ANMEIDA®
ANMEIDA Brand - 6SXZ Series of Coarse Color Sorter – Manual
Scope of application: Peeled broad bean, sunflower core, kidney bean, wheat core, adzuki bean, green bean, dried grape, and sesame etc.

Please carefully read this instruction manual before operation and always keep it in a good order.

Instructions

1. A coarse color sorter identifies the substances with different grain from the particles through photoelectrical and videographic principle and then removes the grains with miscellaneous colors by means of pneumatic elements so as to distinguish unacceptable items from the acceptable items. In general, the acceptable items have consistent color and the unacceptable items have miscellaneous colors.

2. Thank you for your purchasing of the Coarse Grains series of sorter made by us. This manual describes parameter setting and operating instructions for ANMEIDA Coarse Grains series of sorter in detail.

3. Please carefully read this manual before operating this equipment and follow this manual for operation. Especially, pay attention to the precautions mentioned in this manual for correct and safe operation of this series of color sorter.

4. The technical specifications and this manual shall be subject to changes without prior notice due to continuous improvement of design. Please visit our website for all kinds updated product information.

5. Replace the parts at the time of maintenance and repair (if any). We suggest using the parts manufactured or recommended by us. We shall not be liable for any trouble and accidents due to adoption of the parts not manufactured or recommended by us.

6. This product should be operated in a well-ventilated space, avoid installation in low-temperature, high-temperature, and high-humidity area.

7. This manual also applies to AMD-ZK series of color sorter.

Standard compliance: Q/CSO 003-2009  Coarse Grains Color Sorter
Anhui Zhongke Optic-electronic Color Sorter Machinery Co., Ltd

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Chapter 1 Precautions and Warnings

1.1 Precautions:

- Please pay attention to safety for unpacking and acceptance! Avoid unnecessary damage when unpacking. Count parts according to the attached packing list and always keep them in a good order for prevention of loss.

- Carefully examine reliability of lifting eyebolts of the color sorter for prevention of accidents when installing.

- This product shall be kept away from the strong magnetic field, strong sunlight, and dusty working sites.

- Safety grounding measures: The power supply shall be required to be well grounding. If the power supply is not reliably grounded, it is recommended to fabricate the grounding device according to the following figure.

Grounding device fabrication: Welded with galvanized pipes and the welding points need to be covered with asphalt as follows:

As to drawing shows, fill soil likewise.

2~2.5m
30cm Raw Soil
Fill it again and again according to the following three layers filling method and sequence.
10cm Charcoal
30cm Raw Soil
A layer of Raw Salt

Figure 1-1 Sketch for Fabrication of Grounding Line
● Prevention of static electricity interference. Adoption of iron tube must be made for the outgoing and incoming tubes and venting tubes connected by the user. It is not allowed to use plastic tubes and the other non-metallic tubes.

● The necessary air compressors prepared by the user shall meet the requirements of national relevant laws, rules, regulations, and standards.

● The power supply end provided by the user shall be provided with dustproof device to prevent dust from entering.

1.2 Location of Safety Warning Signs and Risk Level

Caution

Figure 1-2 Indication for Front Safety Warning Signs of Coarse Grains Color Sorter

Figure 1-3 Indication for Side Safety Warning Signs of Coarse Grains Color Sorter
1.3 Description to Safety Warning Signs

Warning Figure 1-4 Indication for Back Safety Warning Signs of Coarse Grains Color Sorter

1. The precise main control electrical circuit of the color sorter is provided into the electrical box. Don’t open it for preventing dust from entering.

2. A Thermostat is provided into the electrical box with closed air circulating system. Don’t open it during operating.

3. Don’t open it by unauthorized professional technician. Otherwise, any abnormality of the color sorter shall be at their risks.

1. It shall reliably be grounding for purpose your safety.

2. The power supply shall be provided with good grounding device

The display screen is designed for monitoring the color sorter, which is fragile and easily damaged. Slightly wipe the plane when cleaning. Never press it by force and don’t pound it.

Rotating gear, watch you Hand
Mind you hand
Chapter 2 Installation Instructions

2.1 Installation Instructions

The machine shall be placed on the handrail-mounted or closed and solid platform which is 1.8m from the ground. Don’t remove the bottom angle of the machine at the time of installation and it shall be leveled. Adjust the levelness up to 2/1000mm or below with a level. Access shall be provided around the machine (at least 0.8m for each side) for purpose of operation, patrolling, and maintenance. Depending on the site actual situation, the upper feeding inlet is corresponded to the user’s feeding pipeline. The pipeline shall be provided with flow adjusting plate (throttle) and storage bin. Pay attention that the inlet shall not be placed on the feeding funnel. Otherwise, vibration will easily occur to affect color sorting results. The discharging outlet shall be provided pipelines to take the acceptable items and waste materials out.

Note: Improper selection of installation place may possibly result in injury or abnormality of operating machine.
Figure 2.1 Sketch for Installation of ANMEIDA Coarse Grains Color Sorter

Note:
1. The dimensions shown as Figure 2-1 are minimum installation dimensions.

2. Figure 2-1 is only for your reference, adjustment depends on site actual situation.

3. If you fail to meet this requirements due to site restriction, please contact our after-sales service technician (0551-3846966).

2.2 Electrical Installation Instructions

Note: Improper selection of installation place may possibly result in injury or abnormality of operating machine.

The user must provide 3-phase AC380V±10%, 50Hz±2% power supply used for the necessary compressors provided by the user as well as single-phase AC 220V±10%, 50Hz±2%. The color sorter shall have well grounding device for safety grounding measures.

2.2.1 Power Supply of Main Unit

◆ The power supply of this unit shall be provided with 20A (or more) air breaker (not knife breaker) on the incoming end, which shall be single-phase AC220V±10%, 50Hz±2%.

◆ This unit has 2.0kW power or so, reliably connecting to the lower terminal of the single-phase AC220V/20A air breaker.
Independent grounding measures must be provided for purpose of avoiding interference and lightning.

2.2.2 Power Supply of Air Compressor

The air compressor shall be installed as close as possible. All the pipelines of it shall have a length not more than 10m, depending on the site actual situation. The power supply of the air compressor shall meet the requirements of operation manual for the air compressor.

2.3 Installation of Air Supply

The user shall preferably select oil- and water-free air compressor and provide water filter. If screw-rod air compressor is chosen, oil separator must be provided. All the pneumatic elements must be connected with DN25 galvanized pipes or clean pipes with higher class. It is recommended that the air compressor should be installed in the ventilation isolating room near the color sorter not more than 10m away from it.

2.4 Installation of Dust Collecting Tube

The user must provide dust collecting pipelines for purpose of preventing the dust from entering into the enclosed chamber and ensuring color sorting effect.

