

OWNER'S MANUAL Model Number 700448-4



Berco Rotary Broom 60'For **ALL TERRAIN VEHICLES**

- * ASSEMBLY
- * REPAIR PARTS
- * OPERATION
- * MAINTENANCE

CAUTION:

READ & FOLLOW ALL SAFETY RULES & INSTRUCTIONS BEFORE OPERATING YOUR EQUIPMENT



LIMITED WARRANTY

Conditions and Products Covered:

BERCOMAC guarantees any part of the product or accessory manufactured by BERCOMAC and found in the reasonable judgment of BERCOMAC to be defective in material and or workmanship will be repaired or replaced, at its option, by an authorized dealer without charge up to our maximum labor rates and pre-established times. For replacement parts only standard ground freight services are covered. This warranty applies to the products bought and used in North America.

Warranty Period

(from date of the original retail purchase)

· Residential use: 1 year

• Semi-commercial, professional or rental use: 90 days

Exceptions Noted Below; Despite the fact that the following items are considered wear parts, they have a different coverage condition and limited time:

- Tire Chains:
 - 90 days, residential use
 - No warranty for semi-commercial, professional or rental use

Engines: Will vary as per the manufacturer

Please refer to the engine manufacturer's warranty statement included with the unit. BERCOMAC is not authorized to handle warranty adjustments on engines.

Items and Conditions NOT Covered:

This warranty does not cover the following:

- Pick-up or delivery charges or in-home services fees.
- Any damage or deterioration of the unit, parts and or finish of these due to normal use, wear and tear, or exposure.
- Cost of regular use or maintenance service or parts, such as gas, oil, lubricants, tune-up parts, and adjustments.
- Any part or accessory which has been altered, modified, misused, neglected, accidentally damaged or not properly installed, improperly maintained, vandalism, theft, fire, water or damage because of other peril or natural disasters, stored or repaired not in accordance with the instructions in the owner's manual.
- Repair due to normal wear and or any wear items include but are not limited to items, such as shear pins, bolts, belts, winch cable, cutting edge, skid shoes, etc.
- Expedited freight fee services for replacement parts.
- Shear bolts and shear pins are to be considered as a preventive measure not as an assured protection, any damages resulting from the lack of shear bolts breakage are not covered.
- Damages due to product being installed on vehicle other than stipulated in the owner's manual.

NOTE: All warranty work must be performed by an authorized BERCO dealer using original (manufacturer) replacement parts.

Owner's Responsibilities:

BERCO's defective equipment or part must be returned to an authorized BERCO dealer within the warranty period for repairs. In the event that defective merchandise must be returned to manufacturer for repairs, freight fees are prepaid and a written authorization either BERCOMAC or KIMPEX must be obtained prior to the shipment. This warranty extends only to equipment operated under normal conditions. To validate a warranty claim, it is the user's responsibility to maintain and service the unit as specified in the owner's manual or to have the unit serviced at their dealer at their expense.

General Conditions:

The sole liability of BERCOMAC with respect to this warranty shall be strictly and exclusively repair and replacement as mentioned herein. BERCOMAC shall not have any liability for any other costs, loss or damage, including but not limited to, any incidental or consequential loss or damage.

Taking advantage of the warranty does not in any way extend the length or renewal of the warranty.

In particular, without being limited to, BERCOMAC shall have no liability or responsibility for:

- Travel time, overtime, after hour time or other extraordinary repair charges or relating to repairs and or replacements outside of normal business hours.
- Rental of like or similar replacement equipment during the period of any, repair or replacement work.
- Any communicating or travel charges.
- Loss or damage to person or property other than that covered by the terms of this warranty.
- Any claims for lost revenue, lost profit or any similar costs as a result of damage or repair.
- · Attorney's fees.

BERCOMAC's responsibility in respect to claims is limited to making the required repairs or replacement without charge up to our maximum labour rates and pre-established times and no claim of breach of warranty shall be cause for cancellation or rescission of the contract of sale of any product or accessory. In no event shall recovery of any kind be greater than the amount of the purchase price of the product sold.

This warranty gives you specific legal rights. You may also have other rights, which vary from country to country.

NOTE: Bercomac reserves the right to change or improve the design of any part or accessory without assuming any obligation to modify any product previously manufactured.

Instructions for Obtaining Warranty Services:

Contact the BERCO dealer where equipment was purchased or any other authorized service dealer to arrange service at their dealership. Requests for warranty claims must be carried out through the same distribution network used to purchase the product. Don't forget to bring your proof of purchase (sales receipt) to the authorized dealer.

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INTRODUCTION

TO THE PURCHASER

This new accessory was carefully designed to give years of dependable service. This manual has been provided to assist in the safe operation and servicing of your attachment.

NOTE: All photographs and illustrations in the manual may not necessarily depict the actual models or attachment, but are intended for reference only and are based on the latest product information available at the time of publication.

Familiarize yourself fully with the safety recommendations and operating procedures before putting the machine to use. Carefully read, understand and follow these recommendations and insist that they be followed by those who will use this attachment.



THIS SAFETY ALERT SYMBOL IDENTIFIES AN IMPORTANT SAFETY MESSAGE IN THIS MANUAL THAT HELPS YOU AND OTHERS AVOID PERSONAL INJURY OR EVEN DEATH. DANGER, WARNING, AND CAUTION ARE SIGNAL WORDS USED TO IDENTIFY THE LEVEL OF HAZARD. HOWEVER, REGARDLESS OF THE HAZARD, BE EXTREMELY CAREFUL.

DANGER: Signals an extreme hazard that will cause serious injury or death if recommended precautions

are not followed.

WARNING: Signals a hazard that may cause serious injury or death if the recommended precautions are

not followed.

CAUTION: Signals a hazard that may cause minor or moderate injury if the recommended precautions are

not followed.

Record your attachment serial number and purchase date in the section reserved below (there is no serial number on the subframe). Your dealer requires this information to give you prompt, efficient service when ordering replacement parts. Use only genuine parts when replacements are required.

If warranty repairs are required please present this registration booklet and original sales invoice to your selling dealer for warranty service.

This manual should be kept for future reference.

Please check if you have received all the parts for your kit with the list of the bag and the list of the box.

SERIAL NUMBER : (IF APPLICABLE)	
MODEL NUMBER:	
PURCHASE DATE :	



SAFETY PRECAUTIONS



Careful operation is your best insurance against an accident. Read this section carefully before operating the vehicle and accessory. This accessory is capable of amputating hands and feet and throwing objects. Failure to observe the following safety instructions could result in serious injury. All operators, no matter how experienced they may be, should read this and other manuals related to the vehicle and accessory before operating. It is the owner's legal obligation to instruct all operators in safe operation of the accessory.

