



Operating Manual

T300

Trailer Mounted Trench Burner

Equipped With HATZ 4H50-TIC Tier 4F Diesel Engine and Fluid Coupling



“Better Economically - Better Environmentally”

MADE IN THE USA

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(Vers. 04.08.2024)

Caution

The T300 Trench Burner as “Trailer-Mounted Machinery” is “Non-self-propelled Agricultural / Forestry / Construction Equipment”

The T300 Trench Burner furnished with a VIN is street legal. Its GVWR is 6600 lb. (3000 kg). An appropriate hitch system on the towing vehicle is required (Ball Size 2-5/16 in. or 58.75 mm).

Ensure the towing vehicle is equipped with an appropriate brake controller . (See also “T300 Trailer Towing Checklist on Page 33). Familiarity with all state and local trailer towing regulations and ordinances is advised.

While working under the cowling to perform maintenance tasks, secure the cowling with an appropriate prop rod.

The electric trailer drum brake shoes must be adjusted after the first 200 miles of operation when the brake shoes and drums have “seated”.

The wheel nuts (lug nuts) must be torqued after the first 10 miles, then 25 miles, 50 miles and then monthly after that. Torque the T300 lug nuts to 80 ft-lb (109 N·m).

Contact Air Burners, Inc. should you require any assistance regarding the operation and maintenance of your T300 Trench Burner. Send Email to support@airburners.com, call 772-220-7303 or 888-566-3900 and ask for Customer Support.

Caution

Please, read and understand all Warning Notices before operating this machine and always wear Protective Personal Equipment (PPE).

WARNING:

Should any repairs become necessary that require welding on your T300 Trench Burner, you **MUST** first physically remove the Electronic Control Module (ECM) from the computer controlled Diesel engine. Follow the instructions below. If you need help, call Customer Support at 772-220-7303.



HATZ 4H50
ECM Removal Steps

1. Unsnap Latches 1 and 2
2. Remove Bolts A1 and A2
3. Unplug both connectors
4. Remove Bolts B1, B2, B3 and B4
5. Remove the two brackets
6. The ECM can now be removed and stored away
7. Re-install all in reverse order.

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T300 Air Curtain Trench Burner with HATZ 4H50 Diesel Engine & Fluid Coupling OPERATING MANUAL



T300 Trench Burner at Perfect Pit



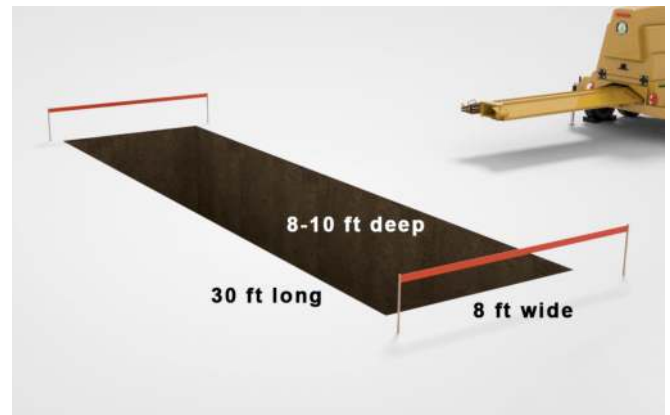
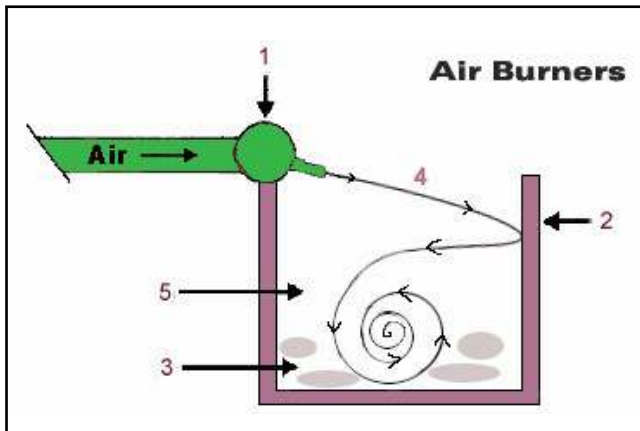
T-Series Trench Burner
(Hitch/Winch Assembly May Vary)

This leads to a video on Trench Burner operation
https://airburners.net/videos/abvid_trenchb/t300_setup.mp4

PRINCIPLE OF AIR CURTAIN INCINERATION

Air curtain incinerators are designed primarily as a pollution control device. Using a Diesel engine driven fan, these machines generate a curtain of air with a very particular mass flow and velocity. This curtain of air acts as a trap over the top of an earthen trench or thermal ceramic lined firebox. The wood debris is dumped into the trench or firebox and then ignited (usually with a propane torch or with a small amount of diesel) just as you would light any other pile of wood you intended to burn.

Once the fire has gained strength the air curtain is turned on. The air curtain traps most of the smoke particles and causes them to re-burn under the air curtain where the temperatures can exceed 1,800° F. These machines do not inject any fuels into the fire, the fire is sustained only by adding more wood waste. The air from the air curtain is not heated. The only fuel used in the continuous operation is that of the diesel engine driven fan.



1. Manifold and nozzles that create the air curtain over the earthen pit (burn chamber).
2. Wall of earthen pit (30 ft. long, 8 ft. wide & min. 8-10 ft. deep).
3. Clean wood waste to be burned.
4. High velocity air curtain.
5. Continued air flow over-oxygenates fire keeping temperatures high.



Scan for video
"Open Pile Burning vs
Air Curtain Burning"

GENERAL DESCRIPTION OF T300

The T300 is a mobile air curtain burner which is used in combination with an earthen pit or trench made to function as the combustion chamber. The T300 unit is a fully self-contained trailer mounted system that includes a power plant, fluid drive system (automatic clutch), blower fan, manifolds, carrier pipe and fuel tanks.

This unit does not require assembly on site, as the carrier pipe and manifolds deploy and unfold. The Diesel engine drives a fan which produces high velocity air. This high velocity air is directed down the carrier pipe to the manifold. The carrier pipe is an important safety element, as it gives the machine the required “set-back” from the fire. This set-back will help protect the machine, if the fire gets too high or if the wind changes direction.

Once in the manifold, the air is evenly distributed across the burning trench through the manifold nozzles. Air is directed across the top and down into the combustion zone. The curtain of air acts as a top over the pit, trapping particulates (PM or small airborne particles) and adding oxygen to the combustion zone, thereby generating a hotter more complete fire.

Temperature achieved by this unit while burning clean wood and other vegetative waste can range between 1,000° F and 1,800° F.

The air flow coupled with the recommended dimensions of the pit creates an after-burner effect. By re-circulating the air under the curtain, residence time of the particulates is increased long enough for their effective combustion with very little smoke escaping.



T300 Carrier Pipe with Manifolds Folded



T300 Carrier Pipe Fully Extended
Manifolds Fully Extended

GENERAL DESCRIPTION OF T300

All of this is carefully engineered to provide the correct amount of air at the correct velocity. It is sometimes thought that more air flow will actually increase the burn rate. This is INCORRECT. Modifying the air flow will actually have the opposite effect and reduce the machine's through-put. Additionally it will reduce the machine's ability to meet air quality minimum standards. There is a maximum rate at which wood can burn. Trying to exceed that rate by adding more air to an air curtain burner causes two major problems:

1. It will cool the fire reducing combustion efficiency creating more smoke (carbon dioxide and nitrogen enriched). This will begin a circular effect of further reducing the oxygen and further reducing combustion efficiency. The result is your through-put drops and smoke increases.
2. Increasing the air flow beyond design standards will over pressurize the pit causing larger sized particles to be ejected from the pit. Besides violating the EPA limits for PM (particulate matter) the larger hotter embers ejected will pose a much greater fire hazard.

T300 Specifications				
Model	Overall Size L x W x H	Trench Size L x W x D	Weight (Tongue)*	Fuel Consumption** gal/hr.
T300	27' 5" x 8' 2" x 7' 4"	30' x 8' x 10'	6,500 lb. (750 lb.)	2.7

* **Hitch** Select Appropriate Class Hitch for Trailer Towing.

** **Diesel Engine:** HATZ 4H50-TIC (Tier 4 Final). Diesel fuel consumption rated at average operating RPM and is approximate.

Drive System: Fluid Drive (Automatic Clutch) & Multi-belt Drive.

