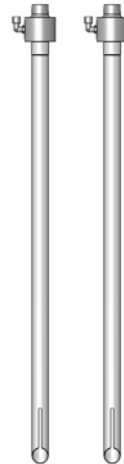
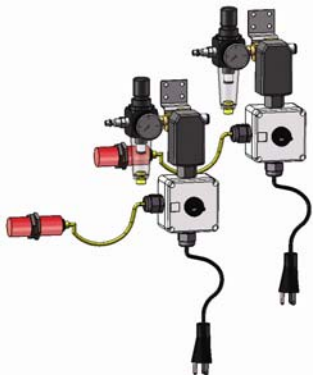


OR



Shown with optional sight glass assembly

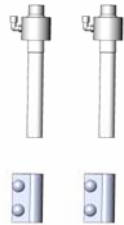
Figure 2.3: SVL-C Parts



OR



OR



Shown with optional sight glass assembly

2-2 Installing the Material Receiver

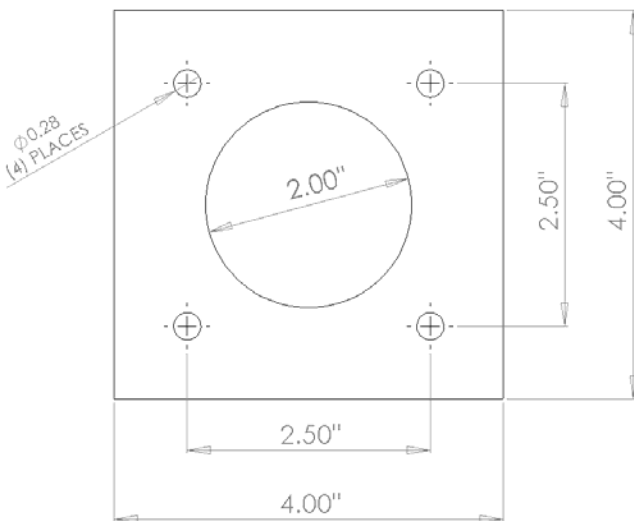
The self contained material loader can be installed directly on the processing machine.

Make sure that all connections are tight so that the conveying performance is not impaired. The material receiver is equipped with a mounting flange.

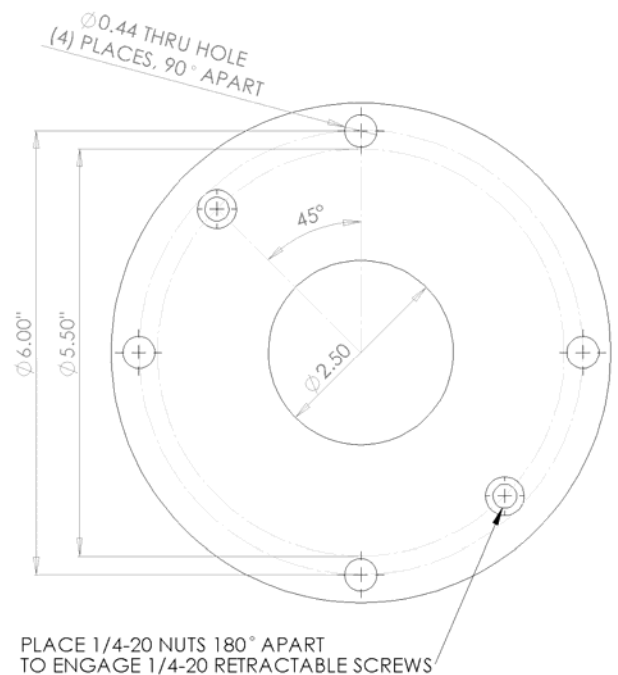
- ☑ Depending on the position, drill the holes for fastening the conveyor hopper to the processing machine. One of 2 standard bolt patterns may be used, sight glass or bin mounted.(as shown in fig. 2.4)
- ☑ Mount the material receiver on the processing machine.
- ☑ Install the vinyl flexible hose on the material receiver inlet and on the venturi assemblies using the hose clamps that are supplied.
- ☑ Make sure all equipment is properly grounded to minimize static and risk of shock.

Note: *The hopper should not touch any other component.*

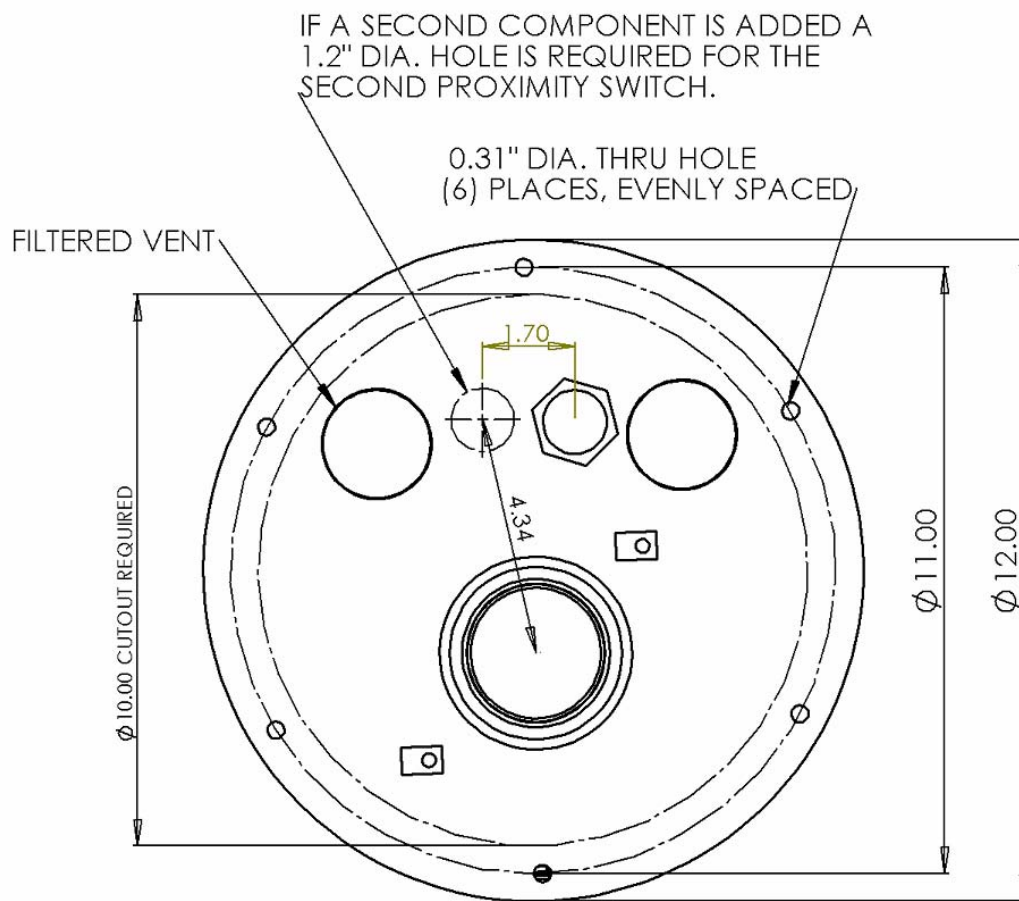
Figure 2.4
(not to scale)



Sight Glass Mounting Flange



Bin Mount Mounting Flange



Sight Glass Mounting Flange

Figure 2.5: Flange Mount

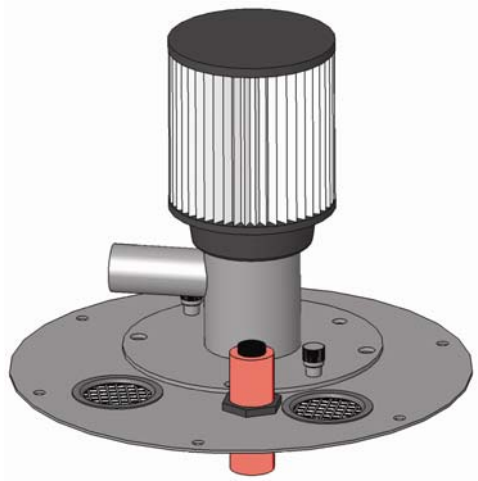


Figure 2.7: Sight Glass Mount to Digital Dosing Feeder

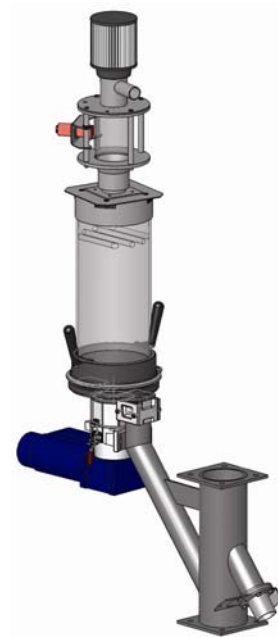
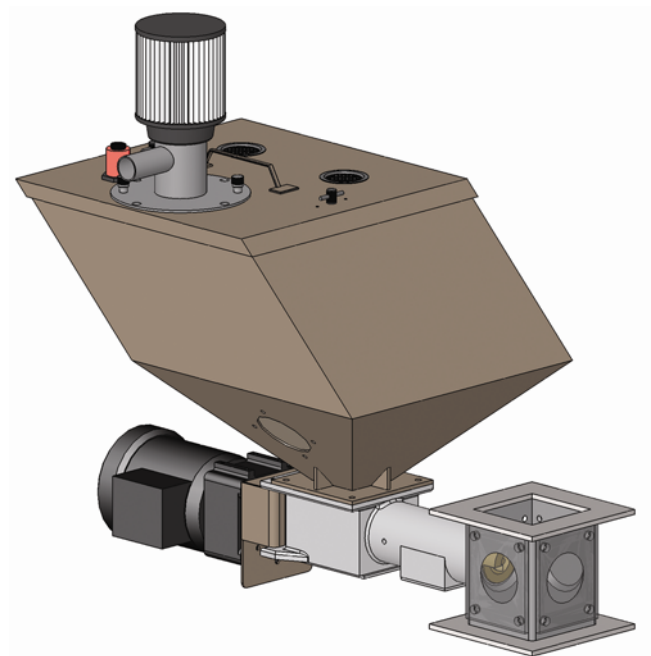


