SMART
MOD-U-BLAST

Skid Mounted Abrasive Recycling Tower

MOD-U-BLAST®

1-800-661-3842

⚠ WARNING

Read Manual

Failure to read, understand & follow all safety and operation procedures in this manual can cause injury or death. Manuals that are lost, incomplete, or damaged, must be replaced immediately

TABLE OF CONTENTS

MOD-U-BLAST®

General Characteristics:

The S.M.A.R.T system has been designed for the cleaning & recycling of different types of media by using a loading hopper, bucket elevator, air wash, dust collector and storage hopper.

The efficiency of the S.M.A.R.T depends on the effectiveness of its components, which require a maintenance program. To that effect, this manual includes a description of the different components and a schedule for the minimum maintenance required. ABSOLUTLEY NO MOISTURE CAN BE ALLOWED TO ENTER ANY COMPONENT OF THE S.M.A.R.T. SYSTEM AT ANY TIME

How the S.M.A.R.T System Works:

With the system running, the used media is dumped into the loading hopper and from there into the bucket elevator which lifts and unloads the media into the air wash classifier. Inside the air wash the used media passes through a screen and builds a curtain to allow air to pass through the used media taking the dust away to the dust collector hopper leaving the good media to fall into the 40 cubic foot hopper and then loaded into a bulk bag to reuse again.

S.M.A.R.T Technical Specifications:

Control Panel Voltage	230 volt - 3 phase - 60 Hz
Large Hopper Capacity	40 cubic feet
Dust Collector Hopper At Capacity Warning Lights	Blue on Panel - Red External on D.C.
Dust Collector Hopper Capacity	9 cubic feet
Loading Hopper Capacity	30 cubic feet
S.M.A.R.T. Unit Weight (without loading hopper)	4075 lbs.
Loading Hopper Weight	350 lbs.
S.M.A.R.T. Dimensions Standing	109”L x 93”W x 184”H
S.M.A.R.T. Dimensions for Transport	184”L x 93”W x 109”H
Recycling Capabilities	6 Tons per Hour
Lifting Lug Ratings	6800 lbs ea. (2)
Strap Ratings	8800 lbs ea. (2)
Anchor Shackles	6.5 Ton Working Load Limit (3)

Erecting The S.M.A.R.T System:

Use a forklift, zoom boom or a picker to stand-up the S.M.A.R.T.. Our illustrations will show the use of a forklift which is very similar to using a zoom boom.

When using a forklift /zoom boom, block the lifting end once removed from the transport vehicle (fig. 1). This will allow you to get the lift forks under the lifting bar. The lifting bar is near the top of the ladder and has 2 lifting lugs attached with the strap.

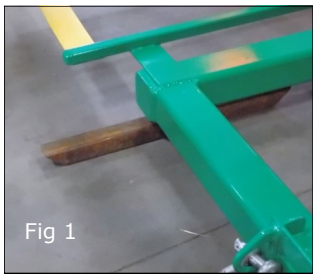


Fig 1

Insert the forks about 24" under the lifting bar at equal width of the lifting lugs. Attach the enclosed strap to the lifting lugs

The second strap will need to be wrapped around the carriage or guard of the forklift / zoom boom and made as tight as possible. Once the straps are hand tight back-up the zoom boom to take the slack out of the straps. There should be approx. about 12" of forks left underneath the lifting bar when straps are tight to assist with lifting the unit. (Fig. 2)

