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You can read the recommendations in the user guide, the technical guide or the installation guide for SATAKE RMGS 1404. You'll find the answers to all your questions on the SATAKE RMGS 1404 in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual SATAKE RMGS 1404
User guide SATAKE RMGS 1404
Operating instructions SATAKE RMGS 1404
Instructions for use SATAKE RMGS 1404
Instruction manual SATAKE RMGS 1404

INSTRUCTION MANUAL

OPTICAL SORTER 4#

RMGS 284·564·844·1404AMS/BM/DMS/AIS/BI/DIS



Type: RMGS1404

SATAKE CORPORATION

0901-27A



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Manual abstract:

When adjusting each setting, select each icons of main menu. (Main menu has each sub menu.) When setting details, access the higher user level on the main menu. (A password is required to access the higher level.) When turning off the power, touch "Stand by" of main menu. Maintenance and Inspection and a scheduled inspection certainly, and prevent a trouble Air filters Covers P.85 In order to demonstrate the function and performance of this machine enough, carry out daily check Dust-collecting equipment Chute Fluorescent lamp Covers Suction filter Wiper Feeder Optical section No. Action Check dirt in detecting section Check dust-collecting equipment Check fluorescent lamp Check and clean feeder Check air filter Frequency Once a week Once a week Once a week Once a week Fluorescent lamp Ref. See P.85 See P.

87 See P.90 See P.92 No. Action Check covers Check and clean wiper Check chute Check and clean suction filters Daily check Frequency Once a week Once a week Once a week Once a day Ref. See P.

85 See P.90 See P.91 Once a week IMPORTANT NOTICE Specifications and/or machine appearance may change for improvement without notice. 1. For Safety Use: ! WARNING (1) Follow this manual when operating, inspecting, or maintaining this machine.

If you have any questions on this machine, contact your local Satake branch office for answers before operations. (2) All operating hazards cannot be anticipated regarding this machine. The instructions and warnings as stipulated in this manual and the warning labels attached on the machine are not all assumed as hazards. Take special consideration to maintain safe operation. Follow the instructions and warnings as stipulated in this manual, and heed the warning labels affixed to this machine. (3) Do not operate this appliance for any use outside of original design. Operating this machine outside original parameters can cause accidents to personnel and damage to the machine. Do not modify the inspection or maintenance schedules. (4) Operators shall work with managers and superintendents to follow safety procedures and run the machine in a safe manner. 2.

For Instruction Manual: ! CAUTION (1) Keep this manual at hand if you have questions about the machine. Contact the local Satake representative if this manual is lost. Satake would be happy to send a replacement manual. (2) Illustrations and displays as stipulated in this manual may differ from the actual ones because they are simplified for easy viewing and understanding by exaggeration or abbreviation. (3) If you have any questions or errors in this manual, contact the local Satake office. (4) If this manual is assembled or collated incorrectly, contact the local Satake office to ask for a correct one. Be sure to inform them of the machine name and model at that time. (5) If this machine is transferred, or sold to a new owner, make sure this manual stays with the machine. i WARRANTY AND AFTER-SALES SERVICE 1. Limitation of Warranty <Warranty Clause> Our equipment is manufactured and supplied under the strict quality control and inspection guidelines.

We warrant that supplied equipment will be free from defects in material and workmanship for the period of either a) one (1) year from the date of initial start-up operation, or b) eighteen (18) months from the date of shipment from our shipping port (on the basis of the Bill of Lading date), whichever is earlier. If any parts or equipment fail to meet the above stated warranty, we shall supply replacement parts and machines at our own expense provided that any such failure is clearly proven by the client. The client shall notify us in writing within thirty (30) days from the date of any such failure. Consumable parts and replacement costs are always borne by the client, even if the warranty period has not elapsed. <Limitation Clause> 1.

We shall be entirely free from any responsibility and/or liability if product failure is caused by any of the following: (1) Misoperation, maintenance and inspection, or negligent treatment of the equipment by the client and/or user (2) Any modifications to the design and/or construction, in whole or in part, of the equipment or any parts therein by the client and/or user (3) Use outside of normal application and/or abnormal use under overcapacity (4) Usage of non-genuine parts (5) Relocation and/or transfer of equipment from the place where initially assembled, erected constructed and/or installed by the client and/or user (6) Acts of God, climate, war, warlike hostilities, civil commotion, riots, strikes, fire, lockouts, plague, or other epidemics, and any other similar circumstances beyond our control (7) Any loss or damage to equipment which occurs after shipment of equipment from our delivery port 2. If this machine is transferred or sold to a new owner, contact the local Satake office. If Satake is not contacted, Satake will be unable to determine the status of the machine (maintenance record, installation status) or confirm the existence or non-existence of the accompanying documents. As a result, the safety and performance of this machine may not be guaranteed. 2.

After-Sales Service <Limitation of Supply of Spare Parts> (1) The limitation on the supply of spare parts for the machine is 12 years after production of the machine is discontinued, though some special parts may be unavailable even if the limitation period has not elapsed. (2) The supply of spare parts for this machine will principally finish according to the above limitation of supply. However, if, after the limitation time has elapsed, the client wishes to purchase spare parts, Satake may be able to submit a price quotation for the parts desired. ii CONTENTS FOR SAFETY IMPORTANT NOTICE

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.. 177 1 FOR SAFETY This chapter presents a list of safety guidelines to prevent a fatal or serious injury to the operator. 1.1 Safety Requirements and Caution Warnings The safety guidelines are divided into two sections: requirements for use to ensure operator safety and caution warnings to prevent accidents. 1.1.1 Safety Requirements (1) Operator must have hair cut short and wear clothes and shoes that are free of FOR SAFETY (2) (3) (4) (5) (6) (7) (8) (9) (10) stray or loose fabric in order to protect from advertent contact with machinery. Always wear a helmet and safety shoes when carrying out any inspection or maintenance. Ensure that passages around the machine, as well as surrounding areas, are kept clean at all times.

Always properly ground the machine in order to protect personnel from fires or electric accidents caused by current leaks. Always inspect the machine before starting operation. When carrying out any inspection work, always power off and clearly indicate that the machine is under inspection or maintenance both in the control room and on the control panel. Always power off before inspection and maintenance and affix an "Under Inspection" sign over the power switch. After the inspection, be sure all tools are picked up.

Check all bolts, nuts, and belts for any looseness or damage. Be sure to replace all covers after completing this check. Check for any cuts or damage to power cord, wiring, and cables. Ensure all connectors and plugs are seated properly. Always stop the machine when greasing the driving part of the machine.

You should get familiarized yourself with the power off procedure for a case of emergency. When two or more persons operate the machine, each person must confirm readiness to the others before starting the machine. 1.1.2 Prohibition Clause (1) Keep water and other liquids away from the machine. Contact with water or other liquids can (2) (3) (4) (5) (6) (7) short electric circuits, subsequently causing the machine to break down. Do not touch any live parts while the machine is powered on. Do not permit any person other than the individual in charge of machine operation to operate the machine. Keep the operating area clear of any people other than those permitted by the operator. Never let children near the machine.

