RJH FINISHING SYSTEMS

CHAMOIS BUFFING MACHINE

OPERATIONS MANUAL

DECLARATION OF CONFORMITY

We the company:

RJH FINISHING SYSTEMS LTD
Artillery Street, Heckmondwike, West Yorkshire, United Kingdom, WF16 0NR
Tel: +44 1924 402 490 Fax: +44 1924 404 635

Hereby declare that:

MODEL NUMBER:

☐ PL2001S	☐ PL2001SP	☐ PL2001SE
	☐ INDPL2001SP	☐ INDPL2001SE
☐ PL2003S	☐ PL2003SP	☐ PL2003SE
	☐ INDPL2003SP	☐ INDPL2003SE
☐ PL2001T	☐ PL2001TP	☐ PL2001TE
	☐ INDPL2001TP	☐ INDPL2001TE
☐ PL2003T	☐ PL2003TP	☐ PL2003TE
	☐ INDPL2003TP	☐ INDPL2003TE

SERIAL NUMBER:
DATE OF ISSUE:

Complies with the following directives:

2006/42/EC	Machinery Directive
2004/108/EC	Electromagnetic Compatibility Directive (EMC)

The following harmonised standards have been applied

Ref. N°:	**Title:**	**Edition/Date**
BS EN ISO 12100	Safety of Machinery - General principles for design	2010
BS EN ISO 13857	Safety of Machinery - Safety distances to prevent hazard zones being reached	2008
BS EN ISO 13850	Safety of Machinery - Emergency stop principles for design	2008
BS EN 614-1	Safety of Machinery - Ergonomic design principles	2006
BS EN 60204-1	Safety of Machinery - Electrical equipment of machines general requirements	2006 + A1:2009

Signed: 

G. Minton
General Manager
For and on behalf of RJH Finishing Systems ltd

DECLARATION OF CONFORMITY

Technical documentation required to demonstrate that the product meets the aforementioned directives has been compiled and is held by the technical document holder at the registered office above.

TECHNICAL DOCUMENTATION HOLDER:

Signed: 

G. Minton

Managing Director

ATTENTION

Please read manual carefully before attempting to install/operate the machine as incorrect use may result in damage to the machine and/or operating personnel. If clarification is required on any subject contained within please contact RJH Finishing Systems ltd.

As an integral part of the machine, this operations manual should accompany the machine during its lifetime of at least 10 years from the installation date to assist both current proprietor and/or future proprietors.

RJH Finishing Systems ltd reserve the right to modify machines without prior notice, therefore your machine may differ slightly to the exhibits shown in this manual.

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GENERAL DESCRIPTION

Designed as a dual end buffing machine, suitable for light applications that is intended to be used by well trained, skilled and semi-skilled operators whilst in a standing position for short to frequent periods of time.

Machines are powered by a singular motor ranging from 0.7 to 1.25Kw, onto which the buffing media is mounted by means of an extension. A comprehensive guarding system with integrated dust outlets, that provide a means of connection to either a stand alone or centralised dust extraction system capable of providing a transport velocity of 20m/s^2.

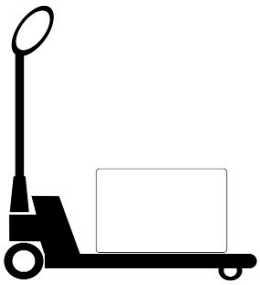
Derived from a standard product that has been supplied into the market place for many decades with an excellent safety record.

TRANSPORTATION

PACKED WEIGHT (kg)			
1500rpm MACHINE	WEIGHT	3000rpm MACHINE	WEIGHT
O PL2001S	40	O PL2003S	35
O PL2001SP	64	O PL2003SP	59
O PL2001SE	93	O PL2003SE	87
O PL2001T	40	O PL2003T	35
O PL2001TP	64	O PL2003TP	59
O PL2001TE	93	O PL2003TE	87
O INDPL2001SP	69	O INDPL2003SP	64
O INDPL2001SE	99	O INDPL2003SE	93
O INDPL2001TP	69	O INDPL2003TP	64
O INDPL2001TE	99	O INDPL2003TE	93

Machines are supplied either boxed and strapped or bolted to a standard wooden pallet so that it can be lifted, transported and positioned by means of a mechanical aid such as fork lift truck or pallet truck.

To avoid damage during transportation, keep the machine in its original packaging at an ambient temperature of -20 to +60°C.



Transportation sketch

STORAGE

Machines are to be stored in their original packaging, in a controlled environment with ambient temperature -20 to +60°C and relative humidity *(RH)* within 0-90% non condensing.

If the machine is moved from a cold *(storage)* room and installed in its final working position, condensation can occur. This can result in sensitive components becoming damp.

Do not connect input supply until all visible condensation has evaporated.

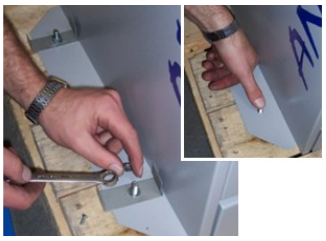
SAFE HANDLING

OFFLOADING

(Bench/Pedestal models) Position the machine close to its intended working area and remove packaging. It is recommended that the machine be offloaded by means of a sling placed under the end caps either side of the motor as shown.

(Extraction models) Position the machine close to the intended working area, remove packaging to expose four pallet retaining bolts. Once four pallet retaining bolts have been removed, it is recommended that the machine be offloaded as indicated below

1. Remove the two base covers to expose transit bolts.



2. Release & Remove the transit bolts (see insert).

3. Position Fork Lift extensions in-line with the pallet top.

4. Slide the machine onto the Fork Lift extensions.

5. With the machine sat stable on the Fork Lift extensions lower to the ground.

6. Slide the machine off the Fork Lift extensions onto the ground.

NOTICE: machines with an abrasive belt configuration have a higher than normal centre of gravity, therefore abrasive belt guards should be lowered to the floor before manoeuvring the machine.

NOTICE: for protection during transit certain components may have been packed separately.

IMPORTANT: great care must always be taken when moving machines as to prevent injury & damage. This must only be attempted by trained personnel. Machines should be installed as soon as possible after being unpacked.

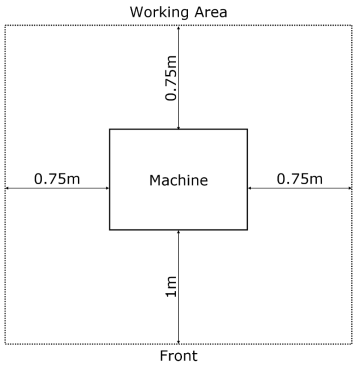
REQUIREMENTS OF OPERATING ENVIRONMENT

The machine is designed for operation within the following environment

- Ambient temperature range of 0-40^{O}C
- Relative humidity *(RH)* not exceeding 65%
- Altitude of 0-1000m above sea level
- Working environment illuminated to a minimum 500lux
- Clean environment with a clear working area

INSTALLATION

INSTALLATION



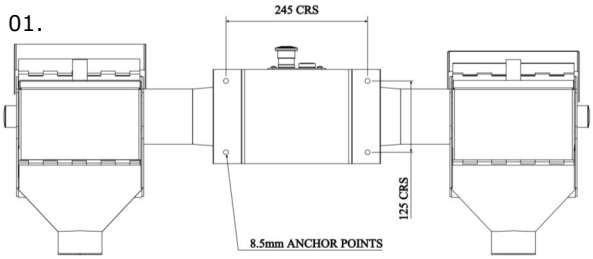
(Bench models) Position and secure the machine to a substantial work bench, through anchor points provided using suitable fixings of 8mm diameter and length *x1.5* longer than the bench top depth *for example* 50mm bench top = 75mm long fastener

(Mounted models) Are to be placed on a substantial and level concrete floor with a clear working area. It is recommended that for general operation an area of 1 metre be made available at the front of the machine whilst a further 0.75 metres be left to the sides and rear for general maintenance procedures as illustrated.

