



Screener Operations

It is important that the operator carries out regular checks before operating the plant especially with operational safety in mind including (but not limited to) those listed below.

Additionally, the operator should always consider what particular safety hazards could occur at specific operating sites and take steps to eliminate them before commencing work.

Pre Start Checks

All PPE must be worn

Please ensure you have read and understood the operator's manual before operating machine for the first time.

The plant may only be operated if the safety instructions provided in the operator's manual have been observed and the described procedures have been performed.

Pre start checks should concentrate on ensuring that the machine is ready to work safely and reliably.

Checks should include:

- Read and understand all warning signs on machine
- Engine coolant
- Engine Oil level
- Hydraulic Oil level
- Fuel level
- **Emergency Stops**
- **Check alignment and tension all conveyor belts**
- Check bins, skirt rubber and screen meshes for wear
- Check all guards and hand rails are in position and secure
- Check plant is level

ALL WALKWAYS AND AREA AROUND THE MACHINE AT GROUND LEVEL SHOULD BE CLEAN AND FREE OF LOOSE MATERIAL AND BUILD UP

use the appropriate walkways!

(no walking over bonnet or on top of the machine)

Safe Start-Up Procedure:

Before starting up the machine it is important that all safety aspects are checked:

- Read and understand all **warnings and symbols**
- Check for build up under machine
- Ensure the full length of both tracks are in contact with a firm level surface
- Check the feed hopper is **empty**
- Check screen angle is correct
- **Check all emergency stops are operational and in the out position**
- Check the throttle and levers are at idle position
- Check that all **guards** are in position and secure
- Visually check that all tools and equipment that are hazardous to operation are removed from the immediate site
- Start engine

Don't crank the engine for too long, if it doesn't start promptly you can do serious damage to the starter motor and over heat the wiring, if it won't start check for a problem.

While the engine is warming up carry out a visual inspection around the machine for any oil leaks, wear and tear, loose bolts etc.

After Start Checks:

Once you have started the machine check that the display panel lights are OK, if not shut it down and find out why or serious damage can be done to the engine.

- Observe all safety warnings
- With engine idling
- Start side belts to warm oil up
- While machine is warming up, check for leaks or faults
- Increase throttle to full
- Start tail belt and screen box
- Start main belt
- Start feeder belt
- Check the stability of the plant. The chassis **SHOULD NOT** have undue vibration during operation
- Run the plant empty for a short period of time and check for abnormal noises, vibration or excessive heat from shaft bearings
- Ensure that all drives are running before any feed is introduced to the plant and that the feed is maintained at a constant rate, irregular and excessive feed rates reduce the efficiency of the plant
- Never leave the plant unattended whilst it is in operation

IN AN EMERGENCY SITUATION, STOP THE ENGINE USING THE EMERGENCY STOP BUTTONS.

Avoid standing on the upper maintenance platforms whilst the screener is operating



Moving the machine

Make sure all personnel are clear of the machine

Do not stand on any of the platforms or ladders whilst it is being manoeuvred

When manoeuvring the plant to it's operating position make sure you stand well clear of the machine but are in a position to have all round vision to see any obstacles, dangers that may lie ahead e.g. personnel, overhead cables, ditches, rocks etc.

Extreme care must be used when manoeuvring the plant with the umbilical control hand set. Stand as far away as possible from the plant. Do not allow the cable of the hand set to sag and become entangled with the tracks.

Operation

Avoid the need for personnel to be on the screener walkway platforms during normal screening operations for any significant length of time.

Being on the walkway platforms during normal operation presents the following risks:

- Struck by objects ejected from the crusher, such as bits of stone or metal.
- Being pulled into a roller or belt when attempting to pull out contaminants (e.g. reinforcing bar).
- Struck by excavator or loader bucket if the access platform is within the working radius of the loading machine
- Falling if adequate guardrails and access arrangements are not provided
- Noise, Process noise at this level can cause deafness and adequate hearing protection is required
- Dust, especially in the case of crushing concrete, approved respiratory protection must be used
- Whole body vibration. Anyone on the platform would be subjected to constant low frequency vibration

It may be necessary for a person equipped with appropriate PPE (e.g. ear protection, dust mask, eye protection, hard hat, protective footwear, high visibility clothes) to spend a few minutes completing general checks from the walkways. Ensure other personnel are aware that you are accessing the plant. Maintain 3 points of contact on ladders, ensure all handrails are in place.



