ABRASIVE BLAST ROOM RECOVERY SYSTEM
WITH SCREW CONVEYOR AND BUCKET ELEVATOR

INSTRUCTION MANUAL
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INTRODUCTION

Welcome to the ISTblast family of sandblasting products. This booklet contains helpful information and acquaints you with the operation and maintenance of your equipment. Please read carefully and follow our recommendations to assure trouble free operation. If you have any questions, please do not hesitate to contact your distributor or our technical service.

The products described in this manual, and the information relating to those products, is intended for knowledgeable, experienced users of abrasive blasting equipment. No representation is intended or made as to the suitability of the products described herein for any particular purpose or application. No representations are intended or made as to the efficiency, production rate, or the useful life of the products described herein. Any estimate regarding production rates or production finishes are the responsibility of the user and must be derived solely from the user’s experience and expertise, and must not be based on information in this manual.

The products described in this manual may be combined by the user in a variety of ways for purposes determined solely by the user. No representations are intended or made as to the suitability or engineering balance of the combination of products determined by the user in his selection, nor as to the compliance with regulations or standard practice of such combinations of components or products.

It is the responsibility of the knowledgeable, experienced users of the products mentioned in this manual to familiarize themselves with the appropriate laws, regulations and safe practices that apply to these products, equipment that is connected to these products and materials that may be used with these products.

It is the responsibility of the user to insure that proper training of operators has been performed and a safe work environment is provided.

Our company is proud to provide a variety of products to the abrasive blasting industry, and we have confidence that the professionals in our industry will utilize their knowledge and expertise in the safe efficient use of these products.

EQUIPMENT LIST

Be sure to identify correctly the components that you obtained. Check that they have not been damaged in transit.

Abrasive blast room structure

- Wall panels galvanized made of steel 14 gauge
- Air deflector for air inlet made of galvanized steel 14 gauge
- Air deflector for air outlet made of galvanized steel 14 gauge
- 14 gauge galvanized steel ceiling panels
- Steel posts
- Main doors
- Operator door
- Lightings with polycarbonate protection panel (bulbs not included)
- Door Safety Switch
- Emergency stop rope
- Hardware
- Rubber lining (optional)
EQUIPMENT LIST (CONT’D)

ABRASIVE BLAST ROOM DUST COLLECTOR
- Impeller
- Housing
- Hopper
- Structural supports
- Dust collector barrel
- Dust transfer hose (connects hopper and dust collector)
- Clamp for the dust transfer hose
- Assembly bolts for attaching the impeller to the housing
- Assembly bolts for connecting the housing to the hopper
- Filtration cartridge (the amount of cartridges depends on the model)
- Electronic controller to manage the automatic cartridge cleaning system
- Exhaust impeller muffler (optional)
- Ventilation ducts (optional)

ABRASIVE RECOVERY AND CLEANING SYSTEM
- Screw conveyor
- Rotating screen basket
- Bucket elevator
- Air Separator (Abrasive Cleaning System)
- Storage hopper
- Media transfer hose (Between air separator and dust collector barrel)
- Hose clamps for media transfer hose
- Dust collector barrel
- Inlet plate for the blow hose
- Depressurizing Hose Plate Kit
- Safety guard kit for the bucket elevator pit
- Steel grating
- Expanded metal
- Steel protection plate for motor
- Fittings

SANDBLASTING POT (PRESSURE VESSEL)
- Pressure vessel
- Pressure vessel lid
- Media transfer hose (Between the hopper and the pressure vessel lid)
- Hose clamps for media transfer hose
- Sandblasting hose
- Pneumatic or electric remote control
- Nozzle
- Pressurization / depressurization control unit
- Abrasive cut-off switch (optional)

OPERATOR PROTECTION EQUIPMENT
- 4-stage filtration system for air respirator
- Operator protective helmet

MAIN ELECTRICAL PANEL
See the assembly drawings for more details on how to assemble your sanding chamber. These drawings are specific to your configuration and are included with each sanding chamber shipment.

The entire structure of the blast room is supplied reinforced, with 14 gauge galvanized steel - G9. All wall and ceiling panels are designed to be bolted together during installation. All panel joints are sealed with sealant during assembly to ensure a tight seal. Before installation, the foundation must be flat and square. All access doors are equipped with safety interlocks in order to be able to interrupt sanding if a door is opened.
ABRASIVE BLAST ROOM STRUCTURE - CEILING PANELS & STEEL STUDS

WALL PANELLING

The panels are made from galvanized 14 gauge bolted together at every 6” for maximum stiffness. The panels are fastened together with 5/16” bolts and must be sealed with the caulk provided after assembly.

CEILING PANELS

The panels are made of galvanized 14 gauge bolted together at every 6” for maximum rigidity. Panels are secured together with 5/16” bolts and must be sealed with the caulking provided after assembly.

STEEL STUDS

Each joint between the wall and ceiling panels is reinforced with reinforced steel reinforcements formed, placed between the panels. These reinforcements are made of 3/16” thick sheet steel.
The interior walls of the abrasive blast room are protected by 1/8“ thick black rubber neoprene curtains.
ABRASIVE BLAST ROOM STRUCTURE - AIR CIRCULATION

The suction fan, through the dust collector and conduit network, creates a negative pressure of 1/2 "w.g. (Nominal) at one end of the blowing room. This causes the outside air to be sucked through the air inlets at the opposite end of the chamber and the development of a cross-flow airflow. The exhaust outlet is diverted to allow only the transport of dust-laden air. The inputs and outputs are proportionally sized to ensure adequate volume and airflows.

**Input Deflectors**

- **Room air inlet**
  - The dimensions and quantity of deflectors depend on the size of the abrasive blast room (they can also be on the doors)

**Outlet Deflectors**

- **Abrasive blast room air outlets**
  - Go to the dust collector of the abrasive blast room. The dimensions and the quantity of deflectors depend on the size of the abrasive blast room
ABRASIVE BLAST ROOM STRUCTURE - DOORS

MAIN DOOR
The entrance / exit doors are manufactured with steel tube frames painted with 18-gauge steel and fixed to structural “C” studs. These doors are equipped with a weatherproof, closed-cell closed-cell foam rubber gasket around the perimeter and a neoprene rubber seal at the sill. The included mounting hardware includes an FM approved panic safety lock and door pulls.

Exterior of the room

Type F screws have a fluted tip.

Hinge Bolts & Nuts
3/8” x 1” - 16

A pilot hole is drilled and the screw is placed in the pilot hole. Once the screw in it, it will make a net in the tube. The 16/64 “bits are included in the same box as the nuts.

Install the hinge as shown.

Foam door seal 1¼” wide x 7/8” thick. X roll 45’ long.

When the joint expands, it will have a thickness of 7/8”. Allow time for the joint to expand.

DOOR OPERATOR
One (1) 30”x 84” - 18 gauge, pre-fixed steel door in an industrial grade steel frame is supplied ready for mounting to the abrasive blast room.
ABRASIVE BLAST ROOM STRUCTURE - LIGHTING

Lighting is provided via 48” length LED fixtures accessible from the top of the booth for easy replacement. Each is mounted behind a polycarbonate protective lens “Lexan” sealed from inside the abrasive blast room with a continuous neoprene rubber seal placed around the perimeter of the opening of the window light. All devices are UL listed and approved for proper use and placement. These will all be open-type luminaires. This energy efficient lighting system must be supplied by a 110 V power source.

INSTALLATION

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<td>Adhesive foam tape applied on the steel panel that will seal the fixture when the Lexan will be installed.</td>
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9. EMERGENCY STOP PULL & DOOR SWITCHES

EMERGENCY STOP PULL

Install the emergency pull cord with the supplied hardware. It must be installed on the inside wall of the abrasive blast room, in front of the access door. Make the electrical connection to the main panel.

DOOR SECURITY: FLOW DIAGRAM

If you purchased this option, install contacts on each door of the abrasive blast room and connect them to the central control panel or control box on the pressure vessel.

INTAKE OF SANDBLASTING HOSES

You must cut openings in the wall of the blasting chamber to correctly install the inlet plate (A) to place the blast hose and air breathing hose into the abrasive blast room. Cutting is also necessary to install the pressure vessel depressurization hose, plate (B).
The dust-laden air enters the hopper side of the dust collector, under vacuum or under pressure. The air is then filtered through the cartridge and out through the venturis into the clean air plenum. Purified air can be extracted outdoors or recycled, depending on the application.

**The automatic cleaning system works as follows:**

For each row of cartridges, there is a diaphragm valve connected to an air tank. This diaphragm valve is actuated by a solenoid valve: An electronic controller opens successively each valve.

