



EXCAVATORS



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The following cleaning/inspection guide has been segmented to facilitate the process.
The segmentation is as follows:

1. [Tracks](#)
2. [Turret / Slew Ring](#)
3. [Engine Bay](#)
4. [Boom Stick and Bucket](#)
5. [Cabin](#)
6. [General](#)

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1. Tracks



Image 2:

The tracks on any excavator are the main area that comes into contact with soil and other Quarantine risk material. Thorough cleaning and inspection techniques are required. In order to facilitate the cleaning and inspection process, all non-affixed panels, rock guards and motor covers must be dismantled. The yellow line indicates a small rock guard, which may not require dismantling. The red line indicates the rollers and the blue the hollow channels on the idler wheel frame.

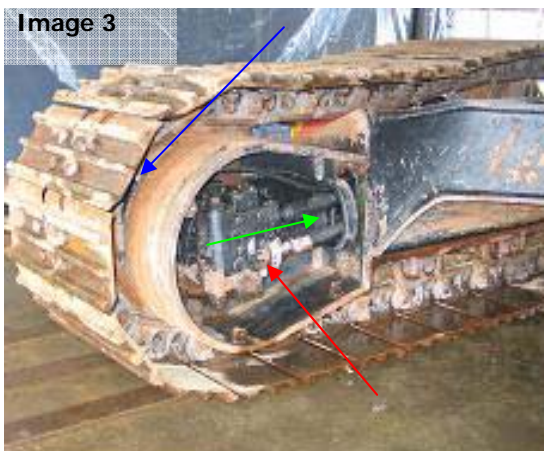


Image 3:

Red line indicates that the motor cover has been removed, allowing access to the drive motor. The green arrow indicates the hollow channel, which extends up through the frame into the turret or slew ring. These hollow areas on each side need to be thoroughly flushed to ensure cleanliness. The blue arrow indicates the area at the rear of the motor cover, which can be easily overlooked.

Image 4:

Illustration of rock guards (red arrows) on a track frame. The frame to which these rock guards is attached (blue arrows), is hollow and must be verified clean. To verify this hollow area and around each roller, the rock guards must be dismantled.

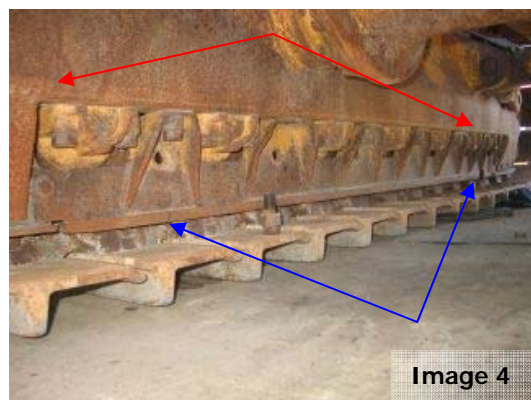


Image 4

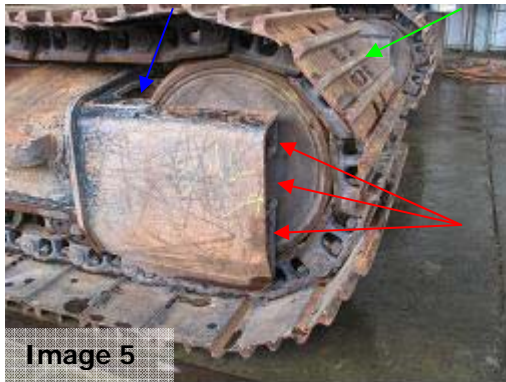


Image 5:

This picture indicates the hollow sections that can be found supporting the idler wheel. All these hollow areas require thorough flushing to remove all contaminants. These hollow sections can also be found on the inside of the idler wheel – green arrow.

Image 6:

This picture indicates the outside of the drive motor. The red arrows highlight the rear of the motor cover and the blue arrows highlight each track nut.

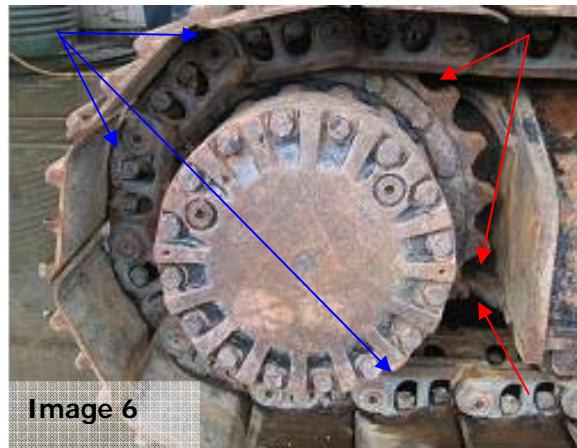


Image 6

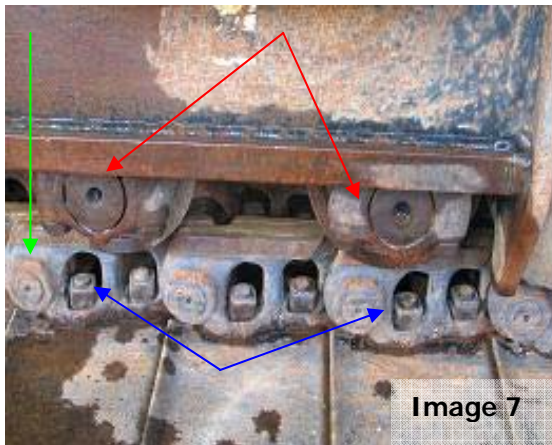


Image 7:

The blue arrows highlight the small gaps either side of each nut where contamination is commonly found. The red and green arrows highlight small hollow areas where contamination can become compacted.