2.5 The Others

a) Oil-free air compressor: 11KW~30KW
b) Air supply pressure: 0.6~10MPa
c) Ambient temperature: +5~+35℃
d) Air consumption: Maximum 2.5m/min (oil- and water-free air). If the user provides additional dust collecting equipment, the airflow shall be 30~45m/min.
Chapter 3 Operating Instructions and Adjusting Method

3.1 Operation

Commissioning of this machine has been made in the factory as per factory standard before delivery. Loading/unloading by machinery or transportation vibration may possibly result in variation of its adjustment. Our engineer will make further commissioning depending on material selected on the user’s site. It must not be assembled/disassembled and serviced by unauthorized persons after completion of commissioning for purpose of prolonged service life of the machine and normal running of color sorter.

Please refer to the followings for purpose of optimal color sorting effect:

1) Be sure to use corrected and well-adjusted wave shape (i.e. background plate).

2) It is not true that the higher sensitivity is the better. Only the user skillfully operates the machine to properly find sensitivity, the color sorting effect can be optimal.

3.1.1 Preparation Prior to Operate

1) Examine the foreign materials in the feeding inlet hopper and thoroughly remove them (if any).

2) Start up the air compressor until the air pressure is 0.6MPa or above. Generally, the air pressure may be adjusted by 0.7MPa for initial commissioning.

Note: Thoroughly drain the air compressor for the waste liquid in it before starting it each time. In winter, the remaining water in the pressure regulating valve will easily be iced, with obstructive airflow. Dry it with heat source (≤45°C). Never frequently adjust the pressure regulating valve for preventing the parts inside it from damaging.
3) Shown as Figure 3-1, the air inlet pressure setting is made by 0.1MPa and working pressure setting is made by 0.15MPa. If the air inlet pressure fails to reach its value setting, this machine is unable to run. The monitor displays low pressure alarm. Generally, both values setting have properly been made at the time of installation and commissioning.

Air injecting valve shall be adjusted as follows: Shown as Figure 3-1, downward pull the lower part of the pressure regulating valve out from it and then turn it. Clockwise turn it to increase the operating pressure and vice versa. Upward push ⑤ to the resetting position.

4) Examine leakage of air pipeline. Tighten the leaking connection in case of leakage. However, it is normal that slight airflow can be found in the air injecting valve and in the pipeline.

5) Examine whether the waste liquid in the filters ① and ④ shown as Figure 3-1 can automatically be discharged.

6) Examine sundries or dust on the pallet of the vibrator, on the channel, glass surface of sorting chamber, upper end of the channel. Blow off them with air gun or wipe them with soft cloth (if any). Never use such sharp and solid items as metal etc to remove them.

7) Confirm that the color sorter is reliably connect to power supply.

Note: Don’t wipe the channel with hard items. Otherwise, the channel surface may seriously be scorched, and affect the color sorting. Wipe it with soft cloth. The welding slag must not spatter on the sliding channel to damage it when the other systems are installing.

3.1.2 Flow of Startup

a) Switch on the power supply: Press the green starting pushbutton on the panel and switch on the power supply. The system will have self-checking for one minute or so.

b) The system is preheated for 5-10 minutes.

c) Select the color sorting mode required by the user. If this color sorting mode is same as that selected for last time, the procedure may be omitted.

d) Start the vibrator: Press the “Feeding ON” pushbutton that the color sorting machine starts to feed the material. Adjust the background plate and the flow according to the wave shape.

e) Adjustment of color precision: Properly set the sensitivity to ideal effect of the user. Refer to the finished product for sensitivity setting. The lower the sensitivity is the better under situation to meet the sorting requirements.

For example, if the sensitivity value of 200 can meet the sorting requirements, it is unnecessary to adjust it by 210.

f) The color sorter starts to run.
3.1.3 Flow of Shutdown

Note: Shut the machine down after completion of sorting according to the shutdown procedure. Don’t compulsorily switch off power supply under working condition.

a) Press the “Feeding OFF” to stop feeding. Press to hold “OFF” pushbutton for five seconds. The main interface displays “Please switch of power supply of this machine” and then press the red pushbutton. The power supply of the complete machine is OFF.

b) Remove dust on the parts of color sorter.

c) Examine whether the filter automatic discharging device on the pipeline has been drained for water. Meanwhile, drain the air compressor and air reservoir for water from their bottom.

Note: First switch of the power supply when servicing the machine.

3.2 Operation and Setting

INTRODUCTION

Sorting Principals

Sorting machines

Color sorters generally consists of four principal systems.

A Feed System
Which presents food particles to the subsequent systems in a controlled manner. These products are presented by an incline chutes.

An Inspection System
Which measure the reflectivity of each particle. The inspection components are housed in an optical chamber, through which the particles passes. The optical chamber contains lighting and one or more lens and detector units. Depending on the number of directions from which the particles are viewed.

A Signal Processing Unit
In which electrical signals from the detector(s) are amplified and fed to decision making circuitry which classifies particles as either “accept” or “rejects”.

A Separation System
Capable of physically separating particles classified as reject from those classified as accept. Accept particles are allowed to continue along their normal trajectory, and rejects are deflected from it into a receptacle. Deflection is usually achieved by emitting short bursts of compressed air through nozzles aimed directly at the rejects.
3.2.1 Startup of Software

Firstly, when you start up machine, enter into software system. It is initial procedure. Password needs to be entered to excess parameters settings. The password is derived from the last digit of each batch of numbers, e.g. from the above batch of numbers, the password would be 1,2,2,& 6.
3.2.2 This is main screen. When machine is started up, you will see this screen.

From this screen you can control the sensitivities of all cameras simultaneously, and excess all functions of the machine.

Test Ej: Ejector testing. Pressing this key will excess the “Test Ej” screen where all ejectors can be tested.

Fw Ctrl: Flow control. Pressing this key will excess the vibrator control screen where the amplitude of each vibrator can be set individually.

Sort Mode: Sorting mode. Pressing this key will excess the “Sorting Mode” screen where the required sorting parameters are set, for each camera.

Backboard: Background plate. Pressing this key excess the background set up screen, to set the type of background required for the product to be sorted.

First: First sorting parameter. When “First” is displayed in the screen above it indicates that the sensitivity parameters above are for the primary sort. If the machine has been configure for a secondary sort, by pressing the key it will toggle to “Second” and the sensitivity parameters will change to the secondary sort preset values.

Ej Close: Close ejector. Pressing this key will close all ejectors from firing.

Feed Off: Close feeder. Pressing this key will close all vibrators from operating.

Sensitivity: To control single camera sensitivity. Pressing this key will excess the screen where all the sensitivities of each camera are set.

Param Set: Parameter setting. Pressing this key will excess the screen where all the common parameters for all chutes are set.