Short pulses of compressed air are ejected through orifices calibrated by the blowing tube in the venturi. The small primary flow of air through the venturi generates a much greater secondary flow of pure air from the distribution chamber; The combined air flow creates a pressure wave traveling down the cartridge, which breaks the dust cake accumulated on the cartridge.

Since only one row of cartridges is cleaned in a given time, the dust collector can run continuously.

---

### ROOM DUST COLLECTOR - MODELS LIST

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The required foundations must be prepared in advance, using the dimensions and weights shown in the overall drawing.  
The dust collector is partially assembled in our installations but is supplied in sections (housing, hopper and structural supports), it can also be equipped with additional ladders, gangways and accessories.

**1st Step**

Secure the structural supports to the foundation. Supply of material not included.

Screw the housing onto the hopper. You should properly seal this junction. The dust collector must be waterproof.

The turbine must be bolted to the top opening of the abrasive blast room.

According to the model, it will be necessary to install structural supports.

The installation material is shipped inside the dust collection drum.

Dust collector housing
**2rd Step**

Screw the housing onto the hopper. You will need to properly seal this junction. The dust collector must be waterproof.

If your dust collector is equipped with an adjustable baffle barrier, adjust it to the maximum opening.

**3rd Step**

Install the dust collection barrel under the hopper and use screw clamps to secure the dust hose.

The dust transfer hose connections and the barrel cover must be airtight.

**4th Step**

Ensure the air supply is clean, dry and oil free.

Connect the air supply to the pulse cartridge cleaning system. An air regulator must be used to maintain the air pressure at 70 psi in the accumulation tank. The pipe and fittings must be ¾” inside diameter.

**5th Step**

Connect the turbine power supply to the main electrical panel supplied with the abrasive blast room.

**WARNING**

Never drill holes in the housing or hopper of the dust collector. The use of self-drilling screws is also prohibited in order to keep the dust collector airtight.
ROOM DUST COLLECTOR - COMPOSITION

CONSTRUCTION

The standard unit is constructed of 3/16 “and 10 ga hot-rolled steel. The dust collection unit is formed and reinforced to maintain structural integrity at 25” w.g. All valves, wires, air hoses, solenoid valves and diaphragm valves are installed outside the housing. The size of the inlet and outlet flange will determine the size of the dust collector (refer to your dust collector manual).

CARTRIDGE

The operation of automatic cleaning of the cartridge is carried out by an inverse pulse of compressed air one row at a time. The cartridges are made of filters (cellulose / polyester). The negative pressure limit of these cartridges is 20 Hg. The maximum air flow allowed by each cartridge is 500 cfm. The filtration efficiency of this medium is 99.7% for the 0.3 microns.

IMPELLER

Installed on top of the dust collector housing or on the floor, the impellers vary in size from 5 hp to 150 hp. Adjust the power of the impeller according to the needs of your application.

CARTRIDGE ACCESS DOORS

The cartridge access doors are located on the front of the dust collector housing. These doors are used for the maintenance of the cartridges.

DUST COLLECTOR BARREL

One barrel (or more depending on model of dust collector) of 55 gallons included with dust collector.

For more details, refer to the appropriate manual for the DCM 3000 TO 50 000 SERIES DUST COLLECTORS.
ABRASIVE AND CLEANING SYSTEMS - CONFIGURATIONS

The steel grids cover the screw conveyors. These conveyors carry the media to a rotating screen basket that separates the media from the larger debris. The media coming out of the rotary basket feeds a vertical bucket elevator. Once raised, the media falls into an air wash system. This air washing system extracts dust from the media drop which continues its way to the storage hopper. The storage hopper feeds the media into the pressure vessel as used by the operator and so on.

RECOVERY AREA

Many configurations are available, see your custom drawing provided by ISTblast to meet your needs.

SOME EXAMPLES OF CONFIGURATIONS:
ABRASIVE AND CLEANING SYSTEMS - SCREW CONVEYOR

LONGITUDINAL

The longitudinal conveyor modules on the floor consist of a 10 ga steel screw structure. The screw is supported by a suspension bearing.

CROSSING

The transverse screw conveyor modules on the floor consist of a 10 ga steel screw structure. The screw is supported by hanging bearings. The transverse screw conveyor collects the overflow from the longitudinal screw conveyor.
The screw conveyors are assembled and pre-aligned in our factory. The subassemblies are identified by numbers which must be in correspondence during the final installation. The material is included with our conveyor.

You will first have to complete the excavation in which the screw and the bucket elevator are to be placed. These excavations must conform to the design specifications provided by ISTblast when purchasing the equipment. The dimensions vary according to the needs of your application and the type of configuration you have chosen.

**EXAMPLES:**
ABRASIVE AND CLEANING SYSTEMS - SCREW CONVEYOR

INSTALLATION

When you receive the various components of your sandblasting chamber, the sub-assemblies of the screw conveyor will be stacked on top of each other upside down to increase stability during ground transportation.

It will therefore be necessary to rotate the screw conveyor subassemblies in a vertical position and then use the appropriate lifting equipment to move them and install them in the appropriate excavation pit.

Always use the lifting anchor points to lift the subassemblies of the screw while moving. This will prevent undesirable deformation of the pre-aligned screw. The use of a girder beam is suggested for displacement operations.

Before assembling the individual sub-assemblies, the transport reinforcement parts must be removed. These pieces are painted with bright colors so they are easily spotted. If they are not removed, assembly will not be possible.

The sections of the screw conveyor to be assembled on site will be identified by corresponding numbers. Matching the numbers on the sections ensures proper alignment of the screw conveyor and screw.
When the assembly is complete, remove the internal reinforcement parts that are painted with bright colors. The screw must be activated until these reinforcements are removed or the screw could be seriously damaged.

There is an indicator on the side of the screw hopper of the recovery module. When sweeping the floor, it is strongly suggested to leave the recovery system on to avoid overloading the motors. Do not overload the screw with the abrasive, observe the max. media indicator.

The assembly flanges are located inside the screw hopper. Use the supplied bolts to assemble them.

If necessary, join the screw sections.

- Screw section
- Adjustable suspension support
- Hanging bearing
- Assembly hardware between the screw section and the center line
- Central axis
- Screw section
Once the various junctions are assembled, check that the alignment is always respected on the horizontal and vertical plane.

Before starting for the first time, check that the gear units are filled with lubricant in accordance with the maintenance specifications.

Remove the rubber plug on each gear unit to allow proper lubricant flow.
ABRASIVE AND CLEANING SYSTEM - SCREW CONVEYOR (CONT’D)

INSTALLATION (CONT’D)

Install expanded metal sheets and steel wire mesh over each hopper opening on the screw conveyor.

Cover plate for covering the motor and the gearbox.
ABRASIVE AND CLEANING SYSTEMS - COMPONENT ASSEMBLY

SCREW DETAILS

<table>
<thead>
<tr>
<th>#</th>
<th>STOCK</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>900420</td>
<td>WORM SCREW 9” X 9” DIAM.</td>
</tr>
<tr>
<td></td>
<td>900421</td>
<td>WORM SCREW 6” X 6” DIAM.</td>
</tr>
<tr>
<td>2</td>
<td>900422</td>
<td>GEAR MOTOR  3 hp / 575 V / 3 Ph / 60 Hz 180TC TEFC</td>
</tr>
<tr>
<td>3</td>
<td>900423</td>
<td>GEAR REDUCER</td>
</tr>
<tr>
<td>4</td>
<td>900424</td>
<td>HEADER-FOOTER BEARING   VF4E-239</td>
</tr>
<tr>
<td>5</td>
<td>900407</td>
<td>HANGER BEARING SUPPORT</td>
</tr>
<tr>
<td>6</td>
<td>900405</td>
<td>HANGER BEARING CONNEXION CB-2-7/16”</td>
</tr>
<tr>
<td></td>
<td>900406</td>
<td>HANGER BEARING BOLTS 2-7/16”</td>
</tr>
<tr>
<td>7</td>
<td>900404</td>
<td>AXLE CONNEXION CC2-7/16”</td>
</tr>
<tr>
<td>8</td>
<td>900425</td>
<td>ROTARY DRUM SCREEN</td>
</tr>
<tr>
<td>9</td>
<td>919729</td>
<td>HANGER PAD</td>
</tr>
</tbody>
</table>
5- COMPONENT RECOMMENDATIONS

Before starting the conveyor, check again the rotation of the motors, the electrical connections and make sure that the conveyor is empty and free from obstructions. Make sure all covers and guards are installed before starting the conveyor.

