From: <u>Air.Pollution Control</u>
To: <u>APC Permitting</u>

 Subject:
 FW: Vic Davis 82-0639/E82165

 Date:
 Monday, April 15, 2024 5:19:51 PM

 Attachments:
 APC-E82165-Spec-Screen.pdf APC-E82165-Spec-Conveyor.pdf

From: Jimmie Horton < Jimmie. Horton@tn.gov>

Sent: Monday, April 15, 2024 3:32 PM

To: Air.Pollution Control <Air.Pollution.Control@tn.gov>

Subject: Vic Davis 82-0639/E82165

Admin:

Additional Application Information

Good afternoon. Please upload to the permit page on SmogLog at your earliest convenience. I appreciate the help.

Sincerely:

J Horton

Ph. (615) 532-0533

From: Tyler Davis <<u>tylerd@vdctn.com</u>>
Sent: Tuesday, March 19, 2024 5:24 AM
To: Jimmie Horton <<u>Jimmie.Horton@tn.gov</u>>

Subject: [EXTERNAL] Corrections to Permit Request. FACILITY ID 82-0639

Mr. Horton,

Please see the attached for the screen and 2 stackers. Please let me know if you have any questions or need anything else on the equipment. Our ID # is 82-0639.

Thanks,

Tyler Davis





Model TR8036

OPERATOR MANUAL + PARTS LIST

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1) INTRODUCTION

Thank you for purchasing a Barford conveyor.

This manual is as important as your conveyor and should be read thoroughly before operating your machine.

Safety is always at the forefront at Barford Equipment Ltd. It is recommended that all safety information should be read and followed.

MANUFACTURER:

Barford Equipment Ltd 72-74 Omagh Road Dromore Co.Tyrone N.Ireland BT78 2AJ

Tel:	+ 44 (0) 2882 897401			
E:	info@barford.com			
Serial Number:				
Product / Model:				

2) WARRANTY

Barford Conveyors have a one year warranty on labour and on all non consumable parts e.g. filters and scrapers.

All Barford Conveyors are carefully examined and tested before leaving the premises.

Every Barford machine **must** be registered for warranty. Please complete the Warranty Registration Certificate on the next page. One copy should be kept by you the customer and a copy returned to Barford Conveyor Systems at the above address.

Before warranty can be honoured a Warranty Certificate must be held on file at BARFORD EQUIPMENT LTD.

NOTE: If servicing or repairing any parts that is non factory supplied will invalidate the warranty. It is the sole responsibility of the operator to read, understand and comply with all instructions as stated in this manual.





Barford Equipment Ltd 72-74 Omagh Road Dromore Co.Tyrone N.Ireland BT78 3AJ T: +44 (0) 2882 897401 E: info@barford.com

Registration Certificate

Your Warranty starts from the day that warranty registration has ta	ken place
Date: Serial Number:	
SAFETY	
Has the Manual been read and understood?	☐ YES ☐ NO
Have you carried out a risk assessment for the proposed	
working area?	☐ YES ☐ NO
Do you have a proper working Radio Remote (optional extra)?	☐ YES ☐ NO
Is the machine set up on a level surface?	☐ YES ☐ NO
Any extra options are in place?	☐ YES ☐ NO
All guards are fitted and secure?	☐ YES ☐ NO
Are you happy with the first test of the machine?	☐ YES ☐ NO
If not, why?	
HYDRAULICS AND THE CONVEYOR	
Check oil level and for water in the diesel tank?	☐ YES ☐ NO
Comments	
Check oil level in hydraulic tank?	☐ YES ☐ NO
Comments	
Are the control valves operating?	☐ YES ☐ NO
Any leaks in the hydraulic system?	□ YES □ NO
Are all persons who will be operating the machine fully trained	
and informed of the workings of the machine?	☐ YES ☐ NO
Is the control panel and emergency stops in good working order?	☐ YES ☐ NO
Is the belt tracking?	☐ YES ☐ NO
Checked tension of discharge belt?	\square YES \square NO
Copy to be retained and hard copy to be returned to above address.	



Please Note: No warranty registration received means no warranty on machine.

Customer Name: _____ BARFORD Dealer/Distributer: Customer Contact Name: Contact: **Customer Contact:** Phone Number: Customer Full Address: Application: **Engine Registered:** ☐ YES ☐ NO ☐ YES ☐ NO Instruction Manual Received: Notes or Comments: I the undersigned confirm that I have received the Barford product and that the operators fully understand the operations of the machine. I was present when all checks were marked and I hereby sign below to agreeing to the conditions of the Barford warranty: Signatures:

Copy to be retained & hard copy to be returned to BARFORD office.

Please note: No warranty registration received, means no warranty on the machine!



3) EU DECLARATION OF CONFORMITY

We the undersigned:

Barford Equipment Ltd 72-74 Omagh Road Dromore Co.Tyrone N.Ireland BT78 3AJ

RARFORD

Declare under our sole responsibility that the following apparatus:

DAIL OILD
Model:
Serial Number:
Is in conformity with the following relevant EC legislation: Machinery Directive 2006/42/EC
Based on the following harmonised standards: EN12100-2:1998, EN ISO 12100:2010, BS EN ISO 4413:2010 and therefore complies with the following essential requirements of the Machinery Safety Directive EHSR1.1, EHSR1.2, EHSR1.3, EHSR1.4, EHSR1.5, EHSR1.7.
We the undersigned, undertake to transmit, in response to a reasoned request by national authorities, relevant information on the machinery by the following method of transmission: Parcel
Name and position of person binding the manufacturer or authorised representative:
Signature:
Name:
Function:
Location: Same as above address
Date of issue:



4) SAFETY RECOMMENDATIONS

The Barford Conveyors is designed with Safety in mind.

Barford Equipment Ltd reserve the right not to take responsibility for any injury or damage if the manual is not read and followed.

Ensure all operators are familiar with the machine, its functions and capabilities.

Inadequate knowledge of the machines operation can lead to death or serious injury.

Before commencing any maintenance work ensure that all energy sources i.e. Diesel Engine or Electric Power pack are locked out using the isolators provided and signs are in place indicating that maintenance work is being carried out

Ensure the machine cannot be started while others carry out work on the machine by locking out all energy sources.

All moving parts are covered by guards and shields to prevent accident or injury. If in the event of repair work or servicing to be carried out, these covers may be removed. Removed guards and shields should be replaced immediately after maintenance work is finished. **Operating the machine is not permitted with missing guards.**

Ensure machine is operated and driven on a level and stable surface.

OPERATING CONVEYOR SAFELY

- Read the operator's manual carefully taking note of all the safety information.
- DO NOT attempt to adjust the conveyor belt while they are running.
- If excessive machine vibration occurs, stop the engine and remedy the problem.

CHEMICAL SAFETY

- Always follow instructions on chemical container. Protective clothing should be worn when using chemicals (gloves and goggles). Use the appropriate tools when opening a chemical container. Always use a well ventilated area.
- **DO NOT** smoke, eat or drink while handling chemicals. Dispose of all waste in line with local and national regulations.

HIGH PRESSURE FLUIDS

- Check all hoses and lines regularly. Replace when needed.
- Check all connections and tighten when needed.
- Always relieve pressure if fluid escapes before disconnecting hydraulic hose or lines.
- **DO NOT** use your bare hands or parts of the body to check for leaks.
- Always seek medical help if an accident occurs.



OPERATING PERSONNEL

- Only authorized, competent or trained personnel should operate the Barford conveyor.
- Only authorized, competent or trained personnel should carry out and maintenance work on the Barford conveyor.
- All instructions should be followed.

PLANT MANAGEMENT IS RESPONSIBLE FOR

- The working area around the machine and the machine itself.
- Any persons in the area of the equipment.
- Any persons operating the equipment.
- Safety of any persons carrying out machine maintenance on site.
- Risk assessment and Health & Safety regulations are adhered to (local and national).
- Ensuring that all doors and guards are closed and installed correctly.
- Ensuring that all maintenance issues, electrical or mechanical, are fixed before machine is operated.

ON SITE ENVIRONMENT

- Risk assessment should be carried out before, during and after operation of the machine.
- All hazardous materials must be handled in accordance with the manual instructions.
- Ensure appropriate measures are taken for site personnel training in Health & Safety awareness.

APPROPRIATE CLOTHING

- All persons operating the machine should wear appropriate clothing e.g. Hard hat, ear protection, dust masks and protective footwear.
- Any loose clothing should be tucked in and kept away from rotating parts.



WORKING WITH ELECTRICS

- It is recommended that any persons working with the electrical operations on the conveyor must work to the standards of EN50110 or similar.
- Before starting machine ensure that all electrical cables and connectors are in good working order. Also de-energised parts are checked for presence of power and ground or short circuit them in addition to insulating elements and adjacent live parts.
- Use recommended current rating original fuses. If the operator suspects that there is a problem, switch off the machine immediately.
- Before starting the machine, the isolator that carries the high voltage must be earth bonded by a qualified electrician.
- Always risk assess the area where the machine will be in operation for overhead
 cables and other dangerous obstacles. If contact is made with a live wire, de-energise
 and alert all persons about approaching and touching the machine immediately.
- When cleaning the conveyor **DO NOT** hose down any electrical enclosures or the electrical motor.