Image 8:

This picture highlights the roller inside the track frame. Not the horizontal ledge inside the frame highlighted by the green arrows. The red arrows highlight the small gap either side of the roller while the aqua line shows a drainage hole, sometimes found on the turret of some excavators.

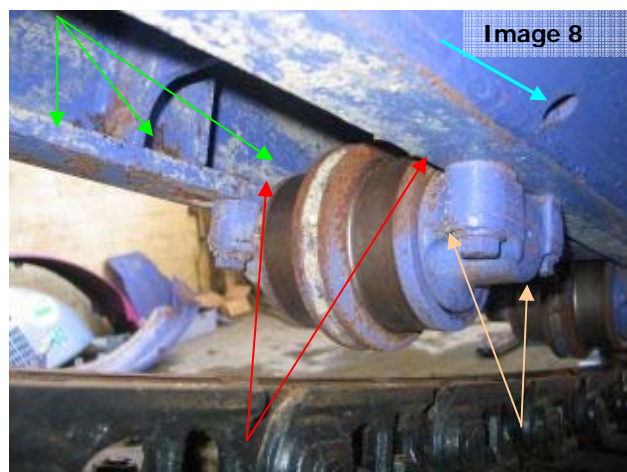


Image 9:

Indicates the top roller above the track frame. The red arrow highlights the small gap at the rear, which must be flushed while the blue highlights the small gap at the rear of the roller.

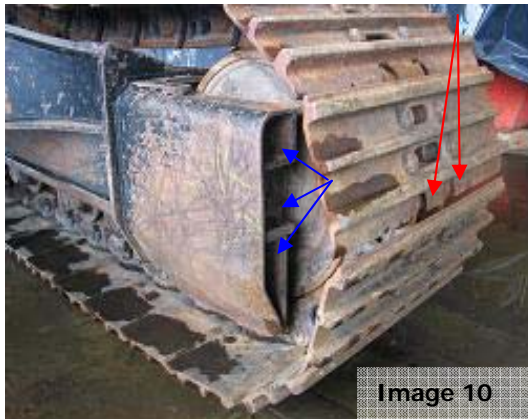
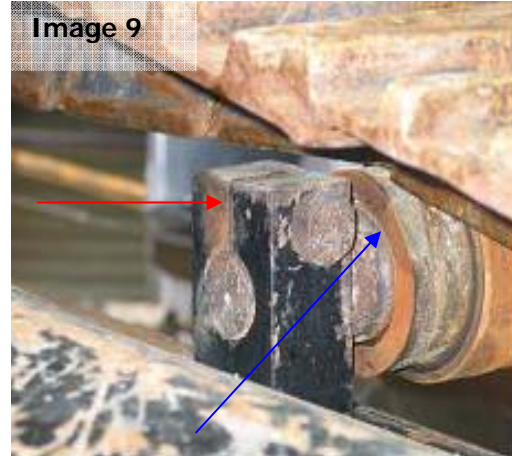
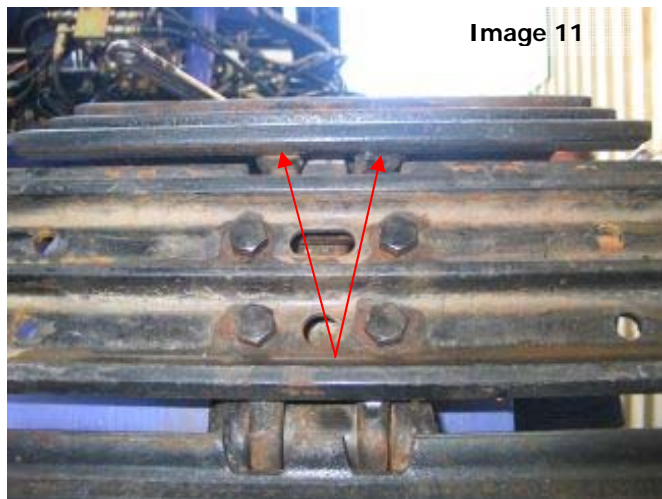


Image 10:

Blue arrows again show the hollow framework that requires thorough cleaning and the red highlight where the track pads connect to the chain. All tracked machines undergo one full revolution to ensure cleanliness. The picture below highlights the track pads opening slightly at the apex, allowing this area to be cleaned.



