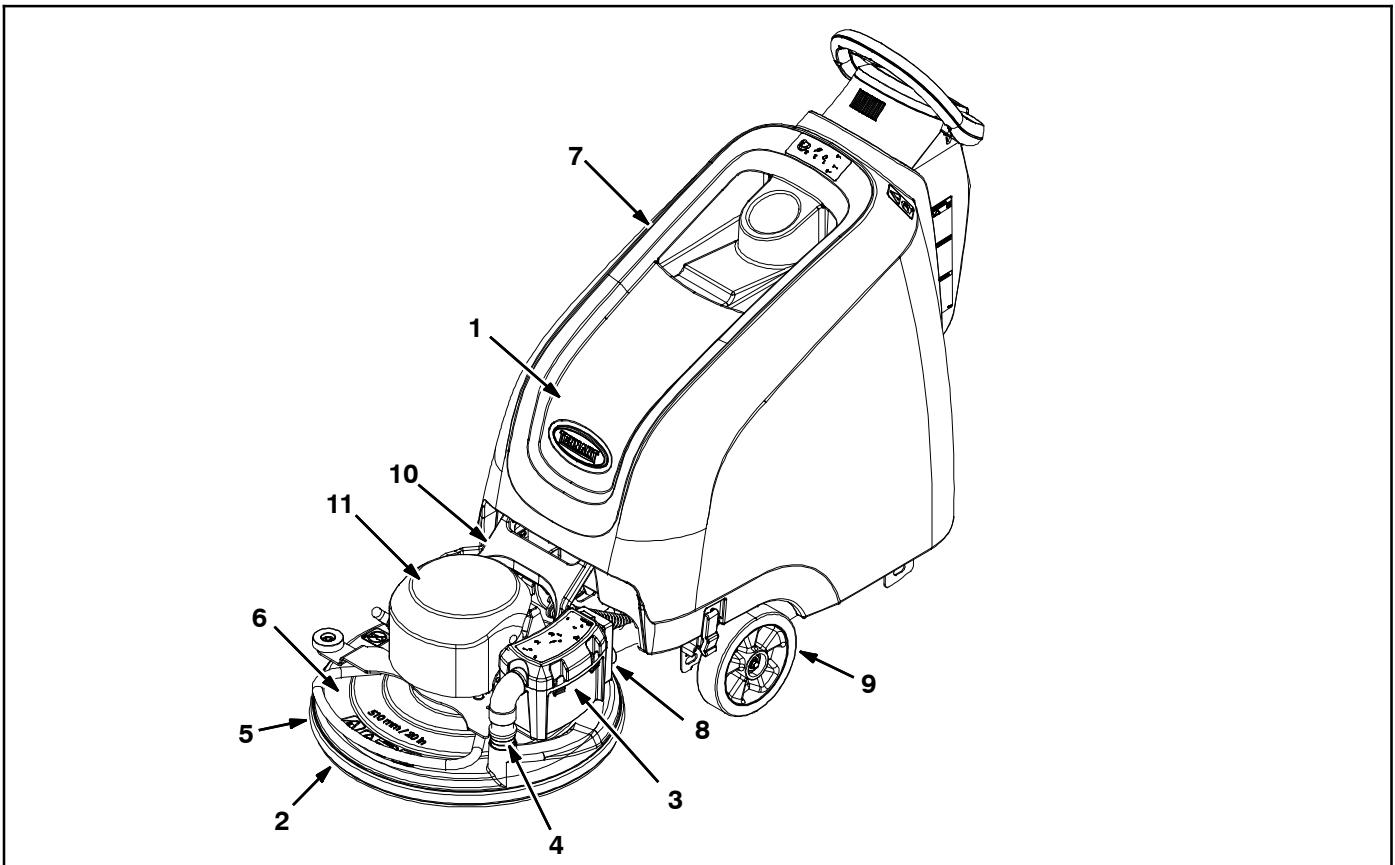


MAINTENANCE

MAINTENANCE CHART



Interval/ Hours	Person Resp.	Key	Description	Procedure
Daily	O	1	Batteries	Charge
	O	2	Burnishing pad	Check, flip or replace
	O	3	Dust collection bag	Check, replace
	O	4	Vacuum hose	Check, clean
	O	5	Burnishing head dust skirt	Check for dry floor finish chunks
Weekly	O	1	Battery electrolyte level	Check, add distilled water if low
50 Hours	O	5	Burnishing head dust skirt	Check for wear and damage
	O	6	Burnishing head	Clean with air pressure hose
	O	7	Machine	Clean with damp cloth
100 Hours	O	1	HydroLINK Battery watering system (option)	Check hoses and connections for damage and wear
200 Hours	O	1	Batteries, terminals and cables	Check and clean
	O	8	Vacuum HEPA filter (Active Dust Control Model)	Check, clean, replace
750 Hours	T	9	Propel motor (Drive Model)	Replace carbon brushes
1000 Hours	T	10	Head lift bushings, 4 points	Inspect, replace bushings
	T	11	Pad motor	Replace carbon brushes

O = Operator T = Trained Personnel

MACHINE MAINTENANCE

To keep the machine in good working condition, simply perform the following maintenance procedures.

FOR SAFETY: Before leaving or servicing machine, stop on level surface, turn off machine, remove key and set parking brake if equipped.

FOR SAFETY: When servicing machine wear personal protection equipment as needed. All repairs must be performed by trained personnel

AFTER DAILY USE

1. Flip the burnishing pad over or change to a new pad (Figure 27).



FIG. 27