DECALS FOR MACHINE SAFETY

Operators should be familiar with all equipment and be trained in their safe use. Before operation the operator must:

- Have read and understood the operators manual and all safety signs in the manual and on the machine.
- Have received specific and adequate training in the operation to be carried out.
- Know the location and function of all controls on the machine.
- Know the location of all Emergency Stops and other safety equipment.
- Be aware of all moving parts of the machine.

Listed below are all the safety signs used throughout this manual and on the machine. Operators must be familiar with these signs and be aware of their meaning. These signs are used in this manual to warn of some of the potential hazards, which may exist while operating this machine.



WARNING: Finger Crush Hazard.

Be careful when removing and replacing prop leg pins.



WARNING: Falling Objects Hazard.

Stay a safe distance from area.



WARNING: Entanglement In The Conveyor Hazard.

Make sure all guards are in place, shut off the engine and remove the key before performing maintenance or repair work.



WARNING: Electric Shock Hazard.

Beware of overhead cables when selling up or moving the machine.



WARNING: Crush Hazard.

Nip point.



WARNING!

Read the instruction manual before proceeding.



DECALS FOR MACHINE SAFETY CONTINUED



WARNING: Possibility Of Crushing By Overhead Conveyor. Stay a safe distance from the conveyor while it is being raised or Lowered.



WARNING: High Pressure Fluids Hazard.
Read the instruction manual before proceeding.



Emergency Stop Button.



Noise level.



Hydraulic oil tank.



Diesel tank.



Mandatory:



Mandatory:

Use eye protection.

Use hearing protection.



Mandatory:



Mandatory:

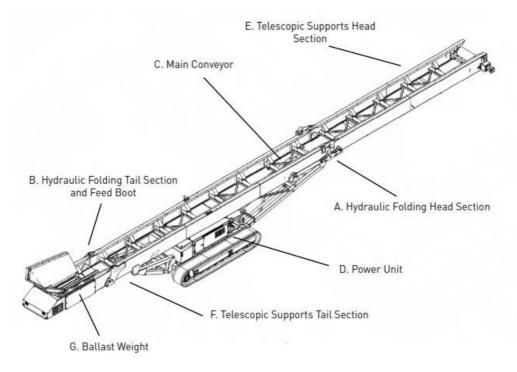
Wear a hard hat.

Wear respirator.

NOTE: Actual decals on your machine may differ slightly from above as new versions are released.

5) KNOW YOUR MACHINE

Please take note of all the different components of the machine



A: Hydraulic Folding Head Section - This allows the machine to be easily folded for transport.

B: Hydraulic Folding Tail Section and Feed Boot - This allows the machine to the folded for transportation and the feed boot is where the raw material is fed.

C: Main Conveyor - This main unit carries the raw material from the feed boot to create a Stockpile.

D: Power Unit - This is the main source of electric and hydraulic power.

E+F: Telescopic Supports - Stability while working and adjustment of stockpile heights.

G: Ballast Weights - Allows conveyor to be repositioned while fully elevated.

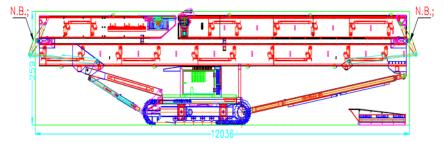


6) Unfolding for Operation

Preparing Barford Conveyor for Operation

Barford Conveyor will arrive folded. Before starting the machine or tracking, follow the steps:

- Ensure machine is on level ground and is stable enough to support the weight of the machine.
- Ensure all guards and shields are in correct position.
- Ensure suitable clothing and safety gear is worn.
- Check fuel tank for level of fuel.
- · Check hydraulic oil level.
- Put control valve levers into neutral position.
- 2. Start the machine (refer to previous section on this, let machine warm up for 10 mins).
- 3. The head section can be unfolded by gently pushing forward the first lever in the auxiliary control bank (moving the lever away from you).
- 4. Gently move the head section into position.
- 5. To achieve the desired working level raise the tail and head section rams.
- 6. Insert locking pins at the stanchion legs once the desired level of stockpile is achieved.
- 7. You are now ready for normal operation. Raise the lever at the conveyor drive bank to drive conveyor belt.
- 8. Check that the conveyor belt is aligned and is running smoothly.
- 9. On first use, let the conveyor run for minutes before loading the Feed boot.
- 10. Adjust engine revs with the hand throttle.



N.B. - LINKS REMOVED FOR TRANSPORT INSIDE A CONTAINER;



7) THE POWER UNIT

The power unit is attached at the chassis and provides the power output. This contains the control panel, engine throttle, engine, radio remote control, manual tracking dog lead, drive control valve bank and also the auxiliary control valve bank. The hydraulic and diesel tanks are placed at either side of the power unit.



ENGINE CONTROL PANEL

The control panel is contained in the power unit and starts up the engine.







Standard Conveyor Control Panel

Dual Power Conveyor Control Panel (Optional)

ICON	DESCRIPTION	
	AUXILIARY INPUTS	Auxiliary inputs can be user configured and will display the message as written by the user.
!_ [FAIL TO START	The engine has not fired after the preset number of start attempts
FAIL TO STOP		The module has detected a condition that indicates that the engine is running when it has been instructed to stop.
		NOTE:- 'Fail to Stop' could indicate a faulty oil pressure sensor - If engine is at rest check oil sensor wiring and configuration.
2 5;	LOW OIL PRESSURE	The module detects that the engine oil pressure has fallen below the low oil pressure pre-alarm setting level after the Safety On timer has expired.
뺚	ENGINE HIGH TEMPERATURE	The module detects that the engine coolant temperature has exceeded the high engine temperature pre-alarm setting level after the <i>Safety On</i> timer has expired.
(4)	UNDERSPEED	The engine speed has fallen below the underspeed pre alarm setting
\$	OVERSPEED	The engine speed has risen above the overspeed pre alarm setting
	CHARGE FAILURE	The auxiliary charge alternator voltage is low as measured from the W/L terminal.
	LOW FUEL LEVEL	The level detected by the fuel level sensor is below the low fuel level setting.
Ё	BATTERY UNDER VOLTAGE / BATTERY OVER VOLTAGE	The DC supply has fallen below or risen above the low/high volts setting level.
Î	EMERGENCY STOP	The emergency stop button has been depressed. This a failsafe (normally closed to battery positive) input and will immediately stop the set should the signal be removed. Removal of the battery positive supply from the emergency stop input will also remove DC supply from the Fuel and Start outputs of the controller. NOTE:- The Emergency Stop Positive signal must be present otherwise the unit will shutdown.
707	MAGNETIC PICKUP FAILURE	Pulses are no longer being detected from the magnetic pickup probe (3110-xxx-01 magnetic pickup version only)
2	INTERNAL MEMORY ERROR	Either the configuration file or engine file memory is corrupted. Contact your supplier for assistance.

HYDRAULIC TANK INDICATOR AND RETURN LINE FILTER

The indicator is located at the side of the hydraulic tank, the return line filter is located on the top of the hydraulic tank.





SHUT DOWN OF DIESEL/ELECTRIC POWERED CONVEYOR

- Observe all safety warnings.
- Make sure the conveyor is empty and clear of all materials.
- Empty the conveyor.
- Lower the engine revs by lowering the hand throttle.
- Stop the main conveyor unit.
- Stop the engine.



В

STARTING THE MACHINE

- Start the engine by turning the key to on position (B).
- At this point the control panel lights will star. If any of the lamps, other than the pre-heat lamp, does not light up this indicates that a problem exists.
- The only lights that will remain on are the battery and oil indicators. If an automatic pre-heat system has been installed the pre-heat light will also light up at this stage.
- To start the machines push on the green button twice. This will be indicated by the red LED and an automatic sequence will begin which will crank the engine. The fuel light will be the only light on while the engine is running. If any other lights come on this indicates a fault.
- To stop the engine, push the red button on the display and return the key to the off position.

OPERATING THE CONVEYOR

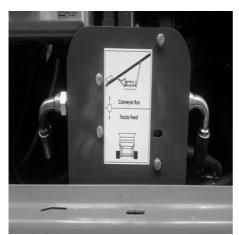
- While the conveyor is in operation it is very important to access risk of the machine, operating personnel and surrounding working area.
- Before starting the machine, make sure there is no one in or around it.
- Check that all control levers are in neutral position.
- Before moving, check that there is no one in or around the machine.

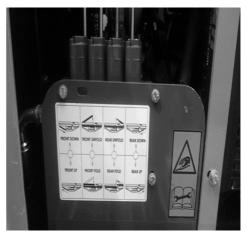


CONTROL VALVES AND HAND THROTTLE

The control valves are contained in the power unit. The single lever valve has three main functions:

- 1. Running the Conveyor
- 2. **Neutral Position**, this position activates the 4 bank lever valve on the opposite side of the canopy. This enables you to raise, lower, fold, and unfold.
- 3. Track Position (towards operator) This allows the conveyor to be tracked.





The hand throttle has two functions, to increase and decrease engine speed. To increase power, pull the lever towards the operator. To decrease push the lever away from the operator.





8) CONVEYOR IN TRANSIT POSITION

Observe all safety warnings.

Before setting up for transit mode, ensure that the belt and the feed boot are clear of any material.