2. Turret/Slew Ring

Image 12:

The red arrows highlight the turret or slew ring, a hollow structure that can be accessed once the belly plate is removed (if present). The green arrow highlights the nuts/bolts that fix the carbody to the turret. All contaminated grease must be removed from each nut/bolt.

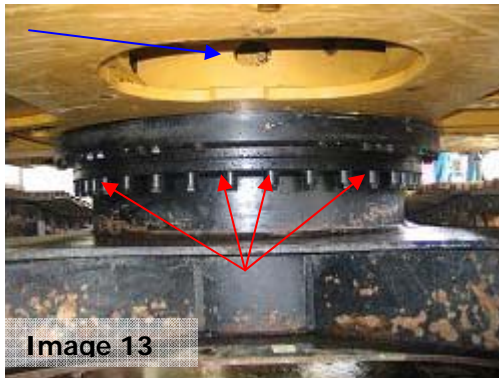
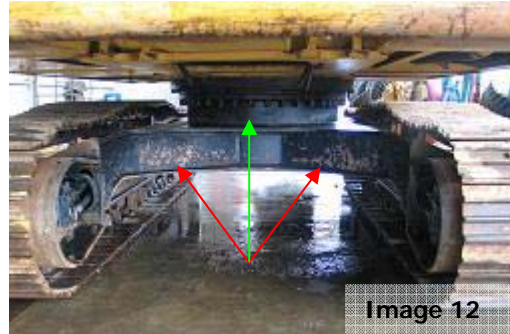


Image 13:

A closer view of each nut/bolt that attaches the carbody to the turret. The blue arrow highlights just one of the plates which has been removed, allowing access to the underside of the engine.

Image 14:

The red arrows highlight the various ledges that can be found inside the turret/slew ring, each ledge requires thorough cleaning. The green arrow points to the hollow channel where the hydraulic hoses run down through the turret housing to the drive motors (yellow line demonstrates the path of the hydraulic hoses). This area must be flushed in the presence of the inspecting officer to verify cleanliness.

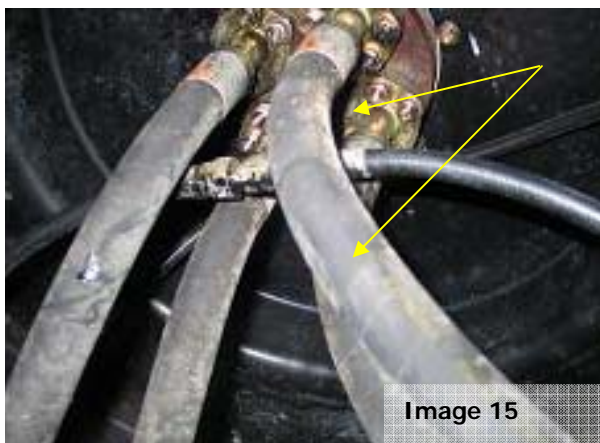
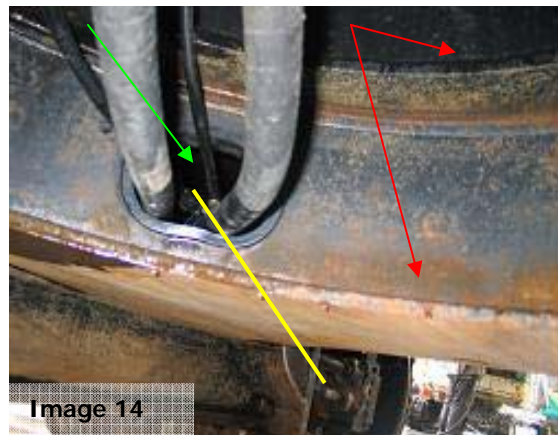


Image 15:

The hydraulic hoses inside the turret/slew ring. Each hose must be individually cleaned.

3. Engine Bay

Image 16:

The RH side of the engine bay. On some models the horizontal blue line highlighted in this picture indicates a hollow channel while the red arrow on the left indicates the entrance to this area. On other models this area is completely sealed. If this channel is open ended, it will require flushing in the presence of the inspecting officer.

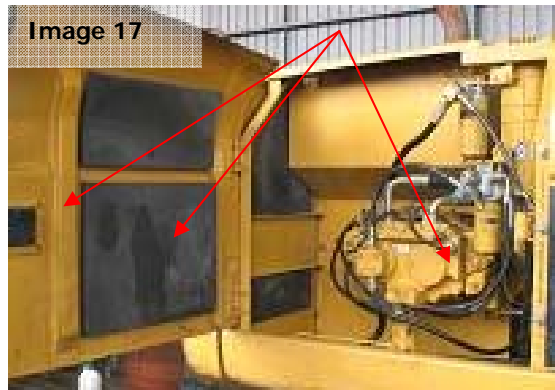


Image 17:

Check all engine doors for hollow support channels. Check for drainage holes or if only spot-welded – will require flushing if not completely sealed. Check all foam insulation and hydraulic hoses.