Operate the machine with all covers in place. Do not attempt to remove any cover while the machine is running. Do not touch any moving parts while the machine is operating. Do not put flammable items near the machine. (8) Wear a dustproof mask and goggles when operating the machine in a dusty place.



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1.2 Hazards In order to protect workers and prevent damage to processing material, the following two methods are used to call attention to possible dangers while operating. (1) A printed warning in this instruction manual (2) A warning label affixed to the machine Printed warning and hazard labels are classified into following three levels depending on the degree of risk or accident at the time of work. Study these warning signs and always follow the stated instructions. Warning Word Definition This shows potential hazard.

Failure to follow this warning increases the possibility of fatal or serious injury. This shows a potential hazard. Failure to follow this warning ! WARNING ! CAUTION increase the possibility of middle or minor class injury, damage to equipment or machinery, or trouble with the material or product. NOTE This warning calls attention to, and places emphasis on, certain special information. 1.

3 Hazard Labels Hazard labels are used to indicate the machine areas/parts requiring special attention. Be sure to fully understand the content of danger prevention warnings, including the exact positions and dangers involved. NOTE Handling of Hazard Label · Be sure all hazard labels can be easily seen and read. Clean or replace the label if legible. · Use cloth, water and detergent to remove the dirt from a hazard label.

Never use organic solvents or gasoline. · Replace damaged, missing, or unreadable hazard labels with new ones. 2 FOR SAFETY 1.4 Position of Hazard Labels Positions of the following hazard labels are shown below. 299001511 Front 299001575 299001509 Fig. 1-1 Position of Hazard Labels (1) 3 299001509 Rear 299001535 299001509 Right Fig. 1-2 Position of Hazard Labels (2) Left 4 2 SPECIFICATIONS, DIMENSIONS, AND EXPLANATION OF EACH PART 2.1 Specifications Table 2-1 Model Number of chute Capacity (t/h) Primary sorting Secondary sorting White rice Brown rice Wheat/Barley AMS Flat 90×2 U channel 90×1 Specifications List (RMGS 284) AIS BM Flat 280×1 BI SPECIFICATIONS, DIMENSIONS AND EXPLANATION OF EACH PART 0.3 ~ 3.6 0.

45 ~ 5.4 0.3 ~ 1.8 0.45 ~ 2.7 0.3 ~ 1.8 0.45 ~ 2.7 Sorting discolored grain in milled rice and brown rice.

Sorting chalky grain in milled rice and brown rice. Sorting discolored and chalky grain in milled rice. Major applications Sorting discolored grain in wheat and barley. Sorting inorganic substances (glass, white stone, etc.) in the above-mentioned materials.

is for only AMS and BM. Power supply (V) Single phase 200 Required Normal 1.2 power (kW) Maximum 1.7 Required air volume 200 ~ 500 NL/min Dust collector (Optional) 7 3/min Compressor (kW) 2.2 ~ 5.

5 Net weight (kg) 520 Dimensions (mm) 949×1550×1900 [Width×Length×Height] Table 2-2 Model Primary Number of sorting Secondary chute sorting White rice Capacity Brown rice (t/h) Wheat/Barley Specifications List (RMGS 564) AMS AIS BM BI Flat 280×1, Flat 280×1, Flat 280×1, Flat 280×1, Flat 280×2 Flat 90×2 Flat 90×1 Flat 90×2 Flat 90×1 U channel U channel U channel U channel 90×1 90×2 90×1 90×2 0.75 ~ 9.0 0.6 ~ 7.2 0.75 ~ 9.0 0.6 ~ 7.2 1.35 ~ 16.

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6 1.35 ~ 8.1 Sorting discolored grain in milled rice and brown rice. Sorting chalky grain in milled rice and brown rice. Sorting discolored and chalky grain in milled rice.

Major applications Sorting discolored grain in wheat and barley. Sorting inorganic substances (glass, white stone, etc.) in the above-mentioned materials. is for only AMS and BM. Power supply (V) Single phase 200 Required Normal 2.

0 power (kW) Maximum 3.0 2.7 3.0 2.7 Required air volume 400 ~ 1000 NL/min Dust collector (Optional) 7 3/min Compressor (kW) 3.7 ~ 7.5 Net weight (kg) 700 Dimensions (mm) 1309×1550×1900 [Width×Length×Height] 5 Table 2-3 Model Primary Number of sorting chute Secondary sorting White rice Capacity Brown rice (t/h) Wheat/Barley Specifications List (RMGS 844) AMS AIS BM BI Flat 280×2, Flat 280×2, Flat 280×2 Flat 280×2 Flat 280×3 Flat 90×1 Flat 90×1 U channel U channel U channel U channel 90×2 90×3 90×2 90×3 1.05 ~ 12.6 0.9 ~ 10.

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4 1.35 ~ 8.1 0.9 ~ 5.4 0.

9 ~ 5.4 1.35 ~ 8.1 Sorting discolored grain in milled rice and brown rice. Sorting chalky grain in milled rice and brown rice.

Sorting discolored and chalky grain in milled rice. Major applications Sorting discolored grain in wheat and barley. Sorting inorganic substances (glass, white stone, etc.) in the above-mentioned materials. is for only AMS and BM. Power supply (V) Single phase 200 Required Normal 2.4 power (kW) Maximum 3.9 3.3 3.9 3.

3 Required air volume 600 ~ 1500 NL/min Dust collector (Optional) 12 3/min Compressor (kW) 5.5 ~ 11.0 Net weight (kg) 920 Dimensions (mm) 1669×1550×1900 [Width×Length×Height] Table 2-4 Model Primary sorting Number of Secondary chute sorting Tertiary sorting White rice Capacity Brown rice (t/h) Wheat/Barley Specifications List (RMGS 1404) AIS Flat Flat 280×4 280×3 U channel U channel 90×3 90×6 BM BI DMS DIS Flat 280×5 Flat 280×3 Flat 280×1, Flat 90×1 U channel 90×2 1.35 ~ 16.2 1.35 ~ 8.1 1.35 ~ 8.1 AMS Flat Flat 280×4 280×3 U channel U channel 90×3 90×6 1.8 ~ 21.6 1.35 ~ 16.2 1.8 ~ 21.6 1.

35 ~ 16.2 2.25 ~ 27.0 1.8 ~ 10.

8 1.35 ~ 8.1 1.8 ~ 10.8 1.35 ~ 8.1 2.25 ~ 13.5 1.8 ~ 10.

8 1.35 ~ 8.1 1.8 ~ 10.8 1.35 ~ 8.1 2.25 ~ 13.5 Sorting discolored grain in milled rice and brown rice. Sorting chalky grain in milled rice and brown rice. Sorting discolored and chalky grain in milled rice. Major applications Sorting discolored grain in wheat and barley. Sorting inorganic substances (glass, white stone, etc.) in the above-mentioned materials. is for only AMS, BM and DMS.

Power supply (V) Single phase 200 Required Normal 4.0 power (kW) Maximum 6.0 5.4 6.0 5.