NOTE: All weights and dimensions are approximate. Subject to change without notice.

SAFETY CONSIDERATIONS

READ ALL SECTIONS OF THIS MANUAL BEFORE YOU BEGIN BURNING OPERATIONS

The Air Curtain Burner operator is dealing with fire on a daily basis; it is very important that each and every individual involved with the machine be aware of and practice very rigid safety precautions.

When you are running the machine, you are responsible for assuring that it is operated in the safest possible manner at all times. During the burning operations there may not be any signs of smoke from the trench, but small hot embers will always be coming out. These embers rise up on the hot gases from the fire. Operators must be aware of the area around the unit to insure "spot fires" do not ignite. If you notice something wrong, correct it immediately, and if you cannot correct it, find someone who can and/or shut down the machine.

The T300 is very safe as long as it is used and operated in the manner for which it was designed; however, it will be no safer than an open fire burning above ground when it is not being used and operated properly.

DANGER: Watch for DANGER NOTICES throughout this manual.

Basic Safety Points:

1. Personnel should not enter the pit while building it.

There is always the danger of the pit collapsing. Personnel must not enter the pit. The pit should be secured and marked to prevent anyone from falling in.

2. Once the pit is in use the area should be restricted.

The area around the pit should be controlled by the trained operators. If the pit is to be re-used the next day, then a security guard and secure fencing should be used around the pit to insure no animals or persons will fall in. If the pit is not to be reused then the fire should be extinguished and the pit filled in with dirt. The operators must monitor the activities around the pit at all times.

3. The Machine must only be operated with the cowling closed and secured.

The top cowling provides a guard for the drive belts and fan inlet. There is a risk of serious injury, if the machine is run with the cowling open.

DANGER: Falling into the fire pit will cause serious injury or death.

SAFETY CONSIDERATIONS

4. The Machine should be placed on cleared, level ground.

The placement or positioning of the machine on the job site can be very important. The machine should be placed in a manner to give the greatest clearance on the downwind side of the pit. The unit should be placed on level ground to facilitate proper positioning of the manifold alongside the pit.

5. The Machine should be placed such that no combustible material is within a minimum of 100 foot clearance in any direction.

The machine should not be located over combustibles, such as dry grass, brush or peat moss. In addition, hot embers will escape from the pit and, depending on the wind, will land on the ground around the unit. The unit should not be located within 100 ft. of any combustible material.

The waste material to be burned during the day’s operation can be staged within the 100 ft. perimeter to facilitate loading. The operator must monitor the loading pile to insure embers do not ignite the loading pile. The combustible materials to be stored for burning at a later date must be stored outside the 100 ft. perimeter or in accordance with the chart below which suggests adjustments for wind speed.

WARNING: The trench burning site must be free of combustibles, such as dry grass, brush or peat moss which could cause a fire to spread to other areas.

WIND SPEED VS. SAFE DISTANCE			
Wind Speed mph	Approximate Safe Distance for:		
	Structures (Houses, etc.) ft.	Woods/Trees ft.	Stored Brush Piles ft.
10	300	150	100
12	300	150	100
14	300	200	150
16	400	250	150
18	400	250	200
20	500	250	200

DANGER: The above distances serve as a **GUIDELINE ONLY!** You **MUST ALWAYS** observe the down range area regardless of the wind speed. You must always observe local fire ordinances and directives from the local fire department or other authorities.

SAFETY CONSIDERATIONS

6. The Machine should not be operated when wind speeds reach 20 MPH.

As an operator you should always be aware of wind speed and direction. Increased wind speed will affect the integrity of the “air curtain” and will cause hot embers to travel farther. See the wind speed chart on Page 5 regarding the suggested set back.

7. NEVER use highly combustible materials to light the pit.

Highly combustible materials such as gasoline, refined spirits, etc. ignite at an explosive rate which may cause serious injury or death. The safest method to start the fire in the pit is to use materials, such as paper and kindling wood. In the absence of these materials or when starting materials with a high moisture content, diesel fuel oil is an acceptable option.

8. Shut the unit down in an emergency.

Stop loading the pit, stop the air flow by shutting down the engine. Dump dirt, sand or water into the fire pit.

9. Personal Safety (Personal Protective Equipment - PPE)

Operators need to be aware of the following potential hazards:

- a. **Flying hot embers** being released from the fire. Operators or anyone within the 100 ft. radius of the fire should wear appropriate fire resistant clothing. The ideal outwear for an operator would include a Nomex jacket, leather gloves, eye protection, hard hat, cotton work jeans and steel toe boots. Operators should never wear synthetic material (i.e. polyester) around the fire as this type of material can melt and cause injury. Additionally, some synthetic materials will support combustion and could be very dangerous around fire. One 100% cotton materials would be the minimum, cotton treated with a fire retardant would be better and fire proof materials, like “Nomex”, would be best.
- b. **Noise, ear protection is recommended around the machines.** It is a good practice to wear approved ear protection when working in close proximity to the fan and engine.
- c. **Ash and dust** can be released during the operation and during cleaning. Operators should wear appropriate breathing masks to protect themselves from inhaling the dust and ash such as respirators.



T300 COMPONENTS



T300 Manifold Extended



T300 Positioned at Trench



T300 Manifold Assembly Retracted

HOW TO SET UP THE MACHINE

1. Once the machine is in the correct location, first chock the wheels with suitable blocks or wedges to keep the trailer from moving, then disconnect your tow vehicle. Next, remove the two jacks from the storage box under the top cowling and fit them to the jack points at the rear and front of the trailer. Using the three jack stands, level the trailer.
2. Lift the cowling of the machine and secure it with an appropriate cowling support prop rod / device.
3. Check engine fluid levels, top up as necessary.
4. Check drive belts (see Page 29).
5. Check fan bearings for grease, regrease per maintenance schedule.
6. Check engine for leaks, check for any loose components and any obstructions at the fan inlet.
7. Close the top cowling and secure all latches (See Photo on upper right). Lock “D” lift latch.



Cowling Latches



Scan for T300 Setup Video

Click this link for a video on T300 setup and operation
https://airburners.net/videos/abvid_trenchb/t300_setup.mp4

DANGER: While working under the cowling to perform maintenance tasks, secure the cowling with an appropriate prop rod in case the cowling lift supports (gas struts) give way.

DANGER: THE MACHINE MUST ONLY BE OPERATED WITH THE WHEELS CHOCKED AND THE COWLING CLOSED AND SECURED.

LEAVE THE TOP COWLING CLOSED WHENEVER THE ENGINE IS RUNNING, AS EXPOSED DRIVE BELTS CAN CAUSE SERIOUS INJURY OR DEATH.

HOW TO SET UP THE MACHINE

DANGER: IF THE TRAILER IS NOT SET LEVEL THEN THERE IS THE RISK THAT THE CARRIER PIPE WILL EXTEND OUT OF CONTROL AS SOON AS THE LOCKING BOLT IS REMOVED. THIS COULD CAUSE SERIOUS INJURY AND/OR DAMAGE TO THE UNIT.

8. Use the 3 jack stands to set the trailer level.
9. Remove the carrier pipe locking bolt, use this bolt to secure the manifold in step 12.

NOTE: When the T300 first arrives, the locking bolt is replaced with a “travel bolt assembly” for flatbed truck transport. Remove this device before first use and replace it with the locking bolt shown here. You will find it in a pouch in the “Black Binder” that contains the Operating Manual (Shipped in the T300 toolbox).

10. Release the front winch and extend the carrier pipe manually by pulling the grab handles. Do not use any equipment or machinery to accomplish this.
11. Extend the carrier pipe completely until the yellow/black arrow indicator shows full extension and you reach a hard stop.



Carrier Pipe Locking Bolt



Carrier Pipe Grab Handles

DANGER: THE REAR JACK STANDS MUST BE EXTENDED BEFORE PULLING THE MANIFOLD OUT, OR THE MACHINE WILL TIP BACK AND YOU COULD BE SERIOUSLY INJURED.

HOW TO SET UP THE MACHINE

12. Swing the manifolds out and secure them by fitting the locking bolt from Step 9.
13. Lower the two rear jacks so that the manifold rests squarely on the ground.
14. With the machine and manifold positioned, you can now mark-out the dimensions for the pit.