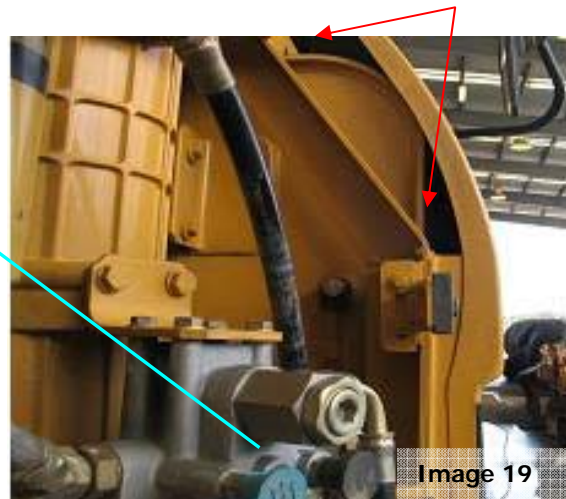
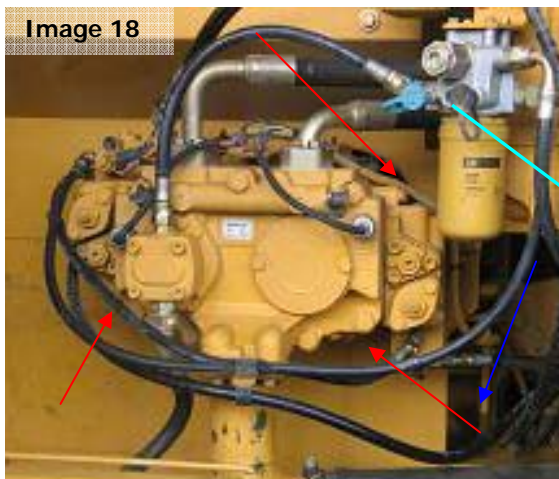


Image 18:

Check all surfaces and hydraulic hoses for cleanliness as indicated by the red arrows. The blue line indicates an accumulation of hydraulic hoses, bound together by zip-ties. These hydraulic hoses need to be separated to allow cleaning and inspection.

Image 19:

The small blue cap seen on the left is also the one seen in this picture. It highlights the fuel cell, located forward. The red arrows show the gaps at the side and above where contamination may accumulate.



Image 20:
The battery box located just in front of the fuel cell on the RH side of the excavator. Ensure the hollow, open-ended sections in the battery-box cover are flushed. Check handrail for openings at either end – flush if open-ended.

Image 21:
The batteries have been removed, allowing for easy cleaning and inspection. The blue arrows again highlight the open-ended channels on the inside of the battery box cover.

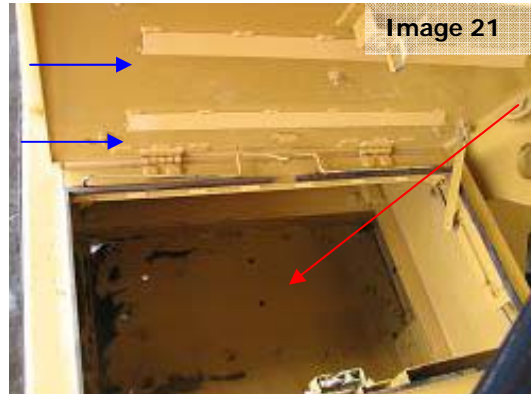


Image 22:
A view of the LH side of the engine bay. Check all insulation foam (red arrow). The blue line again indicates that this section may be a hollow channel while the green line highlights the opening to this hollow section. This hollow section is not applicable on all models.

Image 23:
The red arrow highlights the air-filter, which needs to be removed and checked for cleanliness. An air hose is the best way to verify cleanliness. The blue line highlights the fuse-box. This area is generally well sealed, however an internal cleanliness check is required. The green arrows highlight the oil coolers. Each must be flushed to ensure cleanliness.

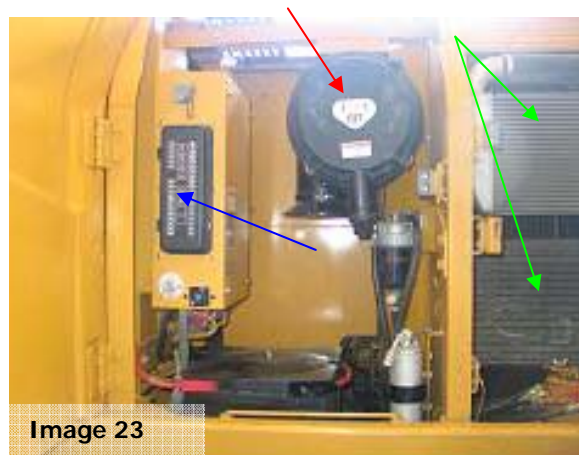




Image 24:

Another view of the LH side of the engine bay. The blue arrow again indicates the fuse-box (access is required), while the green arrow shows an accumulation of hoses that are held together by zip-ties. Each hose must be cleaned and inspected.