SD: Shut down machine. Press this button for 5 seconds, than software will be shut down, and then cut off.
Global Set: The core part of sorting setting, to control all camera sensitivity together.

Mem 1: Memory 1. There are 8 memories totally.

This function stores 8 preprogrammed product parameters. Pressing this key will display the eight memory banks. In these memory banks, are stored parameters settings for eight different products that have been programmed previously. By pressing on the required memory all parameters are transferred to the operating memory to carry out the required sort.

Color Spots: To control Hue and Saturation spot sensitivity

This function controls the acceptance area of discoloration that will be ignored and not rejected. Any discoloration larger in area will be rejected. (this function is operable only if “Open Hue” or “Open Sat.” is enabled in the “Sort Mode” screen.)

Mono Spots: To control white-black spot sensitivity

This function is used in conjunction with the “Low value” and “High value” sensitivity controls. Any contamination (dark or light spots) smaller than the pre-set value will be ignored and not rejected. Any contamination (dark or light spots) larger than the pre-set value will be rejected.

3.2.3 This is ejectors testing screen

All Test: Test all ejectors
Reset: Make the Channel become initial
Single Test: Test single ejector
Stop: Stop testing ejectors
**Channel: To show ejector testing position**

On the ZK2 machine there are 2 chutes. Each chute is divided into 4 channels. Each channel has 16 ejectors.

On the display above we have two white boxes with a number in each box. The left box displays the channel under test, and the right box displays the ejector under test for that channel. The channel required to be tested can be selected by the up, down arrows on the right of the boxes. When “All Test” is selected the No.1 ejector will fire, the number of the ejector under test will be display in the ejector box and will automatically be incremented on the display until it reaches 16.

In the “Single Test” a single ejector can be tested at a time.

3.2.4  This is to show flow control screen

![Flow Control Screen](image)

*Feeder 1 control the first chute, Feeder 2 control the second chute, Feeder 3 control the third chute…..The value for feeder is from 1 to 50. The higher the value, the higher the vibration.*

The display above allows control for 6 vibrators. If a machine has been configured for less chutes, than only the right number of “Feeder” controls will respond.

For example, if the machine has only two chutes, then only “Feeder 1” and “Feeder 2” will have any affect.

When facing the machine “Feeder 1” is to your left, “Feeder 2” is to the right of “Feeder 1” and so on.

The amplitude of the vibration is displayed in the white box and can be increased or decreased by the “up/down” arrows adjacent to it (maximum vibration is 50). The vibrator will only be operational when the “OPEN” button is displayed. The vibrator is disabled, when ”CLOSE” is displayed.
BASIC Principles OF LIGHT

The spectrum of visible light, ranges from wavelength of 0.00078mm or 780nm (nanometer) to a wavelength of 0.00038mm (380 nm).

We perceive the various wavelengths as different colors. The longest wavelength (which corresponds to the lowest frequency) is seen by us as the color red followed by the known colors of the rainbow: orange, yellow, green, cyan, blue, and magenta (violet), which is the shortest wavelength (and highest frequency). White is not a color but the combination of the other colors.

The color spectrum contains three primary colors, namely red, green, and blue. By combining these three, all the other colors of the spectrum (including white) can be produced.
Making colors in this way is based on blending, or adding up colored light, which is why it is called additive color mixing. Combining the three primary colors in specific ratios and known amounts enables us to produce all possible colors.

Light refraction is the reverse process of color mixing. It shows that white light is a combination of all the colors of the visible color spectrum. To demonstrate refraction a prism is used, which is a piece of glass that is polished in a triangle shape. A light beam travelling through a prism is broken twice in the same direction, causing the light beam to change its original course.

Beams with long wavelength (the red beams) are refracted less strongly than beams with short wavelength (the violet beams), causing the colors to fan out. The first fan out is enlarged by the second fan out, resulting in a color band coming out, consisting of the spectrum colors red, yellow, green, blue, and violet. There are no clear boundaries between the various colors, but thousands of transitional areas. A rainbow is a perfect example of the principal of light refraction in nature.

We use this principal for color sorting.

**Colors as Hue, Saturation and Brightness (white-black)**

Describing colors using hue, saturation and brightness (white-black), is a convenient way to organize differences in colors as perceived by humans.

This diagram is called the color wheel, and any particular spot on the wheel from 0 to 360 degrees is referred to as a hue, which specifies the specific tone of color. "Hue" differs slightly from "color" because a color can have saturation or brightness as well as a hue.
**Saturation** is the intensity of a hue from gray tone (no saturation) to pure, vivid color (high saturation).

**Brightness** *(white-black)* is the relative lightness or darkness of a particular color, from black (no brightness) to white (full brightness).

The illustration above shows the difference between saturation and brightness. We first pick a blue **hue** from the color wheel (stretched out into a line to make a prettier illustration). We can then reduce the **saturation** so that the blue hue becomes more and more blue gray. With zero saturation it is gray. We pick a less saturated blue tone and then turn the **brightness** up and down on that tone.

Increasing brightness turns a blue into a lighter sky blue but without making it gray. Decreasing brightness turns the blue to black.

Note that increasing the brightness is not the same as decreasing saturation. Decreasing saturation turns the colors into gray shades.

Taking an almost totally de-saturated blue, so de-saturated it is almost perfectly gray, and increasing the brightness will result in what appear to be lighter shades of gray. However, if there is any "blue" at all in the gray by increasing saturation we can achieve a bright blue again.
3.2.5 Sorting mode calibration

Press Sort Mode in main screen, you will see this screen.

There are totally five groups. Each group has four red keys, each key can be set for a specific sort which determines the type of sort required, for one chute.

Take Group 1 for example:

The first key from the left can be toggle between “Good” and “Bad”.

**GOOD**: Means to reject “2” area and accept “1” area. “1” area is GOOD, and “2” area is BAD.

Displaying “Good” means the machine will operate in the standard mode. Good product flows through
while bad product is rejected.

BAD: Inverse to GOOD sorting
Displaying “Bad” means the machine will operate in the inverse to “Good” sorting. Bad product flows through and good product is rejected. This type of sort is used when there is little good product in the commodity been sorted.

The second key from the left can be toggled between, “Open Sat” and “CLS Sat” enables or disables this function:

The third key from the left can be toggled between, “Open Hue” and “CLS Hue” enables or disables this function:

The fourth key from the left can be toggled between, “Value” and “CLS Value” enables or disables this function: this function is used when dark or light sort is carried out. When the key is “Value”, means white light to material and background.

Red: Red light
This allows the processing of the “Red” light and red signal, and is used in most sorts to remove light and dark defects.

Blue: Blue light
This allows the processing of the blue signal and is mainly used when only a dark sort is required.

