



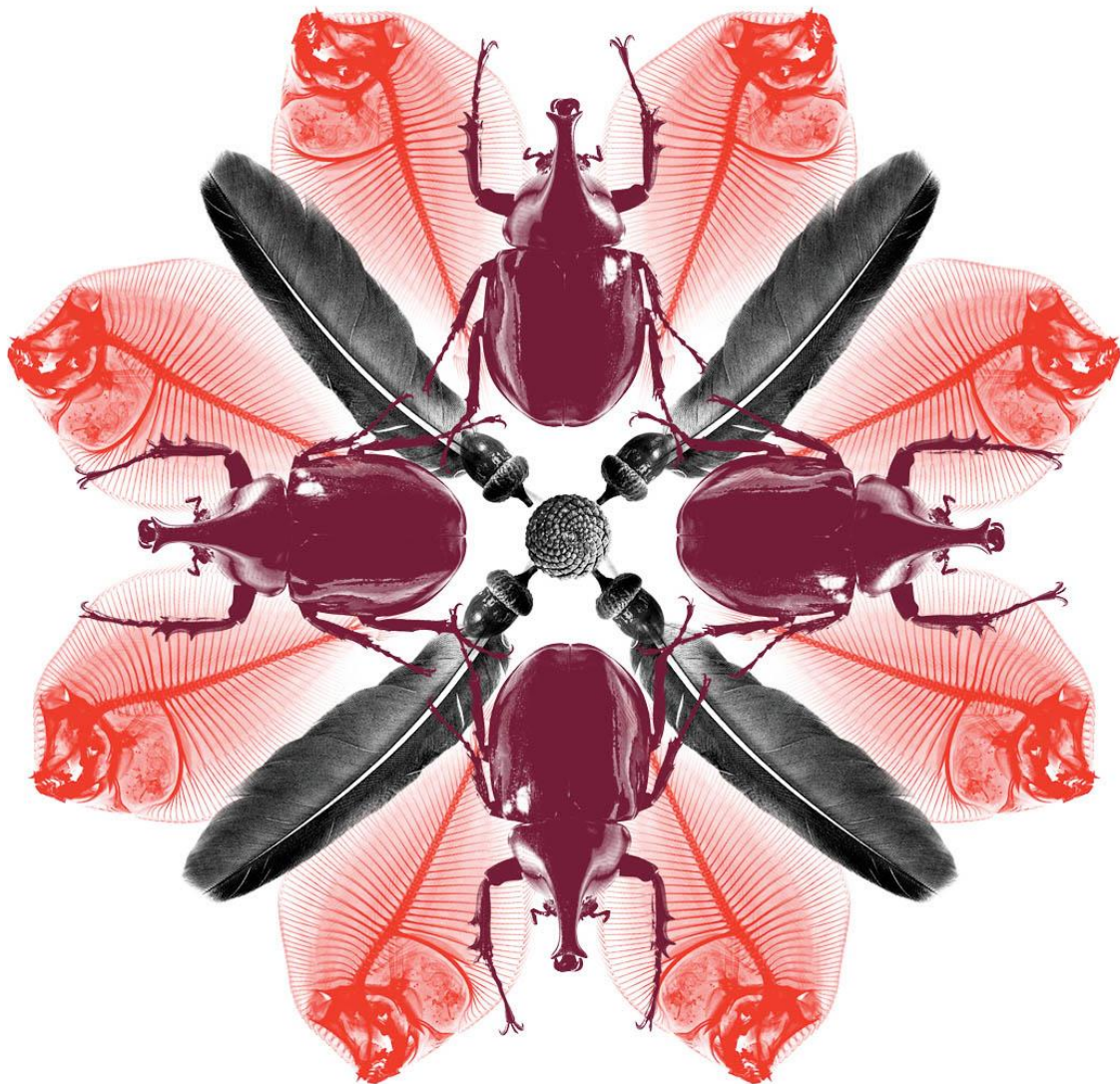
Australian Government
Department of Agriculture
and Water Resources

Machinery Cleaning Guide - Mini Tractors

Biosecurity

Publication series

April 2016



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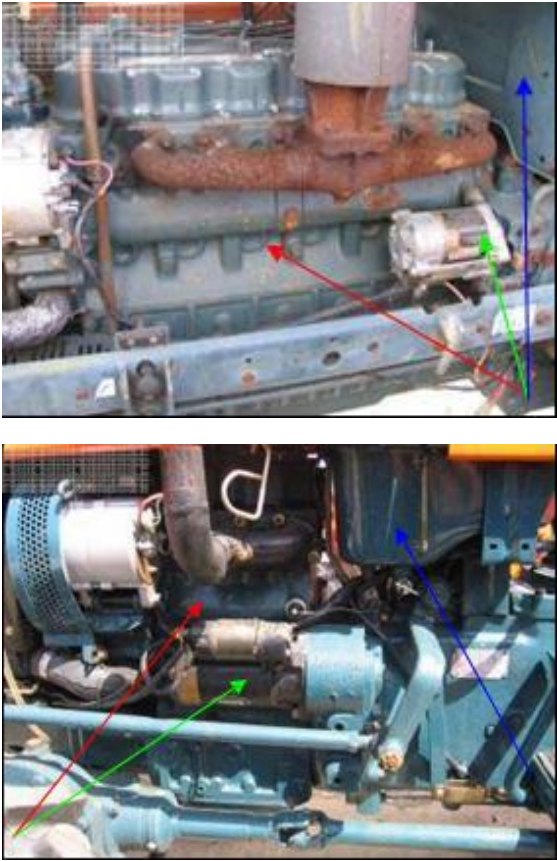

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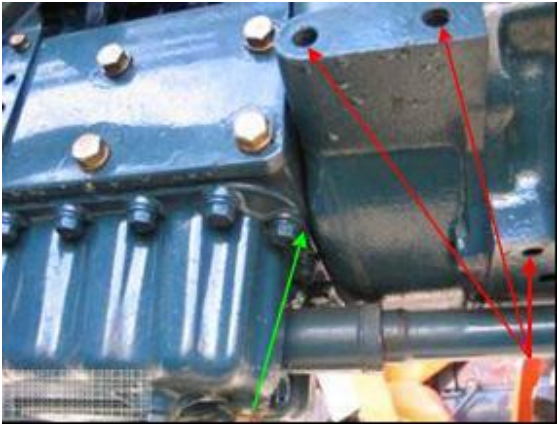




