



IMPORTANT USER GUIDANCE

COMMANDO 4000: DUSTGUARD BOWSER AND JETWASH

READ THESE INSTRUCTIONS BEFORE USING THE APPLIANCE

GENERAL: Commando 4000 is a highway-towable bowser (capacity 1100L) equipped with an aerial water misting unit (25m range) for dust suppression and a jetwash lance for cleaning. An electric-start Hatz diesel engine mounted on the drawbar powers the pump and can deliver 18 litres water/min at 200 bar.



The unit is ideal for locations lacking a mains water supply as it can be filled in advance and towed to any remote area where dust suppression or cleaning of equipment is required. The highway approved trailer is equipped with a lockable 50mm ball coupling, over run brakes, and road lights.

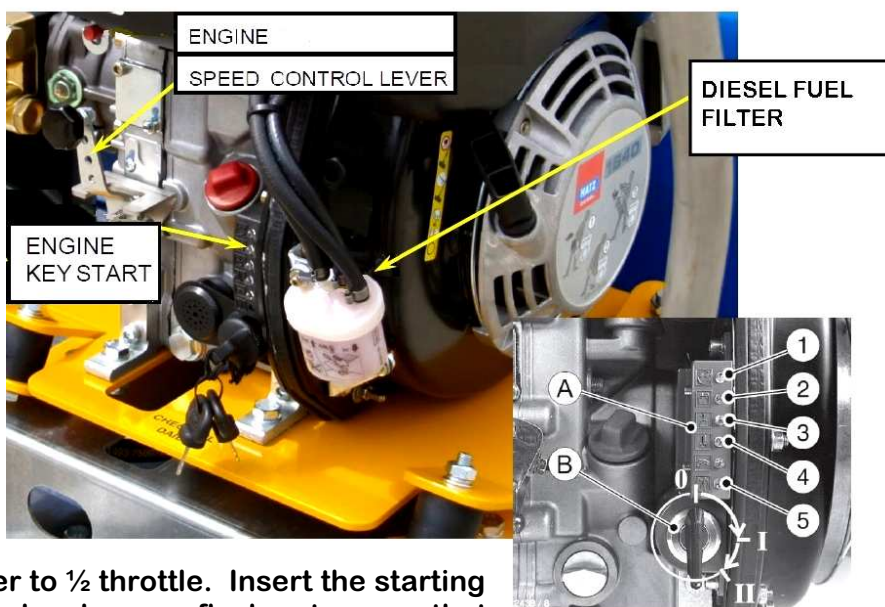
PRE-USE CHECKS / FILLING: Visually inspect the trailer, water tank, water filter, engine, pump, hoses, jetwash lance and aerial misting unit before use; if the equipment is damaged do not use it – contact the supplying hire depot.

Fill the tank with clean potable (drinking) quality water. Ensure the trailer is level and the hand brake is applied; either connect a clean mains water supply to the tank using the marked “Tank Fill” coupling, or fill through the tank lid. The Hatz engine will not run if there is insufficient water in the tank

When the tank is full ensure the lid is securely closed; the trailer may be towed to another location if required. Level the trailer within 15° using the screw jack at the front of the trailer and the stabilizer leg at the rear of the trailer. Ensure the handbrake is applied; if necessary use wheel chocks as well.

OPERATING INSTRUCTIONS:

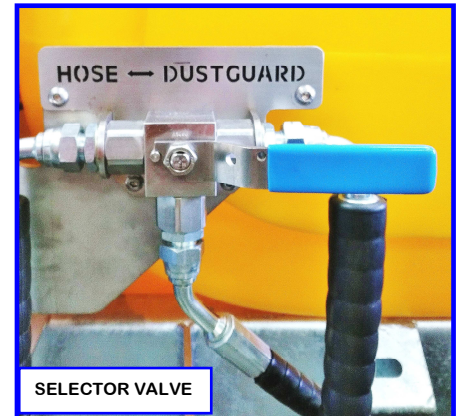
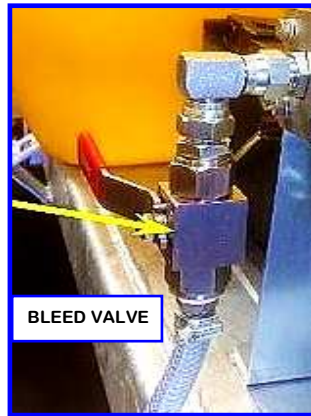
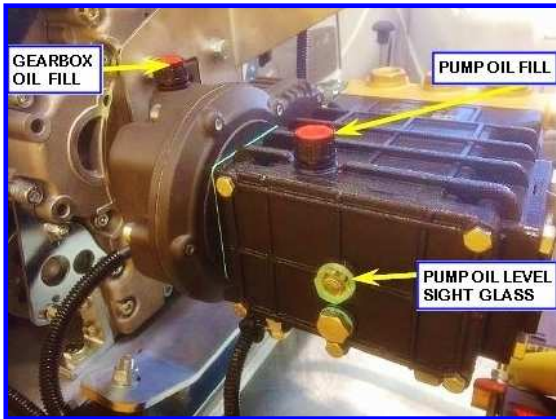
1. Check the oil level of the Hatz diesel engine, and fill its fuel tank with clean diesel.
2. Check the oil level of the high pressure pump and gearbox – oil should reach the red dot on the sight glass [see image over].
3. OPEN THE BLEED VALVE IN THE DISCHARGE LINE OF THE PUMP.
DO NOT ATTEMPT TO START THE ENGINE WHEN THE BLEED VALVE IS CLOSED !!!
4. Set pump output to “Hose” using the Selector Valve.