GLOSSARY:

In this manual, right and left sides are determined by sitting on the seat of the vehicle facing forward.

In this manual, "accessories" means attachments (snowblower, rotary broom, blade etc.) that you install on the vehicle (lawn tractors, A.T.V. s etc).

TRAINING:



This symbol, "Safety Alert Symbol", is used throughout this manual and on the accessory's safety labels to warn of the possibility of serious injury. Please take special care in reading and understanding the safety precautions before operating the vehicle and accessory.

- Read this owner's manual carefully. Be thoroughly familiar with the controls and proper use of the vehicle and accessory. Know how to stop the unit and disengage the controls quickly.
- Never allow children to operate the vehicle nor the accessory. Never allow adults to operate the vehicle nor the accessory without proper instructions.
- No one should operate the vehicle nor the accessory while intoxicated or while taking medication that impairs the senses or reactions.
- 4. Keep the area of operation clear of all people, particularly small children and pets.
- Never start or operate the accessories except from the operator's station on the power unit except if this is impossible.

PREPARATION:

- Thoroughly inspect the area where the accessory is to be used and remove door mats, all foreign objects and the like.
- 2. For motorized accessories, disengage all clutches and shift into neutral before starting engine.
- Do not operate the accessory without wearing adequate winter outer garments. Avoid loose fitting clothing that can get caught in moving parts. Wear footwear that will improve footing on slippery surfaces.

- 4. Handle fuel with care, it is highly flammable.
 - a) Use approved fuel container.
 - b) Never add fuel to a running engine or hot engine.
 - Fill fuel tank outdoors with extreme care. Never fill fuel tank indoors.
 - d) Never fill containers inside a vehicle, or on a truck or a trailer bed with a plastic liner. Always place containers on the ground, away from your vehicle, before filling.
 - e) When practical, remove gas-powered equipment from the truck or trailer and refuel it on the ground. If this is not possible, then refuel such equipment on a trailer with a portable container, rather than from a gasoline dispenser nozzle.
 - f) Keep the nozzle in contact with the rim of the fuel tank or container opening at all times, until refueling is complete. Do not use a nozzle lockopen device.
 - g) Replace fuel cap securely and wipe up spilled fuel.
 - h) If fuel is spilled on clothing, change clothing immediately.
- Never attempt to make any adjustments while the engine (motor) is running (except when specifically recommended by manufacturer).
- Let the vehicle and accessory adjust to outdoor temperatures before using.
- 7. Never use an accessory without proper guards, plates, or other safety protective devices in place
- 8. Always make sure to wear the appropriate safety equipment required (glasses, muffs, mask...) for each type of product. See operation section.
- 9. Always make sure of having safe traction on the vehicle by using the recommended accessories (chains, A.T.V. tracks, counterweights...). See operation section.
- Always make sure all components are correctly installed. (driveline securely attached and locked at both ends, belts properly installed...)
- 11. If applicable, always handle the winch cable with thick leather gloves.
- 12. Never modify the accessory or any part without the written consent from the manufacturer.



SAFETY PRECAUTIONS



OPERATION:

- Do not put hands or feet near, under or inside rotating parts.
- Exercise extreme caution when operating on or crossing gravel drives, walks or roads. Stay alert for hidden hazards or traffic. Do not carry passengers.
- After striking a foreign object, stop the engine (motor), disconnect the wire from the spark plug(s) and keep wire away to prevent accidental starting. Thoroughly inspect the accessory for any damage and repair damage before restarting and using the accessory.
- 4. If the unit should start to vibrate abnormally, stop the engine (motor) and check immediately for the cause. Vibration is generally a warning of trouble.
- Take all possible precautions when leaving the vehicle unattended. Disengage the power take-off, lower the attachment, place the transmission into neutral, set the parking brake, stop the engine and remove the ignition key.
- 6. Do not run the engine indoors, except when starting the engine and for transporting in or out of the building. Do not operate or let motor run in a storage area without ventilation because gas contains carbon monoxide which is odorless, colorless and can cause death.
- Never use the accessories across the face of slopes, go from top to bottom. Exercise extreme caution when using equipment on slopes. Do not attempt to clear a steep slope.
- 8. Never tolerate bystanders in the working zone. Never use an accessory in the direction of bystanders, it might throw gravel or debris that can hurt people or damage property.
- 9. Never operate the accessory at high transport speeds on slippery surfaces. Use care when backing up.
- 10. Do not carry passengers.
- 11. Disengage power to the accessory when it is transported or not in use.
- 12. Never operate the accessory without good visibility or light.
- 13. Keep the accessory away from heat sources or flames.
- If applicable, never handle the winch cable or hook while in tension.

MAINTENANCE AND STORAGE

- When cleaning, repairing or inspecting the vehicle and accessory: stop the engine, set brake, remove ignition key, and wait that all moving parts have stopped. For gasoline engine, disconnect wire from the spark plug(s) and keep wire away to prevent accidental starting.
- Check all the bolts and components at frequent intervals to make sure that they are properly tightened.
- Never store a motorized accessory with fuel in the fuel tank inside a building where ignition sources are present such as hot water and space heaters, clothes dryers, and the like. Allow the engine to cool before storing in any enclosure.
- Always refer to the owner's manual when you store the accessory and vehicle for a prolonged or an unspecified length of time.
- Maintain or replace safety and instruction labels, as necessary.
- 6 For winter accessories, (if applicable), let the engine run for a few minutes after clearing snow in order to prevent the rotary parts from freezing.
- Inspect the vehicle's and accessory's air filter (if applicable) every day. Clean it or replace it as necessary. Change the oil more often when working in dusty conditions. See the vehicle's and accessory's owner's manual.

TRANSPORT

- 1. Review Transport Safety instructions in vehicle manual before moving.
- Check with local authorities regarding transport on public roads. Obey all applicable laws and regulations.
- Make sure all lights and reflectors that are required by the local highway and transport authorities (exemple: SMV (Slow Moving Vehicle)) are in place, are clean, and can be seen clearly by all overtaking and oncoming traffic.
- Never have the equipment in operation during transport.
- 5. Always travel at a safe speed.



SAFETY DECALS



REPLACE IF DECALS ARE DAMAGED SEE PARTS BREAKDOWN FOR DECAL LOCATION

DECAL #105128

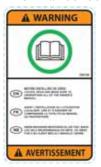


To avoid serious injuries:

Keep hands, feet & clothing away.

Do not attempt to install or remove drive belt without reading owner's manual.

DECAL #105130



Before installing or using:

Locate, read and make sure to understand all of the owner's manual.