Cleaning guidelines

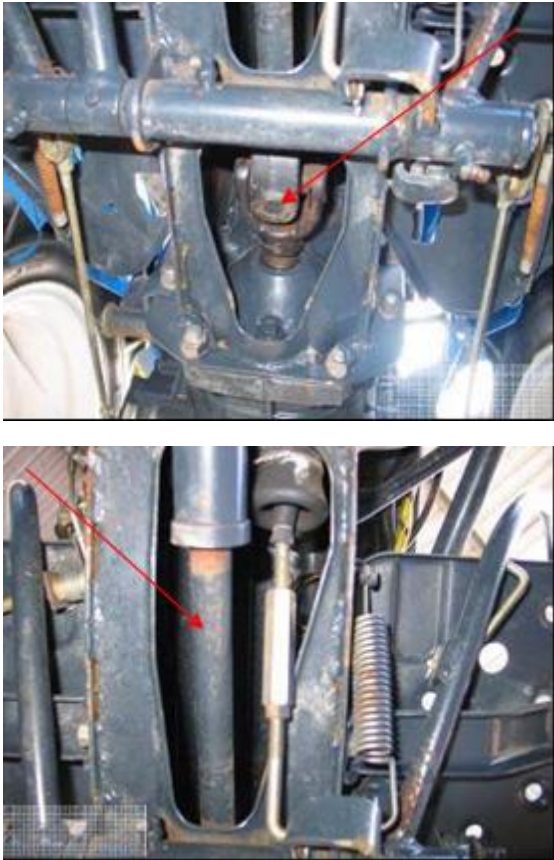

Engine block, sump and Housing

Description	Images
<p>The two sides of the mini tractor engine block. All surfaces of the block (red arrows), around all starter motors (green arrows), oil filters; fuel tanks (blue arrows) must be thoroughly cleaned and inspected.</p>	
<p>The topside of the engine block and tappet head cover (red arrow). This area must be thoroughly cleaned and inspected.</p>	



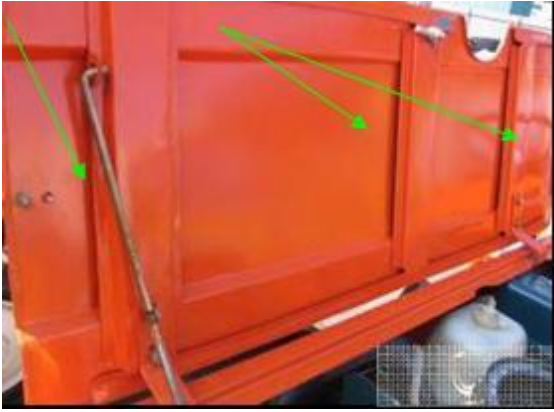
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Description	Images
<p>The rear end of the sump. All countersink holes (red arrow) must be free of biosecurity risk material. On this model there is a small recess above the sump (green arrow) that may require flushing to verify cleanliness.</p>	
<p>Another example of a small recess (red arrow) behind the sump that must be free of biosecurity risk material.</p>	
<p>This illustration shows an unusual sump design with the steering shaft dividing it through the centre. This area (red arrows) can harbour biosecurity risk material and requires flushing to verify cleanliness.</p>	

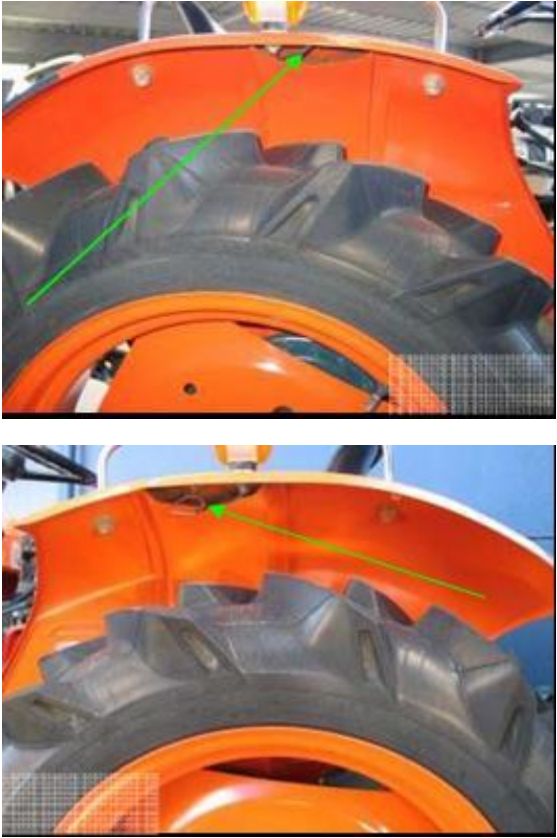
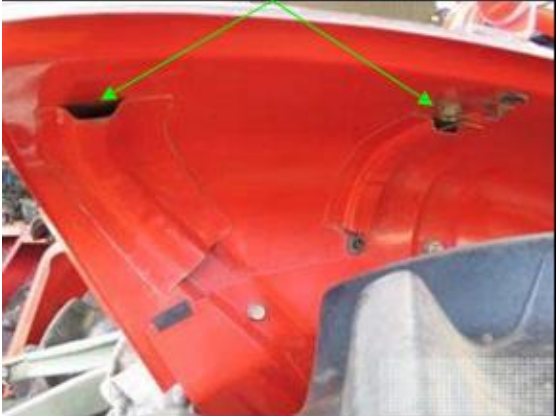
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Description	Images
<p>Examples of universal joints and steering shafts (red arrows), accessible for cleaning and inspection after the removal of non-affixed panels. All internal surfaces must be free of all biosecurity risk material.</p>	 <p>The first photograph shows a close-up of a universal joint assembly. A red arrow points to the central yoke where the shafts meet. The second photograph shows a steering shaft assembly with a coil spring. A red arrow points to a vertical shaft component.</p>
<p>Small recesses like the one highlighted (red arrows) will require flushing to remove any biosecurity risk material and to verify cleanliness.</p>	 <p>The photograph shows a metal housing with a recessed area. Two red arrows point to the recessed area, indicating it needs to be flushed.</p>



