

CHEM-TEX
PANTHER 20
TRUCK MOUNT
MANUAL

Congratulations

On your purchase of a Panther 20 Truck mount.

The Panther 20 is designed for the professional cleaning services with simplicity and reliability built into each Truck mount.

This manual will guide you through the installation, operation, service and trouble shooting on your new Panther 20 Truck mount. Along with this manual you should also find owner manuals for the engine, vacuum blower, and water pump. In these manuals are the recommended service intervals. If followed you can expect years of trouble free service from your Panther 20 Truckmount.

Installation:

*****Extreme heat: mount at least 12” from any car upholstery or combustibles*****

Bolt Down

The Panther 20 truck mount can be installed in trucks, vans or trailers. In all cases you must make sure when drilling holes through the floor for mounting, that there are no break lines, fuel lines, wiring or fuel tank under the floor. There must be a bolt in each mounting hole for safety. If you cannot drill through a hole because of obstruction (fuel lines ect.) then drill a new mounting hole through the frame of the Panther 20 truck mount in a different location.

Positioning

Waste tank location is behind the main unit. Be sure leave enough room to remove lid.

When positioning the truck mount, consideration must be made for the drain in the waste tank. Be sure not to have the drain behind or touching the unit.

Connection

Remove Side covers. They are held on by Velcro and removed simply by pulling gently at the bottom and lifting off.

- A. Connect the **Roots** vacuum blower to the waste tank. From the top of the unit slide the large 2”to 3” hose on the large barbed nipple sticking out of the top of the **Roots** vacuum blower (15 hp is on the side).

Slide on two large hose clamps then connect the other side to the waste tank barbed nipple that leads to waste tank filter. (*In the center of tank*). Tighten the hose clamps.

B. Connect the ¼” blue hose from the temperature control solenoid to the small connection on the waste tank tighten using two wrenches.

C. Connect the black and green wires hanging from the back of the unit to the float wires on the waste tank.

D. Connect Auto waste tank pump-out wires (if equipped).

E. Fuel supply should be connected to the fuel filter on the left side of the Kohler engine.

Fuel Supply

Depending on the type of installation fuel supplies vary, the easiest way to hook up a fuel supply is in a marine tank located beside the machine.

Marine tanks come in many different sizes (6 gallon is the most common size). They come with a vent thumbscrew that should be opened while using the unit and closed during none use to stop fumes from entering the interior of the vehicle.

Vehicle tank installation should only be done professionally. This type of installation can cause damage to the vehicle fuel tank, fuel gauge sensor or in the tanks fuel pump. Tapping into a fuel line does not work any more because automobile engines are fuel injected with high working pressures over 100 psi. The high fuel pressure will damage the carburetor float assembly.

Any vehicle tank installation should have a fuel filter and a 2-psi fuel pump which is located under the vehicle near the tank.

****The Panther 20 Truck mount produces carbon monoxide gas it is odorless and deadly do not use this Panther 20 Truck mount where the fumes can enter any building****

****The Panther 20 Truck mount is extremely hot, be careful to not touch covers or any parts other than front panel controls while hot****

****Extreme heat after operation do not touch or place any item on or near the Panther 20 Truck mount ****

Operation

Location

Be sure and place Panther 20 Truck mount where exhaust fumes do not go into buildings. Consider wind and possible wind changes during use. Do not operate in a garage or any other building.

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- | | | | |
|-----|-----------------------------|-----|---------------------------|
| 1. | Choke lever | 11. | Oil cup |
| 2. | Throttle lever | 12. | Pressure gauge |
| 3. | Key switch | 13. | Pressure regulator |
| 4. | Chemical prime valve | 14. | Water inlet |
| 5. | Chemical meter valve | 15. | Vacuum outlet |
| 6. | Hour meter | 16. | Solution outlet |
| 7. | Temperature gauge | 17. | Fuel filter |
| 8. | Temperature control | | |
| 9. | Chemical flow meter | | |
| 10. | Vacuum gauge | | |

Hook up

At the beginning of use the hoses must be connected.

- A. Water is supplied through a garden hose connection. Before connecting turn on the water to flush garden hose of debris. Connect the garden hose to the water inlet. The inlet is located on the bottom left corner of the control panel.

When using Freshwater tank, hook hose from the pump to the water inlet.

- B. High-pressure solution hose should be connected to the solution outlet quick connect(s) on the bottom right side of the control panel. The other end connects to the cleaning tool.

- C. Vacuum hose is hooked directly to the top left corner of the waste tank. The other end is hooked to the cleaning tool.