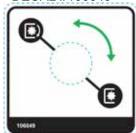
DECAL #105396



To avoid serious injuries:

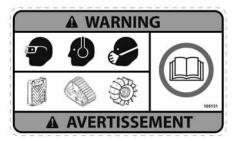
Disengage the broom before starting the engine.

DECAL #106049



Indicates the position of the lever to engage or disengage the brush.

DECAL #105131



Refer to owner's manual about wearing safety glasses, ear muffs and mask.

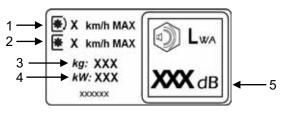
Refer to owner's manual for use of counter weights, cat tracks and tire chains.

DECAL #105997



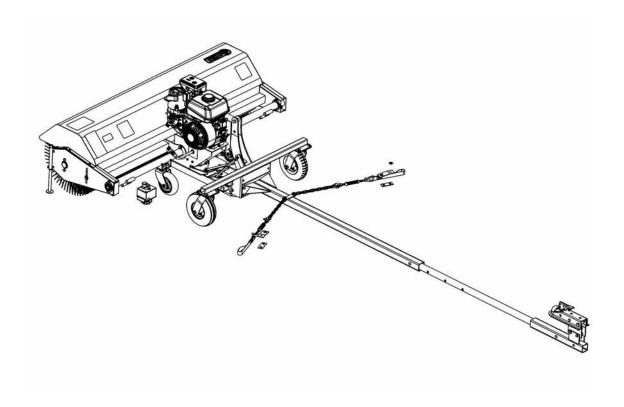
To avoid serious injuries :

Keep hands, feet & clothing away from the broom when the vehicle is in operation.



- 1-Maximum speed when the accessory is ir operation.
- 2-Maximum speed when the accessory is not in operation.
- 3-The weight of the accessory.
- 4-The engine wattage (if applicable).
- 5-The sound pressure level (measured in dBA) from the driver's position and with the accessory on the ground at full engine speed.

IMPORTANT: TORQUE ALL BOLTS ACCORDING TO TORQUE SPECIFICATION TABLE (SEE TABLE OF CONTENTS) WHEN STATED: TIGHTEN FIRMLY. REFER TO PARTS BREAKDOWN SECTION FOR PART IDENTIFICATION.



Overall view

TOOLS REQUIRED

Wrenches: 9/16", 10mm, 1 1/16", 7/16", 1/2", 3/4" Ratchet Sockets 9/16", 1 1/16", 7/16", 1/2", 3/4" Drill 1/4" bit

1/4" bit Cutting pliers

Wrench (for the nuts on the vehicle's battery posts)

STEP 1 VEHICLE PREPARATION:

NOTE: A 1 7/8" tow hitch ball is required.

Choose one of the three following options as a means of fastening the subframe.

OPTION A:

Install the lift strap (item 1) by making a loop around the front suspension arm (item 2) of the vehicle. Tighten the loop firmly.

OPTION B:

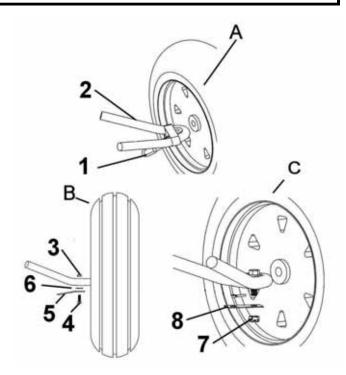
Remove the nut (item 3) and bolt (item 4) from the vehicle's front suspension arm. Secure the bracket (item 5) with a bolt, flat washer (item 6) and nut. Do not tighten the nut too firmly.

OPTION C:

Remove the nut (item 7) and bolt from the vehicle's front suspension arm. Secure the bracket (item 8) with a bolt, flat washer and nut..

Do not tighten the nut too firmly.

NOTE: Repeat the operation on the other side of vehicle.



Install the lift strap or the brackets.

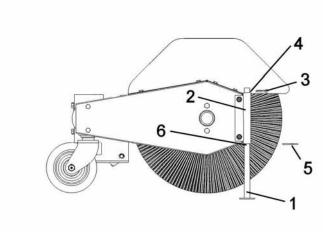
STEP 2 ROTARY BROOM PREPARATION:

Insert the parking stands (item 1) in the stand holders (item 2).

Secure with a $5/32 \times 1$ " cotter pin (item 3) in the upper hole (item 4) and a hair pin 2.5 mm (item 5) in the lower hole (item 6) of each parking stand.

Do the same steps on the other side.

This will allow the broom to rest on the stands.





DANGER



NEVER OPERATE THE ROTARY BROOM WITHOUT:

Brush hood Belt guard Gear box guard Chain guard

Extension guard and any other safety protection devices in place.

Push frame installation:

Install the push frame (item 1) under the motor frame (item 2) by using two cone bearings (item 3), one on top and the other underneath as shown.

Fill the space between the bearings with grease.

Secure with a seal washer 5/16" (item 4), (the hollow portion toward the top) and a nylon insert lock nut (item 5) as shown.

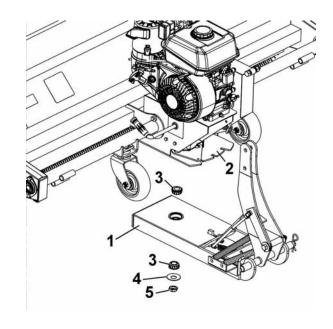
Tighten loosely enough to permit the push frame to move freely.



CAUTION



Never use the Rotary Broom without the belt guard.



Install the push frame

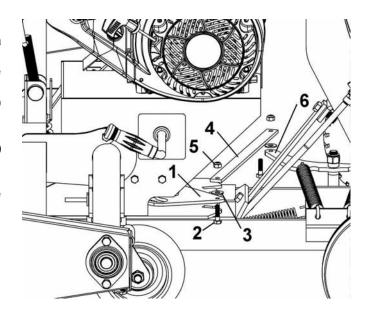
On the left hand side, insert under the lever (item 1) a 1/4" x 1" hex bolt (item 2).

Place on the bolt, a flat washer 5/16" (item 3) on one end of the link (item 4).

Secure in place with the nylon insert lock nut (item 5) as shown.

Install the other end of the link on the pivot (item 6) following the same steps as shown.

Tighten loosely enough to permit the parts to move freely.

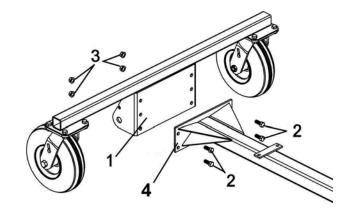


Install the link

STEP 3 SUBFRAME PREPARATION:

NOTE: The set of holes used to assemble the wheel support to the subframe depends on the height of the vehicle. Once installed the subframe must be parallel with the ground.