Position the machine so that the working area is free from obstruction, it can then be anchored through anchor points provided *(shown)* using proprietary fixings *(rawl bolts etc..,)* of diameter 8mm and minimum length 75mm *(dust mounted)* or diameter 12mm and minimum length 120mm *(pedestal mounted)*. It is also recommended that proprietary anti-vibration mounts be used.

Machines without an integral dust extraction system should be connected to an appropriate and suitably sized external extraction system using dust outlets provided, in order to increase the machines longevity and comply with local health and safety regulations.

01.



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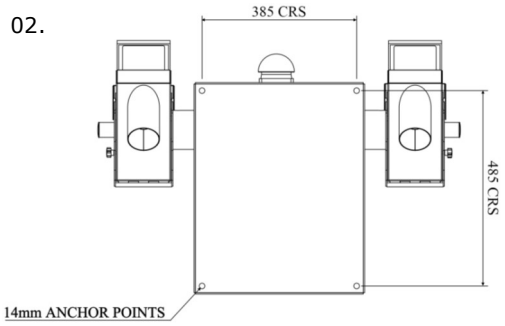

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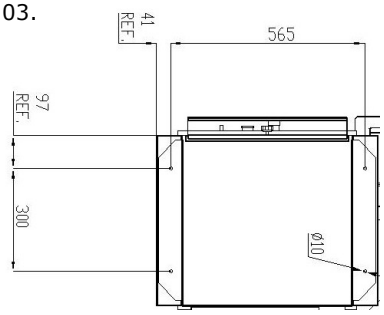


key

01. Bench mounted models
02. Pedestal mounted models
03. Extraction mounted models

IMPORTANT: all electrical procedures undertaken *must* be carried out by a qualified technician.

WARNING: once an electrical connection is made the unit will remain live until isolated at the input power supply

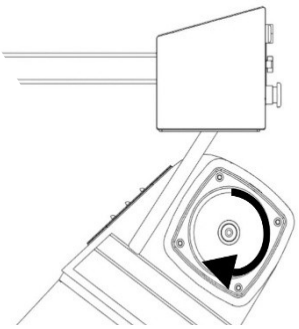
CONNECTION OF ELECTRICAL SUPPLY

Ensure input power supply is in keeping with the machines electrical requirements *(voltage, phase & frequency)*. Ratings can be found at the back of the machine on the serial number plate or in the electrical ratings table.

Incoming supplies must have an earth connection provided, whilst being kept separate from the control and signal cables. Connection to a 3 phase input power supply of *400v, 50Hz, 10amp* capacity via a fused isolator, located no further than 2 metres from the machine, though 1 metre is recommended.

Once an electrical connection has been made it is important to check that the shaft/consumable is rotating in the correct direction as outlined:

- Ensure latched emergency stops are released and guard doors closed
- Activate run mode by pressing the green start button followed immediately by the red stop button to activate a rundown condition
- During this rundown condition it should be observed that the shaft/consumable is rotating downwards *(towards floor)* as indicated when viewed from the operating position
- Should the shaft/consumable rotate upwards *(towards ceiling)* then the incoming connections are incorrect and an electrical intervention would be required



Shaft/Consumable rotational direction

- Disconnect input power supply and alternate two phases before repeating the outlined procedure. Circuit schematics are provided in the technical notes for assistance

ELECTRICAL RATINGS - BENCH/PEDESTAL MOUNTED					
MODEL	KW	RATING	FLC (AMPS)	FUSE RATE (AMPS)	SPEED (RPM)
O PL2001S	0.7	230/1/50	5.0	10	1500
O PL2001SP	0.7	230/1/50	5.0	10	1500
O INDPL2001SP	0.7	230/1/50	5.0	10	1500
O PL2003S	0.7	230/1/50	5.0	13	3000
O PL2003SP	0.7	230/1/50	5.0	13	3000
O INDPL2003SP	0.7	230/1/50	5.0	13	3000

INSTALLATION

ELECTRICAL RATINGS - BENCH/PEDESTAL MOUNTED					
MODEL	KW	RATING	FLC (AMPS)	FUSE RATE (AMPS)	SPEED (RPM)
O PL2001T	1.25	400/3/50	2.9	10	1500
O PL2001TP	1.25	400/3/50	2.9	10	1500
O INDPL2001TP	1.25	400/3/50	2.9	10	1500
O PL2003T	0.85	400/3/50	1.9	10	3000
O PL2003TP	0.85	400/3/50	1.9	10	3000
O INDPL2003TP	0.85	400/3/50	1.9	10	3000

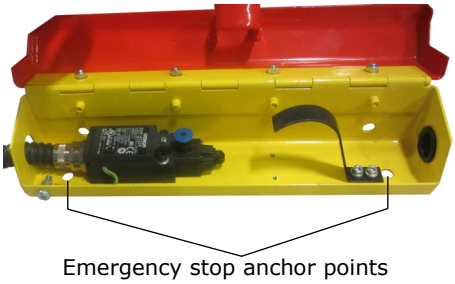
ELECTRICAL RATINGS - EXTRACTION MOUNTED					
MODEL	KW	RATING	FLC (AMPS)	FUSE RATE (AMPS)	SPEED (RPM)
O PL2001SE	1.25	230/1/50	9.8	13	1500
O INDPL2001SE	1.25	230/1/50	9.8	13	1500
O PL2003SE	1.25	230/1/50	9.8	13	1500
O INDPL2003SE	1.25	230/1/50	9.8	13	1500
O PL2001TE	1.8	400/3/50	6.7	10	3000
O INDPL2001TE	1.8	400/3/50	6.7	10	3000
O PL2003TE	1.8	400/3/50	6.7	10	3000
O INDPL2003TE	1.8	400/3/50	6.7	10	3000
1ph Dust Extractor*	0.55	230/1/50	4.8	-	-
3ph Dust Extractor*	0.55	400/3/50	1.9	-	-

* Ratings exclude polishing machine

ANCHORING EMERGENCY FOOTSWITCH

Before the machine can be operated, the emergency footswitch must be anchored to the floor.

- Isolate or disconnect input power supply
- Each emergency stop footswitch should be positioned central to the guard horizontally, whilst being forward of the guard. Ensure the emergency stop footswitch doesn't hinder the operator during normal operation. Lift hinged cover exposing anchor points
- Anchor to a clean and level concrete floor using proprietary fixings *(rawl bolts etc...)*, of size M8 x 75mm minimum length
- Return hinged cover to its operating position and restore input power supply



Emergency stop anchor points

CENTRIFUGAL FAN

The process outlined below will determine which rotational path the centrifugal fan is travelling and whether or not any remedial action is required.