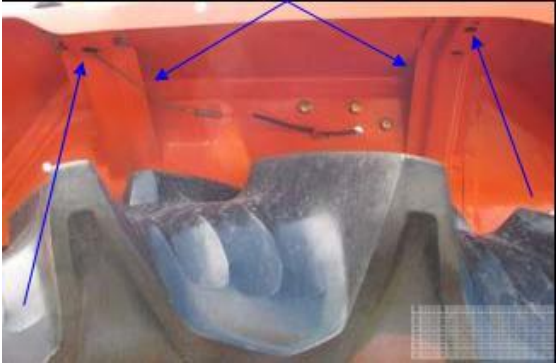
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Description	Images
If drainage holes are present (red arrow), flush to verify internal cleanliness.	
Verify all internal light covers (blue arrows) are clean and free of biosecurity risk material.	
These open support channels (green arrows) inside the top of the engine cover must be thoroughly cleaned and inspected.	

Rear wheel arches


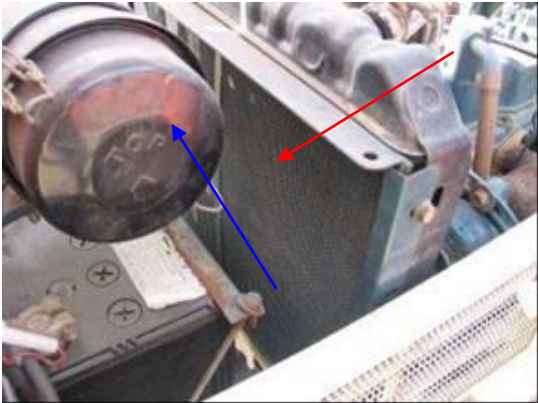
Description	Images
<p>The inside rear wheel arches highlighting the hollow support cavities (green arrows). These hollow channels must be flushed in the presence of the inspecting officer to verify internal cleanliness.</p>	
<p>On some models, numerous hollow support channels may be found under the rear wheel arches (green arrow). All require flushing to remove any internal biosecurity risk material.</p>	

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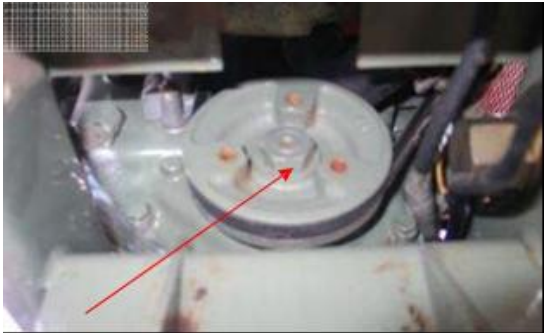

Description	Images
<p>This illustration shows spot-welded hollow support channels under the rear arches. Due to these channels not being sealed units, biosecurity risk material can enter via the small recesses (green arrows) and these require flushing to verify internal cleanliness.</p>	 A close-up photograph of a red-painted metal structure, likely part of a tractor's rear arch. Two green arrows point to small, narrow recesses or gaps in the metal where biosecurity risk material could enter.
<p>The internal cleanliness of the light covers must be verified (blue arrows).</p>	 Two photographs showing the interior of light covers. The top photo shows a red light cover with a blue arrow pointing to its internal surface. The bottom photo shows a white light cover with a blue arrow pointing to its internal surface.
<p>Another illustration of the variety of hollow support channels (blue arrows) under the rear wheel arches that require flushing to verify internal cleanliness.</p>	 A photograph showing the interior of a rear wheel arch. Four blue arrows point to various hollow support channels and recesses within the arch, indicating areas that require flushing for biosecurity verification.

Description	Images
<p>The internal cleanliness of the light covers on top of the wheel arches must be verified (blue arrow).</p>	

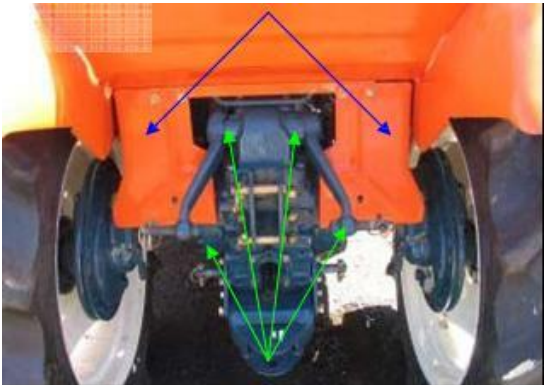
Radiators, batteries and harmonic balancers

Description	Images
<p>Most radiators do not have an internal grill cover, which allows cleaning and inspection access to the inside of the shroud (green arrow).</p>	
<p>The red arrow highlights the mesh grill commonly found at the front of the radiator. These mesh grills must be removed to allow debris caught in the radiator core to be flushed out and removed. Remove the air-filter (blue arrow) and verify cleanliness.</p>	

Biosecurity



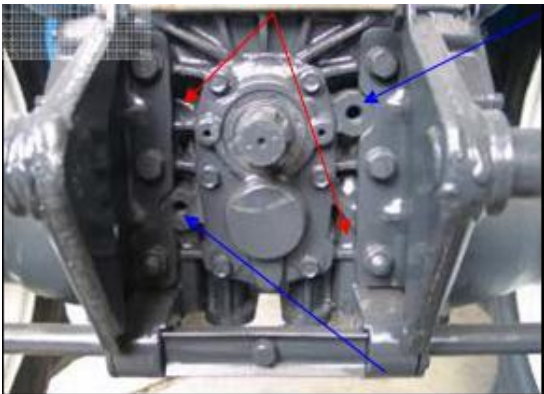
Description	Images
<p>The harmonic balancer found at the front of the engine block (red arrow). These areas are generally concave, can harbour biosecurity risk material and must be verified clean.</p>	
<p>All batteries must be loosened from the tie down points for underside cleaning and inspection (red arrow).</p>	