Figure 2.6: Sight Glass Mount



Figure 2.8: Standard Mount for SF-1 Feeder

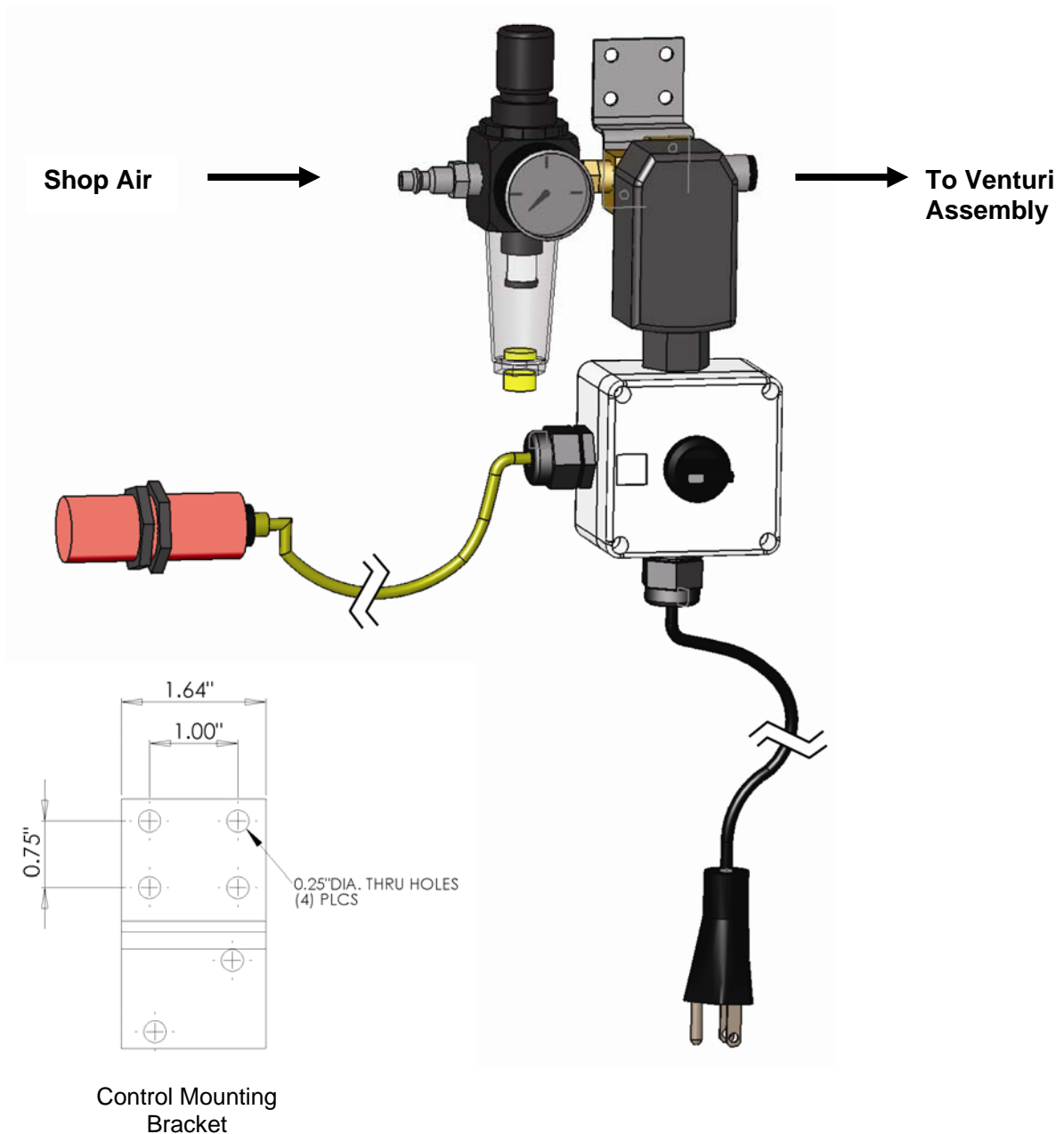


Note: *Optional cover adapters may be required.*

2-3 Installing the Control Assembly

Install the control assembly at a freely accessible site. Check the length of the connection cable and the length of the supplied hoses to the venturi assemblies. During installation of equipment, check the length of the air supply lines. In some cases, longer air supply lines may be required.

Figure 2.9: Control Assembly and Mounting Bracket



2-4 Connecting the Compressed Air Supply

Before connecting the compressed air supply, check the following:

- ☑ Check compressed air piping for correct installation and assembly.
- ☑ Check the fittings, length and quality of the hose connections for agreement with requirements.
- ☑ Check all compressed air lines for leakages.

Supply clean, dry (non-lubricated) compressed air with 70-90 psi (5-6 bar) system pressure.

The air should be free of oil and water.

1. Find the compressed air hose, which has been supplied.
2. Connect it to the venturi and control assembly.
3. Firmly press the compressed-air hose into each connecting socket.
4. Connect the control assembly to the compressed air supply.
5. Set the pressure on the pressure reducer at 70-90 psi (5-6 bar).

Note: Unit requires 25 SCFM at 80 psig if continuously run. Typical air consumption is 8-10 scfm at 80 psig. Max. input pressure 145 psi (10 bar).

WARNING! Make sure that the PLANT supply air lines are large enough to provide required air flow and line pressure. Failure to provide adequate air flow and line pressure will result in conveying performance issues.

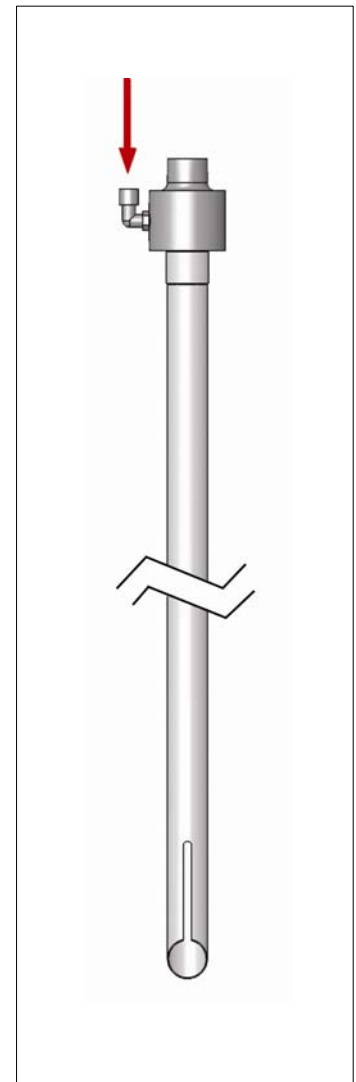


Figure 2.10: Venturi Assembly

2-5 Connecting Material Lines

Typical SVL Loader installations use flex hose to connect the loader to the venturi.

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

1. Attach flex hose over the inlet stub of the loader. Secure the hose with the provided hose clamp. The hose should fit over the inlet stub at least 1 inch. Position the hose clamp at least ¼ inch from the end of the inlet.
2. Connect the flex hose to the venturi. From the loader to the venturi, attach the flex hose in the same manner as described above, being sure of proper orientation (note arrow on venturi). Reduce flex hose down to the shortest possible length to avoid wasting compressed air energy.

Caution! *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 electrical wires, especially control signal wires since static electricity, commonly generated by conveyed material can be discharged to the wires, fouling electrical operation. If static electricity needs to be avoided, use grounded flex hose. (Part # - A0565934)*

Note: *When connecting a vertical feed tube or wand:(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 a Grinder/Take-off:

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

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. It should be routed to minimize bends, and should be connected to the loader with flex hose to allow quick disconnection of the loader.

SVL-C (Two inlet) Installation

Any SVL loader may be equipped for "ratio" or proportioning loading so that two materials (usually virgin and regrind) may be loaded simultaneously. The equipment for this function consists of a "Y" tube and coupler that is installed on the inlet stub of the loader, two controls (one for each component,) a pick-up device (feed tube), a second venturi and both compressed air lines and material hoses. If included at the time of original purchase, all of these items will be included with your SVL. If not included, they may be added later and installed along with your original system. (See "Spare Parts Lists" for required part numbers.)

To Install the Ratio Option

Install the "Y" tube using the included "O" ring coupler (see Fig 6.3) onto the inlet of the SVL-C loader, then connect the flex hoses to the "Y" tube from the two venturis. Connect the second venturi to the second solenoid package in a manner similar to the first venturi/solenoid.

Compressed air must be provided to the second filter/regulator in exactly the same fashion as the first and the second venturi should be joined to the second solenoid in a similar manner as the first.

Note: *Unlike the other types of loading systems that alternately load virgin and then regrind(back and forth), compressed air conveying systems load the two materials at the same time, through the "Y" tube conveying material through both venturi assemblies occurs at the same time as well.*

Position the 2 proximity sensors so they are approximately the same height on the sight glass, then properly adjust the sensors. (See Section 4-3)

Once completed, the installation should provide dual-energized compressed air solenoids, connected directly to two regulators, so that the material flow through each venturi may be regulated independently as material flows.

See Section 4-2, Adjusting Compressed Air Flow to properly adjust air flow.

2-6 Electrical Connection

The operating voltage is 115 or 230 VAC, AC, PE, 50/60 Hz. Special voltages available by request.

The connected load is approximately 2 Watts.

The connection is made using a main connector. A separate protection of the socket is not necessary.

- Connect the plug of the sensor cable to the control unit.
- Plug the main connector into a corresponding socket.
- Make sure all equipment is properly grounded.

WARNING!

Check with the local electricity board for regulations.

Chapter 3: Functional Description

3-1 Operational Summary

Once the control switch(s) is turned on, the SVL loader uses a solid state sensor to determine if material is needed at the material destination (hopper, bin, sight glass, etc.) If the sensor “sees” material, the loader will remain in an “at rest” mode with its solenoid de-energized and no compressed air flowing.

Once the material level drops (typically due to process consuming material) and the SVL sensor no longer “sees” material, the solenoid is energized, turning on the supply of compressed air to the venturi. The sensor is in a “closed state” to convey material and an “open state” to signal a high level condition.

The venturi is located near the material supply and creates a vacuum on its inlet by the rapid rush of compressed air through it. This vacuum pulls on the material source and begins a flow of material through the venturi. Once inside the venturi, the material is then ‘pushed’ by the compressed air through the flex hose, towards the loader.

Once inside the loader, the compressed conveying air is separated from the conveyed material by a combination of gravity, and the filter located on top of the loader. Material and dust will stay inside the filter and conveying air will exhaust through the filter to atmosphere. Unless the material being conveyed is sticky or wet, the material will fall away from the filter surface and join other loaded material in the destination hopper or machine throat.

The compressed air energy of the SVL will remain on and material will flow until the demand sensor of the SVL once again “sees” material. At this time the sensor will determine that the material level is satisfied and de-energizes the compressed air solenoid, stopping compressed air and material flow and returning the system to rest, until the process calls for more material and starts the cycle again.

Note: *The SVL-A unit is designed for clean pelletized material only. The SVL-B and SVL-C are designed for conveying dust-free plastic granules and regrind material. Only the SVL-C is capable of conveying two materials.*

3-2 Method of Functioning

The self-contained venturi loader works according to the Venturi Principle. An external compressed air supply is needed to provide the source of compressed air.

A venturi device (A) is integrated in the venturi assembly.

The venturi creates a vacuum in the lower part of the tube (C) and then conveys the material into the conveyor hopper using pressurized air in the upper part (B). In the hopper loader, the material is separated from the air.

The filling level of material receiver is monitored and controlled by a level sensor located on the sight glass (or on a flange) of the receiver.