B/G” This allows the processing of blue green signals.
B/R: This allows the processing of blue red signals.
G/B: This allows the processing of green blue signals.
G/R: This allows the processing of green red signals.
R/B: This allows the processing of red blue signals.
R/G: This allows the processing of red green signals.

Note: B/G, B/R, G/B, G/R, R/B & R/G are seldom used. Most often used is “Value”, “Blue”, “Red”.

Sen 1, Sen 2, Sen 3, Sen 4:
They are chief control to “Saturation” “Hue” and “Value”. If they are closed, mean that all keys(Saturation, Hue & Value) disabled, and Saturation, Hue & Value will not be displayed on main screen. If they are open, mean they will display on main screen. Any one of these sensitivity controls can be allocate any one of these parameters, “Low Sat”, “High Sat”, “CLS Sat”, “Low Value”, “High Value”, “CLS Value”, “Low Hue”, “High Hue”, and “CLS Hue”.

Cancel: press this button it will return to main screen.
3.2.6
In main screen, press Backboard then you can enter into Background plate calibration.

Lens: Lens No.
F Board: Front background plate
“F Board” refers to front background plate
“B Board” refers to back background plate
Ave: Average value
Red: Red color for the wave
Green: Green color for the wave
Cap: Capture

The background calibration is required so that acceptable product passing through the view of the camera is not detected as the light reflected from the product is the same as the light reflected from the background when there is no product.

Any variation in the color of the product from the acceptable will cause absorption (dark product) or more reflection (light product). Refer to the diagram.

There are two backgrounds used, and the right background for a particular commodity is determined by the color of the acceptable part of the commodity, e.g.

1) Blue, for most products
2) White, rice or any light products

The angle of the background is controlled by the second set of “Up/Down” arrows (starting from the left). The feedback from the camera is indicated in the white box under “Ave”. To view the feedback and monitor the waveform you need to press the “Capture” key. Before the angle of the background is changed by the “Up/Down” keys (second set of arrows from the left), the “Capture” key needs to be in
the disabled position (red condition) the angle of the background is adjusted and then the “Capture” key is enabled (green condition) the new feedback value will now be displayed. The correct feedback is when the waveform observed is fairly even and stable across its length. The feedback value should be between 500 -1500 and all cameras used should have similar readings. The front cameras (1 & 3) is calibrated with the back background (B Board). The back cameras (2 & 4) is calibrated with the front background (F Board). If there is a huge difference in reading between the cameras e.g. Camera 1 reads 750 and camera 2 reads 1200, then the aperture of camera 2 is adjusted so as to read around 750. All cameras need to be adjusted to give similar readings. The difference should not be greater than 100. The ultimate angle of the background, is when maximum feedback is achieved. Changing the angle above or below this figure will only decrease the feedback value. The angle for the blue background should be around 200. For white background should be around 368. This procedure needs to be done for all cameras.

3.2.7 Press Sensitivity in main screen, then you can see this picture. On this screen each cameras sensitivity is set. (While the Global set in main screen is to control all cameras sensitivity.)

![Screen with Sensitivity settings](image)

In this screen we set our Sensitivities, for all cameras

These are,

a) “Low Value” (Dark Sort). The sensitivity value (480) can be adjusted by the adjacent up/down arrows.

b) “High Value” (Light Sort) The sensitivity value (2047) can be adjusted by the adjacent up/down arrows.

c) “Low Sat” The sensitivity value (1) can be adjusted by the adjacent up/down arrows.

d) “High Sat” The sensitivity value (255) can be adjusted by the adjacent up/down arrows.
e) **“High Hue”** The sensitivity value (34) can be adjusted by the adjacent up/down arrows
f) **“Low Hue”** The sensitivity value (260) can be adjusted by the adjacent up/down arrows

These sensitivities are only operable if they have been enabled in the **“sort mode”** screen.

Only one camera at a time can be set, all other cameras are disabled. A camera can be enabled or disabled by pressing the “Open Len” (enabled) or “CLS Len” (disabled), respectively. The camera to be worked on can be selected by the “Up/Down” key next to “Lens” number box.

Once a camera is calibrated all its values can be copied to all the other cameras, but fine tuning might be required for each individual camera.

**Flow:** Flow, control the capacity for each chute

“**Feed off**” (red condition), “**Feeding**” (green condition)

Start and stop of vibrators to feed product whilst setting up the sensitivity of each camera.

**Ok:** Save information

Any changes to any parameters that need to be saved, this key needs to be pressed.

**Pic Cap:** Pressing this key will excess a screen where we can capture images of good and bad product to assist in setting up the sensitivity levels.

**Cancel:** Return to main screen

Pressing this key returns you to main screen

When the **“Pic Cap”** key is pressed the following screen is displayed.

In this screen we can simplify the set up of the sensitivities required to remove the defects from the
acceptable product.
Each camera can be set to capture images, but in practice only one camera is used to capture the images of good and bad product,
The camera been worked on is indicated in the white box under “Lens” and can be changed by the “Up/Down” arrows next to the box.
For each camera we can select up to 3 “Bad” and 3 “Good” samples.
The procedure to capture images of the “Bad” and “Good” samples is as follows.
1) Samples of defects and accepts are selected from the product to be processed.
2) “Single Cap” is then pressed.
3) A sample of the defect is passed down the chute so the camera can view it.
4) An image of the defect will appear on the screen.
5) This image is stored as “Bad 1” by scrolling through the lower left key next o the “Conti Cap” key until it displays “Bad 1”. To store this image under “Bad 1” the “Save ” key needs to be pressed. If a second defect having different characteristics need to be stored, then the above process is carried out and this defect is stored under “Bad 2”. The same process is carried out for the acceptable samples.
6) The above process is carried out for all the cameras.

“Cap Delay” is the required time to take an image of the product being evaluated. The normal value is around 16 and should not be changed.
“Cap Ref” is only a background reference for the image being captured and there is no requirement to change it from around 150-160.

### 3.2.8 Press Param Set to enter into this screen.

<table>
<thead>
<tr>
<th>Delay Time</th>
<th>Clean Time</th>
<th>Clean Fre</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0 ms ▲</td>
<td>5 s ▲</td>
<td>30 m ▲</td>
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<td></td>
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<tr>
<td>Ej Time</td>
<td>Ej Mode</td>
<td>Touch Cal</td>
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<td>7.5 ms ▲</td>
<td>2 ▲</td>
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<td></td>
<td></td>
<td>Clean</td>
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<tr>
<td>Ej Keep</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.07ver ▲</td>
<td></td>
</tr>
</tbody>
</table>

- Reset Set
- Language
- Pram Set
- Status
- Cancel
**Delay Time: Delaying Time, the time for material from camera to ejector**
Delay time is from the time, a defect is detected, and the time it takes to reach the ejector. This can be varied by the “up/down” arrows. Trials are carried out to determine the best delay time for a particular product. The correct time is when the maximum defects are rejected.