Assemble the wheel support (item 1) on the subframe (item 4) with four hex bolts 3/8" x 1" (item 2) and four flange nuts 3/8" (item 3).

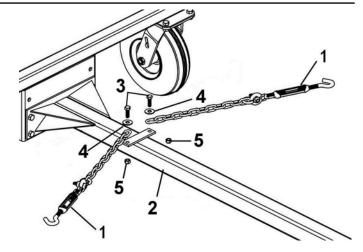


Install the wheel support

Install the assembled turnbuckles (item 1) on the subframe (item 2) with two hex bolts 5/16" x 1" (item 3), two flat washers 3/8" (item 4) and two nylon insert lock nuts 5/16" (item 5) as shown.

Tighten firmly.

NOTE: Position the chains as shown and tighten firmly.



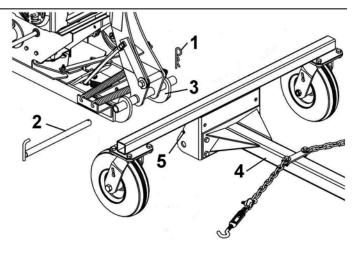
Install the assembled turnbuckles

Remove the 4mm hair pin (item 1) and pin (item 2) from the push frame (item 3).

Install the subframe (item 4) on the broom's push frame.

Secure in place with the pin and hair pin previously removed as shown.

NOTE: The hooked end of the pin must be inserted into the hole (item 5) to lock it in place.



Install broom to subframe

Choose between the three positions (see figure), the height of the hitch support.

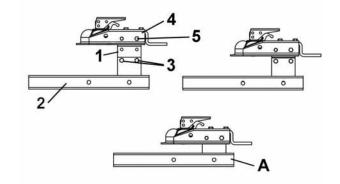
There must be a maximum of ground clearance according to your vehicle.

Figure A does not have the hitch support plate (item 1).

If applicable, assemble the hitch support plates on the hitch support (item 2) with four hex bolts 3/8" x 3/4" (item 3) and four nylon insert lock nuts 3/8".

Secure the hitch (item 4) on the two hitch support plates or on the hitch support with a hex bolt 3/8" x 3" (item 5) and one nylon insert lock nut 3/8" as shown

Tighten firmly

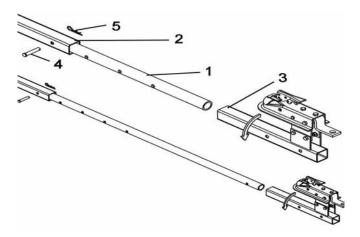


Assemble the hitch support

You have seven different positions on the adjustment tube (the adjustment tube can be inverted) to adjust the length of the subframe.

To choose the right adjustment, insert the adjustment tube (item 1) into the subframe (item 2) and insert the hitch support (item 3) on the adjustment tube. Do not secure.

Turn the hitch support to the side to facilitate installation.



Adjust length of subframe

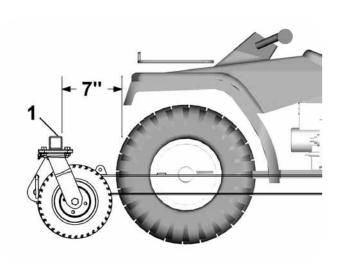
Drive the vehicle over the subframe.

Place the hitch under the tow hitch ball and make sure there is at least 7" (180 mm) between the tube on the wheel support (item 1) and the most advance part of the front of the vehicle.

<u>Furthermore</u>, the wheels of the subframe must not touch the front wheels of the vehicle.

Identify the right length and secure in place with a pin (item 4) and 3mm hair pin (item 5).

IMPORTANT: Make sure the adjustment tube is inserted to its maximum in the subframe in order to prevent premature damage to the subfame.



Adjust the length of the subframe

Insert the assembled hitch support (item 1) on the adjustment tube (item 2). Secure in place with the pin (item 3) and the hair pin 3mm (item 4).

NOTE: This hitch support has two sets of holes to increase the length of the subframe if necessary.

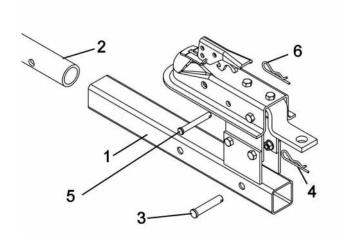
Attach the assembled hitch on the vehicle's tow hitch ball.

Secure in place with the pin (item 5) and a 3mm hair pin (item 6).

Make sure the subframe does not come into contact with vehicle at any time.

NOTE: You can turn the hitch assembly by removing the pin to facilitate driving the vehicle over the subframe.

WARNING: Always check that ball is completely inserted into hitch coupler socket and that the underjaw is securely closed around the bottom of ball. Always check tightness before using the tow hitch. If necessary, tighten locknut against tension spring. Be sure hitch coupler handle is in locked position.



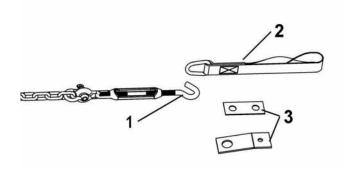
Secure the hitch support on the tow hitch ball

Install the turnbuckles (item 1) into the lift straps (item 2) or into the brackets (item 3).

Adjust the turnbuckles so that the subframe is centered under the vehicle.*

*Tighten the turnbuckles firmly in order to tighten the vehicle's suspension.

IMPORTANT: After adjusting the turnbuckles, tighten the nuts on the vehicle's suspension arms firmly. Make sure to lock the nuts with the original locks.



Install the turnbuckles into the brackets or into the lift straps.



WARNING



TO PREVENT SERIOUS INJURIES:

Wearing gloves is recommended when handling the winch cable.

If the winch on the vehicle is **higher** than 20" (510mm) from the ground:

Install the sleeve (item 1) in the top hole of the lever (item 5).

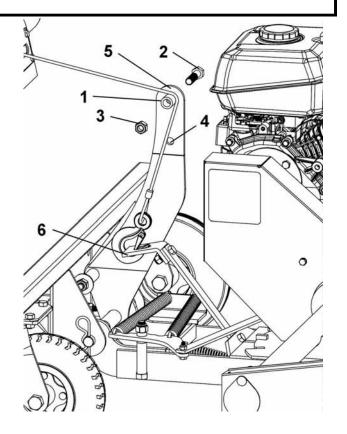
If the winch on the vehicle is **lower** that 20" (510mm) from the ground:

Insert the sleeve (item 1) in the bottom hole (item 4) of the lever.