4 6.0 5.4 Required air volume 1000 ~ 2000 NL/min Dust collector (Optional) 15 3/min Compressor (kW) 7.5 ~ 15.0 Net weight (kg) 1300 Dimensions (mm) 2250×1550×1900 [Width×Length×Height] * Inorganic substances are noncarbon compounds, including stones and glass. * Capacity depends on material variety and mixing rate of contaminants. * When processing materials of very high mixture rates of contamination, large volume of compressed air is required. Be careful of your compressor capacity. * This machine is without conveyors. The user shall prepare conveyers.

(Available as an option.) * Use the U channel chute if primary sorting volume is 0.45t/h or less. 6 2.2 Dimensions 2.2.1 RMGS 284 Unit: mm 949 1550 SPECIFICATIONS, DIMENSIONS AND EXPLANATION OF EACH PART Front 908 599 Right 126 Bottom Fig. 2-1 Dimensions (RMGS 284) 950 300 7 1900 2.2.2 RMGS 564 Unit: mm 1550 1309 Front 1258 126 959 Right Bottom Fig.

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2-2 Dimensions (RMGS 564) 950 300 8 1900 2.2.3 RMGS 844 Unit: mm 1669 1550 SPECIFICATIONS, DIMENSIONS AND EXPLANATION OF EACH PART Front 1618 126 1319 Right Bottom Fig. 2-3 Dimensions (RMGS 844) 9 950 300 1900 2.2.

4 RMGS 1404 Unit: mm 1900 1550 1920 Front Right 1890 1670 148 Bottom Fig. 2-4 Dimensions (RMGS 1404) 10 950 300 1900 2.3 Function of Each Model Table 2-5 Model AMS AIS BM BI DMS DIS Sorting of Glass and Stone × × × Function of Each Model Primary/Secondary/Tertiary Sorting × × × × SPECIFICATIONS, DIMENSIONS AND EXPLANATION OF EACH PART Primary/Secondary Sorting × (Only primary sorting) × (Only primary sorting) × × <AMS/AIS> Material <BM/BI> Material Material <DMS/DIS> Primary sorting Secondary sorting Primary sorting Primary Secondary Tertiary sorting sorting Primary reject Product Secondary accept Final reject Product Primary reject Secondary reject Tertiary accept Secondary accept Final reject Product Final reject Fig. 2-5 Function of Each Model 11 2.4 Name and Function of Each Part Fluorescent lamp Feeder Wiper Chute Halogen lamp Accept outlet Reject outlet Ejector valve Fig.

2-6 Structure (Side Surface) Material is continuously supplied through the intake hopper and feeder, and the flow is rectified by the chute. The rectified flow of rice grains enters the optical section at a constant rate. The optical section is illuminated by four fluorescent lamps and halogen lamps placed on the front and rear sides. The fluorescent lamp is the light source to sort any discolored and chalky grains and the halogen lamp is the light source to sort glass, stone and plastics in the grain. Rice passing through the optical section is observed from both front and rear sides. When any discolored grains, chalky grain, glass, stone and plastic materials (rejects) are detected by the reflected or passed light. They are blown off by the air jet from the ejector to the outside of the accept outlet (reject outlet). The wiper is provided to keep the anti-dust glass screen clean for the consistent sorting function. 12 3 ASSEMBLY AND INSTALLATION ! WARNING · Wrong choice of the location for installation may cause injuries. 3.

1 Caution of Installation (1) Place the machine horizontally. The machine should be installed on the level surface. (2) Install the machine at a vibration-free place. When installing the machine on a common base together with other machines, special attention should be paid to the strength of the base. And when mounting a large hopper tank on top of the machine, avoid attaching it directly to the machine itself to prevent adverse effects by the vibration caused by the down flow of materials. Strong vibrations will cause the down flow of materials through the feeder while the machine is not operation, or cause poor contact in the electrical connections. (3) Avoid the influences of sunlight and illumination. If strong lights directly enter the optical section by the passage of time, the brightness in the optical section will fluctuate which may induce failures in sorting operation. When installing the machine near the windows facing south, a proper measure should be taken to avoid the fluctuation of brightness. In addition, pay attention not to allow light from fluorescent lamps or mercury lamps to enter the detecting section because it may cause malfunction.

(4) On ambient temperature, humidity, dust and other environmental factors. Operating ambient temperature range is 0 to 40. Avoid to install the machine on the location where it is humid, hot, or dusty. Install a heater for cold district of option when the ambient temperature becomes below 10. In case that the ambient temperature around the machine exceeds the specified range, install the air conditioner.

(5) Avoid to install the sorter on the process next following the rice milling. It must be installed on the process coming just after grain size selection. The chute is likely to collect bran immediately after the rice milling, or in winter. Ideally, it should be placed after the cooling process. If the bran still adheres to the chute, turn on the heater switch.

In case of brown rice sorting, keep temperature difference between brown rice and outside less than 5. If brown rice stored in low temperature is sorted directly, condensation on the surface of brown rice causes bran adhesion in brown rice tank and on chute, there is a possibility of having a bad influence on sorting performance. In this case, use chute heater unit for brown rice of option. If the sorter is installed after the process of removing the broken grain or bran, it will not only minimize failures but improve efficiency. Rotary sifter and white rice grading machine should be installed in the process preceding to the new color sorter. ASSEMBLY AND INSTALLATION 13 3.2 Dimensions of Inlet, Outlet and Dust-collecting Duct 3.2.1 RMGS 284AMS/AIS (Flat 90×2 : U Channel 90×1) Unit: mm 220 Primary sorting inlet Secondary sorting inlet Rear 250 198 216 Front 4-M6 171 88 320 Fig. 3-1 Dimensions of Inlets 599 Secondary reject outlet 153 Primary accept outlet 59 98 8-M6 199 110 67 12 Front 255.

5 Rear Secondary accept outlet 110 67 150 150 6-M6 96 (1 nm er Primary reject outlet di a.) 90 69 hole Detail A Dust-collecting duct Fig. 3-2 Dimensions of Outlets and Dust-Collecting Duct 14 3.2.2 RMGS 284BM/BI (Flat 90×3 : 0) Unit: mm Inlet 220 Rear 250 198 Front 4-M6 259 320 ASSEMBLY AND INSTALLATION Fig. 3-3 Dimensions of Inlets 599 155 155 6-M6 199 110 67 126 Front 255.5 Accept outlet Rear 110 67 Reject outlet 6-M6 96 (1 nm er di a.) 69 hole Detail A Dust-collecting duct Fig. 3-4 Dimensions of Outlets and Dust-Collecting Duct 15 3.2.

3 RMGS 564AMS/AIS (Flat 280×1, Flat 90×1 : U Channel 90×2) Unit: mm Primary sorting inlet 220 140 220 Secondary sorting inlet 227 250 198 255/259 320 255/259 320 Front 4×2-M6 Fig. 3-5 Dimensions of Inlets 58 103 216 Rear Primary accept outlet 959 155 155 50 98 59 155 Secondary reject outlet 2-5" dust-collecting duct 6-M6 199 110 67 94 126 Front 255.5 A 8-M6 90 110 67 150 150 150 10-M6 96 (1 nm er Rear Secondary accept outlet Primary reject outlet di a.) 69 hole Detail A Dust-collecting duct (Serial No.41730015 and higher) Fig.