5. Move the engine speed control lever to ½ throttle. Insert the starting key and turn to position “I” – an amber beacon flashes to warn that equipment is in operation. Turn the key to position “II” and release when the engine starts.

The amber beacon on the trailer will continually flash to warn that the equipment is in operation; if you operate the equipment with this feature disabled it is at your own risk !

6. Close the Bleed valve once air-free water starts to discharge from it.



7. Release the jetwash gun from its securing position on the frame and connect the wash lance. Press the trigger on the gun and bleed air out of the hose until air-free water is issuing. Now increase the engine speed to the desired working level using the control lever on the engine – output water volume and pressure are directly affected by engine speed.

Hold the jetwash lance in both hands when squeezing the trigger because it will “kick back”. Use only the hose, lance and nozzles supplied with the machine and do not attempt to connect or disconnect a hose, lance or nozzle while pressurised.

8. If using the Dustguard aerial misting unit set the vertical angle of the spray head before turning the spray on; adjust angle by releasing the black thumbwheel, tilting the head up or down, then re-tighten the thumbwheel.

Ensure no one is in the path of the spray then slowly turn the selector valve lever to “Dustguard” [see image above]. Once water is issuing from the spray head adjust the engine speed using the control lever on the engine – the distance the spray travels and the amount of mist delivered is determined by the engine speed.

Activate the oscillation function (if required) using the switch on the side of the Dustguard. The misting head can sweep through three different arcs – selected using the switch on the side of the Dustguard.

9. **TO STOP ENGINE:** reduce engine speed to idle for 30 seconds, then turn the starter key to the OFF “0” position. **NOW OPEN THE BLEED VALVE** – leave open for re-start.

Dissipate any residual pressure through the misting unit and by activating the trigger of the jetwash lance.

Remove the start key to prevent unauthorised use. If the equipment will be unattended **LOCK THE TOW COUPLING** and remove the key to discourage theft.

Before relocating the trailer **ALWAYS** ensure the hose-reel lock is engaged, the jetwash gun is clipped to the trailer chassis, and the lance is securely retained in its holder. Before returning to the hire company empty the tank of **ALL** water.



TECHNICAL:

DIMENSIONS: Trailer Length 3475mm Width 1550mm Height 2000mm Max Authorised Mass: 1500 kg
Highway trailer with 50mm ball coupling, over-run brakes, and highway DOT lighting.

ENGINE: Hatz 1B40U 7kW Diesel, electric + recoil start; fuel tank 5 litres; engine oil SAE10W30.

PUMP: Max Flow 18 litres/min @ 200 bar / 2900 psi, pump oil SAE10W30, gearbox oil EPA85/140
Output : to Jetwash hose on 30m hose reel or Dustguard aerial mister (25m throw in still air).

CAUTIONS / WARNINGS

IN CASE OF EMERGENCY: TURN THE IGNITION KEY TO 'O' OFF TO STOP ENGINE AND PRESS JETWASH TRIGGER TO DISSIPATE RESIDUAL PRESSURE.

WHEN YOU ARE NOT USING THE COMMANDO - IF LEAVING IT UNATTENDED STOP THE ENGINE AND REMOVE THE IGNITION KEY.

TO DISCOURAGE THEFT ENSURE TOW-HITCH COUPLING IS LOCKED !

This equipment is mobile and can be used and located in many different environments. Users are therefore reminded of the need to ensure that all tasks and locations are risk assessed before activity commences to ensure that all significant hazards are identified with appropriate precautions put in place.

The Commando 4000D is not designed nor intended for use in explosive or flammable atmospheres. The diesel engine will generate exhaust fumes; the machine should be located in well-ventilated areas where exhaust fumes are able to safely disperse.

This equipment is designed for high pressure cleaning (200 bar) and for generating water mist for dust suppression. This equipment ejects water at high velocity and water jets are dangerous if misused. The jet/spray must not be directed at people, animals, the machine itself, non-waterproof, fragile or electrical equipment, nor power cables. Do not attempt to couple or un-couple tools, hoses or nozzles while the equipment is pressurised.

The equipment should be operated by an able bodied adult competent in the use of pressure washers up to 200 bar / 2900psi. This equipment must not be used by minors or anybody under the influence of drugs or alcohol. The work area should be demarcated and exclude any other people from the spray zone of the misting head & jetwash.