- D. Chemical solution hoses should be put in a container containing chemical solution.

Starting the Panther 20 Truck mount

- A. **Check fuel**, the truckmount can use 1.5 gal per hr depending on motor size.

- B. **Check oil**, remove dipstick from motor and look at window on the back of water pump for oil levels.

- C. **Fully open** doors and windows of van or trailer to allow proper cooling of the truck mount.

- D. **Turn on Water** *If using a Fresh water Tank, turn the key to the run position. Turn pump switch on (located between pressure gauge and Hour meter) **Allow the pump to build pressure and then turn off.***

- E. **Move choke** lever (top lever) to the left.

- F. **Set engine** to full throttle (bottom lever) to the left

- G. **Be sure** there are no items touching or on top of unit before starting. There are moving parts and extreme heat that could cause **fire or injury**.

- H. **Open fuel** tank vent cap.

- I. **Turn key** clockwise until engine starts then release.

- J. **Move choke** to off position as soon as the engine starts.

- K. **Decrease throttle** to mid throttle, after a small amount of warm up time, move throttle to full (left).

- L. **Adjust temperature** control to max unless lower temp is required.

****** If using Fresh water tank, Pump must be on prior to engaging starter******

Setting chemical flow

****Engine must be running full throttle****

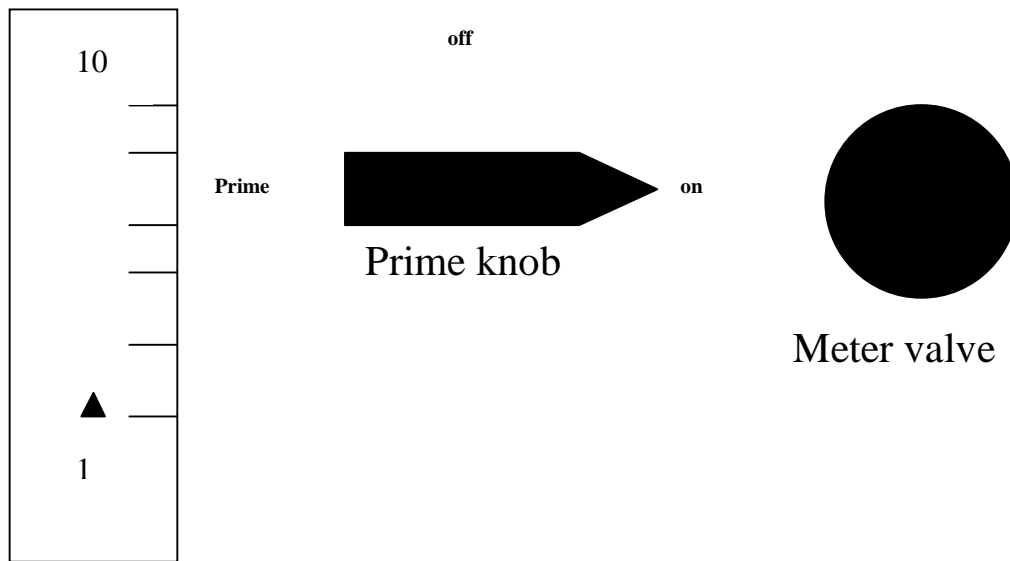
- A. Mix chemicals in 5-gallon container (if using power be sure it fully dissolves.)

- B. Place the 2 chemical hoses in chemical container (2 clear hoses coming out the left lower side near the front.)

- C. Turn chemical prime valve to the left. When the chemical enters the clear flow meter and holds the indicator all the way to the top the system is primed, now turn the prime valve to the right.

- D. Trigger tool to spray water while setting flow, turn flow metering valve counterclockwise to increase flow. Watch clear flow meter to determine amount of chemical flow

- E. To stop the chemical flow point prime valve up



Flow meter

Clean carpet

OK let's make some money

Cleaning carpet is done many different ways. The basic idea is to spray down hot water with chemicals to loosen up dirt and to suck it up using vacuum. The methods used will vary. Normally you will spray in one direction then vacuum the other direction. When the waste tank is full the truck mount will shut off. Empty the waste tank in accordance with all waste disposal laws.

Shut down

- A. Lower throttle to mid throttle (1800-2000 RPM).
- B. Lower temperature control to 150 degrees allow to run about one about 1 min., to cool down truckmount.
- C. Spray WD 40 into blower lube port (located in the middle of the front panel) for at least 10 seconds if finished using the truckmount for the day.
- D. Turn key off.
- E. Close fuel container vent.
- F. Roll up hoses
- G. Don't forget to load your cleaning tool.
- H. Remember to empty your waste tank.
- I. Rinse waste tank and empty filter bag in waste tank.

