

SAFETY AND OPERATING PROCEDURES FOR THE TnT WITH ELECTRIC ACTURATOR ON CUTTING BED

To achieve optimum performance from your Advance Track Setting Systems (ATS) TnT and to ensure your personal safety and the safety of others, please follow the recommended safety and operating procedures.

SAFETY FIRST!

- Always conduct a pre-use hazard assessment and ensure appropriate controls are considered before grooming.
- Always be aware and respectful of all trail users while grooming and that you may not be able to control their behaviors. Expect the unexpected.
- Do not allow riders on this implement while in tow.
- This equipment is intended for grooming snow-covered surfaces only.
- Be sure the surface to be groomed is free from obstacles that may interfere with the various grooming procedures such as rocks, tree trunks, tree stumps, protruding pipes, culverts, posts or any steel markers.
- Use proper body mechanics when loading, unloading or maneuvering any ATS implement.
- Always get assistance to load or unload the TnT to/from truck or trailer.
- Reduce risk of strain or slipping when pulling on the TnT loaded with weights manually by using two people or removing the weights or snow first.
- Do not place weights on the TnT in a manner where one or more could fall off.
- It is recommended to use weights with a one and one quarter inch hole in them where they can easily slide over the weight pin.
- Be aware of pinch points when adding or removing weights.
- Always remove any weights before attempting to lift onto its side for storage.
- Use only the supplied flat plate or ball style hitch connector when attaching the TnT to your towing vehicle.

ASSEMBLING THE TnT AFTER SHIPMENT (if shipped disassembled)

- The TnT will require reassembly after receipt and unpacking. The procedure is straight forward.
- Remove the tie down straps and carefully lift the TnT Track Setter sub-assembly off of the pallet.
 - It is recommended to use two people for this little operation.
 - **DO NOT LIFT ON THE LIFT SUPPORTS!**
- Remove the tie down straps and carefully lift the TnT Renovating Leveler off of the pallet. The Tow Bar is located under the Renovating Leveler.
- Remove the 3/8" bolts from the clamps
- Position the fixed clamp between next to the Alignment Marks on the TnT Track Setter Mounting Beam.



- It is up to you where to position the Track Setter along the beam. It was marked at ATS slightly off center (allowing approximately 20" from the edge). This allows a packed surface for pole planting.
- Place the removable clamp section in place and align the bolt holes.



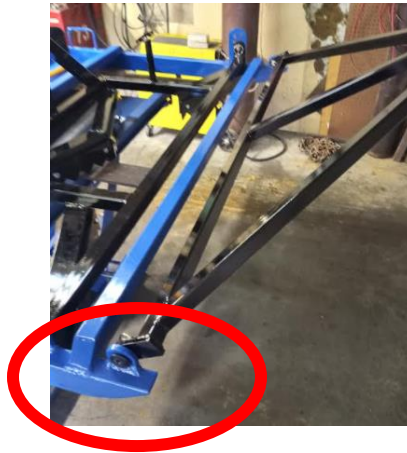
- Insert and snug up the 4 – 3/8" bolts. Tighten just enough so the clamp is well seated on to the Mounting Beam. Do not over tighten so much that the bolt clips bend.
- Once installed it should look like this;



- Connect the electrical conductor quick connect of the Actuator to the cable from the Junction Box.



- Install the Tow Bar with supplied lynch pins. Ensure washers are installed.



ELECTICAL CONNECTION FOR THE ELECTRONIC ACTUATORS

- This TnT was ordered based on the towing machine not having electrical control switches for activating the extension and retraction of the actuators.
- This TnT was supplied with an ATS Pendant Control that will have to be connected to the terminals on the towing machine battery. The yellow conductor cable goes to the battery (power source). Install the supplied inline fuse for protection in the event of an electrical short or similar.



- ATS has labelled the actuator control pendant accordingly for simplicity.
- The black conductor goes to the TnT. It is equipped with a 4-pin trailer connector. The female part of the trailer can be mounted on the towing machine bumper. Then the TnT can be unhooked and hooked easily from the towing machine.



- Follow the attached 12V DC linear actuator wiring diagram in the instruction manual. **Failure to do so may cause damage to the actuator and void the warranty.**
 - It is recommended to solder all connections
 - It is recommended to heat shrink connections
 - It is recommended the system has a 20A fusible link.
- Some towing machines may have a spare 12V DC terminal/fuse available while other machines will require connections directly to the 12V battery.
- Ensure the conductor cable has enough length to allow for turning.
- Ensure the conductor cable is secured to prevent being caught on moving parts or dragged on

the ground.

- Use tie wraps to secure cable to Tow Bar.