3-6 Dimensions of Outlets and Dust-Collecting Duct 16 3.2.4 RMGS 564AMS/AIS (Flat 280×1, Flat 90×2 : U Channel 90×1) Unit: mm Primary sorting inlet 220 2×4-M6 140 220 Rear 250 198 216 320 320 Front ASSEMBLY AND INSTALLATION Secondary sorting inlet Fig.



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3-7 Dimensions of Inlets 58 103 Primary accept outlet 959 155 155 50 153 59 150 Secondary reject outlet 2-5" dust-collecting duct 6-M6 110 94 126 Front A 90 8-M6 Rear 110 150 150 150 150 10-M6 96 (Inner dia.) Secondary accept outlet Primary reject outlet 67 dia.) 69 hole Detail A Dust-collecting duct (Serial No.

41730015 and higher) Dimensions of Outlets and Dust-Collecting Duct Fig. 3-8 17 3.2.5 GS 564BM/BI (Flat 280x2 : 0) Unit: mm Inlet 220 140 220 227 250 198 216 Rear Front 255/259 255/259 4x2-M6 Fig. 3-9 Dimensions of Inlets Accept outlet 959 155 155 50 155 155 2-5" dust-collecting duct 6x2-M6 199 110 67 94 126 Front 255.5 A Rear 110 67 90 150 150 150 150 10-M6 96 (Inner dia.) Reject outlet dia.) 69 hole Detail A Dust-collecting duct (Serial No.41730015 and higher) Fig. 3-10 Dimensions of Outlets and Dust-Collecting Duct 18 3.2.

6 RMGS 844AMS/AIS (Flat 280x2 : U Channel 90x3) Unit: mm Primary sorting inlet 220 140 220 140 220 Secondary sorting inlet 227 Rear 250 198 259 320 259 320 259 320 Front ASSEMBLY AND INSTALLATION 4x3-M6 Fig. 3-11 Dimensions of Inlets 58 103 Primary accept outlet 1319 155 155 50 155 155 50 155 50 155 50 Secondary reject outlet 2-5" dust-collecting duct 110 67 126 199 94 Front 255.5 A 3x6-M6 90 110 150 150 150 150 150 1037 96 (Inner dia.) Rear 67 Secondary accept outlet Primary reject outlet 14-M6 dia.) 69 hole Detail A Dust-collecting duct Fig. 3-12 Dimensions of Outlets and Dust-Collecting Duct 19 3.2.7 RMGS 844AMS/AIS (Flat 280x2, Flat 90x1 : U Channel 90x2) Unit: mm 3x4-M6 220 140 220 140 220 Secondary sorting inlet Rear 250 200 216 320 320 320 Front Primary sorting inlet Fig. 3-13 Dimensions of Inlets 103 58 1319 Primary accept outlet 155 155 50 155 155 50 98 59 153 Secondary reject outlet Secondary accept outlet 2-5" dust-collecting duct 126 Front A 110 110 67 150 150 150 150 150 150 14-M6 96 (Inner dia.) 1037 Primary reject outlet 90 Rear dia.) 69 hole Detail A Dust-collecting duct Fig. 3-14 Dimensions of Outlets and Dust-Collecting Duct 20 3.

2.8 RMGS 844BM/BI (Flat 280x3 : 0) Unit: mm Inlet 227 220 140 220 140 220 Rear 250 198 259 320 4x3-M6 259 320 259 320 Front ASSEMBLY AND INSTALLATION Fig. 3-15 Dimensions of Inlets 1319 3x6-M6 155 155 50 155 155 50 155 155 2-5" dust-collecting duct 94 126 110 199 67 Front A 255.5 Rear Accept outlet Reject outlet 14-M6 90 110 67 150 150 150 150 1037 150 150 96 (Inner dia.) 69 hole Detail A Dust-collecting duct Fig. 3-16 Dimensions of Outlets and Dust-Collecting Duct 21 3.2.9 RMGS 1404 AMS/AIS (Flat 280x3 : U Channel 90x6) Unit: mm 220 62 220 62 220 62 220 62 220 62 220 Rear 216 198 259 259 259 259 259 Front Primary sorting inlet Secondary sorting inlet Fig. 3-17 Dimensions of Inlets Primary reject outlet 141 141 141 141 141 141 141 141 141 141 Secondary reject outlet 20-M6 72 A Front 72 Rear 150 150 150 150 150 150 150 150 714 (Inner dia.) Primary accept outlet 1317 1670 432 (Inner dia.) Secondary accept outlet Primary reject outlet 96 (Inner dia.) 148 Detail A Dust-collecting duct Fig. 3-18 Dimensions of Outlets and Dust-Collecting Duct 22 P.C. D1 32 3.2.10 RMGS 1404 AMS/AIS (Flat 280x4 : U Channel 90x3) Unit: mm 220 62 220 62 220 62 220 62 220 62 220 Rear 216 198 259 259 259 259 259 Front ASSEMBLY AND INSTALLATION Primary sorting inlet Secondary sorting inlet Fig. 3-19 Dimensions of Inlets 141 Primary reject outlet 141 141 141 141 141 141 141 141 141 141 Secondary reject outlet 20-M6 72 A Front 72 Rear 150 150 150 150 150 150 150 150 150 (Inner dia.) Secondary accept outlet Primary reject outlet 996 (Inner dia.) Primary accept outlet 1317 1670 148 96 (Inner dia.)

Detail A Fig. 3-20 Dust-collecting duct Dimensions of Outlets and Dust-Collecting Duct 23 P.C. D1 32 3.2.11 RMGS 1404 DIS (Flat 280x3 : Flat 280x1, Flat 90x1 : U Channel 90x2) Unit: mm 259 (Inner dia.) 259 (Inner dia.) 259 (Inner dia.) 259 (Inner dia.) 259 (Inner dia.) -M (Primary sorting inlet) 226 220 220 220 220 220 -M (Third stage sorting inlet) Rear 198 (Inner dia.) 216 282 282 282 Front 282 87 (Inner dia.) 171 (Inner dia.) 5x4-M6 (For tank installation) -M (Secondary sorting inlet) Fig. 3-21 Dimensions of Inlets -R (Primary rejects) To -M -A (Primary accepts) To final product M6 weld nut (Back side of this) (For lower piping) 1317 714 (Inner dia.) 282 282 269 (Inner dia.) 41.9 342 237 121 (Inner dia.) -R (Secondary rejects) To -M -A (Secondary accepts) To -M 141 141 141 141 141 141 141 141 141 141 Front Rear 18-M6 55 150 150 150 150 150 150 1121 1200 -O other rejects To -M -A -R Standard mode (Tertiary accepts) Standard mode (Tertiary rejects) To -M To final rejects Inverted mode (Tertiary rejects) Inverted mode (Tertiary accepts) To final accepts To -M 150 150 55 Tertiary sorting accept and reject outlets (-R and -A) are switched by selecting standard or inverted mode. Install piping so that outlets can be switched.