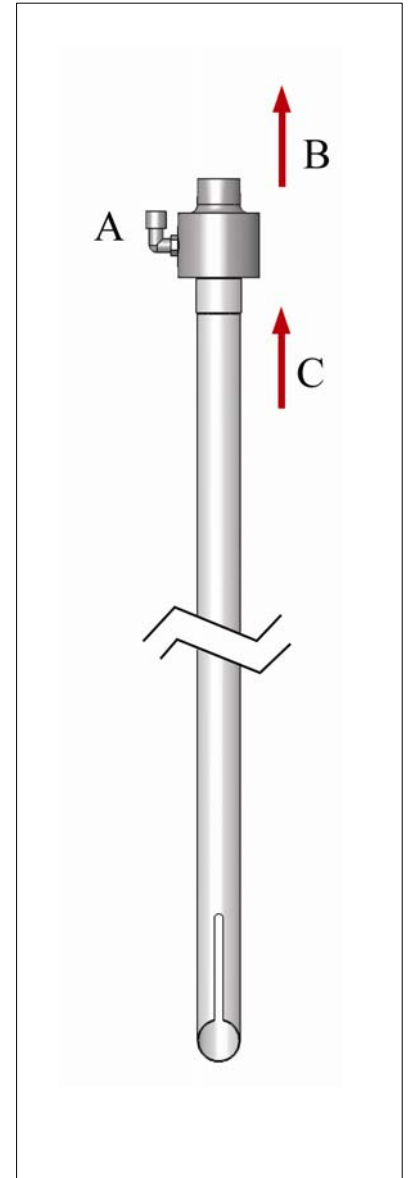
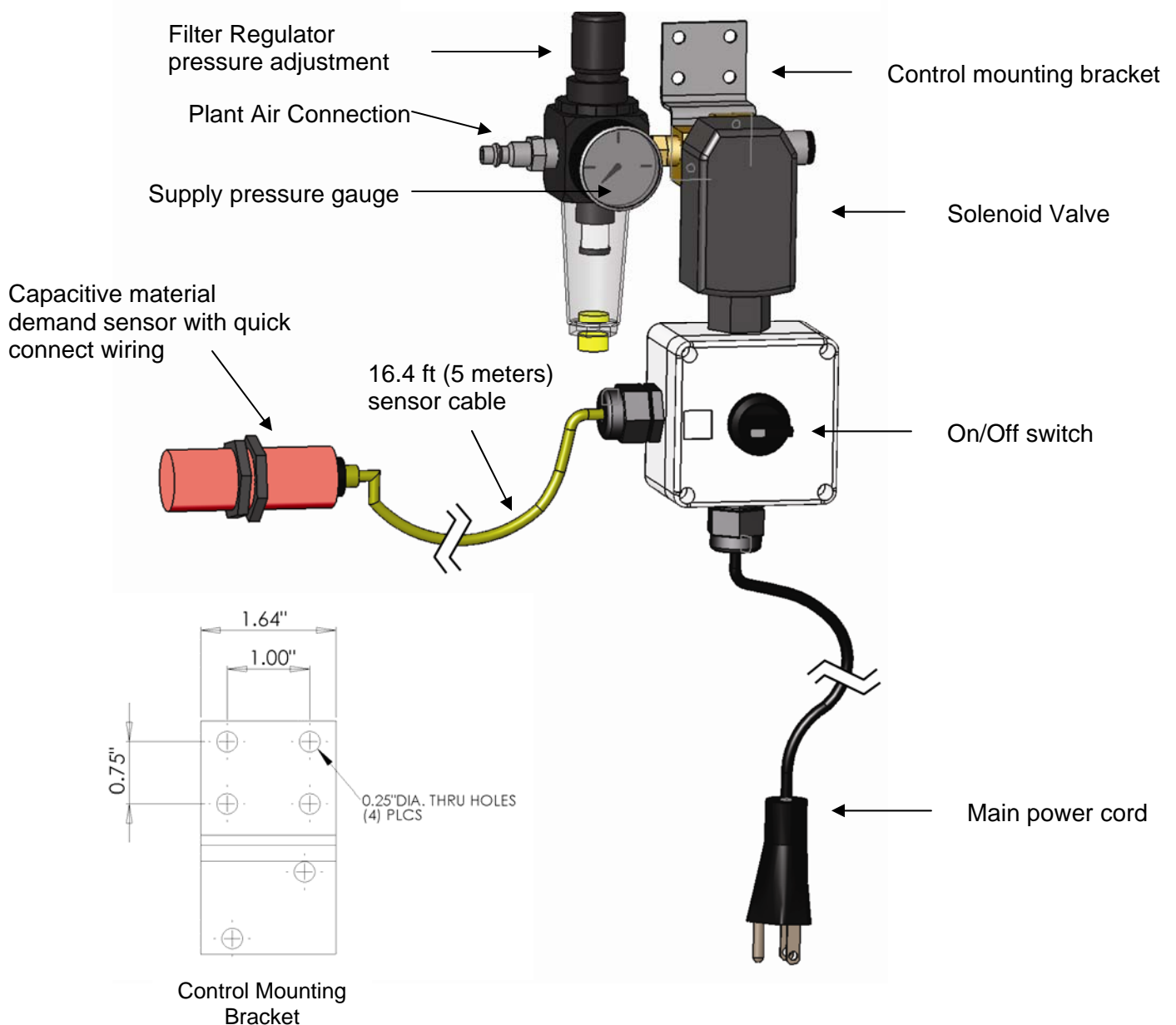


Figure 3.1: Venturi Assembly

3-3 Control Assembly

- A. The unit is switched ON and OFF at the control.
- B. At the regulator, the operating pressure is adjusted. A filter/separator is integrated into the control.
- C. Regularly inspect the compressed air filter to make sure that it is clean and functioning properly. Clean or replace this filter as needed. For information, see Section 5: Maintenance.

Figure 3.2: Control and Regulator Unit



Chapter 4: Setup

4-1 Preparations

- ☑ Check to see if the venturi assembly is inserted in the material to be conveyed.
- ☑ Verify compressed air connections are properly installed.
- ☑ Switch the compressed air supply **ON** at the compressed air source.
- ☑ Check pressure of air supply at the control assembly.
- ☑ Make sure unit and control are properly grounded.
- ☑ Switch the conveyor unit electrical switch **ON** at the control and maintenance unit.

The material loader should now convey until the conveyor hopper is filled up to the level sensor.

4-2 Adjusting Compressed Air Flow

The SVL is equipped with a compressed air filter/regulator that will determine the amount of air that flows to the venturi at the material source. This air flow will determine how much material will be transferred and how fast your process will be replenished with material, with each loading sequence.

Adjusting the air setting: It is best to adjust the air setting to its lowest possible level in order to conserve compressed air energy.

Parameters such as distance, the number of material line bends, the flow characteristics of the material and vertical rises in the flex hose all play a part in finding the proper setting. Ultimately, trial and error settings over several loading sequences will work best to determine the right air level. Too low of a setting may not move material effectively enough to satisfy demands cycle after cycle. Too much air will waste energy and cause the filter on the SVL to prematurely blind in an attempt to evacuate excess air. Refer to the gauge on the regulator and adjust the air to the lowest possible setting that assures reliable material transfer.

Note: *Unit requires 25 SCFM at 80 PSIG (5-6 bar) if continuously run. Typical air consumption is 8-10 SCFM @ 80 PSIG.*

Adjusting air settings for ratio units: Ratio units have two controls and compressed air settings to consider. Usually one is dedicated to virgin material and the other, regrind material. Both material paths terminate into the “Y” tube at the SVL loader inlet so care must be taken to adjust in consideration of the other.

SVL-C (Two Inlet) Operation. If the goal of your system is to evacuate a granulator of regrind in the most effective manner, the regulator should be

adjusted first for optimum flow, as described above. Since regrind material is typically more difficult to load than virgin material, it will take more compressed air (a higher setting on the regulator) than virgin material. Once regrind is adjusted, then the virgin material flow should be adjusted. Notice the flow of material through the flex hose as both are loaded. The virgin is likely to flow much stronger than the regrind and may actually choke off the regrind flow, requiring new settings to balance out the flows to your needs. Keep in mind that distances, bends, etc. all play a part in effective compressed air settings, so continue to adjust both levels until satisfactory loading performance is achieved for both materials.

Note: *The SVL compressed air material loader with ratio capability is not intended to be a blending or metering device for two materials. It can only create air flow that will allow the conveyance of material to your process. Expectations of any precision in the loading process will not be achieved.*

4-3 Setting the Mixing Ratio of the Components (SVL-C Units)

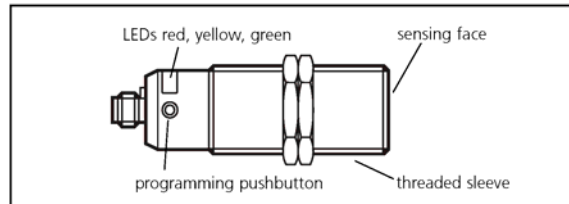
The mixing ratio of the components is adjusted at the regulators. By changing the regulator pressure of each material, you will adjust the rate at which each material is conveyed into the conveyor hopper. This will determine the ratio of two materials entering a conveyor hopper.

Note: *The adjustment of the regulator will vary according to the material, flow properties, particle size and conveying distance. The ratio of each material is just an "observed" ratio and there is no guarantee of accurate ratio percentages.*

4-4 Basic Setting of the Filling Level in the Conveyor Hopper

The filling level in the conveyor hopper is mainly determined by the level sensor.

Figure 4.1: Conveyor Hopper

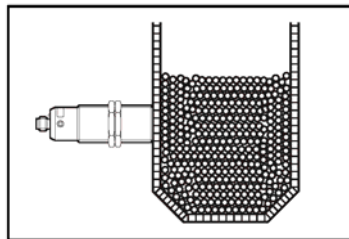


Function and features:

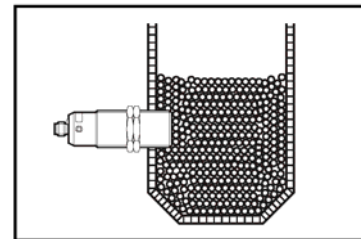
- Capacitive level switch for monitoring and dry bulk material, preferably plastic granulates.
- Automatic adjustment to the medium to be detected by means of programming pushbutton.
- The sensing face is rated for temperatures up to 110°C and can be mounted in direct contact with the sight glass (without air gap).

Mounting:

Mount the level switch as shown:



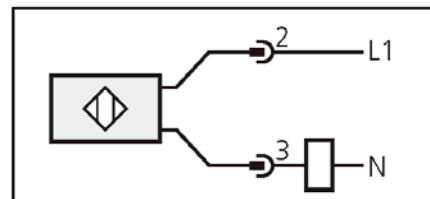
Not in contact with the medium
(only for non-metallic tanks)



In contact with the medium

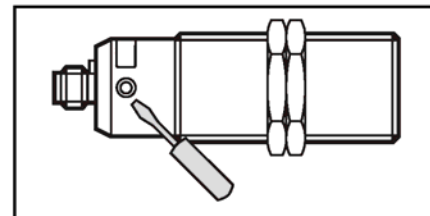
Electrical Connection:

Disconnect the installation from power. Connect the unit (see type label).



Operation:

Adjust the sensor. To do so, press the programming pushbutton with a blunt object.



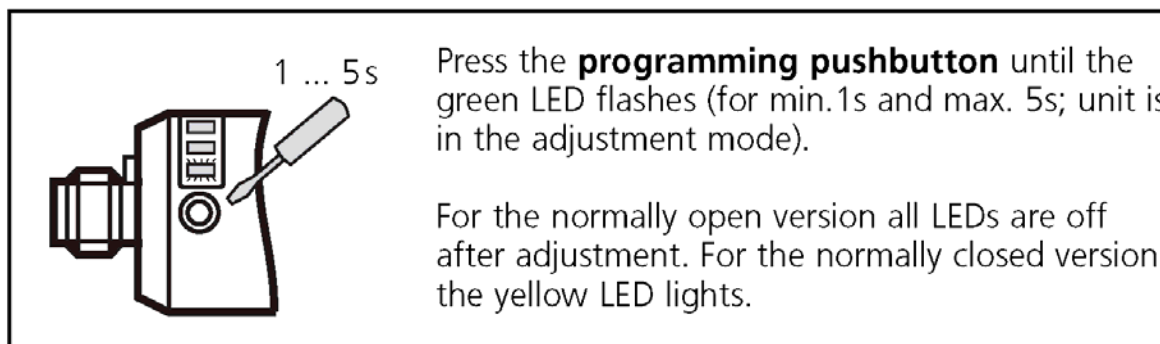
Programming:

Overview of the modes and their basic functions:

- Operating mode: Normal operating mode. In this mode all normal sensor functions are active.
- Adjustment mode: Setting of the switching threshold by empty and full adjustment.
- Locking mode: Locking and unlocking of the unit possible to avoid tampering.

Empty adjustment

The unit must be adjusted after installation in the empty tank (empty adjustment). The tank can be considered to be "empty" when the medium to be detected is a minimum of 20mm (0.9 inches) away from the active zone. If the sensor detects a medium after adjustment, its switching status changes.

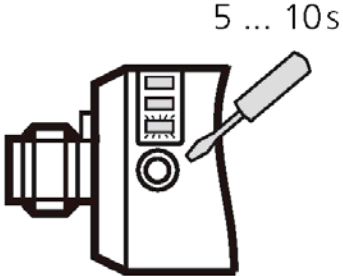


Note: *The sensor is operational just with empty adjustment. However, it is recommended to carry out a "full adjustment" with the active zone being completely covered after empty adjustment. On the basis of the values for the empty state/full state the internal microprocessor determines the optimum position of the switching thresholds between the two states. Using both adjustment criteria (empty and full adjustment) results in the maximum operational reliability for the application. For empty adjustment the internal microprocessor generates 2 values.*

The first value corresponds to the sensor signal measured in the empty state. The second value is an assumed measured value for the full state. It is calculated from the just measured empty state and a factory signal preset. For full adjustment this second value is replaced by a real measured value.

Full adjustment

After empty adjustment the full state is to be achieved, if possible, so that the unit switches.



5 ... 10s

Press the **programming pushbutton** until the green LED flashes quickly (= the unit is in the adjustment mode).


The LED first flashes slowly (about 1 Hz), after 5s it flashes double as quickly (about 2 Hz).

After adjustment only the yellow LED lights - for the normally open version. For the normally closed version all LEDs are off.