Image 25:

Another view of the oil-coolers and radiator core. All require flushing to verify cleanliness. To allow access to the radiator at the rear, the oil cooling fins may have to be dismantled to allow thorough flushing.

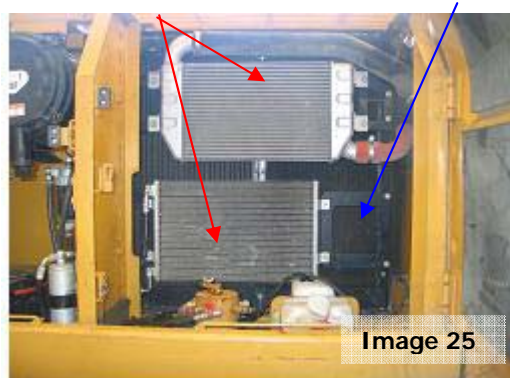


Image 26:

An accumulation of hydraulic hoses bound together with zip-ties.

Image 27:

The zip-tie removed, allowing the hoses to be moved and highlighting contamination between the hoses.



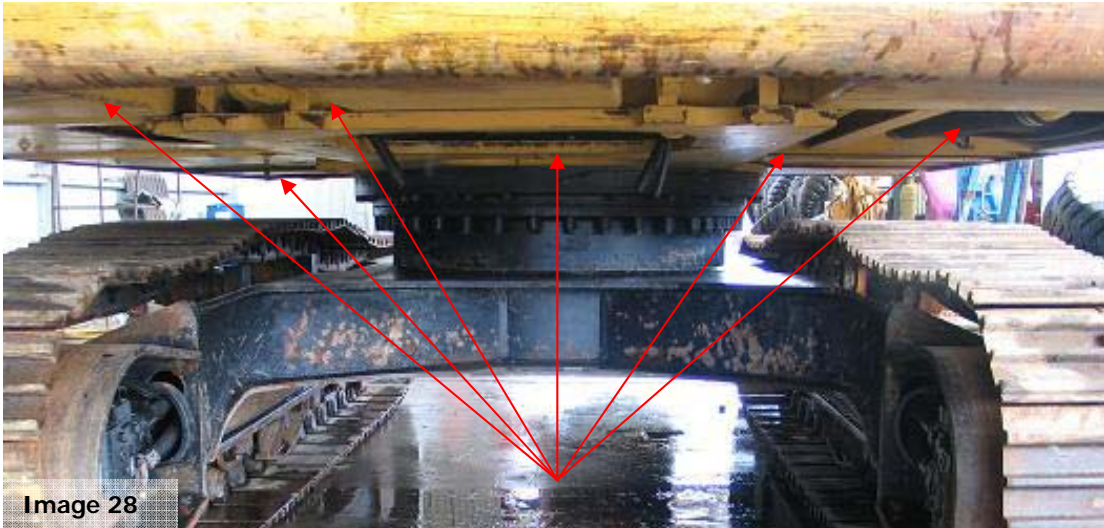


Image 28

Image 28:
All non-affixed panels on the underside of the carbody have been removed allowing access for cleaning and inspection.

Image 29:
When the non-affixed panels on the underside of the carbody are dismantled, this allows access to cleaning and inspection staff. Areas like the one highlighted above requires careful attention and a mirror may assist the inspection process.

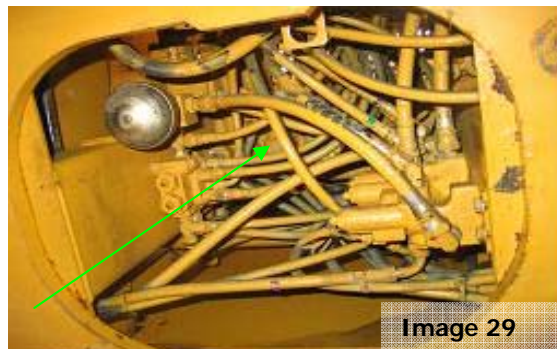


Image 29

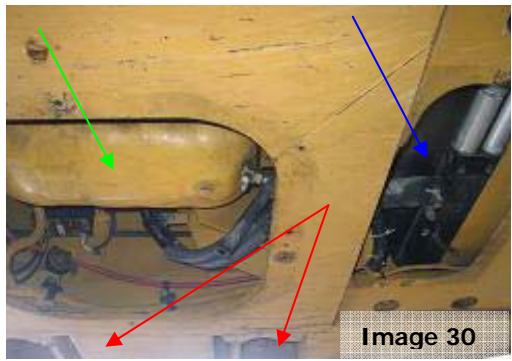


Image 30

Image 30:
The bottom of the sump (green line) is visible with the non-affixed panels removed. All contaminated grease and oil residues must be removed during cleaning. The blue line shows the bottom of the radiator, while the red lines show where the counterweight attaches on some models.

