Product: Robotic Belt Sanders

Version 1.0

Model: EBS DuoGrind 3K

(Original Instruction)

Table of Contents

Preface

1. Do not operate, maintain, or repair the system without having read and understood the safety regulations and user manual.
2. Please Notice: We provide original of instruction manual is English.If original instructions are not available in the language(s) of the Member State in which the machinery is placed on the market and/or put into service, machinery must be accompanied by a translation of the original instructions together with the original instructions.The purpose of the latter requirement is to enable users to check the original instructions in case of doubt about the accuracy of a translation.In some countries the requirement to use specific language(s) is covered by legal requirements.
3. Before operation, make sure there are no foreign objects or personnel around or inside the machine. This is for preventing accidents, danger, or damage during system operation.
4. During operation, only authorized personnel may operate the system. Unauthorized entry is strictly prohibited to avoid accidentally activating switches (e.g., touching, stepping on, or pressing the switches), which could lead to wrong actions and unexpected accidents such as items falling or injury.
5. During operation, please do not load items that are not intended to be transported by the system. Such actions may cause damage to the system machinery or the loaded items to fall, which may lead to unexpected dangers and losses.
6. When the system is running, it is strictly forbidden to put hands, feet, or other objects into the system's operating machinery, which is to prevent serious injuries to personnel and objects.
7. Keep the area around the system clean to prevent slips or falls that may lead to unpredictable personnel injuries.
8. When it is necessary to enter the system for maintenance or repair, be sure to perform the following:

1. Remove the items carried on the system machine to be maintained or repaired.
2. Turn off the "system's power" and activate the "emergency stop switch."
3. To ensure personnel safety, proceed with maintenance only after confirming that the above steps have been completed correctly.

9. In case of a power outage, be sure to disconnect the power. Failure to disconnect the power may result in unexpected accidents when power is restored.
10. In case of a power outage, be sure to disconnect the power. Failure to disconnect the power may result in unexpected accidents when power is restored.
11. When the machine is in operation, personnel not involved in its operation are strictly prohibited from approaching the machine.
12. This is a robotic belt sander designed for robotic application integrators. It is the user’ s responsibility to identify specific hazards (such as fire and explosion) and take measures to reduce the associated risks. This machine not intended use for ATEX. Materials suitable for sanding: aluminum, copper, steel, cast iron, stainless steel, hard metals, plastics, composites, and wood.
    Professionals only: This machine is intended for professional users only.
    Only qualified personnel may access any part of the machine. This machine is not suitable for individuals with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they are supervised or instructed by a person responsible for their safety.
    Only technicians who have been thoroughly trained and are familiar with the machine’ s adjustments and operations are allowed to use this machine.
    Do not allow unauthorized personnel to perform repair or maintenance operations.
    Note:
    Unless explicitly stated in this manual, nothing in this manual shall be interpreted as a guarantee or warranty by DSA for any loss, personnel injury, property damage, or fitness for a particular purpose.

—Limited resource, infinite sustainability—

1、 Safety Regulations

1-1 Basic Conditions for Safe Operation

The safety information described in this chapter serves as general guidance, intending to prevent injury to operators and damage to the equipment during its handling, installation, operation, or maintenance.

1-1-1 Electrical Unit Precautions

This manual uses the following methods to remind operators of dangers and precautions related to this product. Potential hazardous conditions during operation are classified into the following three warning levels. Failure to heed these warnings may result in serious personnel injury or death, or cause significant damage and malfunction to the equipment.

	[Danger icon] Indicates a hazardous situation which, if not avoided, may very likely result in death or serious injury.
	[Warning icon] Indicates a potentially hazardous situation which, if not avoided, may result in death or serious injury.
	[Caution Icon] Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

1-2 Safety Precautions

Safety precautions: This machine is equipped with a variety of safety devices to prevent damage to the operators and other parts. Thus, operators must fully understand the following safety precautions.

1-2-1 Basic Operational Training

The machine contains the following hazardous components: specific control buttons, transformers, motors, circuit junction boxes, high-voltage connectors, etc. Please do not touch these hazardous components.

1. Do not touch the control buttons with wet hands to prevent electric shock.
2. Operators must be familiar with the location of the emergency stop button for immediate use in emergencies.
3. Turn off the main power supply before replacing fuses.
4. Ensure there is adequate workspace to prevent tools or workpieces from falling.
5. Maintain a clean floor space free of cutting fluids, oils, and metal chips to prevent slips.
6. When operating, please confirm the button you intend to operate.
7. If a task requires two people, please first clarify operational signals to each other. The other worker should not proceed until a proper signal has been given.

1. In case of power failure, please turn off the main power switch immediately.
2. Please use the recommended hydraulic oil and lubricating oil.
3. The fuse for replacement should be appropriate and universal.
4. Prevent electricity leakage from control boxes, electrical boxes, etc. to avoid malfunctions.
5. Please do not change the preset values, capacity, and other computer settings arbitrarily. If changes are necessary, please record the original values before the change for easy restoration and avoiding errors.
6. Warning signs must be kept clean. Replace them if they are old or unclear, and mark below the nameplates to prevent incorrect installation.

1-2-2 Before Startup

Please check all electrical equipment and wires before operating to avoid electrical leakage and faults.

Please check all electrical equipment and wires before operating to avoid electrical leakage and faults.

1. Please make sure you fully understand all the instructions for this machine, including the various functions and working procedures.

2. Please use non-slip shoes, goggles, protective boards, safety clothing, and other safety equipment.

3. Please make sure all equipment units, control boxes, and electrical boxes have their safety doors and protective boards properly closed.

1. Ensure that floor-mounted wires are fixed and protected from chips to avoid short circuits.

2. For machines that have been idle for a long time or new machines, ensure regular lubrication of slides and bearings.

3. Please follow the lubrication points indicated on the nameplate to correctly apply lubricant with the appropriate amount of oil (depending on the project).

4. Please check whether the buttons and handles can operate smoothly.

5. Please check whether the cutting fluids need to be replenished (for the cutting machine).

1-2-3 After the Power Switch is Turned On

After turning on the main power switch of the machine and releasing the emergency stop button, confirm whether the sanding belt is installed in the correct position before starting the operation.

1-2-4 Daily Routine Checks

1. When checking the belt and cylinder, do not put your hands between the pulley and the cylinder's operating range.

1. Please check if the pressure is set correctly.
2. Stay alert to any abnormal sounds from the motor, gearbox, or other components.
3. Please check the operation of the lubrication unit and the clearly visible lubrication position.
4. Please check all safety devices and safety covers.
5. Please check the tightness of the belt and replace it with belts of equivalent specification if necessary.
6. Please check whether there is sufficient oil in the hydraulic unit.

1-2-5 Preparations

Do not place any tool on the protective cover.

After replacing parts, please perform a test run first.

