



**ISTRUZIONI D'USO  
INSTRUCTION MANUAL  
BEDIENUNGSANLEITUNG  
MANUEL D'INSTRUCTION**

**ORION**



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# USE AND MAINTENANCE HANDBOOK

**Danger:** means Serious injury or death may result if users or others fail to observe the Danger signs on the machine or in this handbook. Read and respect all Danger signs on the machine or in the handbook.

**Warning:** means Injury may result if users or others fail to observe the WARNINGS on the machine or in this handbook. Read and respect all WARNINGS on the machine or in the handbook

**Caution:** means Damage may result if users or others fail to observe the Caution signs on the machine. Read and respect all Caution signs on the machine

## **1. STORAGE**

We recommend storing the machine without removing it from its original packaging to allow up to a maximum of two packages to be stacked one on top of the other.

If the machine is removed from its original packaging and not used for long periods the wheels and the roller must be raised from the ground. Set the machine on two blocks at least 50 cm high, making sure the base is supported by them.

Store the machine in a dry place. Storage in damp conditions will result in damage to the machine.

Storage temperature -20°C to 50°C.

## **2. TRANSPORTING AND HANDLING THE MACHINE**

**Warning:** Since the machine is heavy, remove the motor before transport. Ask for help lifting the machine and motor.

### **TRANSPORT BY ONE PERSON**

To facilitate transport, the machine can be disassembled into three parts:

- motor
- suction pipe and handle group
- base with roller

proceed as follows:

1. Check that the main lead is disconnected from the main supply and the machine.
2. Open the belt guard after removing the fastening screws using the screwdriver provided.
3. Loosen the belt tensioner using the lever (pos. 2 fig. A) and remove the belts.
4. Loosen the hex screw (pos. 3 fig. A) until the washers on the motor bearing shaft drop out of their seats in the bearings.
5. Remove the motor and transport it to the workplace.
6. After having lowered the lever (pos. 4 fig. A) lift the pipe up (pos. 5) and free the rod (pos. 8) from the tube (pos. 6).
7. Loosen the handle (pos. 11 fig. A) and slide the pipe out of its seat. Transport it to the workplace.



8. Lift the base using the front and back as grip points. Lift the belt guards to chest height and transport to the workplace.

### **TRANSPORT BY TWO PERSONS**

Should to people carry the machine, proceed as follows:

1. One person should hold the grips on the handle.
2. The second one should lift the machine by the handle (pos. 1 fig. A).

## **3. BEFORE STARTING**

### **ASSEMBLY INSTRUCTIONS (AFTER TRANSPORT)**

To reassemble the machine after transport proceed as follows:

1. Open the belt guards.
2. Fit the motor into its mounting points and tighten the hex nut (pos. 3 fig. A).
3. Fit the belts, tighten them and close the belt guards, tightening the relevant screw.

**Caution:** The bearings will wear out prematurely if the belts are too tight.  
The roller belt must have around 8 mm play with a load at centre of  $30 \pm 3$  N. Belt tension can be adjusted by means of the screw (pos. 7 fig. A)  
The suction drive belt must have 8 mm play with a load at centre of  $18 \pm 2$  N. Belt tension can be adjusted by means of the relative belt tensioner.

**Danger:** Using the machine when not fully assembled may result in damage and/or personal injury. Do not use the machine if incompletely assembled. Keep all guards closed. Keep machine adjusted as specified.

4. Fit the suction pipe and the roller control rod.
5. Raise the roller by the lever (pos. 4 fig. A).
6. Connect the main lead to the machine and to the main supply.

### **ELECTRICAL CONNECTIONS**

**Caution:** The machine is designed to operate exclusively at the voltage and frequency indicated on the machine information plate. Check that the power supply corresponds to these values before connecting the main lead.

**Warning:** Exposing the machine to water or rain constitutes a risk of electric shock. Use and store the machine in a dry place.

**Danger:** Incorrect connection to the main supply constitutes a risk of electric shock. To prevent electric shock always use a three pole supply connected to a suitable electrical earth. For maximum shock protection use a supply fitted with a differential cut-out switch.

**Danger:** Tampering in any way with the earth pin may cause electric shock. Do not cut, remove or break the earth wire. Do not try to fit a three-pin plug into anything other than a three-pin socket. If the plug doesn't fit the socket, contact an authorised electrician.