Rear end, linkage and PTO (power transfer output)



Description	Images
<p>The rear view of a typical mini tractor. To facilitate the cleaning and inspection process, remove all non-affixed panels (blue arrows). All contaminated grease must be removed from the linkage arms and pivot points (green arrows).</p>	

Description	Images
<p>Once these rear panels have been removed, it allows access for cleaning and inspection. The green arrows highlight small recesses between the rear guard and the topside of the axles. See following illustrations.</p>	
<p>These two illustrations highlight the small recesses that can be found on the rear axles on some models. The green arrows highlight a small gap that must be flushed to verify cleanliness.</p>	
<p>Check for any biosecurity risk material in areas where attachments are mounted to the rear of the tractor (red arrow). Areas like those illustrated by the red arrows may require flushing to verify cleanliness.</p>	

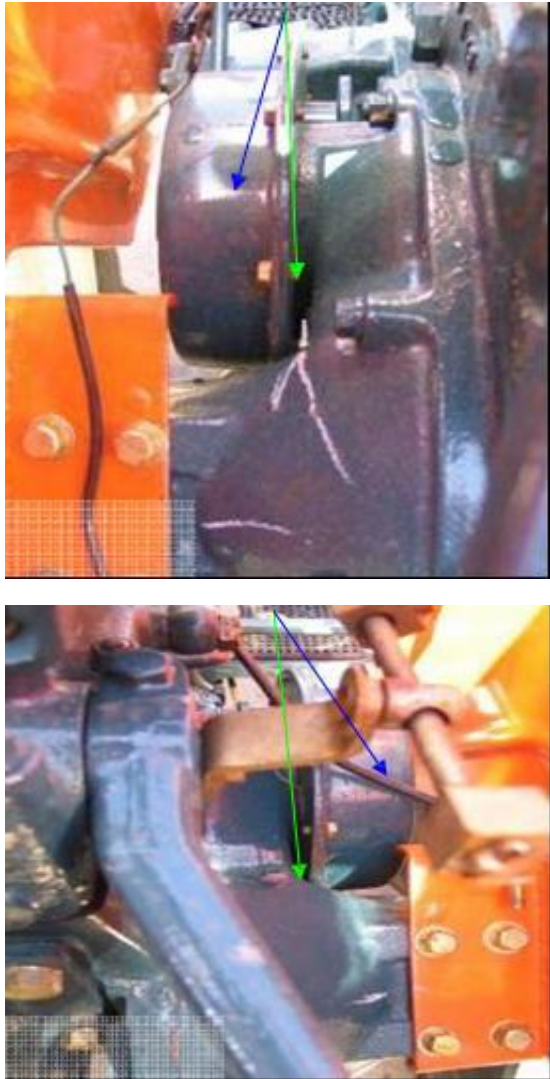
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Description	Images
All countersunk holes (red arrows) must be free of biosecurity risk material.	 A close-up photograph of a blue tractor component. Two red arrows point to small, circular countersunk holes on the surface of the metal part.
In conjunction with verifying countersunk holes, on some models, other small recesses (green arrows) can be flushed to verify cleanliness.	 A close-up photograph of a blue tractor component. Two green arrows point to small, recessed areas on the metal surface, which are intended to be flushed for cleanliness.
Another example of the rear of a mini tractor. This model has numerous ledges (red arrows) and countersunk holes (blue arrows) that must be cleaned and verified.	 A photograph showing the rear of a mini tractor. Red arrows point to various ledges and protrusions on the metal frame, while blue arrows point to countersunk holes. The tractor is positioned on a concrete surface.

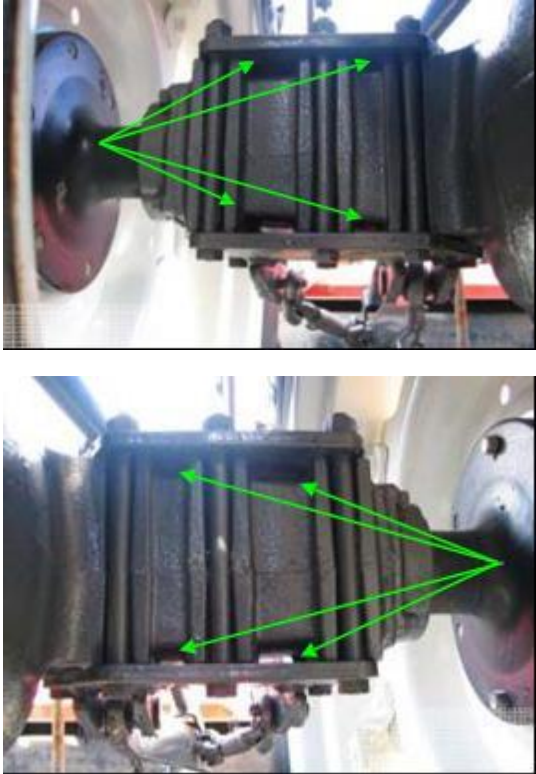
Biosecurity

Description	Images
<p>Even though the rear of some models may appear simplified, all have ledges (blue arrow) and nooks (red arrow) that require thorough cleaning and inspection.</p>	
<p>The underside of the linkage at the rear. These generally have small ledges (red arrows) that must be checked for cleanliness.</p>	


