



Wheelmaster Suction Feed System



Operating & Maintenance Instructions

Serial No.	
Customer	
A/C No.	

Guyson International Limited
Snaygill Industrial Estate
Keighley Road
Skipton
North Yorkshire
BD23 2QR

Tel: 01756 799911

E-mail: info@guyson.co.uk

Website: www.guyson.co.uk



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1. Introduction

This manual should be regarded as part of the product and must be retained for the life of the machine. The manual must be passed to any subsequent owners of the machine.

Any amendments should be attached to the original manual. Machine identification and serial number can be found on the identification plate fixed to the machine body.

1.1 Safety recommendations

Guyson Blast Media

Material Safety Data Sheets are available on request for users of Guyson Blast Media

Users of Guyson equipment are advised to make sure they have identified any hazards associated with their specific blasting processes, including:

- Use of compressed air
- Fire/explosion risks, e.g. Aluminium dust
- Suitable procedures for dealing with fire hazards
- Production of carcinogenic or toxic dusts from media or component surface removal
- Any other known hazards

Users are responsible for ensuring that they have implemented any current regulatory requirements, e.g. COSHH, to deal with any potential risks and/or hazards associated with their processes.

ATEX ZONE DESIGNATION

The ATEX Directives 2014/34/EU (product requirements) and 99/92/EC (user requirements) are implemented by the Equipment and Protective Systems intended for use in potentially explosive Atmospheres Regulations 1996 (EPS) and the Dangerous Substances and Explosive Atmosphere Regulations 2002 (DSEAR) respectively.

We are able to provide equipment that is suitable for use in a hazardous area, and/or equipment that is suitable for use when a hazardous area is created within a system, but it is the end users' responsibility to classify the area in which the equipment is to be used and/or the explosivity of any internal atmosphere created within the system. This is defined in Section 2, Article 3 to 9 of the 99/92/EC Directive (ATEX 137).

Unless we have been advised otherwise, we have to assume that the equipment will be used in an area that is not classified as potentially explosive, and uses a process which will not create an explosive atmosphere within the equipment.

1.2 Electrical specification

Electrical wiring on Guyson equipment conforms to:

- BS EN 60204-1:2006
- IEC 60204-1:2005

2. Data sheet

2.1 Blast cabinet

	Wheelmaster
Overall dimensions	
Height (mm)	1750
Width (mm)	990
Depth (mm)	1200
Turntable diameter (mm)	740
Armhole height (mm)	1085
Maximum air pressure	90 psi or 6 bar
Maximum air supply	77.4 m ³ /hr or 42 CFM
Cabinet lighting	
Electric supply	Single phase, 230 V, 50 Hz
Batten fluorescent	18 W
Fuse rating	2 A
Operator protection required	Hand and lower arm by gloves or gauntlets (supplied)

2.2 Cyclone

	Cyclone & dust collector combination	
	75/16 with 41 D/C	75/16 with C400 D/C
Inlet diameter (mm)	100	100
Outlet diameter (mm)	100	150
Static inlet pressure (mm Wg.)	100	165
static inlet pressure (Pa)	980	1620
Airflow (m ³ /min)	8.0	12.0
Height (mm)	*	*
Base diameter (mm)	*	*
Body diameter (mm)	400	400

*Dependant on whether cyclone is free standing or cabinet mounted

2.3 Dust collectors

	Dust collector model number	
	41	C400
Inlet diameter (mm)	100	150
Extraction outlet	Open exhaust	
Maximum inlet static pressure (mm Wg)	150	165
Maximum inlet static pressure (Pa)	1470	1620
Measured airflow (with open inlet/outlet) (m ³ /min)	10	11
Airflow adjustable?	Yes	Yes
Number of filters	4	1
Type of filter	B	A
Filtration area	1.8 m ² 17.5 ft ²	10 m ² 97 ft ²
Air flow rating (with a filter velocity of 1.5 m/min)	162 m ³ /hr 95 CFM	900 m ³ /hr 530 CFM
Filter cleaning system	C	D
Air consumption (litres per pulse)	N/A	7
Maximum compressed air supply pressure	N/A	50 psi 3.5 bar

where:-

A	Cartridge filter - Polyester element
B	Fabric filter - Polyester needlefelt - Scrim reinforced
C	Manual shaking system
D	Manual pulse air cleaning system



2.4 Air consumption tables

2.4.1 Air flow measured in m³/hr at different pressures measured in bar

Air-jet bore (mm)	Guyson gun type	Blast pressure (bar)				
		2	3	4	5	6
3.2	900	11.4	16.5	21.6	27.0	31.8
4.0	900	19.2	27.3	35.4	43.2	51.6
4.8	900	30.6	42.0	53.4	66.0	77.4

2.4.2 Air flow measured in CFM at different pressures measured in psi

Air-jet bore (mm)	Guyson gun type	Blast pressure (psi)					
		30	40	50	60	70	80
3.2	900	7	9	11	14	16	17
4.0	900	12	15	18	21	24	27
4.8	900	18	22	27	32	37	42

3. Installation

The system may comprise of the following units:

Blast Cabinet/Dust Collector/Cyclone

Flexible extraction hoses, sealing bands and hose clamps are supplied to connect these together.

Remove packing materials and check inside blast cabinet for loose items.

3.1 Location

The equipment must be located on a clean, dry surface.

Locate the cabinet in the required position and orientation; always allow sufficient room around the units to fully open doors and to give access for operation and maintenance.

Care should be taken to ensure all parts of the system are level

3.2 Assembly

Hoses with media flowing through them should only have smooth flowing curves in them.

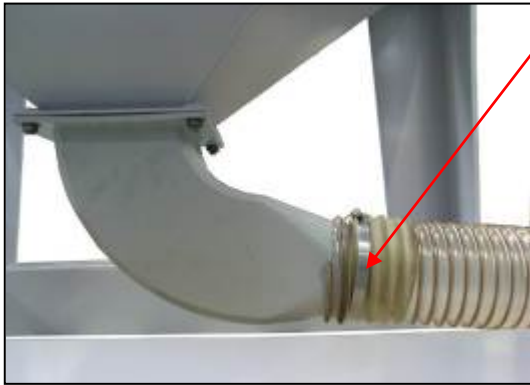
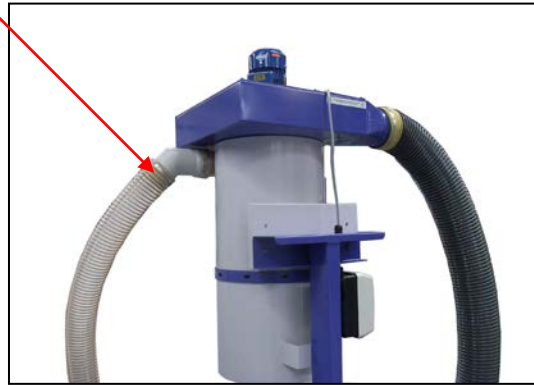
If your system only comprises of a blast cabinet and dust collector then:

Connect the flexible extraction hose from the cabinet outlet to the dust collector inlet using the sealing bands and hose clamps supplied.

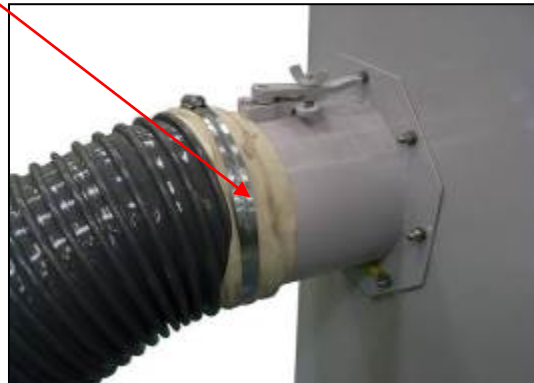


If your system comprises of a blast cabinet, cyclone and dust collector then the cyclone needs to be connected between the blast cabinet and dust collector:

Connect the flexible extraction hose from the cabinet outlet to the cyclone inlet using the sealing bands and hose clamps supplied.