Locking Bolt at Center of the Manifold

**NOTE:
THE FRONT OF THE TRAILER WILL RISE.
THIS IS NORMAL.**



Rear Jack Stands



T300 Carrier Pipe Fully Extended,
Manifolds Partially Extended



T300 Carrier Pipe Fully Extended
and Manifold on the Ground

HOW TO SET UP THE MACHINE

DANGER:
**THE TRENCH BURNER MUST ONLY BE OPERATED
WITH THE TOP COWLING CLOSED AND SECURED.**

STARTING ENGINE

Note:

The key can only be removed from the key switch in the OFF position. Turning the key left to the Auto position is not functional and is not used for your HATZ engine.

This Machine is equipped with a “FLUID DRIVE” (“Automatic Clutch”). The PTO will function automatically.

1. Turn key switch right to ON (1) position. The display will be activated.
2. Wait for automatic PREHEAT to complete.
3. Turn key to START, release, once engine is running.
4. Wait for speed to level off at 900 RPM (*Idle*).
5. Do not run the engine above 900 RPM without extending the manifold first as this would tend to stir up dust and dirt because the carrier pipe opening would not be in alignment with the air fan outlet.
6. Press Throttle Button UP, wait for speed to level off at 1400 RPM.
7. Press Throttle Button UP again to set speed at 2200 RPM (*Operating Low*).
8. Press Throttle Button UP again to set speed at 2600 RPM (*Operating High*).



Electronic Control Panel
(Lockable Cover Open)



Throttle Button UP & DOWN
And Key Switch

NOTE: If you require a replacement T300 Operating Manual Version 01.14.2019a for a different HATZ Engine, Control Panel or PTO/Clutch as shown here, contact the factory. A copy will be emailed to you.

HOW TO SET UP THE MACHINE

SHUT- DOWN OF ENGINE

1. Press Throttle Button DOWN twice from *Operating High* and *once* from *Operating Low* to set speed at 1400 RPM (*Cool Down*).
2. Press Throttle Button DOWN again and wait for speed to level off at 900 RPM (*Idle*).
3. Turn key to OFF position. The fluid clutch will be free wheeling to stop.



Electronic Control Panel
(Lockable Cover Open)

NOTE: If you require a replacement T300 Operating Manual Version 01.14.2019a for a different HATZ Engine, Control Panel, or PTO/Clutch as shown here, contact Air Burners, Inc. A copy will be emailed to you.

WARNING: Your HATZ Diesel Engine is a US-EPA Tier 4 F certified computer controlled engine. Do not attempt to re-program the ECM by pressing buttons at random on the control panel. Contact Air Burners Customer Support Department for help, if any errors have occurred.

Send Email to support@airburners.com, call 772-220-7303 or 888-566-3900 and ask for Customer Support.

Note: The HATZ engine does not require DEF.

MANIFOLD ASSEMBLY WINCH OPERATION

DANGER: The trailer must be level to prevent the manifold from sliding in or out unintentionally.

Should the manifold be sliding out accidentally because the trailer was not properly leveled before the ratchet was released, do not attempt to operate the winch handle or ratchet, as the spinning handle may cause serious injury.

A. WINCH OPERATION FOR PULLING OUT MANIFOLD/CARRIER PIPE ASSEMBLY

1. Level trailer.
2. Release ratchet by pushing the ratchet release lever forward-down (See Photo on right).
3. Proceed with manifold extraction following the instructions on Pages 8 through 10.



Ball Hitch Adapter (Pintle Hitch Optional), Safety Chains, Pigtail, Winch, Break-away Unit & Front Jack Stand

DANGER: Be sure to keep hands clear off handle, as it will be spinning on some models during manifold extraction. A spinning handle can cause severe injury.

B. WINCH OPERATION FOR RETRACTING MANIFOLD/CARRIER PIPE ASSEMBLY BACK INTO THE TRAILER

1. Level trailer.
2. Follow instructions for transport and storage on Page 25.
3. Engage the ratchet by pushing it up .
4. Crank the handle.
5. Crank the manifold in until the safety bolt hole lines up with the bracket.
6. Install the safety bolt and secure it with nut and cotter pin (see Photo on right).
7. For added security, leave the nylon strap tension tight.



Winch (Style May Vary)



Safety Bolt Securing Retracted Manifold Assembly

HOW TO BUILD A PIT

1. The pit needs to be constructed with straight vertical walls to the dimensions shown on Page 15.
2. With the manifold resting on the ground, mark the outline of the pit. Leave the trailer and manifold in position, if possible as it will save time in relocating the trailer.
3. Excavate as close to the manifold without damaging it (see the photo on Page 15). This will give you the proper manifold position to **ensure that the manifold does not protrude over the edge of the pit** which may lead to excessive temperature build-up in the manifold which will cause damage to the manifold.

You may also want to retract the manifold assembly about half way with the manifold sections in travel position to assure that it is not suffering any damage during the pit excavation work. Once the pit is built, **PUSH** and **do not pull** the assembly back. Pulling it would be too dangerous and could easily result in an accidental fall into the pit. Next, swing out the manifold sections again, making sure not to fall into the pit as that could cause serious injury or death. The manifold must rest on the ground at the edge of the pit without hanging over it.

4. The ground under the machine needs to be as close to level as practical. If the ground slopes down from the pit this will cause the air curtain to be too high and if the ground slopes up from the pit this will cause the angle to be too low.
5. Construct a safety barrier on the loading side of the pit, for example, by securing a large tree trunk there to prevent the loader from being accidentally driven into the pit. Such a calamity could, of course, result in serious injury or death.

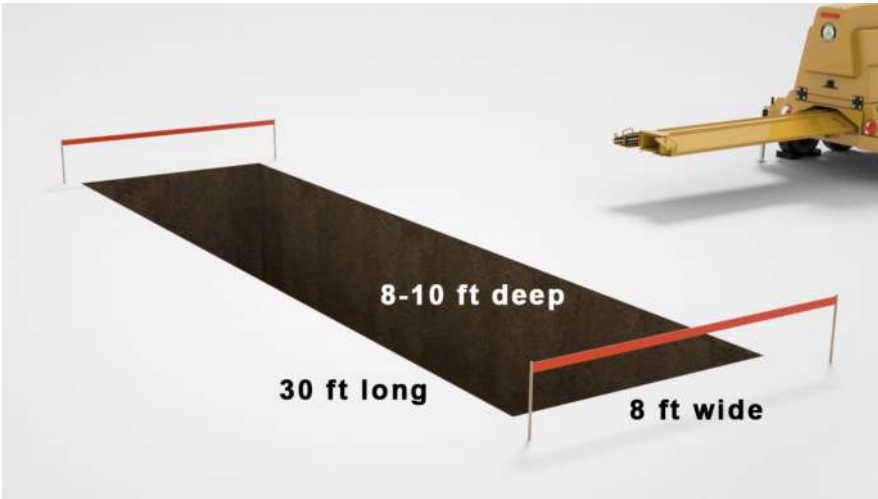
NOTE: IF YOU HAVE TO BUILD UP THE GRADE IT IS IMPORTANT THAT THE FILL IS WELL COMPACTED, SUCH THAT A STABLE PIT MAY BE FORMED.

ON THE LOADING SIDE OF THE PIT OPPOSITE THE MANIFOLD SECURE A SAFETY BARRIER, FOR EXAMPLE FROM A LARGE TREE TRUNK, TO KEEP THE LOADER FROM BEING ACCIDENTALLY DRIVEN INTO THE PIT.

6. After the pit has been used for several days, it may need some re-construction due to partial collapse. After the pit becomes wider than 10 feet and the walls are less than vertical, the trench burner will begin to lose its effectiveness and may start to emit more smoke (particulate matter) than desired. At this point you should either repair the pit or relocate and construct a new pit.

DANGER: THE PIT SHOULD BE PROTECTED AT ALL TIMES BY USING A SUITABLE FENCE, BARRIER OR ENCLOSURE TO PREVENT PERSONS OR ANIMALS FROM FALLING INTO IT.

Standard T300 Pit Dimensions



Optimal Trench Dimensions



[Scan for T300 Setup Video](#)
or Click this Link



20 ft. Safety Set Back T300 to Pit



Pit Excavation with Manifold Positioned



Log Shown as Safety Barrier for Loader

SITE PREPARATION

THE GOALS TO GOOD SITE PREPARATION ARE:

- To locate the machine and trench for easy access
- To sort the waste wood pile
- To organize the inflow of new wood waste

When locating the T300 machine and trench:

Consider access for your truck and trailer to deliver the machine. Ensure that there is enough room to maneuver your vehicle. The (optional) ball hitch adapter may be removed to use the optional pintle hitch in the field for towing by tractor.