**Danger:** Using the machine with a damaged plug or mains lead constitutes a risk of electric shock. If leads or plugs are worn out or damaged in any way, have them replaced by the manufacturer, a K&T authorised dealer or qualified personnel to minimise risk.



## **MAIN LEADS, EXTENSIONS AND PLUGS**

Use only approved three-ply cable with live, neutral and earth.

Maximum recommended main lead length 10 m. For lengths over 10 m use heavier cable section

**Danger:** Using mains leads with inadequate section and/or of excessive length may result in damage and/or personal injury

## **SINGLE PHASE MOTOR MACHINE 230 V~ 50/60 Hz**

For Europe the main lead must be HAR approved type HO5VV-3x2.5 mm<sup>2</sup> and the plug must be approved type 2P+T 16A 200-250V.

## **THREE-PHASE MOTOR MACHINE 400 V3~ 50 Hz**

Use only approved four-ply cable with live, neutral and earth.

For Europe the main lead must be HAR approved type HO5VV-4x2.5 mm<sup>2</sup> and the plug must be approved type 3P+T 16A 380-415V.

**For non-European versions contact an authorised K&T dealer**

## **INSTRUCTIONS TO REMOVE THE SAWDUST PRODUCED DURING WORK**

**Danger:** Sawdust is inflammable and may ignite spontaneously causing injury or damage. Sawdust must be correctly disposed of. Always empty sawdust into metal containers situated in the open air

**Danger:** Sawdust is inflammable and may ignite spontaneously causing injury or damage. Empty the dust bag when it is 1/3 full. Empty the dust bag every time you finish using the machine. Do not abandon dust bags full of sawdust. Do not empty the contents of the dust bag over a fire.

## **4. USER SAFETY RECOMMENDATIONS**

### **PERSONAL SAFETY**

**Warning:** Sawdust may leak into the air and be breathed in when using the machine. Always wear a dust filter face mask when using the sander.

**Warning:** Failure to wear eye protection and protective clothing may result in injury while sanding. Always wear safety goggles, protective clothing and face mask when using the machine.

**Warning** Long exposure to the high noise level produced by the machine in operation may cause ear damage. Always wear ear plugs when using the sander.

### **COMPLIANCE WITH SAFETY STANDARDS**

**Danger:** Using the machine if not fully assembled may result in damage and/or personal injury. Do not use the machine if incompletely assembled. Keep all guards closed. Maintain machine adjustment as specified

**Danger:** Damage or injury may result if the sander is used without guards and covers in place. Always check that all guards and covers are in place and well fastened.

**Danger:** Sanding wooden floors may generate an explosive environment. Cigarettes, cigars, lighters, pilot lights and any other naked light may trigger an explosion if used when sanding. Do not use naked lights in the working area.

**Danger:** Poorly ventilated working areas may generate an explosive environment in the presence of volatile materials such as solvents, alcohol, fuel, certain paints, sawdust and other flammable materials. Floor sanding machines can ignite flammable mate-



rials and fumes. Read the instructions on any chemical products used to determine their flammability. Keep the working area well ventilated.

**Danger:** Contact with nails when sanding may generate sparks and cause fire. Always flatten or remove all nails before sanding the floor.

**Danger:** Electric shock may result if the power supply cuts out repeatedly due to overload. Have fuses, overload cut-out and main circuit checked by an authorised electrician.

**Danger:** Electric shock may result if maintenance and/or repairs are carried out on the machine while it is connected to the main supply. Disconnect the mains before carrying out any form of maintenance and/or repairs.

**Danger:** Using the machine with an unearthed main supply may result in electric shock. Never disconnect or disable the earth circuit. Consult an electrician if no earth circuit is present or if the circuit is thought to be inadequately earthed.

**Danger:** Using the machine with a damaged main lead may result in electric shock. Do not use the machine if the main lead is damaged. Do not pull the machine by the main lead.

**Danger:** Injury or death by electric shock may result if the sander passes over the main lead or damages it. Keep the main lead away from the lower part of the machine to avoid contact with the abrasive. Always keep the main lead above the machine.