1-2-6 During Machine Operation

1. Workers with long hair must have their hair tied up to avoid injury.
2. Do not wear gloves when operating the control buttons to avoid malfunctions.
3. For handling large workpieces, please make sure there are at least two workers present to avoid accidents.
4. Only trained or experienced personnel can operate forklifts, cranes, hook straps, or other lifting equipment.
5. When operating forklifts or cranes, avoid colliding with other work equipment.
6. Please ensure the strength of the slings or hooks when lifting workpieces.
7. Make sure workpieces are firmly secured.
8. The cutting fluid nozzle flow rate on the spindle can only be adjusted after the machine has fully stopped. (cutting machine)
9. Do not touch workpieces or the spindle while it is running.
10. The workpiece must be at a considerable distance from the tool and can only be transported when the spindle is stopped.
11. When the machine is running, do not clean the chips with your hands or a rag.
12. Do not start the equipment before the safety cover plates are properly installed.
13. Please use a brush to clean the tools; avoid cleaning them by hand.
14. Please wear a protective mask when processing magnesium alloy.
15. When using the chip conveyor in processing, you must not touch its running parts (such as chip screws or conveyor belt) to avoid serious injury to limbs, and do not open any protective cover during operation. Additionally, do not attempt to stand on the chip conveyor body, as slipping and being pulled in by the conveyor belt could cause severe injury.

1. Before starting the machine, operators must check and ensure that no one is inside the protective cover plates
   or any enclosed areas with moving parts.
2. Do not open the protective plate doors and windows during operation.
3. During heavy cutting, please be careful of burns caused by chips jumping out. (cutting machine)

1-2-7 Processing Completed

Before leaving the machine after work is completed, please turn off the circuit and set the power switch to the "OFF" position.

1-2-8 Work Completed

1. Clean the chips on the machine only after the machine stops.
   When cleaning, please use a vacuum cleaner or brush; do not use an air spray gun to prevent chips from entering the machine and causing damage, or entering workers' eye. If a chip conveyor is used, please turn off its power before clearing the chip conveyor crumbs. In addition, do not clean the crumbs directly with your hands. Be sure to use a tool (such as an iron rod or shovel) to do it. You should be very careful to avoid getting your hands injured by chips or getting caught in the chip conveyor to get seriously injured.
2. Place all tools, implements, and parts back in their proper locations after use.
3. Please check the damaged scraper and replace it if necessary.
4. Please check the contamination levels of cutting fluid, hydraulic oil, and lubricating oil, and replace or replenish them if necessary.
5. Make sure to turn off all switches before leaving the machine.

1-2-9 Safety Design

1. Protective sheet metal and protective covers of various parts.
2. Emergency stop button.

Please notice:
The emergency stop is different with operation stop function.
It's uses for hazardous situation needing to be urgently ended or averted.
This machine emergency stop function in accordance with stop category 0 of EN 60204-1.The run-down time is 10 seconds, please keep away your hand until all of movement stops.When the emergency stop function is activated it will be maintained until it is manually reset.The interlocking device and emergency stop device are using Safe Torque Off (STO) safety design.It ensures that no torque-generating energy can continue to act upon a motor and prevents unintentional starting.

1-2-10 Maintenance Preparations

1. Do not perform maintenance unless instructed by a supervisor.

2. Prepare replacement parts and other consumables in advance (oil seals, O-rings, oil, grease, etc.).
3. Be prepared to document any task requiring maintenance or calibration.

1. Please understand all the safety precautions in the instruction manual first.

2. Read the operation manual carefully and thoroughly understand the relevant safety precautions.

1-2-11 Maintenance

1. Please turn off the power of the machine before performing maintenance work.

2. Only experienced or knowledgeable personnel can perform maintenance on the electrical box. Do not perform maintenance without proper authorization; contact the responsible in charge.

3. Please do not move the overtravel pulling block, limit switches, proximity switches, or other connection mechanisms at will.

4. Please use a sturdy ladder for maintenance at high positions.

5. Please use fuses and wires of good quality.

6. If any protective cover is removed, the dangerous area will be exposed. Be very careful to avoid danger in such cases, especially when it is necessary to operate the machine.

7. If you need to work above the machine, please use a sturdy ladder or platform as a step to climb to a higher place, and you must be very careful to prevent accidents or even casualties.

8. If anyone wants to enter a work area with movable mechanisms (i.e. a hazardous area) for maintenance or other tasks, ensure the machine is turned off, disconnected from power, and the main power switch is locked and tagged with a warning sign. If the work area is equipped with a safety door switch (optional), manually set the switch

to the unlocked position with its key or using a lock to hook the latch hole of the safety door switch and lock it to prevent accidental locking of the door, which can accidentally start the machine.
#If it is necessary to operate the machine for inspection, the operator must follow the instructions or obtain consent from the person in the hazardous area before proceeding.

1-2-12 Tasks Before Operation and After Machine Maintenance

1. Please organize maintenance items such as oil cloths and dirt removers.
2. Please put unnecessary tools, parts, and excess oil back in their original places.

1. Ask the maintenance personnel to confirm and check whether the machine is operating safely.
2. Please record maintenance data for reference.

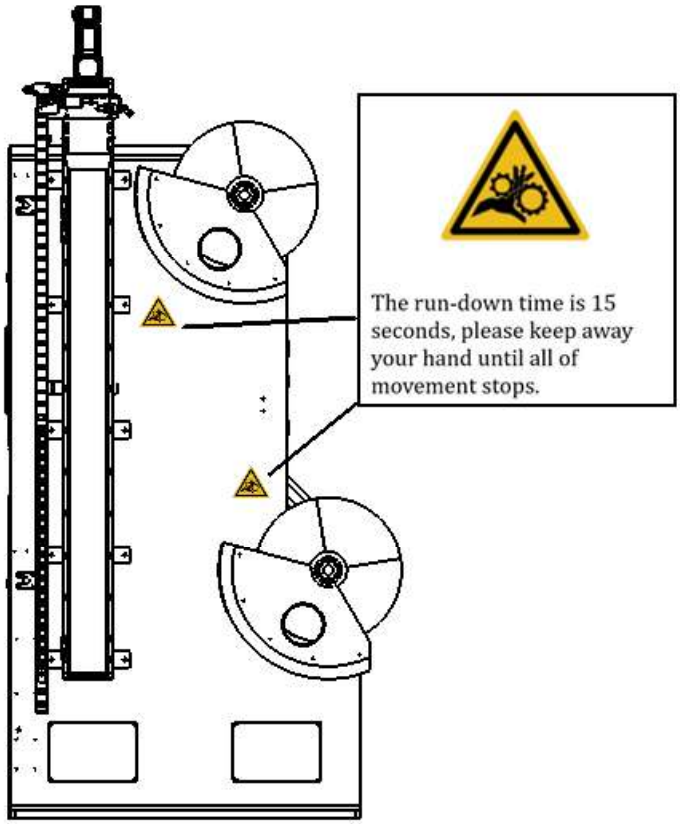
1-3 Marking of machinery and residual risk

