

Operator's Manual



Operator's manual : It is the responsibility of the owner to ensure that all operators of this machine have fully read and understand the content of this manual before using the trowel. Careless use of this machine can cause serious or even fatal injury. Allow only adults to operate this machine.

CONTENTS

Contents.....	2
Safety Instructions.....	3
Assembly.....	7
Operation.....	8
Maintenance.....	9
Trouble Shooting.....	11

Here at Boren Inc we would like to Thank You for purchasing your new Boren Super Trowel. We have provided important safety tips, please read these carefully. A safety message alerts you to potential hazards that could hurt you or others.

Safety Instructions

Failure to comply with the following warning could result in serious bodily injury or death.

General Use

Before operating machine, read and understand this entire operation manual and engine operation manual supplied with the engine. Be familiar with machine before operation.

Safety Gear

Operator must wear personal safety equipment and clothing. Safety gear such as hearing and eye protection is mandatory.

Hearing

During use of this machine an operator may experience a noise level of 85 db (A) or greater. Temporary or permanent damage to hearing may result. Hearing protection required.

Surrounding Area

The surrounding work area must be clear, and well lit. Anyone not involved in the work area should leave the area.

Spark Arrestors

State Health Safety Codes and Public Resources Codes specify that in certain locations spark arresters be used on internal combustion engines that use hydrocarbon fuels. A spark arrester is a device designed to prevent accidental discharge of sparks or flames from the engine exhaust. Spark arresters are qualified and rated by the United States Forest Service for this purpose. In order to comply with local laws regarding spark arresters, consult with the engine distributor.

Fuel Safety

Careful when handling fuel, keep in mind risk of fire, inhaling fumes, and explosion.

Only store fuel in containers approved.

Always refuel in a ventilated area.

Never fill a tank indoors.

Only refuel machine with engine off.

Move machine 10 feet from refueling area before starting engine.

WARNING

Do not ever contact the Trowel blades when the trowel is in operation.

Never fuel machine in vicinity of sparks or flames. Do not use the machine in flammable areas. Do not smoke while fueling or operating the machine.

Never start machine

if fuel has been spilled

if you have spilled fuel on yourself or clothes

if the machine is leaking fluid

Store and transport machine and fuel so that there is no risk of any leakage or fumes coming into contact with flames or sparks.

California

Proposition 65 warning

Engine exhaust, some of its constituents and certain vehicle components contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Exhaust Gas

Poison Exhaust Gas

This trowel is shipped from the factory without a catalytic converter. The engine produces carbon monoxide exhaust emissions and is not safe for use in enclosed areas. Use a catalytic converter reduces the carbon monoxide exhaust emissions, but still is not safe for use in enclosed areas.

Use only in well ventilated areas. Worksite air quality must comply with OSHA 29 CFR 1910.1000 per table Z-1, limits for air contaminants.

Monitor workspace air quality to insure compliance. Failure to comply with result in danger to life and cause permanent injury or death.

Carbon Monoxide

Carbon monoxide (CO) has the distinction of being one of the few commonly encountered industrial gases that is both highly toxic (poison) and odorless. When inhaled, CO acts as a chemical asphyxiant by preferentially combining with hemoglobin in the blood stream. As a result, the hemoglobin is not able to transport its normal amount of oxygen, which results in under-oxygenation of tissues. Symptoms of low-level CO exposure include headaches, dizziness, confusion, and nausea. However, loss of consciousness, permanent injury and death may result from continued or more intense exposure. Because of the health hazards associated with CO inhalation, the Occupational Safety and Health Administration (OSHA) have imposed personal exposure limits. The OSHA exposure limits, which are specified in the 29 CFR 1910.1000 (1998 Revision), allow for a 200 PPM Ceiling Limit and a TWA of 35 PPM per 8-hour shift/40-hr workweek. It is strongly recommended that the OSHA 29 CFR 1910.1000 (Code of Federal Regulations) be consulted for more information on exposure limits for various hazardous materials. If CO Poisoning is suspected immediately remove the victim to fresh air and obtain emergency medical attention.

Ventilation

This trowel is shipped from the factory without a catalytic converter. It is important to be aware that machines with catalytic converters reduce CO and hydrocarbon (HC) emissions. The exhaust still contains CO. If the workspace is too confined or under-ventilated, CO may accumulate until it eventually exceeds OSHA limits. When this happens, action must be taken to remove workers from areas of high concentration. Operators and work area supervisors should take precautions to insure adequate ventilation of the workspace at all times. Carbon monoxide detection monitors should be used to determine that adequate ventilation exists.