Biosecurity

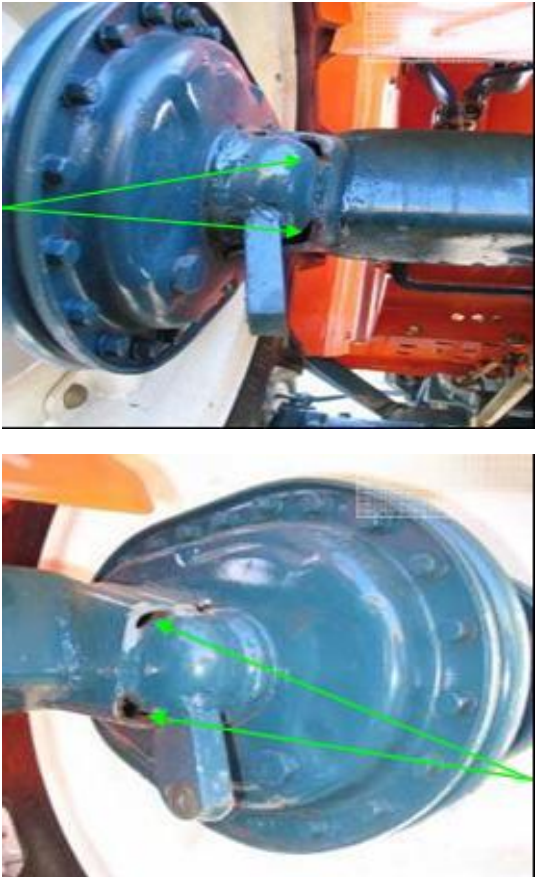
Description	Images
<p>Small recesses between the chain cover (blue arrows) and housing like those highlighted by the green arrows must be verified.</p>	

Rear axles


Description	Images
<p>All surfaces of the rear axles must be free of biosecurity risk material and some may require flushing of recesses (green arrows) to verify cleanliness.</p>	 <p>The images show two views of a rear axle assembly. The top image shows the axle from a side-on perspective, with green arrows pointing to the recessed areas between the axle and the housing. The bottom image shows the axle from a different angle, also with green arrows pointing to the recessed areas. The arrows indicate the specific locations where biosecurity risk material might be present and where flushing is required to verify cleanliness.</p>




Inside rear hubs


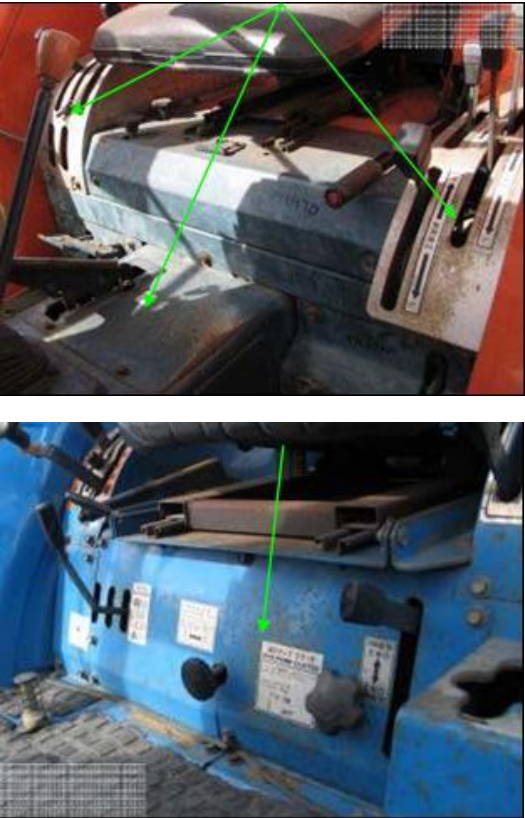
Description	Images
<p>On some models, small gaps can be found in the inside hub housing (red arrows). These areas that can harbour biosecurity risk material will be further illustrated next.</p>	 <p>The images show two views of the inside rear hub housing of a mini tractor. The housing is painted blue. In both images, red arrows point to small gaps between the housing and the axle assembly, which are potential biosecurity risk areas. The top image shows a side view of the hub, and the bottom image shows a more direct view of the hub housing.</p>

Description	Images
<p>A closer view of the small openings (green arrows) that may be found on the rear hubs on some model mini tractors. These must be flushed to verify cleanliness.</p>	


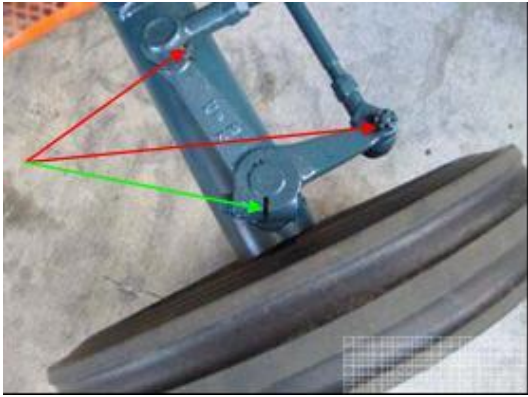
Instrument panels, fuel cells and gears

Description	Images
<p>On most models, when the engine cover is lifted, the topside of the fuel cell (red arrow) becomes accessible for cleaning. The front and topside of the fuel cell (green arrow) is covered by the instrument panel, however this area requires thorough cleaning and inspection.</p>	




Description	Images
<p>Ensure that the ledge around the fuel cell (green arrow) is verified clean.</p>	
<p>The front, sides and the ledge around the fuel cell (red arrow) can be cleaned and inspected from this angle. The underside of the fuel cell (green arrow) also requires verification.</p>	
<p>Another view of the topside of the fuel cell (red arrow) and small recess between the rear of the fuel cell and the engine block (green arrow).</p>	