When you activate the conveyor for the first time, make sure it is media free. Let it work for several minutes to observe unusual noises or any apparent misalignment. If one of these situations occurs, follow these steps:

1. The misalignment between the components must be checked again. Do not force the alignment of components, but check and correct the causes of misalignment.
2. Check the assembly and mounting bolts. Tighten them if necessary.

LUBRICATION BEARINGS

Some conveyor supports and suspension brackets operate without lubrication to avoid contamination of materials; Some are sealed for life and others require periodic lubrication.

For specific lubrication recommendations, refer to the lubrication data of the bearing manufacturer.

When lubricating ball bearings or roller bearings is necessary, be sure to use a recommended lubricant. Do not over lubricate as the seals may be damaged.

LUBRICATION FREQUENCY

The regreasing frequency varies depending on the number of hours of operation, the temperature and the surrounding conditions.

When relubricating the end bearings, add the grease slowly, preferably when the spindle rotates until there is a slight leakage at the joints. In extremely dusty conditions, it is advisable to maintain this leak. For special stops, cover the bearing and add some fresh grease before re-starting after a period of inactivity.

Since these bearings operate at lower speed ranges, the normal temperature will be maintained with proper lubrication. Be careful when using a high pressure, high pressure gun.

INSPECTION

It is recommended to inspect the conveyor periodically for excessive wear or damage. Important points to check: intake and discharge points, wall thickness at the outer edge, condition of the bearings, etc.

Since the highest torque is transmitted to the drive shaft and to the conveyor connection, it is recommended to periodically remove the coupling bolts to inspect the enlargement of the bolt holes and if there are any worn or worn bolts.

A set of spare parts must be kept at hand to ensure stable production without unplanned shutdown.

When ordering spare parts for your conveyor, refer to the “Recommended Spare Parts List” to select the appropriate parts and indicate the appropriate part numbers. It is useful to identify your conveyor with regard to size or number if indicated. Providing ISTblast with this information will eliminate errors and speed up the delivery of spare parts.

ISTblast can assist in the selection and design of special devices or equipment that will help the owner and installer to prepare a safe facility and workplace.

1. Overflow devices consisting of a hinged door connected to a limit switch can be arranged to cut off the feeding of the conveyor when the conveyor discharge is interrupted or clogged and full.
2. Zero speed switches may be provided to turn off the power supply when the conveyor stops because of the presence of foreign objects or if for some reason the drive end of the conveyor is still running. The opposite end is stopped.

There are many types of electrical interlocking of conveyors and conveying systems, so that if a conveyor in a system or process is stopped, other equipment that feeds or follows it can also be automatically stopped.

There are also many ways to make sure that a conveyor will not turn until the housing and protections are all in place. For such electrical control devices and circuit design, consult your manufacturer in electrical equipment.

The inlet and outlet openings of the screw conveyor are designed to connect to other equipment or machines so that the flow of material entering and exiting the conveyor is completely contained.
ABRASIVE AND CLEANING SYSTEMS - PERFORATED ROTARY DRUM

A rotating screen drum is installed at the end of the transverse screw conveyor to filter out larger debris that could have contaminated the media. The rotating drum screen consists of a 11 gauge steel sheet with 3/16 “diameter holes. The body of the rotating basket is 30” long by 14 “diameter. There is a welded helix inside and outside the body.
The bucket elevator is connected either directly to a storage hopper installed at the ground level or to the outlet of a perforated rotating drum located at the end of a transverse screw conveyor.

A) CONSTRUCTION

The bucket elevator structure is made of 14 gauge steel sheet. The buckets are steel and attached to a steel reinforced rubber belt. The buckets are spaced apart from each other with an 8” gap to provide a steady flow of abrasive.

B) DRIVING

The bucket elevator is driven by a 2 hp motor fitted with a gearbox which reduces the speed in order to increase the torque capacity of the motor.

C) ADJUSTMENT

The tension in the steel-reinforced rubber belt is easily adjustable with the tighteners at the bottom of the bucket elevator. The adjustment should be equal to both sides of the elevator to keep the belt properly aligned in the center of the elevator. If one side has more tension than the other, the belt slides towards the opposite side and could even touch the inner side of the housing.

D) BEARINGS

The upper roller is coated with a synthetic coating to ensure non-slip contact with the belt. The lower roller is an aerated drum to prevent the abrasive from being trapped between the roller and the belt.

E) INSTALLATION

The described procedures are an acceptable method for erecting bucket elevators. It is recognized that other procedures can be equally effective and that variations may be useful depending on the conditions and the environment. It is recommended that personnel familiar with the erection of elevators be used for the installation of this equipment.

A suitable foundation for the weight of the lift as well as appropriate anchor bolts shall be provided.

1. Place the base section on the foundation and make sure that the side of the power supply is properly positioned.
2. Anchor the base section securely with foundation bolts.
3. If the elevator is specified as requiring sealing media at the casing joints, apply a sealant or sealant to the upper flange of the base section.
4. Install the rest of the elevator housing sections except the removable, removable cover. Make sure that sections with doors, connection holes, etc. are properly placed and apply sealant or sealant when specified. If you are installing a bucket elevator in sections, upgrade each section independently.
5. Attach ladders and safety cages to each section of the envelope as the erection progresses. Assemble the service platform and attach it to the section of the head then level and align the envelope fully using lead wires hanging centrally on each side of the casing. PERSONNEL MUST NOT USE A SCALE OR DECK BEFORE INSTALLING THE LATERAL BRACKET.
Use the appropriate lifting equipment to place the bucket elevator in an upright position.

Attach the elevator to the bottom of the excavation. (Equipment not supplied with the bucket elevator)

Verify that the elevator is level on all sides along the vertical axis. The use of a plumb bob is suggested. Use a gasket between flange n° 1 and the air flange.

Use a seal between flange 2 and the perforated rotary drum assembly.
Increase belt tension by turning the adjusting screw clockwise.
The tension must be equal on both sides of the bucket elevator.

Use this access door above the bucket elevator to check that the belt is correctly centered on the top roller.

The distance on each side of the belt must be equal.
If this is not the case, adjust the tension on either side of the bucket elevator.
A bucket elevator is a simple mechanical device to raise bulk materials that will provide many years of trouble-free service if the right conditions are met. These conditions include:

- If the motor, speed reducer, drive and bearing power are adequate
- If the proper diameter and fitting is provided on the head and tail pulleys
- If the appropriate steel is used to support the weight of the lift and the material is high
- If the width of the buckets, belt and enclosure conform to CEMA standards
- If the column is erected square and level
- If the speed of the belt is included within the bucket manufacturer’s limits for proper discharge
- If the original equipment has not been modified or the capacity increased

If all the «If» above are met, then the risk of problems is very low. The problem is that it is a set of «If»; Therefore, consider some troubleshooting ideas in reality. The following table lists the common problems with possible causes and remedies.

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>CAUSE</th>
<th>REMEDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Media falls at the bottom of the column</td>
<td>Buckets are overloaded, causing premature discharge.</td>
<td>Open the inspection hatch and use a strobe light while the elevator is running to see if the buckets are overloaded. The buckets should be nearly full, but not overflowing. Check the speed of the head pulley and the capacity of the equipment feeding the column.</td>
</tr>
<tr>
<td>Media falls from the bottom column</td>
<td>The obstruction is to discharge the head.</td>
<td>Check head discharge for foreign matter; Check if there is a missing bucket; It can generally be found in the discharge transition</td>
</tr>
<tr>
<td></td>
<td>The throat brush is not adjusted</td>
<td>Remove the cover and adjust the brush</td>
</tr>
<tr>
<td></td>
<td>Check that the spillway is not too small, that the elbows are too short or too tight or that the media may leak.</td>
<td>Check the spillway and clean or modify as required</td>
</tr>
<tr>
<td></td>
<td>Pressure builds up in the tanks and the spillway</td>
<td>Add aerators on top of trays</td>
</tr>
<tr>
<td></td>
<td>The tray or tank is full.</td>
<td>Carefully monitor the tank or tank.</td>
</tr>
<tr>
<td>Belt is not tracking in center of pulleys.</td>
<td>Boat pulley improperly adjusted.</td>
<td>Adjust take-up screws on boat to level pulley</td>
</tr>
</tbody>
</table>
**PROBLEM** | **CAUSE** | **REMEDY**
---|---|---
**The belt rubs on the side of the head or the hood** | The column is no longer level or distorted. The head pulley is not level. Media accumulation on pulleys Roulements usés. The packing of the head pulley is unevenly worn; The belt will slide downward. | Use transport to check and correct condition Use transport to check and correct condition Place shims under the bearings of the head to level the shaft. Check the pulleys and clean if necessary. Replace the worn bearings. Replace the packing if it is worn. |
**Excessive sliding of the belt or burning of the belt.** | Worn or loose head pulley trim The drive motor is too powerful. Normally, a belt stretches, especially when it is new. | Replace it with manufacturer recommended Check and use an engine with adequate power. Adjust the belt with tensioners if more tension is required. |
**Excessive belt loosening.** | A piece of equipment in the feed column runs too fast or is of poor size. The lift is biased. The pulley rotates too slowly. The drive motor is too weak. Line voltage too low to motor. Weak wiring. | Check speed and capacity Correct the column direction method Check to correct speed Use all the power required for proper operation of the lift. Check the motor voltage. Use a proper wire gauge for the required voltage. |
**The elevator column is overloaded.** | The elevator column is overloaded. | |
**The column does not provide capacity.** | Head axis speed too low. The pulley housing is too high. Check the capacity of the equipment that feeds the column The media is too light The input is too low. | Check the axle speed by making sure that the pulleys are not swapped, that they are correctly installed and that the gear unit has a correct reduction ratio.. Lower the pulley housing If the capacity is correct, make sure that the media is in the column Decrease the speed of the axis The bottom of the inlet must never be lower than the axis of the pulley in its highest position. |
1 – HOW IT WORKS