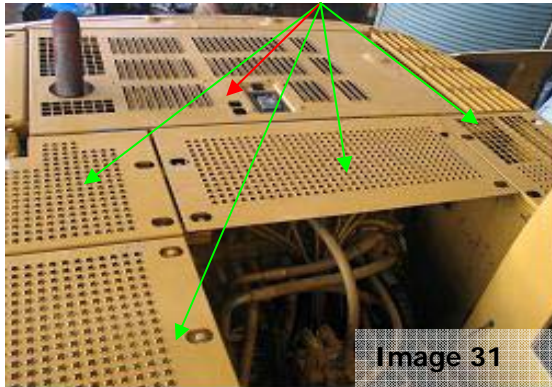


Image 31:
The topside of the engine bay. The red arrow highlights the engine cover that opens, allowing access to the topside of the block. The green arrows highlight the remaining engine covers that are non-affixed and can be dismantled to allow for cleaning and inspection.

Image 32:
The engine cover open, allowing access to the topside of the engine block (red) and radiator (blue).

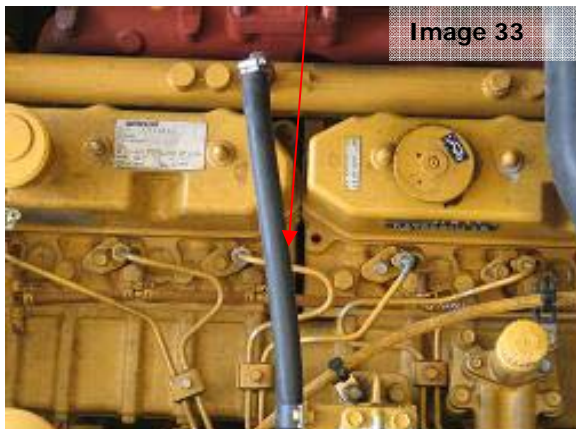


Image 33:
The red arrow highlights a small gap between each tappet cover, which requires thorough cleaning and inspection. Flushing may also be required.

Image 34:
The green arrow highlights the radiator shroud wire grill. This needs to be dismantled to allow access to the inside of the shroud and remove all contamination. The red arrow highlights the small gap between the radiator core and the oil-cooler cores. Check the cores by thorough flushing.





Image 35:
On some models, a mesh grill protects the radiator core. These mesh grills need to be removed as the gauge is small and prevents contamination caught in the radiator fins from being successfully removed.

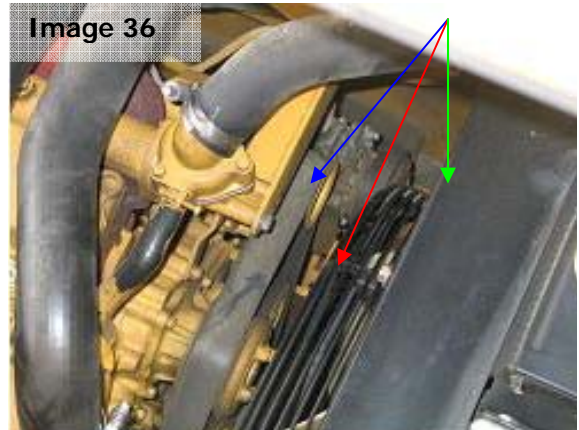


Image 36:
Check the sides of the block, including the harmonic balancers (blue line) as contamination can become caught in front of these open ended flywheels. The red line indicates the radiator grill, which if still present, prevents access to the bottom of the radiator shroud (green line).

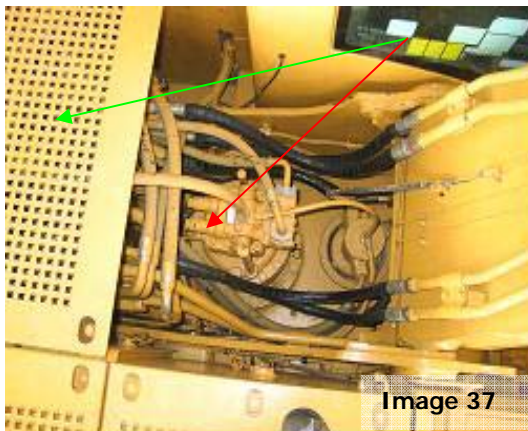


Image 37:
The accumulation of hydraulic hoses (red line) situated just behind the boom stick. Sometimes this area may be covered by a non-affixed panel, which will need to be dismantled to allow access. Other non-affixed panels (green line) can also be dismantled to facilitate the cleaning and inspection process.

Image 38:
Ensure that the small gap between the cabin wall and the base of the boom stick is cleaned and inspected. Contamination can often accumulate inside the small gaps where the hydraulic hoses connect, indicated here by the blue arrow.