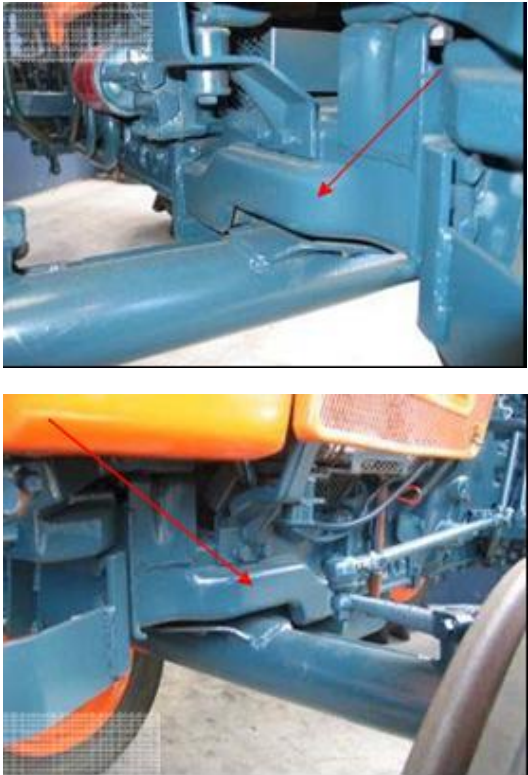
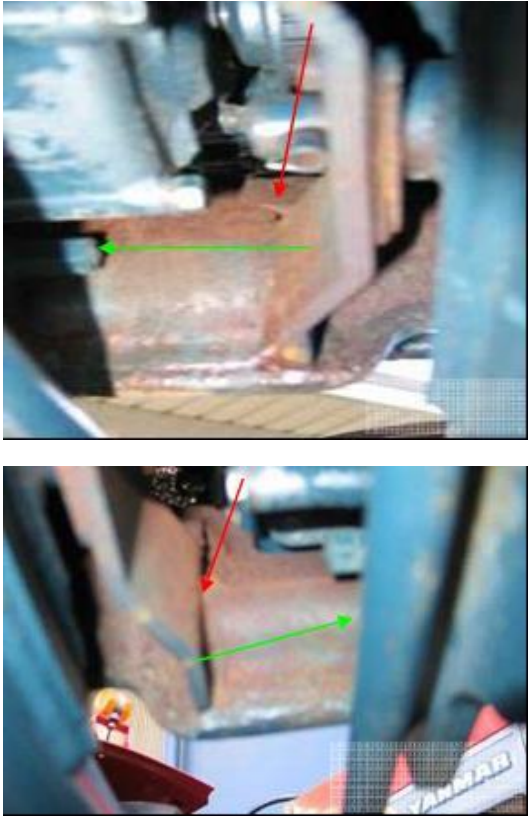
Description	Images
<p>Several illustrations of the variety of gearbox covers (green arrows) found on mini tractors. These non-affixed covers must be removed for cleaning and inspection.</p>	
<p>On other models the gear levers may be found under or beside the seat. These non-affixed covers (green arrows) must be removed for cleaning and inspection.</p>	

Front axles and rims

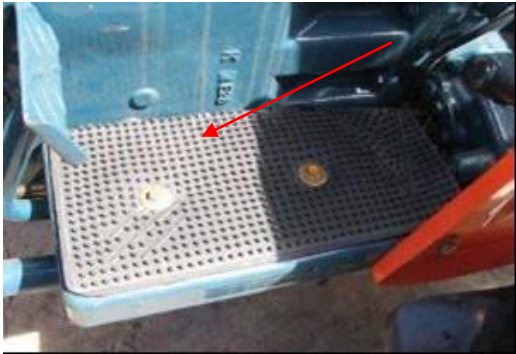

Description	Images
<p>Two examples of hollow front axles that require flushing to verify internal access. While the example on the left only highlights a small recess between the inner and outer sleeve (red arrow), the example on the right shows an open-ended axle (green arrow).</p>	
<p>All pivot points and push arms must be free of contaminated grease.</p>	

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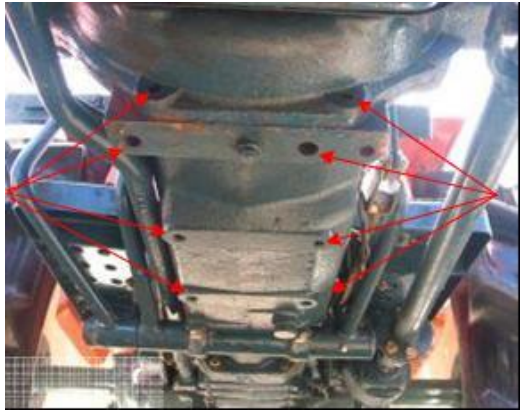
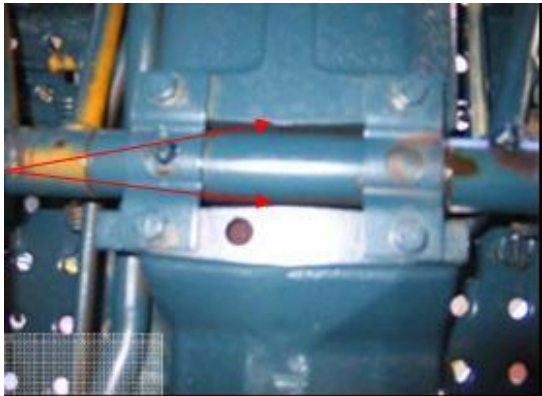
Description	Images
Internal wheel rims such as those illustrated may require flushing to verify cleanliness (blue arrow).	 A close-up photograph of an orange-painted metal wheel rim. A blue arrow points to a recessed area on the inner surface of the rim, near a central hub component.
This illustration highlights a few small recesses (red arrows) above the front axle that require flushing to verify cleanliness.	 A close-up photograph of a metal chassis rail. Two red arrows point to small recessed areas on the top surface of the rail, above the front axle assembly.
Under the front nose, hollow cavities (red arrows) inside the chassis rail will require verification via flushing if present.	 A close-up photograph of a hollow cavity in a metal chassis rail. Two red arrows point to the interior of the cavity, which is located under the front nose of the tractor.