Consider where the waste piles will be located. We generally recommend two waste piles (explained in next section).

Consider the predominate wind direction. Hot embers will be escaping from the fire pit during all burning operations.

Consider where and how (or if) you will empty the ash from the pit. If you plan to excavate the ash out of the pit to empty it, ensure there is room and the soil conditions are not too soft. If you are going to excavate the ash out, then consider where you will dump it. In most cases cold ash can be applied to the land. Check with your local authorities.

DANGER: This T300 machine DOES NOT prevent hot embers from escaping. This machine is designed primarily as a pollution control device to reduce the smoke generated from burning clean wood waste.

SITE PREPARATION

Faster operation through staging the wood piles

Air Burners Trench Burners were designed primarily as a pollution control device, but operated correctly, they will also burn clean wood two or three times faster than open burning. To achieve the best throughput the fire must remain at the highest temperature possible. You achieve this by remembering three rules:

- 1. Don't smother the fire with a huge load of wood waste or a load of very dense material.**
- 2. Load "less more often": load smaller bucket loads more often.**
- 3. Sort out a pile of your best burnable wood, use it as fuel to create a hot fire.**

The basic principle of operation is not too different from a campfire. You use your best wood to get it started and if the fire dies down you add some more "Good Wood" to bring it back up. The big difference is that on your campfire you are probably not adding root balls, leaves and pine needles. These are the high moisture content and dense materials that bring the fire temperature down.

If you overload the machine with materials that have high moisture content, such as tree branches with leaves and needles, or green branches such as palm fronds, then the temperature drops (smoke increases) and your burn rate slows down. While these are certainly ok to burn in the pit, you want to add them to a hot fire, so they dry out and ignite quickly.

To keep the temperature up and to maintain the highest throughput of waste, you should mix the very burnable wood with the less burnable materials throughout the course of the burning operation. The most common way to accomplish this is to stage a pile of the most burnable materials or what we call the "two pile system."

"If it's burning clean it's burning fast, If there is smoke you're losing money."

SITE PREPARATION

The “Two Pile System”

For an efficient operation you would have two piles:

The **first pile** or “Main Debris” pile, is the material being generated from the land clearing or forest clearing operation and is located away from the ember path but with good access to your loading machinery.

The **second pile** or “Good Wood” pile is your best and most burnable wood. When you first setup the site the operator should spend some time sorting through the main debris pile pulling out what appears to be your best and most burnable materials. This is the material with which you will start the fire, this is the material that will give you a good hot burning base fire. You will also draw from the “Good Wood” pile throughout the day, if you should need to stoke up the fire (more on this in the following sections).

As the pit operator is drawing from the main debris pile throughout the day, he/she should continue to replenish the “Good Wood” pile as necessary. The “Good Wood” pile only needs to be enough material to stoke-up the fire, if needed and enough material to get you started the next day.

IMPORTANT WARNING ABOUT THE BURNING OF PALLETS

Wooden Pallets, especially spent pallets, burn extremely hot. DO NOT load the pit above approximately 3/4 of the height of the trench. Otherwise, heat damage to the manifold may occur which would not be covered under your Limited Factory Warranty.



Trench Burner Positioned at a Perfect Pit

LOADING AND STARTING THE FIRE

THE GOALS IN STARTING A TRENCH BURNER ARE:

- To achieve an even fire across the length of the pit.**
- To start the fire from the bottom of the initial pile.**
- To build a hot base fire.**

There are two methods for lighting the unit: a **cold start** and a **hot start**. A cold start means the pit is clean and has no hot coals left from a previous burn. A hot start uses heat from the coals of the previous days burn.

PRE-CHECK

Unit prechecks should be complete and the engine should be at operating temperature and switched OFF again to keep the fluid clutch from spinning the air fan.

LOADING

Load your most burnable material (materials from the “Good Wood” pile as discussed in the previous section) which is the smaller, dryer and cleaner wood, into the pit to a level of about half way up. Ensure the entire bottom area of the pit is covered. Next load some of your heavier materials. Do not load higher than 1 ft. below the manifold.

DANGER: Do not use an accelerant for a Hot Start, as it may ignite unexpectedly and cause injury or death.



LIGHT-OFF, Changing from Darker Wispy Smoke of Diesel to White Smoke from Burning Wood.

LOADING AND STARTING THE FIRE

COLD START LIGHTING

1. Unit should be on level ground and the engine should be off, as the fluid clutch would spin the air fan which would make it more difficult to light the fire and the fire may even be blown out. Ensure, though that you have started the engine and warmed it up before switching it off for the light up.
2. The pit should be loaded with “Good Wood” as previously described.
3. Add accelerant like diesel fuel or something recommended by your local fire department or forest service. A 30 ft. pit will need about 7-8 gal. spread across the pile.
4. For best results and quickest light up, start the fire from the bottom, because the fire will spread up much better than it will spread down.
5. Use a propane torch (like a weed burner) or oil soaked rags on poles to light the fire.
6. Start engine again. The air fan will be engaged automatically.
7. DO not load too fast.

DANGER: Do not use a highly flammable accelerants like gasoline or solvents, as they light explosively and may cause injury or death.

If you are using diesel fuel as a starter, let the fire burn until you begin to see wisps of white smoke replacing the wisps of black smoke from the diesel fuel, or if you are using propane torches, wait until the fire has strengthened and flames are reaching the top of the pit. Then engage the air fan by setting engine speed to *Cool Down* or 1400 RPM.

As the fire burns stronger, increase the air in 15 minute increments to *Operating Low* or 2300 RPM and then up to *Operating High* or 2500 RPM.

Don't increase the air too quickly, as you can “blow” the fire out. If you add air and the smoke gets heavy, then reduce the RPM and let the fire “catch-up.” Once it clears up you can increase the air again. The set-points are pre-programmed and cannot be changed.

Sometimes it is helpful to “fan” the fire during the start-up phase. You accomplish this by increasing the RPM's for 3 to 8 minutes, then decreasing them (i.e. 1400 RPM up to 2300 RPM and back down to 1400 RPM). This sometimes helps to spread the fire throughout the material. How much air to add and when to add it during startup will vary with the type of materials being burned.

LOADING AND STARTING THE FIRE

HOT START LIGHTING

A hot start uses the coals from the previous day's burning operation. Depending on how much ash is in the pit, a hot start can be done once or twice before the pit will need to be emptied. The more ash in the pit that you start with, the LESS room you have for burning new materials.

First, insure there are enough coals remaining to generate enough heat to get the new waste materials burning. You CANNOT and MUST NOT add an accelerant, if the wood waste materials do not light, as that would be too dangerous. If the wood waste does not light, the pit must be emptied before trying a cold start with the use of an accelerant.

DANGER: Do not use an accelerant for a Hot Start, as it may ignite unexpectedly and cause injury or death.

HOT START LIGHTING STEPS

Similarly to a cold start you begin with your best and most burnable materials.

1. Ensure engine was warmed up and switched OFF again.
2. Load the pit to about one third or half way with the "Good Wood". The wood should begin burning as soon as you start loading.
2. Start the engine again and set at 1400 RPM. This should help fan the flames and spread the fire. If you experience heavy smoke then reduce the RPM. Be cautious not to "blow out" the fire.
3. Sometimes it is helpful to "fan" the fire during the start-up phase. You accomplish this by increasing the RPM's for 3 to 8 minutes, then decreasing them (i.e. 1400 RPM up to 2600 RPM and back down to 1400 RPM). This sometimes helps to spread the fire throughout the material. How much air to add and when to add it during startup will vary with the type of materials being burned.

HOW TO FEED A FIRE

It will generally take 30 to 60 minutes for the fire to build to a point where the temperatures are sufficient for the unit to be operating with minimal smoke.