2. Check the dust collection bag for fullness. Replace bag when half full (Figure 28).

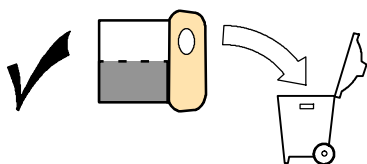


FIG. 28

3. Check vacuum hose for clogging. Clean hose as necessary (Figure 29).



FIG. 29

4. Charge batteries (Figure 30). See *BATTERIES* for charging instructions.



ON- BOARD CHARGER



OFF- BOARD CHARGER

FIG. 30

AFTER WEEKLY USE

Check the electrolyte level in all batteries (Figure 31). See *BATTERIES* for further details.

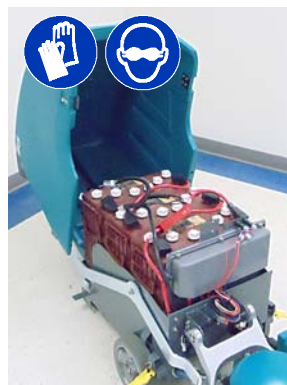


FIG. 31

AFTER EVERY 50 HOURS OF USE

1. Check the dust skirt for wear or damage (Figure 32). Replace if worn or damaged.



FIG. 32

2. Clean the burnishing head and pad motor of any dust buildup using an air pressure hose (Figure 33). Maximum air pressure 100 psi / 690 kPa.

FOR SAFETY: When servicing machine, wear appropriate personal protection equipment as needed



FIG. 33

3. Clean the outside surface of the machine with an all purpose cleaner and damp cloth (Figure 34).



FIG. 34

AFTER EVERY 100 HOURS OF USE

If machine is equipped with the optional HydroLINK battery watering system, check the watering hoses and connections for damage and wear (Figure 35). Replace system if damaged.

FOR SAFETY: When servicing batteries, wear personal protection equipment as needed. Avoid contact with battery acid.



FIG. 35

AFTER EVERY 200 HOURS OF USE

1. Clean batteries and check for loose battery cable connections (See BATTERY MAINTENANCE).
2. Replace the HEPA filter if model is equipped with the active dust control collection option (Figure 36).