The full adjustment can be repeated as often as you like. The stored value for the empty state is not overwritten by the full adjustment. After a new empty adjustment both values are automatically set again, the values last defined are overwritten. Therefore always carry out the empty adjustment first, then, if necessary, the full adjustment!

Locking

The stored adjustment values can be protected against unauthorized programming as follows (factory setting: not locked):



min. 10s

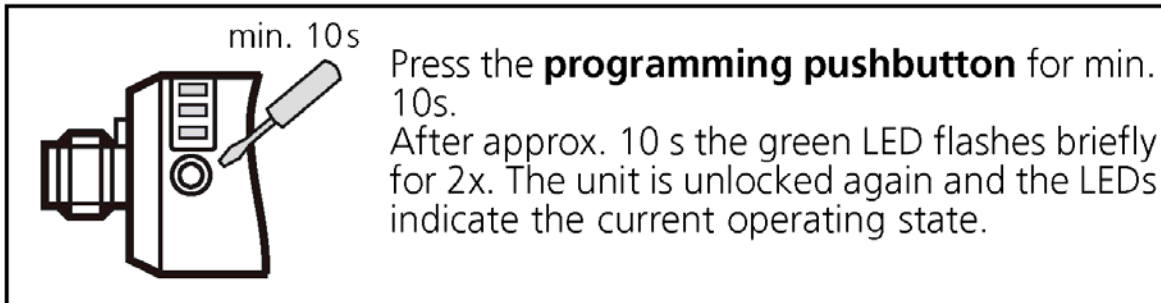
Press the **programming pushbutton** for min. 10s.

The green LED first flashes slowly (about 1 Hz), after 5s more quickly (about 2 Hz), after 10s it goes out, the unit is locked.

When the programming pushbutton is released the unit is locked and all programming functions are inactive. The unit returns to the operating mode.

If this operation starts from the locked state, the green LED does not react for 10s. After 10s the unit is unlocked (see "Unlocking").

Unlocking



When the programming pushbutton is released the unit is unlocked and all programming functions are active again.

Error messages

If empty or full adjustment cannot be made, the red LED flashes quickly at about 8Hz after the adjustment attempt (adjustment error).

To delete this error message press the programming pushbutton once or power off and then power on again. The measured values successfully read so far remain unchanged.

Possible reasons for an error message:

- The signal difference between the empty and full state is too small (e.g. empty and full adjustment without sufficient change of the level).
- The signal change between the empty and full state is in the wrong order (e.g. empty adjustment in the full state and then full adjustment in the empty state).
- Empty adjustment outside the operating range (e.g. empty adjustment in case of direct contact with an electrically grounded medium, e.g. if the active zone is immersed in water).

Help: Avoid the above-mentioned errors and repeat the adjustment for error correction.

Further faults:

- Electronic fault or sensing zone of the unit damaged
- Internal fault (can only be deleted by power off and then power on again, hardware reset).

Set-up / Operation:

Check the safe functioning of the unit. To do so, bring about a sensor response by taking suitable measures.

Display by LEDs:

| | |
|------------|--|
| LED green | Flashes slowly (1Hz): adjustment mode empty adjustment |
| LED yellow | OFF: switching output disabled ON: switching output enabled |
| LED red | Flashes quickly (8Hz): adjustment error, internal fault Flashes slowly (1Hz): close to reaching the switching |

The red LED becomes active for a short time during the change between "medium not present" and "medium present" (flashes at 1Hz) if the medium is close to reaching the switching threshold. This can occur in particular if the level changes very slowly and is no error message meaning a fault in the unit.

The operation of the level switch is maintenance-free. For a correct function ensure the sensing face and the open space should be kept free of deposits and foreign bodies, particularly for mounting with the sensing face showing upwards.

Chapter 5: Maintenance

Preparations

- ☑ Please observe the maintenance intervals.
- ☑ Before starting maintenance work, clean the equipment of oil, fuel or lubricants.
- ☑ Ensure that materials and incidentals required for operation as well as spare parts are disposed of properly and in an environmentally sound manner.
- ☑ Use only original manufacturer spare parts.
- ☑ Keep record of all maintenance and repair procedures.

Caution! **Disconnect the equipment from main electrical supply before starting maintenance procedures to ensure that it cannot be switched on unintentionally. Depressurize all compressed air piping of the equipment before starting maintenance work.**

5-1 Maintenance Intervals

| | |
|------------------------|---|
| Daily: | Check the filter for obstructions or damage when doing a material change. |
| | Check the setting of the pressure regulator. |
| | Empty the water separator. |
| | Check danger signs on the unit for legibility and completeness. |
| | Check for worn tubing or loose electrical connections. |
| Weekly: | Clean the cartridge filter and screen (depending on accumulation of dust). |
| | Blow out the filter from the inside using compressed air. |
| | Check the electrical connections for proper functioning. |
| Every 3 months: | Drain the compressed air filter trap. |
| | Check all electrical and mechanical connections. |
| | Replace filter (depending on accumulation of dust and condition of filter). |

Note: *The maintenance intervals provided are average values. The maintenance intervals might be adjusted due to your individual process conditions.*
Replace/repair components as required.

5-2 Cleaning the Conveying Filter

WARNING! *Disconnect power 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.*

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 filter module atop the SVL loader must be cleaned periodically to assure that compressed air evacuation from the loader is efficient. If this filter becomes clogged the conveying air will seek an alternate escape route, possibly forcing its way out through crevices in the receiving hopper or elsewhere. Loading performance could be hampered by the resistance that the filter gives to air (and material) flow.

1. **Remove the filter.** The filter module is friction fitted to the top of the loader body and may be easily removed by hand, without tools.
2. **Inspect the filter carefully.** Depending upon the material that was conveyed, the filter may only require a brief wipe-out of the inside to remove residual material fines and dust. Always check for holes that could allow the passage of fines or dust to the loader motor. Replace the filter if it is damaged, excessively worn or too clogged with material dust. Do not attempt to repair a damaged filter. Replace the entire filter if the rubber seal is damaged or excessively worn.
3. **Clean the filter.** For dusty material or color changes, the filter should be wiped out and then vacuumed. We recommend that you vacuum the filter surfaces. If you use compressed air, you must wear eye protection and follow all safety regulations pertaining to cleaning equipment with compressed air. Do not attempt to repair a damaged filter.

Caution! *A SVL filter that is worn to the extent that it does not provide a good seal around the base may not grip the top of the loader sufficiently and could fall off during use. This is a hazard to those below/near the loader. The filter should be replaced so that a good, secure fit is achieved each time the filter is installed on the loader.*

4. Install/reinstall the filter. Firmly press down on the filter to make sure a good seal is provided around the entire perimeter of the filter module. The filter should fit evenly on the top of the loader body.

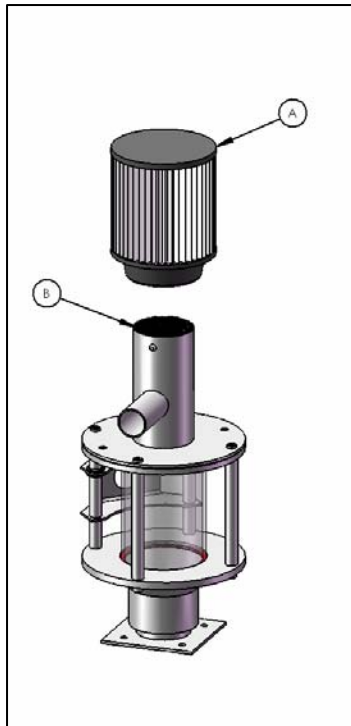


Figure 5.1: SVL-A

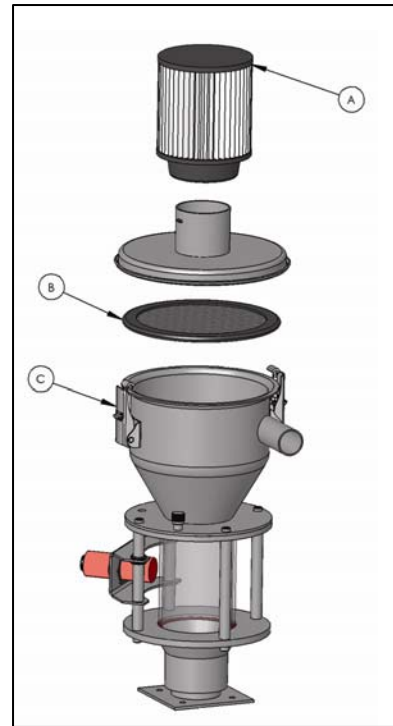


Figure 5.2: SVL-B

5-3 Cleaning the Compressed Air Filter

The compressed air supply to the loader is provided with a moisture trap to prevent troublesome moisture, contained in the air, from touching your material. The filter bowl should be drained regularly to remove this moisture.

To remove moisture:

1. **Open the filter bowl drain.** Turn the knob on the bottom of the filter bowl counterclockwise. Leave the drain open until all moisture has been removed.
2. **Close the filter bowl drain.** Turn the knob clockwise to close the drain.

WARNING!

Switch the unit OFF. Disconnect the main electrical plug.

Disassembly

1. Remove the filter cartridge (A).
2. Blow out the filter cartridge (A) from the inside out using compressed air or replace the filter.
3. Open the toggle-type fastener (SVL-B, SVL-C models) (C) and fold the hopper lid upward.
4. Check the screen (B) within the lid for material residue.
5. Clean the screen (B) using compressed air.

Assembly

1. Clean the hopper loader using a vacuum cleaner.
2. Replace the cover gasket/screens (SVL-B, SVL-C.)
3. Close the hopper lid (SVL-B, SVL-C.)
4. Close the toggle-type fastener (SVL-B, SVL-C.)
5. Assemble the filter cartridge.

5-4 Adjusting the Level Probe

See Chapter 4: Setup, to properly adjust air flow.

5-4 Troubleshooting

| PROBLEM | REMEDY (See Test Steps Below) |
|--|-------------------------------|
| The unit is not conveying and is not active. | A, B, G, H |
| The unit is not conveying; the compressed air valve is activated when the device is switched on. | C, D, E, F, N |
| The unit is not conveying; the compressed air is flowing through the valve. | C, D, E, F, I, J, K, N |
| The unit is overfilled. | G, L, M |
| The unit is not filling properly. | C, D, E, F, I, J, K, L, N |

Test steps:

- A - Make sure the unit is switched **ON**.
- B - Make sure the unit is plugged in and the proper voltage is present.
- C - Make sure sufficient compressed air is available 70-90 psi (5-6 bar).
- D - Make sure the venturi assembly is inserted in the material.
- E - Make sure the compressed air hose is properly connected to the venturi assembly.
- F - Make sure the compressed air hose (incoming supply line) is properly connected to the control solenoid.
- G - Make sure the level sensor is properly adjusted.
- H - Make sure the cable of the level sensor is properly connected.
- I - Make sure the filter is not clogged.
- J - Make sure the screen is not clogged.
- K - Make sure the vinyl flexible hose is properly connected.
- L - Make sure the compressed air supply is properly adjusted.
- M - Make sure the level sensor is not defective.
- N - Check source of material.

