

Operate Safely

Boring

Know and follow the manufacturer's instructions when using this machine. Operate only from the operator's station.

Danger! Prevent death or serious injury from entanglement. **Stay away from all rotating components when the engine is running.** Contact, wrapping or entanglement with the cutting head, auger sections or spoil paddles will result in death or serious injury.

It is the operator's responsibility, following manufacturer's instructions, to instruct other personnel in the pit on proper work position during boring operations. Stay clear of rocks or debris being ejected from spoil chamber.

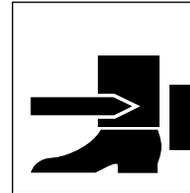
Danger! Prevent possible crushing injury from movement of machine components. **Stay clear of moving pushbar. Operate only from the operator's station. Keep crew away from moving parts.** Death or serious crushing injury will result from entrapment between moving parts.

Danger! Prevent serious injury or death from contact with rotating paddles. **Stay away from spoil chamber**

door(s) when the engine is running. Keep spoil doors closed when the engine is running. Contact with rotating paddles will result in death or amputation.



**Avoid
Entanglement**



**Stay Clear
of Moving
Parts**



**Keep
Spoil Door
Closed**

Operate Safely

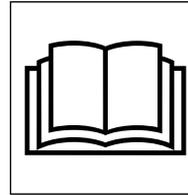
Keep other personnel away from the boring and exit pits while the engine is running.

Danger! Prevent death or serious injury from entanglement, suffocation or crushing hazards. **Do not allow anyone in the exit pit with the engine of the boring machine running. Do not excavate the exit pit during boring operations.** Contact/entanglement with the auger or boring head or collapse of the pit will result in death or serious injury.

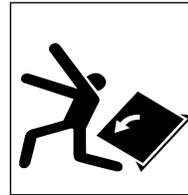
Boring machines can be upset if operated improperly. Read and understand instructions in the operator's manual.

Danger! Prevent death or serious injury from machine upset. **Follow instructions in Operator's Manual.** Operate only from the operator's station. Position the machine crew according to manufacturer's instructions. Attach the casing securely to the master casing pusher. Avoid conditions which lead to machine upset. Do not operate at full power in low or reverse gear. Do not advance the machine rapidly or erratically. Be aware of conditions which can cause the cutter head to catch

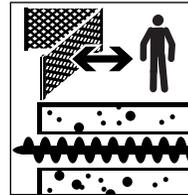
on an obstruction. Machine upset will result in death or serious crushing injury.



**Follow
Operating
Instructions**



**Avoid
Machine
Upset**



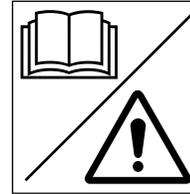
**Stay
Away From
Exit Pit**

Operate Safely

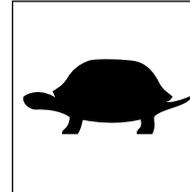
Avoid Machine Upset

Know and follow the manufacturer's instructions.

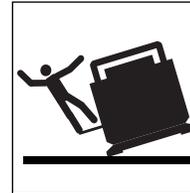
- Before boring **make sure the machine is ATTACHED SECURELY TO THE TRACK** and the **casing is secured to the casing pusher**.
- **Do not operate the machine at full power in low or reverse.**
- Always **use caution during entry** into the face.
- **Advance the machine slowly.** Avoid sudden or erratic advance or power changes.
- **Track lifting** is an indication that torque applied to the drill string is excessive. This is an indication of possible machine upset. **USE EXTREME CAUTION.** Know and follow the manufacturer's instructions.
- **Use extreme caution** when operating **with a wing cutter** inside the casing. **DO NOT operate in a clockwise direction** with a wing cutter inside the casing. Do not allow personnel except the operator next to the machine during this operation.
- A stalled auger string is an indication of possible machine upset. **USE EXTREME CAUTION.**



**Avoid
Machine Upset –
Know and Follow
Safety Instructions**



**Use Caution,
Advance Slowly**



**Avoid
Lifting
Track**

Operate Safely

Removing the Auger

Once the boring head enters the exit pit, or during boring head exposure at the end of the bore, the machine must be shut down and the ignition key removed.

Danger! Prevent death or serious injury from entanglement, suffocation or crushing hazards. **Do not allow anyone in the exit pit with the engine of the boring machine running. Do not excavate the exit pit during boring operations.** Contact/entanglement with the auger or boring head or collapse of the pit will result in death or serious injury

The machine operator and exit pit personnel must be in clear communication during boring head removal.

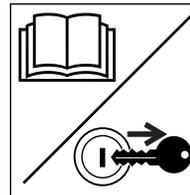
Refer to the manufacturer's manual's specific instructions applying to your boring machine for removing the auger and boring head.

While removing casing it is sometimes necessary to open the spoil door to observe alignment of the machine chuck with the auger shank and insert or remove the connecting pin.

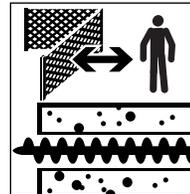
Danger! Prevent serious injury or death from contact with rotating paddles. **Stay away from spoil chamber door(s) when the engine is running. Keep spoil doors closed when the engine is running.** Contact with rotating paddles will result in death or amputation.

When removing the connecting pin in the hex coupling the machine must be shut down and the ignition key removed before opening the spoil chamber door.

When removing auger sections, securely support the sections while inserting or removing the connecting pin.



**Follow
Operating
Instructions**



**Stay
Away From
Exit Pit**