Safety Instructions

DO Read this entire operator's manual before operating this machine. Read and understand all warnings, instructions, controls, and symbol definitions contained in this manual, and on the machine.

DO always give a copy of this manual to the equipment user. If you need extra copies, call 1-800-944-0648 (toll free within the U.S.)

DO keep all guards in place and in good condition.

DO wear safety approved hearing, eye, head and respiratory protection.

DO read and understand all warnings and instructions on the machine.

DO keep all parts of your body away from the blade and all other moving parts.

DO know how to stop the machine quickly in case of emergency.

DO shut off the engine and allow it to cool before refueling or doing maintenance.

DO inspect the base and arms for damage before installing the blade.

DO read all safety materials and instructions that accompany any blades used with this machine.

DO inspect each blade carefully before using it. If there are any signs of damage or unusual wear, DO NOT USE THE BLADE.

DO mount the blades solidly and firmly, tighten the mounting bolts with a wrench.

DO use the correct blade for the type of work being done. Check with blade manufacturer if you do not know if blade is correct.

DO use caution and follow the instructions when loading and unloading the machine.

DO operate this machine only in well ventilated areas. Breathing Poison Exhaust Gas could result in death.

DO instruct bystanders on where to stand while the machine is in operation.

DO establish a training program for all operators of this machine.

DO clear the work area of unnecessary people. Never allow anyone to stand in front of or behind the blade while the engine is running.

DO use caution when lifting and transporting this machine.

DO always tie down the machine when transporting.

DO use caution and follow instructions when setting up or transporting the machine.

DO have all service performed by competent service personnel

DO move the machine at least 10 feet (3 meters) from the fueling point before starting the engine and make sure the fuel cap is on the machine and properly tightened.

DO lift machine only from specified lifting point.

DO clean the machine after each day's use.

DO use caution when handling fuel.

DO NOT

DO NOT operate this machine unless you have read and understood this operator's manual.

DO NOT operate this machine without the blade guard, or other protective guards in place.

DO NOT stand on the guard ring.

DO NOT leave this machine unattended while the engine is running.

DO NOT work on this machine while the engine is running.

DO NOT operate this machine when you are tired or fatigued.

DO NOT operate this machine while under the influence of drugs or alcohol.

DO NOT operate the machine if you are uncertain of how to run the machine.

DO NOT use damaged equipment or blades.

DO NOT touch or try to stop the spinning blades with your hand or foot.

DO NOT use a blade that has been dropped or damaged.

DO NOT touch a blade immediately after use. Blades require several minutes to cool.

DO NOT use damaged or worn blade flanges.

DO NOT allow other persons to be near the machine when starting, refueling, or when the machine is in operation.

DO NOT operate this machine in an enclosed area. Breathing Poison Exhaust Gas could result in death.

DO NOT operate this machine in the vicinity of anything that is flammable. Sparks could cause a fire or an explosion.

DO NOT operate this machine with the belt guards or guard ring removed.

DO NOT operate this machine unless you are specifically trained for its operation.

DO NOT modify this trowel or use it for any application other than for which it was designed.

WARNING: Failure to comply with the following warnings could result in serious bodily injury or death!

Assembly

Unpacking

Your trowel has been shipped from the factory fully inspected. Only minimal assembly is required before using the trowel. Remove the trowel from the container using proper lifting techniques. Discard or recycle the packing material per your regional laws. In your container will be the Trowel, Handle Tube assembly, Pitch Control Plow assembly, spark plug wrench, an owner's manual, and an engine owner's manual.

Assembly Instructions

Handle Tube assembly to the trowel

Slide the Handle Tube over the Handle Tube mounting bracket. Then lock down the bottom part of the Handle tube to the bracket using the U clamp.

Throttle cable and safety switch wire

Locate the throttle lever on the engine. Place the throttle cable into the hole on the throttle lever. The cable is then attached by placing it under the clamp and tightening the screw.

Attach safety switch wire male connector to black female connector on back of engine, by the on/off switch.

Proper Blades

Choose the correct blade type and size for the trowel and work to be done. Do not mix finish blades with combination blades.