-Notes-

Chapter 6: Technical Data

| | |
|--|--|
| Maximum throughput: | 475 lbs/h (149.7 kg/hr) |
| Weight: | Approx. 6.61 lbs. (3 kg) |
| Operating voltage:* | 115 V, AC, PE, 50/60 Hz (standard) Special voltage on request |
| Connected load: | Approx. 2 W |
| Total noise level: | < 75 dB (A) |
| Compressed air supply: | 70-90 psi (5-6 bar) |
| Compressed air consumption: | 25.9 scfm at 80 psig (continuous 100% non-stop operation) |
| Compressed air consumption typical: | 8-10 scfm at 80 psig based on 30% duty cycle for intermittent use (most applications). |
| Vacuum Performance (at 80 psig and full flow): | -42" H ₂ O (-11 kPa) |
| Max. product temperature: | 176°F (80 °C) |

* Optional 230 V, AC, PE, 50/60 Hz

6-1 Dimension Sheet

Figure 6.1: SVL-A

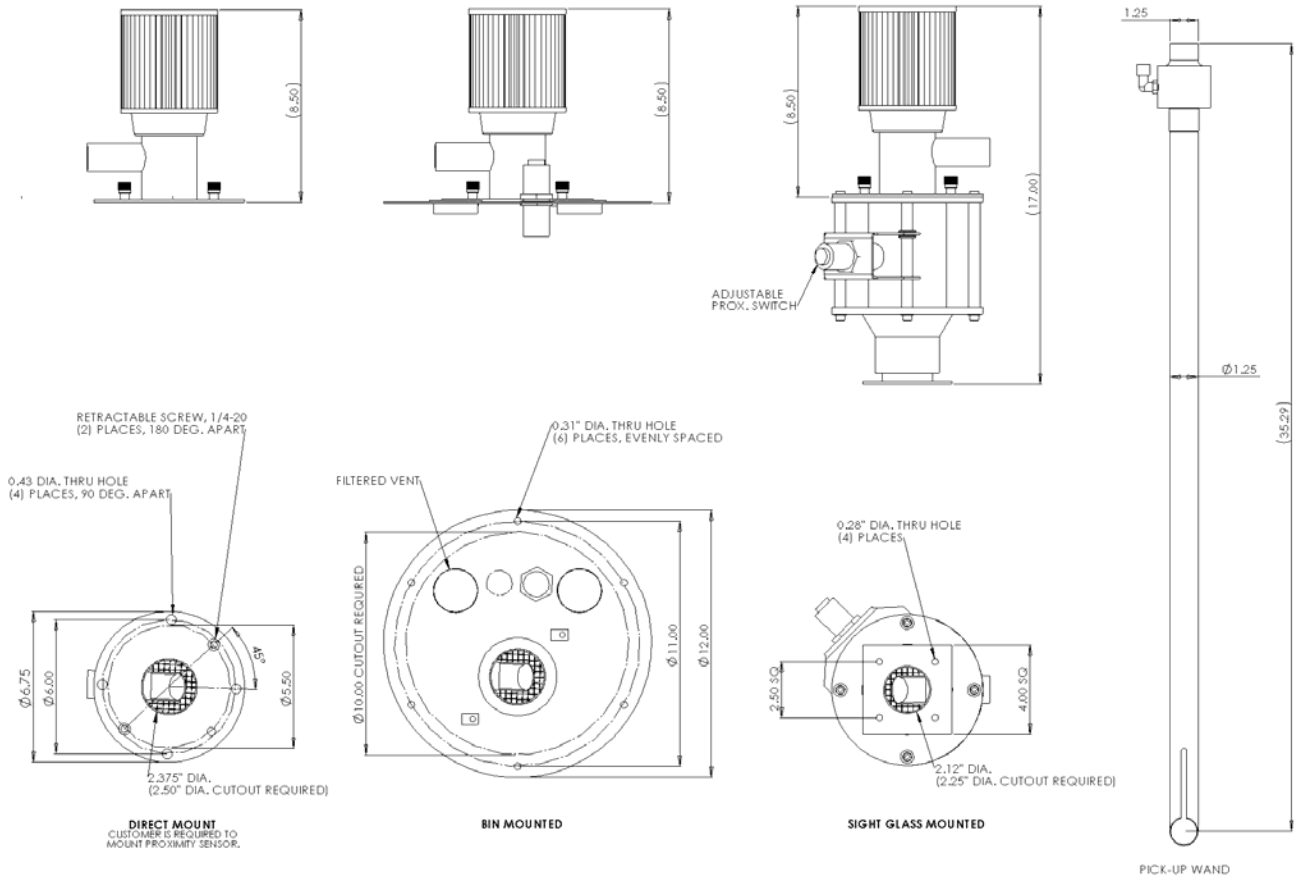
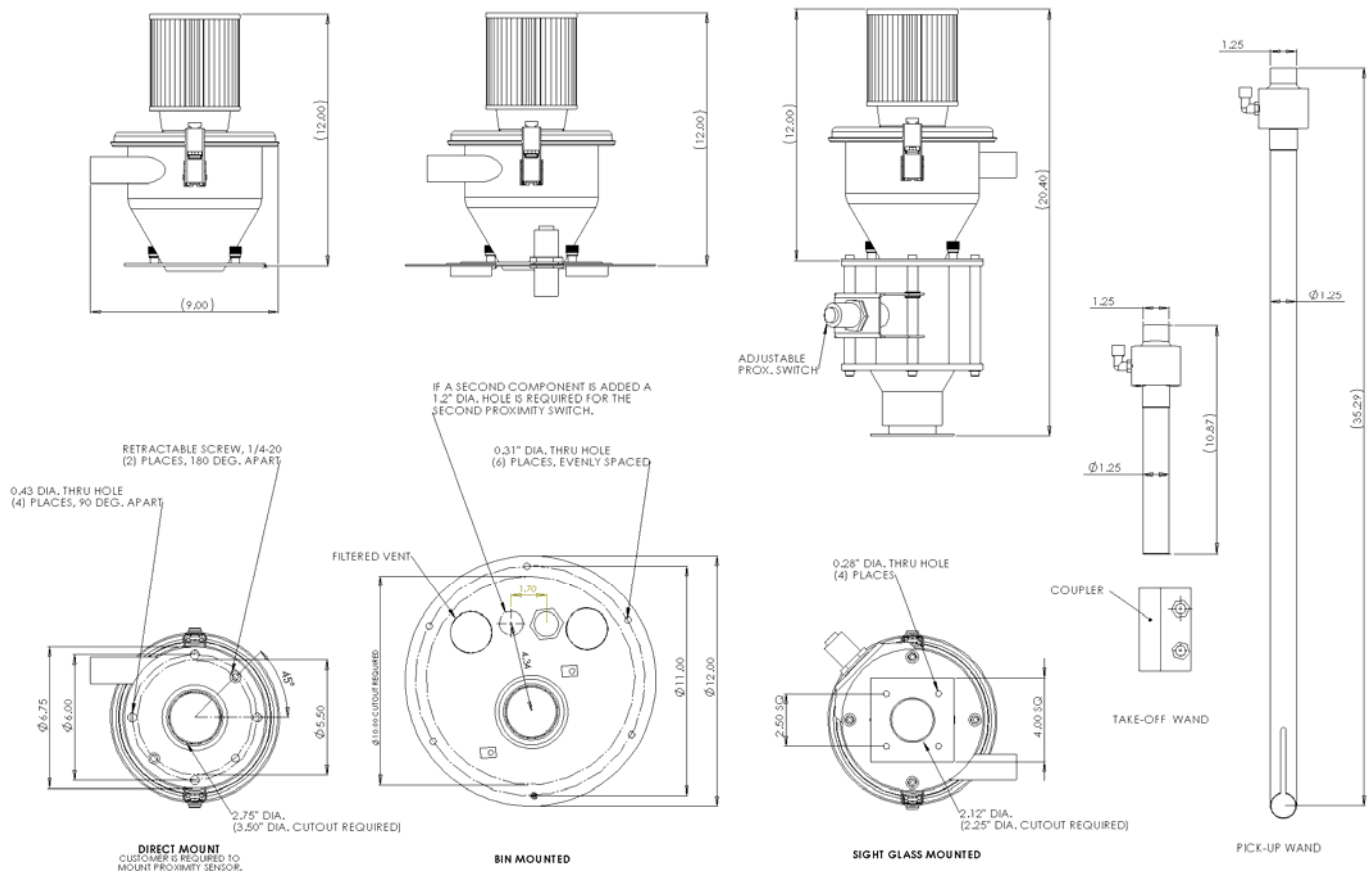
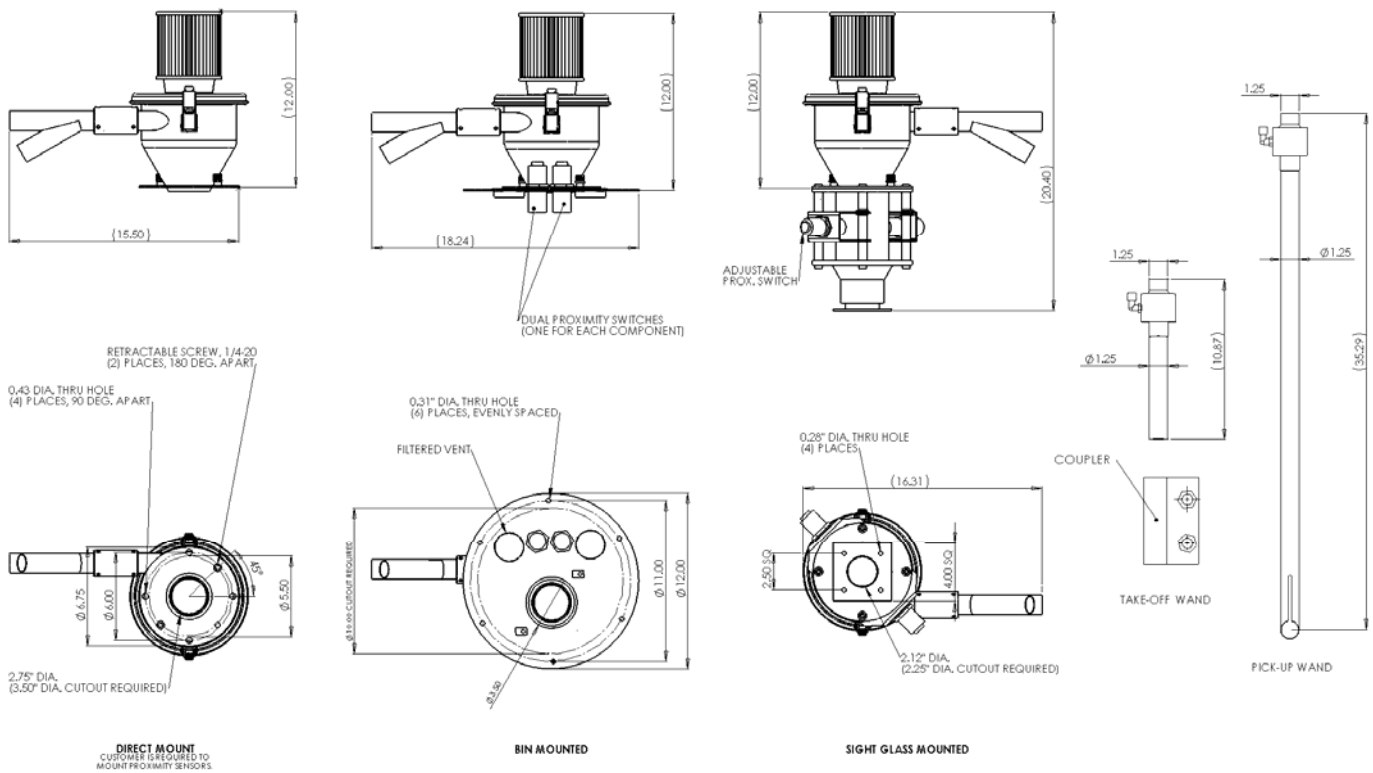


