

CHAPTER 48

CLEANING INSTRUCTIONS – AIRCRAFT TOW MOTORS

- 48.1 This chapter provides generic cleaning instructions for the basic aircraft tow-motor, with specific cleaning requirements for each vehicle type detailed in the following annexes:
- Annex A: Tractor Aircraft Towing Light – Toyota Tow-motor;
 - Annex B: Tractor Aircraft Towing Heavy – Douglas Tow-motor;
 - Annex C: Tractor Aircraft Towing Heavy - SCHOPF F110 Tow-motor; and
 - Annex D: Tractor Aircraft Towing Super-Heavy - TUG U30 Tow-motor.
- 48.2 Where there is a specific requirement or need to highlight particular problem areas detailed cleaning guides are provided as tables and figures in this chapter.

SECTION 48-1 BASIC AIRCRAFT TOW MOTOR

- 48.3 This Section deals with cleaning of the basic aircraft tow motor and is structured as follows:
- external areas,
 - engine bay,
 - battery bay,
 - suspension, and
 - tyres (new, old and spares).

External Areas

- 48.4 Cleaning instructions for the Aircraft Tow Motor exterior are detailed in Table 48-1.

Table 48-1: Cleaning Instructions for the Aircraft Tow Motor's 4x4's Exterior

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Clean under the rubber seals (e.g. bonnet etc) to ensure there is no seed, soil or insect debris.	
2	Any damaged seals should be removed and disposed of.	
3	Ensure that any hold down brackets, nylon straps and buckle loops are separated and cleaned.	
4	Inspect behind number plate and tactical and flush hollow tubing on brush guard.	
5	Damaged lights or where light seals are compromised are to be removed and cleaned of all soil, plant or insect matter.	

UNCONTROLLED IF PRINTED

48-2

6	Clean all areas of the seats paying special attention to below seat areas.	
7	Remove the mudflaps (if fitted) and clean; if damaged dispose of.	
8	Remove any floor mats and individually clean.	
9	Flush out behind mirrors – damaged mirrors are to be removed.	
10	If fitted, remove tread plates to facilitate cleaning.	
11	Remove Dash Panel and air blow all BRM from behind dash. Remove insulation tape where directed to facilitate cleaning.	
12	Remove floor panels.	
13	Door seals (if fitted) are to be removed and cleaned. Critically inspect all door seals. If damaged they are to be removed and disposed of.	
14	Brake and clutch pedal covers (if fitted) are to be removed to facilitate cleaning and then replaced after inspection.	
15	The handbrake dust cover (if fitted) is to be removed.	
16	Remove dash pad to access ventilation/demist ducts (if fitted). Critically inspect the dash pad covering and, if damaged or cracked, dispose of. Thoroughly clean ducts and flex tubing (if fitted) to remove all dust, seed, plant and insect material. Clean inside dash pad and dash wiring with compressed air. Critically inspect dash and instrument panel wiring looms. If the individual wires in the loom are loosely bound by the outer covering, that is, insulation tape or heat shrink, the outer covering is to be removed and disposed of.	
17	Remove the air cleaner (if fitted) and ensure it is free from insect and plant material.	
18	Remove the air cleaner element (if fitted) and dispose of. Replace the air cleaner element with a new part.	
	Total	

Engine Bay

48.5 The specific cleaning instructions for Aircraft Tow Motor's engine and engine compartment include those points detailed in Table 48-2.

Table 48-2: Cleaning Instructions for the Aircraft Tow Motor's Engine Compartment

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Clean the engine compartment and engine to ensure they are free of dust, built up dirt and grease, insect and plant material.	
2	Ensure any engine openings / breathers are taped or plugged to stop ingress of water.	

UNCONTROLLED IF PRINTED

48-3

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
3	Ensure the starter motor and alternator are covered and taped to stop ingress of water.	
4	Do not direct high-pressure water jets at any of the engine openings/breathers, or at any of the electrical/electronic components	
5	Remove heater assembly (if fitted) and clean heater core to remove all dirt, dust, plant and insect material.	
6	Clean heater (if fitted) ventilation fan housing to ensure it is free from dirt, dust, plant and insect material.	
7	Remove the grill (if fitted) and high-pressure air or pick clean the radiator (if fitted) to ensure there are no seed or insect debris embedded.	
8	Flush radiator and oil cooler from both sides to verify fin/core cleanliness.	
9	Loosen radiator shroud to let any loose debris fall through after flushing.	
10	Check either side of radiator for vertical hollow support structures. Flush to verify internal cleanliness if present.	