Reusable media, dust and non-reusable media from the bucket elevator fall into the air separation system consisting of several deflectors. A flow of air is created by the fall of the support allowing to extract the dust from the mixture. The reusable media is directed to the storage hopper to fill the sandblasting pot. A selection of granularity is made possible by an internal door. The non-reusable media is lighter than the reusable media but heavier than the dust, so it can be directed into the non-reusable drop which is ultimately connected to a recovery barrel.

2 – CONSTRUCTION

The structure of this system is made of 12 gauge hot-rolled steel.

3 – CFM REQUIRED (CUBIC FOOT PER MINUTE)

300 cfm (Provided by the dust collector of the room)
4 - AJUSTEMENTS

The adjustment of the air separator to fine-tune the selection of the granularity is made possible by the external lever located on the side of the assembly.

5 - ADJUSTMENT OF “GRANULARITY”

A wider range of media granularity will fall into the storage hopper.
The media mixture will include fine particles

A smaller range of media granularity will fall into the storage hopper.
The reused media will have fewer fine particles
ABRASIVE AND CLEANING SYSTEMS - STORAGE HOPPER

(From 6 ft³ to 100 ft³).

HOW IT WORKS

INSTALLATION

Install the frame frame. Do not anchor it yet.
ABRASIVE AND CLEANING SYSTEMS - STORAGE HOPPER

INSTALLATION (SUITE)

Use the appropriate lifting equipment to position the storage hopper on the structural frame.

Install the storage hopper on the structural frame.

Install the air separator and assemble the junction with the included bolts. Seal these two junctions to prevent leakage of the media and to keep the dust inside the frame of the bucket elevator and the air separator system.

Use the appropriate lifting equipment to position the air separator system on top of the top of the recovery hopper.
Tighten the anchor bolts to finalize the storage hopper installation.

Connect a 4” hose that will provide the air flow used to separate the dust from the media. This pipe must be connected at the other end to the abrasive blast room collector.

Install and screw the structural reinforcement to stabilize the bucket elevator.
ABRASIVE AND CLEANING SYSTEMS - STORAGE HOPPER

INSTALLATION (SUITE)

There is a high level media sensor installed on the recovery hopper. When this sensor is activated, the recovery system stops automatically to prevent overfilling of the recovery hopper.

Install and secure the railing to avoid falling into the elevator pit.

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<table>
<thead>
<tr>
<th>#</th>
<th>STOCK</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>924383</td>
<td>LADDER</td>
</tr>
<tr>
<td>2</td>
<td>919540</td>
<td>3” ZINC PLATED STEEL CLOSURE</td>
</tr>
<tr>
<td>3</td>
<td>930198</td>
<td>ADJUSTABLE GREEN GUIDE GREEN, 18”, PLATE 2”</td>
</tr>
<tr>
<td></td>
<td>919883</td>
<td>+ COMP SPRING. TEMEPED STEEL 11 “L .968 “OF.105”</td>
</tr>
<tr>
<td>4</td>
<td>901460</td>
<td>STEEL BARREL 20 GAL. 18 GA WITH LID, 21½ “HIGH</td>
</tr>
<tr>
<td>5</td>
<td>919170</td>
<td>BARREL TROLLEY 55 GA 700 lb CAP. WHEELS 2½ ”</td>
</tr>
</tbody>
</table>
4" of hose to be connected here at one end and above a dust collecting barrel at the other end. Use a screw flange to secure the hose.

The hose carries fine particles. The particle size in the dust collector depends on the setting of the air separator system.

Secure the hose using a screw worn flange.
WARNINGS FOR PRESSURE VESSELS

WARNING

- All persons who will be operating or will be in the vicinity of the Abrasive Blaster during its operation must receive proper training on how to safely operate the equipment and be informed of the potential hazards involved. In addition to proper training, all persons who will be operating or will be in the vicinity of the Abrasive Blaster during its operation must read, understand and follow all procedures described in the user’s manual. For replacement manuals, please contact your distributor or visit www.ISTblast.com.

- Respiratory protection is mandatory for all persons operating or located in the vicinity of the Abrasive Blaster. Follow all OSHA and NIOSH requirements for breathing equipment and supplied air standards.

- Pressurized Vessels contain large amounts of stored energy and can cause severe injury or death if safety procedures are not followed. Never perform maintenance or attempt to open a Pressure Vessel for any reason while it is Pressurized. Always Depressurize and properly disconnect equipment from its air source before performing any maintenance. Do not modify, grind or weld on the pressure vessel for any reason. Doing so will void the ASME certification. Do not use damaged pressure vessels.

- The use of proper remote control systems (commonly referred to as Deadman controls) are required when using abrasive blasters. Never operate the Abrasive Blaster without remote controls. Never use bleeder type control handles, with RC175 or RC185 series blasters as they can cause a hazardous situation where the blaster will not shut off when the handle is released.

- All persons who will be operating or will be in the vicinity of the Abrasive Blaster during its operation must protect themselves with the proper safety equipment and use of common sense. Safety equipment including but not limited to Hearing, Eye, Body and Lung protection are required. Abrasive blasters and the objects being blasted can be heavy and can lead to severe injury or death if they fall over. Always follow all safety requirements of OSHA and NIOSH.

- Use only Genuine ISTblast replacement parts when performing maintenance on the Abrasive Blaster. Do not modify the equipment for any reason. Use of modified brand parts can cause an unsafe situation and will void your warranty.

- Never use malfunctioning or damaged equipment. Before each use, inspect the Abrasive Blaster for proper function.

- Supply only cool, dry, compressed air that is free of debris to the Abrasive Blaster. Moisture or debris that reaches the remote control system can cause an unsafe situation. Do not supply compressed air to the blaster that exceeds 150 psi.

- Use of an air line pressure regulator is strongly recommended.

- Do not use abrasive blasters in areas that could be considered a hazardous location as described in the National Electric Code NFPA 70, Article 500. Never use the Abrasive Blaster in wet environments. Always connect electrically controlled abrasive blasters to a Ground Fault Circuit Interrupter (GFCI).
The Procedures provided in the Operating Procedures section of the manual are designed to provide basic information on how to safely operate the features of ISTblast RC-175 / RC-185 Series Abrasive Blasters. Only personnel thoroughly trained in abrasive blasting should operate the Abrasive Blaster.

**WARNING**

The reference in Surface Treatment section of the manual are designed to provide basic information on how to safely operate the features of ISTblast RC-175 / RC-185 Series Abrasive Blasters. Only personnel thoroughly trained in abrasive blasting should operate the Abrasive Blaster.

**INSPECT PRESSURE VESSEL**

When you receive your Abrasive Blaster, remove the Handway Assembly and check for foreign items that may have fallen into the Abrasive Blaster through the Pop-up opening. Remove any foreign materials and reinstall the Handway Assembly.

**DANGER**: Never perform any maintenance or attempt to open the Abrasive Blaster in any way while it is pressurized. The violent release of compressed air and propelled objects will cause serious injury or death.