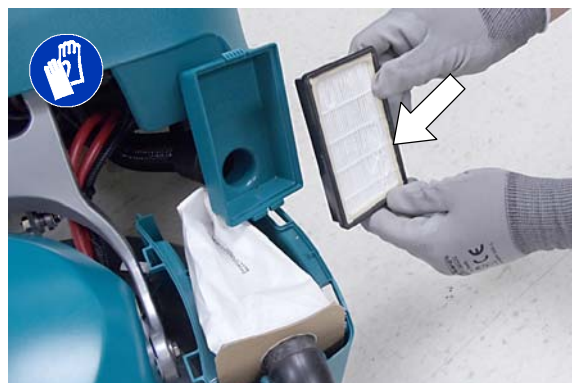


FIG. 36

AFTER EVERY 1000 HOURS OF USE

Inspect the four bushings at the head lift bracket assembly for wear (Figure 37). If you experience head bounce or vibration, have the bushings replaced.

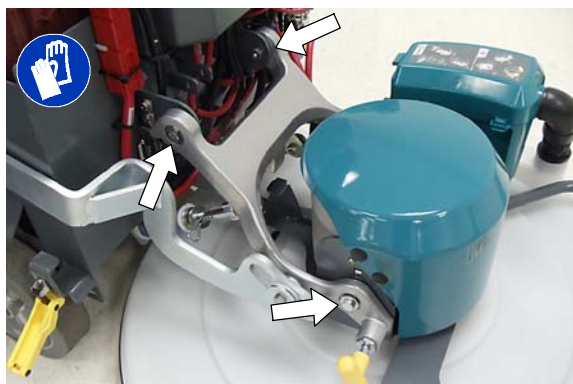


FIG. 37

MOTOR MAINTENANCE

Replace motor carbon brushes as indicated. Contact trained personnel for carbon brush replacement.

Carbon Brush Replacement	Hours
Propel Motor (Drive Model)	750
Pad Motor	1000

BATTERIES

FOR SAFETY: Before servicing machine, stop on level surface, turn off machine, remove key and set parking brake if equipped.

The lifetime of the batteries depends on their proper maintenance. To get the most life from the batteries;

- Do not charge the batteries more than once a day and only after running the machine for a minimum of 15 minutes.
- Do not leave the batteries partially discharged for long period of time.
- Only charge the batteries in a well-ventilated area to prevent gas build up. Charge batteries in areas with ambient temperatures 27°C (80°F) or less.
- Allow the charger to complete charging the batteries before re-using the machine.
- Maintain the proper electrolyte levels of flooded (wet) batteries by checking levels weekly.

Your machine is equipped with either flooded (wet) lead-acid or maintenance-free batteries supplied by Tennant.

FOR SAFETY: When servicing machine, keep all metal objects off batteries. Avoid contact with battery acid.

MAINTENANCE-FREE BATTERIES

Maintenance-free (Sealed AGM) batteries do not require watering. Cleaning and other routine maintenance is still required.

FLOODED (WET) LEAD-ACID BATTERIES

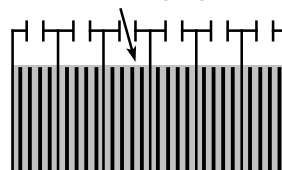
The flooded (wet) lead-acid batteries require routine watering as described below. Check the battery electrolyte level weekly.

NOTE: Do Not check the electrolyte level if the machine is equipped with the battery watering system. Proceed to the BATTERY WATERING SYSTEM (OPTION).

The level should be slightly above the battery plates as shown before charging. Add distilled water if low. DO NOT OVERFILL. The electrolyte will expand and may overflow when charging. After charging, distilled water can be added up to about 3 mm (0.12 in) below the sight tubes.



Before Charging



After Charging

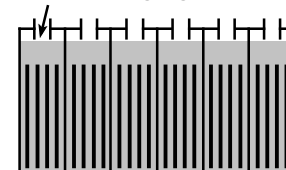


FIG. 38

NOTE: Make sure the battery caps are in place while charging. There may be a sulfur smell after charging batteries. This is normal.

CHECKING CONNECTIONS / CLEANING

After every 200 hours of use, check for loose battery connections and clean the surface of the batteries, including terminals and cable clamps to prevent battery corrosion. Use a scrub brush with a strong mixture of baking soda and water (Figure 39). Do not remove battery caps when cleaning batteries.