Battery Bay

48.6 The cleaning instructions for the Aircraft Tow Motor's battery compartment include the points as detailed in Table 48-3.

Table 48-3: Cleaning Instructions for the Aircraft Tow Motor's Battery Compartment

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Remove the battery from the compartment and clean the leads.	
2	Clean the battery compartment. The battery box should be free of dust, seed, plant and insect material.	
3	Clean batteries.	
	Total	

Suspension

48.7 Cleaning instructions for the Aircraft Tow Motor suspension are detailed in Table 48-4.

Table 48-4: Cleaning Instructions for the Aircraft Tow Motor's Suspension

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Ensure suspension rocker beam mounts on chassis are clean and free of soil, plant and insect material.	
2	Mud and other debris collect in the spring seat, where the spring is mounted to the axle assembly, and are difficult to remove from the	

UNCONTROLLED IF PRINTED

48-4

	base of the springs. Ensure that this area is cleaned well.	
3	Mud and other debris collect in the inside area on the inner side of the wheel. Ensure that this area is cleaned well.	
4	Ensure axles and mounts on chassis are clean and free of soil, plant and insect material.	
	Total	

Tyres (New, Old and Spares)

48.8 The cleaning instructions for Tyres (new, old and spares) include the points detailed in Table 48-5.

Table 48-5: Cleaning Instructions for Tyres (New, Old and Spares)

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	All tyres are to be washed and scrubbed to remove all BRM.	
2	Damaged tyres are to be inspected and their suitability for return to Australia determined. If necessary, damaged tyres (for example, perished, cracked or split) are to be removed and disposed of in accordance with the tyre disposal policy.	
3	Cracked tyres have the risk of containing BRM therefore perished tyres are to be subject to disposal.	
4	All tyres are to be treated with an approved residual insecticide after cleaning.	
5	Fitted tyres that are damaged should be replaced with new tyres.	
6	Used and fitted tyres on rims are to be individually verified that the tyres are on rims, inflated with beading sealed and that the tyres are clean, free of water and other biosecurity risk material.	
7	Tyres not fitted to rims are to be stored in such a manner that water cannot collect inside the tyre. The preferred DA solution is to store tyres in containers. Tyres not fitted on rims will require fumigation on return to Australia.	
8	DA considers a Non-Commercial consignment of tyres to contain a maximum of 8 tyres (inclusive of the wheels on the vehicle) and may be imported with an accompanying vehicle. If tyres are to be transported back to Australia in containers or crates, please refer to the DA BICON (Biosecurity Import Conditions system) internet site (http://www.agriculture.gov.au/import/online-services/bicon) for the commodity "tyres".	
	Total	

Annexes:

- A. Cleaning Instructions – Tractor Aircraft Towing Light – Toyota Tow-motor
- B. Cleaning Instructions – Tractor Aircraft Towing Heavy – Douglas Tow-motor
- C. Cleaning Instructions – Tractor Aircraft Towing Heavy - SCHOPF F110
- D. Cleaning Instructions – Tractor Aircraft Towing Super-Heavy - TUG U30 Tow-motor

ANNEX A TO CHAPTER 48
CLEANING INSTRUCTIONS – TRACTOR AIRCRAFT TOWING
LIGHT - TOYOTA TOW MOTORS

1. This annex provides specific cleaning requirements for the Toyota Tow Motor. Where there is a specific requirement or need to highlight particular problem areas detailed cleaning guides are provided as tables and figures in this annex.
2. The cleaning requirements that follow are in addition to those generic points for tow motor vehicles that are detailed in Chapter 48 of this publication and this annex should be read in conjunction with the parent chapter

Exterior Areas

3. The cleaning instructions for the Toyota Tow Motor's exterior, as illustrated in Figures 48A-1 to 48A-5, include the points detailed in Table 48A-1 and are indicative of the requirements for this variant of tow motor.