Figure 6.2: SVL-B



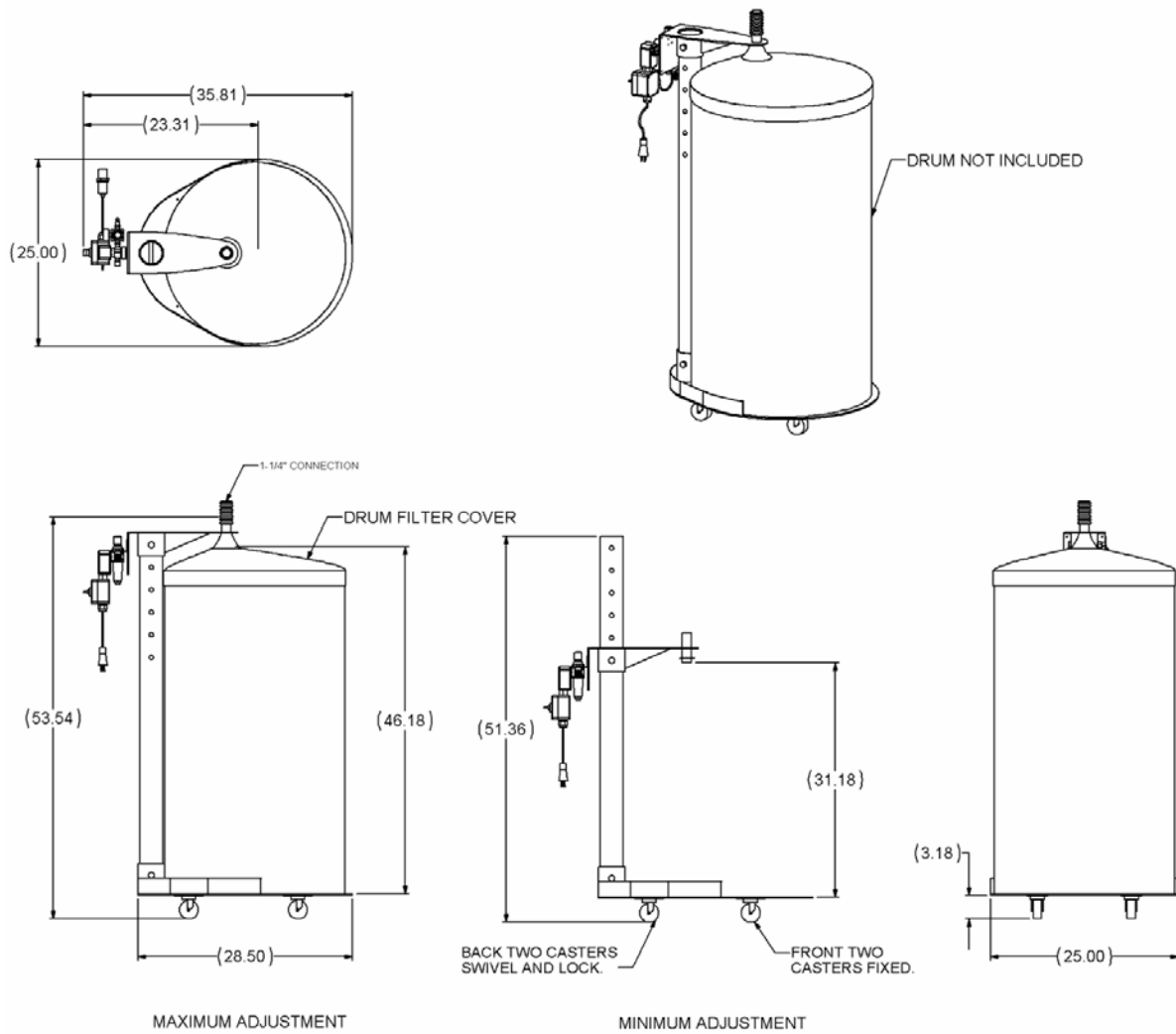
Dimensions and data are not binding. All dimensions are in inches. All data are subject to change.

Figure 6.3: SVL-C



Dimensions and data are not binding. All dimensions are in inches. All data are subject to change.

Figure 6.4: SVL-D



6-2 Spare Parts Lists

Figure 6.5: SVL-A

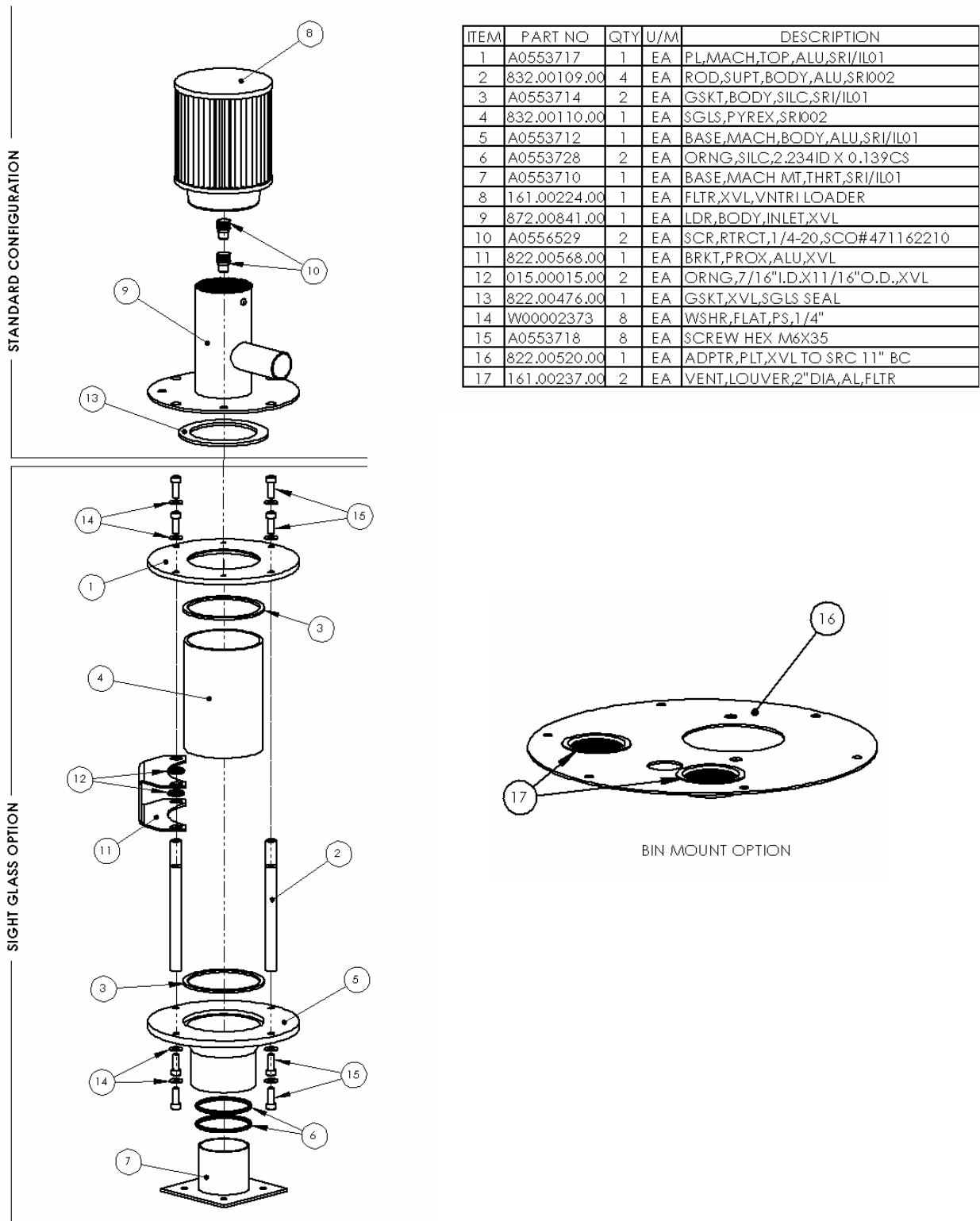
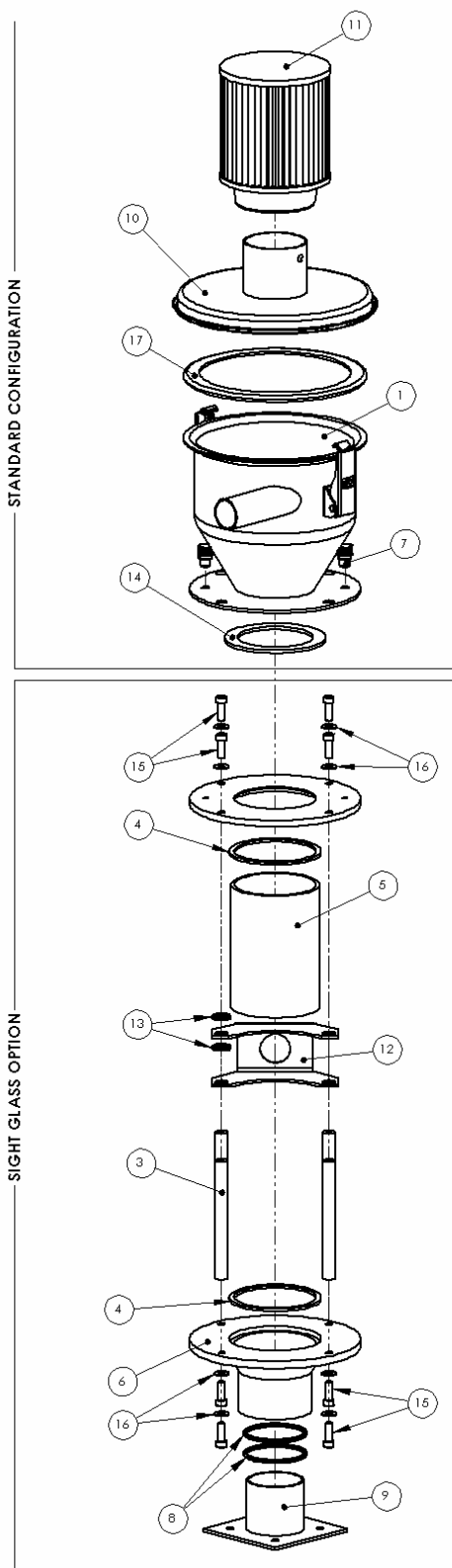
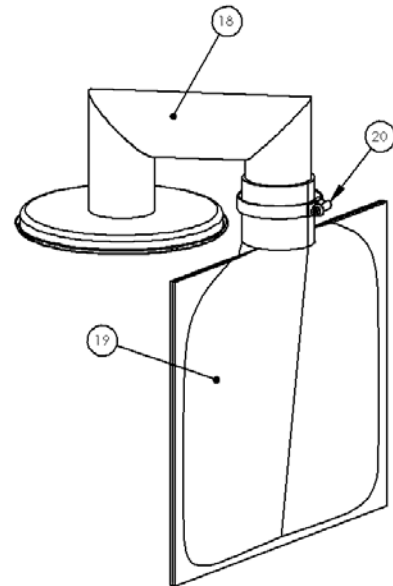


Figure 6.6: SVL-B



| ITEM | PART NO | QTY | U/M | DESCRIPTION |
|------|--------------|-----|-----|---------------------------------|
| 1 | 872.00786.00 | 1 | EA | ASSY,TANK,XVL,SS,1.25 INLET |
| 2 | A0553717 | 1 | EA | PL,MACH,TOP,ALU,SRI/IL01 |
| 3 | 832.00109.00 | 4 | EA | ROD,SUPT,BODY,ALU,SRI002 |
| 4 | A0553714 | 2 | EA | GSKT,BODY,SILC,SRI/IL01 |
| 5 | 832.00110.00 | 1 | EA | SGLS,PYREX,SRI002 |
| 6 | A0553712 | 1 | EA | BASE,MACH,BODY,ALU,SRI/IL01 |
| 7 | A0556529 | 2 | EA | SCR,RTRCT,1/4-20,SCO#471162210 |
| 8 | A0553728 | 2 | EA | ORNG,SILC,2.234ID X 0.139CS |
| 9 | A0553710 | 1 | EA | BASE,MACH MT,THRT,SRI/IL01 |
| 10 | 872.00827.00 | 1 | EA | ASSY,CVR,XVL,SS |
| 11 | 161.00224.00 | 1 | EA | FLTR,XVL,VNTRI LOADER |
| 12 | 822.00568.00 | 1 | EA | BRKT,PROX,ALU,XVL |
| 13 | 015.00015.00 | 2 | EA | ORNG,7/16" I.D.X11/16" O.D.,XVL |
| 14 | 822.00476.00 | 1 | EA | GSKT,XVL,SGLS SEAL |
| 15 | A0553718 | 8 | EA | SCREW HEX M6X35 |
| 16 | W00002373 | 8 | EA | WSHR,FLAT,PS,1/4" |
| 17 | A0565924 | 1 | EA | FLTR,FLAT,7.25OD,WIRE,10 MESH |
| 18 | 872.00928.00 | 1 | EA | WLDMT,XVL,BAG FLTR |
| 19 | 161.00243.00 | 1 | EA | FLTR,BAG,XVL,BAG FLTR OPTION |
| 20 | W00051440 | 1 | EA | CLP,HOSE,DIX#40,2.06-3.00 |
| 21 | 822.00520.00 | 1 | EA | ADPTR,PLT,XVL TO SRC 11" BC |
| 22 | 161.00237.00 | 2 | EA | VENT,LOUVER,2" DIA,AL,FLTR |