Connect the flexible extraction hose from the cyclone outlet to the dust collector inlet using the sealing bands and hose clamps supplied.



3.2.1 Compressed air connections

The air supply should be from a manual shut-off valve that will exhaust down-stream air and be clean, dry and oil-free.

The machine requires a compressed air supply at a maximum of 6.0 bar (90 psi) at the filter inlet and pipework of adequate diameter to provide the flow rate required (see air consumption tables). The minimum recommended bore for the compressed air line is 1" and it connects to a 1/2" BSP thread.

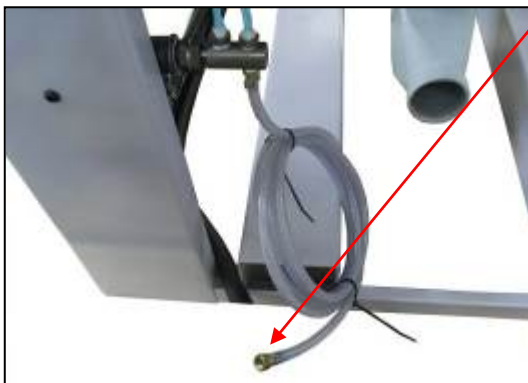
Connect the main compressed air supply to the pneumatic isolator valve.



Take care that any jointing material (e.g. PTFE tape) does not enter the pipework.

If a C400 dust collector is part of the system then this will require a compressed air supply. The regulator should be set to a max of 50 psi.

Connect the air supply from the back right leg of the blast cabinet to the dust collector.



3.2.2 Electrical connections

Electrical installations should only be carried out by qualified electricians

Please see “Electrical installation of dust collectors and cyclones” in the appendix

Power supplies should be taken to the starter box situated on the side of the dust collector.



The plugs to the lighting on the cabinet should be plugged into a single phase supply of the correct voltage and must be switched at a convenient point for ease of operation.

4. Testing installation

4.1 Testing installation procedure

After completing all the connections the cabinet operation should be checked.

Do not add media at this stage

Do not open the air supply at this stage

- Switch on main electrical power supply
- Switch on cabinet light
- Start the dust collector:
 - o The direction of the impellor motor should be checked visually against the arrow on the motor. If rotation is in the wrong direction, then on a 3 phase motor two of the input phase lines should be changed over. Guyson International should be contacted for more info if it is a single phase motor.

NOTE: Air will flow from the outlet even if the fan rotation is wrong, but only at a low level, so rotation must be checked visually.

The best way to do this task is by starting then stopping the dust collector and watch the fan as it slows down.



On a 41 dust collector the motor is inside. The front cover must be removed to see the top of the motor.



On a C400 dust collector the motor is on the outside and can be easily checked.



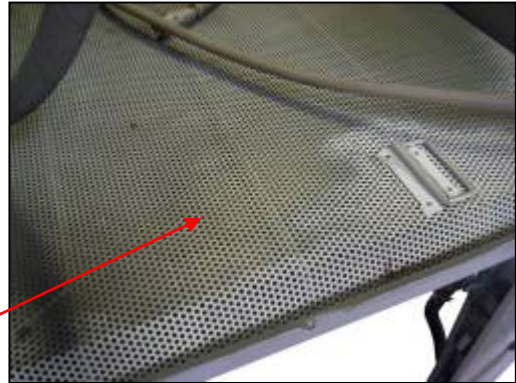
- Turn on the air supply by opening the main air valve
- Set pressure regulator to required blast pressure
- Check all in-line connections for leaks and possible blockages
- Insert both arms through the armhole entries
- Depress the foot pedal
- Check for steady air blast from gun and for possible leaks
- Release foot pedal and remove arms from entries
- Add media to machine

4.2 Media levels

If a cyclone is fitted to the system then media should be added to this. If not then it should be added to the cabinet hopper. $\frac{1}{4}$ - $\frac{3}{4}$ of a 25kg bag of media should suffice.

4.2.1 Adding media to hopper

- Turn off the dust collector
- Open the cabinet door
- Pour media into the hopper
- Close the door
- Turn the dust collector on

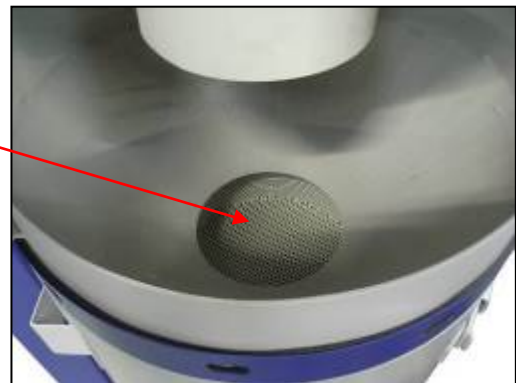


4.2.2 Adding media to 75/16 cyclone

- Turn off the dust collector
- Open the upper cyclone door
- Pour media into the cyclone
- Close the door
- Turn the dust collector on



The upper door should always be used so the media can pass through the sieve before it gets to the mixer box.



5. Machine settings

5.1 Blast settings

The blast settings should be set in the order they appear in the following sections.

5.1.1 Blasting pressure

Air pressure controls the speed at which the blast media leaves the nozzle. Blasting speed increases at higher pressures and shortens operation time. Never use a higher blast pressure than necessary to achieve the finish required.

- Higher pressure air is less economical
- It may distort or damage components
- Greater media breakdown means higher media consumption
- Noise increases

Adjust the blast gun pressure using the control knob on the main air inlet filter. The gauge shows the set pressure.



5.1.2 Media pick-up tubes

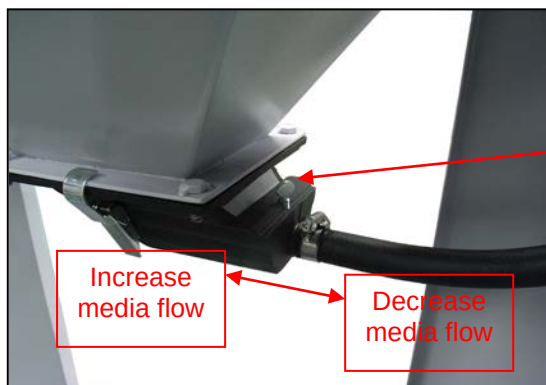
The setting of the pick-up tube in the media box has a significant effect on the blasting performance. Adjustment varies with the media density, with denser media requiring more air to circulate it.

The greater the flow of media from the mixer box to the blast gun, the higher the rate of wear on media hose, blast nozzle.

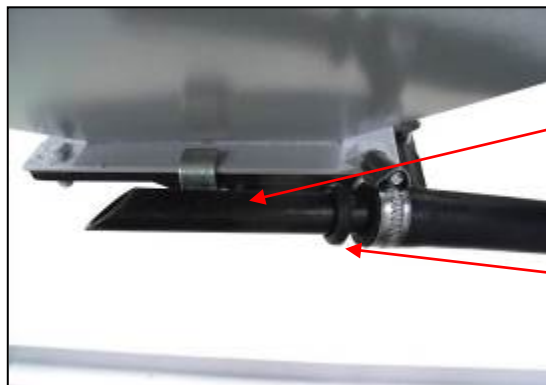
- Check that there is a supply of free-flowing, dry media to the mixer box.
- With compressed air flowing through the blast gun gradually move the pick-up tube into the mixer box with the chamfer facing upwards while a colleague watches the media flow from the nozzle.

The pick-up tube is in the right position when you are just able to see the media stream leaving the nozzle. If the media stream is intermittent then the pick-up tube has been pushed too far in.

- o Moving the pick-up tube out decreases media flow
- o Moving the pick-up tube in increases media flow
- Lock the pick-up tube in place with the retaining screw.
- Further adjustment should not be needed whilst using the same media.



Retaining screw



Pick-up tube

O-ring is used to mark position of the pick up tube in the mixer box. This allows the tube to be reinserted at the same position.