Figure 48A-1: Toyota 02-2TD20 Tow Motor - Exterior



Figure 48A-2: Toyota 02-2TD25 Tow Motor – Exterior



Figure 48A-3: Toyota TD20 Tow Motor – Exterior



Figure 48A-4: Toyota TD20 Tow Motor - Dashboard



Figure 48A-5: Toyota 02-2TD20 Tow Motor – Dashboard

Table 48A-1: Cleaning Instructions for Toyota Tow Motor’s Exterior

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Clean all external areas ensuring freedom from soil and plant material.	
2	Areas under the dash are difficult to clean. A vacuum and low-pressure compressed air should be used to remove dust and insect debris.	
3	Refer to Chapter 48 for detailed cleaning guidelines.	
	Total	

Engine and Engine Compartment

4. The cleaning instructions for the Toyota Tow Motor’s engine and engine compartment, as illustrated in Figures 48B-6 to 48B-8, include the points detailed in Table 48A-2.



Figure 48A-6: Toyota 02-2TD20 Tow Motor - Engine and Engine Compartment



Figure 48A-7: Toyota 02-2TD25 Tow Motor - Engine and Engine Compartment



Figure 48A-8: Toyota TD20 Tow Motor - Engine and Engine Compartment

Table 48A-2: Cleaning Instructions for the Aircraft Tow Motor's Engine Compartment

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Clean the engine compartment and engine to ensure they are free of dust, built up dirt and grease, insect and plant material.	
2	Remove the batteries from the compartments and clean the batteries and the leads.	
3	Clean the battery compartments. The battery compartments should be free of dust, seed, plant and insect material.	
4	Refer to Chapter 48 for detailed cleaning guidelines.	
	Total	

ANNEX B TO CHAPTER 48

CLEANING INSTRUCTIONS – TRACTOR AIRCRAFT TOWING

HEAVY - DOUGLAS TOW MOTOR

1. This Annex provides basic and specific cleaning requirements for the Douglas Tow Motor. Where there is a specific requirement or need to highlight particular problem areas, detailed cleaning guides are provided as tables and figures in this Annex.
2. The cleaning requirements that follow are in addition to those generic points for tow motor vehicles that are detailed in Chapter 48 of this publication and should be read in conjunction with the parent chapter.

Exterior Areas

3. The cleaning instructions for the Douglas Tow Motor's exterior, as illustrated in Figure 48B-1, include the points detailed in Table 48B-1 and are indicative of the requirements for this variant of tow motor.



Figure 48B-1: Douglas Tow Motor's Exterior

Table 48B-1: Cleaning Instructions for Douglas Tow Motor's Exterior

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Clean all external areas ensuring freedom from soil and plant material.	
2	Remove the air cleaner (if fitted) and ensure it is free from insect and plant material.	
3	Remove the air cleaner element (if fitted) and dispose of. Replace the air cleaner element with a new part.	
4	Refer to Chapter 48 for detailed cleaning guidelines.	
	Total	

Cabin

4. The cleaning instructions for the Douglas Tow Motor's cabin, as illustrated in Figure 48B-2, include the points detailed in Table 48B-2.



Figure 48B-2: Douglas Tow Motor's Exterior

Table 48B-2: Cleaning Instructions for a Douglas Tow Motor's Cabin

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Remove any rubber floor mats and clean floor pan.	
2	Remove and clean all door rubbers, internal door panelling and clean all windowsills.	
3	Remove and clean under the seat, including the rubber seat shroud.	
4	Remove the centre console cover to allow access to engine areas (See Figure 48B-2). Ensure area is free of grease, soil and other BRM.	
5	Remove any non-affixed floor panel if applicable and clean underneath.	
6	Remove rubber pedal covers and clean.	
7	Clean behind all cabin walls lining/panelling. Access will be required for inspection.	
8	All air-conditioning vents must be internally cleaned. Access will be required for inspection.	
9	Clean inside all joystick rubber boots. Access will be required for inspection.	
10	Check cleanliness of cabin roof, both inside and out.	
11	Clean ladder to cabin (if fitted) and under each footstep. Note: Some ladders may have hollow frame.	
12	Internally clean all light covers. Access will be required for inspection.	
13	Empty windscreen reservoir.	
14	Check for false floor under cabin and remove for cleaning, if applicable.	
15	Areas under the dash are difficult to clean. A vacuum and low-pressure compressed air should be used to remove dust and insect debris.	