**Ej Time: Ejector working time**
The time the ejector is on for. This is determined by the size of the commodity sorted, e.g. rice would have a short time, but broad beans would have a long time.

**Ej Keep: Time of ejector cycle.**
Cycle time of ejector (on/off).

**Clean Time: Dust removal time**
Cycle time for cleaning the glass

**Clean Fre: Clean frequency, the interval of dust removal.**
The interval between the wiper operation to clean the glass

**Ej Mode:** The number of adjacent ejectors to fire (maximum 4). For rice or millet or sesame, the value should be 1, and for broad beans the value should be 4. This parameter needs to be changed manually for different size commodities. When you sort sesame it would be set for “1”, and as soon as you change the sort to larger size commodity you need to change this to a higher value so that the defect is rejected correctly.

**Reset Set:** Resets values on this screen to the original factory settings.

**Language:** Language options

**Status:** To show camera working condition, not used

**Touch Cal:** Touch screen calibration

“Clean” key: Manually operates wipers to clean the glass

“Lenses Cali” key: This function is used for the camera to calibrate its red, green and blue signal, to set the white balance. When this key is pressed it will display another screen as below. Before any keys are pressed the white calibration plate needs to be installed at its location.

Once the plate is installed the camera under calibration is selected by the “Lens” key arrows, then the “White Balance” key is pressed to start the calibration routine. It will first calibrate on the Red signal then the Green and finally the blue. When it has finished its procedure it will display “Correction Success”. This procedure can be carried out for the rest of the cameras.

**Pram Set:** This is to configure the type of machine and is only done once.
This is to set up the number of chutes, the number of channels, and the number of cameras.

3.2.9 Input password, then you enter into this screen.
Lens: Number of cameras used on the machine.

Group Num:
1 represents 64 ejectors in the chute.
2 represents, 2 group of 32 ejectors in each group. Total 64 ejector for the chute.
4 represents 4 group of 16 ejectors in each group. Total 64 ejectors for the chute.

Channel: Total number of ejectors on the machine

1st: No. of valves for the first sorting
Number of ejectors for the primary sort. Each chute has a bank of 4 ejector modules. Each ejector module represents 16 ejectors. So if we select 4 for the “1st Channel” it indicates 64 ejectors are used for the primary sort (1 Chute), if we select 8 it indicates 128 ejectors used for the primary sort (2 chutes). If a total of 2 chutes are used on the machine, then there is no need to set “2nd Channel” as there are no more chutes left to do a secondary sort. In this case the “2nd Channel” parameter is irrelevant.

2nd: No of valves for the second sorting
Number of ejectors used for the secondary sort. This is set up with the 1st Channel, only if a secondary sort is carried out simultaneously. For example we could set the “1st Channel” to 4, and the “2nd Channel” to 4. This means we would be using the first chute for primary and the second chute as a secondary sort.

Gain: Enlarge multiple(fixed value for machine).
Normally set at 1.

CLS Lamp: To close some LED to sort out transparent material

CLS Blue: To close blue LED.
This is normally disabled. This is only enabled if a color sort is required to remove blue, e.g. plastic

6KHZ Key: Not used.
3.2.10  This picture show lens pixle calibration.

Each camera has its own Lens No., Start pixel, End Pixel, Sart channel, End Channel. Press Cap to capture the wave, and calibrate start pixel and end pixel. Finish individual camera calibration, then press OK to reserve. After finish all cameras calibration, press Cancel to come back to main screen.

This screen is used to align the camera with the chute. This only needs to be done if the camera CCD, or a new or different chute is changed. When this align process is done, a camera alignment plate is necessary. Otherwise there is no need to align the camera during the life of the machine.

Lens refers to the camera number that is being aligned.

Group refers to the part of the chute that is aligned, and this has a different meaning for different chutes.

The “Group” function is used in conjunction with the, ”Start canal” (first ejector) & the “End Canal” (last ejector) function.

AMD machines have 6 different chutes that are used for different commodities.

1) The Flat, 16 Channel, 21 Channel, 32 Channel, and 64 channel chutes, use one alignment plate.

To align these chutes with the camera we would select Group “1” and “Start Canal” would be set at “1” and “End Canal” at “64”.

2) Four sectioned Chute. This is a standard chute that has been divided into 4 equal sections. Each section represents 16 ejectors.

This chute has a special alignment plate and should be used when aligning the camera.

The procedure to align this chute is as follows.
Group 1 is selected to represent the first section. The Start Canal is set at 1 and the End Canal is set at 16. When alignment has been carried out as described below, then the next section is selected. Group 2 represents the second section and Start Canal is set at 17 and End Canal is set at 32. The third section is selected by Group 3 with the Start Canal set at 33 and the End Canal is set at 48. The forth Group is select by Group 4 and the Start Canal set at 49 and End Canal at 64.

The procedure to align the camera with the chute is as follows,

a) Position the alignment plate on the chute as shown below.

b) The pattern of the plate will appear as marks on the screen as shown in the image below.

The reference of the edge of the chute is located by moving the red line (using “up/down” arrows next to the “Start Pix”) until the red line reaches the inner edge of the black mark as shown in the diagram. A number is displayed in the white box, under “Start Pix”. This number is taken as reference to the start of the chute.

The same is done with the blue line, to reference the end of the chute. Again the line is moved along the pixels until it reaches the inner part of the line as shown in the diagram. A number appears in the white box under end pixel. This number is referenced as the end of the chute.

This procedure only needs to be done if a camera, or chute is being replaced.
4.1 Maintenance on Each Shift
Examine whether all the parts are kept in a good order and whether they are loosened. Remove dust on the parts.

4.2 Dust Removal of Ash Scraper
Weekly remove the dust on the brush of the ash scraper with an ash removal air gun. Monthly examine whether the brush can smoothly and steadily run. Tighten it (if any). If the all the soft hair on the brush laid down toward one side, remove to interchange the brushes for continuation of service.

4.3 Dust Removal of Sorting Chamber
If dust can be found on the exterior and interior glass of the sorting chamber (generally on the front glass of the sorting chamber), wipe them with clean soft cloth and alcohol. Meanwhile, examine whether the ash scraper can normally run. Make color sorting after the glass surface is drying and cleaning.

4.4 Filter Draining for Water
Frequently drain the filtering device on the machine for water, at least twice on each shift, for preventing all the impurity entering into the core parts of the machine, which may result in damage. Otherwise, it will result in damage and loss.

4.5 Examination during Running
Patrol to examine the signal indication (including operating indication and alarm indication) as well as valve injecting action during running. Patrol to examine whether the air compressor, air pressure, and noise is abnormal. Drain the air compressor for water not less than three times on each shift. Immediately remove the clogging sundries on the drain outlet (if any).

