

# Air Screen Machine

Manufactured in the U.S.A.

## OWNER'S MANUAL

Serial Number \_\_\_\_\_



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## INTRODUCTION

You have purchased one of the finest air screen machines on the market today. These cleaners are a culmination of cleaning principles over a century old in combination with all of today's technology.

From the base model to custom designed Air Screen Machines, any separation is Possible, with the utmost precision and 0% damage to your crop.

We use tubular steel frames and either steel or wood shoes. All components are Easily interchanged and all pulleys and bearings are standard and can be Purchased locally.

Some applications of the Bench Air Screen Machine are: seed plants, rice cleaning, Cereal grains, pinto beans, peas, beet pulp, corn pellets, and all other applications Where aspiration and sizing is needed.

In the following Set-up, Start-up, Installation, and Maintenance we provide explanations, suggestions, and remedies to most circumstances. Should you have additional concerns, please contact us for assistance at Bench Industries, PO Box 3167, Great Falls, MT 59403, 406.727.6514 or e-mail us at [brian@benchindustries.com](mailto:brian@benchindustries.com) or [mikeb@mill-mac.com](mailto:mikeb@mill-mac.com) (cell) 406.240.0069

## SETTING UP THE MACHINE

All Bench Air Screen Machines have been pre-run at the factory, but even so, once you have received your Bench Air Screen Machine you should check for any loosened components due to shipping.

The standard Bench Air Screen Machine, Model 35472-2A is a single shoe machine Designed to be attached to a concrete floor or pad. If you have an unstable Surface, a counterbalance will be required.

All bearings should be checked for grease and screen hold downs should be checked For tension. Also set the in-feed in low position and air setting closed for start-up.

The fan is designed to mount remote usually mounting on the outside of the Facility, or in case of a mobile unit, can be mounted off the cleaner with Framework. Make certain air controls are open and closed as indicated on side of Machine. **(Refer to Figure 4)**

**The machine must be level and securely bolted down.**

## **START-UP**

Now that you are ready to operate your Bench Air Screen Machine, for your ease, we recommend the following:

The intake hopper is designed to be fed with a spout or auger. If you gravity feed the machine for an overhead bin directly, a hogs back must be installed in the field to prevent excess weight on the feeder pan. The fan rotation needs to be checked and make sure you have no restrictions in the air system.

Start the machine without any product and let it run for at least 15 minutes. This will allow you to check for noise of loose components and to examine your installation. Once you start product feeding into the machine start with a small amount and slowly increase the feed.

## **MAINTENANCE**

The bearings should be greased moderately and often, but with very small amounts. All bolts and set-screws should be checked often when first running the machine.

If any excessive noise occurs, your machine should be shut down and inspected for loosened parts or push-rod arms.

You should make sure the shoes are always shaking straight back and forth with no side to side movement present. Any side-to-side movement means loose rush rods or worn bearing and must be remedied immediately to prevent damage to our machine.

The balls in the ball deck should be checked periodically for resilience. They should Return at least 2/3rd when dropped on a hard surface.

## PRODUCT IN-FEED

Product is metered into the Bench Air Screen Machine by way of a vibrating pan. The level is preset at the factory, but may require some fine tuning at start-up. The level of the pan is adjustable through the access door at the front of the machine. There are 2 Nylock nuts that can be raised or lowered. The volume control is mounted on the side and is easily controlled with a hand crank. If excess weight is put on the vibratory pan, cranking will become difficult and possibly damage the components. Should excess weight be a factor, a hogs back may need to be installed. Variables of speed, shoe shakes, and screen sizes will all determine the volume flowing through the machine and will impact you desired final result. Begin with a slow rate and increase until desired capacity with quality is achieved. Do not overload the screen decks or damage may occur.





## AIR CONTROLS

Air separation on the Bench Air Screen Machine is controlled by air baffles inside the machine's air chambers. Before the air system is sealed, check to make sure the set-screws are tight and the baffles are in the proper setting as indicated on the handle setting. When starting the product through the machine, set air on the low setting (closed) and increase slowly. The product will then begin discharging from air settings auger under the air control settings. Slowly change each setting until you obtain the desired result on both discharge augers. After changing the settings, you will need to wait several minutes before actual results are noticed. Air settings augers must be sealed and discharge doors free floating.