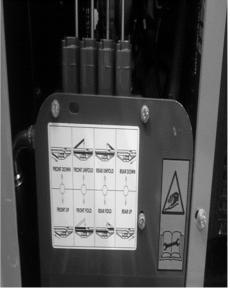
To set the conveyor up for transit mode the following steps must be followed:

1. Reduce engine revs using the hand throttle.



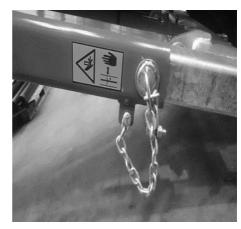
2. Turn all control valves to neutral positions.





3. Remove locking pins from conveyor support legs located at the head and tail sections





- 4. Folding Head Section— Do this by using the left lever of the 3 lever control valve. Gently pull the lever down to fold the head section.
- 5. The conveyor will be fully folded.
- 6. Replace all locking pins at tail and head section legs.
- 7. Your conveyor is now in transit mode.

SWITCHING OFF THE ENGINE

- 1. Check that all levers are in neutral position.
- 2. Reduce engine revs with hand throttle.
- 3. Let the conveyor belt run a few minutes to ensure that there is no material left on the belt.
- 4. Turn the ignition key to off position to stop the engine. Always remove the key from the machine when it is not in use.
- 5. If fitted with radio remote control switch off by using the engine kill switch on the transmitter.
- Check that the engine and control panel doors are closed securely and the machine overall is secure.

MACHINE SHUTDOWN PROCEDURE

The control panel comes complete with 2 remote machine stops and 1 key switch for normal starting and stopping of the machine. The remote machine stops are located at opposite side of the power unit.

9) OPERATING THE DIESEL POWERED CONVEYOR

PRESTART CHECKS

Before starting and operating the conveyor ensure that:

- All personnel are clear of the machine.
- All personnel are fully trained on the operation and the dangers of the machine.
- All personnel are wearing the correct PPE.
- Belts are clear from debris.
- Feed boot is empty.
- Machine operational area is clear and free from any obstructions.
- Machine operational area is level and even.
- Machine operational area is able to support the machine weight.
- All guards are securely in place.
- Conveyor is unfolded and secure.

STARTING HYDRAULIC POWERED CONVEYOR

- 1. Check fuel tank for level of fuel.
- 2. Check hydraulic oil level.
- 3. Put all control valve levers in to neutral position.
- 4. Start the machine through the following steps: Turn control panel key to on position (pics a-b), push green button on the control panel display twice and allow 30 seconds for the machine to self start (pics c-d)







C



D

- 5. The machine should now be running. The conveyor will have to be firstly taken out of transit mode. To do this the single level valve located closest to the starting control panel must be in the neutral position.
- 6. Go to the other side of the unit and by using the 4 lever valve carefully and slowly unfold the head section



- 7. Now the conveyor can be raised to stockpile height. Again this is controlled by the 4 lever valve. When the desired height is achieved replace the leg pins ensuring they are pushed the full way through.
- 8. Now go to the control panel side of the unit. Before the belt is run it is recommend to once again carry out the risk assessment.
- 9. With this assessment complete push the single lever valve upward to drive the belt.
- 10. Check the conveyor belt is running smoothly and in alignment.
- 11. On first use let the conveyor run for 10 minutes before loading the feed boot.
- 12. Adjust engine revs with the hand throttle.

STOPPING PROCEDURE

- 1. Check that all levers are in neutral positions.
- 2. Reduce engine revs with hand throttle.
- 3. Let the conveyor belt run a few minutes to ensure there is no material left on the belt.
- 4. Push the red button on the control panel to stop the engine. Always remove key from machine when not in use.
- 5. Check that all control panels are closed securely.

EMERGENCY STOPPING

- 1. Only use emergency stops for emergencies. When an emergency stop has been pressed, do not restart the engine until it is safe to do so. Pressing an emergency stop will stop the engine and machine.
- 2. Be familiar with emergency stop locations. When emergency stops have been pressed turn the ignition key off (hydraulic option) or turn off isolator (electric option). The emergency stops will now have to be physically disengaged by pulling or twisting. Only when the machine is fully switched off and safe should you try to get to the root of the problem.



RESTART AFTER EMERGENCY START

- 1. Ensure the problem is solved before starting the machine.
- 2. Check all emergency stops are released.
- 3. Restart machine in the normal procedure.



MOVING

- 1. Before moving the conveyor, ensure all material has run off the conveyor, the feed boot is empty.
- 2. Avoid moving the conveyor on uneven ground. It may cause damage to the conveyor and engine.
- 3. In cold conditions start up the machine for approximately 10 minutes before moving. When hydraulic oil is cold the machine would tend to steer to the right and track fast forward.
- 4. Never stand on the conveyor while it is being moved.
- 5. To track the machine the Single Lever Valve must be engaged in TRACK position (towards operator). This will allow the conveyor to be tracked with the remote.



SAFE TRACKING

- 1. When travelling down a gradient, tracks should be driven sprocket first.
- 2. Going up a gradient, the tracks should driven forward.
- 3. Machine should be parked on level ground that is suitable to support the weight of the machine.
- 4. Track the machine every day for a short distance. This will reduce the risk of track seizure.
- 5. Never track the machine if they are frozen to the ground or attempt to move the machine in any other way.
- 6. Always clear the tracks of any surrounding debris. Do not track the machine with out clearing the area.
- 7. Do not attempt to move the machine if it is not possible to track it.

TRACKING WITH DOG LEAD REMOTE CONTROL

Ensure the machine is clear of any obstacles before tracking







- 1. Check that the dog lead is connected to the machine and the machine stop is not pressed.
- 2. Start the engine.
- 3. Push the two levers of the drive control up fully.
- 4. Switch the tracking switch (aux / track) on the handset to the track position. At this point the safety siren will sound. There will be a short delay before the tracks will operate.
- 5. You can now use the handset to track the conveyor.

Please note that when the remote is not in use, the function controls should be left in neutral position.

TRACKING WITH RADIO REMOTE CONTROL (Optional Extra)

The radio remote is an independent control unit for the tracks only.

- 1. First plug in the Receiver Box connection. The machine will not track if the receiver box is not plugged in. Always unplug the dog lead remote control.
- 2. Start the engine / machine.
- 3. Push the two levers of the drive control up fully.
- 4. After the remote tracking manual handset has been disconnected from the machine press any button on the transmitter.
- 5. There will be a short delay and then the transmitter becomes active.



Transporting

- 1. Before transporting always check that the machine is secure and there are no loose objects or materials.
- 2. Always use the appropriate vehicle for hauling the conveyor. Take into consideration the weight and size of the machine and the route when transporting.
- 3. Check local regulations of transporting large machinery i.e. certification.



10) OPERATING THE DUAL POWER CONVEYOR (OPTIONAL EXTRA)

Dual power allows for an operator to have the option of using diesel power and also electric power. Only qualified operating personnel should operate this machine. All health and safety regulations should adhere to while using this power. Continued assessment of risk should be carried out, before during and after operation, tracking and transportation.

If the conveyor is to be run using the diesel engine, then followed all the steps described in Chapter 8– Operating Diesel Powered Conveyor.

- 1. Track machine into desired working position by using diesel engine (refer to previous section on this).
- 1. When in position stop the engine on the Control panel as normal (refer to previous section on this).
- Proper electrical supply should only be used to operate the
 electric power on the conveyor. Any application used to supply
 the 3 phase 57amp power should only be carried out by a
 qualified electrical engineer. This is plugged into the facility
 provided.
- It is important to always assess risk while using the dual power. Being aware of the extended cable to the machine carrying electricity and the dangers involved if not isolated when not in use. It is recommended that all operators to be aware of all moving objects surrounding the cable, if damaged electricity will still be live. This could cause an injury or death.







5. Now that power is connected, switch from diesel to electric on the control panel.



6. Then press blue button to reset the panel.



7. Now you are ready to start your electric motor. Press the green button and hold it in, there will be a 10 second alarm delay before the machine starts. This will allow you to lift up and down front and back stanchions, fold and unfold the machine and convey material.



8. When you want to move the machine or you are finished with the machine you should run the conveyor belt for a few minutes making sure that there is no material on the belt. Make sure all auxiliary levers are in neutral position before stopping the machine. You are now ready to change back to diesel power. Press the red button.



9. Switch the panel back to diesel and start the Control Panel as normal. Before moving the machine, be aware of the dangers of the connecting cable carrying electricity making sure it is disconnected and isolated. Tracking over the cable or pulling it out will cause damage and over stretching.



10. In an emergency there are three emergency push stops. Two are located at the front of the engine canopy and one on the control panel.

These are all active when using electric and diesel power. It is recommended that all operating personnel make themselves familiar with the location of these.







11) MAINTENANCE

Good records and maintenance are mandatory aspects of a machines life. Good maintenance of your conveyor is vital the conveyor will perform at its best when cared for. Only personnel with proper qualifications for servicing and maintenance can perform these tasks. All safety regulations and risk assessment should be followed before maintenance is carried out. Never work under unsupported equipment. It is important to remember that any raised part of the machine can fall, causing injury or death. When maintenance is carried out ensure all safety aspects are in good working order before returning the machine to operating service. Any hydraulic maintenance should be carried out by qualified personnel. Always bleed and depressurize the hydraulic lines before attempting maintenance or repairs. Replace any worn or broken parts as soon as possible. Keep power units dry at all times. Power washing can weaken the seal on plugs. All electricity should be isolated before removing the front panel

Maintenance Shedules			
Engine	Daily (10 hour)		
Coolant level	Check/fill up		
Engine lube oil level	Check/fill up		
Fuel tank level	Check fill up		
Fuel water seperator	Check fill up		
Engine air cleaner service indicator	Inspect/replace air filter if illuminated		
Moving components			
Material build up	Remove		
Turning/moving freely	Check/repair		
Power unit			
Hydraulic oil level	Check/fill up		
Conveyor belt			
Alignment	Check/align		
Tension	Check/tension		
Rubber cushions	Check/replace		

MONTHLY CHECKS

- Grease all bearings at grease points provided.
- Belt condition and tension.
- Rubber skirting condition in feed boot.
- Check belt rollers rotate freely.
- Check condition of hydraulic hoses.