4.6 Maintenance after Shutdown
Clear up the vibrator (especially the coagulated materials in the vibration hopper), inside of the machine, material receiving hopper, and dust scraping brush with an air gun.

Note: When using an air gun to clear up the material receiving hopper, the air gun must not directly blow off the nozzle tip. Otherwise, the injecting valve may possibly be damaged.

Weekly: Examine the filter element and examine the cleanliness of the ash removing brush.
Quarterly: Replace the florescent tube once, or, interchange the right end and left end of the tube for purpose of prolonged service life of it.

Semi-annually: Replace the grease of the air compressor once.

Warning: For prevention of static electricity and for purpose of personnel safety, the main unit and its supporting equipment must be grounded well with a grounding resistance not more than 0.1 Ohm. It is strictly prohibited that unauthorized person to open the live electrical box. The electrical box is designed with fully-enclosed, self-circulating, air-cooled system. Don’t open this rear box cover when the machine is running.
## Chapter 5  Troubleshooting

### 5.1 Troubleshooting

<table>
<thead>
<tr>
<th>Troubles</th>
<th>Causes</th>
<th>Remedies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air leakage of solenoid</td>
<td>Foreign articles in the solenoid</td>
<td>Back blow off. Test the solenoid again and again.</td>
</tr>
<tr>
<td></td>
<td>Dirty element of filter</td>
<td>Clean/replace the filter element.</td>
</tr>
<tr>
<td></td>
<td>Worn parts inside the solenoid</td>
<td>Replace the worn parts</td>
</tr>
<tr>
<td>No action of solenoid</td>
<td>Poor contact between the plug on the downstream of the solenoid and the socket</td>
<td>Unplug and re-plug it. Repair the poor contact position.</td>
</tr>
<tr>
<td></td>
<td>Line broken of solenoid core</td>
<td>Replace the solenoid</td>
</tr>
<tr>
<td></td>
<td>Damaged control PCB</td>
<td>Replace the control PCB.</td>
</tr>
<tr>
<td>Insufficient air injecting capacity of solenoid</td>
<td>Dust in the solenoid</td>
<td>Back blow off. Test the solenoid again and again.</td>
</tr>
<tr>
<td></td>
<td>Too low air pressure</td>
<td>Examine the pressure gauge and relevant air pipeline.</td>
</tr>
<tr>
<td>Material of sliding channel</td>
<td>Too high humidity of Coarse Grains</td>
<td>Sort after dehumidifying and drying.</td>
</tr>
<tr>
<td></td>
<td>Lumped dust in the sliding channel</td>
<td>Clear up the sliding channel with soft cloth.</td>
</tr>
<tr>
<td></td>
<td>Scoring of sliding channel</td>
<td>Grind it with fine sandpaper or replace the sliding channel.</td>
</tr>
<tr>
<td></td>
<td>Damaged florescent lamp</td>
<td>Replace the florescent lamp.(Now LED only)</td>
</tr>
<tr>
<td>Frequent action of color sorting pilot lamp and solenoid</td>
<td>Incorrect selection of color sorting method.</td>
<td>Correctly choose the mode.</td>
</tr>
<tr>
<td></td>
<td>Damaged power supply of florescent lamp</td>
<td>Replace the power supply.</td>
</tr>
<tr>
<td>Reminding of electrical circuit trouble</td>
<td>Seizure of background plate</td>
<td>Repair it.</td>
</tr>
<tr>
<td></td>
<td>Improper adjustment of Coarse Grains sorting wave shape</td>
<td>Re-adjust the background plate.</td>
</tr>
<tr>
<td></td>
<td>Florescent lamp not switched-on</td>
<td>Re-switch on the florescent lamp.</td>
</tr>
<tr>
<td></td>
<td>System trouble</td>
<td>Please contact us.</td>
</tr>
<tr>
<td>The complete machine basically fails to sort</td>
<td>Too low sensitivity</td>
<td>Adjust the sensitivity.</td>
</tr>
<tr>
<td></td>
<td>Valve power supply not switched-on</td>
<td>Switch on the valve power supply.</td>
</tr>
<tr>
<td>Worse and worse sorting quality within a period of time</td>
<td>Dust on the glass plate inside the sorting chamber</td>
<td>Remove dust with clean cloth.</td>
</tr>
<tr>
<td></td>
<td>Aged florescent lamp</td>
<td>Replace the florescent lamp.</td>
</tr>
<tr>
<td></td>
<td>No ash removal of color sorting</td>
<td>Examine the ash removing device.</td>
</tr>
<tr>
<td>Bad sorting effect on single side of the complete machine</td>
<td>Damaged or aged ash scraper</td>
<td>Replace the ash scraping brush.</td>
</tr>
<tr>
<td></td>
<td>Improper ash removal of rod-free cylinder, bad ash removal effect</td>
<td>Adjust the ash scraping velocity.</td>
</tr>
<tr>
<td></td>
<td>Too high sensitivity</td>
<td>Re-adjust the sensitivity.</td>
</tr>
<tr>
<td>Problem</td>
<td>Solution</td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Improper adjustment of background plate (i.e. wave shape)</td>
<td>Re-adjust the background plate.</td>
<td></td>
</tr>
<tr>
<td>Too high impurity content of raw material</td>
<td>Reduce output.</td>
<td></td>
</tr>
<tr>
<td>Insufficient air supply pressure of the color sorter.</td>
<td>Examine the air pressure, whether the air pipeline is too long. Re-adjust the air pipeline.</td>
<td></td>
</tr>
<tr>
<td>Frequent protection of air pressure</td>
<td>Try to make the pipeline not clogged. Clean or replace relevant filters.</td>
<td></td>
</tr>
</tbody>
</table>

5.2 Precautions in winter (especially in the Northern Region)

Start up the machine to preheat it for 30 minutes in advance. Keep the ambient temperature at $+5^\circ C$ or above.

a) In cold winter, all the ball valves shall slowly be opened to prevent the pipeline from clogging by ice due to high-velocity airflow.

b) Strictly drain equipment for the remaining gas and water in it for prevention of icing in the end of each shift.

c) Refer to the following methods to determine whether the air pipeline is clogged.

Pay attention that the indicating value by the air inlet gauge on the back of the color sorter is consistent with that by the air pressure value of the air compressor. If the former is lower than the latter, the pipeline is clogged by impurity or icing. Please clean out the pipeline and each filter element.