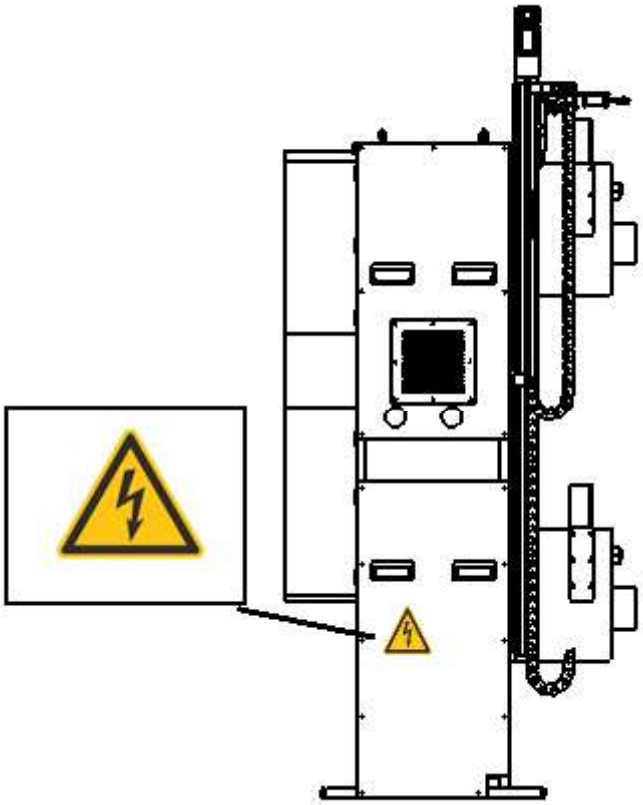
Due to the high-speed rotation of the sanding belt, the working area is extremely dangerous. The machine takes 10 seconds to reach a complete stop. Always keep your hands away from the machine until all motion has fully stopped.

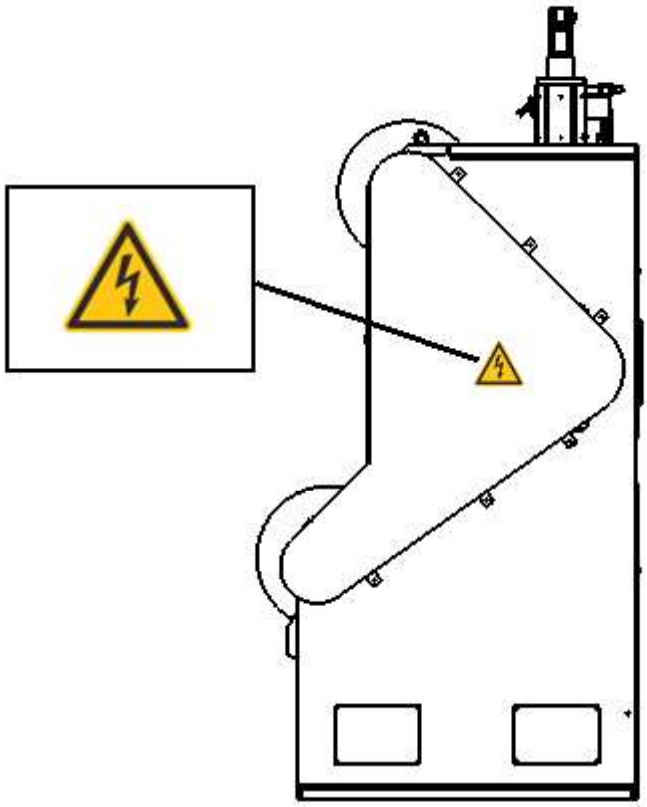
For the safety of the operator, personal protective equipment must be worn to protect the operator, such as goggles, safety shoes, and a safety helmet. A face mask should also be worn if necessary. The employer must provide personal protective equipment (P.P.E.) for the operator.

1. When operating in automatic operation mode, do not open movable doors, acrylic windows, and other protective covers.
2. Please pay attention to safety when the machine is running or when the power supply is switched to "ON".

Ignoring the above warnings may result in serious personal injury or machine damage.


The run-down time is 15 seconds, please keep away your hand until all of movement stops.





1-4 Safety Devices

Although the machine is equipped with various safety devices to prevent injury or damage, the operator must follow safety regulations in addition to relying on these safety devices. Before starting any operation, be sure to read the instructions carefully to understand the location and function of various safety devices.

Ignoring these warnings may result in serious injury or machine damage.

1. Do not move, alter, or remove safety devices without authorization from the Company.

2. It is strictly prohibited to open or dismantle the following devices without authorization:

(a) Electrical boxes

(b) Covers that require special tools to open.

3. For the operator’ s own safety, personal protective equipment must be worn to protect the operator’ s safety, such as goggles, safety shoes, and helmet, and if necessary, a mask.

4. For the operator's own safety, the operator must follow relevant safety precautions and the following items:

(a) Operators shall not operate and maintain the machine under the influence of alcohol or drugs.

(b) The operators must ensure that their clothes and hair will not be caught in the running parts of the machine.

1-5 Equipment Installation Environment Conditions Description

The applicable storage and installation environmental conditions for the machine are as follows:

Voltage: Steady state voltage: 0.9 to 1.1 of nominal voltage.

Frequency: 0.99 to 1.01 of nominal frequency continuously; 0.98 to 1.02 short time.

Harmonics: Harmonic distortion not exceeding 10 % of the total r.m.s. voltage between live conductors for the sum of the 2nd through to the 5th harmonic and 2 % of the total r.m.s. voltage between live conductors for the sum of the 6th through to the 30th harmonic.

Voltage unbalance: Neither the voltage of the negative sequence component nor the voltage of the zero-sequence component in three-phase supplies exceeding 2 % of the positive sequence component.

Voltage interruption: Supply interrupted or at zero voltage for not more than 3 ms at any random time in the supply cycle with more than 1 s between successive interruptions.

Voltage dips: Voltage dips not exceeding 20 % of the peak voltage of the supply for more than one cycle with more than 1 s between successive dips.No power attenuation occurs within the height of 1000 meters above sea level; however, the power attenuates 5% per 1000 meter at the height between 1000m~3000m. (For special condition environment, please contact with us before install).

Ambient Temperature: -25 ~ 55°C. For a short duration (less than 24 hours), it can endure up to +50°C.

Relative Humidity: 30% ~ 95% RH.

Environment: No excessive dust, acidic gases, corrosive gases, or salt content.

Please avoid exposure to heat radiation or direct sunlight to prevent changes in ambient temperature.

Please avoid exposure to abnormal vibrations.

2、 Regular maintenance

2-1 Regular Maintenance Instructions

2-1-1 Regular Maintenance Checklist

Maintenance checks can be conducted daily, weekly, monthly, and annually. Certainly, these maintenance are based on the situation and the actual frequency of operations. Operators should also regularly check for unusual machine noises, oil levels, air pressure, spindle oil and gas, and other mechanical anomalies.

Item	Maintenance details		Maintenance frequency/1 time
1	Air pressure unit	Pressure adjustment check	Daily
2		Air hose joint leakage check	Weekly
3		Replace filter	Every 3 to 6 months
7	Motor unit	Motor housing cleaning	Monthly
8		Transmission component lubrication	Every 6 to 12 months
9		Check operating status (for unusual noises or abnormalities)	Weekly
10	Transmission unit	Cleaning and inspection of each part	Weekly
11		Tighten each locking bolt	Monthly
12		Protective device inspection	Monthly

Note 1: The frequency listed in this table is based on normal operating conditions. If the operating environment is harsher or usage frequency is high, it' s recommended to consider increasing the maintenance frequency.
Note 2: If this table is not aligned with other schedules, please follow this table.

2-1-2 Description of Maintenance Items

To extend the lifespan of the machinery, maintenance works should be carried out reliably.