1. Add material from your “Good Wood” pile slowly for the first hour. It takes about an hour for the fire to reach minimum temperature. Your goal is to achieve an even and hot fire across the unit.
2. If you get excessive smoke and ash when you load the wood waste while dropping the load through the air curtain, then you may need to turn the RPM’s down temporarily as you load.
3. Take caution when loading the pit that the material to be burned is not “dumped” into the pit too quickly causing hot embers to be thrown from the pit.
4. If you have an area in the pit that is smoking, this indicates the temperature is low in that area. Add material from the “Good Wood” pile to get the fire temperature up. Once that area is burning, add some of the heavier material.
5. The rate at which you load the pit varies depending on moisture content of the materials and the temperature of the fire. If you overload the pit you will notice an increase in white smoke. White smoke is an indication that the temperature is dropping. If the smoke increases stop loading until the fire has caught up. You can also bring the temperature up by adding materials from the “Good Wood” pile.
6. For the highest throughput load **“LESS MORE OFTEN.”** Smaller bucket loads more often will give the materials a better chance to burn and will result in your highest throughput of material. Oversized bucket loads may smother the fire for a short period before the wood waste ignites; this will slow the burning down and reduce your daily throughput.
7. The load in the pit should not go higher than 1 ft. below the manifold. If the material is piled higher it will begin to break the air curtain and more smoke will escape.
8. The fire should be loaded continuously throughout the day in order to maintain operating temperatures. If the fire is not loaded continuously, the temperature will drop, the through-put will go down and more smoke will escape.

“If it’s burning clean, it’s burning fast, If there is smoke, you’re losing money.”

HOW TO BURN FIRE DOWN FOR SHUTDOWN

1. All loading should stop about one or two hours before you intend to put the fire out.
2. As the fire burns down, reduce the engine RPM to *Cooldown* or 1400 RPM leveling off the RPM at each set-point.
3. DO NOT shut off the air flow through the manifold while the fire flames could still be reaching the manifolds. Without the air flow it is possible to reach temperatures high enough to damage the manifolds.
4. Depending on local ordinances you may have to put the coals in the pit out with water, or you may be able to bury them. Check with your local Fire Marshall or competent permitting authority, if you are unsure.
5. When covering the fire with dirt, always have the operator start on the upwind side and cover the entire area before moving down the pit. This manner of covering will keep smoke emission to minimum level.
6. Make sure the fire is extinguished before you leave the job site.
7. MAKE SURE THE PIT IS SAFE BY FENCING IT OFF OR FILLING IT IN BEFORE YOU LEAVE THE JOB SITE.
8. If you are leaving the pit open for use the next day you must secure the site with fencing and/or a security guard to insure no person gets near the pit and animals cannot fall into it.



DANGER: THE PIT OR AREA AROUND THE PIT MUST BE PROTECTED AT ALL TIMES, USING A SUITABLE FENCE, BARRIER OR OTHER MEANS, TO PREVENT PERSONS OR ANIMALS FROM FALLING INTO IT.

HOW TO CLEAN OUT THE PIT

1. Burn pits are cleaned out when you either want to reuse it, or if required by local ordinances.
2. When cleaning out the pit, it is important to minimize the fly ash. The easiest way is to use water. Wet down the ash and then remove it. Dirt can be used in place of water to help reduce the fly ash. Load dirt into the pit on top of the ash then remove the ash and dirt together.
3. Ash should be removed from the pit from the up-wind end. Special care should be taken to dump the ash from the loader bucket slowly in order to keep most of the ash from becoming airborne. There will be hot embers and chunks of hot wood, some may even flare up, when exposed to oxygen. Be very cautious during the ash removal process. (See Caution Note below).

DANGER:

When removing ashes from the pit, make sure that hot ashes, embers, burning or hot materials are not carried by the wind or otherwise away from the pit to places where they could start a fire!

Wear Personal Protective Equipment (PPE) while performing this task.

HOW TO PREPARE THE MACHINE FOR TRANSPORT

1. Before working on the machine to prepare it for transport the fire must be completely extinguished.
2. Leave the manifolds extended, raise the rear jacks to lift the manifold from the ground.
3. Remove the bolt securing the manifold section and fold them back using the handles. The manifolds should be locked into position by lifting slightly into the storage hooks on the carrier pipe.
4. Winch the carrier pipe into the trailer. (see Page 13 for “winch operation”). Never push the carrier pipe with a vehicle, such as a front loader.
5. NOTE: THE FRONT END OF THE TRAILER SHOULD BE SLIGHTLY LOWER THAN THE BACK; USE JACK STANDS TO ADJUST. THIS WILL MAKE IT EASIER TO PUSH THE CARRIER PIPE BACK INTO THE MACHINE. IF THE TRAILER FRONT IS HIGHER THAN THE BACK, THEN IT MAY CAUSE THE CARRIER PIPE ASSEMBLY TO SLIDE BACK OUT OF CONTROL, CAUSING DAMAGE AND/OR INJURY.
6. Fit the securing bolt at the front of the carrier pipe to lock the carrier pipe into position. Always use both nut and cotter pin.
7. Attach the trailer to the tow vehicle.

DANGER: FAILURE TO PROPERLY FIT THE SECURING BOLT MAY RESULT IN THE CARRIER PIPE DEPLOYING WHILE THE TRAILER IS BEING TOWED. THIS COULD CAUSE DAMAGE, SERIOUS INJURY OR EVEN DEATH.

8. Remove the jack stands and store them. Use the provided storage box inside the T300.
9. Close the cowl and make sure it is secure with all three latches secured and center “D” lift latch locked with the latch key.
10. Connect the trailer and vehicle electrics and ensure that all lights and electric brakes function correctly before entering public roadways.
11. Connect safety chains and secure hitch with suitable pin or locking device before entering public roadways.

DANGER: GREAT CARE MUST ALWAYS BE TAKEN WHEN WORKING AROUND THE PIT. THERE IS A RISK OF FALLING INTO THE PIT WHICH MAY RESULT IN SERIOUS INJURY OR DEATH.

TROUBLESHOOTING

1. Fire will not start

Material in the pit has too much air space. To correct this, load heavy waste material, such as logs to pack down the material in the pit.

Material in pit is wet or green. Use more appropriate accelerant for initial lighting (do not add accelerant after the initial light off, as it may ignite unexpectedly on hot coals and could cause injury or death). Once lit add material slowly, until you build good heat in the pit.

Material in the pit has too much dirt mixed in. Using the loader bucket or rake, drive into the pit if possible, after you have made sure that there are no hot coals or hot ashes left in it, then lift and drop the material to shake the dirt loose. If this does not work, the pit will have to be cleaned out and repacked.

2. Fire burning at one end

Load finer more combustible materials between the area burning and the area that is not. This will cause the fire to move in that direction. Only load light materials until the fire is burning throughout the pile. Let the fire burn down to insure the bottom materials are burning; otherwise they will become trapped under additional loads and will burn very slowly.

3. Fire not getting hot

If your fire is not getting hot enough, you probably do not have enough material packed on top of the pit. The pit must be packed tight or you will lose your heat into the air.

4. Fire smoking too much

The most common reason for a smoking fire is too much dirt going into the pit. You must make sure the wood waste material is clean.

If you have overloaded the pit you will begin to smother the fire and it will cool down and smoke. Only load fine highly combustible materials in small quantities to bring the temperature back up. Once the fire is burning well, stop loading and let the fire burn down some. It is important that ALL the materials in the pit will be burning. If you load too fast you will smother the fire and starve it for oxygen. This will cause smoke and it will decrease your through-put.

A pit that is too wide will smoke, no matter what you do to improve it. The air flow cannot circulate properly over and into a pit that is too wide. You should never attempt to light a fire in a pit that is not built properly.

MAINTENANCE AND CARE

WARNING:

Should any repairs become necessary that require welding on your Trench Burner, you **MUST** first physically remove the Electronic Control Module (ECM) from the computer controlled Diesel engine. Follow the instructions on Page ii in the front of this Operating Manual (Back of front cover).

MAINTENANCE AND CARE: See Page 32 and Appendix B for more details. Also consult the supplied HATZ Engine Service Manual and the Electronic Control Panel Manual.