5.3 Precautions in the Southern Region (especially in the coastal regions)

a) It is recommended that two water filters should be provided by the customer.

b) The user shall drain for the water at least once two hours. Otherwise, water will flow into the machine, which may shorten the service life of the machine.

c) Regularly drain the filters (including those inside the machine) on the air pipeline for water and replace the filter elements (as appropriated).

d) Careful maintenance may effectively prolong service life of the machine and make sure that the machine can normally run.
### Table 6-1: Technical Data of ANMEIDA Coarse Grains Color Sorter

<table>
<thead>
<tr>
<th>Category</th>
<th>Kidney Bean</th>
<th>Peeled Broad Bean</th>
<th>Sunflower Kernel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight of complete machine (kg)</td>
<td>6SXZ-192</td>
<td>6SXZ-256</td>
<td>6SXZ-320</td>
</tr>
<tr>
<td>Production rate (kg/h)</td>
<td>$\geq 9$</td>
<td>$\geq 9$</td>
<td>$\geq 9$</td>
</tr>
<tr>
<td>Output (kg/KW·h)</td>
<td>$\geq 700$</td>
<td>$\geq 700$</td>
<td>$\geq 700$</td>
</tr>
<tr>
<td>Accuracy (%)</td>
<td>$\geq 99$</td>
<td>$\geq 99$</td>
<td>$\geq 99$</td>
</tr>
<tr>
<td>1st sorting carryover</td>
<td>$\geq 2; 1$</td>
<td>$\geq 2; 1$</td>
<td>$\geq 2; 1$</td>
</tr>
<tr>
<td>2nd sorting carryover</td>
<td>$\geq 4; 1$</td>
<td>$\geq 4; 1$</td>
<td>$\geq 4; 1$</td>
</tr>
<tr>
<td>Voltage</td>
<td>220V</td>
<td>220V</td>
<td>220V</td>
</tr>
<tr>
<td>Power (KW)</td>
<td>1.0~2.7</td>
<td>1.2~3</td>
<td>1.5~3.5</td>
</tr>
<tr>
<td>Air pressure (MPa)</td>
<td>$\geq 0.6$</td>
<td>$\geq 0.6$</td>
<td>$\geq 0.6$</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>680</td>
<td>820</td>
<td>950</td>
</tr>
<tr>
<td>Outer dimension (mm)</td>
<td>$1610 \times 1480 \times 1900$</td>
<td>$1960 \times 1880 \times 1900$</td>
<td>$2247 \times 1880 \times 1900$</td>
</tr>
</tbody>
</table>

Notes:
1. The color sorting parameter shown as Table 6-1 is subject to taking 4%~5% kidney, sunflower core or peeled broad bean as an example for different color grains in raw material. The actual indicators depend on the actual indicators.

AMD ZK series color sorter specification and parameter is subject to change without prior notice.
on raw materials and impurity rate.

2. Secondary sorting means re-sorting of items rejected during primary sorting.

3. The data shown as Table 6-1 is only for your reference, which shall be subject to change without any prior notice.

4. The hopper-type lifting machine and the blower shall be provided by the others.
Chapter 7  Structure and Wiring Diagram

7.1 Structure

1. Feeding Inlet 1
2. Feeding Inlet 2
3. Feeding Inlet 3
4. Feeding Inlet 4
5. Switch of Power Supply
6. Front Sorting Chamber
7. Air Filter
8. Discharging Outlet 1
9. Discharging Outlet 2
10. Discharging Outlet 3
11. Discharging Outlet 4
12. Vibrator
13. High Voltage Electrical Box
14. Monitor
15. Rear Sorting Chamber
16. Frame
17. Overflowing Outlet

A, B, C: Selected Objects  D: Rejected Objects  A', B', C': Rejected Objects
It consists of feeding inlet, vibrator and feeding hopper. The material sorted is delivered to the feeding hopper via feeding inlet by vibration. The amplitude of the vibrator is controlled by the electrical box to adjust the overall flow. The feeding device is provided on the transverse beam of the vibrator to effectively reduce resonance through separation from the machine body via vibration-proof spring.

### 7.1.2 Sliding Channel

It consists of many groups of slope channel and pressing strips, which may make the materials sorted enter into the observing area of the sorting chamber at a constant acceleration.

### 7.1.3 Sorting Chamber

It consists of luminaries, background plate adjusting device, sensor and observing and sampling window, and dust removing device. The signal received is transmitted to the micro-computer electrically controlled system to process through the sensor so as to run according to program setting. The dust removing device will automatically remove dust at a fixed interval for purpose of prevention of dust interference.

### 7.1.4 Air Injecting Valve

When the high-velocity magnetic air inject valve is receiving actuating instruction, it properly discharge compressed air to blow off the items rejected.

### 7.1.5 Material Receiving Hopper

It consists of front and rear chamber, respectively receiving finished product and items rejected through color sorting. Dust collecting holes are provided on both sides, which have an 80mm diameter of port.

**Note:** The user must provide the dust collecting device (the dust collecting blower shall be provided by the user) to reduce dust inside the enclosed body chamber. Otherwise, the service life of the machine and color sorting effect will directly be affected.

### 7.1.6 Electrical Control Box

The fully enclosed box is designed with a control system which mainly includes micro-computer. It is a control core of the machine. This system shall automatically be responsible for acquisition, magnification, and processing of digital signal. It sends instructions, through control sub-system, to actuate air injecting valve to discharge compressed air and to blow off items rejected for purpose of fine color sorting.
The electrical control sub-system features sensitivity (color sorting precision) adjustment, flow adjustment, timing adjustment of automatic ash removal, air pressure preheating, heater control, trouble self-checking, and air injecting valve examination etc.

7.1.7 Air Pipeline System

It locates on the rear of the machine, provided with filtering valve, distribution valve, and pressure regulating valve etc. to provide highly clean compressed air. It is also provided with air pressure gauge. When the air inlet pressure is less than 0.1MPa, it will automatically pre-warn. The screen will automatically remind the user to check.

7.1.8 Machine Body

It consists of structural rib and sheet metal, forming an enclosed body.

7.2 Wiring Diagram

7.2.1 Wiring Diagram of Coarse Grains Color Sorter

Figure 7-2  Wiring Diagram of Coarse Grains Color Sorter
7.2.2 Coarse Grains Color Sorter – Signal Transferring Wiring Diagram

Figure 7.3   Coarse Grains Color Sorter – Signal Transferring Wiring Diagram
### Chapter 8 List of Accessories, User-Provided Necessary Equipment and Parts, Wearing Parts