5.1.3 Stand-off distance

This is the distance of the gun nozzle from the component. The stand-off distance should not normally be reduced below 50mm as media from the nozzle will be deflected or slowed down by media ricocheting from the surface being blasted.

The impact of the media can be affected by the stand-off distance and the air pressure. The type of media will influence this but a larger blast area may be achieved by increasing both the stand-off distance and the blast air pressure.

5.1.4 Angle of blasting

The optimum angle for blasting for surface finishing is between 90 and 60 degrees to the horizontal. Shallower angles can cause surface damage or compromise material properties. Shallower angles than this can be used for deposit removal where the surface finish is not critical and with softer media.

Blast guns should be angled to minimise interference between the outputs from different guns. This will avoid disrupting the speed and direction of media between nozzle and component.

Always position guns pointing away from any cabinet openings; this minimises the risk of media being blasted out of the cabinet.

5.2 Extraction settings

5.2.1 Dust collector

The air-flow must be sufficient to create a slight negative pressure inside the cabinet to prevent dust from blowing out. The airspeed must also be high enough to carry the blast media and dust out of the cabinet and up the extraction hose to the inlet of the cyclone. This varies with the size and weight of blast media.

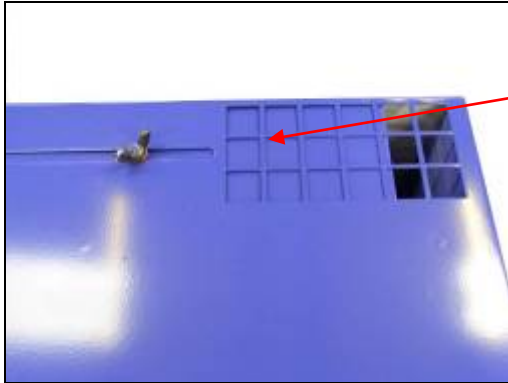
The suction in the dust collector should be such that a minimum amount of media is transferred into the dust collection system.

This is altered with the damper/blast gate on the dust collector outlet/inlet:

- Opening the damper/blast gate increases the suction
- Closing the damper/blast gate reduces the suction

When setting the dampers/blast gates always keep the extraction air-flow to the minimum needed to avoid pressurisation of the cabinet during blasting. Over time the filters in the dust collector will become clogged with dust, and an increased air-flow may be necessary between filter changes and maintenance. In systems with a cyclone the extraction should be set so that a minimum amount of media is transferred into the dust collection system.

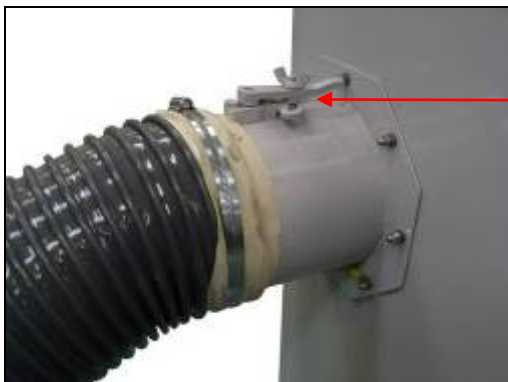
Always check the waste bin for good media when adjusting any settings.

**41 Dust collector**

Air flow is controlled by the slide damper on the exhaust outlet on the dust collector.

**C400 Dust collector**

Air flow is controlled by the slide damper on the exhaust outlet on the dust collector.

**C400 Dust collector with cyclone**

Air flow is controlled by the blast gate on the inlet to the dust collector.

The dust collector must be started before and stopped after the cyclone unit (if fitted) in order to clear the system of dust after the blasting operation.

The dust collector should be checked to see how much reusable media has been transferred and the settings adjusted accordingly.

Never try to extract reusable media for reuse in the machine.

5.2.2 Cyclone

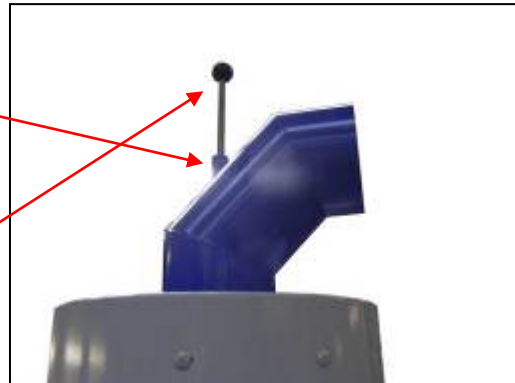
If after adjusting the dust collector damper good media is still being drawn into the dust collector, it may be necessary to adjust the cyclone vortex as well.

To test the position of vortex; first clean the dust collector waste bin. Operate the blast process for 10 minutes and then look inside the dust collector waste bin. A large quantity of usable blast media in the waste bin indicates the vortex needs adjusting to reduce carry over. The absence of any dust at all indicates the vortex needs adjustment to separate the dust which may be retained within the media hopper.

A short vortex will usually draw more dust out of the cyclone than a long vortex. Each process may need a different vortex setting, with best results being achieved by trial.

To adjust the length of the vortex on a non-motorized cyclone:

- Switch off the dust collector
- Open the access panel
- Release the thumb-screw securing the vortex adjusting rod at the top of the cyclone exit elbow.
- By means of the knob attached to the adjusting rod, slide the rod up or down as required to decrease or increase respectively the length of the vortex.
- Secure the thumb-screw when the adjusting rod is in the desired position.
- Close the access panel



NOTE: The position of the vortex can be viewed by opening the top access door during the adjustment procedure.

As a further aid to the separation of good media from dust and fines there is an air-flow separation control band around the body of the 75/16 cyclone.

This band has slots cut in it which coincide with holes in the cyclone body itself. When all the holes are lined up, air is permitted to enter the cyclone increasing the amount of air available for extraction to the dust collector. In turn this reduces the velocity of the exhaust air and permits media to fall out of the airstream more easily. This is particularly beneficial with light media (such as plastics) where the individual granules do not have sufficient mass to drop out of a moving airstream.

Where it is not necessary or not required to increase the velocity of the exhaust airstream the band should be rotated so that the holes in the band do not line up with the holes in the cyclone body; this will inhibit the entry of any extra air by this route and hence leave the characteristics of the air-flow unchanged.



It must be remembered that the air-flow separation band is adjustable to give all permutations between fully open and fully closed; this provides the operator with a wide range of adjustment to suit individual situations. However, it is also important to remember that there is no firm rule concerning the use of this band and the best results will be achieved by trial and error.

Once the cyclone has been set for a particular application, it should not require adjustment. Any loss of visibility or a failure to remove sufficient dust may be caused by blocked breather pads or choked dust collector filters.

To maximize operation, each different blasting operation will need the settings checking for best blasting performance.

6. Operation

6.1 Operating procedure

- Perform daily maintenance tasks (see section [7.1](#))
- Switch on main electrical power supply
- Switch on cabinet light
- Start the dust collector
- Turn on the air supply by opening the main air valve
- Ensure the wheel is grease-free and dry before blasting
- Open the cabinet door
- Remove the trolley stop pin(s)
- Place wheel on trolley in the cabinet
- Attach earthing clamp to wheel
- Position the blast gun and airwash so that they will be easily reached when using the gauntlets/gloves and sleeves
- Close the cabinet door securely
- Insert both arms through the armhole entries



GAUNTLETS/GLOVES MUST BE USED IN CONJUNCTION WITH THE ARMHOLE SLEEVES.

- Depress the foot pedal, media will exit from the gun nozzle
- Move the nozzle jet across the affected area of the wheel at a suitable distance from the surface, refer to blast gun settings section
- The affected area of the wheel should be blasted evenly
- When the blasting is complete, release the foot pedal
- The door can now be opened, and the wheel can be removed for inspection
- Further blasting may be necessary, or an adjustment to one or more of the machine or blast settings
- The air line may be used to clean dust from the component surface



Note:

If the machine is to be transported reinsert the trolley stop pin(s) to prevent the trolley from damaging the door and window.