NOTE: NEVER CHECK HYDRAULIC HOSES WITH BARE HANDS



ANNUALLY

- Change engine filters
- Change in line filters

Never power wash around the control panels. Always abide by the safety standards when carrying out maintenance.

ELECTRIC MAINTENANCE

- Disconnect battery ground cable before carrying out maintenance on electrics.
- The control panel lids should be closed at all times. A regular check of the control panel and all the connections is recommended.
- When maintenance or repairs are being carried out on the control panel, ensure it is covered to prevent any rain or water getting in.
- Check daily for any damages, worn out parts and good operating switches.





WELDING

- Only welders qualified to European Standards or similar are permitted to perform welding operations on the machine.
- Before working on the plant, switch off and isolate battery power. Again asses risk before working on the conveyor.

HYDRAULICS

- Only certified personnel should carry out any maintenance or servicing to the hydraulic system.
- Always relieve pressure from the hydraulic system before carrying out any kind of maintenance or servicing.

NEVER ATTEMPT TO ADJUST ANY HYDRAULICS WHEN THE MACHINE IS IN OPERATION



BELT MAINTENANCE

ONLY AUTHORISED AND TRAINNED PERSONNEL TO WORK ON BELT MAINTENANCE

BELTS

- Belts, scrapers and drum lagging are consumable items and will need to be replaced through general wear and tear.
- The belt must be checked regularly for rips, cuts and any damage.
- Always keep the belt at the proper tension.
- Belts need to be aligned.
- Never overload the belt.
- Belt should be cleaned from ground height by rotating the belt slightly each time.

If the above is not followed, belt slippage can occur

BELT ALIGNMENT AND TENSION

It is important that the conveyor belt is in alignment. If the belt is not in alignment, the machine may not be level, the belt tension is faulty or the position of the drum is faulty. Naturally the belt will stretch due to wear and as a result it will need adjusted occasionally. The belt should be tensioned so it is not too tight or too loose. Loose belts cause slippage whilst a tight belt will damage the drum bearings. As well as visual inspections it is important to use hearing inspections as any unusual sounds can indicate a potential problem with the belt and its running gear.

If the belt needs tensioned or aligned all the work is done at the tail section of the conveyor. Ensure the running of the belt is disengaged to carry out this work. Using a spanner alter the tail drum adjuster to the desired location.







POWER UNIT MAINTENANCE(OPTIONAL EXTRA)

The engine in your BarfordPower Unit comes with its own manual. If you have not received this please contact BARFORD EQUIPMENT LTD.

All safety and maintenance information should be read and understood before carrying out maintenance on the power unit.

FUEL

Diesel is a highly flammable fuel. Do not fill the diesel tank to capacity. The fuel level of the machine can be checked by viewing the indicator.

- We recommend you will fill the fuel tank at the end of the day.
- Check the level indicator.
- Clean around the cap.
- Remove the cap and funnel in the fuel until the indicator is at it's highest level then replace the cap.
- Always clean any spillage of the fuel.



It is essential that the hydraulics are regularly serviced. Keep air vents in the cap open to allow the hydraulic system to breathe.

CHECKING HYDRAULIC OIL LEVEL

- It is important that the correct grade of oil is used.
 If you find that you are filling the hydraulic oil more than usual, check all hydraulic parts and pipes for leaks.
- Before checking the hydraulic oil, ensure it is at normal temperature. Where possible, have all cylinders retracted.
- Check the oil indicator. The oil level must be in the middle of the maximum and minimum marks on the indicator.





FILLING THE HYDRAULIC OIL

When filling the hydraulic oil tank, always make sure the engine is switched off and fill between the maximum and minimum indicator. As always follow the safety regulations.

Never overfill the hydraulic tank as this will cause leakage from the filter cap and system overheating.

CHANGING HYDRAULIC OIL

- Always assess risk before carrying out work on the hydraulic oil system.
- Ensure oil is at normal operating temperature and cylinders are retracted where possible.
- Before removing the drain plug, slowly unscrew the filler cap to release any pressure in the hydraulic tank
- Ensure you have a suitable container to catch all of the oil. Ensure to clean any spillage.
- Remove the drain plug.
- Remove the cover plate which is under the filler cap. Dispense the gasket.
- Remove the suction filters by unscrewing them from the suction pipes.
- Using clean oil, flush out the tank removing any dirt. Clean and reuse the suction filters and replace on the suction pipes.
- Replace cover plate using a new gasket, then replace drain plug.
- · Change the return line filter.
- Refill the tank with clean hydraulic oil at the level marked on the indicator.
- Run the engine, operate the hydraulic controls which will take any air from the system.
- Stop the engine and check level of oil at the indicator and top up if required.

BATTERY CHECK

- Always abide by safety regulations when dealing with batteries.
- Always wash hands after handling a battery. Ensure to maintain battery level. In cold weather distilled water should only be added immediately before starting the engine to prevent it freezing.
- Always keep the terminals and case clean.

CHANGE OF BATTERY

- Always follow safety regulations. Ensure all electrical circuits are switched off.
- Disconnect the earth lead from the battery.
- Disconnect the positive lead from the battery.
- Remove battery from the machine. To reinstall always connect positive first and then connect the earth.





TRACK MAINTENANCE

- Refer to Tracks Operation Manual for advice and information.
- It is important to maintain your tracks on a regular basis.
- · Always remove any debris and built up oil and grease.
- Replace any damaged and broken parts.

TRACK TENSION

When checking the tension on the tracks, drive your machine about 2-3 metres forward. Measure the sag on the top part of the track on the longest section of unsupported track as shown below.



The sag of the track must be between 5mm and 15mm. You must check the track tension on a new machine. DO NOT set track tension too tight.

ADJUSTING TRACK TENSION

Crawler track systems use a grease cylinder to keep each track chain in tension. Screwed into the end of the grease cylinder is grease fitting enabling grease to be pumped into the grease chamber and released from it, tightening and slackening the track

- Take care when loosening the grease fitting as it is pressurised.
- If the tracks keep becoming slack, check for any leakage on the outer face of grease fitting.
- Check if there is any grease leakage at contact surface between the grease tension and grease fitting. Ensure the tension seal are not damaged.
- Before replacing seals, place a straight edge along the cylinder barrel as shown above to ensure outer sleeve has not swollen from being overlooked.
- To replace seals, simply unscrew grease fitting push or pull out inner cylinder to expose lip seal and inner seal.

TIGHTENING THE TRACK

- At the side of the track frame there is an access cover, unscrew this
 to gain entry.
- Check that the grease fitting and grease gun adaptor is clean.
- Connect a grease gun to the grease fitting and add grease until the track tension is normal.
- Drive the conveyor forward and backward to check if the track is tightened.



SLACKENING THE TRACK

- At the side of the track frame there is an access cover, unscrew this to gain entry.
- Loosen the track fitting, by turning it in a anti-clockwise direction, using small movements until the grease is released. Once you have achieved the correct tension, tighten the grease fitting by turning in a clockwise direction.
- · Clean all excess grease.

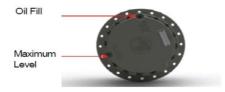
Remember to track the machine for a while forward and backward in order to assess if the tracks are at the right tension. This movement will help the grease work through the tracks.

TRACK CHAINS

It is important to be aware of the conditions that the conveyor tracks are working in. Certain surfaces and environmental surroundings could cause corrosion. Tracks can also seize if they are not moved on a daily basis. To prevent this, track the machine a few meters in both directions.

OIL FILLING

- To fill the oil, track the machine until the gearbox casing is level with a plug positioned at 12 o'clock (see diagram).
- Unscrew the two plugs and fill from the upper hole until oil reaches the level of the lower hole.



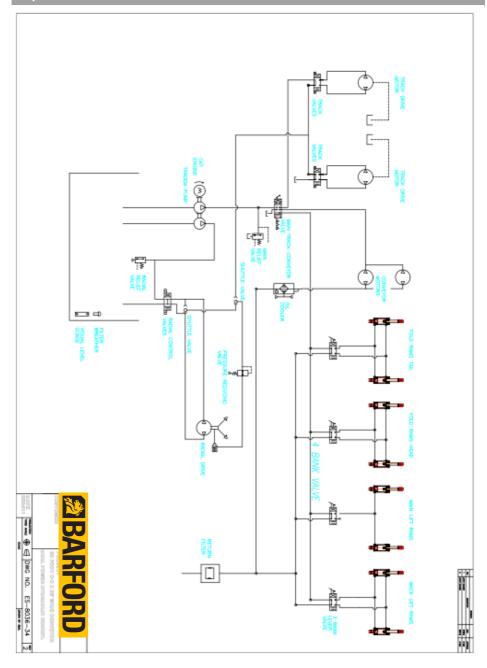
OIL DRAINING

- To drain the oil, track the machine until the plug is at 6 o'clock position (see diagram).
- Unscrew both plugs and allow all oil to empty into a container.
- Do not fill oil in the track drive without checking oil level inside it. Track systems are supplied with a quantity of oil in track drive. The gearbox life will shorten if oil becomes dirty. Only use new clean oil in clean containers.