A. Daily check list:

1. Engine Oil level (top off as needed).
2. Engine coolant level (top off as needed).
3. Diesel fuel level in fuel tank.
4. Tap dirt out of air intake housing and check for excessive dirt.
5. Clean debris off radiator.
6. Check "Racor" Water Separation Fuel Filter and service as needed

B. Periodic Maintenance

1. Change engine oil and oil filter.
2. Replace fuel filters as needed (Main filter, pre-filter, Racor water separation filter).
NOTE: T300 shipped from the factory after November 20, 2023 have been fitted with HATZ engines where the pre-and main fuel filters are combined into a single unit (see Appendix B).
3. Clean and inspect air filters and replace as needed.
4. Grease both air fan bearings every 200 hours. ***Do not over-grease!***
5. Grease fluid clutch bearing every 120 hrs. (Approx. 4-5 grease gun pumps or 10 g). Call factory for major service every two (2) years or as needed.
6. Check alternator V-belt and adjust as needed.
7. Check and inspect dual air fan belts for wear and tear. Replace as needed.
8. Manually adjust all brakes.
9. Call factory for service of fluid coupling (automatic clutch).

Consult the supplied HATZ Engine and WBM Control Panel Service Manuals. Call Air Burners Customer Support for Fluid Coupling Service.

MAINTENANCE AND CARE

C. Manifold Care

The technician/operator of the unit must take special care not to damage the manifold.

Always load material from opposite the manifold. Do not drop logs on the manifold. Do not hit the manifold with the excavator bucket or other implement. Do not allow the manifold to be positioned directly in the flames. If at any time it becomes necessary to load material from the same side of the pit where the unit is placed, an assistant should help and warn the operator to watch for the assistant's signals at all times when approaching the manifold.

At no time should the loader's wheels come closer than 6 inches from the manifold, and when beginning to dump the load, do so slowly. If you see anything that might fall on the manifold, you should stop and either reposition the loader or the load that is being carried, in order to keep the material from hitting the manifold as it is dumped into the pit.

IMPORTANT NOTE:

Considering that you are dealing with a tremendous amount of heat when the T300 is operating properly, it is absolutely necessary to make sure the manifold is not hanging over the edge of the pit (See Page 8 "How to Set up the Machine"). The manifold is subjected to a great deal of heat during normal operations anyway, and if it is hanging over the edge of the pit it is exposed to a minimum of three times the normal heat which will cause severe deterioration or warpage of the manifold sections.

Warpage due to excessive heat is not covered under your warranty.

D. Adjustment of Electric Brakes

The electric trailer drum brake shoes must be adjusted after the first 200 miles of operation when the brake shoes and drums have "seated", then every 3,000 miles thereafter, or as use and performance requires. See Appendix A for details. It is also advised to have a qualified technician inspect the braking system at least once a year or every 12000 miles.

E. Wheel Nut Torque

The wheel nuts (lug nuts) must be torqued after the first 10 miles, then 25 miles, 50 miles and then monthly after that. Torque the T300 lug nuts to 80 ft-lb (109 N·m).

F. Wheel Bearings Maintenance

Grease the suspension wheel bearings with a manual grease gun at the location indicated. Remove the center grommet and rotate the wheel by hand as grease is applied to the bearing until old grease is visible. See Page 32 for lubricant grade. Grease after first four (4) months, then at least once a year.



REMOVAL & INSTALLATION OF TWIN V-BELTS

The T300 Trench Burner is fitted with twin OPTIBELT *Red Power 3 Type 5V1400 V-Belts* (Air Burners P/N 5000-0008). These are high quality belts that do not stretch again after a short initial runtime of 10-15 minutes and never require adjustments again for the life of the belts. These technical notes explain how to remove and install the belts and how to properly adjust their tension.

Install only new belts in pairs and use only Optibelt 3 V51400. Never mix new and used belts or belts of different types.

Belt Assembly Components:

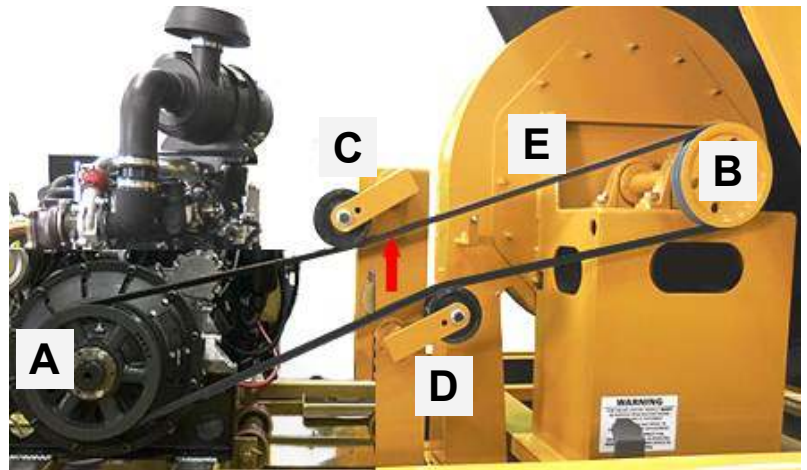
Engine/Fluid Coupling Pulley (A)

Air Fan Pulley (B).

Fixed upper Guide Pulley (C)

Fixed lower Guide Pulley (D)

Twin Optibelts *Red Power 3* (E)



Required Tools:

Wrenches

Belt tension measurement tool - we suggest an Optikrik "Cricket" from Optibelt

Caution: Wear protective gloves and other PPE as needed.

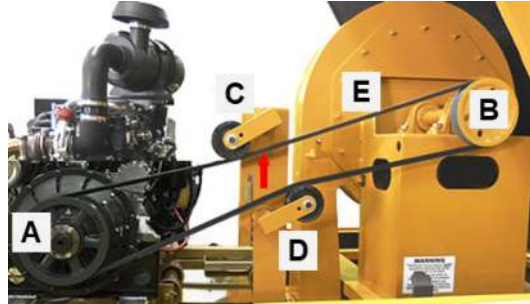
A. Follow these steps for twin belt removal:

1. Ensure the trailer is stabilized, the engine is switched off and the cowling secured in maintenance position (see Page 31).
2. Loosen guide the pulleys (C) and (D) in back and move them out of the way of the belts.
3. Remove the twin belts by "rolling" them off Pulley A, one at a time. Do not use any tools, like a screwdriver. Make sure not to pinch your fingers. Run the engine for 10 to 15 minutes after which time the belts have stretched to the permanent length.

REMOVAL & INSTALLATION OF TWIN V-BELTS

Belt Assembly Components:

- Engine/Fluid Coupling Pulley (A)
- Air Fan Pulley (B).
- Fixed upper Guide Pulley (C)
- Fixed lower Guide Pulley (D)
- Twin Optibelts *Red Power 3* (E)



B. Follow these steps for new twin belt installation:

1. Install first belt over fan Pulley (B) and Fluid Coupling Pulley (A), then the second belt the same way. Do not use any tools, like a screwdriver.
2. Rotate the Fixed Lower Guide Pulley D upwards to achieve 190 lb. tension and tighten the two bolts previously loosened. Place the Optikrik tool to determine the belt tension in the center on top of the upper stretch of the belts just below Pulley C (still out of the way turned upwards, see image above) at the location indicated by the red arrow in the image. Verify both belts measure the same tension.
3. Rotate Fixed Upper Guide Pulley C downwards and put a deflection of approx. 1/2 in. on the belts and tighten the bolt.
4. Run the engine (which will engage the automatic clutch) for 10 to 15 minutes after which time the belts have stretched to the permanent length.
5. Move the Fixed Upper Guide Pulley (C) temporarily out of the way and use the Optikrik to set the belt tension to 147 lb. by adjusting the Upper Guide Pulley (C). No further adjustments will be needed for the life of the belts.

C. Positioning of Belt Tensioner Measurement Tool:

The proper positioning of the *Optikrik* belt tensioner measurement tool on T300 drive belts is shown in the image to the right. Any good quality “Krikit” or electronic belt tension tester will work.

The original *Optikrik* from Optibelt can be purchased from Air Burners Parts Department.

The *Optikrik* Part Number is 5000-2469.



OPENING COWLING FOR MAJOR MAINTENANCE

To facilitate opening of the cowling and to keep it open for routine service, it has been fitted with two Support Gas Struts. For major maintenance work it may be necessary to open the cowling all the way as shown in the photo to the right.