7. Maintenance

Blast machines are subject to wear. The rate of wear is determined by:

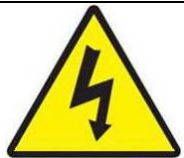
- The speed of media passing over the component surface
- The proportion of media to air exiting the blast nozzle
- The angle of contact with component surface
- Component material
- Media coarseness and type used

The wear can be minimised by regular maintenance and monitoring settings particularly those effecting localised wear.

The frequency of any maintenance schedule and the replacement of parts are determined by the amount of use, media used and operating conditions. Maintenance intervals will be determined by experience of machine-use over time. The following periods are recommended for initial trial periods until wear patterns are established.



ENSURE ALL AIR SUPPLIES ARE TURNED OFF AND THE SYSTEM IS FULLY EXHAUSTED BEFORE PERFORMING ANY MAINTENANCE



THE DUST COLLECTOR SHOULD BE FULLY ISOLATED BEFORE PERFORMING ANY MAINTENANCE. A LOCK-OUT AND TAG PROCEDURE SHOULD BE IN PLACE TO PREVENT THE MACHINE FROM BEING STARTED PRIOR TO THE COMPLETION OF MAINTENANCE.



PPE: GUYSON RECOMMENDS THAT AS A MINIMUM, OPERATIVES SHOULD USE A DUST MASK AND SAFETY GLASSES WHEN PERFORMING MAINTENANCE OF ANY SORT. REFERENCE SHOULD BE MADE TO THE MATERIAL SAFETY DATA SHEET OF THE MEDIA BEING USED FOR ANY SPECIFIC PPE REQUIRED.

7.1 Daily

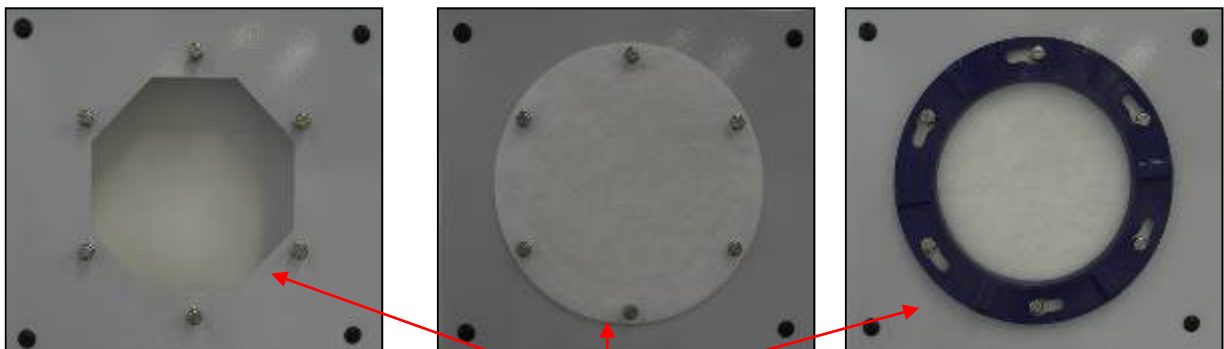
- Inspect breathers pads (see section [7.1.1](#))
- Inspect the viewing window and anti-frost sheet (see section [7.1.2](#))
- Inspect all hoses for wear and damage (see section [7.1.3](#))
- Inspect blast nozzles for uneven wear and bore size (maximum oversize is plus 20%) (see section [7.1.4](#))
- Inspect door seals for wear (see section [7.1.5](#))
- Inspect hopper for signs of overspray wear (see section [7.1.6](#))
- Empty dust collector bin and check contents for quality of media, ensure good media is not being wasted (see section [7.1.7](#))
- Top up media as required (see section [7.1.8](#))
- Clean the filters every four working hours (see section [7.1.9](#))
- Check compressed air filter (see section [7.1.10](#))
- Check earthing bonds are secure (see section [7.1.11](#))

7.1.1 Breather pads

The breather pads should be checked to see that they are not blocked. If they are they can cause an excessive negative pressure in the cabinet and affect the media stream from the gun. See below for how to change them if necessary.



Slide breather bezel anti-clockwise and remove.



Remove and replace the breather pad (Y1AB0001). Return the breather bezel to the locked position.

7.1.2 Viewing window



Check that the view of the component to be blasted is not impaired by a scratched anti frost sheet (P2PF0008) or glass (P2GL0008). Replace if necessary.

7.1.3 Hoses



Check the media supply hose (**R6TB0018**) for signs of wear and damage. Internal wear can be determined by feeling the rigidity of the tubing along its length. Any internal wear will result in the hose feeling soft where the hose wall is thinner. The first section to wear out is usually next to the pick up tube.

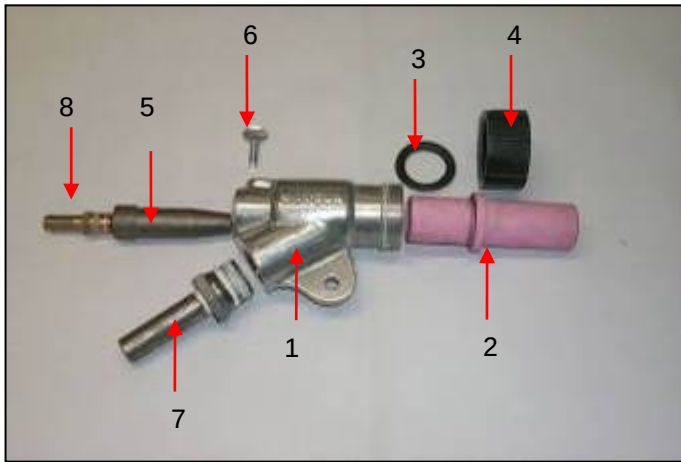
Check the extraction hoses for holes or breaks as these will affect the rate of extraction from the cabinet.



Item code	Description
R6TB0030	Flexible exhaust ducting - standard - 100 mm bore (m)
R6TB0032	Flexible exhaust ducting - polyurethane - 100 mm (m)
P2HS0000	Hose sleeve - 100mm
R6TB0034	Flexible exhaust ducting - standard - 150 mm bore (m)
R6TB0036	Flexible exhaust ducting - polyurethane - 150 mm bore (m)
P2HS0001	Hose sleeve - 150mm

7.1.4 Blast nozzles

900 Blast gun

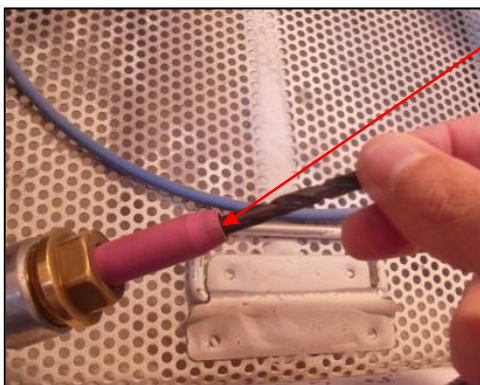


Pos	Item code	Description
1		900 Gun body
2	D2BA0006	9.5mm Ceramic nozzle
	D2BA0007	12.7mm Ceramic nozzle
	D2BA0009	9.5mm Boron nozzle
	D2BA0010	12.7mm Boron nozzle
3	P1WS0039	Nozzle washer
4	D2AA0009	Nozzle locknut
5	D1AA0004	3.2mm Airjet
	D1AA0005	4.0mm Airjet
	D1AA0006	4.8mm Airjet
	D1AA0012	3.2mm Tungsten sleeved airjet
	D1AA0011	4.0mm Tungsten sleeved airjet
	D1AA0008	4.8mm Tungsten sleeved airjet
6	P1TH0189	Thumbscrew
7	P4CG0009	Media entry 16mm hose
8	P4CG0001	1/4" BSP Hosetail x 10mm