Fig. 3-22 Dimensions of Outlets and Dust-Collecting Duct 24 3.2.12 RMGS 1404 BM/BI (Flat 280x5 : 0) Unit: mm 220 62 220 62 220 62 220 62 220 62 220 Rear 216 198 259 259 259 259 259 Front ASSEMBLY AND INSTALLATION 5x4-M6 Inlet Fig. 3-23 Dimensions of Inlets Reject outlet 141 141 141 141 141 141 141 141 141 141 Accept outlet A 72 72 150 150 150 150 150 150 150 150 1278 (Inner dia.) 1317 1670 Front Rear 96 (Inner dia.) 148 Detail A Dust-collecting duct Fig. 3-24 Dimensions of Outlets and Dust-Collecting Duct 25 P.C. D1 32 3.

3 Space around the Machine Install the machine to allow for a space of 1.0 meter or more in front, and 0.5 meters or more in rear and on the right and left sides of the machine in order to facilitate ease of operation, maintenance, and inspection. For the RMGS 1404, allow 1.0 meter or more on the right and left sides 0.5 m 0.5 m 0.5 m 1m Front Overhead view Fig. 3-25 3.4 Welding Guidelines Space around the Machine Do not weld anything directly onto the machine. Furthermore, when welding or painting around the machine, be sure to cover the machine. Special attention should be paid to avoid cutting or splattering the chute while welding or painting. 3.5 Transportation Guidelines ! CAUTION This sorter is a precise machine. Incorrect adjustment of the lenses will cause a sorting malfunction. Do not jar, shake, or otherwise disturb the machine.



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· Be careful not to apply any physical stress to the machine. Be careful not to damage a touch panel etc. during transport. 26 3.

6 Main Body Installation The main body should be carried to the installation site using lifting eye bolts that are attached to the top of the machine. The hoisting angle should be 60 degrees or more. Secure the main body to the installation site with carrying and installing stand. Adjust the levelness of the machine to a slope of 1/1000 or less using a level. ASSEMBLY AND INSTALLATION 60 degrees or more Fig. 3-26 Position of Sling Fig. 3-27 Fixture of

Main Body 3.7 Material Tank and Sample Outlet Installation Install the shutter between the material tank and the main body of the sorter. To avoid unnecessary vibration, do not fix the material tank directly to the main body. At the installation of material tank, take care not to allow any materials to flow into the feeder or the chute.

Arrange the sample outlet to allow convenient sample collection. 27 3.8 Air Piping Installation ! may damage the machine. CAUTION · Strictly follow the instructions and warnings for piping, otherwise you (1) The operating ambient temperature range for the machine is 0 to 40. Where the nighttime temperature goes below 0, the compressor and the air filter should be drained at the end of operation. As the air filter and the micro-mist separator are equipped with an automatic drain system, liquids will be drained automatically upon reaching a certain level. However, if the temperature falls below 0 the drain outlet may freeze, making it difficult to drain upon resuming operation. To prevent this, be sure to drain the machine manually under these circumstances. (2) When operating the machine in an environment where the compressed air temperature is below 0, the air supplied to the air filter and the micro-mist separator should first be dried by an air dryer. If any humid air is supplied, the internal filter element may be frozen, which not only blocks air flow but breaks the element.

28 (3) When installing the machine in an extremely dusty or humid location, a main-line filter with a 50m filtration ratio must be installed in the line, following the compressor. If the air from the compressor is supplied to the machine directly, the lifetime of the elements of the air filter and micro-mist separator will be reduced. Shown below are examples of a compressed air cleaning system. Reciprocating After cooler air compressor (Built in the machine) SATAKE OPTICAL SORTER ASSEMBLY AND INSTALLATION Tank Main-line filter (Sub-line) Air dryer Fig. 3-28 Example of compressed Air Cleaning System Using a Reciprocating Air Compressor Screw Air Compressor After cooler SATAKE OPTICAL SORTER Main-line filter (Built in the machine) Tank Sub-line Air dryer Fig.

3-29 Example of Compressed Air Cleaning System Using a Screw Air Compressor 29 · After cooler: Cools the high temperature compressed air from the compressor to 40 or below, and efficiently condenses and decomposes moisture contained. · Main line filter: Removes impurities of oil, moisture, foreign matters, etc. in the compressed air, which serves to improve the function of driers down the stream, to prolong the lifetime of precision filters and to prevent other various equipment problems. Through the use of the foregoing compressed air cleaning system, high temperature compressed air will be cooled, moisture contained will be condensed and decomposed, and impurities will be reduced to 0.01m or less, resulting in a clean air supply.

This equipment dwells air delivery material directly and delivers residue to next process. To save quality of delivery material, make sure the air quality is greater than grade 2.6.2 by ISO. Refer to the table below and select the appropriate filter. Table 3-1 Compressed Air Quality Grade by ISO8573-1 2.5.3 2.6.3 1.

4.1 1.5.1 1.6.1 1.4.1 1.5.1 1. 6.1 1.1.1 1.2.

1 Impurities in Compressed Air Secondary Oil Moisture Solid Concentration(21) Pressure dew point 5 0.5 mg/ 0.3m (A,N,R) Pressure dew point 10 Smell Kind of Air Pressure dew point 3 Pressure dew point 5 Pressure dew point 10 Pressure dew point 3 Pressure dew point 5 Pressure dew point 10 Pressure dew point 70 Pressure dew point 40 0.01m 0.5 mg/ (A,N,R) 0.

5 mg/ (A,N,R) 0.5 mg/ (A,N,R) General drying air Oil-free Cleaning drying air Odorless air Super drying air 0.01m 0.01m Table 3-2 Grade 1 2 3 4 5 6 Pressured Air Quality Grade by ISO8573-1 Maximum Dew Point under Pressure () 70 40 20 3 7 10 Maximum Oil Concentration (mg/m3) 0.01 0.1 1.0 5 25 Maximum Particle Diameter (m) 0.1 1 5 15 40 For example, "Grade 1.2.1" shows below.

Solid Particle: 0.1m Dew Point under Pressure: 40 Oil Concentration: 0.01 mg/m3 30 (4) The pressure of the compressor must be 0.5 MPa (5 kg/cm2) or more. When using steel pipes, choose SGP 25A (inner diameter 27.6 mm) or larger together with rubber hoses of inner diameter 25 mm or over. If the air piping is more than 20 meters from the compressor, use pipes a grade higher. Be sure to attach the air gun which is supplied with the machine. Adjust the pressure to 0.25 MPa (2.

5 kg/cm2) using the regulator. Before connection, chips or dust in the pipe must be completely removed. ASSEMBLY AND INSTALLATION Fig. 3-30 Air Equipment (RMGS 284564844) Fig. 3-31 Air Equipment (RMGS 1404) 31 3.

9 Connecting a Power Supply Connect a single phase, AC 200V power supply to the machine's power cable. Refer to specifications list on P.5 ~ 6. The main body should be grounded independently. Grounding should be accomplished by choosing the shortest route possible in accordance with Grade 3 of Japanese Industrial Standards.