FIG. 39

CHARGING BATTERIES

The charging instructions in this manual are intended for the battery charger supplied with your machine. The use of other battery chargers that are not supplied and approved by Tennant are prohibited. If your machine is equipped with an off-board battery charger refer to the charger's owners manual for operating instructions. Contact distributor or Tennant for battery charger recommendations if machine is not equipped with charger.

FOR SAFETY: The use of incompatible battery chargers may damage battery packs and potentially cause a fire hazard.

If the on-board battery charger detects a problem while in use, the machine will display a service code. See *SERVICE INDICATOR CODES*. For off-board battery charger error codes refer to the manual supplied with charger.

Battery Charger Specifications:

- CHARGER TYPE:
 - For wet (Lead acid) Batteries
 - For Sealed (AGM) Batteries
- OUTPUT VOLTAGE - 36 VOLTS
- OUTPUT CURRENT - 25 AMPS
- AUTOMATIC SHUTOFF CIRCUIT
- FOR DEEP CYCLE BATTERY CHARGING

IMPORTANT NOTICE: The battery charger is set to charge the battery type supplied with your machine. If you choose to change to a different battery type or capacity (i.e. flooded (wet) lead-acid, maintenance-free, sealed, AGM batteries, etc.), the battery charger and the machine's battery discharge indicator (BDI) must be reprogrammed to prevent battery damage. See *BATTERY CHARGER SETTINGS*.

1. Transport the machine to a well-ventilated area.

⚠ WARNING: Fire Or Explosion Hazard. Batteries emit hydrogen gas. Explosion or fire can result. Keep sparks and open flame away when charging.

2. Park the machine on a flat, dry surface, turn off machine and remove key.

FOR SAFETY: When servicing batteries, stop on level surface, turn off machine, remove key and set parking brake if equipped.

3. If the machine is equipped with flooded (wet) lead-acid batteries check the battery electrolyte level weekly before charging. See *FLOODED (WET) LEAD-ACID BATTERIES*.
4. For models equipped with on-board chargers, remove the charger's power cord from the storage hooks and plug power cord into a properly grounded wall outlet (Figure 40).



FIG. 40

For models equipped with off-board chargers, first connect the charger's DC cord into the machine's battery charge receptacle then plug the AC power supply cord into a properly grounded wall outlet (Figure 41). Refer to the off-board battery charger's owner manual for operating instructions.

FOR SAFETY: Do not disconnect the off-board charger's DC cord from the machine's receptacle when the charger is operating. Arcing may result. If the charger must be interrupted during charging, disconnect the AC power supply cord first.



FIG. 41

5. The charger will automatically begin charging and shut off when fully charged. The maximum charging cycle may take up to 6- 10 hours depending on battery type.

On- board battery charger: The battery discharge indicator lights will ripple back and forth during the charging cycle. When all five lights are flashing, the charging cycle is complete (Figure 42).

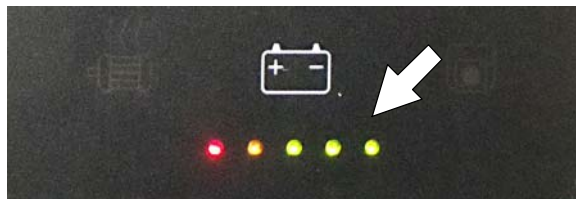


FIG. 42

6. After charging batteries unplug the power supply cord and wrap cord around the cord hooks (Figure 43).
For models equipped with an off- board charger, always disconnect the AC power supply cord first before disconnecting charger from machine.



FIG. 43

BATTERY CHARGER SETTINGS

The battery charger is set to charge the battery type supplied with your machine. If you choose to change to a different battery type or capacity, the battery charger and the machine's battery discharge indicator (BDI) must be reprogrammed to prevent battery damage.

To have machine reprogrammed, contact service or order the Software Installation Kit (p/n 9012788).

On- board Charger Models: If the Software Installation Kit not available, as an alternative, the settings can also be manually changed as described below.

Off- board Charger Models: For machine's equipped with an off- board battery charger, the Software Installation Kit is required to change the BDI setting. After the BDI is reprogrammed, refer to the off- board charger's owner manual to change charging profile settings.