Shut down procedure:

Observe all safety warnings

Ensure that the feeder, all belts and the screen box are empty

Stop the feeder belt

Stop Main belt

Stop Screen box and tail belt

Stop side belts

Using the speed control, decrease the engine rpm to idle

Idle the machine for at least 5 minutes before shutting down.

Stop the engine

Turn isolation key off, remove keys, shut and lock the control box to prevent unauthorised use

Following the shut down procedure above, it is recommended that at the end of production for the day the plant is routinely cleaned down and thoroughly examined to check for any damage, breakages, wear, leaks etc which should be rectified before further operations

It is recommended to check air cleaner after shutdown.

Powerscreen 1400 / 2100 Set Up

Screen box

1. Observe all safety warnings.
2. With screen box in lower position, remove pins from walkway slides.
3. Unhook chain or strap from ladder and swing at right angles to walkway.
4. Ensure walkways and end floor plates are secured in the up position.
5. Slide walkway out using 2 people.
6. **Align holes and pin walkway in place. (walkways must be pinned)**
7. Remove chain from top of walkway, and let fall down into place.
Note: extreme care must be used to keep hands free from nip or crush points
8. Unhook chain from floor end plate, and let fall into place.
Note: extreme care must be used to keep hands free from nip or crush points
9. Repeat same procedure for other side walkway
10. With both walkways out, raise screen box to 1st upper hole
11. Slide box section up to the hole and pin in place
12. Ensure rubber flap is still attached on chains on top deck.

Tail belt

1. Observe all safety warnings.
2. The tail conveyor and tail head section must be raised alternately using the 2 separate levers, slowly and a small distance at a time.
3. Once tail and head section is out straight and at the desired height, place retaining pins into the conveyor struts.
4. Check feed boot rubber is inside the tail belt feed section.

Opening out side conveyors

1. Observe all safety warnings.
2. Remove all rope or straps.
3. Shake return side of belt to remove any loose stones.
4. Start engine
5. Remove transport pins.
6. Move up left hand side conveyor lever, to open out the left hand side conveyor, fully into position. (**TAKE SPECIAL CARE NOT TO NIP THE CONVEYOR BELT BETWEEN MOVING PARTS**)
7. Slide box section up to the hole and insert pin and keeper.
8. Repeat same procedure for opposite side.

Main belt

1. Observe all safety warnings
2. Check distance from end of screen box to main belt, if too close material will spill over end of screen, too far away all screen mesh will not be utilised.
3. Adjust if necessary

Joey Belt

1. Observe all safety warnings.
2. Position machine on level ground.
3. Position excavator beside joey belt in a way that the operator can always see the 2nd person.
4. Attach chain to top lifting eyes on joey belt, and take slack up.
5. Remove pins holding joey belt to bin, with a hammer and bar.
6. Once personnel are well clear, lift belt up and out, too line lugs up with holes
7. Insert small bar in pin holes to help line up, and insert pins and clips
8. Unhook chain and attach to feed end of belt.
9. Once personnel are clear, lift belt up to correct height and insert pins in legs.

Note: At no point should anyone be directly under belt or excavator while it is being lifted



Warrior 1800 Set Up

Open side conveyors

1. Observe all safety warnings
2. Start engine and remove safety pins
3. Move head section of conveyor to 45°
4. Move the mid section to vertical
5. Move bottom section to desired position, then remainder to suit
6. Extend telescopic sections
7. Fit safety pins, and side skirts

Opening hopper sides

1. Observe all safety signs
2. Start engine
3. Using the hopper control levers fold out LHS , RHS, then end section of hopper.
4. Insert hopper wedges
5. Open ball valve near control levers
6. Slide hopper forward to working position
7. Close ball valve

Open out tail conveyor

1. Observe all safety signs
2. Stop machine , implement lock out procedure
3. Check that the tail conveyor is in the lower pin position
4. Start engine
5. Move tail conveyor up to the required angle
6. Shut of ball valve

Installation and removal of temporary handrail

1. This task requires 2 personnel
2. Have the screen deck in the lowest position
3. Person 1 to remain on the ground, person 2 to be on the fixed walkway
4. Person 1 on the ground to pass posts to person 2 on the fixed walkway
5. Person 2 to slide the posts into their correct locator – all posts and locators are numbered
6. When all 4 posts are in each side, safety chains can be clipped on to each post
7. Once all posts and safety chains are secured, personnel are then able to enter the screen deck, ensuring they use 3 points of contact.
8. Removal of the temporary handrail is by reversal of steps 1 – 6.