4. Boom Stick and Bucket

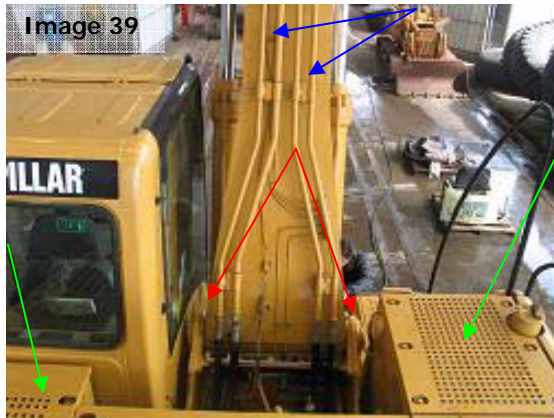


Image 39:

The base of the boom stick and checker-plate above the engine. Ensure all contaminated grease is removed from the pivot –points (red arrows). Flush under all the checker-plate as indicated by the green arrows. Check all hydraulic lines and mounting points (blue arrows). The boom can be extended and lowered to address occupational health & safety concerns (otherwise use scaffolding or cherry picker).

Image 40:

Check along the length of the boom, ensuring all risk material including contaminated grease is removed (red line). All hydraulic lines need to be cleaned and inspected (blue line).



Image 40

Image 41:

Check along all surfaces, hydraulic rams (green arrows) and for the presence of any drainage holes or openings in the boom stick (blue lines).

Images 42 & 43:

Ensure all rams and pivot points are clean and free of contaminated grease.



Image 42

Image 43

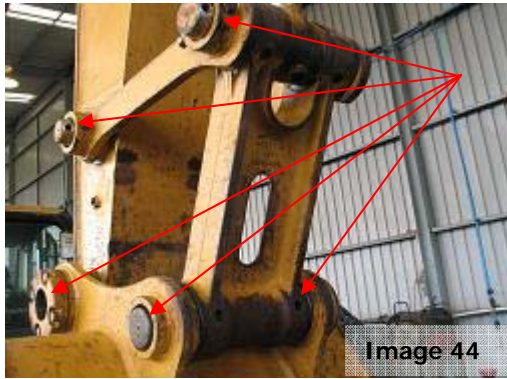


Image 44:
Check all pivot points above the bucket and ensure all contaminated grease is removed.

Image 45:
The wear plates (red arrows) either side of the bucket must be either dismantled or at the very least loosened off and flushed behind. All cutting teeth (blue arrows) must be removed and the teeth can be seen here in the bucket (green line).

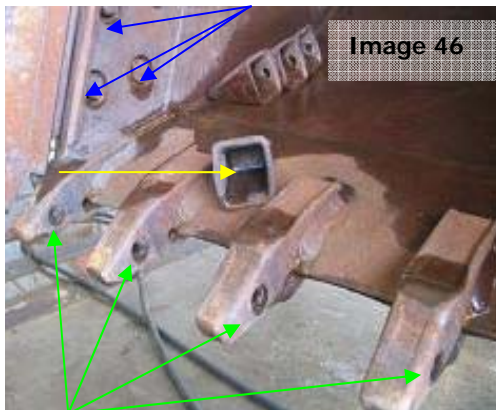
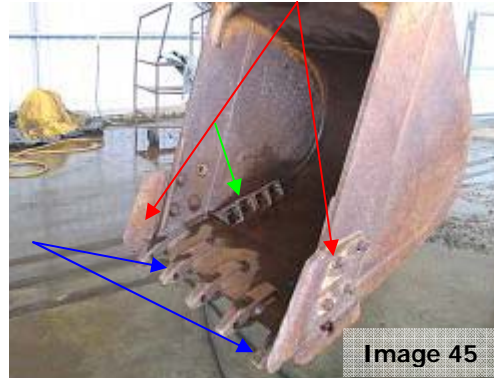
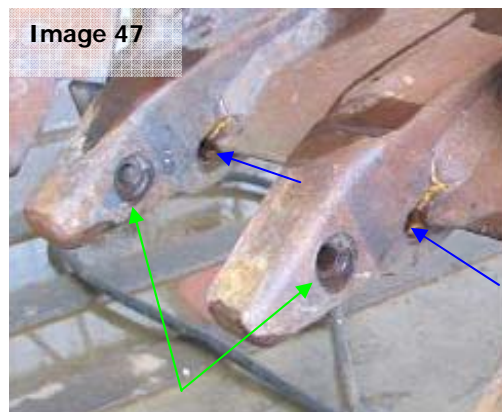


Image 46:
The cutting teeth have been removed, exposing the hole through the centre (green line), which cannot be verified while the teeth are still in place. Ensure the countersunk holes (blue line) where the wear plates attach are free of all contamination. The yellow line shows the inside of the cutting teeth – quick and easy to verify if presented in this manner.

Image 47:
A close up of the boots and which the cutting teeth are mounted. Ensure around each pinhole is clean. The blue arrows highlight a narrow opening that tends to become compacted with risk material and can be overlooked if the cutting teeth are still attached.