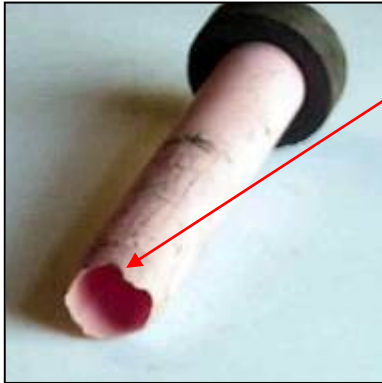
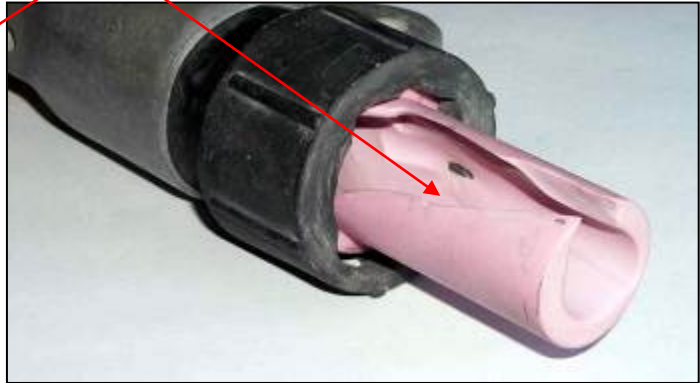
Blast nozzle

Inspect the blast nozzle for wear. When the bore size has increased by 20% (6mm bore @ 20% = 7.2mm) then the nozzle needs to be replaced. The effective bore of a nozzle can be quickly checked by use of a twist drill bit.

The nozzle should be withdrawn from the gun body after 8 hours blasting and rotated by 5° to avoid uneven wear.



The pictures below show extremely worn nozzles. Your nozzle should not be allowed to reach this state as it will decrease its blasting effectiveness and may also damage the blast gun.



Airjet

The airjet should be withdrawn from the gun body after 8 hours blasting to establish the wear pattern on its outer surface. When wear has become noticeable, the fitting should be rotated to the next unworn section. When wear has occurred around the whole circumference, the airjet should be replaced.



Media entry

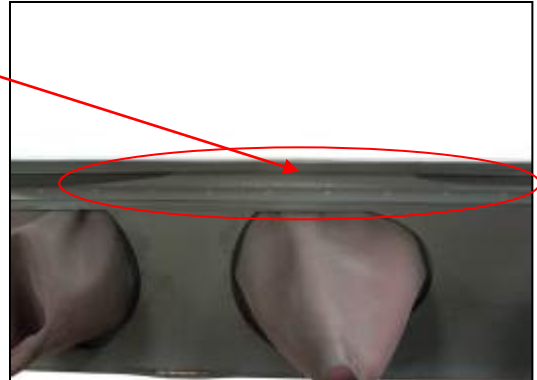
The media entry connection should be withdrawn from the gun body and inspected for wear on a regular basis.

7.1.5 Door seals

If the door gasket strips are worn then:

- this allows noise to escape from the cabinet more easily
- media may be able to exit the cabinet

Item code	Description
R5SL0008	12mm wide x 5m roll
R5SL0024	16mm wide x 5m roll
R5SL0026	38mm wide x 5m roll
R5SL0027	25mm wide x 5m roll



7.1.6 Overspray

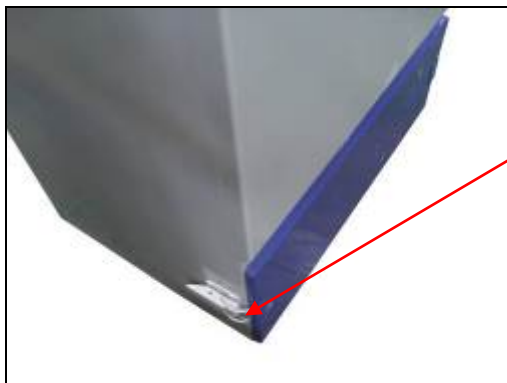
Care should be taken not to wear away the insides of the cabinet. If certain areas are getting increased wear then Guyson International can supply rubber curtains and linings.

7.1.7 Empty dust collector bin

The dust collector bins should be emptied twice daily. They should also be checked for good media. If this is present then the dust collector/cyclone settings will need adjusting.



**CARE SHOULD BE TAKEN WHEN HANDLING THE WASTE BINS AS THEY
MAY BE HEAVY**



41 Dust collector

This bin is held in by clips on both sides of the dust collector. Release these to remove the bin from the dust collector.

**C400 Dust collector**

This bin is compressed against the filter chamber of the dust collector by a lifter cam. To lower the bin; use the handle on the side. Then slide the bin out.

7.1.8 Topping up media

Top up the media levels as required as media is consumed. This can be roughly gauged from the waste bin on the dust collector. Regular additions of small quantities of media maintain an even particle size and assist in producing consistent results.

7.1.9 Filter cleaning

Filter cleaning must be carried out on a regular basis. Initially this should be carried out every four hours, until a working pattern is reached. The table below shows the different cleaning mechanisms on the various dust collector models:



THE MOTOR SHOULD BE SWITCHED OFF WHEN USING THE CLEANING MECHANISM ON THE 41 AND C400 DUST COLLECTORS



41 Dust collector

The filter cleaning system is manual. Pull and push the knob back and forth to shake the filter clean.

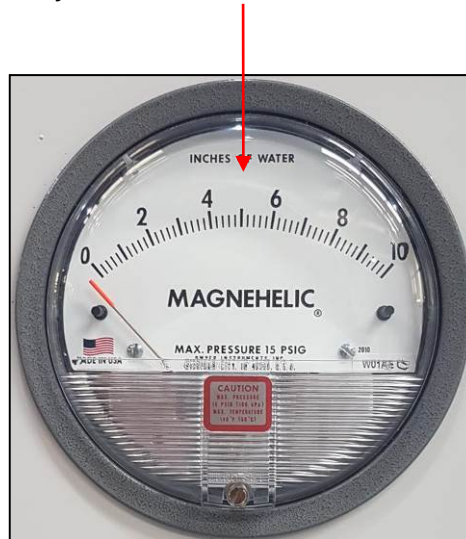


C400 Dust collector

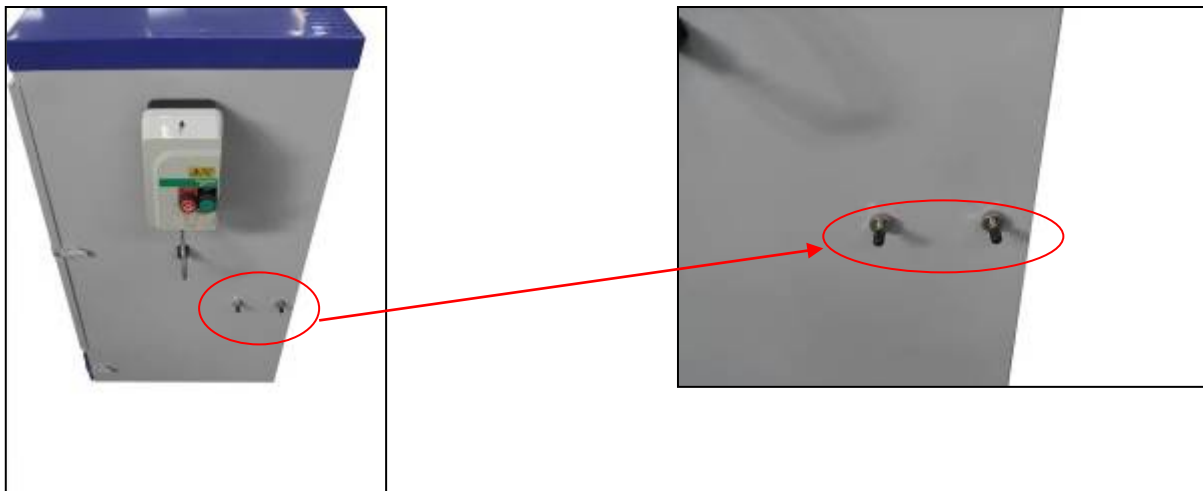
The filter cleaning system is manual. Push the button to release the compressed air from the pressure vessel to knock the dust from the filter.