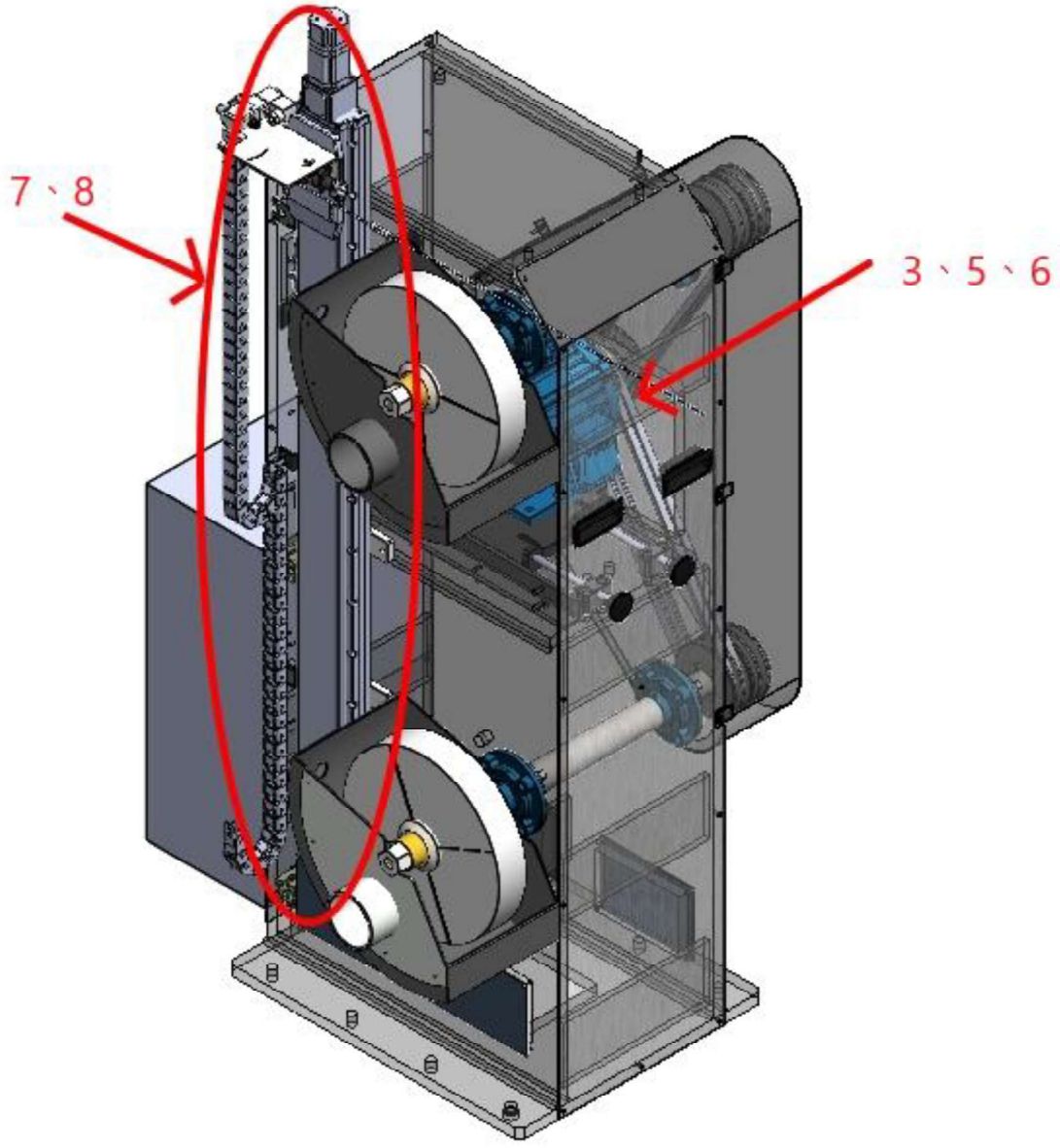
Inspection Item	Inspection Time
1. The air pressure should be maintained within the range of 5.5 to 7 kg/cm² (78 to 99 psi), and this must be strictly adhered to.	Daily Inspection
2. The air from the air pressure source must be kept dry, and the moisture in the compressed air must be discharged regularly to prevent moisture from accumulating in pipes and equipment. Ensure to check and drain water regularly.	Daily Inspection
3. The motor must be lubricated at all times, so the oil level in the lubricator in the conditioning unit must be maintained at a standard level (depending on the project)	Daily Inspection
4. Regularly inspect the sealing of pipes and connections to ensure there are no gas leaks. Leaks can lead to energy waste and impact system efficiency.	Daily Inspection
5. Clean pneumatic/motor components, including the compressor, air cooler, filters, separators, and motor housings. Make sure their exterior surfaces are free of dust or dirt, which helps heat dissipation and maintain good operating conditions.	Daily Inspection

6. Check the bottom of the motor for fluid leaks, especially oil or coolant. Leaks may be a sign of sealing or plumbing problems.	Daily Inspection
7. Visually inspect the condition of power transmission components, including gears, bearings, belts, chains, etc. Make sure they are not visibly worn, damaged, or loose.	Daily Inspection
8. Replace worn or damaged parts of the power transmission source promptly, such as broken belts, damaged gears, or bearings. This helps prevent further damage.	Daily Inspection
9. Make sure there are no obstructions within the machine's operating range.	Check anytime

To prevent the device from being accidentally powered on or started:
Lockout/Tagout:
Before performing maintenance work, ensure the main switch (main isolation switch) or any other independent power switch is turned off, and lock it in the OFF position using a personal padlock to ensure it remains off.
According to established procedures, place a tagout device on the energy isolation device to indicate that the energy isolation device and the controlled equipment may not be operated until the tagout device is removed.
Ensure that maintenance and repair work is performed by qualified personnel who are fully familiar with robotic belt sanders and the associated equipment.

2-2 Regular Maintenance Instructional Diagram

Maintenance of Pneumatic and Motor Components: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Maintenance of transmission components (sanding belts, grinding wheels, and wheel shafts):

2-2-1 Steps for Replacing Consumables

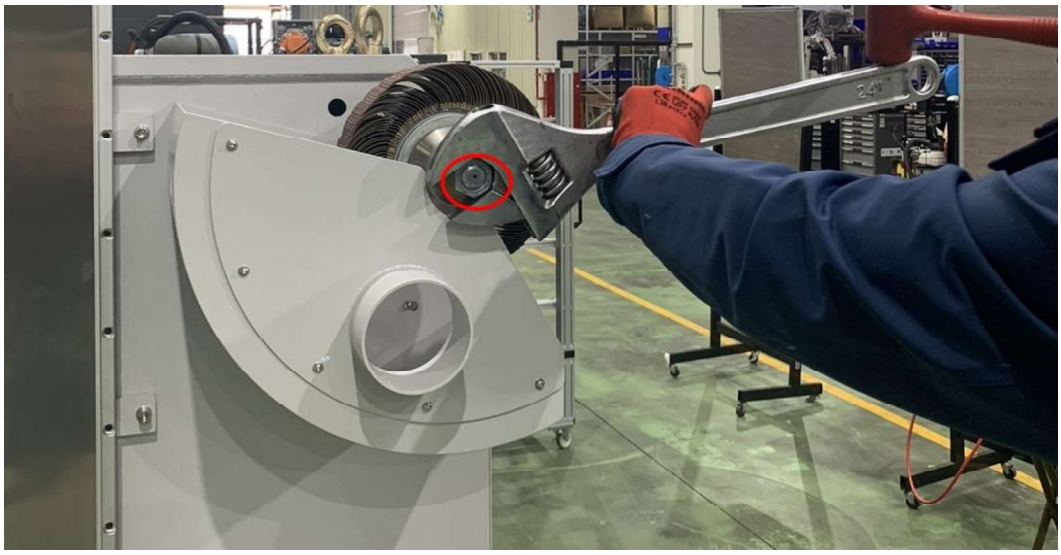
(1) Belt replacement for belt sander:

DANGER

Before replacing the sanding belt, the power must be turned off. Visually confirm that the motor and the sanding belt have reached a complete stop before opening the maintenance door to perform the replacement.