Secure in place with a 1/2" x 2 1/4" hex bolt (item 2) and 1/2" nylon insert lock nut (item 3). Tighten firmly.

Tip: Thread the winch's hook behind the lever as shown and then thread the cable over the sleeve.

Attach the winch hook in the bracket (item 6) as shown.



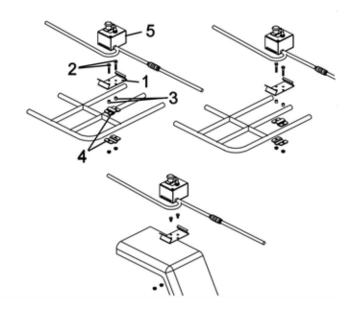
Install the winch hook

STEP 4 INSTALLATION OF THE CONTROL BOX

As shown, choose from the three different ways to secure the control box support (item 1).

Use two hex bolts 1/4" x 1 1/2" (item 2), the support brackets (item 4), spacers (item 3) and the flange nuts.

Insert the control box (item 5) into the support.



Install the control box

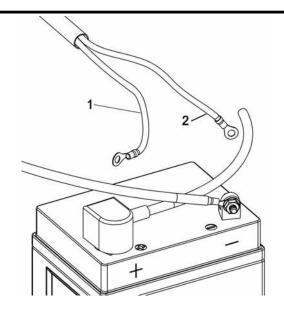
Wires for the control box:

Connect the red wire (item 1) to the positive post and the black wire (item 2) to the negative post on the vehicle's battery.

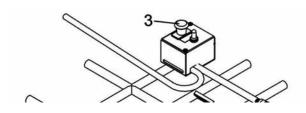
NOTE: Secure the wires to the vehicle with the nylon tie wraps. These wires will stay on the vehicle.

IMPORTANT: The control box is equipped with a red emergency kill switch (item 3) in case you need to stop the engine quickly.

NOTE: The emergency kill switch (item 3) must be pulled out to start the engine for the broom.



Install the wires of the control box



PRESSURE OF THE TIRES

Verify and adjust the pressure of the tires as follows:

For the subframe: at 50 psi. For the broom: at 50 psi.

The tire pressure must be even on both sides.

OPERATION



WARNING



Read the vehicle owner's manual carefully. Be thoroughly familiar with the controls & proper use of the attachment. Know how to stop the accessory quickly.



WARNING



Never start the accessory when engaged.

FAMILIARISATION OF THE CONTROLS:

Emergency kill switch: Push on the red button to stop the engine. Disengage the accessory using the handle (item 3) after stopping the engine.

IMPORTANT: The emergency kill switch must be pulled out to start the engine of the accessory.

Familiarize yourself with the controls before using:

- a) Adjust the pressure on the brush
- b) Raise the broom.
- c) Start the engine
- b) Engage the broom using the handle (item 3).

ANGLE ADJUSTMENT:

In order to be able to change the angle of the broom follow these instructions.

- a) Raise the broom to its maximum (the lock mechanism will disengage).
- b) Activate the control to turn the broom to the angle desired.
- c) Lower the broom to the ground (the locking mechanism will reengage).

NOTE: It is not necessary to perfectly align the latch with the slots. When the broom will be lowered to the ground the springs will allow the latch to engage itself into the slot.

RAISING AND LOWERING THE ROTARY BROOM:

Use the winch switch control to raise and lower the rotary broom.

<u>IMPORTANT</u>: To prolong the subframe's life, release the switch immediately when the attachment hits the stopper in the highest position.

IMPORTANT:

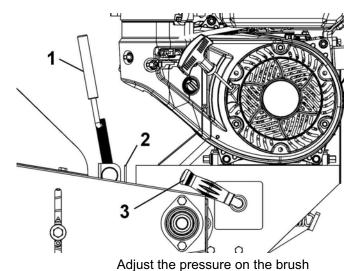
Always keep the winch cable taut when the broom is in operation to keep the wheel support on the ground.

WARNING



TO PREVENT INJURIES AND FOR MORE TRACTION WHEN USING THE ACCESSORY:

- -Do not drive faster than 3 km/hr (2 m/hr) with an accessory on the ground.
- -Do not drive faster than 10 km/hr (6 m/hr) with the accessory in raised position.
- -Do not operate on a slope greater than 10%.
- -Vehicle manufacturer approved tire chains are required.
- -Maximum drawbar pull provided for at the hitch ball coupling: 3560N (800 lbs)
- -Maximum vertical load provided for on the hitch ball coupling: 360N (80 lbs).
- -Ear muffs, dust mask, safety glasses and gloves are recommended.



13

OPERATION

ADJUSTING THE PRESSURE OF THE BRUSH ON THE GROUND



DANGER



Always adjust the pressure on the brush before starting the engine of the accessory.

The engagement lever is close to the exhaust pipe, there is a danger of being burnt.

By turning the adjustment screw (item 1) counter clockwise, the gauge (item 2) moves higher and the pressure of the brush on the ground increases.

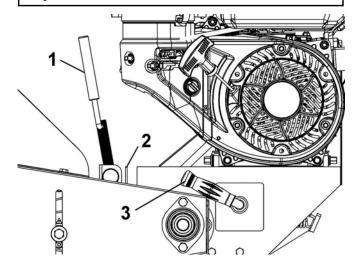
By turning the adjusting screw clockwise, the gauge (item 2) moves lower on the gear box frame and the pressure of the brush on the ground decreases.

IMPORTANT: Adjust frequently to compensate for brush wear. Remember to sweep with the tips of the bristles like a broom and not with the sides of the bristles like a mop. Too much pressure can decrease the brush life up to 95%.

CAUTION



Be careful turning the adjustment screw (item 1). The motor and especially the muffler become very hot.



Adjust the pressure on the brush

GENERAL SWEEPING

Minimize dust by reducing brush speed and by sweeping after rain or on a day with high moisture.

SNOW SWEEPING

The broom works well for light snow removal.

Sweep with the wind blowing in the direction of broom discharge (wind in your back).

NOTE: Foreign objects in the snow may be thrown faster than the snow itself.

Frequently clean the snow and ice accumulation from the top and bottom of the broom hood.

LAWN DETHATCHING AND LEAF RAKING:

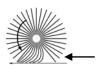
NOTE: It is recommended to use the side wheel support kit (700451) when used for dethatching uneven ground.

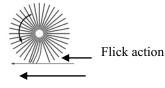
Lower the broom on a hard surface and lift the brush 1" from the ground by turning the adjusting screw clockwise. The brush is supported by dolly wheels. This adjustment is normally satisfactory but you may raise or lower depending upon grass height.