After approximately five hundred hours use the dust will have worked its way into the body of the filter and cleaning with the cleaning mechanism will no longer clean sufficiently to allow enough air through. This will be evident by poor visibility in the cabinet and/or failure to extract the dust even with the dust collector damper fully open. A filter change will be necessary at this point.

C400 dust collectors are fitted as standard with a magnehelic manometer gauge. This measures the differential pressure across the main filter. When the pressure difference reaches 5" Water Gauge then a filter change will be necessary.



The 41 dust collector does not come fitted with a manometer as standard. Hosetails are fitted as standard allowing an aftermarket manometer (**E1AA1836**) to be used.

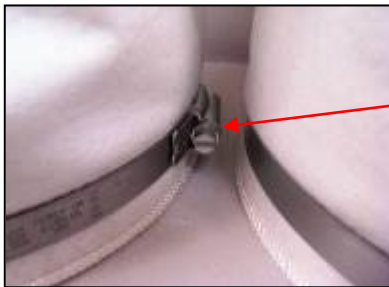


7.1.9.1 Replacing the filter sleeves on a 41



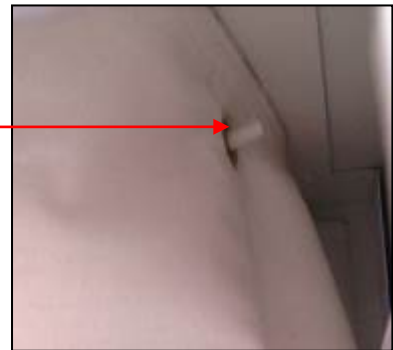
Shake filters and allow dust to settle.

Remove front panel by unhooking latches.



Remove large worm-drive clip from base of each filter sleeve.

Unhook top of each filter from retainer clip.



Carefully remove filter from dust collector.

Replace with new filter sleeve (Y1CA0000) by hooking top of filter onto retainer clip first then pass worm drive clip over the base of the sleeve and secure to base of dust collector. Re-fit front cover.



7.1.9.2 Replacing the filter cartridge on a C400

- Press the filter cleaning push button and turn off the air supply



Turn anti-clockwise to
unlock.

Remove front cover.



For filter removal turn lifter
cam 180° to the left.

The cam is now unlocked
and the filter cartridge can
be removed.



Replace with new filter
cartridge (Y1CA0049).

Turn lifter cam 180° to the
right to lock cartridge.

Replace front cover.



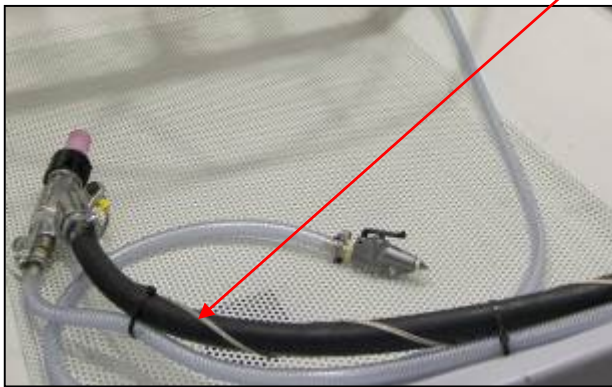
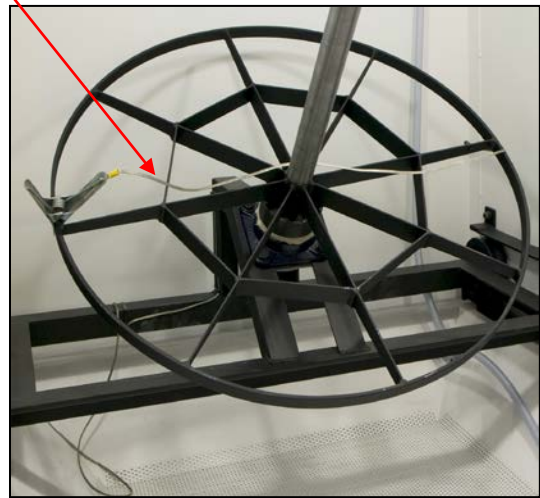
**ENSURE THE FILTER IS CORRECTLY POSITIONED SO THAT DUST
CANNOT BYPASS IT TO THE EXHAUST**

7.1.10 Compressed air filter

The compressed air filter is self draining. If the media is dry and not clumping together then the compressed air filter is working correctly. If the media is clumping together then there is a problem with the compressed air filter or your air supply. Guyson International should be contacted for more information.

7.1.11 Earthing bonds

Check that the earthing wires on the media hose and trolley are secure.



7.2 Weekly

- Inspect hopper elbow and wear plates for wear (see section [7.2.1](#))
- Inspect cyclone interior and wear plates for wear (see section [7.2.2](#))
- Inspect sleeves/gauntlets for wear (see section [7.2.3](#))
- Inspect wheelmaster trolley (see section [7.2.4](#))

7.2.1 Hopper elbow

Hopper elbows will either be made of PU or Mild Steel. If they are Mild Steel they will either have a PU or Mild Steel Wear plate fitted depending on the specification ordered. The wear plate should be inspected and replaced when worn thin. If the elbow is made of PU and has worn through then a new hopper elbow will be required.

7.2.1.1 Replacing the wear plate

- Turn dust collector on
- Turn cyclone on
- Run machine for 10 mins to clear pipes
- Turn cyclone off
- Turn dust collector off
- Detach hopper elbow
- Replace wear plate
- Reattach hopper elbow

Item code	Description
E1AA0097	90° Ø100 PU Hopper Elbow
E1AA3176	Wear Plate Side Loader Hopper Elbow

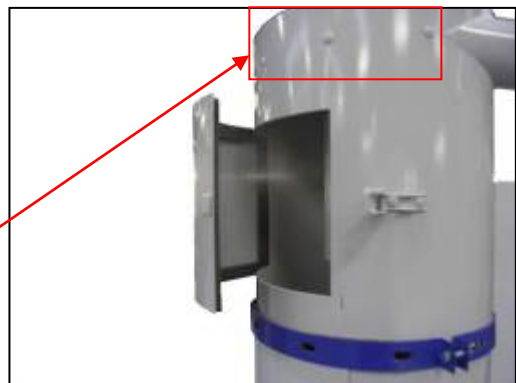
If your elbow is not one of those listed in the table above then please contact Guyson International for more information.

7.2.2 Cyclone

Cyclones will either have a PU lining or a wear plate fitted depending on the specification ordered. The wear plate should be inspected and replaced when worn thin. The PU lining cannot be relined and a new cyclone body will be required when it has been worn away.

7.2.2.1 Replacing the wear plate

- Open the top door
- Remove the 3 bolts while holding on to the wear plate to stop it falling off
- Replace wear plate (**E1AA2454**) and secure it in position with the 3 bolts



7.2.3 Sleeves/Gauntlets

If the sleeves (**Y1AA0024**) or gauntlets (**Y1AA0017**) have holes in them or have split then:

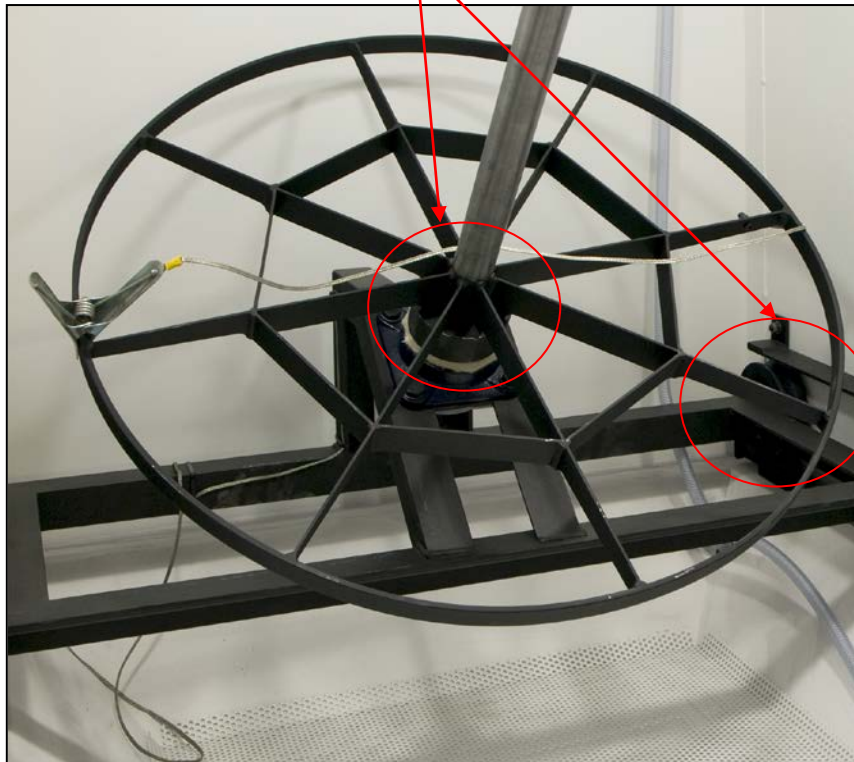
- this allows noise to escape the cabinet more easily
- media may be able to exit the cabinet

They should be replaced when damaged.