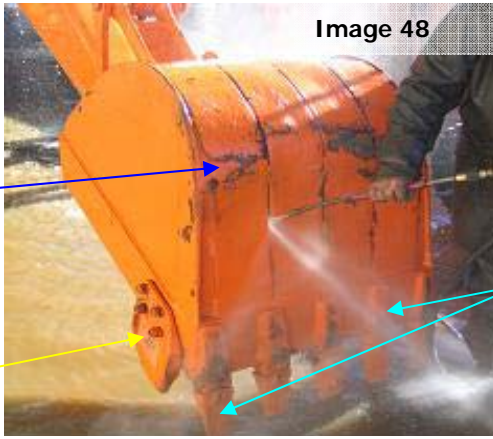


Image 48

Image 48:

Evidence of a crack/split (blue line) in the wear plate on the underside of the bucket. Side wear plates (yellow line) need to be either removed or loosened and flushed. Cutting teeth (aqua lines) must be removed at the time of inspection.

Image 49:

If wear plates are only spot-welded as seen in the examples above, ensure that these are verified. E.g. by witnessing high-pressure water being flushed through.



Image 49

5. Cabin

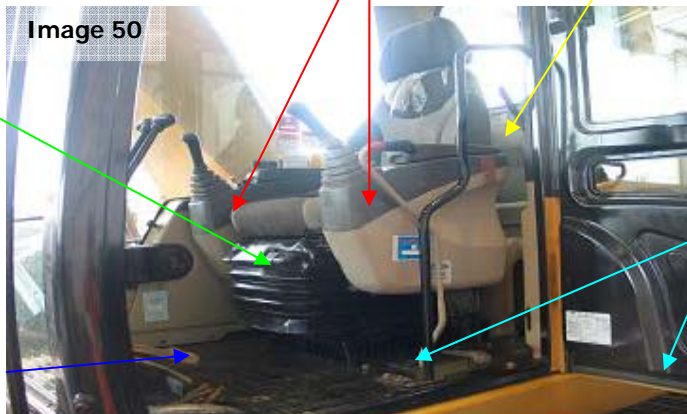


Image 50:

Landscape shot the inside of a typical cabin. Access is required to verify the cleanliness of the internal workings of the joystick controls (red arrows). The seat shroud (green arrow) must be internally and externally cleaned and inspected. If rubber or plastic foot pedal covers are in place, remove and clean. The yellow line highlights the air-conditioning unit, which will be highlighted later. The door rubbers (aqua arrows) can be contaminated and the internal door panelling, depending on the configuration may be harbouring internal contamination.



Image 51:

Access will be required to check the internal workings of the joystick control panels.

Image 52:

The box section below the seat needs to be thoroughly cleaned. Proper access can only be achieved once the four bolts are removed and the seat moved. Access into the joystick control panels (red line) is required. Inside the seat shroud must be cleaned and inspected.



Image 52



Image 53:

Contamination has previously been found in some air-conditioning vents and therefore an area of interest to AQIS.

Image 54:

If rubber or plastic foot pedal covers (red lines) are in place, remove and clean. Rubber shrouds below pedals (green line) must also be verified clean inside. Under the floor mat must be clean (blue line).

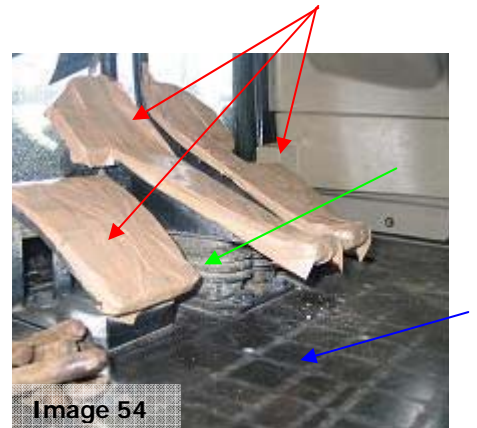


Image 55:

Located behind the seat in some models is the air-conditioning filter. The filter must be removed, the filter and surrounding area cleaned and verified.

Image 56:

The filter has been removed, revealing contamination inside which must be removed.



6. General

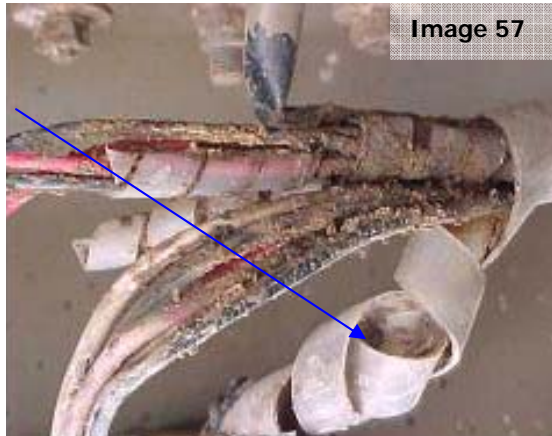


Image 57

Image 57:

Ensure that all looming (blue line) around hydraulic hoses and lines is free of all contamination. Flushing these areas with the looming still in place rarely removes all contamination as can be seen in this illustration.

Image 58:

All wiring harnesses (yellow lines) must be thoroughly inspected for internal contamination as seen above.



Image 58



Image 59

Image 59:

Contamination inside the fuse box – must be removed.