Personal protective clothing must be worn. When operating the Dustguard use an impact resistant visor or goggles and ear defenders as a minimum. Water jets can generate high noise levels and produce a high impact force, so when using the jetwash protective (waterproof) clothing, gloves and boots should be worn in addition. Some jetwash applications may generate an aerosol containing pathogens e.g. guano removal, the cleaning of animal by products etc; the user must assess whether RPE needs to be used in this situation.

The engine and pump generate noise, the level varies according to engine speed. Typical noise levels in-service are 78 dB(A) @ 7 metres / 84 dB(A) @ 3 metres at max. engine speed. The jetwash lance is supplied with a 30 metre hose so where possible locate the machine away from the cleaning activity and persons who might be affected by the noise. Personnel obliged to work in close proximity to the machine must use hearing protection. If the machine is operating in a wholly or partially enclosed space from which noise cannot readily dissipate Users should consider conducting a noise survey to identify if extended mandatory hearing protection zones are required. This equipment [engine+pump] has a Guaranteed Sound Power of LWAd 116dB [this is a power rating not a noise level].

This equipment contains water - do not allow it to freeze !!! If the pump has frozen DO NOT attempt to start the engine; allow to thaw and inspect for damage before use. If possible store indoors during frost; if this is not possible you must introduce anti-freeze (25% solution) through the quick-coupling (located below the machinery platform); operate the engine at low speed to draw it through the pump, hoses, lance and spray nozzles: this will protect down to approx - 5°C. Before next use flush with clean water and collect the antifreeze solution for re-use (do not dispose of antifreeze to the environment).

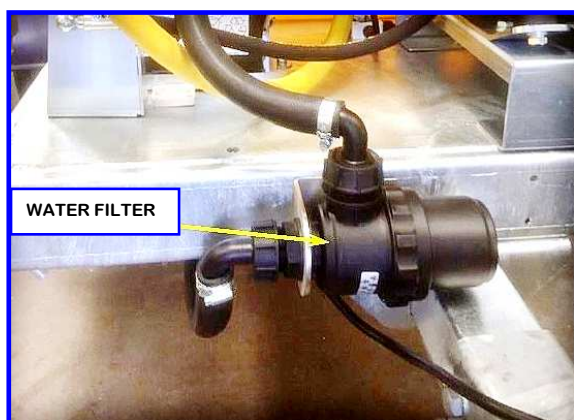
Legionella bacteria can grow at temperatures between 20°C and 45°C, particularly in dirty or contaminated water. For this reason always fill the bowser with cold, clean, potable (drinking quality) water only. If you will not be using the equipment for a few days drain the equipment of water. Before use always purge the equipment using clean water, operating the engine at low speed to minimise production of spray.

If ambient conditions are such that water temperature is sustained above 20°C consider treating the tank and flushing the equipment periodically with a sanitising agent such as Milton. The user's attention is drawn to HSE's guidance on Legionella ACoP L8; depending on your work environment and prevailing temperature it may be necessary for you to include the equipment within your Legionella management programme.

Fuels & Lubricants: diesel fuel is flammable – take care not to cause a fire - top up fuel and check lubricant levels with the machine shut down and in a cold state. If lubricant is required contact the supplying hire depot. Engine oil must be changed every 250 hours, pump oil + gearbox oil every 500 hours; an hour meter is fitted to facilitate this.

TROUBLE SHOOTING GUIDE:

FAULT	CAUSE	ACTION
1. Knocking noise from pump.	Water starvation. Pump sucking in air.	Ensure that there is sufficient water supply. Make sure that the suction hose is not flattened or kinked, especially where it passes over the edge of the tank. Check the suction hose for leaks, which might allow air to be drawn in.
2. Loss of pressure.	Water starvation.	Ensure that there is sufficient water in the tank.
	Pump sucking in air.	Check that the strainer is not blocked and that the pump inlet valve is open. Check the suction hose for leaks, which might allow air to be drawn in.
	Lance nozzle too large or missing.	Check that the correct nozzle is fitted and is in good condition.
	High pressure water leak.	Examine the high pressure hose and fittings for leakage.
	Unloader not correctly set up.	Have unloader checked by a suitably equipped and trained engineer.
	Pump speed too low.	Check that engine speed is correct.
3. Pressure too high.	Pump speed too high.	Stop engine immediately. Restart at idle and reset engine speed.
4. Safety valve passing water.	Lance nozzle too small or blocked.	Check that the correct nozzle is fitted and is in good condition.
	Unloader not correctly set up.	Have unloader checked by a suitably equipped and trained engineer.
5. Engine shuts down	Lack of fuel Low Oil Level	Allow to cool and refill fuel tank Top up engine oil
	Low water level in tank/ bowser.	Refill water tank to above minimum level.
	Engine protection operated or other fault.	Re-start @½ throttle with bleed valve open



Noise



High Pressure Water



Wear Hearing & Eye Protection



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