Description	Images
<p>These illustrations highlight the outside of a hollow channel (red arrows) that is present on some models and potentially harbour biosecurity risk material. The following illustrations will highlight the inside access points for flushing.</p>	
<p>Although not visible in these illustrations, the access points to the hollow channels mentioned above are highlighted by the red arrows. The green arrows indicate the direction of the hollow channel.</p>	

Sidesteps

Description	Images
<p>The underside of all rubber mats (red arrow) that may be on mini tractor sidesteps must be cleaned and accessible for inspection.</p>	
<p>The underside of the side step (red arrow) must also be free of all biosecurity risk material.</p>	

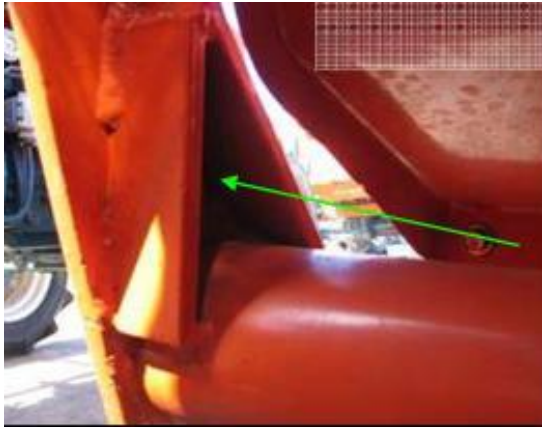
Underbelly

Description	Images
<p>The underside of many mini tractors has numerous countersunk holes (red arrows) which all require cleaning and inspection to verify free of contaminants.</p>	
<p>The shaft (red arrows) located halfway along the underbelly will require flushing to verify cleanliness.</p>	

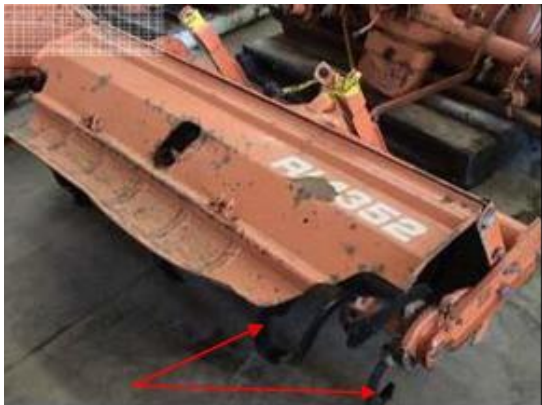
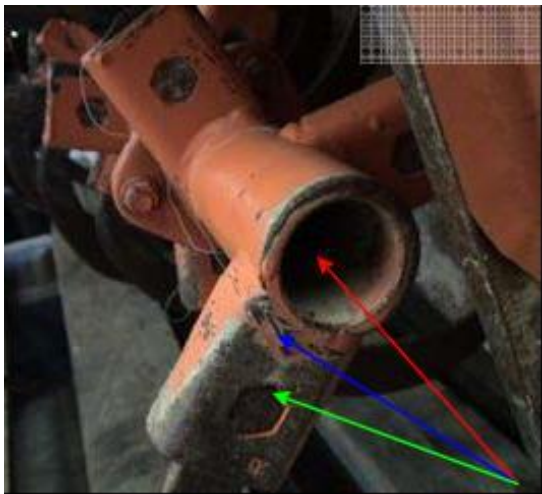
Push Arms

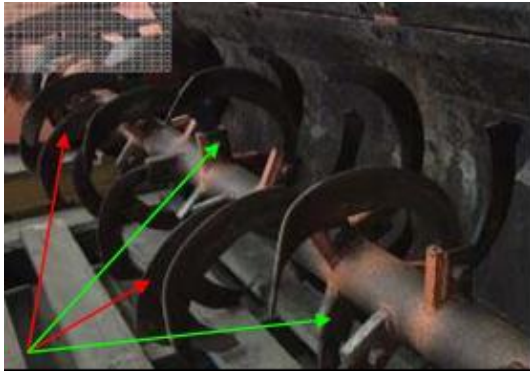
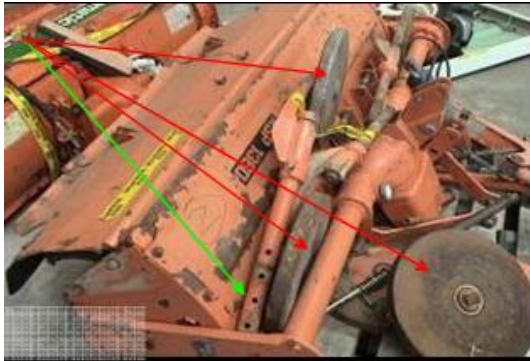
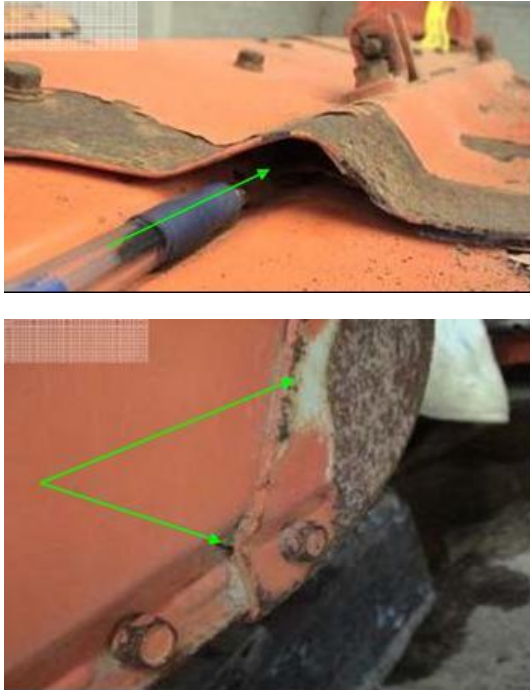
Description	Images
<p>The push arms (blue arrow) may be hollow structures which require internal verification. See next illustration.</p>	 A close-up photograph of an orange tractor's push arm. A blue arrow points to the arm's surface. The tractor's model number 'L1802DT' is visible on a white panel in the background.
<p>On the inside of the push arm, a hollow structure (green arrow) is illustrated and will require verification.</p>	 An interior view of the push arm, showing a hollow structure. A green arrow points to this structure. The background shows the tractor's frame and a clear blue sky.
<p>At the base of where the push arms attach to the frame (green arrow) there may be open cavities which will be illustrated next.</p>	 A photograph showing the base of the push arm where it attaches to the tractor's frame. A green arrow points to an open cavity at the attachment point. A tractor tire is visible on the left.