12) HYDRAULIC SCHEMATIC



13) TECHNICAL SPECIFICATIONS

SPECIFICATION

Discharge Height	10100 m	/ 33ft 1ins
------------------	---------	-------------

- Belt Width.....900mm / 36ins
- Belt Length......23m 275mm/ 76ft 4.3ins
- Belt Type.....EP 500 3PLY / Optional
- Powerunit......Diesel Hydraulic with Cat 2.2 C

Developing 38kw / 50bhp @ 2200 rpm

Fuel Consumption 5.2 - 6.2 ltr / hr

ADVANTAGES

- Minimises transport costs with easy tracking in and out of 40ft container.
- Can be used for various applications: Top Soil, Sand, Coal, Bark and Crushed Aggregate.
- A wide range of heights for output and input and can be used with other crusher and screeners.
- Height on front stanchions can be set with out using manual pins by special load holding cylinders.
- · Easy mobility on site.
- Increased efficiency while operating. And increased stockpile capacity.
- Reduced fuel costs i.e. no need for shovel operator to move materials from under Conveyor.

OVERALL DIMENSIONS

Machine Width	2260mm / 7ft 4ins
Transport Length	12036mm / 39ft 5.9 ins
Transport Height	2591mm / 8ft 6ins

HYDRAULICS

Hydraulic Motor.....Kasappa OMV 500

TRACK DATA

Tractive Effort	14300 daN
Gearbox Ratio	134:1
Hydraulic Motor	Caproni 33cc/ Rev
Annroy Spood	1 6km / hr (0 05mnh)



3M HEAVY DUTY CRAWLER TRACK DATA

- Tractive effort 14300daN
- Gearbox ratio 134:1

Hydraulic Motor - Rexroth 32cc / Rev

Approx. Speed - 1.6 km p/hr (0.9mph)

Battery

Type - 12v negative earth

Electric Information

3 Phase 380 – 415 Volts (depending on normal national voltage)

Optional Extras

- Higher HP Engine.
- Dual Power (Diesel / Electric Hydraulic).
- Full Side skirting or Half side skirting.
- Hardox hopper liner plates.
- Rubber hopper liners.
- Feed boot extension.
- Dust Covers (Canvas or Steel).
- Spray bar (reduce dust).
- Radio remote controlled tracks.
- Belt scraper upgrade.
- · Chevron belt.
- Hydraulic folding head.

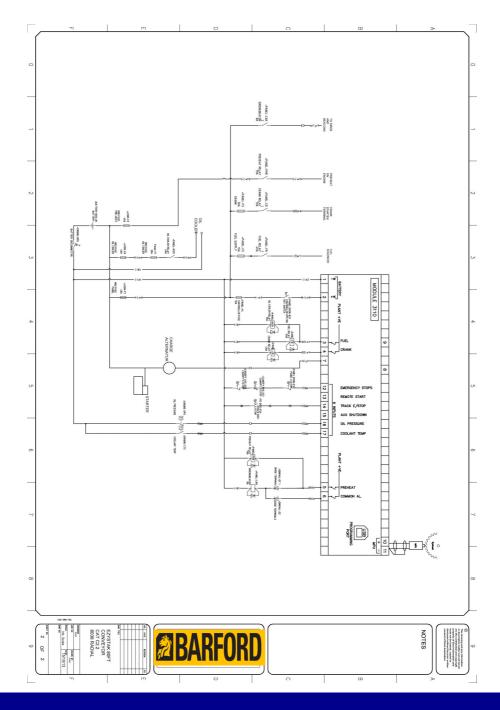
Standard Features

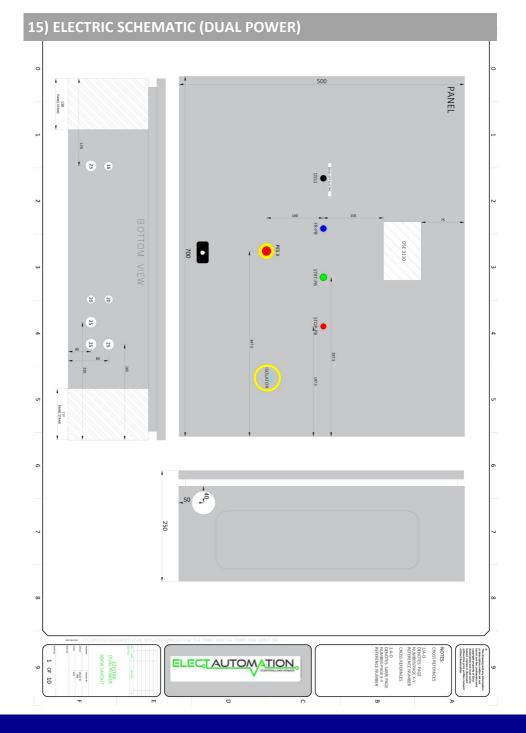
- Full dog lead remote control.
- Heavy duty head and tail drums.
- Heavy duty rollers.
- · Cat engine.
- Impact bars on tail section.
- Galvanised telescopic legs.
- Hydraulic folding head section.
- 3M Heavy duty crawler track.
- Cat 37kw engine.
- Painted with 2 pack epoxy primer and 2 pack high level gloss CE approved.



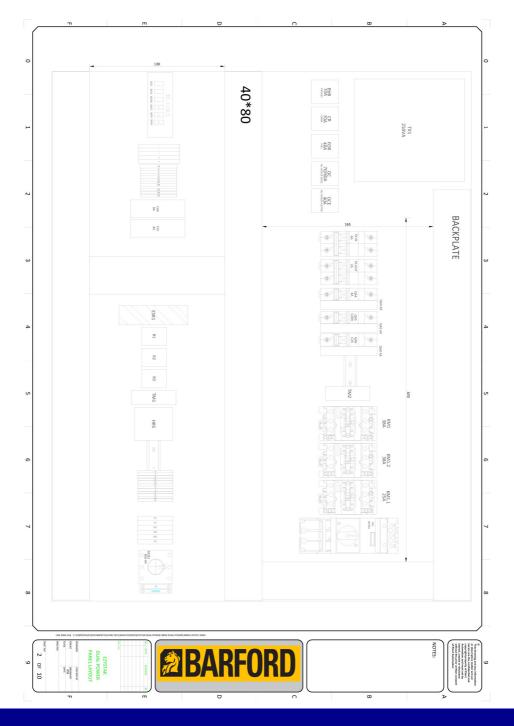
14) ELECTRIC SCHEMATIC Constraint 3110 controller cutout **a** 25 Fuses 3 f3a f4 f5 f6