Low brush speed and ground speed is best for lawn dethatching and leaf raking.

Never sweep with the sides of bristles!

Sweep with the tips! Do not mop!





Too much pressure= Shortens brush life!

Road surface



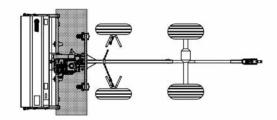
DANGER



TO PREVENT INJURIES:

Be careful of the danger zone when starting or adjusting the pressure on the brush,

- -Stop the vehicle.
- -Activate the parking brake.



MAINTENANCE

BEFORE DOING ANY MAINTENANCE OR DISMOUNTING AN ACCESSORY, REFER TO THE SAFETY PRECAUTIONS.

MAINTENANCE

- a) Grease the wheel axles after every eight hours of use.
- b) Chain: do not lubricate when used in dusty conditions. After use, wash clean and lubricate.
- c) Adjust the chain frequently by moving the idler sprocket to give 1/2" deflection.
- d) Frequently clean the interior and exterior of hood, dirt, mud, ice, etc, accumulation adds weight on the brush and could result in premature wear of brush.
- e) Check mounting bolts at frequent intervals for proper tightness to be sure equipment is in safe working conditions.
- f) Apply oil at all pivot points.
- g) Inspect the air filter on the vehicle and accessory every day. Clean it or replace it when necessary. Change the oil more often when working in dusty conditions. See the owner's manual for the vehicle the motor and for the accessory.

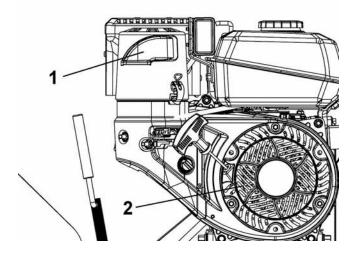


CAUTION



Be careful when cleaning the motor. The motor and especially the muffler become very hot.

Frequently clean the carburetor filter (item 1) and the cooling fan cover when lawn dethatching and leaf raking.



CAUTION

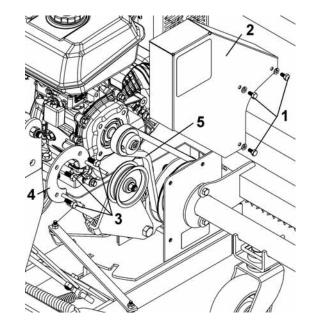


Never use the Rotary Broom without the belt guard.

BELT REPLACEMENT:

For belt part numbers, refer to parts breakdown section for parts identification.

- a) Remove the three hex bolts (item 1) and the belt guard (item 2).
- b) Remove the three hex bolts (item 3) and the disengage plate (item 4).
- c) Replace the belt (item 5).
- d) Make sure the pulleys are well aligned.
- e) Engage the accessory and reinstall the disengage plate then the belt guard.
- f) Disengage the accessory.



BRUSH REPLACEMENT:

See parts breakdown section for parts identification.

- a) Remove the hood.
- b) Loosen the chain idler sprocket.
- Remove the bolts from both flangettes that holds the brush hollow shaft.
- d) Remove the brush hollow shaft from the broom frame.
- e) Loosen the set screw and remove the right bearing from the brush hollow shaft
- Remove the bolt which retains the brush to the brush hollow shaft.
- g) Remove the brush tube from axle.
- h) Install the new brush by reversing the procedure.
- Adjust the tension on the chain by moving the idler sprocket to give a 1/2" deflection on the length of the chain.

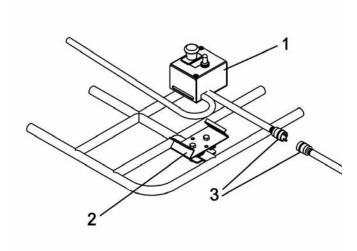
DISMOUNTING & STORAGE

DISMOUNTING

- a) Select a level surface, set parking brake, stop the engine, and remove the ignition key to prevent accidental starting.
- b) Straighten the broom perpendicular with the vehicle.
- c) Set the parking stands in their most extended position <u>Make sure the brush bristles never touch</u> the ground.
- d) Lower the broom to the ground.
- e) Unhook the turnbuckles from the front of the vehicle, the hook from the winch and the hitch from the rear of the vehicle.
- f) Remove the control box (item 1) from the support (item 2). Disconnect the wires (item 3) and place the box on the accessory.
- g) Remove the vehicle.

END OF SEASON STORAGE

- a) Clean the broom and inside of the hood and paint all the parts where the paint has worn off.
- b) Take note of the replacement parts needed for next season.
- c) Lubricate all grease fittings and all moving parts.
- d) Store broom on parking stands. <u>Make sure the</u> brush bristles never touch the ground.
- e) If brush bristles are exposed to direct sunlight, protect the bristles with a tarp.
- f) Store the broom in a dry place.

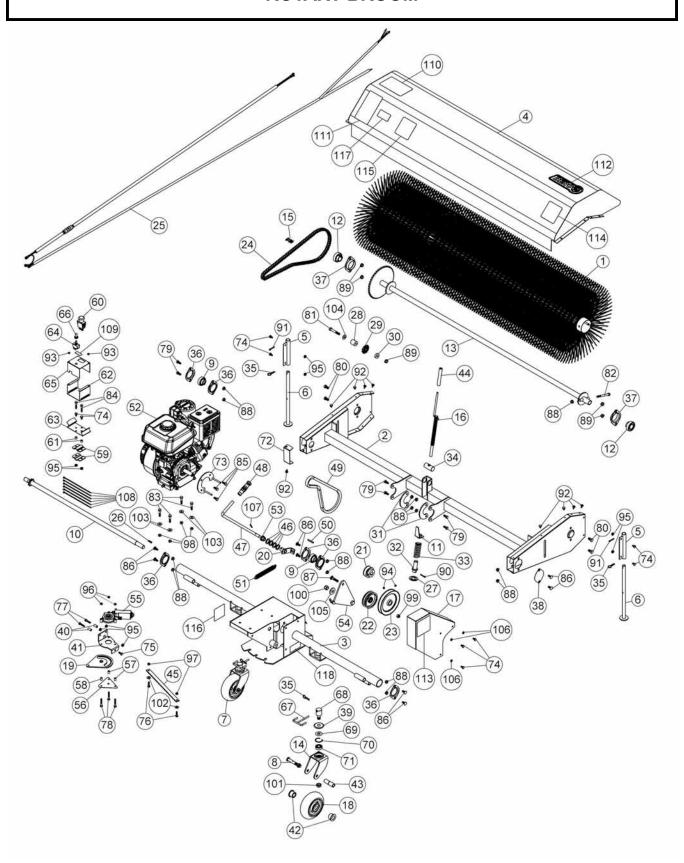


TROUBLESHOOTING

* Please refer to parts breakdown section for parts identification.