**Danger:** Moving parts may cause damage and/or serious injury. Keep hands, feet and loose clothing away from all moving parts of the sander.

**Danger:** Carrying out maintenance or emptying the dust bag may result in injury to the user and any others present if the machine is connected to the main supply.

**Warning:** Failure to follow all the instructions contained in this handbook may result in serious injury and/or damage. Read and observe all safety instructions. Check that all information plates, warning and cautions labels and instructions are present on the machine. For new plates contact your authorised K&T dealer.

**Caution:** Maintenance and repairs carried out by unauthorised persons may result in damage and/or personal injury.

**Caution:** Storing the machine in a damp environment will result in damage. Store the machine in a dry place.

### **INSTRUCTIONS FOR CORRECT USE**

The appliance is suitable for commercial use, for example in hotels, schools, hospitals, offices, factories and shops.

The information that follows highlights potentially hazardous conditions for the user and/or the machine itself. Read the handbook carefully to get to know the machine and recognise when such conditions may arise. Use all safety systems provided on the machine. Personnel must be trained before using the machine. Immediately report any damage to the machine or maloperation.

1. Keep hands and clothing away from moving parts.
2. Keep hands on the handle while the motor is running.
3. Do not abandon the machine with the motor running
4. Do not use the machine with drive belt guards or sanding belt covers open.
5. Always use the machine with the dust bag correctly fitted.
6. Do not remove the dust bag with the motor running.

7. Always disconnect the machine from the main lead before carrying out maintenance.
8. Given the weight of individual machine components, always use caution during transport.
9. Only use the machine in well ventilated areas.
10. Always use the dust bag as instructed (see page 8).
11. Always use the sanding belts provided with the machine or of the type specified in the handbook.
12. Lower the roller using the lever (pos. 4 fig A) only with the motor running and raise it before switching the motor off.
13. Use the machine indoor.

## 5. MACHINE SPECIFICATIONS

Sanding belt size	690 X 250 mm
Roller width	250 mm
Roller diameter	185 mm
Roller speed	at 50 Hz 1800/2050 rpm at 60 Hz 2000/2250 rpm
Motor	(A34) Europe 230 V AC, 50 Hz 2.99 kW (A50) Europe 400 V3 AC, 50 Hz 2.99 kW (A35) USA 220 V AC, 60 Hz 3 kW
Control lever	On handle
Level control	Cam on wheel
Motor protection	After power failure the motor does not restart automatically
Wheels	Ø 112 mm and 87 mm replaceable
Bearings	Permanent lube radial ball
Roller pressure adjustment	Infinite adjustment
Noise (continuous weighted A sound pressure measure at 0.4 m from grip and 1.5 m from floor level)	87.5 dB (A)
Machine dimensions	1045 x 430 x 980 mm
Net weight	85 kg
Package dimension	760 x 536 x 830 mm
Gross weight	97 kg
Standard equipment	Dust bag, plug, spanner, use and maintenance handbook



## 6. INSTRUCTIONS FOR USE

### INCORRECT USE

**Caution:** Using the machine to push other objects or on an incline may result in damage and/or personal injury. The machine must be used exclusively to sand dry wooden floors that are flat or with a maximum incline of 2%. Do not use the machine to sand steps or furniture. Do not ride the machine

**Caution:** Allowing the machine to remain stationary in one point with the roller running will result in serious damage to the floor being sanded. To prevent damage to the floor always approach the stopping point gently. Do not pause when raising or lowering the roller, but always advance at a constant speed.

## 7. STARTING THE MACHINE

To start the machine proceed as follows:

1. Get to know the machine and read all instructions regarding potential dangers, warnings and precautions. Make sure that all users have read this handbook.
2. Fit the dust bag on the tube bend and secure by tying the wire above the flange.
3. Locate the main supply. The socket must be compatible with the plug. To prevent electrical hazards the socket must be earthed and fitted with a 20A fuse.
4. Wind the lead onto the supports provided. Keep the lead out of the way of the machine.
5. Open the side guard fig. C pos. 1.
6. Fit the sanding belt, as described in **"FITTING THE ABRASIVE SHEET"**