1. Remove flexible hose from guard hood spigot using a n°6 wrench or screwdriver
2. Activate run mode and allow the machine to achieve full operating speed
3. Position an 80mm diameter vane sensor over the hose as shown. Record velocity in m/s
4. Should the centrifugal fan follow the intended rotational path a velocity reading of >20m/s should be achieved. However, readings of <9m/s indicate the centrifugal fan is running backwards, therefore switch two phases and repeat procedure. If this fails to rectify the problem contact manufacturer
5. On completion re-attach and secure flexible hose

SAFETY

SAFETY FEATURES

Supplied in accordance with the European Machinery Directive 2006/42/EC and subsequent amendments, the machine has a number of incorporated safety features, these are as follows:

- Emergency stop push button incorporating a latching turn release mechanism

> *NOTICE:* the emergency stop function on this machine is provided for emergency use only. It is unadvisable to make use of this facility on any other basis since in certain circumstances damage to the machine/components may result

- Low volt appropriately identified *(to BS EN 60204-1)* push buttons and indicators
- Comprehensive guarding system reducing the risk of injury associated with various consumables
- Adjustable polycarbonate eye shields for protection against foreign bodies dispersed during the machining process. These are to be used in combination with approved safety glasses
- *(If fitted)* Knee activated stop bar for when hand operated pushbuttons are not a viable option *for instance* Operator gripping work piece with both hands
- Integral dry dust extraction system "designed to meet the requirements of COSHH/ PUWER". The dust extractor includes the following safety features:
    1. High quality polyester needle felt filter, which when ignited melts in order to self extinguish
    2. Safety mesh between needle felt filter and high pressure backward centrifugal fan

RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT (PPE)

SAFETY GLASSES ARE MANDATORY

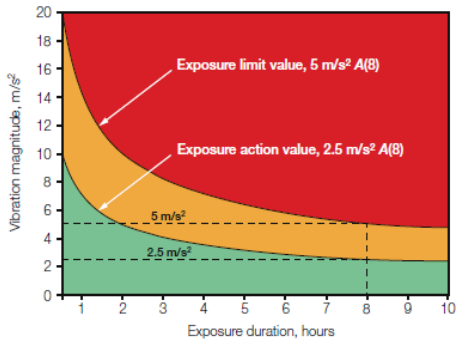
DUST MASKS ARE RECOMMENDED

EAR DEFENDERS ARE RECOMMENDED

VIBRATION

Hand arm vibration syndrome *(HAVS)* is a consideration with all off hand operations and whilst the idling vibration generated is less than the daily exposure action value *(EAV)* of 2.5m/s^2 A(8), levels in excess of this maybe experienced by the operator.

Depending on the nature of the operation, consumable combination, load applied etc.., accelerations in the 3-5m/s^2 range are possible. in such cases, exposure times may need to be



reduced to meet A(8) target limits, typically 5.5 hours for a level of 3m/s^2 and 2 hours for a level of 5m/s^2 maximum as shown.

These values can only be determined by assessment in operation using hand arm monitoring equipment. Regular monitoring of the machine, consumables etc.., is highly recommended to prevent abnormal vibrations being experienced.

NOISE EMISSIONS

Measured at a distance of 1 metre in the locations illustrated and running under normal idling conditions at full operating speed, emitted noise was lower than the daily or weekly personal exposure action value of 80dB (A-weighted) as identified to 'The Control of Noise at Work Regulation 2005', therefore ear defenders are not considered mandatory.

However, depending on the consumable and work piece material used noise levels may exceed the daily or weekly personal exposure action values *(EAV)*, therefore values for working environments can only be determined by assessment during operation using appropriate sound level meters. In cases where the daily or weekly personal exposure limits are exceeded, it is mandatory that approved ear defenders are provided and worn.

NOISE EMISSIONS dB(A)		
O PL2001* O PL2003*	O PL2001*P O PL2003*P O INDPL2001*P O INDPL2003*P	O PL2001*E O PL2003*E O INDPL2001*E O INDPL2003*E
66	66.4	76.2

SAFE WORKING PRACTICES

Failure to adhere to these simple safety regulations may result in personal injury and/or damage to the machine

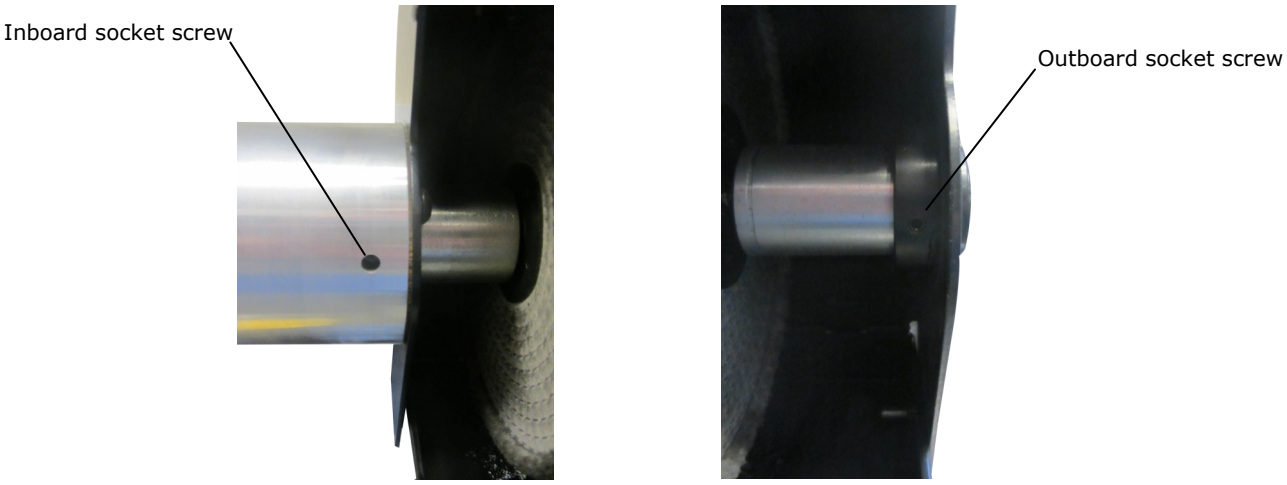
- Those operating the equipment should be thoroughly familiar with these instructions an comply with any safety rules/regulations in force
- Thos operating the equipment should be thoroughly familiar with the properties/hazards attached to both machine and work piece materials
- Designed and manufactured as a dual end buffing machine intended to be used by well

trained skilled and semi-skilled operators whilst in a standing position. Use of the machine for any other purpose is prohibited

- Modifications of the machine must be undertaken by the original manufacturer or have their approval, otherwise the modifier is then considered liable and must fulfil the obligation of the machinery directive
- Rules regarding the wearing of protective clothing should be enforced
- Do not wear a tie, jewellery or loose clothing when operating equipment. Wear hair protection or tied back properly preventing entanglement
- Ensure work area is clean, well illuminated and free of any potential hazards i.e. tripping
- Machine guarding and safety devices must be in place at all times
- Machines found to be faulty must not be used and reported to the maintenance department immediately
- Disconnect the input power supply before carrying out any maintenance procedures
- Keys required to release key operated emergency stop buttons must be assigned a key holder and not left within the machine
- Inhalation of dust particles must be avoided and appropriate dust extraction systems *(LEV)* should be provided. The standard of dust extraction must take into account the volume and toxic nature of airborne contaminants
- Regular LEV performance and maintenance logs should be kept to monitor the units efficiency
- If necessary provide suitable personnel protection against inhalation of airborne particles produced by the machining process

DO'S	DONT'S
ALWAYS WEAR SUITABLE EYE PROTECTION.	OPERATE MACHINE WITHOUT EXTRACTION.
ALWAYS WEAR GOOD QUALITY CHROME OR LEATHER GLOVES.	USE MACHINE WITHOUT PROVIDED GUARDS.
KEEP QUENCHING MEDIUM CLOSE TO HAND AS CONSIDERABLE HEAT CAN BE GENERATED IN THE WORKPIECE.	EXERT SIDE LOADS ON ABRASIVE MEDIA AS THIS WILL LEAD TO DAMAGE.
WEAR PERSONAL EAR PROTECTION.	USE EMERGENCY STOP FOR NORMAL STOPPING OF MACHINE.
CHECK/DRESS ABRASIVE MEDIA REGULARLY FOR UNDUE WEAR AND BALANCE.	USE MACHINE FOR ANYTHING OTHER THAN ITS INTENDED PURPOSE.
KEEP PROVIDED SAFETY FEATURES PROPERLY ADJUSTED TO AFFORD MAXIMUM PROTECTION.	LEAVE THE MACHINE UNTIL IT HAS BEEN STOPPED AND COME TO A COMPLETE STANDSTILL.
MONITOR VIBRATION LEVELS OF THE MACHINE & THOSE EXPERIENCED BY THE OPERATOR'S.	ENTER THE ELECTRICAL CONTROL PANEL UNLESS QUALIFIED & MAINS SUPPLY IS ISOLATED.