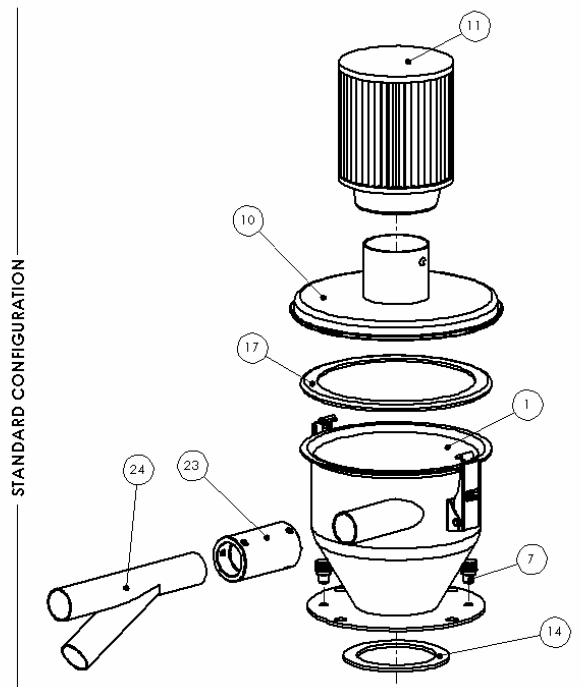


BAG FILTER OPTION

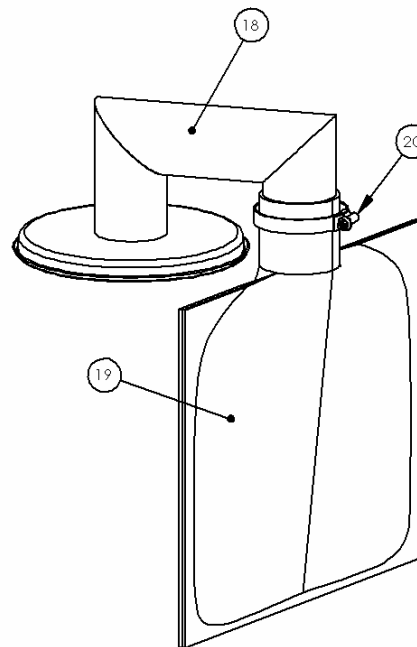
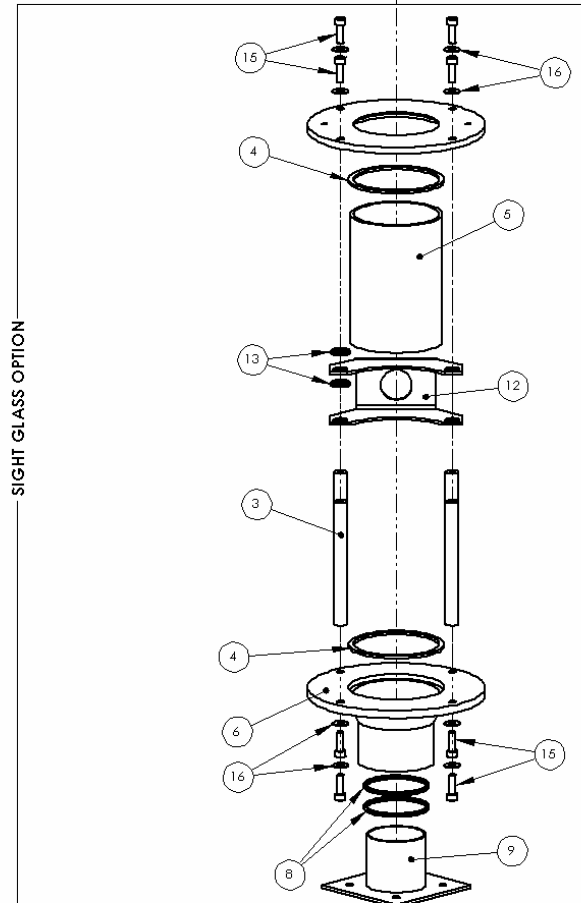


BIN MOUNT OPTION

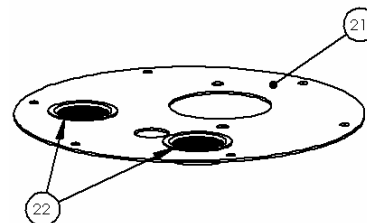
Figure 6.7: SVL-C



| ITEM | PART NO | QTY | U/M | DESCRIPTION |
|------|--------------|-----|-----|---------------------------------|
| 1 | 872.00786.00 | 1 | EA | ASSY,TANK,XVL,SS,1.25 INLET |
| 2 | A0553717 | 1 | EA | PL,MACH,TOP,ALU,SRI/IL01 |
| 3 | 832.00109.00 | 4 | EA | ROD,SUPT,BODY,ALU,SRI002 |
| 4 | A0553714 | 2 | EA | GSKT,BODY,SILC,SRI/IL01 |
| 5 | 832.00110.00 | 1 | EA | SGLS,PYREX,SRI002 |
| 6 | A0553712 | 1 | EA | BASE,MACH,BODY,ALU,SRI/IL01 |
| 7 | A0556529 | 2 | EA | SCR,RTRCT,1/4-20,SCO#471162210 |
| 8 | A0553728 | 2 | EA | ORNG,SILC,2.234ID X 0.139CS |
| 9 | A0553710 | 1 | EA | BASE,MACH MT,THRT,SRI/IL01 |
| 10 | 872.00827.00 | 1 | EA | ASSY,CVR,XVL,SS |
| 11 | 161.00224.00 | 1 | EA | FLTR,XVL,VNTRI LOADER |
| 12 | 822.00568.00 | 1 | EA | BRKT,PROX,ALU,XVL |
| 13 | 015.00015.00 | 2 | EA | ORNG,7/16" I.D.X11/16" O.D.,XVL |
| 14 | 822.00476.00 | 1 | EA | GSKT,XVL,SGLS SEAL |
| 15 | A0553718 | 8 | EA | SCREW HEX M6X35 |
| 16 | W00002373 | 8 | EA | WSHR,FLAT,PS,1/4" |
| 17 | A0565924 | 1 | EA | FLTR,FLAT,7.25OD,WIRE,10 MESH |
| 18 | 872.00928.00 | 1 | EA | WLDMT,XVL,BAG FLTR |
| 19 | 161.00243.00 | 1 | EA | FLTR,BAG,XVL,BAG FLTR OPTION |
| 20 | W00051440 | 1 | EA | CLP,HOSE,DI#40,2.06-3.00 |
| 21 | 822.00520.00 | 1 | EA | ADPTR,PLT,XVL TO SRC 11" BC |
| 22 | 161.00237.00 | 2 | EA | VENT,LOUVER,2" DIA,AL,FLTR |
| 23 | 892.01867.00 | 1 | EA | CPLG,ORNG,ASSY,1.25 TBG |
| 24 | 872.00902.00 | 1 | EA | TUBE,INLET,"Y",XVL,DUAL INLET |

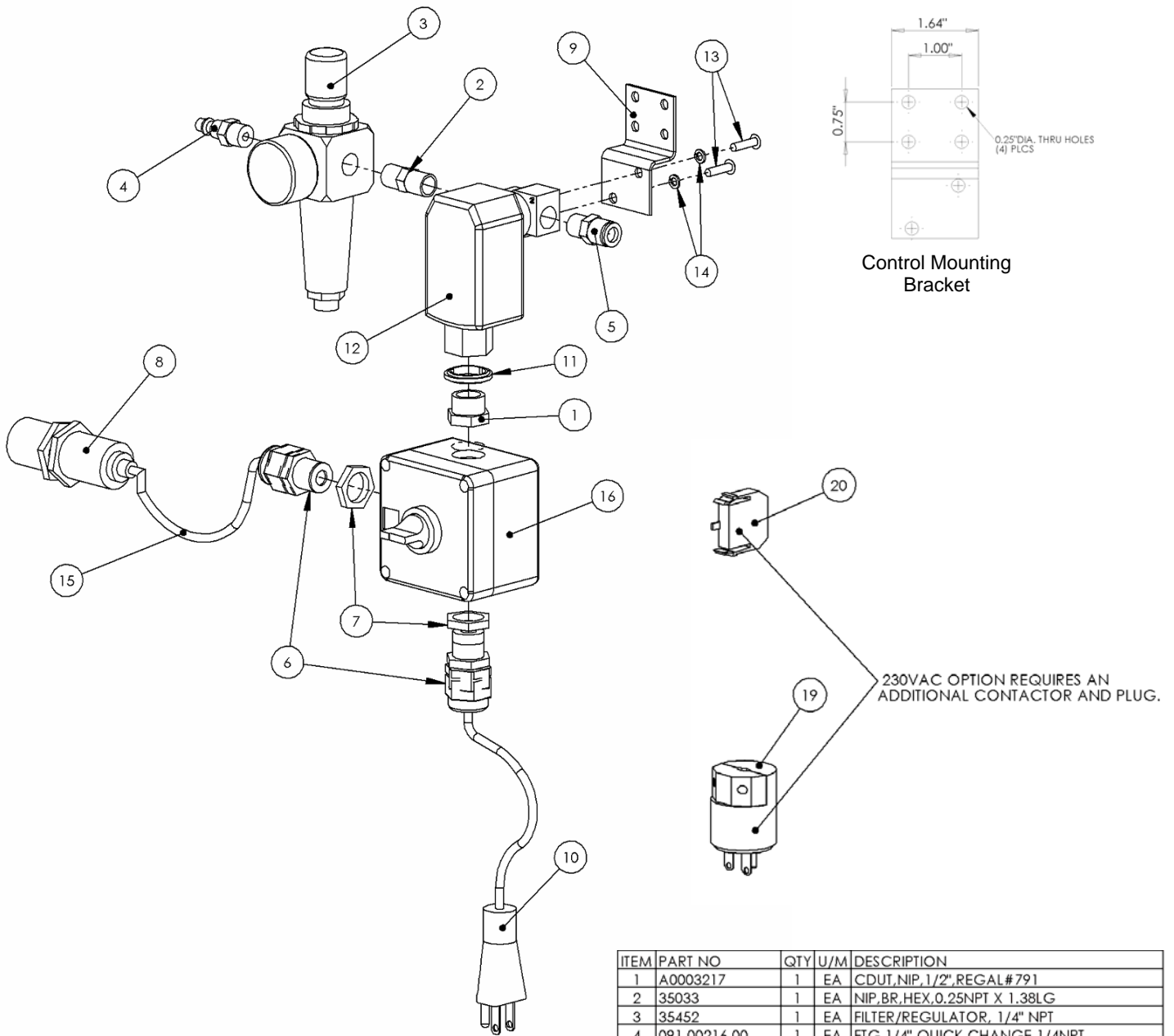


BAG FILTER OPTION



BIN MOUNT OPTION

Figure 6.8: Control Assembly



| ITEM | PART NO | QTY | U/M | DESCRIPTION |
|------|---------------|-----|-----|-----------------------------------|
| 1 | A0003217 | 1 | EA | CDUT,NIP,1/2",REGAL#791 |
| 2 | 35033 | 1 | EA | NIP,BR,HEX,0.25NPT X 1.38LG |
| 3 | 35452 | 1 | EA | FILTER/REGULATOR, 1/4" NPT |
| 4 | 091.00216.00 | 1 | EA | FTG,1/4" QUICK CHANGE, 1/4NPT |
| 5 | 091.00214.00 | 1 | EA | FTG,TBG,STR,3/8" TUBE, 1/4" NPT |
| 6 | A0541039 | 4 | EA | STRF, STR, BLK, 1/2NPT, .170-.450 |
| 7 | A0541262 | 2 | EA | NUT,LOCK,CND,0.50NPT,NYL,BLK |
| 8 | 730.00026.00 | 1 | EA | SW,PROX,CAP,AC,30MM,NC |
| 9 | 822.00591.00 | 1 | EA | BRKT,MTG,SOLV,XVL |
| 10 | 700.00316.00 | 1 | EA | CORD,PWRSPPLY,SJ,14/3,15AMP,9FT |
| 11 | A0506850 | 1 | EA | SEAL,CONN,BOX,LT,0.500NPT |
| 12 | 732.00219.00 | 1 | EA | SOLV,1/4 NPT,100-240VAC |
| 13 | 001.00016.00 | 2 | EA | SCR,BHC,SS,10-32 X 0.75 |
| 14 | 13092 | 2 | EA | WSHR,LOCK,PS,#10 |
| 15 | 700.00314.00 | 1 | EA | CBL,AC MICRO,3CND,5M,RT ANG CN |
| 16 | 156.00505.00 | 1 | EA | ENCL,ASSY,XVL,2POS SEL SW |
| 17 | 162.00001.99 | 1 | EA | COIL,VLV,SOL,1/4",100/240VAC |
| 18 | 162.00001.100 | 1 | EA | KIT,REBUILD,SOL,VLV |
| 19 | 718.00494.00 | 1 | EA | PLUG,MALE,NEMA6-15P,230VAC |
| 20 | 721.00079.00 | 1 | EA | CONTACTOR,CNTC,1NO |