OPERATING THE TnT

The TnT is essentially a combination of the ATS Renovating Leveler and Electronically Actuated version of the ATS Light Weight Track Setter. This TnT has an Electronically Actuated Renovating Cutting Bed

There are critical operating requirements/procedures that must be followed to prevent damaged to the TnT and get satisfactory grooming and track setting results.

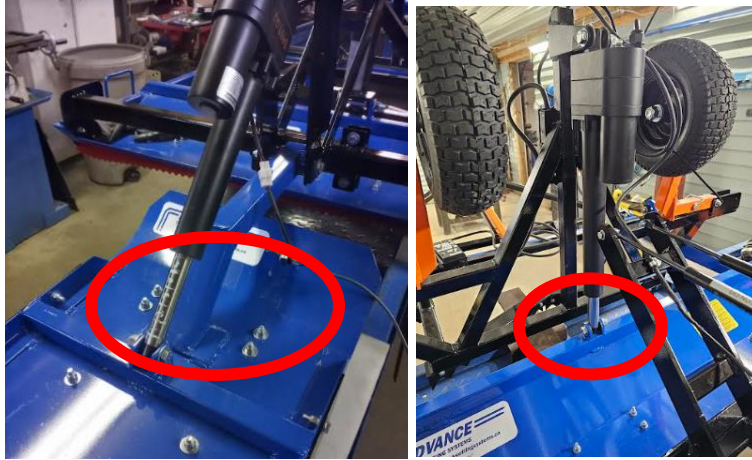
- **ALWAYS LIFT THE TnT TRACK SETTER UP BEFORE MAKING ANY SHARP TURNS**
- **ALWAYS LIFT THE TnT TRACK SETTER UP BEFORE PROCEEDING THROUGH AN DEEP DITCHES**
- **ALWAYS LIFT THE TnT TRACK SETTER AND RENOVATING CUTTING BED BEFORE BACKING THE TnT UP**
- **ALWAYS LIFT THE TnT TRACK SETTER UP FULLY WHEN JUST CARRYING OUT LEVELING AND RENOVATING OPERATIONS**
- **ALWAYS LIFT THE TnT TRACK SETTER AND RENOVATING CUTTER BED UP FULLY BEFORE CROSSING GRAVELLED, ASPHALT, CONCRETE ROADS OR SIDEWALKS.**
- **PROTECT THE LIFT SUPPORT RODS ON THE LIFT BRACKET FROM BEING STRUCK BY, BENT OR SCRATCHED.**



ADVANCE

TRACK SETTING SYSTEMS

- **NEVER APPLY ANY EXTERNAL SIDE FORCE ON THE LIFT SUPPORT RODS.**
- **ALWAYS PROTECT THE ELECTRONIC ACTUATORS FROM BEING STRUCK, BENT OR SCRATCHED.**



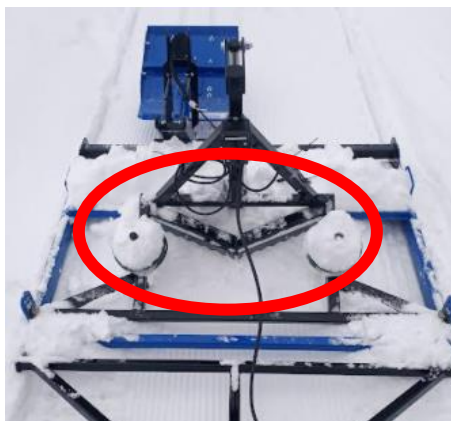
- **DO NOT OPERATE THE TnT IN TEMPERATURES LOWER THAN -26 DEG.C AS DAMAGE TO LINEAR ACTUATOR MAY OCCUR.**
- **ALWAYS DISCONNECT THE ELECTRICAL CONDUCTOR TO THE TnT WHEN UNHOOKING THE FROM THE TOWING MACHINE.**
- **THE RENOVATING LEVELER MUST HAVE SUPPLEMENTARY WEIGHTS ADDED TO BALANCE THE UNIT AND APPLY DOWNWARD FORCE ON THE CUTTING BED.**

RENOVATING AND LEVELING

- Hook the TnT up to the towing machine.
- Hook up the electrical conductor
- The Renovating Leveler component of the TnT is designed to pack new snow or renovate the existing base by either grinding new snow into the base to add air (decrease density) or remove air (increase density).
- Under very deep snow conditions (>3") you will have to prepack the new snow with just the towing vehicle or a roller.
- When packing fresh new snow (<3"), the renovator cutting bed can be in a raised position. There is no need to add additional resistance created by the cutting teeth.