To manually change the On- board battery charger settings for a different battery type :

NOTICE: These instructions should only be performed when Software Installation Kit is not available.

1. Unwrap the battery charger power cord from the cord hooks.
2. Using a T25 star screwdriver, remove the two screws located at the bottom of the control console to access battery charger (Figure 44).

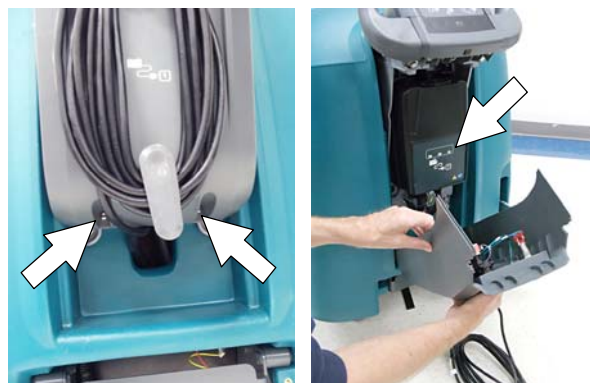


FIG. 44

MAINTENANCE

3. Carefully peel back the charger display label to access the dial settings (Figure 45).

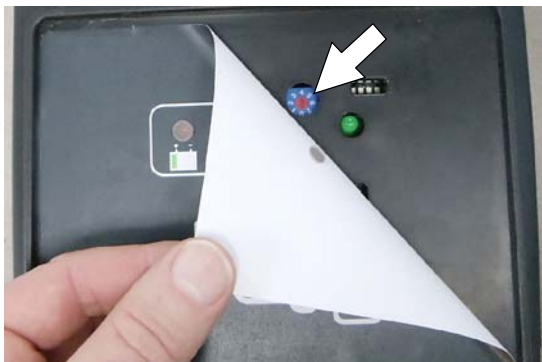


FIG. 45

4. Using a small standard screwdriver, turn the dial to the appropriate battery type according to the following chart (Figure 46).

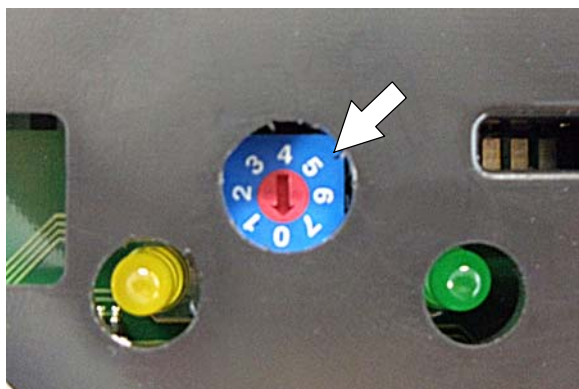


FIG. 46

NOTE: The only time the dial should be changed from the "0" position is when changing to a different battery type and Software Installation Kit is not available. The preferred method is to use the Software Installation Kit and keeping the dial set at the "0" position at all times.

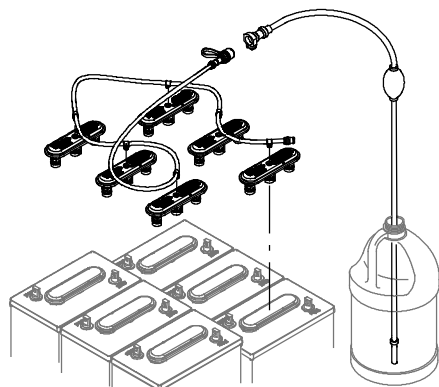
When using the Software Installation Kit, the dial **MUST** be set to the "0" position to properly program otherwise battery damage may result.

Dial Position	Battery Description Settings
0	Software Program Setting (all battery types)
1	Wet, Trojan 180- 250 AH
2	Wet, Trojan 260- 360 AH
3	Wet, Enersys 200- 350 AH
4	AGM, Discover 200- 300 AH
5	AGM, Fullriver 200- 350 AH
6	Gel, Sonnenschein 150- 250 AH

5. Re- apply the display label.
6. Replace the control console.
7. To set the BDI to the new battery type, plug the on- board battery charger cord into an electrical outlet. The machine's software will automatically reprogram the BDI to the new battery type.