**PURGE AIR SUPPLY HOSE**

Before connecting the Air Supply Hose to the Abrasive Blaster, purge the hose of any moisture or foreign debris. Standing water or moisture in the air line will cause degraded performance of the Abrasive Blaster. Air supplied to the Abrasive Blaster must be clean, dry and cool.

**ATTACH REMOTE CONTROL HANDLE**

Attach the Remote Control Handle to the Blast Hose near the Nozzle with hose clamps or heavy wire ties. Form a loop of Twinline/Control Cord that comes 6” away from the Blast Hose, runs 6” parallel to the Blast Hose, and comes 6” back to the Blast Hose. Using duct tape, attach the Twinline/Control Cord to the Blast Hose where the loop ends by wrapping the tape around the Twinline/Control Cord twice and then around the Blast Hose. At the point where the buckle ends, attach the Twinline/Control cord to the sandblasting hose by twice wrapping tape around the Twinline/Control cord and then around the blast hose to form a decompression clip.

Do this only on the first connection near the control handle. Attach the remaining Twinline/Control cord to the blast hose by wrapping tape around the cord and hose every 3 feet, beginning at the end of the blast hose nozzle.

**RE-TIGHTEN HANDWAY ASSEMBLY**

After the Abrasive Blaster has been pressurized for the first time, tighten the nut on the Handway Assembly. Tightening the nut on the Handway Assembly should also be done any time after the handway has been removed for maintenance before and after the next pressurization.

**DANGER**: Never perform any maintenance or attempt to open the Abrasive Blaster in any way while it is pressurized. The violent release of compressed air and propelled objects will cause serious injury or death.
INSTALLATION AND CONNECTIONS OF THE PRESSURE VESSEL

CONNECTIONS BETWEEN THE PRESSURE VESSEL AND THE STORAGE

1. Connect the media hoses between the butterfly valves under the storage hopper to the inlet plate of the pressure vessel and to the dust barrel.

2. Connect the flexible hose between the side of the storage hopper and the inlet plate of the pressure vessel.

PRESSURE VESSEL LID

- Connect the other end of the 4” media transfer hose to the pressure vessel cover.
- Hose of overpressure plunger that connects to the storage hopper.
- Support deflector to protect the plunger against media accumulation.

Butterfly valve allows the operator to empty the storage hopper for servicing. This valve is normally closed.

Butterfly valve allowing the passage of media from the storage hopper to the pressure vessel. This valve is normally open. It is useful to close it during maintenance on the pressure vessel. Connect a 4” transfer hose with a worm screw flange.
The customer supplies the air supply to a normally closed AV-176 valve.

When the PRESSURIZATION SWITCH is activated, the AV-176 combined air valve opens to allow air to enter and pressurize the tank. The pressure tank is now ready for the sand blasting operation.

In order to start the sandblasting operation, all the doors of the sandblasting room, equipped with a safety switch, must be closed.

It is only when all the doors are closed that the operator will be able to start the blasting operation.

The operator will start the operation by pressing the control handle located on the sanding hose near the nozzle.

The AV-186 air valve and PMV 186 abrasive metering valve then open to begin the sanding operation.

When the operator releases the control handle, the sanding operation stops. The pressure vessel remains under pressure, ready to repeat the sanding operation when the operator presses the control handle again.

When the blasting operation is complete or when the pressure vessel is to be filled with the abrasive, the operator releases the control handle. In order to depressurise the tank, the operator must turn the depressurization switch to the OFF position.

**WARNING**

**CAUTION: NEVER LEAVE THE PRESSURE VESSEL UNDER PRESSURE WHEN NOT USED.**

The pressure vessel must be depressurized and the air supply deactivated.
PRESSURE VESSEL - PRE-BLAST CHECKING

Before each use of the Abrasive Blaster, it must be checked to ensure it is in a safe condition to be used. Closely examine all components of the Abrasive Blaster for signs of excessive wear, worn out seals and hoses, or damaged components. If any component of the Abrasive Blaster is found to be damaged or worn, it must be replaced before blasting.

**WARNING**: Never use an Abrasive Blaster if any components are damaged or worn. Damaged or worn parts must be replaced before use.

ADDITION ABRASIVE

When you are preparing to use your machine for the first time, we suggest that you thoroughly close the abrasive dosing valve located under the tank before refilling. Please refer to the section on adjusting the metering valve later in this manual. Before filling the sandblaster, make sure that the air inlet valve is closed and the pressure vessel is depressurized. The abrasive is added by pouring it into the top of the sandblaster where it can flow through the filling hole. Do not overload the blaster. Do not allow foreign material to enter the sandblaster. It is recommended that a sieve be used to prevent foreign matter from entering the sandblaster.

**DANGER**: Never reach into the Pop-up opening while filling the Abrasive Blaster. It can close without warning causing severe injury or death.

**WARNING**: ISTblast Abrasive Blasters may not be used with abrasives containing silica. Never use abrasives containing silica.

**WARNING**: Never fill the abrasive blaster with the inlet valve in the open position. Always close the inlet valve before filling.

**WARNING**: Electrically conductive abrasives may not be used with the abrasive blasters using Electric Remote Control Systems without changing to sealed strain relief connectors.

**WARNING**: Never attempt to move or transport the Abrasive Blaster when it contains Abrasive

REMOTE CONTROL SYSTEM

Abrasive Blasters must use a Remote Control System (commonly known as deadman) to start and stop abrasive blasting. Remote Control Systems can be electric or pneumatic.

**Electric**: Connect the Remote Control Handle to the Abrasive Blaster’s female twist-lock connector. Connect a 12 VDC power source (12V Battery or Optional 120 VAC to 12 VDC converter) to the Abrasive Blaster’s male twist-lock connector.

**Pneumatic**: Connect the Remote Control twin line hose to the Abrasive Blaster using the supplied threaded or quick disconnect fittings. It is not recommended that Pneumatic Remote Control Systems are used when the Blast Hose length will be longer than 100 feet.

**WARNING**: Never operate the Abrasive Blaster without a Remote Control System.

**DANGER**: Always use caution around electric sources to avoid electric shock. Do not operate electrical remote controlled Abrasive Blasters in wet or other hazardous environments.

CONNECTING HOSES

Before connecting hoses to the Abrasive Blaster, make sure the Inlet Valve is closed and the compressed air supply is shut off. Connect the hose coming from the compressed air supply to the inlet on the Abrasive Blaster and secure with safety clips. **Use of an air line pressure regulator is strongly recommended.** Connect the blast hose to the coupling on the Metering Valve at the base of the Abrasive Blaster and secure with safety clips.

**WARNING**: Always use safety devices like clips and whip-checks (safety cables) at hose.
Connect the blasting hose to the abrasive valve.

Pressure Vessel Depressurization Hose

Abrasive blast room wall

To the abrasive blast room

Install a 1¼ " air regulator (not included) to stabilize the internal pressure in the pressure vessel and in the sandblasting hose.

Main compressed air supply. The inside diam. of the hoses must be 1¼ " or more in order to leave enough air in the sandblasting hose.
Check that the maintenance access door nut is tight during operation. The seal must be properly positioned to prevent air and abrasive leaks.

MEDIA FLOW VALVE
This valve is designed in such a way that the manually adjustable measuring function and the pneumatic actuating function of the valve are carried out separately, enabling rapid and inexpensive replacement of the worn parts.

ABRASIVE CUT-OFF SWITCH
A pneumatic cut-off switch is provided to permit the use of compressed air at the blast nozzle for blowing dust on sanded surfaces. This switch controls the opening and closing of the sanding valve on the remote control handle. When sandblasting is completed, the operator simply places the switch in the off position, stopping the flow of abrasive. The air valve remains open so that only high-speed compressed air flows from the nozzle. The release of the handle stops the whole unit.
PRESSURE VESSEL - PRE-BLAST CHECKING (CONT’D)

SANDBLAST HOSE
The sandblast hose, which transmits compressed air and media to the blast nozzle, has an internal diameter of 1¼” and an outside diameter of 2 5/32”. It weighs 60 pounds for each 50’ length. The hose is rated for a working pressure of 175 psig. The hose fitting is ¼” thick, rubber impregnated with carbon black for static dissipation. It is equipped with quick and light aluminum couplings that mount outside and incorporate self-locking safety wires. Fifty (50) feet of sandblast hose and control lines are supplied with each blasting machine.

SANDBLAST NOZZLE
A 3/8” I.D. double venturi nozzle will be supplied with the sandblasting machine. The nozzles are made of the highest quality materials and designed for a long service life. The nozzle is connected to the sandblast hose with an externally mounted nylon nozzle holder.