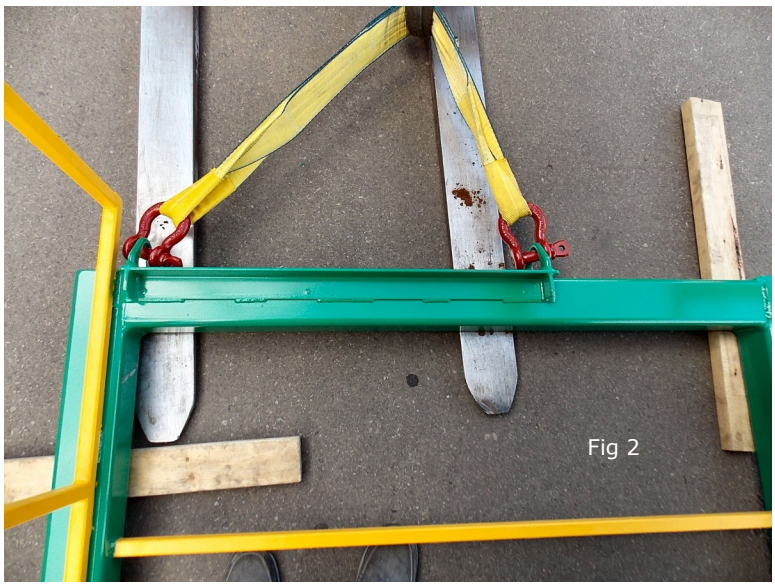


Fig 2

- Now the Smart system can be lifted upright - **make sure that during the lifting process that you drive ahead slowly while lifting the unit and keep the lifting straps tight.**
- Once the unit is upright then the straps can be disconnected
- Lift the unit by using the forklift pockets onto a level area.

S.M.A.R.T System Set-Up:

Remove the loading hopper from the skid by using the attached lifting eyes with one of the straps supplied and place the hopper onto the inlet of the bucket elevator (fig. 3) and bolt them together.(Fig. 4) (9/16" wrench required - hardware included) The legs on the hopper may need to be shimmed if not on level ground. Hopper positioning is as shown on the cover page of this manual.

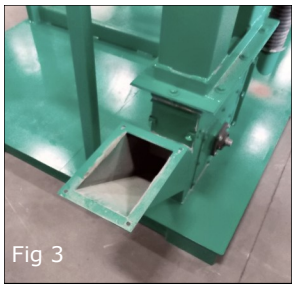


Fig 3

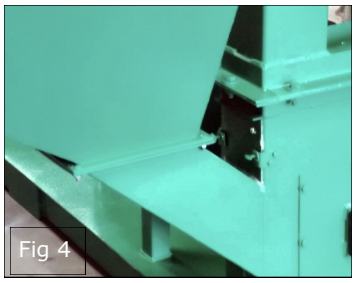


Fig 4

Attach your power input cable to the female plug (supplied) (Power requirement is listed on the tag at the right bottom corner of the control panel). Once your power cable is ready then plug it into the male pigtail on the panel (Fig. 5)

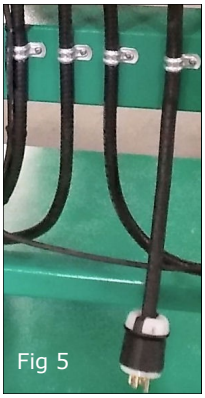


Fig 5

Place the bulk bag under the large hopper on a 4' x 4' pallet and attach the rubber straps as shown in (Fig. 6). Place the large drum (if supplied) on a small pallet 2' x 3' under the dust collector as shown in (Fig. 7). Position the small pail (if supplied) under the junks discharge tube as shown in (Fig. 8).

Fig 6


Fig 7


Fig 8

S.M.A.R.T Operating Instructions:

ALL COMPONENTS IN THIS SYSTEM MUST BE ON BEFORE INSERTING USED MEDIA INTO THE LOADING HOPPER

See the control panel layout in (Fig 9).

Startup Procedures:

1. Connect an air supply for the dust collector as shown in (Fig 10) - open the ball valve from the compressor slowly and check the gauge (adjust pressure to 80 psi).
2. The toggle switch on the reverse pulse box (Fig 11) needs to be in the up/on position at all times during use of the system.
3. Turn the main power switch to the on position - The power light will illuminate.
4. To start the S.M.A.R.T. System push the green buttons for each component starting from top to bottom. (the control panel will only allow you go in this order).
5. The system is now ready to recycle the used media. (see the following page for airwash & damper adjustment once the media starts to flow through the system)
6. **The dust collector hopper butterfly valve must remain closed during the recycling process but will need to be emptied often for maximum filtration.**
7. The Blue light on the panel will illuminate when the Dust Collector hopper is full and should be emptied into a container. (The red external light will also illuminate at the same time as a secondary warning).