Blocked belt procedure

If a conveyor belt is overloaded or jammed, the machine must be shut down and locked out before any work is carried out.

1. Shut down machine
2. **Lock and Tag out**
3. Inspect machine for the cause of the overload ? example- roller jammed, belt slipping, torn skirts, hole in belt, etc
4. If the belt is to be shovelled off, all safety precautions must be observed, at no point should anyone be on the belt itself if it's above 1.5m with out hand rails or safety harness (**contact supervisor if you cannot access belt from under 1.5m in height**)
5. After belt has been emptied, Inspect for any damage or causes for the blockage
6. Remove Tag and Lock , run belt and check for any problems
7. Make any notes on time sheet or notify supervisor if immediate action is required



Safe Operating Tips:

Keep away from the grid, screen box and the discharge conveyors, where there is a risk of serious injury or death due to the loading or removal of material

Don't operate the machine unless you have had appropriate training or are training under the supervision of a competent operator.

Read and understand your machines operator's manual and any warning labels on the machine.

Ensure good house keeping

Be alert while operating the machine.

Avoid frequent starting and stopping of the machine.

The screener should be fed by an excavator or loader such that the bucket does not pass over or near to personnel or the machine apart from the feed hopper.

Plan your work, and operate on a level work surface whenever possible.

Always be aware of other people, machinery working nearby.

Never allow anyone on or near the machine while operating.

Never work close to overhead or under ground power lines unless a full risk assessment has been completed and you are satisfied that it is safe to do so. Aurora energy provides specific advice on working near lines. If unsure always check before commencing work.

Always keep the machine a safe distance from the edge of a bench or excavation. Be alert for unstable ground.

Never undermine the machine while excavating material.

Never operate underneath an overhang



General Maintenance

Practice safe maintenance

Observe all safety warnings

Never allow unqualified or untrained personnel to attempt to remove or replace any part of the machine, or anyone to remove large or heavy components without heavy lifting tackle

Never work under suspended loads

Only suitably competent personnel with the necessary training/experience should approach the task

A person should never work alone.

Understand service procedure before doing any work. Keep area clean and dry

Disengage all power and operator controls to relieve pressure.

Stop the engine.

Implement lockout procedure.

Allow machinery to cool.

Never lubricate, clean, service or adjust machine whilst it is moving.

Keep hands, feet and clothing clear of power driven parts and in-running nip points

Securely support any machine elements that must be raised for service work.

Do not stand on handrails

Remove any build up of grease, oil or debris.

Disconnect battery cable (-) before making adjustments on electrical systems or welding on machine

BEFORE WORKING ON PLANT, SWITCH OFF, "LOCKOUT", AND "TAGOUT"

Lubrication and servicing

Regular lubrication of the plant in accordance with this schedule is essential.

Air filters must be checked on a regular basis

Do not climb on machines to reach high greasing points, if the machine does not have remote greasing points at ground level or at a hand railed walkway notify your supervisor

The frequency of the lubrication required is as follows:

- Conveyor belt bearings: once per week 2 pumps per bearing.
- Screen box bearings: grease once per week 10 pumps per bearing

To deliver the specified quantity of grease to each bearing, ascertain the amount your grease gun will deliver with each "pump".

Do not assume! Check the greasing equipment used on a regular basis.

It is bad practice to mix greases. Use only one brand.

It is the operator's responsibility to ensure that all bearings are greased with the correct quantity and quality of grease at the correct intervals specified above.

Fuelling up

Do not fill tank to capacity.

Allow room for expansion and clean up spilt fuel immediately

Diesel is highly flammable

Never remove the filler cap or refuel, with the engine running

Do not smoke while refilling or carrying out maintenance on the fuel system.

Do not carry out maintenance on the fuel system near naked lights or sources of sparks, such as welding equipment.

Remember If you are unsure about something, ask your supervisor for advice