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
16	Soil debris collects under and behind the cabin rail and should be removed.	
17	Soil debris collects on the top of the fuel tank and should be removed.	
	Total	

Battery Compartment

- The cleaning instructions for the Douglas Tow Motor's battery compartment, as illustrated in Figure 48B-3, include the points as detailed in Table 48B-3.



Figure 48B-3: Douglas Tow Motor's Battery Bay

Table 48B-3: Cleaning Instructions for the Douglas Tow Motor's Battery Compartment

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Battery compartment is located below the left side door.	
2	Refer to Chapter 48 for detailed cleaning guidelines.	
	Total	

Engine and Engine Compartment

- The cleaning instructions for the Douglas Tow Motor's engine and engine compartment, as illustrated in Figure 48B-4, include the points detailed in Table 48B-4.



Figure 48B-4: Douglas Tow Motor’s Engine and Engine Compartment

Table 48B-4: Cleaning Instructions for the Douglas Tow Motor’s Engine Compartment

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Clean the engine compartment and engine to ensure they are free of dust, built up dirt and grease, insect and plant material.	
2	Ensure any engine openings / breathers are taped or plugged to stop ingress of water.	
3	Refer to Chapter 48 for detailed cleaning guidelines.	
	Total	

Winch

- The cleaning instructions for Douglas Tow Motor’s Winch, as illustrated in Figure 48B-5, include the points detailed in Table 48B-5.



Figure 48B-5: Douglas Tow Motor’s Winch Assembly

Table 48B-5: Cleaning Instructions for the Douglas Tow Motor's Winch

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	The winch drum in the Douglas Tow Motor is located in the front of the vehicle with the cable running under the vehicle and out through the rear of the vehicle. See Figure 48B-5.	
2	The winch cable is to be extended to full length and subject to a high-pressure water clean using degreaser, if required, to remove all soil, plant and insect matter.	
3	The winch drum is also to be degreased and subject to a high-pressure water clean.	
4	All winch ropes, wire ropes and slings are to be re-oiled after inspection. An application of a protective covering (plastic bag) may be required to protect the refurbished ropes and cables.	
	Total	

ANNEX C TO CHAPTER 48

CLEANING INSTRUCTIONS – TRACTOR AIRCRAFT TOWING

HEAVY - SCHOPF F110

1. This annex provides basic and specific cleaning requirements for selected vehicles. Where there is a specific requirement or need to highlight particular problem areas, detailed cleaning guides are provided as tables and figures in this Annex.
2. The following cleaning requirements are in addition to those detailed in Chapter 48 and should be read in conjunction with the parent chapter.

Exterior Areas

NOTE

Before cleaning, the SCHOPF F110 must be positioned to allow right-angled forklift access to the lower ballast compartments on both sides of the vehicle.

WARNING

When standing on top of the vehicle, personnel are to observe Defence Workplace Health and Safety 'Working at Height' policy.

3. Cleaning instructions for the exterior of the SCHOPF F110, as illustrated in Figure 48C-1 to Figure 48C-3, include the points detailed in Table 48C-1 and are indicative of the requirements for this variant of tow motor.



Figure 48C-1: SCHOPF F110 Tow Motor – Exterior Front Left



Figure 48C-2: SCHOPF F110 Tow Motor - Exterior Rear Left

Table 48C-1: Cleaning Instructions for SCHOPF F110 Tow Motor – Exterior

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Clean all external areas ensuring freedom from soil and plant material.	
2	The SCHOPF F110 has upper (external) and lower (internal) ballast. The upper ballast comprises metal flats bolted securely to the upper chassis above and slightly forward of each rear wheel (See Figure 48C-2 and Figure 48C-3). These may be left in place for cleaning.	
3	Remove, clean and replace the two fire extinguishers.	
4	Refer to Chapter 48 for further detailed cleaning guidelines.	
	Total	

Internal Areas

4. Cleaning instructions for the SCHOPF F110 internal areas, as shown in Figure 48C-3 and Figure 48C-4, include the points as detailed in Table 48C-2.