Figure 6.9: Wand Assembly

| ITEM | PART NO | QTY | U/M | DESCRIPTION |
|------|--------------|-----|-----|-----------------------------------|
| 1 | A0770115 | 1 | EA | VNTR, COMPRESSED AIR, 1-1/4" |
| 2 | 822.00530.00 | 1 | EA | 1.25" DIA SS TUBE, 16 GA |
| 3 | 078.00103.00 | 1 | EA | FTG, AIR, ELBOW, 1/4 NPT-3/8" TBG |
| 4 | 27011 | 10 | FT | HOSE, FLEX, CLR, VINYL, 1.25ID |
| 5 | A0063013 | 10 | FT | TBG, PE, 0.375OD X 0.062W, NAT |
| 6 | A0548640 | 1 | EA | CLP, HOSE, DIX# 20, 0.81-1.75 |

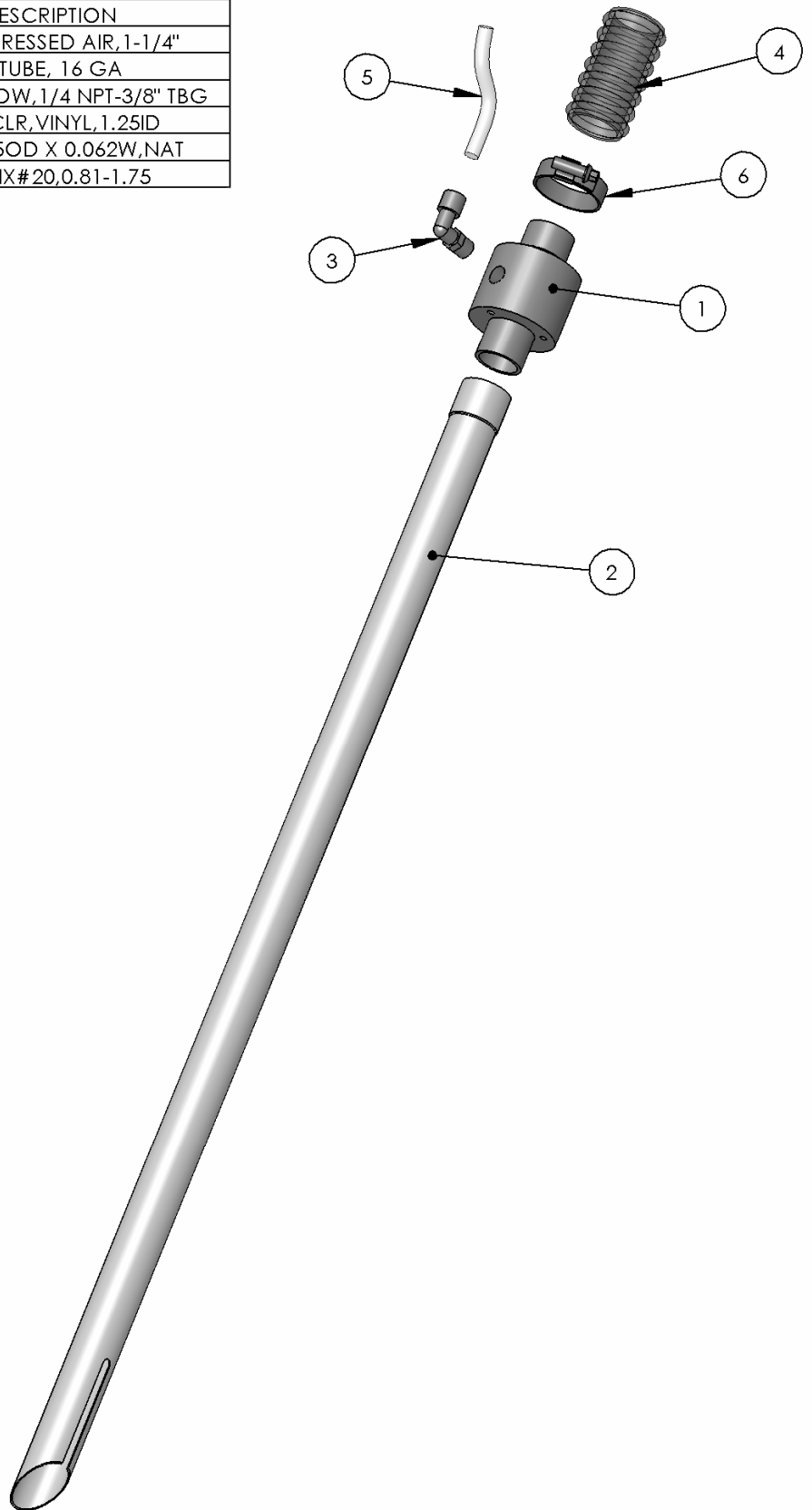
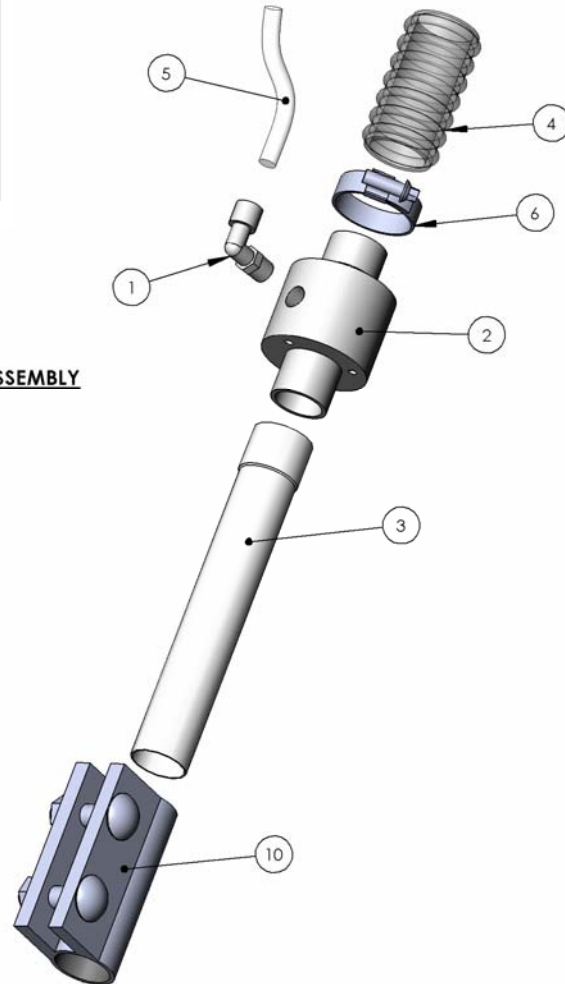


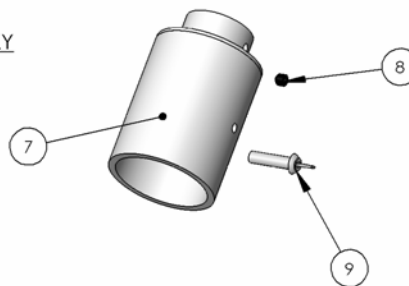
Figure 6.10: Take-Off Wand Assembly

| ITEM | PART NO | QTY | U/M | DESCRIPTION |
|------|--------------|-----|-----|--------------------------------|
| 1 | 078.00103.00 | 1 | EA | FTG,AIR,ELBOW,1/4 NPT-3/8" TBG |
| 2 | A0770115 | 1 | EA | VNTR,COMPRESSED AIR,1-1/4" |
| 3 | 822.00539.00 | 1 | EA | 1.25" DIA SS TUBE, 16 GA |
| 4 | 27011 | 10 | FT | HOSE,FLEX,CLR,VINYL,1.25ID |
| 5 | A0063013 | 10 | FT | TBG,PE,0.375OD X 0.062W,NAT |
| 6 | A0548640 | 1 | EA | CLP,HOSE,DIX#20,0.81-1.75 |
| 7 | 872.00924.00 | 1 | EA | UNIV TAKE OFF,BODY |
| 8 | 13263 | 1 | EA | SCREW,SET,1/4-20X1/4"LG |
| 9 | W00008534 | 1 | EA | SCR,THMB,PS,1/4-20 X 0.75LG |
| 10 | 233.00006.00 | 1 | EA | CPLG,CPRSN,1.5OT,3BLT,BLK |

TAKE-OFF WAND ASSEMBLY



**OPTIONAL -
UNIVERSAL TAKE-OFF WAND ASSEMBLY**
THIS FEATURE SECURES TO THE TAKE-OFF
WAND ASSEMBLY AND ADAPTS UP TO A
2" O.D. TUBE.



6-3 Quick Start Guide –SVL Self Contained Material Loader

- Unpack all parts. Check for the following:
 - Material receiver with level sensor and mounting option
 - Control Assembly(s)
 - Venturi assembly(s)
 - Vinyl flexible hose(s)
 - Compressed air hose(s)
 - Operating instructions (on CD)
- Mount the material receiver using the flange provided on its base.
- Mount the control assembly at a location that is readily accessible. Make sure that the compressed air hose and level sensor cable are long enough to reach the control assembly.
- Connect the compressed air supply from the control assembly to the fitting located on the material pick up wand using the poly tubing supplied with the equipment.
- Connect shop compressed air to the regulator on the control assembly. The compressed air connection must be 70-90 psi (5-6 bar). (Minimum 8 SCFM, maximum 25.9 SCFM)
- Plug the control assembly into the main power socket. Make sure that the correct voltage is being used.
- Adjust the level sensor to sense the material that is being conveyed into the conveying hopper.
- Maintain the unit as stated in Chapter 5 of this manual.
- Convey material

Technical Assistance

Parts Department

Call toll-free 7am–5pm CST [800] 423-3183 or [262] 641-8610, Fax [262] 641-8653

The ACS Customer Service Group will provide your company with genuine OEM quality parts manufactured to engineering design specifications, which will maximize your equipment's performance and efficiency. To assist in expediting your phone or fax order, please have the model and serial number of your unit when you contact us. A customer replacement parts list is included in this manual for your convenience. ACS welcomes inquiries on all your parts needs and is dedicated to providing excellent customer service.

Service Department

Call toll-free 8am–5pm CST [262] 641-8610 or call [800] 423-3183
Emergencies after 5pm CST, call [847] 439-5655

We have a qualified service department ready to help. Service contracts are available for most products.

Sales Department

Call [262] 641-8610 Monday–Friday, 8am–5pm CST

Our products are sold by a worldwide network of independent sales representatives. Contact our Sales Department for the name of the sales representative nearest you.

Contract Department

Call [262] 641-8610 Monday–Friday, 8am–5pm CST

Let us install your system. The Contract Department offers any or all of these services: project planning; system packages including drawings; equipment, labor, and construction materials; and union or non-union installations.

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