OPERATOR REMOTE CONTROLS
The remote controls are pneumatic type, and include a normally closed inlet valve and a normally open outlet valve. The air pressure opens the inlet valve and closes the outlet valve to begin the sanding process. In the event of loss of air pressure on the valves, the springs return the valves to their normal position.

If your sandblast hose is 75 feet or more the remote control may be electric.

ABOUT THE REMOTE CONTROL SYSTEM
An electric or pneumatic remote control system (also called “Deadman”) must always be used with a sandblasting pot to start and stop blasting.

Electrical: On the sandblasting pot, the remote control handle must be connected to the female socket with rotating latch of the blasting pot. A 12 V DC power source (12 V battery or optional 120 V AC to 12 V DC converter) must be connected to the male latch connector.

Pneumatic: The dual remote control hose must be connected to the blasting pot using supplied threaded or quick disconnect couplings. The use of pneumatic remote control systems is not recommended with sandblast hoses over 100 feet.
MOUNTING KIT

A mounting kit for depressurization is included with each pressure vessel of your abrasive blast room. This kit is used to facilitate the installation of the sandblast hose, air breathing hose, remote control hose and depressurizing hose through the wall of the abrasive blast room.

CONNECTIONS BETWEEN THE PRESSURE VESSEL AND THE ABRASIVE BLAST ROOM

As close as possible to the pressure vessel on the wall of the abrasive blast room, install the hose inlet plate (A) and depressurizing plate (B) closest to the pressure vessel on the wall of the room.

1. Connect the sandblasting and remote control hoses by sliding them from the inside of the room through the inlet plate (A) to the pressure vessel.

2. Connect the depressurization hose of the pressure vessel to the depressurizing hose plate (B).
PROTECTIVE EQUIPMENT FOR THE OPERATOR

The operator of the blast chamber is provided with protective clothing and a respiratory helmet with a controlled environment, which is suitable for working in a dusty atmosphere. This operator protection equipment is designed to comply with the standards of the National Institute of Occupational Safety and Health (NIOSH).

SUPPLIED AIR RESPIRATOR (HELMET)

The operator’s helmet is based on the latest available air respirator technology. It is made of high density polyethylene, and manufactured in accordance with NIOSH approval. The helmet is equipped with a hood that extends 36” below the helmet, a removable inner collar, and an adjustable padded suspension. The replaceable air inlet fitting is located at the back of the center of the helmet. The visor is large and includes a system of (3) three lenses; A perforated outer lens, an intermediate lens and a fixed inner lens. Fifty (50) replacement replacement lenses are included with the headset.

AIR TUBE COOLER

The cooling air tube (up to 18 °C) is evaluated at 20 cfm and is of the vortex type. The control of cold air to the helmet is located on the fresh air tube unit, within range of the operator. This unit carries NIOSH approvals as part of the complete system and with the same approval numbers.

AIR TUBE HEATER

The air tube heater (up to 30 °C) is evaluated at 20 cfm and is of the vortex type. The hot air adjustment control on the helmet is located on the hot air tube unit, within range of the operator. This unit carries NIOSH approvals as part of the complete system and with the same approval numbers.

SANDBLASTING SUIT

The exterior of the suit is wear-resistant leather on the front and porous cotton for the rest. The combination includes fastening straps to each cuff and to the bottom of the leg. A pair of leather gloves completes the set.

NOISE LEVELS

The noise levels generated by the respiratory system are measured inside the helmet at a maximum air flow rate which can be obtained according to the pressure and pipe length requirements and do not exceed 80 dBA.
AIR BREather SYSTEM WITH CARbon MONOxIDE AND ALARM CONTROL

Model 50–2 is a 50 cfm carbon monoxide monitor / alarm system designed to detect carbon monoxide in breathing air supply applications. When it detects a CO level of 10 ppm (for US) and 5 ppm (for Canada) or more, the unit activates an alarm.

Components Assembly
Connect your air supply line to the inlet of the pressure vessel. (It is recommended that an air pressure regulator be installed at the inlet of the pressure vessel and set at 100 psi).

Also connect the air filtration system (4 stage) for the operator’s hood (see diagram opposite)

4 STAGE FILTRATION SYSTEM
You must install an air supply hose from the main line to the inlet of the air filter to be fed to the operator’s hood.
STARTING PROCEDURE

The control panel is a NEMA 12 housing, which contains all electrical control components. All control buttons, indicator lights and counters are mounted in the main panel.

1 - PRIMARY VOLTAGE
480 V, 3 ph, 60 Hz or 600 V, 3 ph, 60 Hz Validated on the nameplate of the panel.

2 - LIGHTING REQUIREMENTS.
Voltage double 120 V-1 ph-60 Hz or 277 V-1 ph, 60 Hz Other voltages available on request.

3 - CONTROL VOLTAGE
A step-down transformer provides a 120 V control circuit with fuse.

4 - DUST EXTRACTOR MOTOR STARTER
A starter is provided for the extraction motor of the dust collector.

5 - MEDIA RECOVERY MOTOR
Engine starters are provided for the bucket elevator, and an abrasive cleaner.

EXTERNAL CONTROLS

External controls for the blasting system are located on the front of the electrical control panel.

1 - SANDING ROOM LIGHTS
Customer-provided on / off switch

2 - EMERGENCY STOP
The emergency stop button is located at the operator station to stop the entire system in an emergency.

3 - EMERGENCY STOP CLIP CABLE
The emergency pull cord is located inside the abrasive blast room on a wall running from the front to the back of the room and allows the entire system to be shut down in case of emergency.

4 - TIME ELAPSED INDICATOR FROM DUST COLLECTOR (OPTIONAL)
A time counter is provided to indicate the operation of the dust collection system and to determine maintenance schedules.

5 - PANEL ASSEMBLY
The electrical panel is fully pre-assembled and wired. All wires are numbered at both ends. Two copies of the wiring diagram and the list of fuses are placed inside the panel door, with two additional copies provided on delivery of the system.
HMI (HUMAN MACHINE INTERFACE)

SCREEN SAVER MODE

ISTblast screen saver will display after 4 minutes of inactivity.
**HMI (HUMAN MACHINE INTERFACE) (CONT’D)**

**AUTOMATIC MODE OPERATION**

Green lights will display active systems.

Red lights will be displayed momentarily when the Stop buttons have been pushed.

The green start up light for the Dust Collector System will begin to flash during startup. This delay will prevent overloading of the dust collector motor.
The green start-up light for the Pneumatic Conveyor and Recovery System will begin to flash to advise that the motors will be brought online.

The red shut-down light for the Pneumatic Conveyor and Recovery System will begin to flash indicating that the motors will be shut down.
HMI (HUMAN MACHINE INTERFACE) (CONT’D)

MAINTENANCE PAGE

1. Access the Operation Screen under Automatic Mode
2. Access the Operation Screen under Manual Mode
3. Access the time meter menu
4. Access the adjustment menu
5. Access alarm history section
6. Change Password Section
7. Unlock to the protected operation screens

MANUAL MODE OPERATION SCREEN

1. Return to Maintenance page
2. Start the dust collector
3. Start the bucket elevator
4. Start the blasting system
5. Start the screw conveyors

The red buttons become green during manual mode operations.
HMI (HUMAN MACHINE INTERFACE) (CONT’D)

DATE/TIME CHANGE MENU

When a value-field is selected a keyboard will be displayed to enter a value.

ALARM HISTORY MENU

1. Return to Maintenance Menu
2. Error Message (Green type) (error resolved)
3. Error Message (Yellow type) (acknowledgement) of error message
4. Error Message (Red type) (Error in Progress)
5. Move error message towards the top
6. Move error message towards the bottom
7. Previous Page
8. Subsequent Page
9. Acknowledgment of Error Message

Possible Error Messages

- EMERGENCY BUTTON
- MEDIA HIGH
- OVERLOAD SCREW
- OVERLOAD DUST COLLECTOR
- EMERGENCY ROPE
HMI (HUMAN MACHINE INTERFACE) (CONT’D)

UNLOCK MENU

1. Enter Username
2. Enter password
3. Unlock Menus
4. Lock Menus
5. Return to Automatic-Mode Operations

When a value-field is selected a keyboard will be displayed to enter a value.
HMI (HUMAN MACHINE INTERFACE) (END)

ALARM MENU

1. Warning display message
2. See list of possible error messages
3. Ignore error message

POSSIBLE ERROR MESSAGES

- EMERGENCY BUTTON
- MEDIA HIGH
- OVERLOAD SCREW
- OVERLOAD DUST COLLECTOR
- EMERGENCY ROPE
ELECTRICAL CONNECTIONS

BEFORE CONNECTING THE UNIT to an electric current, make sure that the current is the same as that indicated on the identification plate of the sanding equipment. An electric current higher than specified may seriously injure the user and also damage the system. If you have any doubts, do not connect the unit.