**Warning:** Only use 250 x 690 mm sanding paper Fig.D

7. Check that the lever (pos. 4 fig. A) is engaged and the roller raised from the floor.
  8. Connect the socket-plug.
  9. Starting the machine:
    - a) **SINGLE PHASE MOTOR**  
Turn the switch (pos. 1 fig. B) from 0 to START and hold it until the motor has reached sufficient speed. Then release the switch, which automatically returns to working position 1.  
To stop the machine, turn the switch from position 1 to pos. 0.
    - b) **THREE-PHASE MOTOR**  
Turn the motion inverter switch to position 1, then press the START button. Check that the roller turns in the direction indicated on the belt cover. If it does not, switch the machine off (STOP button), turn the motion inverter switch from position 1 to position 2. Press START.  
To stop the machine press the STOP button.
- Danger:** Using the machine with roller direction other than indicated will result in damage and/or personal injury

**Warning:** This machine is fitted with a safety switch. In the event of power failure during use, the switch automatically cuts-out to prevent accidental restart when power is restored. To continue working, repeat the starting procedure described above.



## **8. ADJUSTING THE MACHINE**

### **FITTING THE ABRASIVE SHEET**

The abrasive sheet should be cut to the size indicated in fig. D. It must be cut at a slant as shown in the figure. Open the side guard (pos. 1 fig. C) and lift the front guard of the roller up (pos. 2 fig. C). Use suitable spanners to rotate the two tensioner shafts (pos. 2 and 3 fig. E) until the two surfaces on the shafts are facing each other. Insert one edge of the abrasive sheet about 2/3 of the way into the slot on the roller and rotate it making sure the abrasive adheres to the rubber. After completing one turn, insert the other edge of the abrasive sheet until it is uniformly tight. Then extract the two edges by about 5 mm from the slot as shown in fig. F. Turn the tensioner shafts in opposite directions to obtain uniform abrasive tension. Once finished, the surfaces of the tensioners (P) should be as shown in fig. F.

If after completing the above operation the abrasive sheet is not uniformly tight, the operation must be repeated, re-inserting the abrasive by the amount needed to achieve uniform tension. The above procedure is for coarse grain abrasive sheets (31/2 -20 -24). For medium and fine grain paper (36-60-80 etc.) several layers of abrasive, the full width of the roller and about 30 mm long, must be inserted between the tensioners to make up for the difference in thickness between coarse grain and fine grain paper.

**Warning:** In the correct position the abrasive sheet protrudes by approx. 1.5 mm from the roller edge.

**Danger:** Using loosely fitted or damaged abrasive may cause damage to the machine and the floor by tearing when sanding.

### **SANDING PRESSURE ADJUSTMENT**

Adjust the pressure the roller exerts on the floor using the handwheel (pos. 9 fig. A) as follows:

1. Turn the wheel clockwise to decrease pressure on floor.
2. Turn the wheel anti-clockwise to increase pressure.

### **FLOOR EDGE WHEEL**

The machine is fitted with a free wheel (pos. 10 fig. 1) to prevent damage to skirtings or walls while sanding the floor edge.

**Warning:** In the correct position the floor edge wheel gives the machine approx. 8 mm clearance when in contact with the wall.

Before starting work set the wheel to the correct position by loosening the screw (pos. 3 fig. G), moving the wheel to the desired position and re-tightening the screw.

### **ADJUSTING THE WHEELS** (parallel to roller axis)

To adjust wheel alignment proceed as follows:

1. Loosen the locknut (pos. 1 fig. G).
2. Turning the screws (pos. 2 fig. G) clockwise raises the guard side end of the roller from the floor.
3. Turning the screws (pos. 2 fig. G) anti-clockwise lowers the guard side end of the roller toward the floor.
4. Once adjusted to the correct position, re-tighten the locknut (pos. 1 fig. G).



## 9. PERIODIC MAINTENANCE

To keep the machine in good working order, the following items must be periodically checked and maintained.

### SANDING BOX (users)

Periodically clean out the sawdust accumulated in the box.

### DRUMS (users)

Periodically check the external surface of the roller. Remove any accumulated dirt.

### WHEELS (users)

Periodically remove any dirt from the machine casing and wheels. Accumulated dirt may cause undulations on the surface being sanded.

### DUST BAG (users)

Remove the dust bag and shake it vigorously to remove the collected sawdust. Turn the bag inside out and wash it in the washing machine in cold water to prevent pore blockage which decreases dust suction capacity.