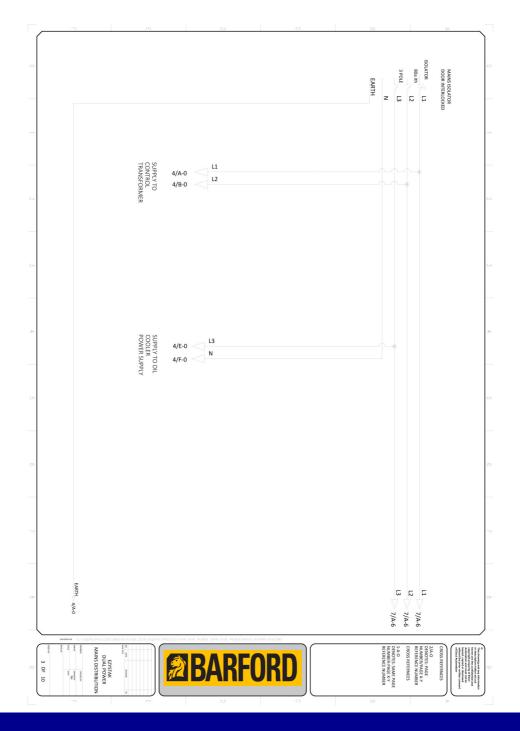




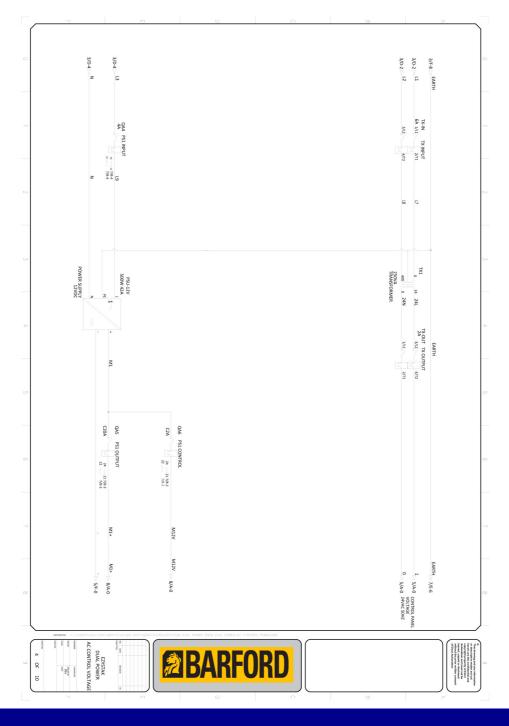


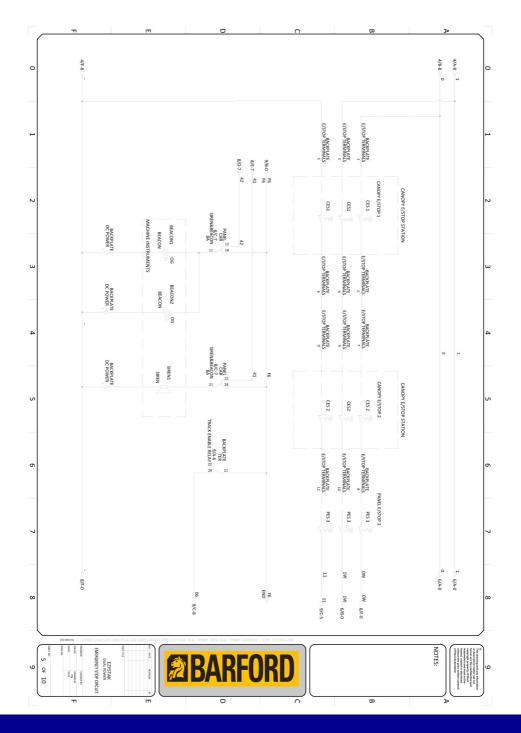




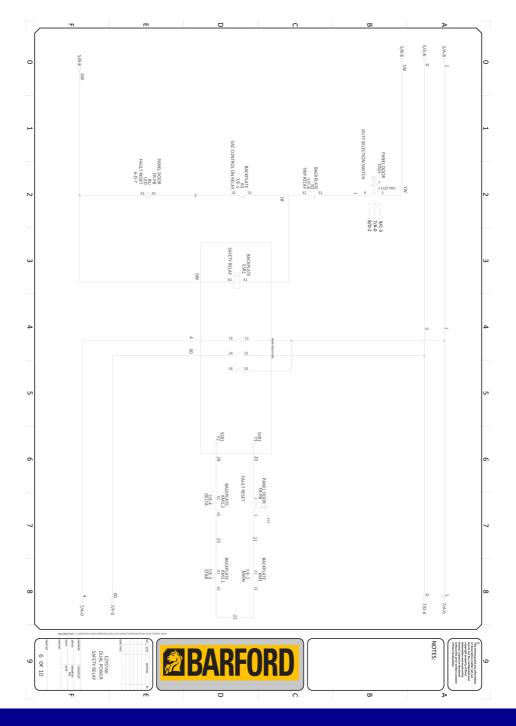


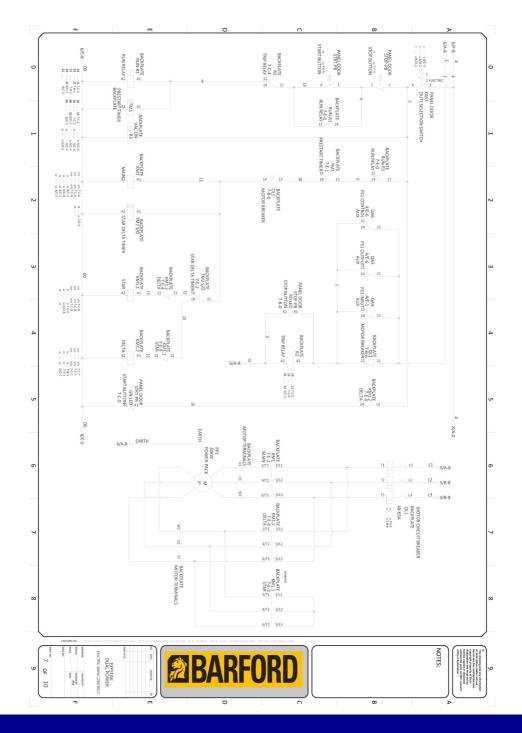




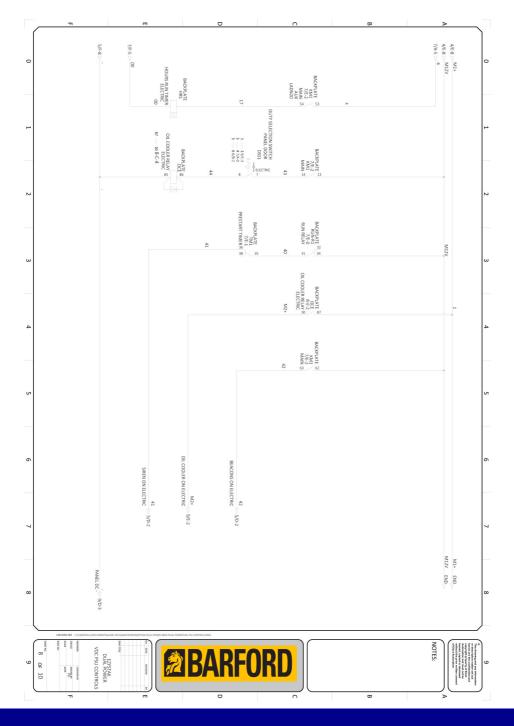




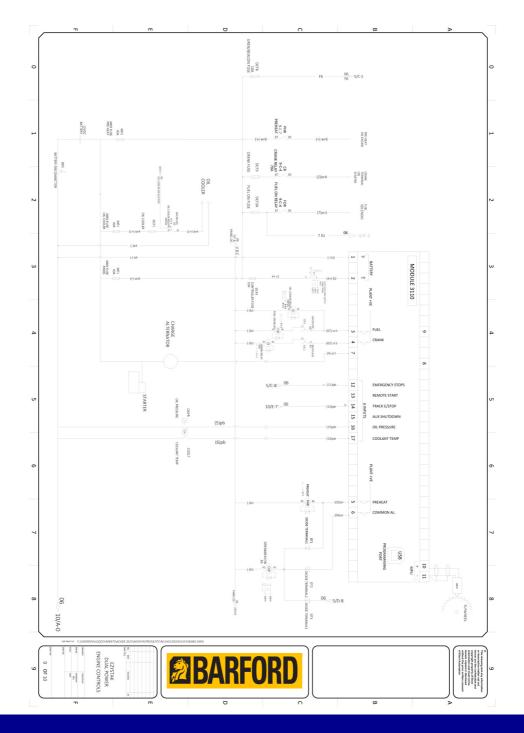


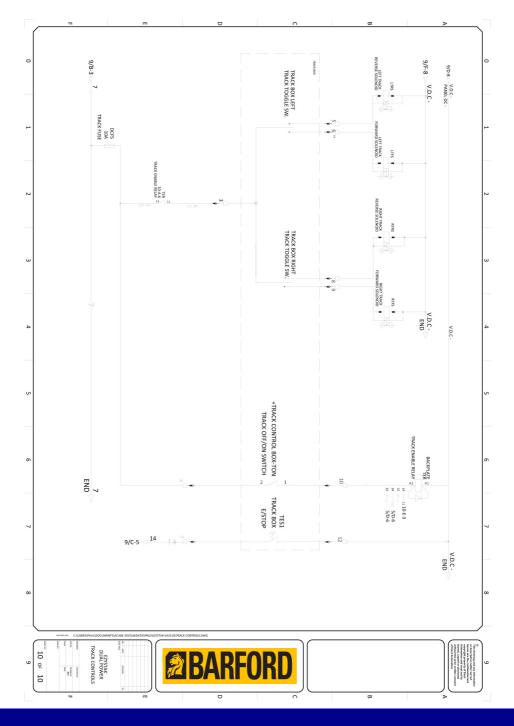


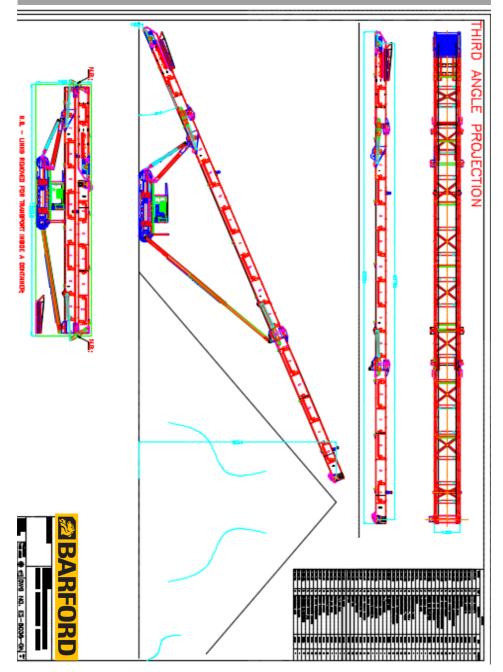
















SPARE PARTS LIST

BARFORD SPARE PARTS

Barford Equipment Ltd General Information

Barford Equipment Ltd recommend that only genuine spare parts are used on their machines, this is to ensure the minimum amount of downtime and ensure the longevity of the warranty period.

Parts which have not been supplied by Barford or its dealer network cannot be guaranteed to be of the same specification as supplied on the machine.

Barford Equipment Ltd cannot be responsible for damaged or downtime arising from the use of non genuine parts and the use of any such parts shall result in the end of the warranty period.