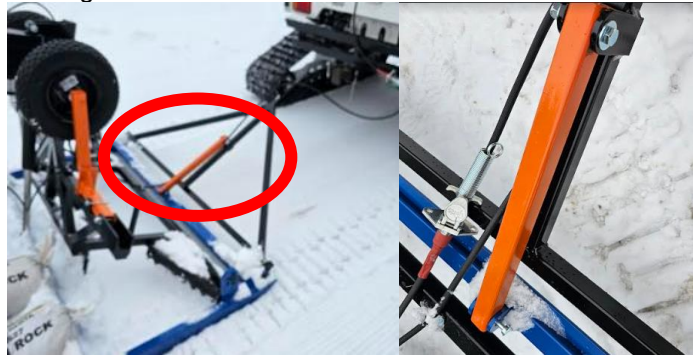
- When packing, and renovating to “mechanically age” new snow while towing, lower the renovator sufficiently enough to scratch the hard pack base. If there is too much resistance, raise the cutting bed to a height where towing is possible.
- To mix new snow into the base or tear up an older base to renovate, lower the cutting bed as far as needed using both front mounts and actuator. Multiple passes may be required and will depend on your desired results.
- For optimal leveling and renovating results when working hard packed or icy snow, the Renovating Leveler should have 100-200 lbs of weight/mass added on the front weight pins. Allowing snow to accumulate on top of pan adds weight/mass as well.
- Ensure the power cable is connected to the 12 V DC supply on the towing machine.
- Using the control switch on the towing machine or ATS Pendant Control
 - Lower the Raise or Lower the Renovator with momentary toggle switch



- Maximum recommended towing speed for packing and leveling is 5 to 10 kpm. For best results, the slower the better.



- If the TnT is equipped with a wheel kit, it is recommended to leave the Tow Bar Retaining Bar engaged, making the Tow Bar a rigid member and keeping the Renovating Leveler in a more level plane while grooming.

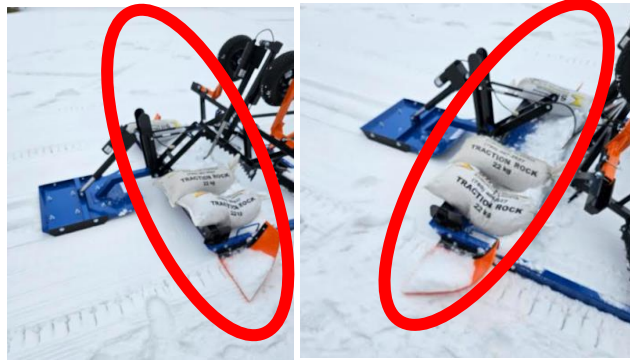


SETTING TRACKS

- The TnT Track Setter gets its track setting compaction capability (downward force) imparted by the reactional force translated back to the Renovating Leveler. When engaged with snow surface the compaction force is about 240 pounds. **No additional weights are required on the TnT Track Setter itself.**



- **THE RENOVATING LEVELER MUST HOWEVER BE WEIGHTED WHEN ATTEMPTING TO SET TRACKS. ADD 200-240 LBS OF WEIGHT/MASS ONTO THE PAN OF THE RENOVATING LEVELER IMMEDIATELY IN FRONT OF THE TRACK SETTER.**



- Under optimal snow conditions, where the packed base is at least 2-3 inches deep, lower the TnT Track Setter onto the snow surface until the actuator reaches the end of its stroke and you observe the gas shocks just starting to compress.
- For conditions where the base is less than 2-3 inches deep, it is possible to set shallower tracks by only lowering the TnT Track Setter only sufficiently enough to match available snow depth. This can be accomplished by extending the actuator only sufficiently enough to form tracks
- **Caution: for packed bases less than 2-3 inches, the pre-cutters may dig up grass and roots. Damage to the equipment and ground may occur.**
- Ensure the power cable is connected to the 12 V DC supply on the towing machine.
- Using the control switch on the towing machine
 - Lower the Track Setter with momentary toggle switch



- Tow at slow speeds to allow the TnT Track Setter to compress and form a solid, well-formed track, No faster than 5 to 8 km per hour.



- It is recommended to leave the new tracks settle and solidify for at least 2 hours prior to skiing on

them if at all possible.

MAINTENANCE AND STORAGE

- Do not use sharp tools to remove any buildup of ice on the TnT Renovating Leveler or Track Setter. Gently tap ice with a hammer or piece of wood.
- If desired, remove snow from the pan before storing the renovating leveler on its side or off the snow.
- Place wooden blocks under runners to prevent sticking to snow.
- Store in a dry area to help prevent rusting over time if possible.
- It is recommended that the implement be tarped for long term off-season storage.
- Ensure the polyurethane comb and track shoes are protected from ultraviolet rays during long term storage.
- Check the wiring connections regularly
- Ensure tow bar and cutting bed retaining pins are in place and secured with lynch pins.
- Lubricate the pivot points on the TnT Track Setter and Renovating Leveler monthly during grooming season with a moly spray lubricant.