### BELT TENSION (users)

Periodically check belt tension. For adjustment procedure see page 7 (BEFORE STARTING)

### BEARINGS (maintenance personnel only)

Periodically check bearings for wear out or damage:

Wheels	after the first 2500 working hours
Tensioner pulley	after the first 2500 working hours
Fan drive shaft	after the first 2500 working hours
Sanding roller	after the first 5000 working hours
Motor shaft	after the first 5000 working hours

## 10. REPLACEMENT PARTS

Always use original K&T replacement parts. The guarantee and all consequent liability will be forfeited if non-original K&T parts are used or repairs are carried out by unauthorised persons.



## 11. TROUBLESHOOTING (USERS)

PROBLEM	CAUSE	REMEDY
Insufficient sanding depth	Sanding belt worn or unsuitable	Replace sanding belt
	Insufficient roller pressure	Increase roller pressure see "Sanding pressure adjustment"
	Insufficient roller belt tension	Increase belt tension see "Assembly instructions"
	Roller belt worn	Replace belt
Motor speed too low	Insufficient voltage due to:	
	excessive length or unsuitable section of power cables	Use cables with adequate section and length
	poor connections	Use suitable plugs and sockets
	power condenser defective	Contact an authorised K&T dealer
	motor defective	Contact an authorised K&T dealer
Working surface scored	Defective sanding belt	Replace sanding belt
	Roller surfaces soiled or defective	Clean roller surfaces
		Clean, adjust or replace the rubber lined roller
	Wheels badly adjusted	Adjust wheel position see "Adjusting the wheels"
Insufficient dust suction	Dust bag over 1/3 full	Empty the bag
	Dust bag dirty or with blocked pores	Shake out dust and wash bag
	Suction/delivery pipe obstructed	Clean air pipes
	Defective switch or safety device	Contact an authorised K&T dealer
Motor does not start	Defective starter condenser	Contact an authorised K&T dealer
	Insufficient voltage due to poor connection	Contact an authorised K&T dealer
	Defective motor	Contact an authorised K&T dealer
	No power	Check power supply and connections
	Sanding belt worn	Replace the sanding paper
Working surface scorched	Excessive sanding pressure	Increase roller pressure see "Sanding pressure adjustment"
	Abrasive too fine	Use coarser abrasive



# DECLARATION OF CONFORMITY

<p><b>EC DECLARATION OF CONFORMITY</b> <b>73/23CEE, 98/37CEE, 89/336/CEE,</b> <b>92/31/CEE.</b></p>
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**We**

**KUNZLE & TASIN S.P.A.**

Accounting office : Via C. Freguglia 4  
20122 Milano - Italy

**declare under our responsibility that the product**

**ORION DRUM SANDER**

**to which this declaration relates is in conformity with the following standards or other normative document(s):**

- Safety of machinery - Basic concepts, general principles for design  
Basic terminology, methodology EN 292 Part 1 (1991)
- Safety of machinery - Basic concepts, general principles for design  
Technical principles and specification EN 292 Part 2 (1991)
- Safety of machinery - Electrical equipment of machines  
Part 1 : General requirements EN 60204-1 (1997)
- Safety of household and electrical appliances - General requirements  
EN 60 335-1 (1994) + A12, A13, A14,
- Particular requirement for floor treatment and floor cleaning machine for industrial and commercial use – EN 60 335-2-67 (1998)
- Electromagnetic compatibility (EMC)
- Limits and methods of measurements of radio disturbance characteristics of electrical motor-operated and thermal appliances for households and similar purposes, electric tools and similar electric apparatus - EN 55014-1 (1993) + A1, A2
- Part 3: Limits. - Section 2: Limits for harmonic current emissions (equipment input current  $\leq 16$  A per phase) - EN 61000-3-2 (1995) + A12, A1, A2, A14
- Part 3: Limits. - Section 11: Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current  $\geq 16$  A. EN 61000-3-11 (2000)

**following the provisions of the Directives:**

**73/23CEE, 98/37/CEE, 89/336/CEE, CEE 92/31/CEE.**

\_\_\_\_\_  
(place and date of emission)

\_\_\_\_\_  
(signature)