Maintenance

Daily or Before Starting Engine	Fill fuel tank Check oil level. (add if needed) Check air cleaner for dirty, loose or damaged parts Check air intake and cooling areas as necessary Check blower oil (add if needed) Check water pump oil (add if needed)
Every 25 Hours	Clean Bypass Jet & filter (in water box)
Every 25 Hours	Clean Solenoid Jet & filter (in waste tank {if equipped})
Every 25 Hours	Service precleaner element
Every 50 Hours	Change oil & oil filter engine
Every 50 Hours	Change water pump oil
Every 200 Hours	Check spark plug condition and gap.
Every 250 Hours	Replace heavy-duty air cleaner element and check inner element.
Annually or Every 500 Hours	Have bendix starter drive serviced. Have solenoid shift starter disassembled and cleaned.
Every 500 hours	Change water pump oil
Every 500 Hours	Have crankshaft spline lubricated.
Every 1000 hours or yearly	Replace blower oil
Every 1500 Hours	Replace fuel filter (EFI engines)

Engine

Check Oil Level

The importance of checking and maintaining the proper oil level in the crankcase cannot be overemphasized. Check oil BEFORE EACH USE as follows:

1. Make sure the engine is stopped, level, and is cool so the oil has had time to drain into the sump.
2. To keep dirt, debris, etc., out of the engine, clean the area around the dipstick before removing it.
3. Remove the dipstick; wipe oil off. Reinsert the dipstick into the tube and press all the way down.

4. Remove the dipstick and check the oil level.
5. If the level is low, add oil of the proper type, up to the full mark on the dipstick.
(Refer to “Oil Type” on page 5 of the Kohler manual.) Always check the level with the dipstick before adding more oil

Oil change

Change oil after every 50 hours of use. Change oil while the engine is still warm.

Make the engine level while changing and checking the oil.

1. To keep the dirt out, clean the area around the oil fill cap and the dipstick
2. Remove the plug from the oil drain hose on the left side and put in container to catch the used oil
3. Wipe area around the filter to remove dirt
4. Place a rag under the filter to catch any spilled oil and remove the filter
5. Wipe oil on new filter gasket and install new filter tighten 2/3 to 1 turn after it contact the surface.
6. Replace plug and refill oil to proper level.

Filters

1. **Air filter-** removes air filter cover and remove air filter, if the filter or precleaner are dirty replace.
2. **Water hose filter-** inspect clean if needed
3. **Bypass jet assembly -** remove jet filter assembly from water box open assembly clean jet and filter (see fig. A pg. 14)
4. **Water pump inlet filter-** inspect clean if needed

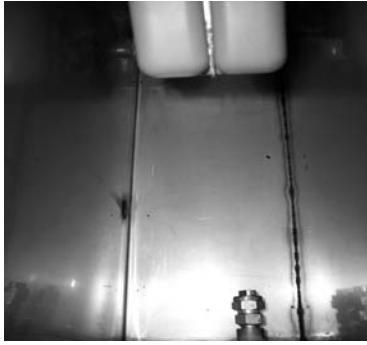


fig. A bypass jet assembly – water box

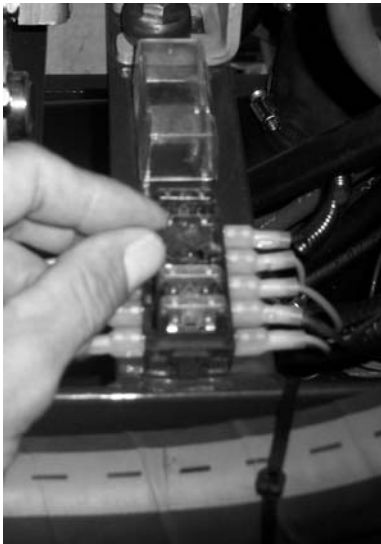


fig. B fuse # 3 removal

Descaling should only be done when needed. It is recommend by Chem-Tex to use a water softener to reduce hard water deposits. It will greatly reduce the amount of descaling needed if a water softener is use in conjunction with the panther truckmount. A suitable water softener can be purchased from Chem-Tex a low cost.

Watch for scaling when cleaning water bypass jet and filter in waterbox.

If the Panther Truckmount needs descaling, use Chem-Tex Truckmount Descaler.