PROBLEM	POSSIBLE CAUSES	CORRECTIVE ACTION
Brush wears out prematurely or does not wear out evenly.	well adjusted.	Reduce the pressure on the brush when on the ground. Adjust when needed to compensate for the wearing out of the brush.
The brush turns jerkily or bounces.	Too much pressure on the brush, it will wear out up to 5 times faster.	Always sweep with the tips of the bristles like a broom and not with the sides of the bristles like a mop.
The brush does not sweep well.	Debris accumulation.	Clean the inside and outside of the hood frequently during operation. Dirt, mud, ice, etc accumulation adds weight on the brush and could result in premature wear of the brush.
The brush is too aggressive when lawn dethatching or leaf raking. The brush does not turn on the grass.	Too much pressure on the brush.	Lower the broom on a hard surface and lift brush 1" from the ground by turning the adjusting screw clockwise. Adjust from time to time if necessary. May require a side wheel support kit #700451.
The chain wears out prematurely.	Inappropriate lubrication.	Do not lubricate the chain during operation. Wait until the job is finished. Wash the rotary broom and lubricate the chain. Let the broom turn a few moments so the oil penetrates in the chain.
The sprocket wears out prematurely.	Chain is not adjusted.	Check the chain adjustment frequently (too tight, too loose).
Loss of steering.	Too much pressure on the brush.	Reduce pressure on the brush. If problem persists, contact your dealer for more information.
The bristles take a bad form or shape.	The broom was not stored on the parking stands.	Wash the broom with warm water or warm steam. Leave in raised position and let it turn a few turns. The brush should take its original shape.
Electric motor does not work	Motor overheating.	These motors are equipped with an internal protector. Wait 10 minutes before using.

PARTS BREAKDOWN ROTARY BROOM



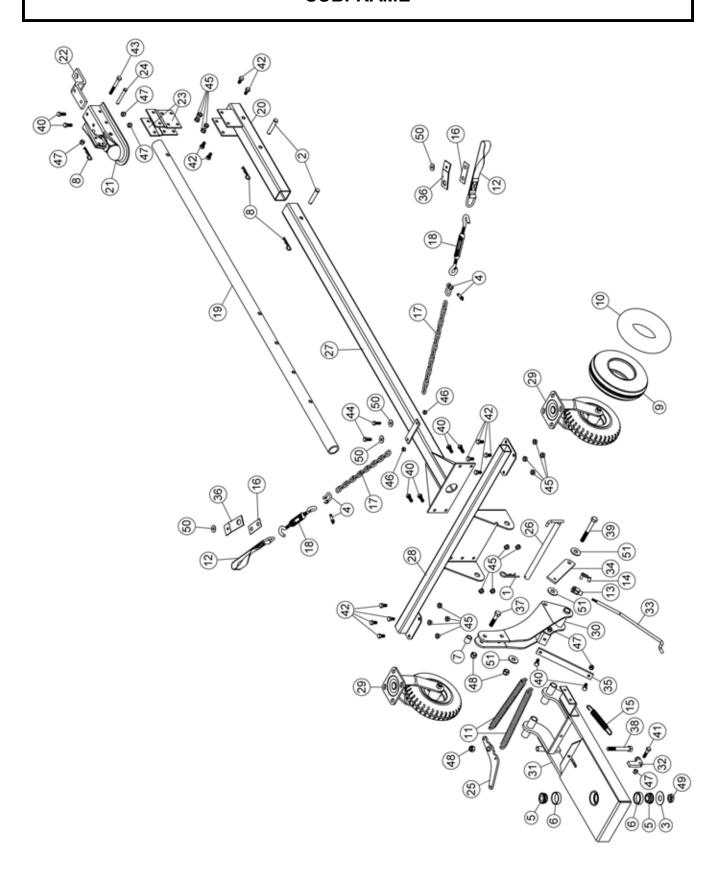
Ref. Réf.	English description	Description française	Qty. Qté.	Part # Pièce #
1	Polypropylene brush	Brosse de polypropylène	1	104459
2	Broom frame	Châssis du balai	1	104455
3	Motor frame	Châssis du moteur	1	105259
4	Hood	Capot	1	104457
5	Stand holder	Support de pied	2	102392
6	Parking stand	Pied de stationnement	2	102394
7	Caster wheel assembly	Roue pivotante assemblée	2	105108
8	Axle and nut	Essieu et écrou	1	102372
9	Bearing with set screw	Roulement à billes avec vis à pression	2	102864
10	Drive shaft	Arbre de commande	1	104650
11	Gauge	Jauge	1	102367
12	Bearing with set screw	Roulement à billes avec vis à pression	2	102755
13	Brush hollow shaft	Arbre de brosse	1	104456
14	Wheel fork	Fourche de roue	1	104676
15	Connecting Link #40	Maille d'accouplement #40	1	102040
16	Adjustment screw	Vis d'ajustement	1	104651
17	Belt gard	Garde-courroie	1	106105
18	Wheel 6" included 103482	Roue 6" inclue 103482	1	103484
19	Lever	Levier	1	104707
20	Tension arm	Bras de tension	1	104656
21	Pulley 2.25" with set screw	Poulie 2.25" avec vis à pression	1	105694
22	Flat pulley	Poulie plate	1	102839
23	V pulley	Poulie en V	1	103288
24	Roller chain #40 x 90 links/conn.link	Chaîne #40 x 90 mailles/maille acc.	1	104449
25	Wire assembly	Fil assemblé	1	104662
26	Key 3/16" x 3/16" x 1"	Clé 3/16" x 3/16" x 1"	1	102026
27	Special washer	Rondelle spéciale	1	102429
28	Spacer	Douille	1	102286
29	Idler sprocket	Pignon tendeur	1	102027
30	Spacer	Espaceur	1	102241