7.2.4 Wheelmaster trolley

The turntable trolley should be checked to see that its 4 wheels and turntable are running smoothly and freely. If not then the wheels may have worn and need replacing. The turntable bearing may need replacing or greasing.



Item code	Description
E1AB2454	Vee wheel
P5BE0150	Flange bearing RHP SF 40

7.3 Monthly

- Drain old media and discard (see section [7.3.1](#)) and refill system with new media (see section [4.2](#)).

7.3.1 Emptying media

To empty machine,

- Turn on the dust collector
- Use an air line to clean inside cabinet
- Once clean leave dust extraction on for 10 minutes to clear pipes of residual media
- Switch off dust collector
- When motor has stopped remove pick-up tube from mixer box
- Place container under mixer box, unclip and remove mixer box and collect media.



TAKE CARE TO AVOID TRAPPING FINGERS; THE MIXER BOX COULD BE VERY HEAVY

7.4 Quarterly

- Inspect blast gates for internal wear (see section [7.4.1](#)).

7.4.1 Blast gates

Inspect for excessive wear. If this wear is so excessive that you cannot set the blast gate correctly then it will need replacing. Contact Guyson International for more information.



8. FAQ's

Static Electricity

Cabinet, media and component

Un-insulated earth braid wrapped round the media hose and/or connected to the component and then earthed to the cabinet and extraction equipment provides a drain path.

Static build-up on extraction hose

Un-insulated earth braid wrapped round the extraction hose and earthed to the cabinet and extraction equipment provides a drain path.

If you experience any problems with static electricity please contact our Service Department



FAULT-FINDING CHECKS SHOULD ONLY BE CARRIED OUT BY A FULLY QUALIFIED ENGINEER



IF REQUIRED THE BLAST CABINET AND ALL ITS ANCILLARY EQUIPMENT SHOULD BE FULLY ISOLATED BEFORE PERFORMING ANY FAULT FINDING CHECKS



IF REQUIRED ENSURE ALL AIR SUPPLIES ARE TURNED OFF AND THE SYSTEM IS FULLY EXHAUSTED BEFORE PERFORMING ANY MAINTENANCE

Questions for Suction-feed machines

Fault	No air from blast gun when in cycle	Action
Possible cause	Bore of air-jet in blast gun blocked	Unblock and clean
	Nozzle blocked	Unblock and clean
Fault	Moisture coming from blast gun nozzle	Action
Possible cause	Fault with customer air supply	Customer to check and correct



Fault	Air pressure from blast nozzle drops	Action
Possible cause	Compressor fault/not to specification	Customer to check air supply and correct
	Incorrect mains supply pipe diameter	Refer to Data sheets, change pipe
	Worn air-jets or nozzle	Replace
	Faulty air valve	Replace
Fault	No media flow from blast gun	Action
Possible cause	Pick-up-tube incorrectly set in mixer box	Refer to Setting Media Pick-up-tube
	Damp media causing poor flow to mixer box	Replace media and check air supply and compressed air filter
	No suction at pick-up-tube	Check for hose blockage/ gun wear
	Blocked media supply hose to blast gun	Unblock
	No media in hopper	Refill
	Blocked nozzle	Unblock
Fault	Erratic media flow from gun nozzle	Action
Possible cause	Incorrect pick-up-tube setting	Refer to Setting Media Pick-up-tube
	Incorrect air-pressure setting	Refer to Set-up information
	Worn pick-up-tube/air-jet/gun nozzle	Replace as necessary
	Hole in gun body	Replace as necessary
	Air supply causing moisture in media	Customer to check air supply
Questions for machines with Cyclones / Dust collectors		
Fault	Incorrect media separation	Action
Possible cause	Cyclone vortex incorrectly set	Refer to Cyclone set-up
	Breather filters blocked	Replace
	Cyclone door seals worn/bin seals faulty	Replace as necessary
Fault	Poor visibility/dust emissions	Action
Possible cause	Lack of negative pressure in extraction system	Check dust collector filters and damper settings
	Damaged hoses on dust collector	Replace
	Breather filters blocked	Replace
	Poor media quality	Replace all media
If problems are ongoing please conduct a full maintenance service of the equipment or contact Customer Services to book a Guyson Service Engineer visit		



9. Spares and servicing

A maintenance and service agreement for this system is available as an optional extra, for further details please refer to contact details below.

When ordering spares or accessories please quote the following information:

Customer Account Number
Machine Serial Number
Product code of item required

If an item has broke that is not listed in the maintenance section and cannot be identified from the mechanical drawings in the appendix of this manual then please contact Guyson International on the details below for further help.

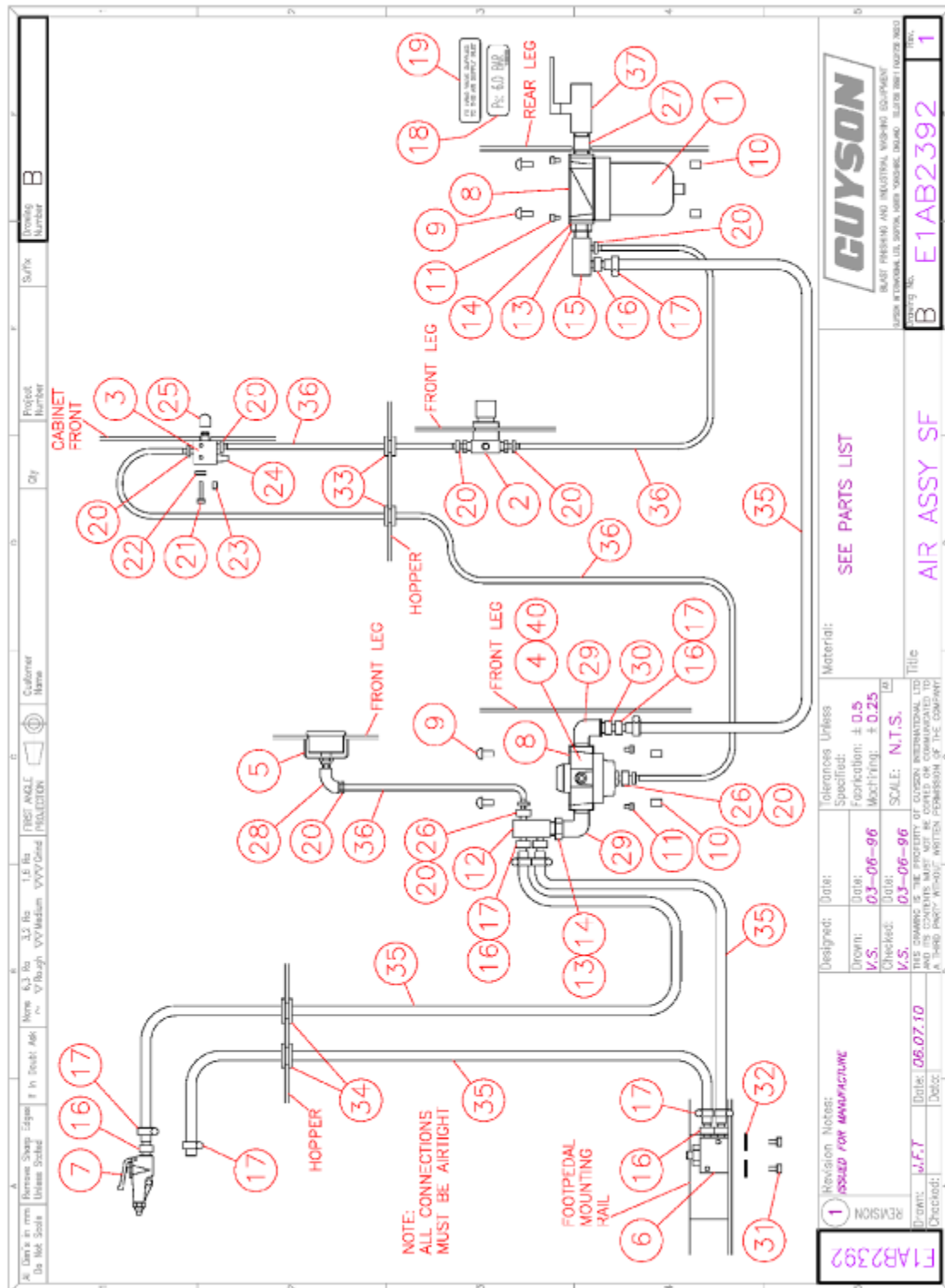
Customer Service Department
Guyson International Ltd
Snaygill Industrial Estate
Keighley Road
Skipton
North Yorkshire
BD23 2QR
Tel: 01756-799911
E-mail: info@guyson.co.uk
Website: www.guyson.co.uk