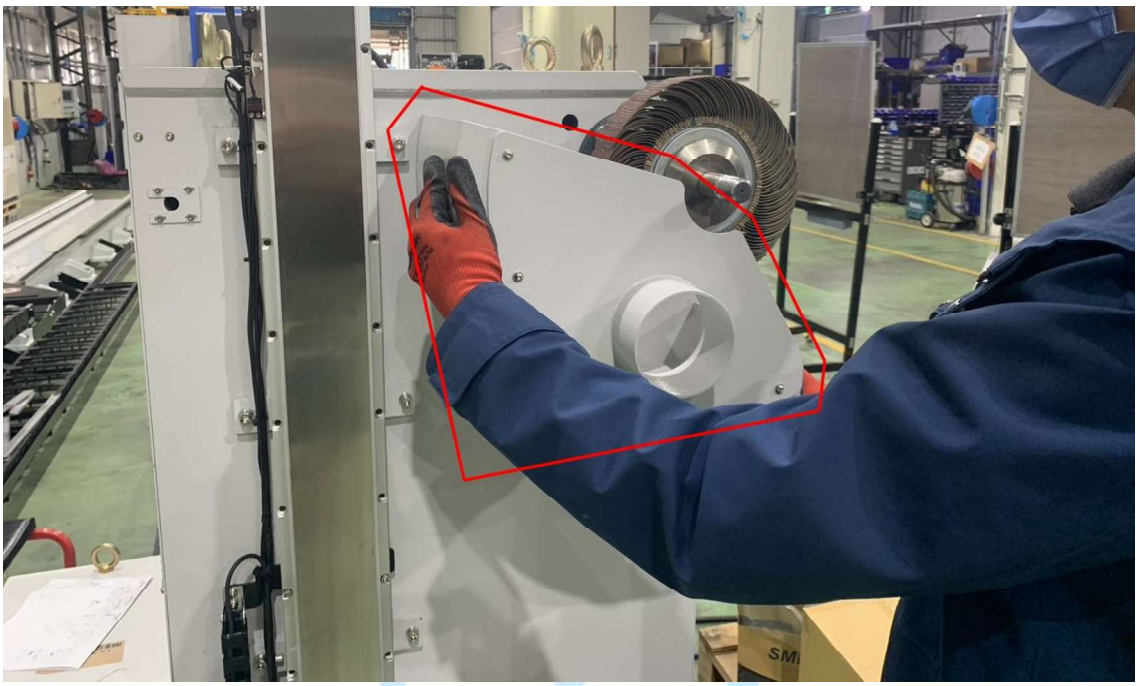
▲ Dual Flap Sander

▲ Use a wrench to unscrew the screw



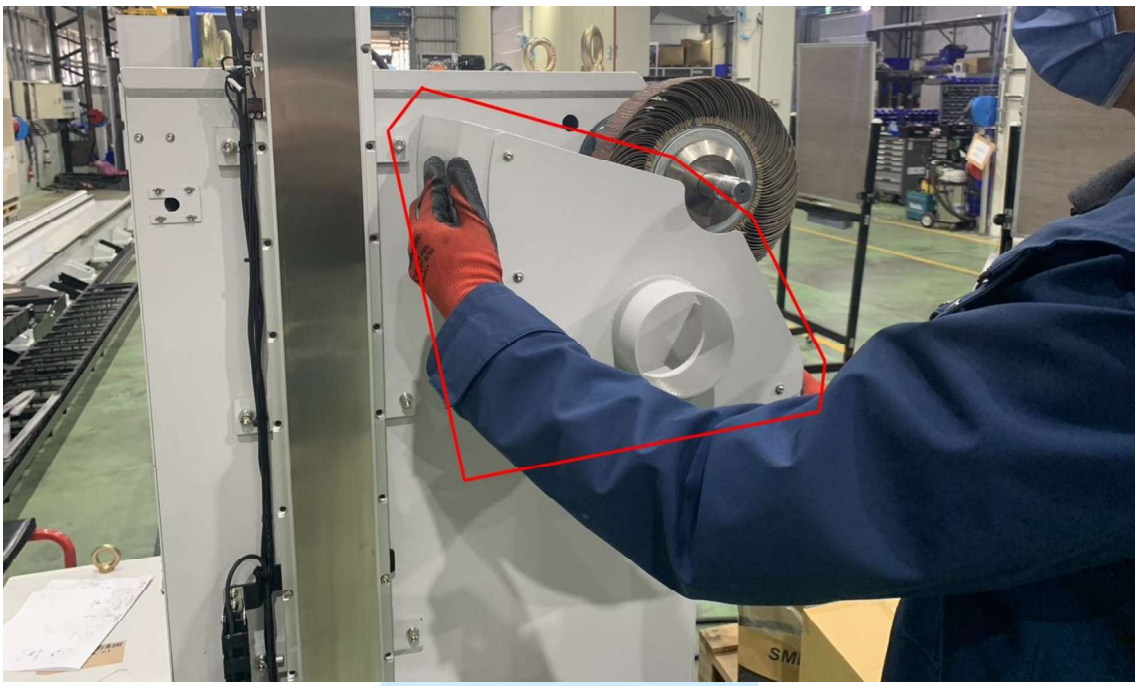
▲Remove the shaft bushing and grinding wheel stopper)

▲Remove the protective cover.



▲Remove Dual Flap Sander switch the new one.

▲ Replace the protective cover



▲Reinstall the shaft bushing and grinding wheel baffle

▲Tighten the screw back

2-3 General Precautions

(1) The machine should be kept from direct sunlight and heat sources to avoid damage to precision.

(2) Install the machine in a dry, well-ventilated area.

(3) Please keep the machine away from cranes, arc areas, and welding machines.

(4) Ensure that the machine is not exposed to water droplets or mist from cooling towers or filtration towers.

(5) Avoid using unknown lubricants from unknown sources that are not recommended.

(6) Do not use hammers or heavy objects to hit when installing or disassembling.

(7) After completing the work, please clean the machine and turn off the air pressure and power supply.

(8) Before starting the machine every day, please check the pressure gauge (oil level indicators) in each part.

