ADVANCE
TRACK SETTING SYSTEMS

SAFETY AND OPERATING PROCEDURES FOR THE TRAIL ROLLER GROOMER 5 or 8 Foot (TRG5 or TRG8)

To achieve optimum performance from your Advance Track Setting Systems (ATS) TRG 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 rolling and 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, trees 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 TRG to/from truck or trailer.
- Reduce risk of strain or slipping when pulling on the TRG loaded with weights manually by using two people and removing the weights or snow first.
- Do not place weights on the TRG 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 storage.
- Use only the supplied flat plate, pintle or ball style hitch connector when attaching the TRG to your towing vehicle.

ASSEMBLING THE TRG AFTER SHIPMENT

- The TRG will require reassembly after receipt and unpacking. The procedure is straight forward.
- Remove the tie down straps and carefully lift the TRG off of the pallet.
    - It is recommended to use two people for this little operation.
    - The Tow Bar is located under the TRG.
- Install the Tow Bar with supplied 3/8” Hex Head Bolts. Ensure washers are installed on side nearest roller. Tighten nuts onto bolts

OPERATING THE TRG

There are critical operating requirements/procedures that must be followed to prevent damaged to the TRG and get effective compaction and grooming results.

- ***ALWAYS ENSURE THE TRAIL TO BE PACKED AND GROOMED IS FREE OF ROCKS, STUMPS AND ANY OTHER SHARP OBJECTS THAT MAY PUNCTURE THE TRG PLASTIC ROLL***
- ***BE CAREFUL AROUND TREES AND OTHER OBJECTS THAT MAY HOOK THE FRAME OF THE TRG***
- ***ALWAYS LIFT THE GROOMER UP BEFORE BACKING UP***
- ***DO NOT OPERATE THE TRG IN TEMPERATURES LOWER THAN -25 DEG.C AS THE PLASTIC ON THE TRG ROLL WILL BECOME BRITTLE AND SUBJECT TO CRACKING SHOULD IT STRIKE A SOLID OBJECT.***
- ***NEVER HAMMER ON THE PLASTIC TRG ROLL TO REMOVE ICE OR SNOW AS IT MAY CRACK OR PUNCTURE. INSTEAD, SWEEP THE ROLL OFF WITH A BROOM AFTER USE.***
- ***PLEASE BE AWARE THAT THE TRG IS BACK END HEAVY DUE TO THE WEIGHT OF THE GROOMER. THE TOW BAR, WHEN DISCONNECTED FROM THE TOW MACHINE, WILL LIFT UP WHEN THE GROOMER IS IN THE RAISED POSITION.***

ROLLING AND GROOMING

- Hook the TRG up to the tow machine.
- The TRG was initially designed to attach at a hitch height of 14-15” off the ground (essentially level) for the groomer to work most effectively. The hitch height can be adjusted by adding a spacer between the top of the tow bar and hitch or by lowering the hitch on the tow machine if possible, using a drop hitch as in the photo below. If you are using a trailer ball type hitch connection, ensure the trailer ball coupler is snuggly adjusted for the size of ball.

- Ensure the axle retaining pins are always in place before using.

- Inspect the bottom of groomer for ice/hard snow build up. This will cause poor quality of groomed surface. Remove ice/snow build up if required.

- The TRG will efficiently pack new snow by removing air and consolidating snow crystals (increase density). This is much faster than simply driving over the trail with sleds, utvs or atvs. It is especially effective for large accumulations of fresh snow.

Recommended Practices for Optimal Results (based on experience with cold dry snow)

- *After heavy snowfalls (> 6" of fluffy snow) it is recommended to pack and groom in three steps*
  - *Step 1: Pack the snow with trail roller only (groomer raised). This squeezes the air out of the snow and packs the crystals together. Also, there will be far less resistance on the tow machine and reduced chances of getting stuck in deep snow.*
  - *Step 2: Allow the packed snow to "set up" for a few hours (over night if time allows). As the crystals are squeezed together, friction adds a small amount of heat (believe it or not) melting the crystals. The setup time allows the compacted crystals to refreeze forming a more solid stable structure.*
  - *Step 3: Lower the groomer, add weights (if required) and finish packing and snow grooming.*
- ***Important to note, if the snow depth is greater that 16" (up to the top of the frame, it may be necessary to prepack with the old snowmobile method. At depths greater than 16" the roller may not roll as the TRG may be now acting as a snow plow and pushing snow. Basic physics.***

- The TRG can be used as a trail roller only. This allows very efficient trail packing as you can travel bit faster (10-15kph). If just using as a trail roller, simply keep the groomer pan raised.
- Do not over tighten the hand winch or damage can occur to the TRG. Just raise enough to lift pan off the snow.

- For trail rolling and grooming, using the hand winch, lower the groomer pan onto the snow until there is slack in the winch belt. Do not unhook the winch belt.

- If required, for additional compaction, you can add weight to both the trail roller frame and groomer on the weight pins. Allowing snow to accumulate on top of pan adds weight as well.