1. Empty entire container of Chem-Tex Descaler into water box.
2. Set Temp control to 200 deg.
3. Start truckmount and allow to idle for 5 min.
4. Lower temp to 80 deg. Run 1 min
5. Shut off the truckmount, wait 10 min.
6. Use bleeder hose or tool to remove Descaler from the unit and dispose of properly.
7. Pour in 1 cup of Supreme carpet detergent in waterbox. Allow idling for 5 min.
8. Remove using bleeder hose or tool.
9. Allow truckmount to flow fresh water through until all Supreme and Descaler is removed.

Fresh water tank users***

If control solenoid is hooked to fresh water tank, The tank must be rinsed using Supreme to insure no descaler is left in tank.

Note: removing fuse #3 will allow truckmount be run without water hooked.(see pg. 14 fig. B) up be sure to not run water box empty or water pump will be damaged.

Winterizing Too prevent freezing, anti-freeze must be added to the water box.

1. Remove the third fuse (see pg 14 fig. B.) To disable water pressure sensor.
2. With out water supply run truckmount to empty waterbox 2/3 of the way down.
3. Add 1 gallon of anti-freeze to water box and allow to run 2 or 3 min.
4. Spray tool or open bleeder until anti-freeze comes out.
5. Truck mount is now safe from freeze.

6. To remove drain anti-freeze through tool or bleeder hose.
7. Allow fresh water to flow and clean out any traces of anti-freeze.
8. Replace the fuse that was removed.

Fresh water tank users***

If control solenoid is hooked to fresh water tank, The tank must be rinsed using Supreme to insure no Anti-Freeze is left in tank.

Note: removing fuse #3 will allow Unit be run without water hooked.(see pg. 14 fig. B) up be sure to not run water box empty or water pump will be damaged.

Engine dies while using Unit

Problem	Corrective Action
Waste tank full	Empty waste tank
Out of fuel	Refill gas tank
Machine overheated	Check jet and filter in water box for clog
Water supply turned off	Check for kinks in hose or clogged incoming water filters
Oil level low	Add oil

Starter Won't Turn

Problem	Corrective action
Battery bad	Replace or recharge (be sure to check water level)
Starter fuse blown	Fuse located inline near starter in yellow fuse holder
Battery cable bad	Replace or clean
Ignition switch is bad	Test if bad replace

Vacuum blower seized	Repair or replace
Starter solenoid defective	Test if bad replace

Starter turns and has spark

Problem	Corrective action
Out of fuel	Refill tank and check for obstructions
Fuel filter clogged	Replace fuel filter
Air filter clogged	Replace air filter
Spark plugs fouled	Clean or replace as needed
Cylinder compression low	Test compression if low take to Kohler Service Center or Replace engine

Starter turns won't start -has Spark

Problem	Corrective action
2 lb sensor problems fuse # 3	
Dirty inlet filter causing 2 lb sensor to prevent starting	Check inlet hose strainer and inlet y-strainer behind front panel
Low inlet water pressure causing 2 lb sensor to prevent starting	Check for supply hose kinks or blockage- if using fresh water tank check water pump
2 lb sensor bad	Remove sensor fuse #3 if motor starts, test sensor replace if bad
Waste tank float fuse # 4	
Float bad	Remove fuse #4 if motor starts test float if bad replace
High temp kill sensor fuse # 5	
Water box too hot (temp back up older units without water box)	Remove bypass jet and filter from waste tank or water box clean and replace
Temp solenoid not opening	Check fuse, disassemble clean, test replace if bad

High temp sensor or switch gauge	Remove sensor fuse #5 if motor starts, test sensor replace if bad
Low oil pressure Sensor	Check oil, remove sensor wire if motor starts-stop motor check sensor and oil pressure with a pressure gauge, replace sensor if bad. If pressure is low take to Kohler Service Center.

Vacuum Blower Seized

Problem	Corrective Action
Blower won't Turn	Check waste tank filter for clog or collapse
	Check operation of relief valve is correct
	Lube well and turn with wrench or contact Roots Blower division

Low vacuum

Problem	Corrective action
Vacuum low at tool	Check hoses and tool for clog
Vacuum low at tank	Check tank filter, check drain valve for leaks, check for bad or missing gasket clean or replace as needed

Low water pressure

Problem	Corrective action
Water supply is off	Turn on water, check for kinks in hose or clogs
Water filter clogged	Check hose strainer, y-strainer and water box strainer
Water box jet missing or worn	Reinstall or replace
Debris clogging pressure hoses or quick connects	Check all clean or replace
Low volume	Check volume of water coming from pump outlet