Item	Inspection Item	Inspection Guideline
1	Air pressure confirmation	Confirm that the pressure on the three-point combination pressure gauge is maintained at 5–7 kgf/cm²
2	Is there any leakage in the piping?	Check for leaks at hose joints
3	Vibration, Abnormal Sounds, and Motor Heat	Check servo motor error codes

3、 Machinery Installation Tips

3-1 Safety Precautions

Robotics are high-precision equipment. When handling and transporting, safety precautions are crucial. Especially during transport and unloading, avoid crushing or violent collisions.

1. Ensure the handling methods and the machines/tools used for lifting are checked for safety beforehand.

2. No standing under items being lifted or suspended.

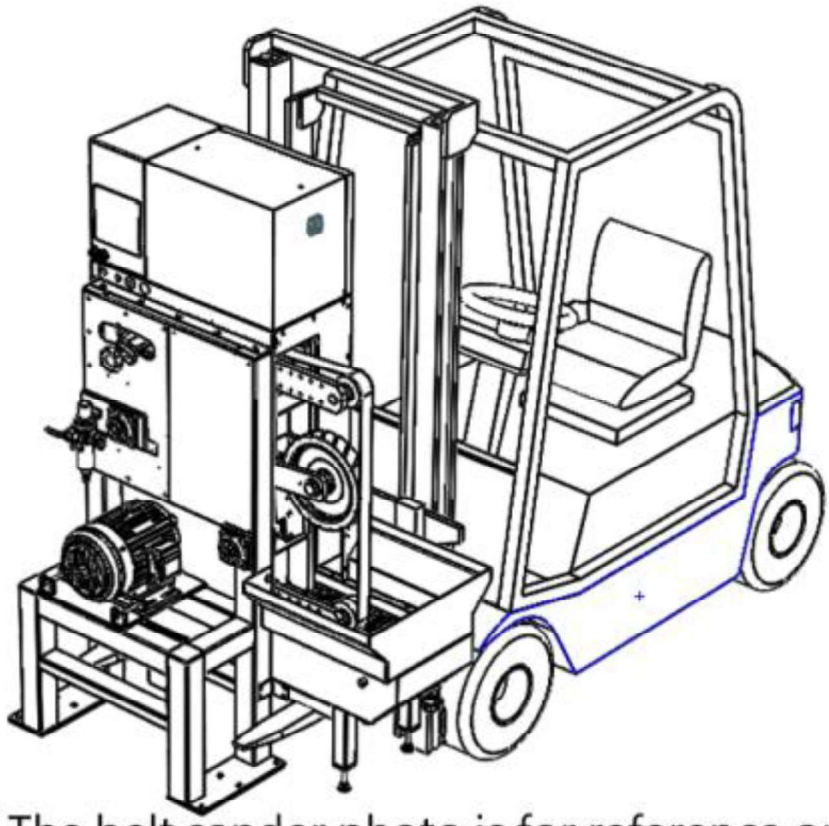
3-2 Handling of Machinery

When putting down the machine, check for any pipelines that may have slipped underneath the base to avoid crushing them. Before transporting the machine, please follow these instructions:

1. Before moving, check whether the electrical wires and air pipes of the equipment are unplugged.

2. Use lifting equipment with a capacity of more than 1 ton.

3. Before moving the machine and equipment, please clear the obstacles on the moving route and be cautious of switches to avoid collision.



「The belt sander photo is for reference only.」

3-3 Temporary Storage

1. If the machine is not installed immediately after arrival, it must be stored in a warehouse to prevent dust and moisture from entering the machine.

2. If the machine needs to be stored for a period of time, apply anti-rust treatment to limit switches and position detectors to prevent rusting.

3-4 Pre-Installation Preparation

3-4-1 Minimum Machine Footprint

Footprint Dimensions: Front Width × Depth × Height = 810 × 1340 × 1470 mm

3-4-2 Installation

The machine’ s performance depends on the proper installation process. Even if the machine guide rails are smooth and offer high accuracy, improper installation can hinder achieving the desired precision. Most problems can be attributed to the final installation process. The high precision will be achieved only when installation is carried out exactly as per the machine's original state.

Please follow the correct installation methods below to obtain good results:

1. Place the machine on the pre-designated installation foundation.
2. Temporarily place the foundation bolts and foundation pads next to the foundation bolt holes.
3. Lift the machine, place foundation bolts and foundation pads in the level adjustment bolt holes, and tighten them with nuts to prevent them from slipping off.
4. Place the machine on the foundation and insert the foundation bolts into the foundation bolt holes. To prevent uneven foundation surfaces from affecting level adjustment after concrete grouting, a jack, and a level must be used first.
5. The initial machine leveling should be within 1mm/m, and after adjustment, the machine should be supported with wedges.
6. Pour concrete into the foundation bolt holes. Ensure that an appropriate expansion agent is mixed into the concrete to prevent shrinkage after solidification (non-shrink cement must be used).

7. After the secondary concrete is fully solidified, the machine level can be adjusted. The concrete floor flatness should be within 4 mm/m, and the foundation concrete strength should be above 140 kg/cm².

3-4-3 Installation Environment

The machine installation environment must meet the following conditions:

▲Avoid direct sunlight.

▲Ensure the machine is not close to heating devices, and is kept under an external temperature range of 0°C to 45°C.

▲The air humidity range is below 75%RH.

▲The machine cannot be installed near punch casting or forging machines to avoid severe vibration.

▲The machine cannot be installed in an environment containing dust and acid or alkaline gases.

▲Ensure that there are no hooks, hangers, oil drums, etc. near the machine to prevent contamination or interference with operation.

▲The installation floor must be flat and stable without irregularities or looseness.

3-4-4 Suggestions and Instructions for Handling Grinding Dust

Recommended the conveying of chips and dust between the capture device and the machine connection to the CADES (chip and dust extraction system), especially flexible connections of moving units, shall follow the requirements to minimize pressure drop and material build up.

To ensure that the chips and dust extracted from the point of origin are conveyed to the collection system, the design of the hoods, ducts and baffles should be based on a conveying velocity of extracted air in the duct of 20 m s−1 for dry chips and 28 m s−1 for wet chips (moisture content 18 % or above).

The pressure drop between the inlet of all capture devices and the connection to the CADES should not exceed 1500 Pa (at air velocity in the ducts of 20 m/s).

Unintended access to the tool through any dust extraction outlet with disconnected exhaust system shall be impeded.

3-4-5 Noise Declaration

Noise reduction methods and noise source control:
In accordance with EN ISO 11688-1 and ISO/TR 11688-2, appropriate technical measures should be adopted to reduce noise from the main sound sources of the machinery.
Operating conditions for noise measurement:
Check conditions:
The machine is operating at 80% of its maximum speed
Placement/installation: floor-standing
Height from ground: 1.6 m
Measuring distance d = 1 m
Measurement time per position = 30 seconds
Test standard: EN ISO 3746:1996+AC:2009
Parameters: survey method level 3
Uncertainty K = 4 dB
Background sound pressure level: 65 dB
A-weighted sound pressure level LWA: 90 dB (measured value)
Also, the permitted exposure levels may also differ between countries. However, this information can help machine users better assess hazards and risks.