All electrical connections to the ISTblast system should be made by a qualified electrician and must comply to the codes, standards, and procedures specified by the local authority having jurisdiction. The customer is responsible for providing appropriate disconnecting means adjacent to the equipment for each incoming power circuit.

It is important to connect the ISTblast system to an Earth Ground to bleed off static electricity, which may be generated while blasting. The Earth Ground may also reduce the discomfort an operator may experience when static electricity is discharged.

OPTIONS

Main control panel
If you purchased this option, proceed to the installation of the panel according to the lay out plan provided for this purpose. Make the electrical connections of the various components, according to the electrical plan supplied with the panel.

Install emergency pull with hardware provided for this purpose. It must be installed on the inside wall of the sandblast room, opposite to the access door. Make the electrical connection to the main panel.
The reference in surface treatment

AIR CONSUMPTION - PRESSURE SYSTEM

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LEGEND

0 Optimal pressure
1 psi: pounds per square inch
2 cfm: compressed air required in cubic feet minute
3 lb/h: abrasive consumption in pounds per hour

CHECKING INSTALLATION

A. Check motor rotation on dust collectors as per arrow indicators placed on each fan:
   - Check that the emergency pull and door security options work properly.
   - Check that the pulse controller for the blast room dust collector activates solenoids on pulsation system (see manual DCM 900-50.000)

B. Install the sandblast nozzle on the hose and also the sanding control handle.

1. Check that all pipe and hose connections are tightly fastened and air tight.
2. Check that all electrical box covers are securely installed.
3. Check that the dust drum (option) under the dust collector is sitting firmly and is center.
4. Start the dust collector
1. Turn on the sandblast room dust collector.  
2. Start the screw conveyor system and pour the abrasive in the recovery pit and wait until it is completely emptied.  
3. Open the main air supply valve and adjust the air pressure at the inlet of pressure vessel to the desired blasting pressure.  
4. Put on the operator’s vented hood and take care to adjust the air flow (if required)  
5. Pressurize the pressure vessel with the control unit by turning the switch to “pressure on”. The vessel should pressurize at the blasting pressure already preset.  
5a. If you have completed the installation of a security system on sandblast room doors, make sure that all doors are closed.  
6. Hold blasting hose and nozzle firmly and press on the remote control lever.  
7. The air and abrasive will come out after the remote control lever has been pressed. Wait a few seconds in order for the stream to stabilise.  
8. If the amount of abrasive seems insufficient or too important, please make an adjustment. Adjust the amount of abrasive to the nozzle by using the abrasive metering valve below the abrasive pressure vessel. Rotate clockwise to decrease the amount, and counterclockwise to increase. (for reference, see manual pressure vessel PPB 346–646). If necessary repeat again.  
9. After a certain period of sandblasting, pressure vessel will be emptied of its contents, and the jet will consist solely of air.  
10. Release the trigger remote control to stop the jet.  
11. Depressurize pressure vessel by pushing the depressurising switch to “PRESSURE OFF” of the control box (see step 5)  
12. If your sandblasting room floor has a pit partially covering it, it may be that the majority of the abrasive was sprayed on the floor next to the pit. Push all of the abrasive in the pit so that the recovery system can draw the abrasive towards the pressure vessel, and wait until all of the abrasive is transferred to the pressure vessel.  

PROCEDURE WITH THE CONTROL PANEL  

| AUTOMATIC MODE OPERATION | 1 Dust Collector Start Up Button | 2 Dust Collector Stop Button | 3 Screw conveyor Start up Button | 4 Screw conveyor Stop Button | 5 Sandblasting Start Button | 6 Sandblasting Stop Button | 7 Maintenance Menu |
SCREW CONVEYOR STARTING PROCEDURE - WITHOUT MAIN PANEL

1. Turn on the sandblast room dust collector.

2. Start the Screw conveyor system and pour the abrasive in the recovery pit and wait until it is completely emptied. Make sure that the level of abrasive in the pressure vessel is maximum: 2000 pounds of steel grit, 800 pounds for aluminium oxide or glass bead. Check through the inspection window of storage hopper located above the vessel, you should see a slight accumulation above the cap* located above the upper opening of the vessel* (maximum 1 to 2 inches above) again.

3. Open the main air supply valve and adjust the air pressure at the inlet of pressure vessel to the desired blasting pressure.

4. Put on the operator’s vented hood and take care to adjust the air flow (if required)

5. Pressurize the pressure vessel with the control unit by turning the switch to "pressurized vessel". The vessel should pressurize at the blasting pressure already preset.

5a. If you have completed the installation of a security system on sandblast room doors, make sure that all doors are closed.

6. Turn on by pressing the button «BLAST»

6a. Hold blasting hose and nozzle firmly and press on the remote control lever.

7. The air and the abrasive will come out after the remote control lever has been pressed. Wait a few seconds in order for the stream to stabilise.

8. If the amount of abrasive seems insufficient or too important, please make an adjustment. Adjust the amount of abrasive to the nozzle by using the abrasive metering valve below the abrasive pressure vessel. Rotate clockwise to decrease the amount, and counterclockwise to increase. (for reference, see manual pressure vessel PPB 346–646). If necessary repeat again.

9. After a certain period of sandblasting, pressure vessel will be emptied of its contents, and the stream will consist solely of air.

10. Release the remote control trigger to stop the jet.

11. Depressurize pressure vessel by pushing the depressurising switch to “Depressurized vessel” on the control box (see step 5)

12. If your sandblasting room floor has a pit partially covering it, it may be that the majority of the abrasive was sprayed on the floor next to the pit. Push all of the abrasive in the pit so that the conveyor system can draw the abrasive towards the pressure vessel, and wait until all of the abrasive is transferred to the pressure vessel.

13. Make sure that the level of abrasive is at maximum in the pressure vessel. Look through the inspection window of storage hopper located above the vessel, we should see a slight accumulation over the cap* located above the top opening of the vessel* (maximum 1 to 2 inches above)

* Cap
GENERAL MAINTENANCE & SCHEDULE

CHECK FOR WEAR ON ALL PARTS IN DIRECT CONTACT WITH THE BLASTING ACTION

Nozzle:
Check nozzle wear on a regular basis. The orifice diameter should never be more than \( \frac{1}{8} \)" wider than the original diameter. A worn nozzle will increase air consumption and may cause premature wear of abrasive hose.

Abrasive hose:
Check abrasive hose for wear. It has to be changed before it gets any perforation. A simple test to do is to bend the hose: if it is possible to bend it on itself \( (180^\circ) \) the wall is too thin and the hose has to be changed. Give a special attention to part of the hose that are curved.

Couplings and gaskets :
Check on a regular basis the hose couplings and gaskets for wear.

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<tr>
<td>Gear box OIL (2 000 h) or :</td>
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<tr>
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<tr>
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<td>608568</td>
<td>SOLENOID VALVE</td>
</tr>
<tr>
<td>900404</td>
<td>CC2-7/16” CONNECTING SHAFT</td>
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<tr>
<td>900405</td>
<td>CB-2-7/16” CONNECTING SHAFT</td>
</tr>
<tr>
<td>900406</td>
<td>SCREW BEARING 2- 7/16”</td>
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<tr>
<td>900407</td>
<td>SUPPORT FOR CONNECTING SHAFT BEARING</td>
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SAFETY, INSTALLATION AND SERVICE INSTRUCTIONS FOR SCREW CONVEYORS

**WARNING**
The important information contained in this manual must be reviewed and applied by the contractor, installer, owner and user.

**SECURITY**

Most accidents involving property damage or injury are the result of negligence or lack of attention from someone. To avoid such accidents, one of the many things to do is to make machines that eliminate as far as possible an unsafe or dangerous condition. Screw conveyors shall be installed, maintained and used with the following minimum requirements:

- Screw conveyors should not be used as long as the outer structure of the conveyor does not completely protect the moving parts and all transmission guards are in place. The following warning signs (see CEMA Safety Labels SC-2 and 86-3) are attached to all conveyor housings in the specified locations. These labels should not be removed from the boxes or be painted over them! Replacement labels can be ordered from the Transport Equipment Manufacturers’ Association (CEMA).

- Do not overload the conveyor or use it for any purpose other than intended use.