DO NOT USE THE EMERGENCY STOP BUTTON TO SHUT THE S.M.A.R.T. DOWN UNLESS THERE IS AN ACTUAL EMERGENCY

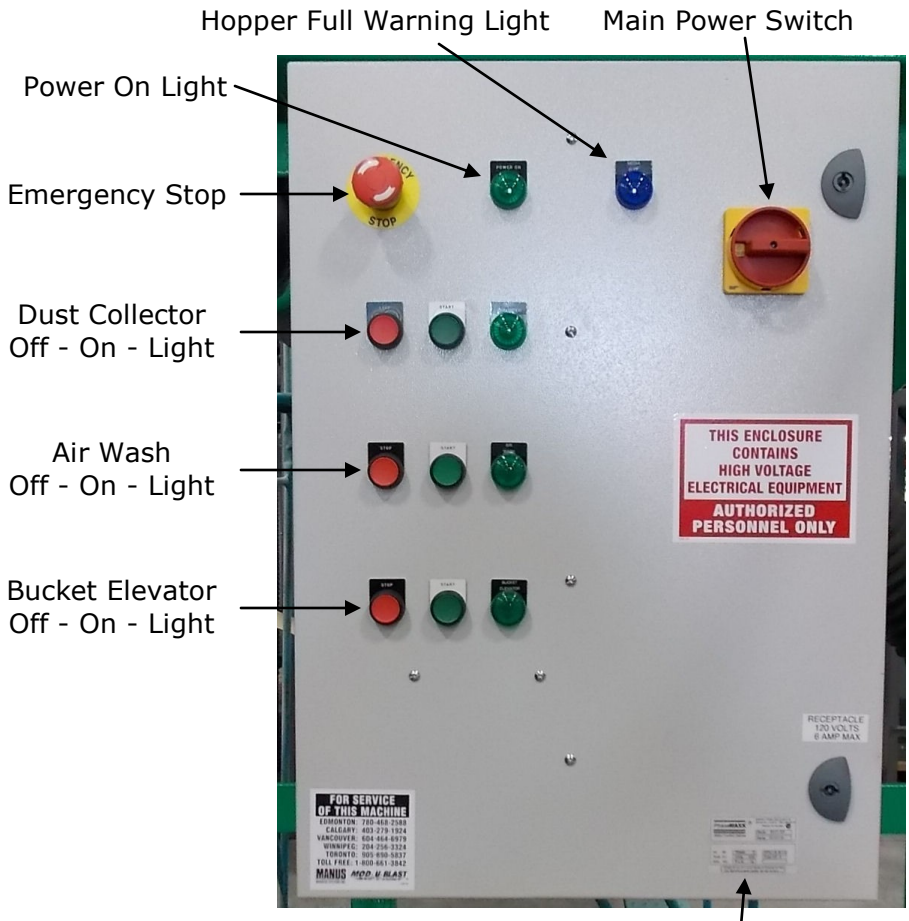


Fig 9

Fig 10

Air Connection For Dust Collector

Fig 11

Reverse Pulse Toggle Switch

Air Wash Separator Adjustments:

The bucket elevator carries the used media to the air wash separator to be cleaned of dust and big particles and return good media to the storage hopper.

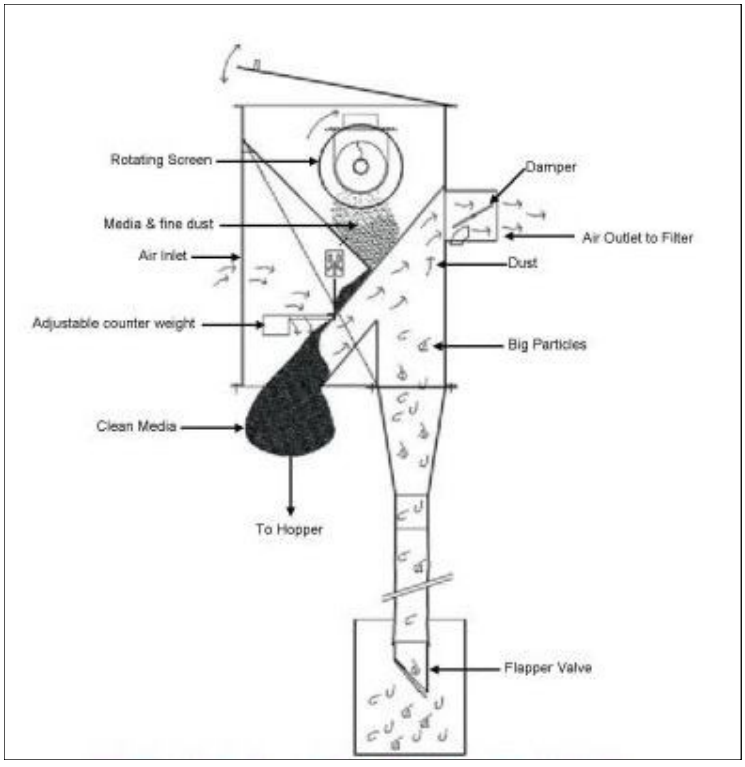
Once the media starts flowing through the system the air wash separator curtain needs to be set to insure proper dust removal.