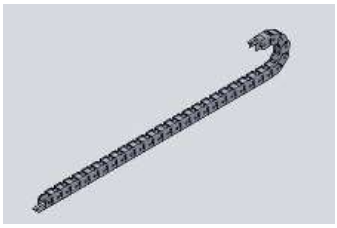
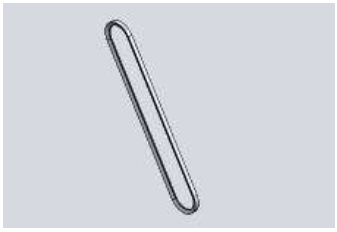
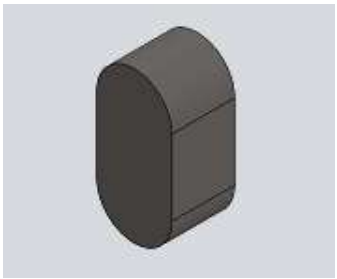
Please notices:

The figures quoted are emission levels and are not necessarily safe working levels. Whilst there is a correlation between the emission and exposure levels, this cannot be used reliably to determine whether or not further precautions are required. Factors that influence the actual level of exposure of the workforce include characteristics of the work room, the other sources of noise, etc. i.e. the number of machines and other adjacent processes.

Also, the permissible exposure level can vary from country to country. This information, however, will enable the user of the machine to make a better evaluation of the hazard and risk.

4. Damageable Parts

Table 4-1 Damageable Parts

Position	Name	Drawing No./Model	Image
Dual Flap Sander	pulley	SPB-125X2	
Dual Flap Sander	Protective drag chain	CBO-0-30	
Dual Flap Sander	belt	SPB-1450	
Dual Flap Sander	Double round key	12x24x8	

5. Consumable Parts

Table 5-1 Consumable Parts List			
Position	Name	Drawing No./Model	Image
Dual Flap Sander	Dual Flap Sander	D350*50.8mm	

6. Air Pressure Unit

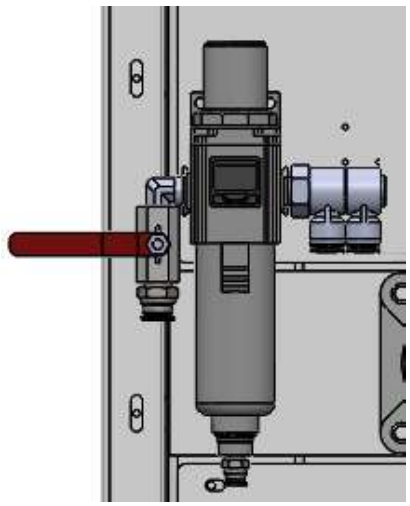
For the functions of the air compressor unit of this machine, please refer to the schematic diagram. Machine operators should perform regular inspections according to specifications.

6-1 Air Compressing Conditioning Assembly

Specification: GAFR30010ASNK (AirTAC)

Maximum working pressure: 1.0Mpa (145psi)

Adjustable pressure range: 0.03~0.7MPa



(a) The air pressure source should not be less than 5.5kg/cm2 (78psi)

(b) Although the water filter in the three-point conditioning unit is automatic, operators should check daily during downtime to ensure no water accumulation.

This helps prevent the potential failure of the automatic drainage system, which could lead to water vapor entering the air pressure components and affecting their lifespan.

(c) Operators should always pay attention to any hissing noises in the air pressure pipelines which might indicate a leak at an air pressure joint,

and inspection should be carried out. The machine uses quick connectors for its piping. The disassembly method is as follows:

The nylon tube can be directly inserted into the quick connector, and it can be pulled out by pressing the fixing ring with your fingers or a flat screwdriver. (as shown in the picture)

6-2 Air Pressure Conditioning Unit Troubleshooting

Problem	Cause	Solution
Reduced air pressure output	Filter obstruction	Clean the filter
Air leakage	1. The nut is loose 2. O-ring damaged 3. Broken pipe	1. Tighten the nut 2. Replace the O-ring 3. Replace the pipe
Pressure regulator cannot function	Damaged pressure regulator 1. The pressure regulator spring is broken 2. Valve spring broken 3. Dust or dirt attached to the valve seat 4. Damage to the valve lining surface 5. Diaphragm rupture	1. Replace the spring Replace the spring 3. Clean valve and valve seat 4. Replace the valve 5. Replace the diaphragm
The secondary pressure side fails to reach the desired pressure.	1. Valve seat is stained with dust, and the secondary pressure side fails and the desired pressure cannot be achieved 2. Rubber on the lining surface is damaged and the desired pressure cannot be achieved 3. Valve spring broken	1. Clean valve and valve seat 2. Replace the cabinet 3. Replace the spring
Air leaks from the small holes on the edge of the cap	Cracked gasket	Replace the gasket
Air leaks from the cap	1. The hat-shaped cover screw is loose 2. Cracked gasket	1. Tighten the screws 2. Replace the gasket

7. Equipment System Operation Instructions

1. Please refer to the electronic control circuit diagram for the functions of the electronic control unit of this machine. The machine operator is also required to regularly check the status of each item.
2. Do not operate, maintain, or repair the system without having read and understood the safety regulations and user manual.
3. Before operation, make sure there are no foreign objects or personnel around or inside the machine. This is for preventing accidents, danger, or damage during system operation.
4. During operation, only authorized personnel may operate the system. Unauthorized entry is strictly prohibited to avoid accidentally activating switches (e.g., touching, stepping on, or pressing the switches), which could lead to wrong actions and unexpected accidents such as items falling or injury.
5. During operation, please do not load items that are not intended to be transported by the system. Such actions may cause damage to the system machinery or the loaded items to fall, which may lead to unexpected dangers and losses.
6. When the system is running, it is strictly forbidden to put hands, feet, or other objects into the system's operating machinery, which is to prevent serious injuries to personnel and objects.

7. Keep the area around the system clean to prevent slips or falls that may lead to unpredictable personnel injuries.
8. When it is necessary to enter the system for maintenance or repair, be sure to perform the following:

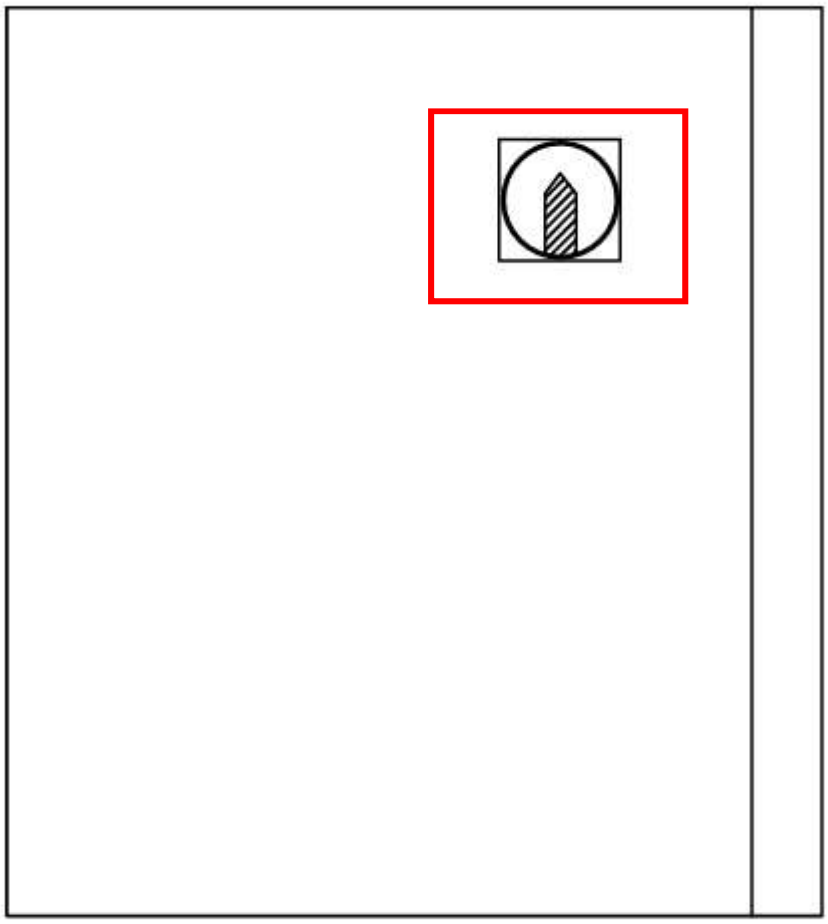
   A. Remove all objects (including the clamping jaws) from the machine to be repaired.