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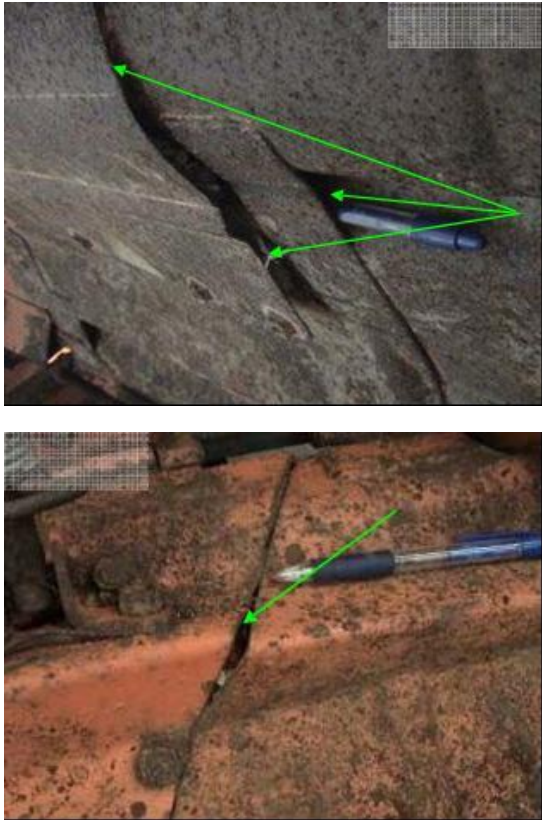
Description	Images
<p>The open cavity at the base of the push arms (green arrow) which will require verification.</p>	

Rotary Hoes

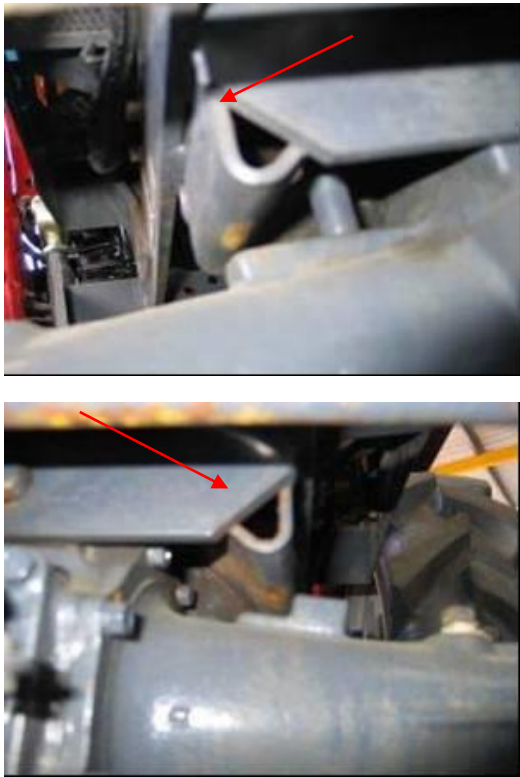

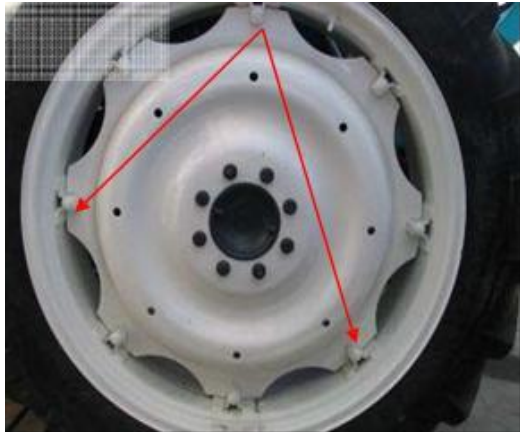
Description	Images
<p>A typical rotary hoe for a mini tractor. All blades (red arrows) must be removed from the tynes for cleaning and inspection. There are numerous cavities and recesses on all surfaces of the rotary hoe and all must be thoroughly cleaned and inspected. Many will require flushing to verify cleanliness.</p>	
<p>The tyne pockets (green arrow) are hollow (blue arrow) and to verify these, the blades must be removed. Flushing with the blades in place does not suffice. Flush all hollow channels (red arrow) as indicated.</p>	

Description	Images
<p>The cutting blades (red arrows) on the rotary hoe. All blades must be removed to verify the internal cleanliness of the tynes (green arrows).</p>	
<p>All surfaces of the rotary wheels (red arrows) must be checked for cracks, splits or evidence of repair. These wheels are hollow and will require flushing to verify internal cleanliness if breached. Flush all hollow channels (green arrow) to verify cleanliness.</p>	
<p>Examples of the small cavities (green arrows) that are commonly found on rotary hoes. These areas must be cleaned and flushed to verify cleanliness.</p>	




Biosecurity

Description	Images
<p>Examples of the small cavities (green arrows) that are commonly found on rotary hoes. These areas must be cleaned and flushed to verify cleanliness.</p>	


General

Description	Images
<p>Hollow channels like those highlighted (red arrows) must be verified internally clean.</p>	 <p>The first photograph shows a close-up of a white plastic component with a red arrow pointing to a narrow channel. The second photograph shows a similar component from a different angle, with a red arrow pointing to another channel.</p>
<p>Verify the internal cleanliness of the toolbox, located under or behind the seat.</p>	 <p>The photograph shows an open blue toolbox mounted on a machine. A green arrow points to the interior of the toolbox, which contains a mesh tray and some tools.</p>
<p>Check all outer rims for small gussets (red arrows) that will require verification.</p>	 <p>The photograph shows a white metal wheel rim. Two red arrows point to small, raised gussets on the outer edge of the rim.</p>

Biosecurity

Description	Images
<p>All non-affixed panelling (red arrow) is removed for cleaning and inspection.</p>	
<p>All cracks and splits in tyres must be verified to ensure they are free of biosecurity risk material.</p>	
<p>If a cabin is present, check for hollow open-ended framework (red arrow) and flush to verify cleanliness.</p>	

Biosecurity

Description	Images
<p>The underside of the seats must be verified clean (red arrow).</p>	
<p>The underside of the axles and differential may also have small recesses (green arrows) that require verification.</p>	