Air Wash Setup:
Big particles are removed in the rotating screen and the media and dust fall through which produces a uniformed curtain. It is very important that the curtain created be the maximum width of the separator, so the slide gate is adjusted to a 1-1/2" gap (from the factory). Media must be added to the counter weights (Fig. 12) to achieve a full width curtain. (Approx. 1/3 full when cleaning Garnet) **NOTE: Loading the counter-weight in excess prevents the abrasive from falling freely.**

The air goes through the curtain and separates the dust form the good media.(The more even the curtain - the better the dust removal).
The 6" suction outlet to the dust collector (damper controlled) should be regulated so that the filters only retain dust and a small quantity of abrasive. **(If the damper is open to far good media will start to pour out of the 4" hose for the big particles).**

Once the air wash separator is set and the proper separation is achieved it will not need any more adjustments unless the S.M.A.R.T System is put into transport mode where the counter weights will be emptied. (Should this happen then the counter weights will need to be adjusted when upright again to create the proper media curtain).

How the Airwash Works:



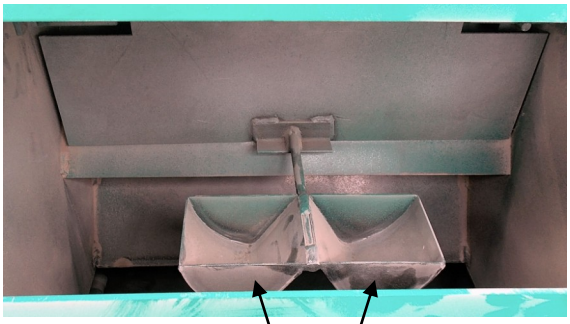


Fig 12

Counter Weights
Add or Subtract
Media to Obtain
Full Curtain

S.M.A.R.T Operating Instructions cont'd:

See the control panel layout in (Fig. 9 on page 6).

Shutdown Procedures:

1. After finishing recycling the used media make sure the loading hopper is empty and let the system run for approx. 2 minutes to clear out the bucket elevator and air wash.
2. To stop the S.M.A.R.T. System push the stop button for each component starting from bottom to the top. (the control panel will only allow you go in this order).
3. Keep the main power and the pulse on for 10 minutes to allow the filters to clean. (Fig 11 on page 6)(The filters clean best when the dust collector fan is off)
4. After the 10 minutes shut the main power off (the pulse switch can remain in the up / on position).
5. Shut the ball valve off at the compressor to stop the air supply and drain the system air tank.
6. The loading hopper should be covered with a tarp to ensure the system does not get moisture inside. (not included)

DO NOT USE THE EMERGENCY STOP BUTTON TO SHUT THE S.M.A.R.T. DOWN UNLESS THERE IS AN ACTUAL EMERGENCY

General Maintenance:

After the first 10 hours of operation, the elevator belt tightness should be checked due to some initial stretching. (When the system is empty there should not be a noise coming from the buckets 'clanging' against the inside of the elevator - if there is, then the belt needs to be adjusted). (see next page for instructions)

It is a good rule to tighten the belt after every extra 50 working hours. To avoid damaging the belt do not tighten excessively; a moderate tightness is preferred.(The belt can be checked through the hatch on the front side of the elevator just above the loading hopper. Periodically inspect the belt and the condition of the buckets and the pulleys.