10. Appendices

10.1 Mechanical drawings and parts lists

10.1.1 Air assy for Wheelmaster SF





Pos.	Item Number	Description
1	P4AP0027	Filter 1/2" BSP Autodrain
2	P4AP0030	Regulator 1/8" BSP Pilot Reg
3	P4VL0033	Plunger Valve 3/2 1/8" NPT
4	P4AP0028	Regulator 1/2" BSP P/Operated
5	P4SD0000	Press Gauge Panel 0-10 bar
6	P4VL0059	Plunger 2/2 Valve 1/4" BSP
7	P4VL0072	Valve Trigger Gun (2006ga44)
8	E1AA0032	Mounting Bracket
9	P1TH0184	Hex.Skt. Button Screw M8 x 16
10	P1TH0228	Nutsert M8
11	P1TH0093	Hex.Skt.Cap Screw M5 x 10
12	D1MC0000	Manifold A3201 (3 Outlets)
13	P4MN0179	Locknut 1/2" BSP (Manifold)
14	P1WS0036	Washer Dowty 1/2"
15	D1MC0001	Manifold A15249
16	P4CG0001	Hosetail 1/4" BSP x 10mm Hose
17	P1HC0000	Hose Clip 10mm
18	Y1BB0422	Label, "Ps: 6.0 Bar"
19	Y1BB0056	Label "Fit Hand Valve"
20	P4TF0132	Hosetail Barb 1/8" - 1/8" NPT
21	P1TH0025	Hex. Set Screw M5 x 25
22	P1WS0012	Spring Washer M5
23	E1AA0031	Valve Locating Pin
24	P4SL0002	Silencer 1/8" NPT
25	P2GT0013	PVC Black End Cap
26	P4MN0151	Bush Red. 1/4" X 1/8" BSP
27	P4MN0089	Nipple Barrel 1/2" BSP
28	P4MN0000	Elbow Fem. 1/8" BSP
29	P4MN0019	Elbow M/F 1/2" BSP
30	P4MN0155	Bush Red. 1/2" X 1/4" BSP
31	P1TH0030	Hex. Set Screw M6 x 12
32	P1WS0003	Plain Washer M6
33	P2GT0009	Grommet 5.6 x 8mm
34	P2GT0000	Grommet 10mm PVC Hose
35	R6TB0003	Hose 10mm x 16 OD Braided PVC
36	R6TB0046	Tube 1/8" Id Blue PU
37	P4VL0114	Ball Valve 1/2" BSP Venting
38	P1TH0213	Hex. Nut M5 Nyloc
39	P1WS0002	Plain Washer M5
40	P4MN0134	Plug Solid 1/4" BSP

10.2 Electrical schematics and parts lists

The following references are used on the electrical drawing package.

Where numbering is added, this is to distinguish between like components.

Where a component consists of several units performing different functions, separate part numbers are given.

Reference	Description	Example
A	Assemblies/sub-assemblies	Speed controller, PLC
B	Transducers	Pressure, Vacuum, Reed, Proximity and Limit switches
E	Misc. equipment	Machine lighting
F	Protection devices	Fuses, Overloads, RCDs
H	Signalling devices	Visual and Audio indicators
KA	Relays	Control, Signal, Interface relays
KM	Main contactors	Motor contactors
KT	Timers	Process, Interface, Delay timers
M	Motors	All electrical motors
P	Test devices, meters	Hourmeter, Counter, Ammeter, Voltmeter
Q	Mechanical connecting devices for power circuits	Isolators, Circuit breakers
R	Resistors	Potentiometers, Resistors
S	Mechanical connecting devices for control circuits	Selector switches, Pushbuttons
T	Transformers	Voltage: Lighting, Controls, Power, Sensors
U	Converters (electrical)	Rectifiers, Encoders, Filters
X	Terminal connectors	Plugs/Sockets, Terminals
Y	Electrically actuated devices	Solenoid valves, Motor brakes, Door locks

Note:

These reference letters should be distinguished from lower case letters used to identify terminal connections

10.2.1 Electrical installation of dust collectors and cyclones

Guyson dust collectors and motorised cyclones (whether for single or three phase supplies), when supplied to complement blast cabinets, are fitted with starters. These should be wired from the customer's switched fused isolator.

The starter needs to be wired up by a suitably qualified electrician; electrical schematics for the single and three phase systems are attached.

The supply required can be discovered from reading this chart:

Model	Phase	Voltage	Cycle (Hz)	Power (kW)	Full Load Current (A)*
21/41	1	230	50	0.37	3
C400	1	230	50	0.75	5
C600	1	230	50	0.75	5
C800	1	230	50	1.5	6.8
75/16	1	230	50	0.55	4.7
CY600	1	230	50	1.5	6.8
41	3	400	50	0.37	1.4
C400	3	400	50	0.75	1.8
C600	3	400	50	0.75	1.8
C800	3	400	50	1.5	3.6
75/16	3	400	50	0.55	1.5
CY600	3	400	50	1.5	3.6
CY900	3	400	50	1.5	3.6

* Fuses should be sized to comply with full load current. When sizing fuses, smallest fuse rating should be used to suit motor and starting characteristics.

On both single and three phase motors it is essential to check that the direction of rotation matches the arrow attached to the motor housing. This is best done visually. If the motor is rotating in the wrong direction, it will be necessary to switch off the machine, isolate the electric supply and reverse the position of L1 and L2 on single phase machines or any TWO of the feed wires (L1, L2 or L3) on three phase machines.



If a problem occurs with installation then Guyson International should be contacted to provide support.

IF REQ'D

STOP RESET

START

MOTOR RUNNING IF REQ'D

Wiring diagram for a motor with a thermal relay. The diagram shows a three-phase supply (L, N, RD) connected to a motor (M 1) through a thermal relay (U1, U2, Z1, Z2). A stop button (STOP RESET) is connected to the supply and the thermal relay. A start button (START) is connected to the supply and the thermal relay. A thermal relay (A) is connected to the supply and the motor. The thermal relay has a reset button (L) and a stop button (A). The thermal relay is labeled 'IF REQ'D'.

When fitting a new starter motor, the overload will have to be set to the required full load current. Use the table at the start of this section to select the correct value, and adjust the overload accordingly.



To adjust, pull out selector
and slide to required position