MACHINE CONTROLS



OPERATION

MACHINE SET UP

Machines are supplied without abrasive media fitted as standard *(unless specified)*. Therefore the following steps must be undertaken before machining processes be carried out.

- Machine guarding has been designed to use buffing mops of diameter 200mm x 25mm
- Isolate or disconnect the input supply
- Using a 3mm Allen key, release socket screw retaining the inboard sleeve
- Slide inboard sleeve away from the buffing mop, until extension flats are exposed
- Using a 22mm spanner to hold the extension steady, using a gloved hand thread the buffing mop upwards *(towards ceiling)* onto the extension till it can be screwed no further
- Adjust inboard and outboard sleeves so they sit within 3-4mm of the buffing mop. This allows for any lateral movement when placed under a working load. Secure socket screw(s)
- Adjust hinged flap to within 3-4mm of the buffing mop and secure. It is important that the hinged flap remain close to the buffing mop as this restricts turbulent air caused by the buffing mop which can negate the extraction performance
- Restore input supply
- Activate run mode , ensuring the buffing mop runs without any sideways movement *(true)* and that neither sleeve is encroaching the buffing mop

MACHINE OPERATION

- Ensure every operator has been instructed in the use of all machine controls before use
- Connect suitable dust extraction system as defined by local health & safety regulations
- Check machine for signs of damage and report findings to the maintenance department
- Clean machine before processing different materials
- Ensure emergency devices are in place and unlatched
- Ensure buffing mops are fitted correctly and secure
- Actuate *start button* to initiate run mode. The machine has a controlled acceleration of 10 seconds before full operating speed is achieved
- Actuating the *stop button* brings the machine to a controlled halt within 10 seconds
- In emergency situations, actuating the fitted emergency device triggers the emergency sequence, thus bringing the machine to a rapid but controlled halt. The machine can not

restart until the *emergency stop* button latch has been release and *start button* actuated

- Don't apply excessive pressure during the machining process as this increases the risk of components being entangled or ejected

UNLATCHING EMERGENCY DEVICES

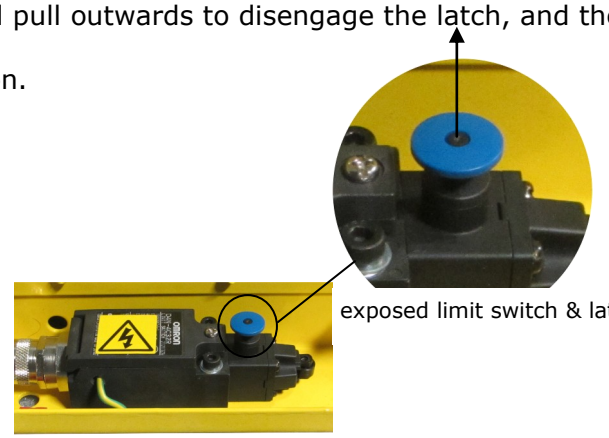
Emergency stop push buttons are reset by turning the head in a clockwise direction

(If fitted) Emergency stop push buttons are reset by turning the ronis 455 key.

> *NOTICE:* keys required to release key operated emergency stop push buttons must be assigned a key holder and not left within the machine

(If fitted) Emergency stop footswitches are reset by lifting the red hinged cover, thus exposing the limit switch. Locate the blue reset head button and pull outwards to disengage the latch, and then return the red hinged cover to its operating position.

emergency stop footswitch



exposed limit switch & latch

CONSUMABLE SELECTION

Selection of an appropriate buffing mop, abrasive belt etc.., depends on a number of factors such as process material, operating speed, available speed, available power and required finish. Seek advice from a specialist supplier regarding the most appropriate solution for a specific requirement.

DRESSING ABRASIVE MEDIA

Frequent truing of the buffing mop is required to keep the wheel concentric on its extension. A wheel *'out of round'* will cause excessive vibration and periodic knocking of the work piece against the wheel, this will invariably result in the buffing mop surface being *'loaded or glazed'* which impairs the cutting action and may induce the operator to compensate by additional pressure of the work piece on the buffing mop.

Dressing the buffing mop is therefore essential for efficient production and frequent light dressings are generally preferable to occasional severe dressings. The following procedures should be adopted

OPERATION

- Ensure buffing mops are at full operational speed. Offer the mop rake's serrated edge to the centre of the buffing mop face
- Work the mop rake across the buffing mop face *(left to right)* until its appearance is bright and fibres loose

Dressing operations will often cause intense plumes of dust that will rise upwards, so it is important that precautions regarding facial/breathing PPE are taken before commencement and is only carried out by experienced personnel.

REPLACING CONSUMABLES

> *DISCLAIMER:* buffing mops are considered consumables and their life expectancy is largely related to the way in which they are used, handled and stored. These items are not covered by the standard 12 month warranty. In general we would normally grant a 90 day warranty on supplied consumables, but would reserve the right to rescind this for particularly severe or aggressive applications.

- Machine guarding has been designed to use buffing mops of diameter 200mm x 25mm
- Isolate or disconnect the input supply
- Using a 3mm Allen key, release socket screw retaining the inboard sleeve
- Slide inboard sleeve away from the buffing mop, until extension flats are exposed
- Using a 22m spanner to hold the extension steady, using a gloved hand rotate the buffing mop downwards *(towards floor)*, until free of the extension
- Still holding the extension steady and using a gloved hand thread the buffing mop upwards *(towards ceiling)* onto the extension till it can be screwed no further
- Adjust inboard and outboard sleeves so they sit within 3-4mm of the buffing mop. This allows for any lateral movement when placed under a working load. Secure socket screw(s)
- Adjust hinged flap to within 3-4mm of the buffing mop and secure. It is important that the hinged flap remain close to the buffing mop as this restricts turbulent air caused by the buffing mop which can negate the extraction performance
- Restore input supply
- Activate run mode , ensuring the buffing mop runs without any sideways movement *(true)* and that neither sleeve is encroaching the buffing mop

COLLECTION TRAY

As the polyester needle felt filter becomes clogged, it improves as a filter but increased resistance results in a drop of the carrying velocity and consequently the effectiveness. The extractor unit is provided with a shaker knob which when agitated causes the cleaning ring to make contact with the filter and dislodge accumulated dust. Dislodged dust falls into the collection tray situated below. The collection tray must be emptied regularly and it is recommended that this happens at least once a fortnight or sooner if the duty cycle dictates.

Empty the collection tray outside the working environment into a suitable container and dispose in accordance with all associated regulations. Care should be exercised to avoid inhaling or dispersing dust into the atmosphere. Return dust collection tray, ensuring that it is seated properly.