General Maintenance Schedule:

PREVENTATIVE MAINTENANCE	HOURLY PERIODS		
	50 HRS	100 HRS	200 HRS
CHECK TIGHTNESS OF ELEVATOR BELT	√		
LUBRICATE ALL BEARINGS	√		
CHECK OIL LEVEL IN GEAR BOXES	√		
INSPECT ELEVATOR BUCKETS		√	
INSPECT UPPER PULLEY OF ELEVATOR			√
INSPECT LOWER PULLEY OF ELEVATOR			√

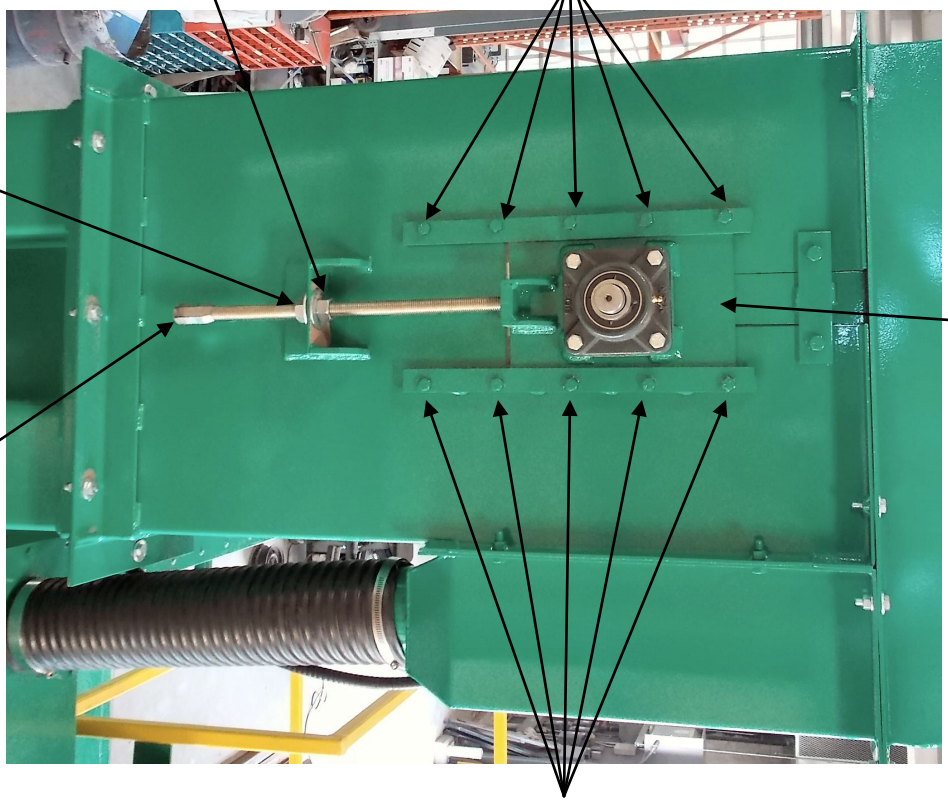
BEFORE ATTEMPTING ANY MAINTENANCE DISCONNECT THE POWER SUPPLY FIRST.

Adjusting the Bucket Elevator Belt:

This is the most difficult, time consuming and crucial part of the continued operation of this unit.

1. Disconnect the power supply & lay down the unit as explained on the next page. (Pg. 10)
2. Loosen the adjustment guide bolts on each side of the elevator (do not remove)
3. Loosen off the bottom locking nut on each side of the adjustment bolt
4. While holding the top nut turn the adjustment bolt to move the slider upwards which will tighten the belt.(Exactly the same amount of turns must be done on both sides to insure proper belt tracking) **Do not over tighten the belt**
5. Once the belt has been adjusted then tighten the locking nut on the adjustment bolt and tighten the guide bolts.
6. When everything is tight then return the unit to the upright position. Open the lid on top of the bucket elevator. Connect the power and start the system - while the system is running someone needs to watch the belt tracking at the top of the bucket elevator. The belt needs to run straight on the wheel - if it starts to wander to one side then shut the system down, adjust the side that the belt is tracking to towards the top and check again. When the belt tracks straight for 2 minutes then close the lid.
7. The unit can now be returned to operation.