	(3.0gpm-hydro.....4.0gpm cat) Rebuild if low
Belt loose or broken	Replace or tighten
Pressure regulator sticking or not adjusted	Lube or replace and lube o-rings adj. for 400 psi.
Pressure gauge bad	Replace Gauge
Tool filter or tips clogged	Inspect tool for clogs or dirty filters

Water not hot

Problem	Corrective action
Jet in tool worn or too large	Replace jet in tool
Bypass jet in water box worn or missing	Replace or reinstall jet
Bypass on wand or tool left open	Close bypass valve

Water too Hot

Problem	Corrective action
Water box bypass jet or filter clogged	Remove jet and filter clean or replace
Water bypass solenoid clogged or stuck	Clean or replace
Thermostat bad or out of adjustment	Adjust or replace

No Chemical

Problem	Corrective action
No chemical	Refill container
Prime knob turned off or to prime	Turn knob to point at meter valve knob
Check valves not sealing or stuck	Clean or replace chemical pump check valves
Chemical pump diaphragm ruptured	Replace bad chemical pump diaphragm
Air leak	Tighten or replace chemical hose

Chemical won't prime

Problem	Corrective action
No chemical	Refill container
Valve not turned to prime setting	Arrow should point to the left
Pump too dry	Put chemical prime hose (the hose without the strainer) into the vacuum and seal with hand to suck the chemicals through the system
Diaphragm ruptured	Replace bad chemical pump diaphragm
Check valves not sealing or stuck	Clean or replace chemical pump check valves
Air leak	Tighten or replace chemical hoses
Water pump not operating correctly	Repair water pump

PART	SERVICE	HOW OFTEN	DATE	DATE	DATE
ENGINE	Descale	100 HRS*			
ENGINE	Check oil level	Daily			
ENGINE	Check air intake and cooling areas	Weekly			
ENGINE	Check air cleaner for dirty, damaged or loose parts	Weekly			
ENGINE	Service pre-cleaner element	25 HRS			
ENGINE	Change oil***	50 HRS			
ENGINE	Service air cleaner element	100 HRS			
ENGINE	Check condition & re-set gap on spark plugs	100 HRS			
ENGINE	Change oil filter***	100 HRS			
VACUUM PUMP	Spray WD-40 in lubrication cup for 5 sec.	Daily			
VACUUM PUMP	Check oil level	Weekly*			
VACUUM PUMP	Lubricate bearing on pulley end with grease	100 HRS			
VACUUM PUMP	Drain, flush & replace oil*****	Yearly			
VACUUM INLET FILTER	Clean filter, inspect, replace if damaged	Daily*			
VACUUM INLET FILTER	Replace	Yearly*			
VACUUM HOSES	Wash out with clean water	Daily			
WATER PUMP	Check oil level**	Daily			
WATER PUMP	Change Oil**	500 HRS			
WATER PUMP INLET FILTER	Check for debris and clean	Weekly*			
(Optional) AUTOMATIC WASTE PUMP	Inspect and remove any debris or sediment	Daily*			
BATTERY	Check for proper fluid level, Fill with distilled water only	Weekly*			
BATTERY	Clean battery terminals	100 HRS*			
HIGH PRESSURE HOSES	Inspect for damage or impending damage	25 HRS*			
PRESSURE REGULATOR	Lubricate stem and o-ring	50 HRS			
CHEMICAL VALVES	Inspect and/or adjust packing nuts	200 HRS *			
PULLEY SET SCREWS & HUBCAP SCREWS	Check for proper torque valves. Re-torque , if required	250 HRS*****			
DRIVE PULLEYS	Check pulley alignment****	500 HRS			
DRIVE BELTS	Inspect and clean****	500 HRS			
DRIVE BELTS	Check belt tension****	500 HRS			
CHEMICAL PUMP & CHECK VALVES	Replace diaphragm and check valves	1200 HRS			

MAINTENANCE SCHEDULE

ENGINE:

Change oil and filter every 50 hours.

Every 300 hours or 6 months change spark plugs and air filter.

HYPRO PUMP:

Check oil each day, add if needed.

Change oil every 500 hours. (30 weight non-detergent hydraulic oil)

BLOWER:

Grease blower-traps every month or whenever you change Engine Oil.

Check blower oil every month. Add if needed. (50 weight Hydraulic oil)

DAILY MAINTENANCE:

Clean waste tank thoroughly every day. Spray "W-D 40" on the filter

In waste tank generously before parking your vehicle for the following day.