MAINTENANCE

GENERAL

IMPORTANT: all maintenance procedures undertaken *must* be carried out by a suitably trained and qualified technician

IMPORTANT: before carrying out any maintenance procedures ensure the input power supply has been disconnected

Machines of this type are relatively simple and need little attention by way of maintenance.

- Do not make adjustments whilst machine is running. Ensure input power supply has been disconnected prior to any maintenance procedure being undertaken
- Check the machine after each use for damage or broken parts and repair/replace parts immediately
- Clean out accumulated dust daily and periodically. Remove the grill in the extraction tray and thoroughly clean it to maintain extraction performance

Provisions have been made within the design of the machine to enable easy access for carrying out any maintenance procedures, highlighted in the schedule below. Procedures must be carried out whilst the machine is at a stand still and the input power supply disconnected.

SCHEDULE	ACTION
DAILY	Check Consumable(s) condition and replace if worn or damaged.
	Check condition of extension
	Clean debris from working area.
WEEKLY	Guard positioned properly and intact.
	All ducting securely connected and intact.
	No visible emissions from exhaust outlets.
MONTHLY	Examine drive belts
	Visually examine electrical circuit.
BI-ANNUAL	Inspect bearings/gearboxes for signs of damage
	All push buttons, twist dials, switches etc.., are operational
	Check electrical cabinet for contamination and replace filters where fitted
	All protective devices fitted and free from damage
	Emergency stop devices fitted, operational and free from damage

ELECTRICAL

IMPORTANT: all electrical procedures undertaken *must* be carried out by a suitably trained and qualified technician

IMPORTANT: before carrying out any electrical procedures ensure the input power supply has been disconnected

Circuit diagrams are provided in the section entitled 'Technical Notes'

BUFFING MOP MAINTENANCE

- Machine guarding has been designed to accept buffing mops up to a maximum diameter 200mm x 25mm wide
- Buffing mops require very little maintenance
- Over time they will wear down and need replacing
- Dress buffing mops by means of a nail board or similar, this removes built up polishing compound *(aka soap)* that can unbalance the buffing mop resulting in vibration and chatter

WARNING: the dressing operation will often cause intense plumes of dust, it is therefore important that the necessary precautions regarding facial/breathing PPE are taken.

VIBRATION & CHATTER

- Damaged buffing mops may cause vibration and will require replacing
- Buffing mops should be regularly dressed to maintain and reduce vibration/chatter as detailed above

DUST EXTRACTION SERVICE SCHEDULE

In order to maintain effectiveness and control hazards to design levels, its important that the unit performance is monitored and recorded. The suggested scheme and log should help in this regard. We would recommend four levels ranging from daily operator checks to the thorough examination completed by a competent person as follows:

- **DAILY OPERATOR CHECKS**
    1. That extractor is drawing air successfully through inlet ducts
    2. Capture hood is positioned correctly
    3. Collection tray doesn't need emptying

MAINTENANCE

Call supervisor if attention is required, otherwise take appropriate remedial action and sign log

- **WEEKLY OPERATOR CHECKS**

1. That extractor is drawing air successfully through inlet ducts
2. Capture hood is positioned correctly
3. Collection tray doesn't need emptying
4. No partial blockages in capture hood
5. Ducting securely connected and intact
6. No visible emissions from exhaust outlet

Call maintenance if attention is required, otherwise take appropriate remedial action and sign log

- **QUARTERLY OPERATOR CHECKS**

1. Extractor is working effectively by means of a smoke test
2. Capture hood is positioned correctly
3. Collection tray doesn't need emptying
4. No partial blockages in capture hood
5. Remove inlet ducting from extractor and check for blockages. Clean and remove as necessary, replace and secure duct
6. Remove front panel and inspect polyester needlefelt filter. If damaged or 2 years old, replace with new. If dust has penetrated through the filter then either a hole(s) are present or band clamp has come adrift
7. Check integrity of unit *i.e. for penetrative corrosion or leaking seals*

Take appropriate remedial action as required and sign/complete maintenance log

- **ANNUAL EXAMINATION FOR COSHH**

This must be conducted by a competent person as defined by the HSE. This will often be a suitably qualified and experienced contractor who will conduct a detailed assessment of the unit and its effectiveness at controlling the hazard. This will involve taking appropriate airflow measurements and producing a detailed report of the findings and any identified corrective actions. We would anticipate airflow readings to be inline with the following table:

AIRFLOW READINGS		
STATIC FAN PRESSURE (*hpa*)	DUCT VELOCITY (*m/s*)	AVERAGE FACE VELOCITY (*m/s*)
16.5 (±1)	>20.0	>1.0

Where

fig01 Static pressure test point

1. Static fan pressure is measured with a digital manometer at test point *(fig 01)* provided at the front of the dust extraction unit
2. Duct velocity is measured using a digital anemometer with a diameter 45mm fan. Remove duct from guard spigot *(fig 02)*
3. Guard face velocity is assessed by averaging a matrix of readings taken using hot wire anemometer

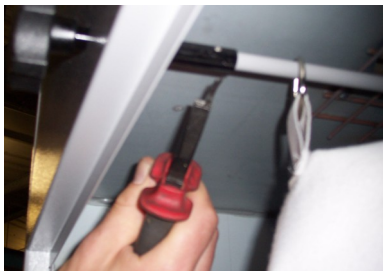
fig 02 Duct Velocity

REMOVING POLYESTER NEEDLE FELT FILTER

The polyester needle felt filter should be examined periodically and if found to be heavily soiled or torn, must be replaced. Alternatively it is recommended that the extractor bag be replaced every two years.

Tools required:

1. Remove front cover.



2. Remove split pin

3. Remove shaker

4. Remove shaker frame from rear support.

5. Remove rear retaining clip.

6. Remove shaker frame from extractor.

MAINTENANCE

7. Remove front retaining clip

8. Remove shaker frame from dust filter.

9. Remove shaker frame from extractor.

10. Release snap over retaining clip.

11. Remove retaining clip from extractor.

12. Remove dust filter.

REPLACING POLYESTER NEEDLE FELT FILTER

1. Extended new dust filter.

2. Fold dust filter inwards.

3. Ensure filter hanger and retaining clip are inline.

4. Fit dust filter over bottom seal.

5. Re-assemble shaker frame & orientate filter hanger front to back of extractor.

NOTICE: assembly of the polyester needle felt filter from this step onwards is a reversal of the removing polyester needle felt filter procedure

RISK ASSESSEMENT

This variant is based on a family of machines which RJH Finishing Systems ltd have supplied into the market place for many decades and has an excellent safety pedigree. However, like all machines of this type they can be dangerous if used carelessly or incorrectly.

It is therefore essential that all hazards are identified and safe working practices are adopted and adhered to. What follows is an indication of the potential risks

POTENTIAL HAZARDS

FIRE & EXPLOSION generally is considered a low risk except in certain circumstances. It is important that the potential risk of fire and explosion is assessed in each particular situation, there is a potential source of ignition in that a spark stream can be generated during the machining process. Filter bags of dry collectors have been to catch fire after heavy and prolonged use. The risk of fire and explosion is increased when working with certain materials, most notably aluminium, magnesium and titanium. Special regulations exist for these materials and expert advice should be sought. RJH Finishing Systems ltd would normally recommend a wet dust extractor for these materials which would minimise the risk and reduce the likelihood.

GENERALLY LOW BUT REQUIRES ASSESSMENT

LIMB ABRASION is probably the most common hazard associated with off hand operations as contact with the abrasive media will lead to skin abrasion. However, the use of a guarding system is likely to minimise the risk and the wearing of good quality gloves *(chrome or leather)* could further reduce the possibility. Working below the horizontal centre of the abrasive media must be avoided.