The illustration below only shows adjusting the one side Both sides of the elevator must be done equally for proper belt tracking



Transport Position Shown

Should you need advice with these procedures then please call 1-800-661-3842 and ask for the service department

Transporting The S.M.A.R.T System:

Laydown Procedures:

1. Make sure the 3 hoppers are empty before attempting to lay down the S.M.A.R.T system into the transport mode.
2. Unbolt & remove the loading hopper and remove anything that is loose.
3. Attach the slings as shown in (Fig. 13)
4. Make sure when the slings are tight when pulling back that the forks are under bar at least 12 inches. Slowly reverse your forklift / zoom boom keeping tension on the slings while lowering the forks.
5. Once the unit is almost lowered onto the ground then block the end to remove the forks.
6. Lift the unit onto the transport vehicle using the forklift pockets on the side of the unit and fasten down for shipping.

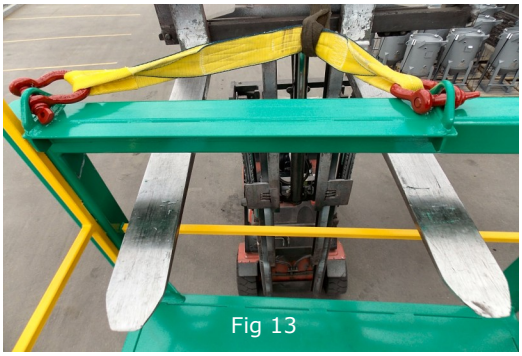


Fig 13

Transport Mode

Troubleshooting The S.M.A.R.T System:

The component most likely to have any issues will be the bucket elevator probably due to improper belt tension. Should this happen the belt will slip off the top pulley causing the belt to seize and trip the breaker. (see below) To correct this follow the steps for the 'adjusting the bucket elevator belt' on page 9. (The top of the elevator will have to be removed to reposition the belt back on the pulley)

BEFORE ATTEMPTING ANY SERVICE DISCONNECT THE POWER SUPPLY FIRST.

TROUBLESHOOTING

Problem	Possible Cause	Remedy
Control panel won't power up	Power supply not plugged in	Plug in power supply on side of control panel
Control panel won't power up but power light is on	Emergency switch pushed in	Check emergency switch by twisting clockwise lightly
	Breaker Tripped	Open control panel to see if a breaker has tripped - nothing will run if one is off and there may be a problem with the component controlled by that breaker - check that component - refer to the schematic inside the control panel door (see below)
Blue light on control panel coming on	Dust collector hopper is full	Empty dust collector hopper before continuing to recycle media Note: when the DC butter fly valve is open the air wash will not separate the dust and good media properly
Dust Collector won't pulse	Pulse control power is off	Turn toggle on (up position) on right side of pulse box (Fig. 11)
	No air supply	Check air supply and adjust pressure tank to 80 psi
Dust collector won't pull any air	Dust collector hopper is full	Empty hopper
	Dust collector filters are plugged	Replace filters (Part Number 11507 for 2)
Too much good media in dust collector	Six inch damper on back of air wash open to far	Close damper down so achieve mostly dust going to the dust collector
Good media coming out of the junks hose	Damper on airwash open to far	Close damper enough to stop the flow of good media from the junks hose
Airwash media curtain not all the way across	Counter weights too light	Add media to the counter weights until an even curtain is achieved from side to side

MOD-U-BLAST®

For Service Call
1-800-661-3842

← Breaker Tripped

Skid Mounted Abrasive Recycling Tower

WARRANTY

Mod-U-Blast equipment is covered by a one (1) year warranty against defects in material and workmanship starting from the purchase date. This covers mechanical components, air valves and plumbing, electrical components, air motors, vessels, machine body (normal wear).

This warranty does not apply to abnormal use of the equipment or parts. Parts subject to abrasive wear, such as nozzles, hoses, dust filters, windows and window protectors are not covered by the warranty.

Claims will be honored only if the warranty card is returned within a period of two months from the factory shipping date.

The card can be returned to your Mod-U-Blast salesperson or mailed to the address on the below.

In the event of failure of this equipment
please contact a Mod-U-Blast service centre
or call (780) 425-5510.

403 - 69 Avenue NW
Edmonton, Alberta
Canada
T6P 0C2
PH: (780) 425-5510 FAX: (780) 425-5540