Barford Ordering Procedure

When placing an order for spare parts, please ensure that the following is listed:

Machine type

Machine Serial Number

Part Number

Quantity

Delivery Address

Delivery Method

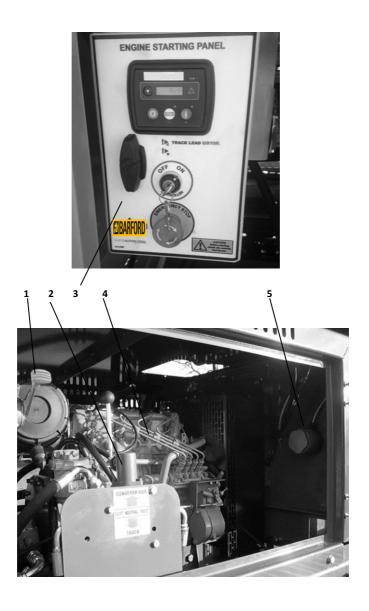
Orders may be emailed, faxed or posted to us; failure to supply the required information may result in a delay on your parts being dispatched. Orders by post should be sent to the following address:

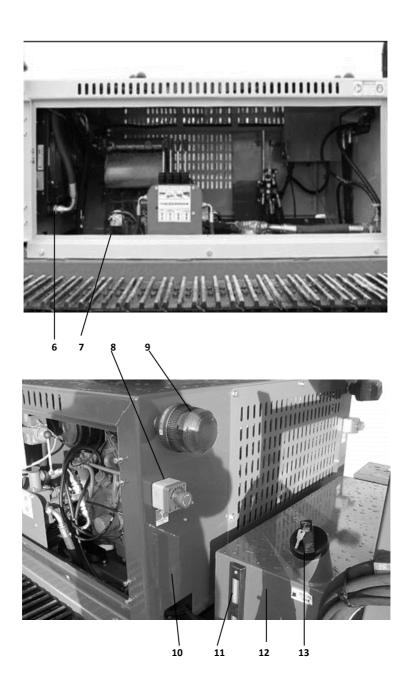
Barford Equipment Ltd 72-74 Omagh Road Dromore Co.Tyrone N.Ireland BT78 3AJ

Tel: + 44 (0) 2882 897401 Email: info@barford.com

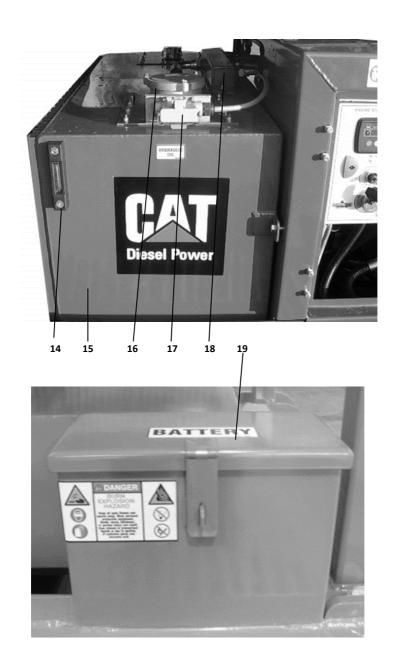


Power Unit Components

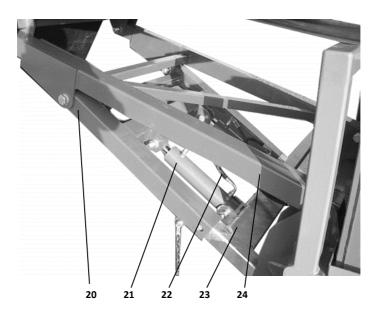


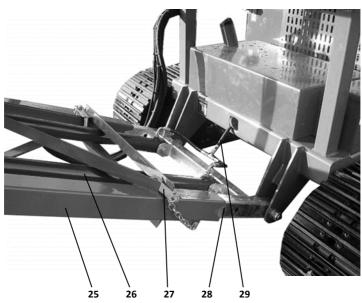




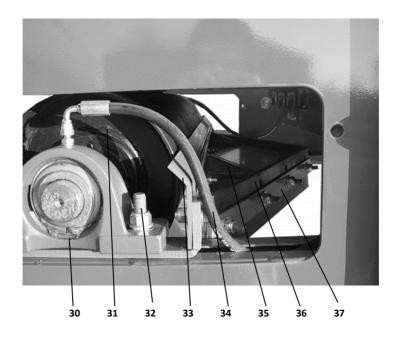


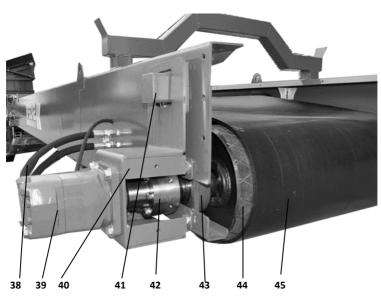
Leg and Ram Assembly



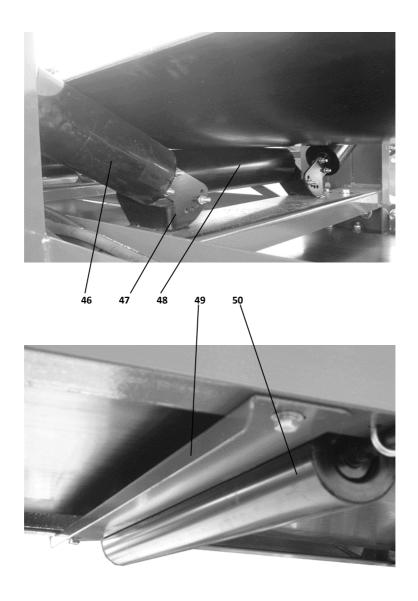


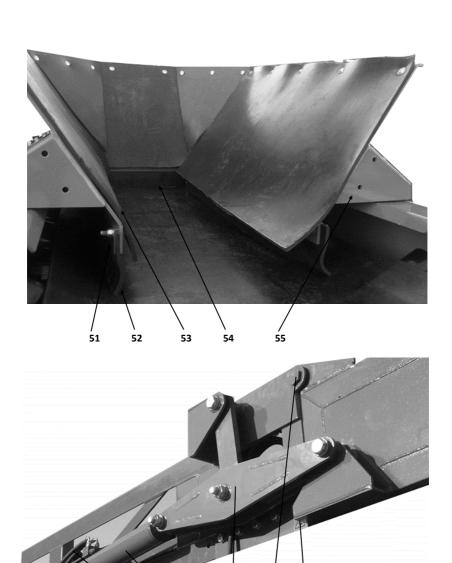
Conveyor Drums

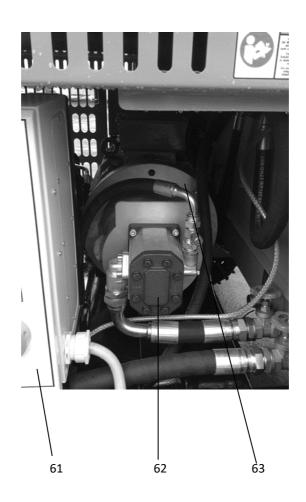




Conveyor Rollers









ITEM NUMBER	PART NUMBER	DESCRIPTION
1	8036001	Hand Throttle
2	8036002	Single Lever Valve
3	8036003	Engine Control Panel
4	8036004	Cat 2.2 Engine
5	8036005	Hooter
6	8036006	Oil Intercooler
7	8036007	4 Lever Valve
8	8036008	Emergency Stop
9	8036009	Beacon
10	8036010	Engine Canopy
11	8036011	Fuel Gauge
12	8036012	Fuel Tank
13	8036013	Lockable Fuel Cap
14	8036014	Hydraulic Oil Gauge
15	8036015	Hydraulic Oil Tank
16	8036016	Suction Filter
17	8036017	Dog Lead
18	8036018	Hydraulic Manifold
19	8036019	Battery Box
20	8036020	Rear Outer Telescopic Leg
21	8036021	Hydraulic Rams
22	8036022	Ram Pipe Kit
23	8036023	Rear Inner Telescopic Leg
24	8036024	Top Hung Leg
25	8036025	Front Outer Telescopic Leg
26	8036026	Hydraulic Rams
27	8036027	Height Leg Pins
28	8036028	Front Inner Telescopic Leg
29	8036029	Ram Pipe Kit
30	8036030	Tail Drum Bearing



31	8036031	Tail Drum
32	8036032	Tail Drum Adjuster
33	8036033	Tail Drum Scraper
34	8036034	Grease Pipe Kit
35	8036035	Tail Drum Plough
36	8036036	Tail Drum Plough Rubber
37	8036037	Tail Drum Plough Rubber Clamp
38	8036038	Conveyor Drive Pipe Kit
39	8036039	Conveyor Drive Motor
40	8036040	Drive Motor Housing
41	8036041	Drive Motor Mount
42	8036042	Drive Motor Coupling
43	8036043	Head Drum Bearing
44	8036044	Head Drum
45	8036045	Conveyor Belt
46	8036046	Wing Roller
47	8036047	Adjustable Roller Board
48	8036048	Centre Roller
49	8036049	Return Roller Guard
50	8036050	Return Roller
51	8036051	Feedboot Rubber Clamp
52	8036052	Feedboot Rubber Skirting
53	8036053	Feedboot Rubber Lining (optional)
54	8036054	Reedboot Rear Skirting
55	8036055	Feedboot
56	8036056	Folding Ram Pipe Kit
57	8036057	Folding Rams
58	8036058	3 Point Fold Linkage
59	8036059	Conveyor Hinge Bolts
60	8036060	Various Safety Decals
61	8036061	Dual Power Control Panel
62	8036062	Dual Power Hydr Pump
63	8036063	Dual Power Electric Motor