New trowels are shipped with combination blades installed.

Installing Blades

Use the 7/16-14 bolts found on the trowel arms to attach new blades to the arms. Bolts should be wrench tight using a 5/8" wrench.

After installing all four arms check to see if the trowel is balanced. Trowels are shipped balanced from the factory. Adjustment should not be required unless damage has occurred to the blades or arms.

Balancing

The trowel needs balancing when it runs with a pronounced wobble. Identify the blade that is unbalanced. Loosen the jam nut on the height adjustment bolt. Adjust the bolt to the desired height. Using two 15/16 wrenches, tighten the jam nut down against the arm without rotating the adjustment bolt. Check for blade balance. Repeat as necessary.

OPERATION

Before Starting

Before Starting trowel, check the following:

- Engine oil level
- Gearbox oil level
- Fuel level
- Air filter condition
- Fuel line condition
- Blade condition
- Arm condition
- Safety label descriptions

Starting (cold)

Insure that the throttle lever is pushed down to the lowest rpm. Insure that the safety switch is in the off position. Turn the engine dial from off to on. Open the fuel valve. Move choke lever to closed position. Do not place foot on guard ring when starting. Pull the recoil start rapidly. Repeat if necessary until the engine starts. After the engine starts, switch the choke lever to open position. Move to the handle bar. Grip handles firmly. Throttle up the engine to desired blade speed.

Starting (hot)

Insure that the throttle lever is pushed down to the lowest rpm. Insure that the safety switch is in the off position. Turn the engine dial from off to on. Open the fuel valve. Do not place foot on guard ring when starting. Pull the recoil start rapidly. Repeat until the engine starts. If trowel does not start after 3 pulls of the recoil start follow the starting steps for a cold engine. After engine starts, move to the handle bar. Grip handles firmly. Throttle up the engine to desired blade speed.

Operation

Push down on the handle to move the trowel to the right. Pull up on the handle assembly to move the trowel to the left.

Stopping

Reduce engine rpm to idle. Turn the on/off dial to off. Close the fuel valve.

MAINTENANCE

Before performing any maintenance, ALWAYS park the machine on a level surface with the engine “OFF” and the engine switch set in the “OFF” position. Let the machine cool down! Other maintenance and repairs should only be carried out by a qualified technician.

Breaking In

After the initial 20 hours of operating, check the engine owner’s manual and change oil.

Daily

Check engine oil level.

Check guard ring and belt guard for damage.

Clean machine daily.

Check that the six grease fittings, located on the bottom end, are greased thoroughly with heavyduty waterproof grease.

Every 50 hours of Operation

Clean spark plug

Clean engine air filter. Service sooner if used in dusty conditions.

Every 100 hours of Operation

Change the engine oil

Every 200 hours of Operation

Replace engine air filter element

Clean fuel filter

Clean and adjust spark plug

Every 500 hours of Operation

Replace spark plug

Remove carbon from cylinder head

Check and adjust valve clearance

Clean and adjust carburetor

Every 1000 hours of Operation

- Replace fuel lines
- Overhaul engine

Safety Switch

WARNING: Never operate power trowel with faulty or tampered safety switch.

Check operation of the On/Off Safety Switch daily before each use.

Engine must stop when switch is engaged.

To Test Operation of Switch:

Select a wide open area with NO obstacles.

With the engine idling, turn switch by hand from the “On” to “Off” position. Engine should stop immediately.

With the engine at low rpm and blades slightly engaged, let loose of handle bars. Trowel should spin then engine should stop immediately.

Use Low RPM for testing the Safety Switch so operator can regain control of trowel in the case that the safety switch fails.

TROUBLE SHOOTING GUIDE 17 *Problem*

<ul style="list-style-type: none">• Engine does not start	<ul style="list-style-type: none">• Engine runs poorly• Check On/Off knob• Check fuel level; open fuel valve• Check Safety Switch• Check/ Replace spark plug• Clean Air filter• Check Fuel filter
<ul style="list-style-type: none">• Engine runs slow• Check spark plug• Clean air filter• Clean debris from blades• Clean debris from arms• Engine rpm is set too low	
<ul style="list-style-type: none">• Poor trowel operation (engine runs well)	<ul style="list-style-type: none">• Check belt for wear/damage• Check clutch for wear/damage• Clean debris from blades