Figure 48C-3: SCHOPF F110 Tow Motor - Left Side Ballast Compartment (Lower)



Figure 48C-4: SCHOPF F110 Tow Motor - Right Side Upper Compartment

Table 48C-2: Cleaning Instructions for SCHOPF F110 Tow Motor Internal Areas

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	The lower ballast compartments on both sides (See Figure 48C-3) are opened by a trained operator. The lower ballast comprises two steel containers filled with lead in each compartment. The containers have notches on the bottom sides for forklifts. Remove these containers for cleaning using a forklift. Clean the interior of the compartments, and replace the steel containers.	
2	Clean the right-side upper compartment (See Figure 48C-4)	
	Total	

Cabin

- Cleaning instructions for the SCHOPF F110 Tow Motor cabin, as illustrated in Figure 48-5, include the points detailed in Table 48C-3.



Figure 48-5: SCHOPF F110 Tow Motor - Cabin

Table 48C-3: Cleaning Instructions for the SCHOPF F110 Tow Motor Cabin

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Remove any rubber floor mats and clean floor pan.	
2	Remove and clean all door rubbers, internal door panelling and clean all windowsills.	
3	Remove and clean under the seat, including the rubber seat shroud.	
4	Remove non-affixed floor panels if applicable and clean underneath.	
5	Remove rubber pedal covers and clean.	
6	Clean behind all cabin walls lining/panelling. Access will be required for inspection.	
7	All air-conditioning vents must be internally cleaned. Access will be required for inspection.	
8	Remove rubber boots from joystick controls and clean inside. Access will be required for inspection.	
9	Check cleanliness of cabin roof, both inside and out.	
10	Internally clean all light covers. Access will be required for inspection.	
11	Empty windscreen reservoir.	
12	Check for false floor under cabin and remove for cleaning, if applicable.	
13	Areas under the dash are difficult to clean. A vacuum and low-pressure compressed air should be used to remove dust and insect debris.	
	Total	

Battery Compartment

6. Cleaning instructions for the SCHOPF F110 battery compartment, as illustrated in Figure 48C-6, include the points as detailed in Table 48C-4.



Figure 48C-6: SCHOPF F110 Tow Motor - Battery Bay (Upper Left-Side Panel)

Table 48C-4: Cleaning Instructions for the SCHOPF F110 Tow Motor Battery Compartment

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Battery compartment is accessed through the upper left side panel.	
2	Refer to Chapter 48 for further detailed cleaning guidelines.	

Engine and Hydraulics

7. Cleaning instructions for the SCHOPF F110 engine and engine compartment, as illustrated in Figure 48C-7 and Figure 48C-8, include the points detailed in Table 48C-5.



Figure 48C-7: SCHOPF F110 Tow Motor - Engine Compartment Top Panels Closed



Figure 48C-8: SCHOPF F110 Tow Motor – Engine Compartment Top Panels Open

Table 48C-5: Cleaning Instructions for the SCHOPF F110 Tow Motor Engine Compartment

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Access to the engine and hydraulics bay is through two top panels (See Figure 48C-7 and Figure 48C-8). The forward upper panel is hinged at the cabin end, and the larger rear upper panel is hinged on the right side.	
2	The hydraulic pump is mounted on the transmission, and is the component in the centre of Figure 48C-8 with the three hydraulic pipes sitting above.	
3	Clean the engine compartment, engine and hydraulic components to remove dust, built up dirt and grease, insect and plant material.	
4	Ensure any engine openings / breathers are taped or plugged to stop ingress of water.	
5	Refer to Chapter 48 for further detailed cleaning guidelines.	
	Total	

Winch

8. The hydraulic winch is mounted at the rear right hand side of the tractor (see Figure 48C-9 and Figure 48C-10) Cleaning instructions for the SCHOPF F110 Tow Motor Winch include the points detailed in Table 48C-6.