   B. Turn off the system power and buckle the emergency stop button.

   C. Only proceed with maintenance after confirming the above steps to ensure personnel safety.
9. In case of a power outage, be sure to disconnect the power. Failure to disconnect the power may result in unexpected accidents when power is restored.
10. When the equipment is in operation, non-operators are strictly prohibited from approaching the machine.

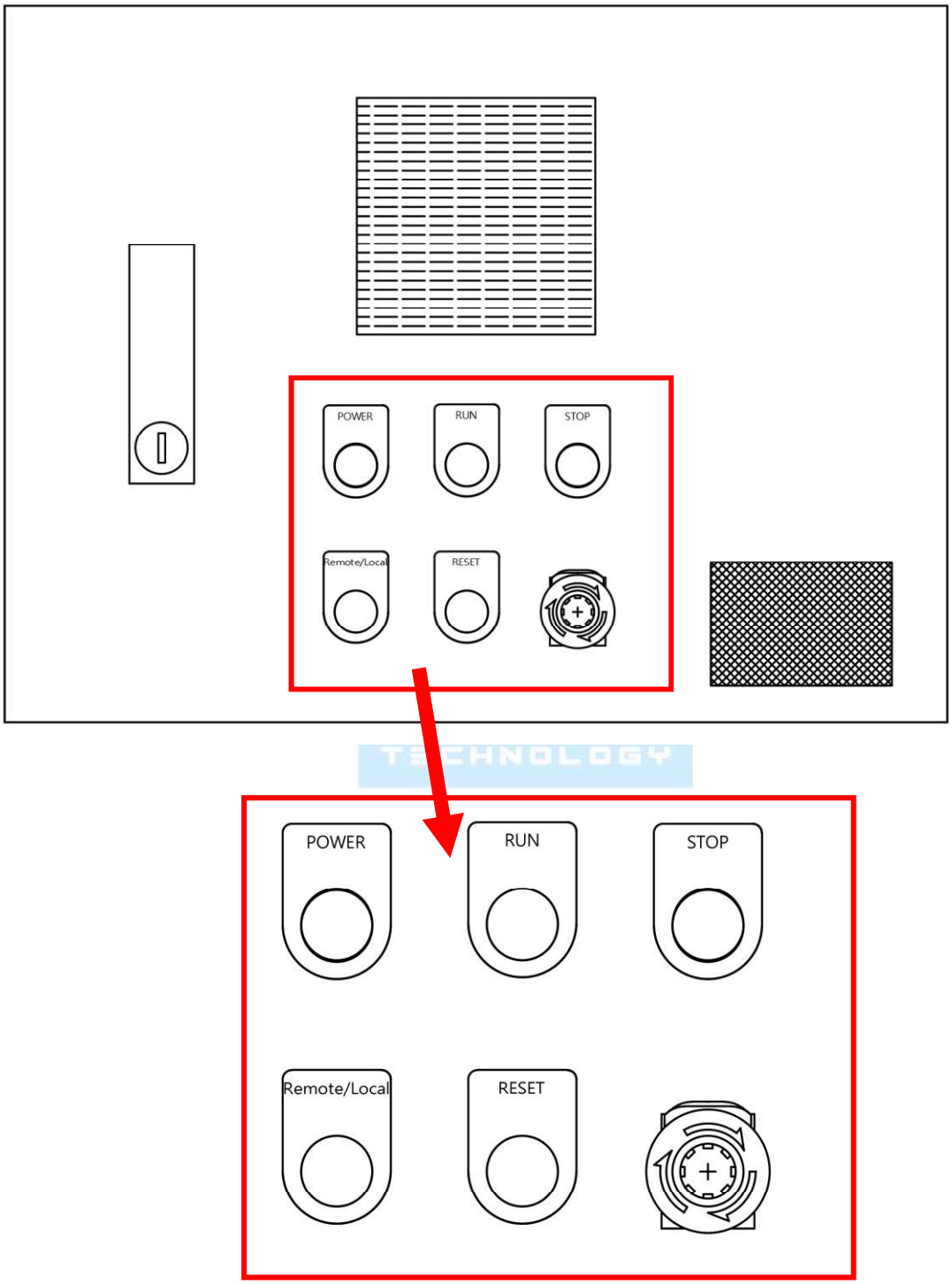
7-1 Indicator Lights and Button Operation Instructions

1. Power switch



Description: After confirming that the circuit breaker inside the box is open, close the electrical control box door, and then switch the source power switch, located in the red frame of the schematic, from OFF to ON.

2. Panel operation buttons



Description:

1. POWER: When there is power from the source, this indicator light will turn on.

2. Remote/Local: This is the mode switch knob. When the knob switch is switched to the Remote position, the operation of the belt sander and other signals are controlled by external devices. When switched to Local, the RUN and STOP buttons can be operated.

3. RUN: When the belt sander is in Local mode, press this button and the belt sander motor will start running.

4. STOP: When the belt sander is in Local mode, pressing this button will stop the motor and halt the operation of the belt sander.

5. RESET: When there is any inverter fault in the belt sander, refer to the inverter manual to troubleshoot the issue. After resolving the fault, press this button to reset.

6. EMS button: In case of any emergency or abnormality, please press this emergency stop button.

   ※When the EMS button is pressed, the belt sander will come to a complete stop within 15 seconds.

7-2 Electrical Control Circuit Diagram

See Appendix 2

7-3 Installation Guide for Connectors

1. The connector location is indicated by the red circle on the equipment.

2. There are two connectors: the power connector and the control connector. The details are as follows:

2-1. **Power connector**：Responsible for supplying power to the belt sander. Please refer to Appendix 2 – Electrical Circuit Diagram for the connector pin configuration.

2-2. **Control Connector** : Allows basic operation of the belt sander to be controlled by an external device (in Remote mode). **If no external device (e.g., PLC) is connected, the connector must remain plugged in to ensure the safety circuit remains properly connected**. Please refer to Appendix 2 – Electrical Circuit Diagram for the connector pin configuration.