3.10 Dust Suction Piping Installation Refer to dimensions on P.7 ~ 10 for the positions of dust collecting duct. Refer to specifications list on P.5 ~ 6 for the required air volume and the power of dust collector. 3.11 Connecting an External Level Meter Alarm ,m,e,a,P MN AI ,m,e,a,Q HEATER ,m,e,a,R ,e,R ,P ,n,o,d,q ,s,h,n,m SOCKET-1A ,m ,e,a,P MA I N ,m,e,a,Q HEAT ER n o d q ` s h n m ,,,, ,m ,e,a,R ,e,R ,P S OC K E T - 1 A 200V ,m,e,a,P MA I N ,m,e,a,Q HEATER 200V S OC K E T SOCKET ,m,e,a,R 2 ,n,o,d,q ,s,h,n,m ,m,e,a,P MA I N ,m,e,a,Q HE A T E R n o d q ` s , h n m ,,,, , ,m,e,a,R TB2 PT1 PT2 AL1 AL2 I L1 I L2 TB1 R0 S0 E 4 5 4 6 4 7 4 8 10 0 10 1 R 1 S 1 E R2 S 2 PT1 PT2 AL1 AL2 I L1 I L2 R0 S0 E 4 5 4 6 4 7 4 8 4 9 5 0 2 00 2 01 R1 S 1 E R2 S 2 PT1 PT2 AL1 AL2 I L1 I L2 TB1 L 0 N0 E 4 5 4 6 4 7 4 8 4 9 5 0 5 1 5 2 5 3 5 4 2 00 2 01 L 1 NI E L 2 N2 T B1 PT1 PT2 AL1 AL2 I L1 I L2 HI ,g ,Q ,a,m ,k,U ,a,m ,k,U RMGS 284 RMGS 564 While alarm is active, contact ON output RMGS 844 DC24V Relay coil RY RMGS 1404 PT1 PT2 AL1 AL2 IL1 IL2 Alarm contact output Rated control capacity = 3A, 250V AC 3A, 30V DC Interlock 1: Terminals PT1 and PT2 of the terminal base are contact-output terminals when the alarm is active.



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Keep in mind that there is a possibility that the machine may be damaged if AC outputs (AC 200V etc.) are wired. 2: Wire a contact signal connecting the outputs from the external level meter to terminals IL1 and IL2 of the terminal base.

This is the machine's input terminal. Fig. 3-32 External Level Meter 32 3.12 Removing Fixing Brackets Installing the Feeder During shipment, the feeders are fixed so they do not move, as shown in the following figure. Remove the fixing brackets attached at the front and rear side of the feeder before operating. After removing the fixing brackets, adjust the position of the feeder by the chute so it doesn't bump the chute or other parts of the machine, and affix a feeder base positioning board. ASSEMBLY AND INSTALLATION Fixing bracket Fig. 3-33 Fixation of Feeder 33 4 EXPLANATION OF TOUCH PANEL 4.1 Title Screen

Turn on the main power and [title screen] is displayed. [Operation Monitor screen] appears automatically Fig.

4-1 Title Screen Fig. 4-2 Operation Monitor Screen 34 4.2 Operation Monitor Screen After initializing, you can operate the machine. * Under normal circumstances, the initialization will finish automatically. Upper tank sensor Operating condition Operation version Variety name Air pressure Operation/Stop ON/OFF display Main menu Ejector dwell time monitor EXPLANATION OF TOUCH PANEL Sub menu Fig.

4-3 Name Operation/Stop Operation Monitor Screen Function Operating condition Variety name Air pressure ON/OFF display Ejector dwell time monitor Upper tank sensor Operation version Main menu Sub menu Selects ON/OFF of operation "Operation/Stop" button: If this button is red, the machine is running. "Operation/Stop" button: If this button is green, the machine is stopped. Displays machine condition. Displays sorting variety name. Displays compressed air pressure level supplied.

It should be 0.25 MPa under normal circumstances. Displays ON/OFF of each sensor and setting. Displays the average ejector dwell time for each chute. If there is rice in the feeder, "Rice" is displayed. If there is no rice in the feeder, "No-Rice" is displayed. Displays Operation version of this machine. Sets and confirms each setting of this machine. Sets advanced settings for main menu. * Contents of main menu and sub menus depend on user level setting.

! CAUTION · Do not put anything in the visual field of the cameras while "INITIALIZE..." is displayed, as it will result in poor sorting. · When turning on the power supply, allow the machine to warm up for 20 to 30 minutes after "INITIALIZE..." before operating. 35 The following items can be set and confirmed in main menu. Which functions can be performed depends on the user level.

* Every level can perform all operations available to the levels below. * A password is required in order to change to a higher level. Main menu User level 1 Operator Operation Monitor User level 2 Supervisor Flow Rate Adjustment (Detail) Sensitivity Adjustment (Detail) User level 3 Maker Engineer Flow Rate Adjustment (Detail) Monitor/Adjustment Flow Rate Adjustment Sensitivity Adjustment Simulation Variety Load Save/Rename Operation Log Alarm Log Maintenance Alarm Monitor Remaining Time, Date Remaining Time, Date/Time Ejector Remaining Time Ejector Test Software Update User Level Sorting Mode User Setting Background Auto Flow (Level) Signal Processor Setting Auto Flow (Ejector) External Comm. Timers Maker Setting Camera Position Language Model Product Setting 1 Fig. 4-4 36 4.

3 Flow Rate Adjustment Screen Touch the "Flow Rate Adjustment" icon on the sub menu for "Monitor/Adjustment" to display the [Flow Rate Adjustment screen]. The flow rate of the feeders for primary (1 pass and 2 pass) and secondary sorting can be adjusted individually on this screen. This screen does not, however, control feeder ON/OFF settings or other feeder adjustments. Feeder monitor EXPLANATION OF TOUCH PANEL Flow rate Fig. 4-5 Flow Rate Adjustment Screen Name Flow Rate Adjusts flow rate of rice.

Function The setting range is from 0 to 100. Higher numeric values mean higher flow rates. Actual flow rate depends on rice variety and condition. Feeder Monitor Displays the strength of vibration of each feeder in real time. 37 4.4 Flow Rate Adjustment (Detail) Screen (User Level 2 and 3) Touch the "Flow Rate Adjustment (Detail)" icon on the sub menu for "Monitor/Adjustment" to display the [Flow Rate Adjustment (Detail) screen]. This screen controls feeder ON/OFF settings and other feeder adjustments. Feeder monitor Slow start ON/OFF Flow rate Vibration control ON/OFF Feeder ON/OFF Fig. 4-6 Attaching the Sensor Amp and Fiber Unit Name Flow Rate Adjusts flow rate of rice. Function The setting range is from 0 to 100.