LOW - MEDIUM RISK

ENTANGLEMENT potentially the most serious hazard and it is important the safe working practices are adhered to and adequate training given. Despite considerable improvements to the guarding of the machine there are still areas that could draw limbs in. Working below the horizontal centre of the abrasive media must be avoided.

LOW RISK

BURNING as with all machining processes considerable heat can be generated in the work piece and burning of the skin can result if handled carelessly. Operators should always wear good quality gloves *(chrome or leather)* and a quenching medium *(water)* should be close to hand. Risk considered low for experienced operators.

LOW RISK

RISK ASSESSMENT

ELECTROCUTION is a possibility with any electrical powered appliance and even though the machine has simple electrical controls with overloads and no-volt release there remains a small danger. Only qualified personnel must be allowed access to the electrical controls.

LOW RISK

EYE DAMAGE is a risk with any machining process and there is a possibility that dust particles or debris can enter the eye(s). The wearing of approved safety glasses is mandatory and when used with a suitable dust extraction system the risk is reduced further.

LOW RISK

EJECTION OF PARTS OR COMPONENTS can occur if a component is wrenched from the operators hand. In most cases the component will fall into the dust collector or to ground. This is more likely if the operator attempts to work below the horizontal centre of the abrasive media, so it is imperative that this is not allowed to happen and should be an important element of the operator's training. Risk considered low for certain experienced operators.

LOW - MEDIUM RISK

VIBRATION is transmitted in all off hand processes like this and in extreme cases can lead to hand arm vibration syndrome *(HAVS)*. Idling vibration with no media attached is generally less than $0.5m/s^2$. However, the problem is more operation related than necessarily a function of the machine. Consumables and process techniques require evaluating and close monitoring.

MEDIUM RISK

NOISE very much depends on the consumable used during operation. Machines such as this will usually be under the 80dB(A) threshold, therefore ear defenders would not normally be mandatory though are recommended.

LOW RISK

This type of manual equipment has been available for decades and the various processes with their associated operating hazards are well known, largely chronicled and manageable. It is our belief that with good operator training and adherence to safe working practices this family of machines can be considered to have an overall *low risk* rating for the Provision and Use of Work Equipment Regulations *(PUWER)*.

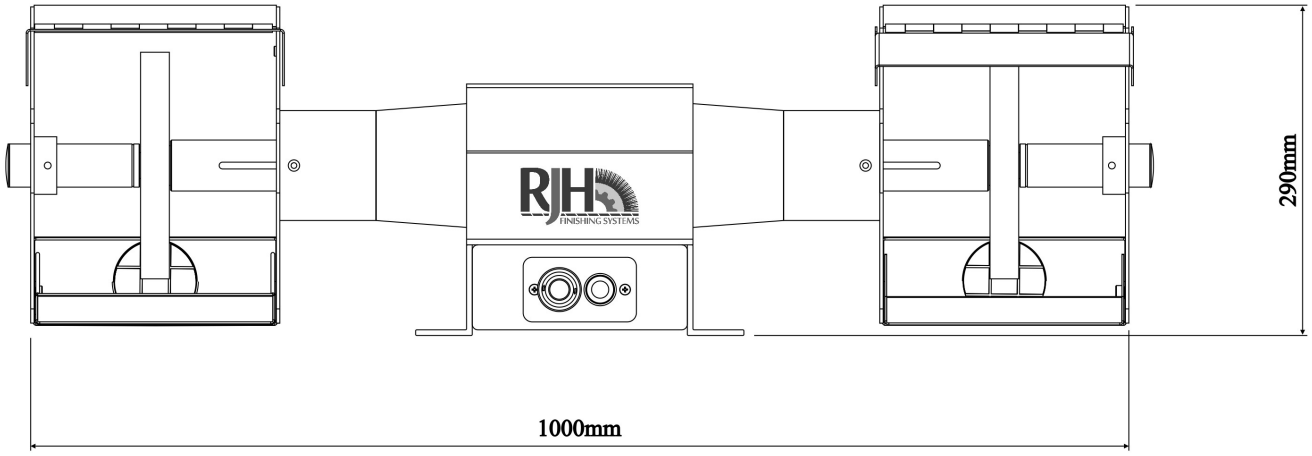
TROUBLESHOOTING

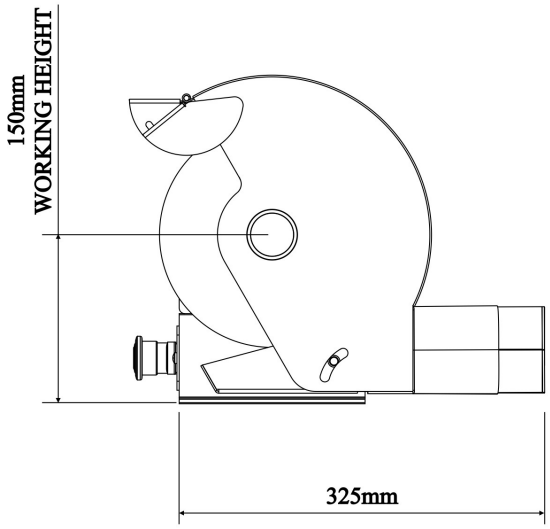
SYMPTOM	CHECK	ACTION
Machine will not start	Mains on Control overloads Control fuses Guard Interlocks Emergency stop	Switch on isolator Requires electrician Requires electrician Requires electrician Release emergency stop latch
Excessive vibration	Polishing Mop/wheel condition Bearings	Replace if necessary Replace if necessary
Reduced processing performance	Polishing compound Polishing mop selection Mop condition Abrasive belt condition Abrasive belt selection	Seek advice on correct compound required Seek advice for alternative solution Replace if necessary Replace if necessary Seek advice for alternative solution
Excessive noise	Protective sleeves / work rests Polishing mop/wheel selection Bearings	Adjust to give 2-3mm clearance Seek advice for alternative solution Lubricate or replace