## SCREEN INSTALLATION

Open the access door at the intake end of the Bench Air Screen Machine. The standard machine is equipped with two screen layers. Scalp, and Sift. There are two screen sections 54' x 36' which are placed above the ball racks. Each ball rack comes with 16 compartments for the rubber balls for screen cleaning. Each ball rack needs a minimum of 5 balls per compartment. Each deck holds 160 balls. The standard Bench Air Screen Machine with 3 decks requires a total of 480 rubber balls.



*Figure 1*



*Figure 2*

The screen has a 1/2' lip that is to be positioned toward the discharge end to prevent any product leakage. Be certain the rails that support the ball and screen racks are free from debris. Now you can load your screen and ball racks. After installation the screens should evenly spaced, this is the proper installation. Place the blank against the screen and ball rack. Hold the blank tight against the screen and adjust the push bolts against the ball rack. As shown in *Figure 1*. Close the door and latch; tighten the two hand knobs, as shown in *Figure 2*. If the door will not shut, check to see what the obstruction is and loosen thumb knobs and check blanks to see if they are in properly. After the door is closed properly, carefully snug up the thumb knobs as shown in *Figure 2*. If you hear a banging noise, STOP the machine immediately and adjust the ball rack and screen holders.



## VARIABLE SPEED SHOE SHAKE

The motor pulley is equipped with a mechanical variable speed pulley. To adjust the speed, loosen the set-screws on pulley and loosen tension on motor mount. You can tighten the pulley to increase speed, or loosen the pulley to decrease the speed.



The recommended speed is from 320 to 360 rpm. Excessive rpm could damage the machine and will void the warranties.

The speed recommended is the minimum speed required to keep screens clean. Make sure the rubber balls are working properly by judging the return bounce of 2/3rd the distance when dropped on hard surface.

## FINAL AIR COLUMN ADJUSTMENT

For Maximum efficiency of the final air column, the slide gate should be set as Close to the top of the product discharging off the shoe as possible.



When starting a new product, the slide gate should be open far enough so the Product doesn't back-up into the shoe. Once capacity is set, you can fin-tune the Air flow by turning the control handle down.



## **GROUNDING INSTRUCTIONS**

In the event of a malfunction or breakdown, grounding provides a path of least Resistance for electric current to reduce the risk of electric shock. This machine is Equipped with an electric cord having equipment grounding conductor and a Grounding plug. The plug must be plugged into a matching outlet that is properly Installed and grounded in accordance with all local codes and ordinances.

DO NOT modify the plug provided. If the plug provided will not fit the outlet, have The proper outlet installed by a qualified electrician. Improper connection of the Equipment-grounding conductor can result in a risk of electric shock.

Use only 3-wire extension cords that have 3-prong grounding plugs and 3-hole Receptacles that accept the machine's pug. Repair or replace damaged or worn Plugs immediately.

Check with a qualified electrician or serviceman if the grounding instructions Are not completely understood, or if in doubt as to weather the tool is properly Grounded.

## **LIMITED ONE (1) YEAR WARRANTY**

**You must check the bolts and bearings for possible loosening during transport.**

All Bench Air Screen Machines are warranted to the original purchaser to be free From defects in materials used in their manufacture of workman ship for a period Of one (1) year from the date of initial retail purchase.

Labor on warranted parts will be covered for a period of one (1) year. This warranty does not cover any parts that have been subjected to misuse, Abuse, alteration, overload, accident or normal wear of moving parts.

Motor Warranty: All motors are subject to the same condition as machines, and Are warranted to the original purchaser of one (1) year from the date of initial Retail purchase. During this period, any motor found to be defective will be Replaced or repaired at not charge.

Only Bench Industries is authorized to perform warranty service to it's products.

The merchandise you have purchased from us has been carefully engineered and Manufactured under the Bench Industries' rigid quality standards and should give You satisfactory and dependable operation. However, like all mechanical Merchandise, it may occasionally require adjustment, replacement parts, or Maintenance. Should you ever need assistance or parts, please contact or write to Bench Industries, 406.727.6514, PO Box 3167, Great Falls, MT 59403