#### 8.1 List of Accessories

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Specification</th>
<th>Unit</th>
<th>Q’ty</th>
<th>Counting</th>
<th>Shipment</th>
<th>Inspection</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>主机（色选机）</td>
<td>主机</td>
<td>Unit</td>
<td>1</td>
<td>□</td>
<td>□</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Main Unit (Color Sorter)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>吹尘枪</td>
<td>Each</td>
<td>1</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Blow-off Gun</td>
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<td>3</td>
<td>螺旋气管</td>
<td>Piece</td>
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<td>□</td>
<td>□</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spiral Air Pipe</td>
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<td></td>
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</tr>
<tr>
<td>4</td>
<td>振动器总成</td>
<td>Set</td>
<td>1</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
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<tr>
<td></td>
<td>Vibrator Assembly</td>
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<td>5</td>
<td>瞄准靶</td>
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<tr>
<td></td>
<td>Aiming Target</td>
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<td></td>
<td>Screwdriver</td>
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<td>Screwdriver</td>
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<tr>
<td>12</td>
<td>色选机钥匙</td>
<td>Each</td>
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<td>□</td>
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</tr>
<tr>
<td></td>
<td>Key to Color Sorter</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>13</td>
<td>装箱人</td>
<td>Set</td>
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<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>序号</th>
<th>No.</th>
<th>名称</th>
<th>Description</th>
<th>规格</th>
<th>Unit</th>
<th>数量</th>
<th>Q’ty</th>
<th>Counting</th>
<th>Shipment</th>
<th>Inspection</th>
<th>备注</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>序号</th>
<th>No.</th>
<th>名称</th>
<th>Description</th>
<th>规格</th>
<th>Unit</th>
<th>数量</th>
<th>Q’ty</th>
<th>Counting</th>
<th>Shipment</th>
<th>Inspection</th>
<th>备注</th>
</tr>
</thead>
</table>

设备名称：设备编码：包装日期：年月日

Packed by: Inspected by Goods Issued by:
### 8.2 User-Provided Necessary Equipment and Parts

<table>
<thead>
<tr>
<th>序号 No.</th>
<th>名称 Description</th>
<th>规格 Specification</th>
<th>单位 Unit</th>
<th>数量 Q'ty</th>
<th>发货 Shipment</th>
<th>包装箱 Package No.</th>
<th>备注 Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>空压机 Air Compressor</td>
<td></td>
<td>台 Unit</td>
<td>1</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>储气罐 Air Reservoir</td>
<td>0.5/10</td>
<td>台 Unit</td>
<td>1</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>储气罐配件 Parts of Air Reservoir</td>
<td></td>
<td>套 Set</td>
<td>1</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>压力容器质保证书 Certificate to Pressured Vessel</td>
<td></td>
<td>份 Sheet</td>
<td>1</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>立式提升机 Vertical Lifting Machine</td>
<td></td>
<td>套 Set</td>
<td>2</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>集料斗 Material Collecting Hopper</td>
<td></td>
<td>件 Ea.</td>
<td>1</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>UV型32槽通道 UV-type 32-slot Channel</td>
<td>ZHK015</td>
<td>件 Ea.</td>
<td>3</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>抽风装置 Exhausting Device</td>
<td></td>
<td>件 Ea.</td>
<td>3</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>1#钢丝管总程 1# Steel Wire Tube Assembly</td>
<td>1-25-8-2500</td>
<td>根 Ea.</td>
<td>1</td>
<td>□</td>
<td>□</td>
<td>置于主机包装箱内 Placed into the packing box of this main unit</td>
</tr>
<tr>
<td>10</td>
<td>1#钢丝管总程 1# Steel Wire Tube Assembly</td>
<td>1-25-8-5000</td>
<td>根 Ea.</td>
<td>1</td>
<td>□</td>
<td>□</td>
<td>置于主机包装箱内 Placed into the packing box of this main unit</td>
</tr>
<tr>
<td>11</td>
<td>过滤器 Filter</td>
<td>AFF-22B-10D</td>
<td>件 Ea.</td>
<td>1</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>过滤器 Filter</td>
<td>AMG-550-10D</td>
<td>件 Ea.</td>
<td>1</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>过滤器 Filter</td>
<td>AM-550-10D</td>
<td>件 Ea.</td>
<td>1</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>密封胶带 Sealing Tape</td>
<td></td>
<td>盒 Box</td>
<td>16</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>密封圈 Sealing Ring</td>
<td>30×20×3</td>
<td>只 Piece</td>
<td>6</td>
<td>□</td>
<td>□</td>
<td>用于钢丝管接头 Used for connection of steel wire tube</td>
</tr>
<tr>
<td>16</td>
<td>六角外丝 Hex. Head bolt with Male Threads</td>
<td>1”</td>
<td>只 Piece</td>
<td>8</td>
<td>□</td>
<td>□</td>
<td>用于过滤器连接 Used for connection of filter</td>
</tr>
<tr>
<td>17</td>
<td>球阀 Ball Valve</td>
<td>1”</td>
<td>只 Piece</td>
<td>1</td>
<td>□</td>
<td>□</td>
<td>用于过滤器进出口 Used for filter进出口</td>
</tr>
</tbody>
</table>

装箱人：
Packed by:

检验：
Inspected by:

销售发货：
Goods Issued by:

Table 8-1 List of Accessory
## Table 8.3  List of Main Components

<table>
<thead>
<tr>
<th>#</th>
<th>Component</th>
<th>English Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>触摸屏操作系统</td>
<td>Touch Screen Operating System</td>
</tr>
<tr>
<td>2</td>
<td>电控系统</td>
<td>Electrical Control System</td>
</tr>
<tr>
<td>3</td>
<td>气路总成</td>
<td>Air Pipeline Assembly</td>
</tr>
<tr>
<td>4</td>
<td>供料系统</td>
<td>Material Supply System</td>
</tr>
<tr>
<td>5</td>
<td>支金件</td>
<td>Sheet Metal</td>
</tr>
<tr>
<td>6</td>
<td>光源系统</td>
<td>Light Source System</td>
</tr>
<tr>
<td>7</td>
<td>过滤总成</td>
<td>Filtering Assembly</td>
</tr>
<tr>
<td>8</td>
<td>清灰系统</td>
<td>Ash Removing System</td>
</tr>
</tbody>
</table>

### 8.4 List of Wearing Parts

<table>
<thead>
<tr>
<th>#</th>
<th>Part</th>
<th>English Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>毛刷</td>
<td>Brush</td>
</tr>
<tr>
<td>2</td>
<td>灯管 (LED light)</td>
<td>LED light</td>
</tr>
<tr>
<td>3</td>
<td>过滤器</td>
<td>Filter Element</td>
</tr>
<tr>
<td>4</td>
<td>保险丝</td>
<td>Fuse</td>
</tr>
<tr>
<td>5</td>
<td>分选室玻璃</td>
<td>Glass of Sorting Chamber</td>
</tr>
<tr>
<td>6</td>
<td>气管</td>
<td>Air Pipeline</td>
</tr>
</tbody>
</table>
Declaration

This instruction manual has been verified and re-reviewed. The instructions and description whereof is accurate for the ANMEIDA color sorter when publishing. We follow a sustainable development strategy. The contents of this instruction manual and performance of product shall be subject to change without any prior notice. The authority for final interpretation of this manual is reserved by our company.