Figure 48C-9: SCHOPF F110 Tow Motor - Winch Assembly



Figure 48C-10: SCHOPF F110 Tow Motor – Winch Drum

Table 48C-6: Cleaning Instructions for the SCHOPF F110 Winch

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	The hydraulic winch in the SCHOPF F110 is mounted at the rear right hand side of the tractor.	
2	The winch cable is to be extended to full length and subject to a high-pressure water clean using degreaser, if required, to remove all soil, plant and insect matter.	
3	The winch drum is also to be degreased and subject to a high-pressure water clean.	
4	All winch ropes, wire ropes and slings are to be re-oiled after inspection. An application of a protective covering (plastic bag) may be required to protect the refurbished ropes and cables.	
	Total	

ANNEX D TO CHAPTER 48

CLEANING INSTRUCTIONS – TRACTOR AIRCRAFT TOWING

SUPER-HEAVY – TUG U30

1. This annex provides basic and specific cleaning requirements for selected vehicles. Where there is a specific requirement or need to highlight particular problem areas, detailed cleaning guides are provided as tables and figures in this annex.
2. The cleaning requirements for the Super-Heavy TUG U30 in this annex are in addition to those points for tow motor vehicles detailed in Chapter 48 of this publication and should be read in conjunction with the parent chapter.

External Areas

NOTE

Before cleaning, the TUG U30 must be positioned to allow right-angled forklift access to both side ballast compartments located between the front and rear wheels.

WARNING

When standing on top of the vehicle, personnel are to observe Defence Workplace Health and Safety 'Working at Height' policy.

3. Cleaning instructions for the exterior of the TUG U30, as illustrated in Figure 48D-1 to Figure 48D-6, include the points detailed in Table 48D-1 and are indicative of the requirements for this variant of tow motor.



Figure 48D-1: TUG U30 Tow Motor - Cabin Lowered



Figure 48D-2: TUG U30 Tow Motor - Cabin Raised



Figure 48D-3: TUG U30 Tow Motor - Under Cabin Area



Figure 48D-4: TUG U30 Tow Motor - Fire Extinguishers



Figure 48D-5: TUG U30 Tow Motor - Left Side Cabin Lowered



Figure 48D-6: TUG U30 Tow Motor - Internal Jacking Pads (Circled)

Table 48D-1: Cleaning Instructions for TUG U30 – External Areas

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Clean all external areas ensuring freedom from soil and plant material.	
2	With the cabin raised, clean the area below.	
3	The TUG U30 is fitted with an internal, hydraulically operated jacking system. Circular jacking pads (See Figure 48D-6) are fitted to hydraulic rams on each corner of the ballast compartment. The pads are only extended for maintenance, and then only on a flat and very solid surface because of the vehicle's extreme weight. When retracted they sit flush with the bottom of the ballast tank and need not be extended for cleaning,	
4	Remove the fire extinguishers mounted at the rear of the vehicle, clean and replace.	
5	Refer to Chapter 48 for further detailed cleaning guidelines.	
	Total	

Internal Areas

4. Cleaning instructions for the TUG U30 internal areas, as shown in Figure 48D-7 to Figure 48D-9, include the points as detailed in Table 48D-2.



Figure 48D-7: TUG U30 Left Side Upper Compartment – Air Intake Filter and Fuel Tank



Figure 48D-8: TUG U30 Left Side Lower (Ballast) Compartment



Figure 48D-9: TUG U30 Upper Right-Side Panel – Auxiliary Hydraulic Controls

Table 48D-2: Cleaning Instructions for TUG U30 Internal Areas

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Ensure the air intake grill (See Figure 48D-7) is free from insect and plant material.	
2	Remove the large single-element air filter (See Figure 48D-7) and dispose of. Replace with a new part.	

UNCONTROLLED IF PRINTED

48D-5

3	Clean the fuel tank and the remainder of the compartment.	
4	Clean the right-side upper compartment (See Figure 48D-9)	
5	The vehicle has identical ballast compartments on both sides (See Figure 48D-8) containing removable and non-removable ballast blocks. Removable blocks have two slots in the bottom sides for forklift access. Remove these for cleaning, clean inside the ballast compartment, and replace the removable blocks.	
	Total	

Cabin

5. The cleaning instructions for the TUG U30 cabin, as shown in Figure 48D-10, include the points detailed in Table 48D-3.