To open the cowling completely follow these steps:

1. Do not perform this work outdoors on a windy day; a strong wind may damage the unit while the cowling is upright.
2. Have a helper standing by; two people are required to disconnect the gas struts safely.
3. Secure the machine on level ground with the jack stands and retract the manifold approximately 3 to 4 feet. It will be the support base for the cowling in the vertical position. Place some protective material, such as cardboard onto it to prevent paint from being scratched.
4. To disconnect the gas struts, pull the lower sockets by hand sharply off the ball joints affixed to the fan mount while your helper is holding the cowling in position.
5. After both struts have been disconnected from the fan mount, gently push the cowling backwards until it rests on the manifold. It will stay in the open position by design.
6. Before closing the cowling again, re-attach the two gas struts by snapping their sockets firmly onto the fan mount bracket balls by hand while a helper is holding the cowling in position. Make sure that the gas struts are safely attached.
7. Should it become necessary to detach the cowling from the base by unbolting the hinges, make sure that the shims under the hinges, if any, are replaced as originally installed.



DANGER:

Make sure that the T300 is placed on level ground with the jack stands secured. Do NOT perform this work outdoors on a windy day. Have a helper standing by to assist you, as the cowling is heavy. Wear suitable Protective Equipment (PPE).



**T300 Air Curtain Trench Burner with HATZ 4H50 Diesel Engine & Fluid Coupling
OPERATING MANUAL**

**PARTS LIST FOR ROUTINE SERVICE OF
HATZ 4H50-TIC INDUSTRIAL DIESEL ENGINE (TIER 4)**

Refer to Appendix B “Engine Overview” and HATZ Service Manual for Engine Service Details
(Engine must be serviced after first 50 hours, then every 500 hours of operation or as needed)

Description	Air Burners P/N	Manufacturer’s P/N	Service Interval
Air Filter (Main Element H50)	5000-2338	HATZ 50638200	500 Hours
Air Filter (Secondary Element H50)	5000-2339	HATZ 50638300	500 Hours
Oil Filter H50	5000-2340	HATZ 50638800	500 Hours
Oil Separator H50 (Crank Case Vent)	5000-2341	HATZ 50640500	500 Hours
Fuel Filter H50 (Main Filter)	5000-2342	HATZ 50638100	500 Hours
Pre-Fuel Filter	5000-2343	HATZ 50638000	500 Hours
Combo Main & Pre Fuel Filter*	5000-3007	HATZ 2147501	500 Hours
Poly-V-Belt (Engine) H50	5000-2344	HATZ 50629401	500 Hours
Fuel/Water Separator Filter	5000-1297	RACOR R20P	As needed
V-Belt (Air Fan, 2 Belts)	5000-0008	Optibelt Redpower 3 5V1400	As needed
Battery, 12V, Max 120 Ah; Max. CCA 800; Min. CCA 750; RC 130	5000-2472	Interstate Batteries 24M-XHD	2 Years or as needed

* Applies only to T300 HATZ engines shipped after November 20, 2023.

Tire Pressure	60 PSI (414 KPA)
Tire Size	ST225/75R15
Rim	15×5 (5 Lugs)
Diesel Fuel	Ultra-Low Sulfur Fuel Only
Engine Oil	10W40 or 15W40 Diesel Grade - Ultra-Low Sulfur
Engine Oil Capacity	4H50: 7.2 qt. (6.8 L)
Engine Radiator Protection Fluid *	Coolant Fluid must be approved by HATZ, i.e. Havoline XLC (OF02), Havoline XLC+B, Castrol Radicool SF, Exxon Mobil Delvac ELC Coolant
Bearing Lubricant	NLGI Grade 2
DEF and DPF **	Not required (Engine meets US EPA Tier 4 Final and EU 97/68 Stage 3B)
Fuel Tank Capacity	Minimum 46 Gallons (174 Liters)

* Contact Air Burners Customer Service Dept. for complete list of HATZ approved Radiator Protection Fluids.

** DEF = Diesel Exhaust Fluid DPF= Diesel Particulate Filter

**Contact Air Burners, Inc. (Customer Support) for Fluid Coupling Service
and assistance with any other maintenance task.
Email: support@airburners.com, Phone: 772-220-7303 or 888-566-3900**

T300 TRAILER TOWING CHECKLIST

Prior to towing a T300 Trench Burner on public roadways, the following items must be considered and checked:

1. A suitable hitch assembly for the weight of the T300 (Gross weight (GVWR): 6,600 lb., tongue weight: 750 lb.) is required. The ball size is 2 5/16 inch. To use the optional pintle hitch, remove the ball hitch receptacle and replace it with the pintle hitch.
2. The trailer is equipped with electric brakes on both axles and a break-away system. A suitable brake controller on the towing vehicle, such as a NAPA PN 89241 or a Tekonsha PN 9055, must be installed. The factory installed electrical connector (“pigtail”) must be used to electrically connect the towing vehicle to the trailer in order for the brakes, break-away system and lights to operate properly.

The T300 has been fitted with a 7-blade RV type plug and a pig tail that is permanently attached to the T300 tongue (see trailer-side pin diagram of the 7-pole receptacle on Page 34 “Trailer Wiring Diagram”). Pin 4 supplies +12V for charging the break-away system battery.



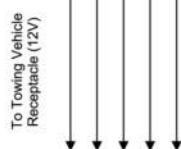
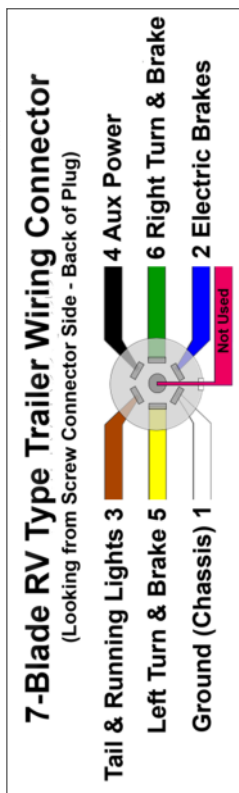
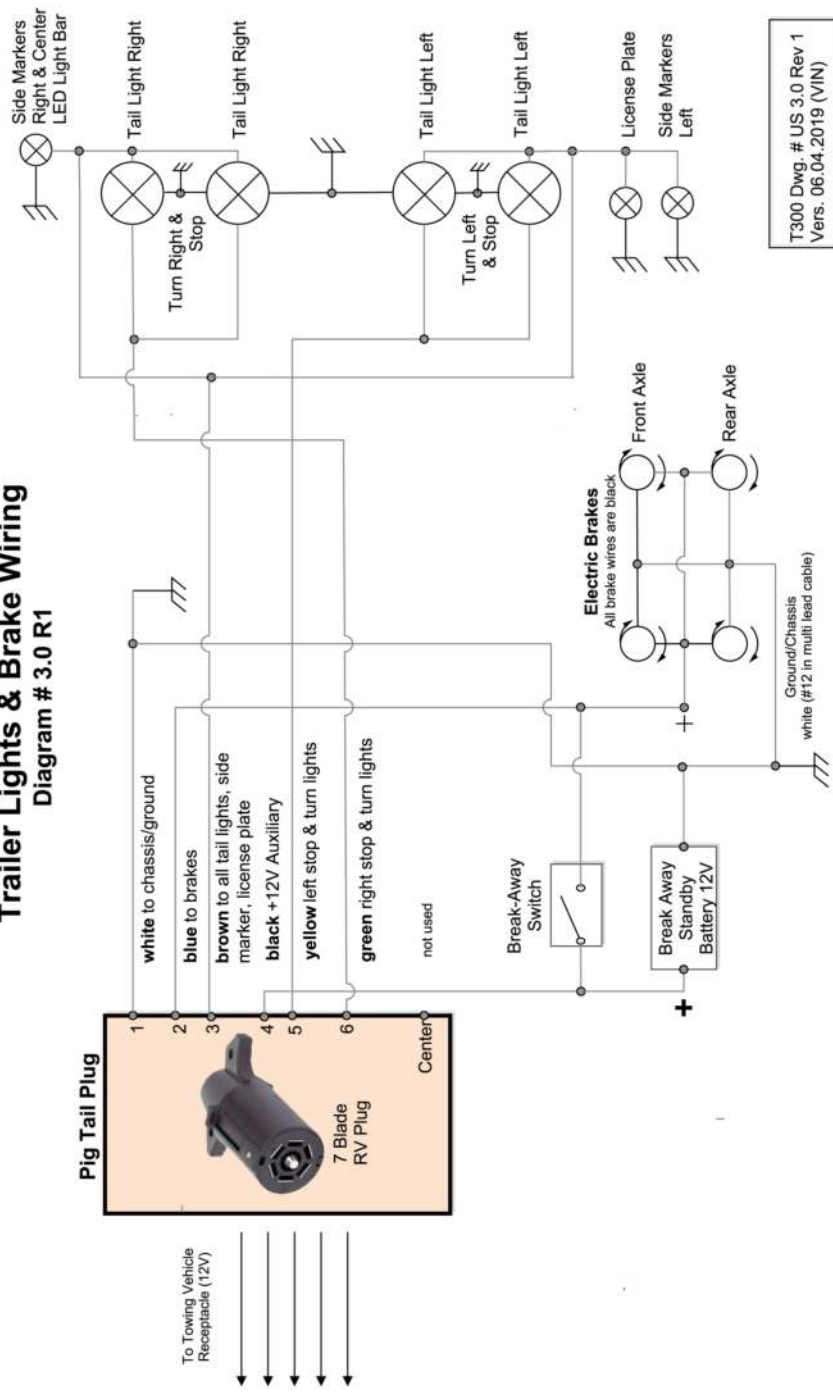
Carrier Pipe, Winch, Jack Stand, Safety Chains, Ball Hitch Receiver, Break-away System and Pigtail with 7-Blade RV Plug