Higher numeric values mean higher flow rates. Actual flow rate depends on rice variety and condition. Feeder Monitor Feeder ON/OFF Slow Start ON/OFF Vibration Control ON/OFF Displays the strength of vibration of each feeder in real time. Turn ON/OFF each feeder individually. When the feeder is ON, the strength of vibration increases gradually to the preset value. Turn ON this function usually. When ON : Controls the strength of each feeder to stay constant with the preset value, according to the feeder monitor. The flow rate is kept at the preset value. When OFF : The preset value and feeder monitor value will not always be equal because vibration is not directly controlled. The flow rate of each feeder may differ in spite of having the same preset value because of individual differences.

38 4.5 Sensitivity Adjustment Screen Touch the "Sensitivity Adjustment" icon on the sub menu for "Monitor/Adjustment" to display the [Sensitivity Adjustment screen]. This screen can be used to individually adjust the sensitivity of the front and rear sensors with regard to primary (1 pass and 2 pass) and secondary sorting. NIR sensitivity is adjusted with NIR. This screen does not, however, control sensitivity ON/OFF settings Camera select A Sensitivity B C EXPLANATION OF TOUCH PANEL Fig.

4-7 Sensitivity Adjustment Screen Name Camera Select Sensitivity Function Selects the camera to be adjusted (CCD or NIR). If you change the value for primary, secondary or tertiary sorting, the sensitivity of all appropriate chutes will be changed. AMS / AIS A Primary sorting B Secondary sorting BM / BI A Primary sorting DMS / DIS A Primary sorting B Secondary sorting C Tertiary sorting 39 4.6 Sensitivity Adjustment (Detail) Screen (User Level 2 and 3) Touch the "Sensitivity Adjustment (Detail)" icon on the sub menu for "Monitor/Adjustment" to display the [Sensitivity Adjustment screen]. This screen controls sensitivity ON/OFF settings and adjustments for individual chutes.



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Pixel size Camera select Unit select Sensitivity Sensitivity setting value Sensor switch Fig. 4-8 Name Camera Select Unit Select Sensitivity Setting Value Sensitivity Adjustment (Detail) Screen Function Selects the camera to be adjusted. Selects the unit to be adjusted. All sensitivities can be adjusted individually using "Camera Select" and "Unit Select". This screen controls the following settings. Use sensitivities in combination to remove rejected grain. There are two sensitivities. . . . Sensitivity Peck sensitivity : For sorting discolored grain. Pale sensitivity : For sorting paled grain. Discolored grain: Rice which is damaged partly and discolored.

Paled grain : Rice which is lightly discolored totally. Discolored grains and paled grains are removed by using above sensitivities. Selects dark or light sensitivity. 40 Discolored Accept Paled Pale (Accept) Background Pale sensitivity Peck sensitivity Fig. 4-9 Each Sensitivities As shown in the Fig. 4-9, blacker color serves as a big signal. Therefore, it is comparatively easy to sort out a signal difference with good grain. However, since pale grain is thin colored, its signal difference with good grain is small. Then, to remove pale grain, it is required to raise sensitivity. Here, in order to remove pale grain, when peck sensitivity is raised, even rice with pale color such as but considered as good grain will be removed.

Pale sensitivity is prepared to avoid this. EXPLANATION OF TOUCH PANEL Pale sensitivity is for sorting rice with pale area of more than arbitrary setting sizes, which is considered as bad grains. Therefore, in the Fig. 4-9, is bad grain through peck sensitivity. is bad grain through pale sensitivity.

and are good grain in the above figure, while can be regarded as bad grain by making setting size (area) of pale sensitivity smaller. Moreover, when peck sensitivity is turned off in the Fig. 4-9 and only pale sensitivity is used, it will be considered that , and are good grain, and only is bad grain. That is, since pale sensitivity will no function at all if it does not set up highly than peck sensitivity. Form sensitivity is for recognizing the grain as a sorting material.

Form sensitivity is always higher than peck sensitivity and pale sensitivity. Check estimated form sensitivity on the simulation screen and decide the form sensitivity. Name Sensor switch Size setting Function Turn ON/OFF the sensor of each unit. When the switch is blue, the sensor is ON. Sets reject detecting size of peck and pale sensitivity. If there are more reject pixels in a rice grain than the preset number, the grain is recognized as a reject. Set as below usually.

Peck sensitivity : 3 Pale sensitivity : 40 If you change the size setting value, increase the setting value of pale sensitivity. 41 4.7 Simulation Screen (User Level 2 and 3) Touch the "Simulation" icon on the sub menu for "Monitor/Adjustment" to display the [Simulation screen].

Various simulations are run by capturing images of flowing sorting materials on this screen. Chute select Camera select Image capture gauge Front/Rear select File Load File Save Image capture Operation window Zoom in/out Fig. 4-10 Simulation Screen (a) Name Camera Select Front/Rear Select Chute Select Image Capture Function Selects the camera to capture the image. Selects front or rear for the camera capturing the image. Images can be captured from all cameras by using "Camera Select". Selects the chute for simulation. Captures the current image. Be sure to capture the image when sorting materials are flowing. 42 Name Image Capture Gauge Function Displays the processing status for "Image Capture." When the gauge is full, image capture is completed.

No other operations can be performed in the following cases. 1When the image is capturing and the capturing is not yet completed. 2If no sorting materials are flowing when "Image capture" is touched. In the case of 2), if nothing is detected by the selected camera, the "Image Capture" process will not start.

Place your hands in front of the camera lens so that the selected camera detects something.

Be careful not to touch the camera. Zoom In/Out Zooms in/out the captured image. "" : Zooms in the captured image in 4 scales. "" : Zooms out the captured image in 1 scale. File Save Saves the captured image.

The file name is decided automatically as below and the name can not be changed. File name : (Time and date when "File Save" is touched.) (Front or Rear) (Camera No.) .dat Example): 200801011200_F1.dat (At 12 o'clock on January 1, 2008 Front camera No.1) EXPLANATION OF TOUCH PANEL File Load Operation Window Loads a saved file. Touch "Operation Window" to adjust sensitivity, sensitivity size and signal processing settings. Sorting simulation is run by using captured image. Use the scroll bars to display parts of the captured image covered by the Operation Window.

43 4.7.1 Capturing the Simulation Image Example) Capturing front camera image of unit 1 (1) Select the camera to capture the image as in Fig. 4-11. Select No.1 Select the simulating chute Select CCD FRONT Fig. 4-11 Simulation Screen (b) (2) Touch "Image Capture" when the sorting materials flow. As the image is captured, the image capture gauge advances. Image capture gauge Touch the image capture Fig. 4-12 Simulation Screen (c) 44 (3) When the image capture gauge is full, the captured image is displayed as in Fig.

4-13. Fig. 4-13 Simulation Screen (d) (4) Touch "Operation Window" to display operation buttons as in Fig. 4-14. When blue (peck sensitivity) and green (pale sensitivity) are illuminated on the image, each sensitivity can be controlled.

See P.40 "4.6 Sensitivity Adjustment (Detail) Screen (User Level 2 and 3)"for "Sensitivity Adjustment" and "Sensitivity Size". EXPLANATION OF TOUCH PANEL Operation window White frame Ejector dwell part Dark sensitivity setting Light sensitivity setting Sensitivity adjustment Sensitivity size Fig. 4-14 Simulation Screen (e) 45 Areas enclosed by white frames are detected as abnormal.