- Maximum recommended towing speed for trail packing is 10 to 15 kph. For best results, the slower the better. Higher speeds may introduce a wash board behavior.
- Maximum recommended towing speed for trail grooming is 5 to 10 kph. For best results, the slower the better. Higher speeds may introduce excess snow spill over from roll to groomer.
- If there is a large buildup of snow on the groomer pan, some may spill over onto the groomed trail. It may be necessary to clean the snow build up off of the pan as required.
- Depending on the temperature and snow behavior, snow may pack into the grooves on the roll which can add to snow spill over. This will only occur if the conditions are on the warm side. Packing at -10 to -20 deg C will produce optimal results.
- Always raise the groomer pan with the hand winch before backing the TRG up. This will make backing easier as well as prevent potential damage the trail finishing comb on the underside of

the pan.


TRGs EQUIPPED WITH GAS SPRING LIFT SUPPORTS

- The ATS TRG can be equipped with 2 gas spring lift supports which apply a constant downward force on the TRG groomer pan. In theory, you should not have to apply additional weights on the groomer pan. *Note, experienced trail maintenance/grooming staff may have differing opinions on this concept.*

- The combination of the two gas spring lift supports apply approximately 180 lbs of downward force onto the snow surface. This is in addition to the weight of the groomer pan itself which weighs approximately 100 lbs.
- The theory of how the gas spring lift supports apply thrust on the TRG is as follows. The gas spring supports are preloaded at ATS. As the Tow Bar is lifted to an approximate15" hitch height as on most towing machines, the gas springs compress approximately 2". This is called preloading.
- Raising TRG groomer
    - The only way to get the TRG groomer pan raised fully is to utilize the hand winch. It will lift the pan and compress the gas spring lift supports.
    - Raising must be done before backing up the TRG or when grooming is not required.
    - **DO NOT OVERLIFT THE GROOMER AS DAMAGE TO THE GAS SUPPORTS CAN OCCUR IF COMPRESSED TO MUCH.**
    - **DO NOT OVERLIFT THE GROOMER AS DAMAGE TO THE FRAME CAN OCCUR.**
- Lowering the TRG groomer
    - Lower the TRG groomer using the hand winch until there is a slight bit of slack in the winch belting.
- **If the Users prefer to use weights on the groomer pan, the gas spring lift supports should be removed allowing the TRG groomer to float freely and prevent undue extension forces on the gas spring lift supports.**
    - To remove the gas spring lift supports, the TRG must be unhitched from tow machine and allow the Tow Bar to rest on the ground. The TRG groomer pan must be lowered as well. This unloads the gas spring supports and you can safely remove the retaining nuts

and the gas spring lift supports.
- The above procedure can also be used for replacing the gas spring lift supports.

- Gas spring lift support general information
  - **The gas spring lift supports used on the TRG is Tuff Support Part Number 613597-4464. Extended Length 14.5”. Compressed Length 9.5”. This allows about 5” of travel.**
  - The gas spring lift supports on the TRG are fitted with blade style connections. A 5/16” bolt fits through the eye.
  - Gas charged lift supports are energy storage devices that create energy by compressing gas inside a cylinder. When closed, the energy is stored. When opened the energy is released to raise a hatch, hood, liftgate or trunk, holding them safely in an open position. Gas charged lift supports are sometimes incorrectly thought of as shock absorbers or struts, which instead absorb energy to control motion. Lift supports normally store a gas charge of 1,500 psi, therefore, they cannot typically be compressed by hand.
  - By design, all gas charged lift supports begin to fail over time. They are typically out of sight and out of mind…until they no longer function properly. Furthermore, they may work reasonably well one day and then not at all the next. The most common causes of failure include loss of gas pressure due to natural permeation, exposure to extreme temperatures and frequent use or cycling of the part.
  - Proper alignment is also crucial for preventing side loads that can damage a gas spring’s seal and piston rod.
  - Gas springs should be installed with the piston rod downwards. As a gas spring nears full extension and the piston rod reaches the bottom, it travels through a small oil chamber which provides end damping to soften the motion.
  - Always replace the gas spring lift support in pairs.
- Protecting Gas Springs
  - Some gas springs operate in demanding applications and environments, so consider the following accessories to make the springs last:
  - To keep them clean, use rod wipers attached to the rod to keep it clean, as well as protect it from debris and caustic fluids.
  - Do not apply any side force on the gas spring lift supports

MAINTENANCE AND STORAGE

- Clean the pan off before storing and place a piece of wood or other material under the pan to prevent build-up of ice/snow.

- Place wooden blocks under end flanges to prevent sticking to snow.
- Do not use sharp, hard tools to remove any buildup of ice or snow on the TRG. Sweep residual snow off after use with a broom. Remove snow build up on the groomer pan with a plastic shovel or broom.
- Store in a dry area to help prevent rusting over time if possible.
- It is recommended that the equipment be tarped or stored inside for long term off-season storage.
- Ensure the polyurethane comb is protected from ultraviolet rays during long term storage.
- Lubricate the pivot points on the TRG monthly during grooming season with a moly spray lubricant or lubricating oil.
- **Grease the bearings annually.**
- **Ensure the axle bearing retaining collars are secured with set screw.**
- **Ensure the axle retaining bolts are always in place before using.**