HYDROLINK® BATTERY WATERING SYSTEM (OPTION)

The following instructions are for models equipped with the HydroLINK battery watering system option.



The optional HydroLINK battery watering system provides a safe and easy way to maintain the proper electrolyte levels in your batteries.

This battery watering system is also offered as an aftermarket kit (p/n 9010301). It is designed exclusively for Trojan® flooded (wet) lead-acid batteries.

FOR SAFETY: When servicing machine, wear personal protection equipment as needed. Avoid contact with battery acid.

Before using the battery watering system check hoses and connections for damage or wear.

1. Fully charge batteries prior to using the battery watering system. Do not add water to batteries before charging, the electrolyte level will expand and may overflow when charging.
2. After charging batteries, check the battery electrolyte level indicators located on the battery covers (Figure 47). If the level indicator is white add water as described in the following instructions. If the level indicators are black the electrolyte is at the correct level, no water is required.



FIG. 47

3. Locate the battery fill hose coupler inside the battery compartment. Remove the dust cap and connect the hand pump hose (Figure 48).

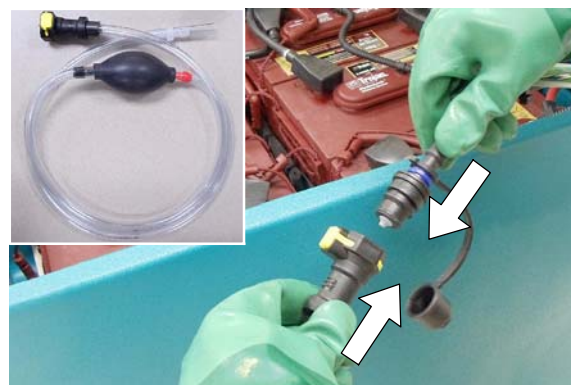


FIG. 48

4. Submerge the other end of the hand pump hose into a bottle of distilled water (Figure 49).



FIG. 49

5. Squeeze the bulb on the hand pump hose until firm (Figure 50). The level indicators will turn black when full.

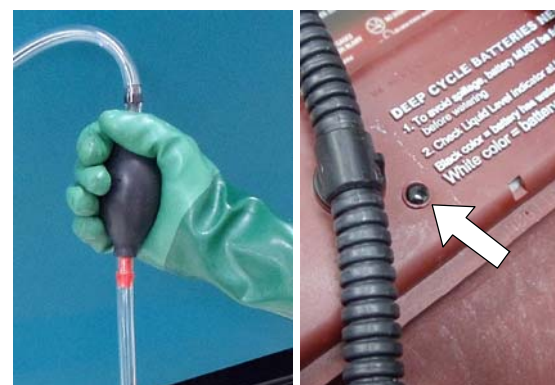


FIG. 50

6. After adding water, replace the dust cap on the battery fill hose and store the hand pump hose inside the machine's battery compartment for future use.

MACHINE JACKING

FOR SAFETY: Before leaving or servicing machine, stop on level surface, turn off machine and remove key.

Use the designated jacking locations for jacking up the machine (Figure 51). Use a jack capable of supporting the weight of the machine. Position the machine on a flat, level surface and block the tires before jacking.

FOR SAFETY: When servicing machine, jack machine up at designated locations only. Use jack or hoist that will support machine weight. Block machine up with jack stands.

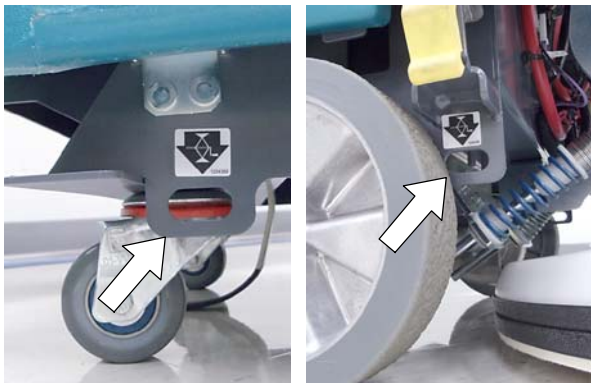


FIG. 51

LOADING/UNLOADING MACHINE FOR TRANSPORTING

When transporting the machine by use of trailer or truck, carefully follow the loading and tie-down procedure:

1. Raise the burnishing head to the transport position to prevent potential head damage when ramp loading machine on truck or trailer (Figure 52).