Figure 48D-10: TUG U30 Cabin

Table 48D-3: Cleaning Instructions for the TUG U30 Cabin

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	Remove any rubber floor mats and clean floor pan.	
2	Remove and clean all door rubbers, internal door panelling and clean all windowsills.	
3	Remove and clean under the seat, including the rubber seat shroud.	
4	Remove any non-affixed floor panel if applicable and clean underneath.	
5	Remove rubber pedal covers and clean.	
6	Clean behind all cabin walls lining/panelling. Access will be required for inspection.	
7	All air-conditioning vents must be internally cleaned. Access will be required for inspection.	

UNCONTROLLED IF PRINTED

48D-6

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
8	Clean inside all joystick rubber boots. Access will be required for inspection.	
9	Check cleanliness of cabin roof, both inside and out.	
10	Internally clean all light covers. Access will be required for inspection.	
11	Empty windscreen reservoir.	
12	Check for false floor under cabin and remove for cleaning, if applicable.	
13	Areas under the dash are difficult to clean. A vacuum and low-pressure compressed air should be used to remove dust and insect debris.	
14	Soil debris collects under and behind the cabin rail and should be removed.	
	Total	

Battery Compartment



Figure 48D-11: TUG U30 Top Panels – Battery (Rear) and Engine (Front)

6. Cleaning instructions for the TUG U30 battery and battery bay, as shown in Figure 48D-12, include the points as detailed in Table 48D-4.



Figure 48D-12: TUG U30 Battery Bay

Table 48D-4: Cleaning Instructions for the TUG U30 Battery and Battery Bay

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	The battery is accessed through the upper rear panel (See Figure 48D-11 and Figure 48D-12) which is hinged at the rear.	
2	Refer to Chapter 48 for further detailed cleaning guidelines.	
	Total	

Engine and Hydraulics

7. The hydraulic pump is mounted on the engine transmission (See Figure 48D-14). Cleaning instructions for the TUG U30 Tow Motor engine and hydraulics, as illustrated in Figure 48D-13 and Figure 48D-14, include the points detailed in Table 48D-5.



Figure 48D-13: TUG U30 Tow Motor Engine and Engine Compartment

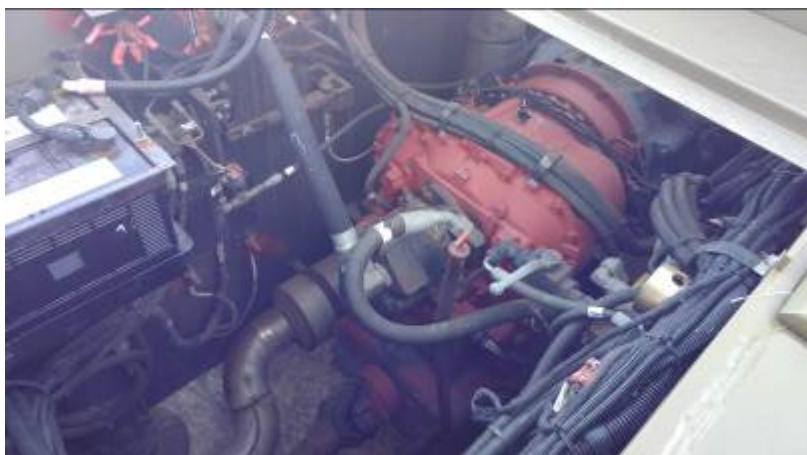


Figure 48D-14: TUG U30 Engine Transmission and Hydraulic Pump

Table 48D-5: Cleaning Instructions for the TUG U30 Tow Motor Engine Compartment

<i>Serial</i>	<i>Comments or Tasks</i>	<i>Technical Time (hours)</i>
1	The engine is accessed through the upper front panel (See Figure 48D-11) which is hinged at the front.	
2	Clean the engine compartment, engine and hydraulic pump to ensure they are free of dust, built up dirt and grease, insect and plant material.	
3	Ensure any engine openings / breathers are taped or plugged to stop ingress of water.	
4	Refer to Chapter 48 for further detailed cleaning guidelines.	
	Total	