3. The trailer tires are 8-ply bias tires, size 225/75R15 (originally supplied) with 5 lugs. The tires should be inflated to a (cold) pressure of 60 PSI or 414 KPA. Max tire pressure is 80 PSI. Ensure all lug nuts are torqued to 80 ft-lb (109 N·m).
4. Ensure that all trailer lights are working properly and the break-away battery is charged and tested and the breakaway switch steel cable is attached to the towing vehicle.
5. Ensure that all machine components, such as the carrier-pipe/manifold assembly and cowling are properly secured.
6. Ensure that trailer safety chains are connected to the towing vehicle and that enough slack is allowed for turning.
7. Ensure the trailer ball hitch pin is locked with a spring clip or lock to prevent it from coming loose while traveling.
8. Ensure that your brake controller in the towing vehicle is properly calibrated following the instructions of the manufacturer of the brake controller.
9. Periodic maintenance is required on the trailer brakes and axle bearings. See Page 28 and Appendix A. All wheel lug nuts and safety chains must also be checked before each trip.

IMPORTANT: Ensure that the retracted carrier-pipe/manifold assembly is secured with the appropriate locking device (bolt-nut-cotter pin) at the front end near the hitch to prevent it from sliding out of the back of the trailer while traveling. Also, make sure that the cowling latches are secure and the center “D” lift latch (handle) is locked in place with the provided key. Check all tires, wheel lug nuts, hitch assembly, electrical connections and safety chains.

Trailer Wiring Diagram T300

Air Burners, Inc.
T 300 Trench Burner
 US/Canada Standard Version
 with 7 Blade RV Pigtail Connector (Plug)
Trailer Lights & Brake Wiring
 Diagram # 3.0 R1





T300 Air Curtain Trench Burner with HATZ 4H50 Diesel Engine & Fluid Coupling OPERATING MANUAL

Appendix A Manual Adjustment of Brake Shoes

1. Jack up the trailer and secure it on adequate capacity jack stands.
2. Ensure the wheel and brake drum rotates freely.
3. Remove the adjusting-hole cover from the adjusting slot on the bottom of the brake backing plate.
4. With a screwdriver or standard adjusting tool, rotate the starwheel of the adjuster assembly to expand the brake shoes. Adjust the brake shoes out until the pressure of the linings against the drum makes the wheel very difficult to turn.
5. Then rotate the starwheel in the opposite direction until the wheel turns freely with a slight lining drag.
6. Replace the adjusting-hole cover and lower the wheel to the ground.
7. Repeat the above the procedure on all remaining three brakes.

NOTE ABOUT WHEEL NUT TORQUE

The wheel nuts (lug nuts) must be torqued after the first 10 miles, then 25 miles, 50 miles and then monthly after that. Torque the T300 lug nuts to 80 ft-lb (109 N·m).

Contact Air Burners, Inc. (Customer Support) for assistance with any T300 maintenance task.

Email: support@airburners.com

Phone: 772-220-7303 or 888-566-3900

**APPENDIX B
HATZ ENGINE OVERVIEW (4H50)**

VIEW FROM RIGHT SIDE



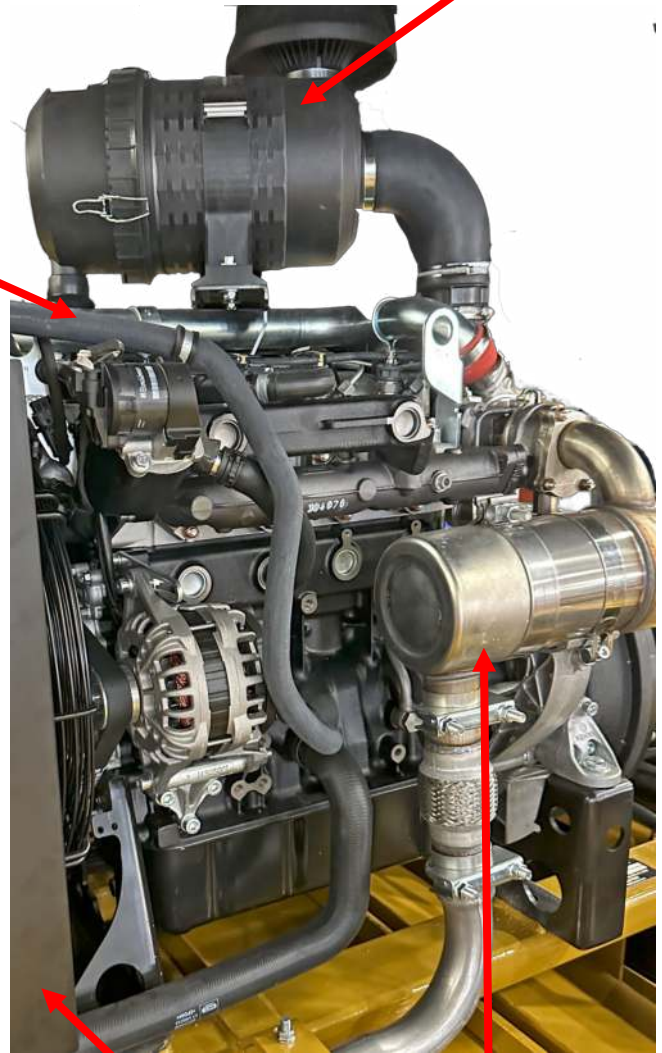
Fuel Pump

Pre Fuel Filter only on T300 models shipped before November 20, 2023

RACOR Fuel-Water Separator

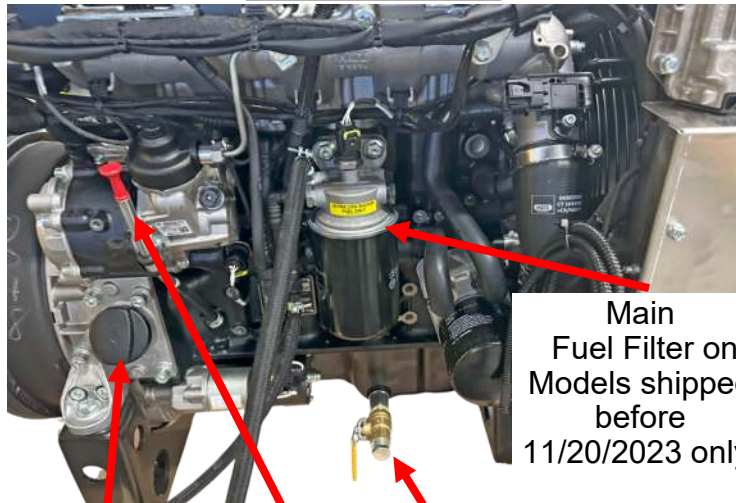
Oil Separator Crank Case Vent (Hidden)

VIEW FROM FRONT



Air Filter Housing

VIEW FROM REAR



Main Fuel Filter on Models shipped before 11/20/2023 only.

Oil Fill (Rear)

Dip Stick

Oil Drain

Includes Pre-filter on newer T300 Models. (Appearance may vary slightly)

Oil Fill (Top)



While working under the cowling to perform maintenance tasks, secure the cowling with an appropriate prop rod and always wear Protective Personal Equipment (PPE).

Radiator

Silencer