TECHNICAL NOTES

MACHINE FOOTPRINT

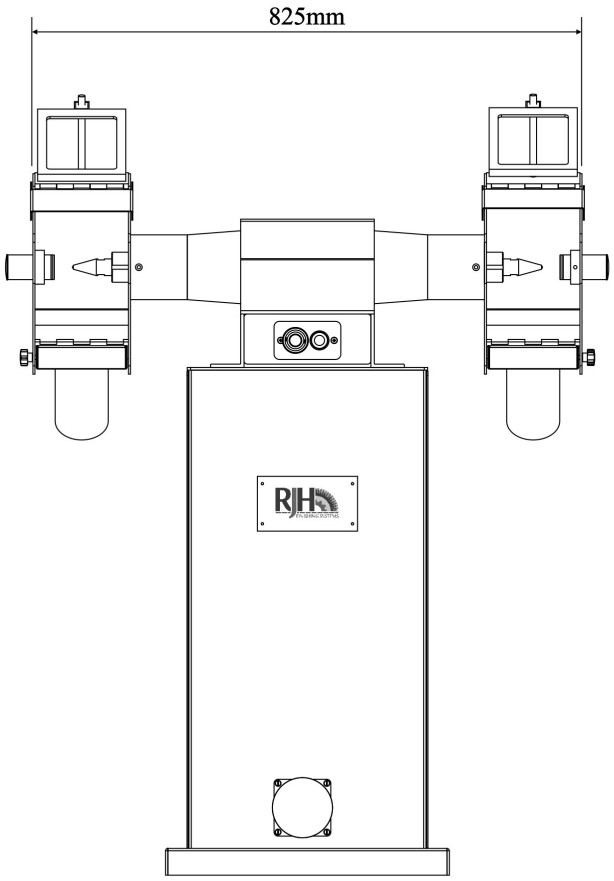
Bench mounted range

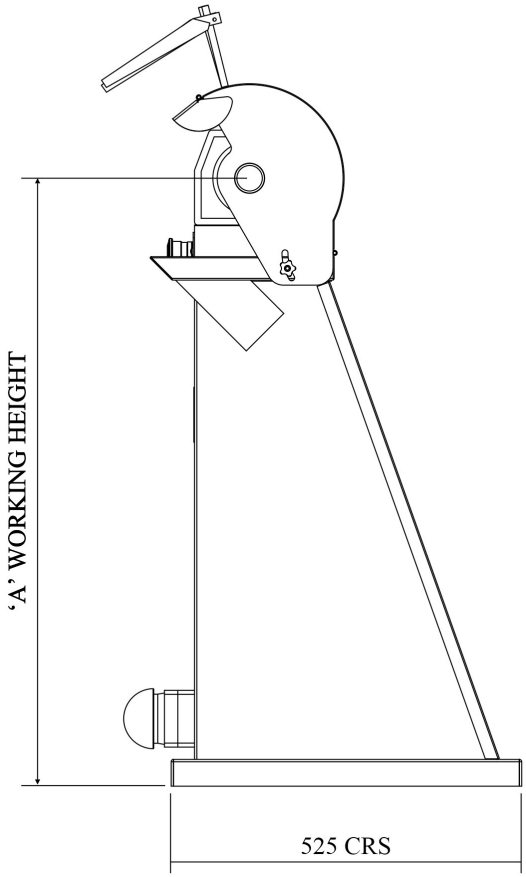




MACHINE FOOTPRINT

Pedestal mounted range



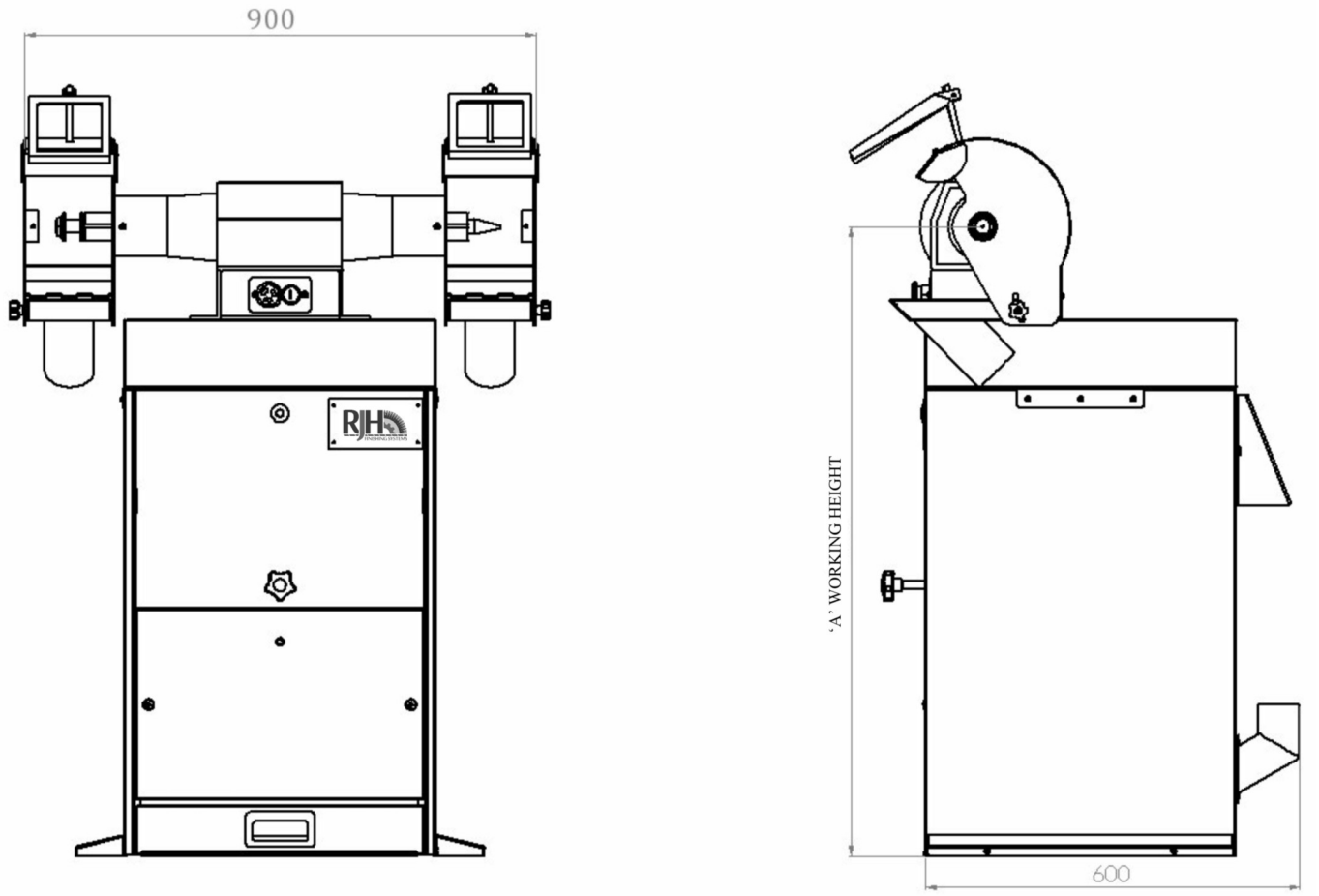


'A'	
O PL200**P	910mm
O INDPL200**P	1000mm

TECHNICAL NOTES

MACHINE FOOTPRINT

Extraction mounted range



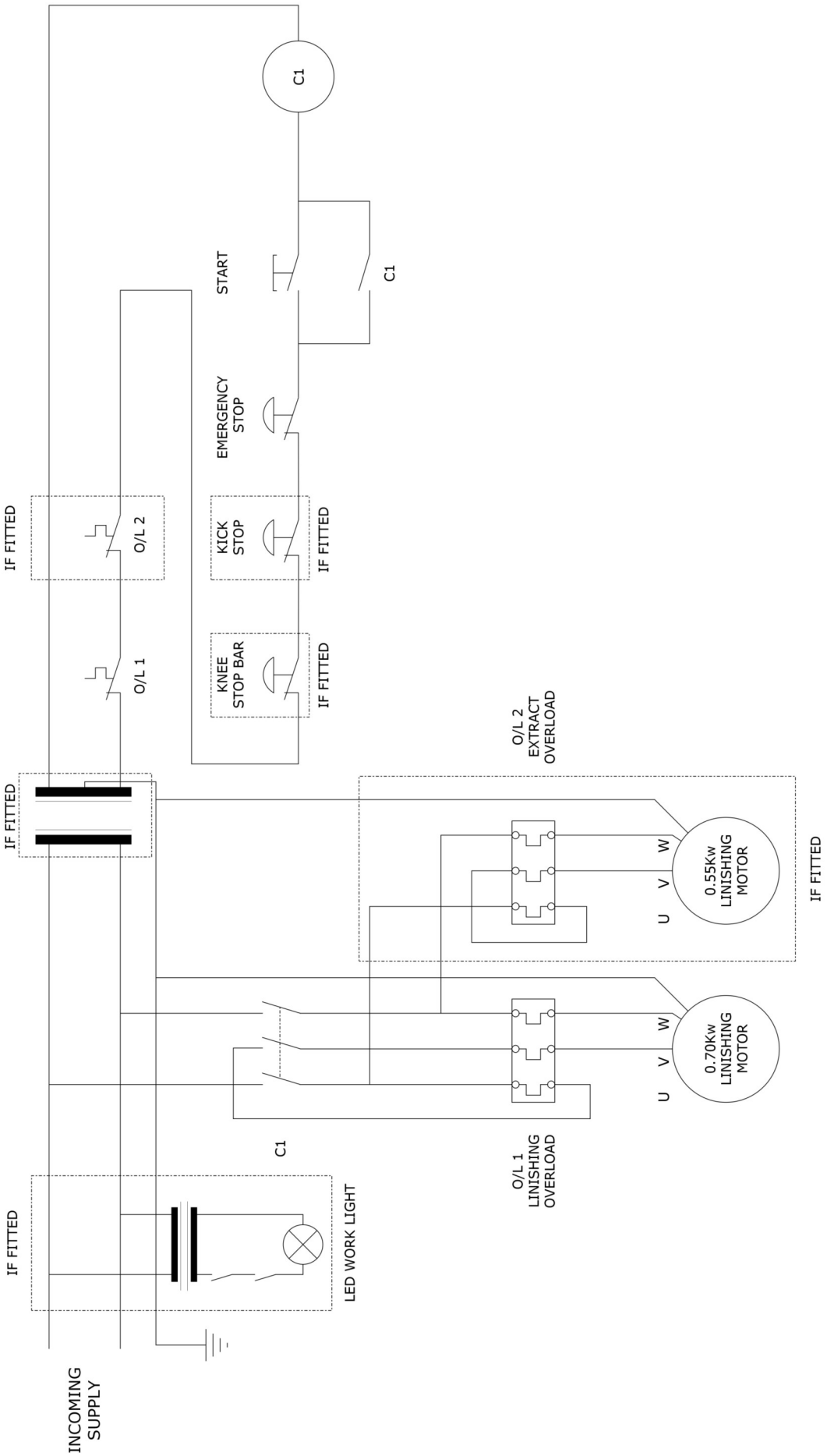
'A'	
O PL200**E	920mm
O INDPL200**E	1010mm

SPARE PARTS

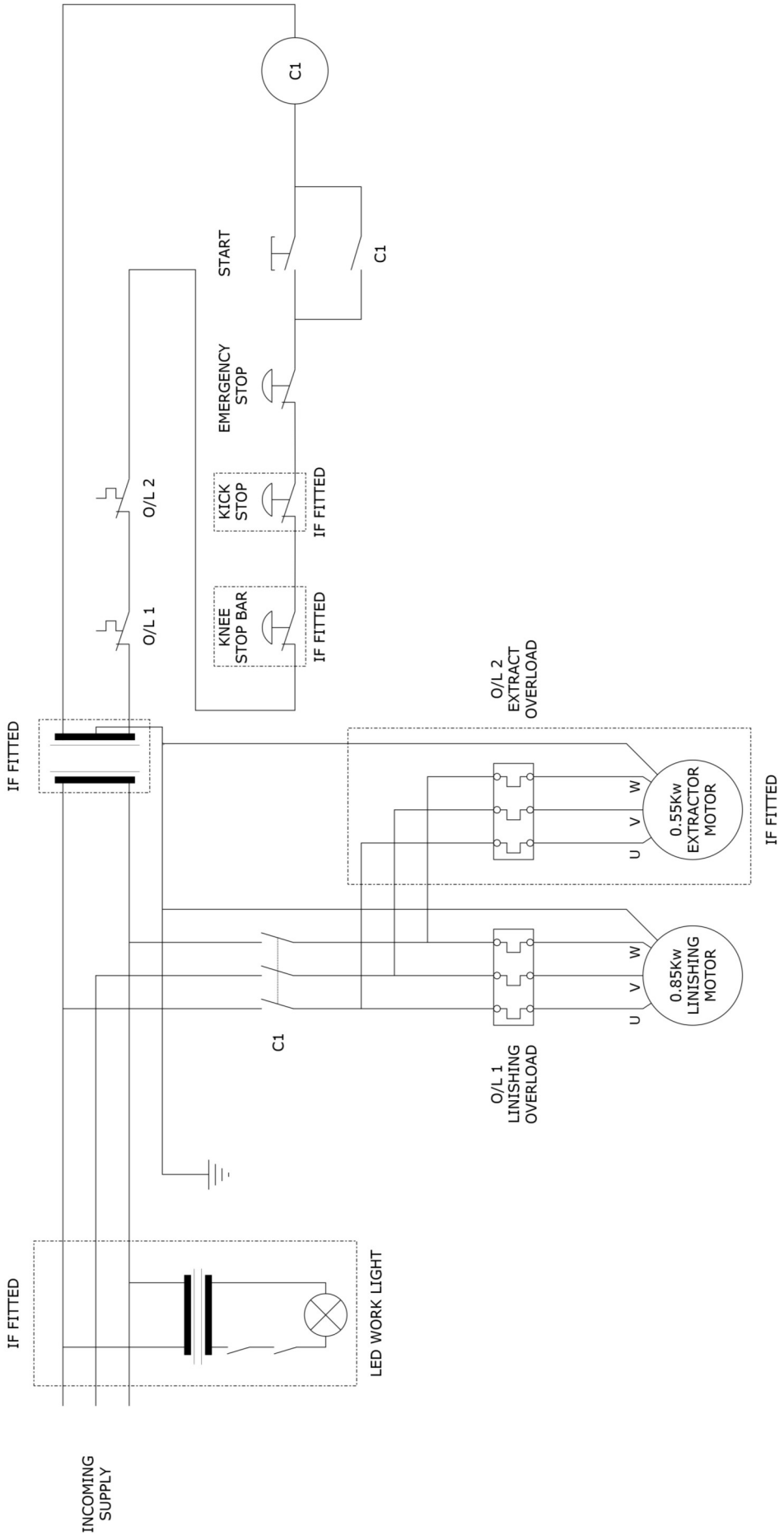
PART CODE	DESCRIPTION	QTY
7242-001	Flush push button - green	1
7242-002A	Emergency stop push button - twist release	1
P CBMFB	Needle felt filter bag	1
COB-STRAP-ASSY	Needle felt filter bag strap assembly	1
N E	Eye shields	1pair
PL-3-0006	Lefthand taper nose - 1500rpm	1
PL-3-0007	Righthand taper nose - 1500rpm	1
PL-3-0011	Lefthand taper nose - 3000rpm *(Bench mtd only)*	1
PL-3-0012	Righthand taper nose - 3000rpm *(Bench mtd only)*	1
PL-3-0050	Lefthand taper nose - 3000rpm	1
PL-3-0051	Righthand taper nose - 3000rpm	1
PL-3-0052	Lefthand parallel extension - 3000rpm	1
PL-3-0053	Righthand parallel extension - 3000rpm	1
PL-3-0054	Carrier plates	2

TECHNICAL NOTES

WIRING SCHEMATIC - SINGLE PHASE



WIRING SCHEMATIC - THREE PHASE



Technical notes

Extractor maintenance log

Asset N^{o}:

Location:

Operation:

Installed:

Date	A	B	C	D	Action	Signed	Position

Form Completion Notes:

Column *A,B,C or D* should be ticked when corresponding maintenance schedule as detailed has been completed. Any significant events can be recorded in the action column and each entry should be signed.

NOTES

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