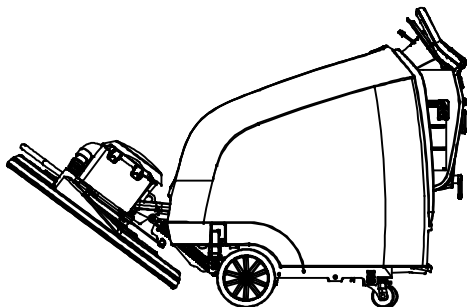
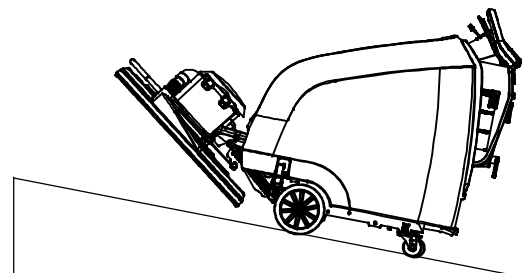


FIG. 52

2. Use a ramp that can support the machine weight and operator and carefully load machine. Do not operate the machine on a ramp incline that exceeds a 19.5% grade level (Figure 53). A winch must be used when ramp incline exceeds a 19.5% grade level.

FOR SAFETY: When loading/unloading machine onto/off truck or trailer, use a ramp that can support the machine weight and operator.

Do not operate the machine on a ramp incline that exceeds a 19.5% grade level. Use tie-down straps to secure machine to truck or trailer.



19.5% maximum ramp grade

FIG. 53

3. Once loaded, position the front of the machine up against the front of the trailer or truck. Lower the burnishing head to the floor and turn the key off (Figure 54).
4. Place a block behind each wheel (Figure 54).
5. Using tie-down straps, secure the front and rear of the machine using the four tie-down brackets located on the machine frame (Figure 54). It may be necessary to install tie-down brackets to the floor of your trailer or truck. Do not use the burnishing head lift pedal as a tie down.

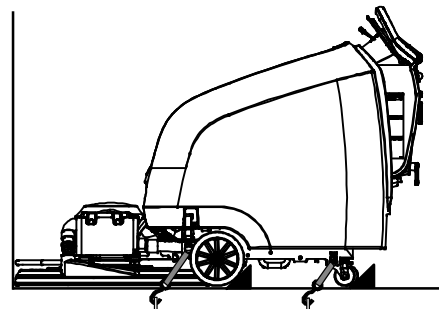


FIG. 54

6. When unloading machine, carefully back the machine down the ramp. Do not unload machine going in the forward direction.

STORING MACHINE

The following steps should be taken when storing the machine for extended periods of time.

1. Charge the batteries before storing machine to prolong the life of the batteries. Recharge batteries every 3 months.
2. Raise the burnishing head off the floor.
3. Park the machine in a cool, dry area.
4. Turn machine off and remove key.

NOTE: To prevent potential machine damage store machine in a rodent and insect free environment.

⚠ WARNING: To Reduce the Risk of Fire, Explosion, Electric Shock or Injury do not expose the machine to rain, store indoors.

5. For storage areas with limited space, raise the head as shown (Figure 55).

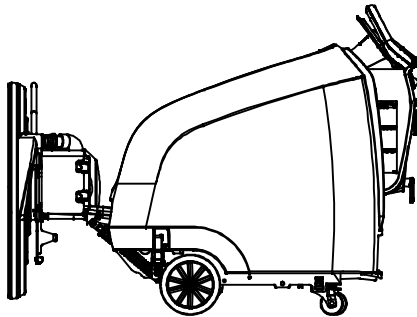


FIG. 55