- Feed openings for shovels or other manual or mechanical equipment shall be so constructed that the rotating and moving parts of the conveyor are closed and restrict access to the conveyor.

- Always turn off power before servicing.

- ISTblast does not perform electrical design services and therefore does not provide electrical appliances, unless the purchaser has expressly stipulated.

- ISTblast will endeavor to assist, to the best of its ability, in selecting equipment or equipment that will assist the owner and installer in the preparation of a safe installation and a safe workplace. Zero speed switches and other electrical devices can detect the operation of the conveyor so that operations can be interrupted and / or alarms can be actuated.

- There are many types of electrical interconnection devices for conveyors, elevators and conveyor systems so that if a conveyor in a system or process is stopped, other equipment feeding it or the next may also be automatically stopped and thus avoiding overloading at transfer points. For the safety of those who will come to the area where this equipment will operate we recommend that you contact an electrical designer and supplier. Provide them with information about your operating conditions so they can better advise and provide the appropriate devices.
SCREW CONVEYOR - CEMA SAFETY LABELS - POSITIONING GUIDELINES

EQUIPMENT: HORIZONTAL SCREW CONVEYOR

“B”

- Use the label “B” on the ends of the power supplies, in the middle of the covers and at the inlet opening.

EQUIPMENT: VERTICAL SCREW CONVEYOR

“A”

- Use the “A” label on the belt guard.
- Use the label “B” on the ends of the power supply, the inspection inspection door and on both sides of the discharge nozzle.

“B”

- On the 2 Sides
- Front side
- Rear side
Safety is a paramount consideration in the design, manufacture, installation, use and maintenance of conveyors. It is well known that in many cases safety labels can increase awareness among operators and maintenance personnel of the hazards inherent in conveyors or other moving equipment. The design and installation of the conveyors must be supervised by qualified personnel. The operation and maintenance of the conveyors must also be carried out and supervised by trained staff so that it is done safely. The purpose of this program is to provide guidelines for the selection and application of safety labels for use on conveyors and associated equipment handling equipment. As part of the comprehensive conveyor user safety program, conveyor users must inspect and examine safety labels to ensure their integrity and maximize their effectiveness in preventing injuries.

**ANSI 535.4-1991 CEMA SAFETY LABELS**

**TITLE FROM THE LABEL:**

The heading or titles that designate a degree or level of severity of danger. The signaling labels for product safety labels are DANGER, WARNING, and CAUTION.

**DANGER:**

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This label must be restricted to the most extreme situations.

**WARNING:**

Indicates a potentially hazardous situation which, if not avoided, could result in serious or undesirable injury.

**CAUTION:**

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It can also be used to alert to dangerous practices.

**NOTE: DANGER or WARNING** Not to be taken into account for property damage accidents, unless the risk of personal injury appropriate to these levels is also involved.

**CAUTION** Damage caused by physical items is permitted.

**SAFETY LABELS MAY BE OBTAINED FROM:**

ISTblast
4160 Industriel Blvd.
Laval, QC, H7L 6H1 CANADA

450 963-4400 or 1 877 629-8202 • Fax : 450 963-5122
info@istsurface.com • istsurface.com
SCREW CONVEYOR - DANGEROUS HANDLING

Screw conveyors are not normally manufactured or designed to function in the handling of hazardous materials or in a hazardous environment. Contact ISTblast if there is a risk that a hazardous condition or material is involved.

Hazardous materials may be explosive, flammable, toxic or dangerous to personnel if they are not completely and completely contained in the conveyor housing. Special construction of conveyor housings with special bolted joints and lids and case design can sometimes be used for handling this type of material.

Screw conveyors are not manufactured or designed to comply with local, state or federal codes in non-standard pressure vessels. When a zone of product is under pressure or under vacuum, or the vessel is provided with heating or cooling walls, special precautions are necessary.

During the blasting operation, the worn media falls onto the floor of the blast chamber and through the steel mesh into the recovery and cleaning system. The media on the ground must be swept into the screw hopper in order to be recovered.

SCREW CONVEYOR - INSTALLATION

ISTblast does not install conveyors. It is the responsibility of the contractor, installer or owner / user to install, operate, and maintain the conveyor and / or components to comply with OSHA and all applicable laws and regulations. Local and local ordinances.

INSTALLATION, OPERATION AND MAINTENANCE OF CONVEYORS AND / OR COMPONENTS MAY CAUSE SERIOUS INJURY. SEE PAGES 18 AND 19 FOR SPECIFIC WARNING LABELS.
ISTBLAST LIMITED WARRANTY

ISTblast warrants all equipment led in this manual which is manufactured by ISTblast and bearing its name, to be free from defects in material and workmanship on the date of sale by an authorized ISTblast distributor to the original purchaser for use. Notwithstanding any special, extended or limited warranty published by ISTblast will, for a period of TWELVE (12) months from the date of sale, repair or replace any part of the equipment determined by ISTblast to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with ISTblast’s written recommendations.

This warranty does not cover, and ISTblast shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non- ISTblast component parts. Nor shall ISTblast be liable for malfunction, damage or wear caused by the incompatibility with ISTblast equipment with structures, accessories, equipment or materials not supplied by ISTblast, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by ISTblast.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized ISTblast distributor for verification of the claimed defect. If the claimed defect is verified, ISTblast will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser, transportation prepaid. If the inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

ISTblast’s sole obligation and the buyer’s sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought forward within one (1) year of the date of sale.

ISTblast MAKES NO WARRANTY, AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IN CONNECTION WITH ACCESSORIES, EQUIPMENT, MATERIALS OR COMPONENTS SOLD BUT NOT MANUFACTURED BY ISTblast. These items sold, but not manufactured by ISTblast (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. ISTblast will provide the purchaser with reasonable assistance in making any claim for breach of these warranties.

LIMITATION OF LIABILITY

In no event will ISTblast be liable for indirect, incidental, special or consequential damages resulting from ISTblast supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of ISTblast, or otherwise.

The following items are not covered under the ISTblast warranty policy:

- Parts or chassis replacement due to normal wears.
- Defective material or workmanship is not considered normal wear.

Report all accidents or “near misses” which involve ISTblast products to our service department:

1 877 629-8202
ISTBLAST WARRANTY REGISTRATION

ISTblast would like to thank you for your recent purchase of our product line. Please complete the card below and either mail or fax it to our office so that we may start the warranty of your product and keep you up to date on the EPA regulations by fax. Again, thank you for your purchase and if you have any suggestions or comments, please feel free to contact our office.

COMPANY NAME: ____________________________
ADDRESS: __________________________________________
CITY: ___________________ STATE/PROV.: ___________________
COUNTRY: ________________ ZIP CODE: _________________
CONTACT: __________________________
TEL. NUMBER: ______________________ FAX NUMBER: _______________
PURCHASE FROM: __________________________
DATE OF PURCHASE: ________ ______ __________
                      Month   Day     Year
SERIAL NUMBER: _______ - _______ - _______  MODEL NUMBER: _______ - _______
TYPE OF MEDIA USED: __________________________
Which factors most influenced your decision to purchase this ISTblast unit?
________________________________________________________________________
________________________________________________________________________
SUGGESTIONS ABOUT THE EQUIPMENT: __________________________________________
________________________________________________________________________
________________________________________________________________________
IMPORTANT! Please complete and return within 30 days after purchase to activate the warranty.

PLEASE SEND THE COMPLETED FORM TO:

ISTblast
4160 Industriel Blvd.
Laval, QC, H7L 6H1 CANADA
ISTblast is a registered trademark of:

International Surface Technologies
istsurface.com

For more information, pricing or technical support, contact your local IST distributor or call / fax to our Consumer Information numbers:

TEL.: 1 877 629-8202 & 450 963-4400  FAX : 450 963-5122

Or visit us at:
istsurface.com
ABOUT THE COMPANY

WHO WE ARE
IST is a leading industrial manufacturer of standard and custom engineered equipment for the surface treatment industry and the solvent recycling industry.

MISSION
IST is dedicated to being an innovative and trusted supplier in the conception, fabrication and distribution of surface treatment equipment and recycling equipment.

MARKETS SERVED
The products, technologies and industry expertise of IST are used in a wide range of manufacturing and industrial applications, including but not limited to:

- General Manufacturing
- Industrial Equipment
- Metal forming
- Aerospace and Aviation
- Rail and Transit
- Marine
- Automotive
- Petroleum
- Flexography (Labeling) & Lithography
- Wood finishing
- Power & Energy
- Pharmaceutical