SERVICE RECORD

Date	Works Carried Out	Signed

CONTACT US

BARFORD Equipment Ltd

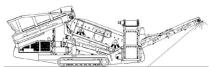
72-74 Omagh Road
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BT78 3AJ

Tel: + 44 (0) 2882 897401 Email: info@barford.com

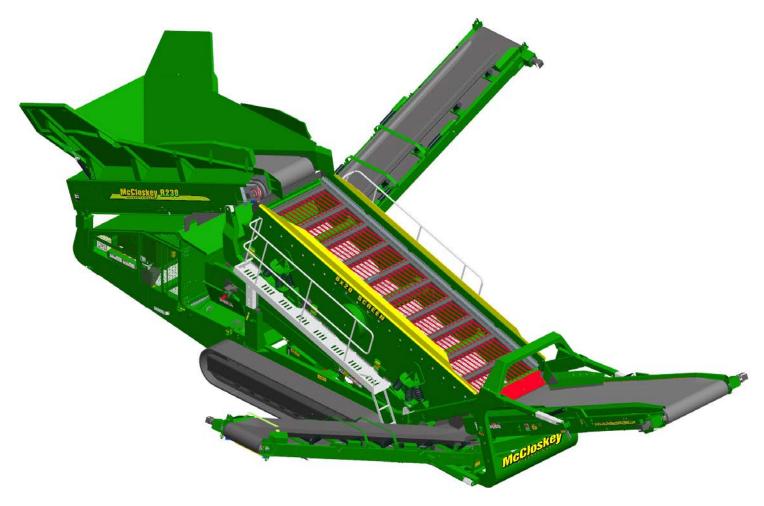
E: john.nethery@wkeys.co.uk





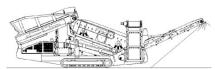


SPECIFICATIONS



McCloskey R230





DESCRIPTION

Heavy duty mobile screener with following features:

- 20x6 heavy duty high energy 2 bearing screenbox.
- 225Hp six cylinder diesel engine.
- Track mobile.
- Direct feed Hardox lined hopper.
- Travel out fixed walkways.
- Integrated hydraulic folding stockpiling conveyors.
- Fast on-site setup time 10 minutes.
- Screen raises at lower end for easy bottom deck access.
- Service standing room inside Powerpack.

DIMENSIONS AND WEIGHTS

Length – working	16.5m (54' – 1")
Width – working	14.00m (46' – 5")
Length – transport	16.97m (55' – 8")
Width – transport	3.00m (9' – 10")
Height – transport	3.50m (11' – 5.8")
Weight – Belt Feeder	37,200 Kgs (82,000 lbs)
Weight – Apron Feeder	39,500 Kgs (87,083lbs)

CAPACITIES

Diesel tank capacity 485 L (128 US gal) Hydraulic tank capacity 800 L (211.3 US gal)

Capacity – hopper (level) 11.50 m³

BELT FEED CONVEYOR

Belt width 1500mm (60")

Belt spec Heavy Duty Plain 500/4 8+2

Drive drum dia. 335mm (13.1")
Tail drum dia. 320mm (12.5")

Gearbox Bonfig 805 W2 x 2 off

Gearbox ratio 24.2 : 1

Gearbox torque 14,000Nm cont, 25,000Nm max Motor Danfoss OMSS125 x 2 off Flow rate 101.2 Lpm (26.7 US gpm)

Adjustable speed YES
Maximum speed 16.7 rpm

COLLECTION CONVEYOR

 Belt width
 1400mm (55")

 Belt spec
 Plain 400/3 4+2

 Drive drum dia.
 285mm (11.2")

 Tail drum dia.
 270mm (10.6")

 Motor
 Danfoss OMV800

 Flow rate
 101.2 Lpm (66.6gpm)

Adjustable speed YES
Maximum speed 126.5 rpm



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TAIL CONVEYOR

Stockpile height 3.83m (12' – 6")

Angle 12 to 24 degrees adjustable

Belt width 1600mm (64")

Belt spec Heavy Duty Chevron – 500/3 5+1.5

Drive drum dia. 285mm (11.2")
Tail drum dia. 270mm (10.6")

Motor Danfoss OMV500 dual drive Flow rate 79.2 Lpm (20.9 US gpm)

Adjustable speed YES
Maximum speed 79.2 rpm

FINE PRODUCT SIDE CONVEYOR

Stockpile height 4.10m (13' - 5.3")

Angle 20 to 25 degrees adjustable

 Belt width
 1050mm (42")

 Belt spec
 Plain - 400/3 4+2

 Drive drum dia.
 285mm (11.2")

 Tail drum dia.
 270mm (10.6")

 Motor
 Danfoss OMV630

Flow rate 101.2 Lpm (26.7 US gpm)

Adjustable speed YES
Maximum speed 160.6 rpm

MID PRODUCT SIDE CONVEYOR

Stockpile height 3.66m (12')

Angle 14 to 25 degrees adjustable

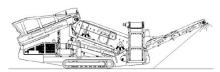
Belt width 900mm (36")
Belt spec Plain - 400/3 4+2
Drive drum dia. 270mm (10.6")
Tail drum dia. 200mm (8")

Motor Danfoss OMT400

Flow rate 50.6 Lpm (13.4 US gpm)

Adjustable speed YES
Maximum speed 126.5 rpm





SCREENBOX

Dimensions – top deck 6.1m x 1.83m (20' x 6') Dimensions – bottom deck 5.49m x 1.83m (18' x 6')

Bearing type NSK 150mm bore – 22330 EVBC4

Screens – top deck 6' x 4' side tension – 5 off
Screens – bottom deck 6' x 6' end tension – 3 off
Tensioning – top deck Quick release pin and wedge
Tensioning – bottom deck Curved tension bar and adjuster
Screen angle 13 to 17 degrees adjustable

Screen motor David Brown Hyd. MCC2216 (110.8cc/rev)

Drive system Direct drive with HRC180 coupling

Hydraulic flowrate 138.6 Lpm (36.6gpm)

Speed adjustable YES – Pressure compensated FCV

Screen stroke adjustable 8 – 10mm maximum

Screen shaft speed 950 rpm Screen 'g' force 4.95 - 5.05 g

POWERUNIT AND HYDRAULICS

Engine Options CAT C7.1 (Tier III) 225HP

Volvo D5 Tier 4 (218HP) Cat 7.1 Tier 4 (225)

Cat 7.1 Fixed Speed(280HP)

Engine speed (except fixed speed) 2200 rpm Fixed Speed Engine 1800 rpm

Flywheel Pump 1 David Brown Hyd. 5063,5046,5046 LH PTO Pump 2 David Brown Hyd. 5036,5023 Total system flow 470.8 Lpm (124.4 US Gpm)

Hydraulic tank capacity 800 L (211.3 US Gal)

Hydraulic tank ratio 1.70 : 1 Hydraulic Oil cooler YES

ELECTRICS

Chassis cabling

Engine shutdowns:

Start Siren

Emergency stops 4 off, 2 powerunit RH&LH, 2 chassis

front sides RH&LH. Armored cable YES – 10 sec delay

Low oil pressure High water temp

Air filter blockage (selectable)

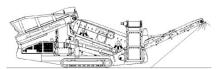
Fuel contamination Low hydraulic tank level

Engine room light YES

Radio control tracks optional – Hetronic system

Pendant track control YES – plugged in at feeder end





TRACKS

 Width
 500mm (19.7")

 Length
 3800mm (12' - 6") crs.

 Height
 798mm (31.4")

Gearbox Bonfiglioli 709

Ratio 142:1

Motor Rexroth A2FE 90
Speed max 1.14 Kph (0.71 Mph)
Flow rate 101.2 Lpm (26.7 US Gpm)
Attachment to chassis Bolt On for quick change

OPTIONS

Heavy duty top deck finger screen.

Bottom deck finger screen.

Top deck punch plate screen.

Bottom deck punch plate

Top deck Bofor screen.

Radio remote control for tracks.

Plate Apron Feeder instead of Belt Feeder.

APRON FEED CONVEYOR

Apron width 1500mm (60")

Apron spec 12mm Hardox upper surface

Gearbox Brevini 2090FP

Gearbox ratio 16:1

Gearbox torque 10,000Nm cont, 15,000Nm max

Motor Danfoss OMTS400

Flow rate 101.2 Lpm (26.7 US gpm)

Adjustable speed YES
Maximum speed 15.8 rpm

SAFETY FEATURES

External belt alignment points.

External grease points.

Engine safety shutdown systems. Full safety guarding for nip points.

CE compliance.

DUAL POWER

Electric motor – 55kw @1450 rpm Pump – Cast Iron 71cc/ 71cc tandem pump Electric motor – 55kw @1450 rpm Pump – Cast Iron 56cc/ 34cc tandem pump

Electric motor – 22kw @ 1450 rpm Pump – Cast Iron 100cc pump Total system flow 478 Lpm (126.2 US Gpm)



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