The red line shows where the ejector will fire to remove materials rejected via peck sensitivity and pale sensitivity. Air is discharged toward the center of the white frame. Refer to the setting values on this simulation screen to set the actual values on their appropriate screens. <Caution> 1) Sensitivity setting value is always "pale sensitivity/peck sensitivity". . Peck sensitivity can not be greater than pale sensitivity. 2) After first capturing an image, all setting values will automatically revert to those on the [Sensitivity Adjustment (Detail) screen], but the setting values on the simulation screen can not automatically be transferred to the setting values on the [Setting Adjustment (Detail) screen].



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46 4.7.2 Saving the File Touch "File Save" to save the captured image. The file name will be decided automatically and the save confirmation window will be displayed.

Touch "Yes" to complete the save. File Save EXPLANATION OF TOUCH PANEL Fig. 4-29 Previously-saved varieties can be loaded on this screen. Fig. 4-30 Select a previously-saved variety to load that variety. Fig. 4-31 Touch "Yes" to save the variety. Fig. 4-32 To changing the variety name, use the following procedure. Fig. 4-33

Use the on-screen keypad to change the variety name. After changing the variety name, touch "OK". The display will return to the [Variety List screen]. Fig. 4-34 This screen displays alarm contents when a fault occurs.

Fig. 4-35 This screen displays the operation log. Up to 600 operations can be logged. Fig. 4-36 This screen displays the alarm log. Up to 600 operations can be logged.

4-29 Remaining Screen Name Cumulative Operation Time Fluorescent Lamp (Warning) It can not be reset. Function The cumulative operation time of this machine is displayed. Remaining lifetime for fluorescent lamp is displayed. After replacing fluorescent lamps, touch the "Reset" button to restart the timer. * It starts counting down from 3,000 Hrs. Fluorescent Lamp (Stop) An alarm signal of "exchange time of lamp" is displayed 200 Hrs after the remaining lifetime for the fluorescent lamp reaches 0 Hrs. This setting can not be changed. Halogen Remaining lifetime for halogen lamp is displayed. After replacing halogen lamps, touch the "Reset" button to restart the timer. * It starts counting down from 3,000 Hrs.

Air Filter Remaining lifetime for air filter is displayed. When the remaining lifetime reaches 0 Hrs, an alarm is displayed on the "Alarm Monitor". After replacing air filters, touch the "Reset" button to restart the timer. * It starts counting down from 3,000 Hrs. Date/Time Setting *User level 2 and 3 Time is displayed. Date/time can be changed. * 54 4.15 Ejector Remaining Time Screen (User Level 2 and 3) Touch the "Ejector Remaining Time" icon on the sub menu for "Maintenance" to display the [Ejector Remaining Time screen]. On this screen, accumulated ejector count can be confirmed. Accumulated ejector count Accumulated ejector count monitor Reset Chute No.

All reset Ejector No. EXPLANATION OF TOUCH PANEL Fig. 4-30 Ejector Remaining Time Screen Name Accumulated Ejector Count Accumulated Ejector Count Monitor Chute No. Ejector No. Function Selected accumulated ejector count is displayed.

All accumulated ejector counts (28 ejectors) for selected chute are displayed on the monitor. Sets the chute for which the accumulated count is displayed. Sets the ejector for which the accumulated count is displayed. Use the Chute No. and Ejector No.

settings to check accumulated counts for all ejectors. Reset All Reset Accumulated ejector counts can be reset individually. After replacing an ejector, touch the "Reset" button. All accumulated ejector counts for selected chute can be reset. After replacing ejectors for the chute unit, touch the "All Reset" button. 55 4.16 Ejector Test Screen (User Level 2 and 3) Touch the "Ejector Test" icon on the sub menu for "Maintenance" to display the [Ejector Test screen]. On this screen, ejector valves can be tested individually. Ejector test Ejector No. Chute No.

Fig. 4-31 Ejector Test Screen Name Ejector Test Tests the selected ejector. Function Confirm the following items for the selected ejector when the test mode is ON. 1) Check that LED corresponding to the selected ejector illuminates on the operation screen. 2) Make sure that a beep sounds. 3) Place your hands in front of the nozzle to check that the selected ejector discharges air. Chute No. Ejector No. Selects the chute which contains the ejector to be tested.

Selects the ejector to be tested.

Use the Chute No. and Ejector No. settings to test all ejectors. 56 4.17 Sorting Mode Screen (User Level 2 and 3) Touch the "Sorting Mode" icon on the sub menu for "User Setting" to display the [Sorting Mode screen].

On this screen, various settings which have a large impact on sorting performance can be adjusted. Chute Select Sorting Mode Wiper ON/OFF Wiper interval Auto Wiper ON/OFF Hopper Sensor ON/OFF Ejector ON/OFF Delay time Dwell time EXPLANATION OF TOUCH PANEL Monitor (Auto Wiper) Monitor interval Threshold Fig. 4-32 Sorting Mode Screen Name Sorting Mode Function Select according to the application. Each mode can be selected individually.

Also, the following combination of sorting mode can be selected.

Glass, stone/discolored grain Glass, stone/chalky Glass, stone/discolored grain/chalky Discolored grain/chalky Discolored grain Chalky "Glass, stone" sorting mode is only machines with NIR (AMS/BM/DMS). Wiper ON/OFF Wiper Interval Auto Wiper ON/OFF The ON/OFF setting of the wiper for cleaning of the optical section can be controlled. Usually operate the machine with Wiper ON. The interval of wiper operation can be controlled. Turns the auto wiper ON/OFF. The auto wiper operates when the glass is dirty regardless of the above-mentioned wiper interval. 57 Name Monitor (Auto Wiper) Function The monitor interval and threshold of the auto wiper can be set. Monitoring of dirt on the glass surface of the optical section. The auto wiper operates when the monitoring value goes below the setting threshold. Monitor interval Threshold The monitor interval can be set.

· Standard: 60 The threshold can be set. When the threshold is set to a high value, tolerance for dirt on the glass surface is low. The wiper will operate to remove even a small amount of dirt. · Hopper Sensor ON/OFF Standard: 80 This sensor is installed at the material tank and controls the ON/OFF setting of feeders. If the rice in the material tank for primary sorting is lower than the position of the tank sensor, the feeder for primary sorting will be turned OFF. If the rice in the material tank for secondary sorting is higher than the position of tank sensor, the feeder for primary sorting will also be turned OFF. Ejector Power ON/OFF Chute Select Turns the power supply for the ejector valve ON/OFF. Selects the chute to be adjusted. The possible settings are: · · · Primary sorting: All chutes for primary sorting Secondary sorting: All chutes for secondary sorting Chute No.1: Only chute No.

1 Chute No.2: Only chute No.2 Standard_CCD : 10 ~ 25 Standard_NIR : 20 ~ 40 Dwell Time The dwell time for the ejector valve can be set. · · Delay Time The delay time between the time of rice detection by the sensor to the time of ejector valve operation can be set. · · Standard_CCD : 110 ~ 130 Standard_NIR : 90 ~ 120 58 4.



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