Ref. Réf.	English description	Description française	Qty. Qté.	Part # Pièce #
31	Collar	Collet	2	102402
32	Spring holder	Support de ressort	1	102197
33	Spring	Ressort	1	105118
34	Special nut	Écrou spécial	1	102288
35	Hair pin 2.5mm	Goupille à ressort 2.5mm	3	102013
36	Flangette	Flangette	6	102212
37	Flangette	Flangette	2	102680
38	Сар	Capuchon	1	104517
39	Сар	Capuchon	1	102586
40	Sleeve	Douille	2	104186
41	Bracket	Support	1	104653
42	Delrin bushing	Coussinet Delrin	2	103482
43	Wheel bushing	Douille de roue	1	103483
44	Foam grip	Poignée de mousse	1	104630
45	Link	Lien	1	104655
46	Washer	Rondelle	4	104113
47	Latch rod	Tige de loquet	1	104657
48	Handgrip	Poignée	1	102062
49	V-belt,	Courroie en V,	1	106106
50	Key 3/16 x 3/16 x 1 1/2"	Clé 3/16 x 3/16 x 1 1/2"	1	104536
51	Spring	Ressort	1	102592
52	Engine 7 hp	Moteur 7 cv	1	105654
53	Plastic grommet	Oeillet de plastique	1	102063
54	Idler arm	Bras de tension	1	104654
55	Electric motor	Moteur électrique	1	106147
56	Plate	Plaque	1	103363
57	Spacer	Espaceur	2	103361
58	Oil lite bushing	Coussinet imprégné d'huile	1	103362
59	Support bracket	Fixation du support	2	103068
60	Emergency switch	Interrupteur d'urgence	1	104807

Ref. Réf.	English description	Description française	Qty. Qté.	Part # Pièce #
61	Spacer	Espaceur	2	103368
62	Вох	Boîte	1	104660
63	Box support	Support de la boîte	1	104661
64	Switch	Commutateur	1	103381
65	Box cover	Couvercle de la boîte	1	104659
66	Rubber boot	Capuchon de caoutchouc	1	103379
67	Lock pin	Goupille de barrure	1	104677
68	Adaptor pin	Goupille adapteur	1	104678
69	Spacer	Douille d'espacement	1	104679
70	Retaining ring	Bague de retenue	1	102600
71	Bearing	Roulement à billes	1	102599
72	Chain guard	Garde chaine	1	106001
73	Disengage plate	Plaque de débrayage	1	106104
74	Hex. bolt 1/4" n.c. x 1/2"	Boulon hex. 1/4" n.c. x 1/2"	9	O/L
75	Hex. bolt 1/4" n.c. x 3/4"	Boulon hex. 1/4" n.c. x 3/4"	1	O/L
76	Hex. bolt 1/4" n.c. x 1"	Boulon hex. 1/4" n.c. x 1"	2	O/L
77	Hex. bolt 1/4" n.c. x 1 1/4"	Boulon hex. 1/4" n.c. x 1 1/4"	2	O/L
78	Hex. bolt 1/4" n.c. x 1 3/4"	Boulon hex. 1/4" n.c. x 1 3/4"	3	O/L
79	Hex. bolt 5/16" n.c. x 3/4"	Boulon hex. 5/16" n.c. x 3/4"	6	O/L
80	Hex. bolt 3/8" n.c. x 3/4"	Boulon hex. 3/8" n.c. x 3/4"	4	O/L
81	Hex. bolt 3/8" n.c. x 2 1/2"	Boulon hex 3/8" n.c. x 2 1/2"	1	O/L
82	Hex. bolt 5/16" n.c. x 3 1/2"	Boulon hex. 5/16" n.c. x 3 1/2"	1	O/L
83	Hex. bolt 5/16" n.c. x 1 1/2"	Boulon hex. 5/16" n.c. x 1 1/2"	4	O/L
84	Hex. bolt 1/4" n.c. x 1 1/2"	Boulon hex. 1/4" n.c. x 1 1/2"	2	O/L
85	Hex. bolt 5/16" n.f. x 3/4"	Boulon hex. 5/16" n.f. x 3/4"	3	O/L
86	Carriage bolt 5/16" n.c. x 3/4"	Boulon à carrosserie 5/16" n.c. x 3/4"	8	O/L
87	Carriage bolt 3/8" n.c. x 1 3/4"	Boulon à carrosserie 3/8" n.c. x 1 3/4"	1	O/L
88	Flange nut 5/16" n.c.	Écrou à bride 5/16" n.c.	15	O/L
89	Flange nut 3/8" n.c.	Écrou à bride 3/8" n.c.	5	O/L
90	Cotter pin 5/32" x 1 1/4"	Goupille fendue 5/32" x 1 1/4"	1	O/L

Ref. Réf.	English description	Description française	Qty. Qté.	Part # Pièce #
91	Cotter pin 5/32" x 1"	Goupille fendue 5/32" x 1"	2	O/L
92	Tapping screw 1/4"-14 x 1/2"	Vis taraudeuse 1/4"-14 x 1/2"	9	O/L
93	Metal screw pan head #8 x 1/4"	Vis à métal tête pan #8 x 1/4"	2	O/L
94	Hex. socket set screw 5/16" n.c. x 5/16"	Vis à pression hex. 5/16" n.c. x 5/16"	2	O/L
95	Flange nut 1/4" n.c.	Écrou à bride 1/4" n.c.	9	O/L
96	Nylon insert lock nut 1/4" n.c. (thin)	Écrou à garniture de nylon 1/4" n.c.(mince)	3	O/L
97	Nylon insert lock nut 1/4" n.c.	Écrou a garniture de nylon 1/4" n.c.	2	O/L
98	Nylon insert lock nut 5/16" n.c.	Écrou à garniture de nylon 5/16" n.c.	4	O/L
99	Nylon insert lock nut 3/8" n.c.	Écrou à garniture de nylon 3/8" n.c.	1	O/L
100	Nylon Insert lock Nut 1/2" n.c.	Écrou à garniture de nylon 1/2" n.c.	1	O/L
101	Nylon insert lock nut 5/8" n.c. (thin)	Écrou à garniture de nylon 5/8" n.c. (mince)	1	O/L
102	Flat washer 5/16" hole	Rondelle plate 5/16" trou	2	O/L
103	Flat washer 3/8" hole	Rondelle plate 3/8" trou	4	O/L
104	Flat washer 7/16" hole	Rondelle plate 7/16" trou	1	O/L
105	Flat washer 9/16" hole	Rondelle plate 9/16" trou	1	O/L
106	Lock washer 1/4"	Rondelle de blocage 1/4"	3	O/L
107	Roll pin 3/16" x 1"	Goupille roulée 3/16" x 1"	1	O/L
108	Tie wrap 8"	Attache de nylon 8"	6	O/L
109	Lift decal	Décalque de relevage	1	104229
110	Decal warning safety	Decalque avertissement sécurité	1	105131
111	Decal read instructions	Decalque lire instructions	1	105130
112	Berco decal	Décalque Berco	1	102471
113	Decal danger belts	Decalque danger courroies	1	105128
114	Decal danger broom	Decalque danger balai	1	105997
115	Decal danger start/clutch	Décalque danger démarrage/embrayage	1	105396
116	Clutch decal	Décalque d'embrayage	1	106049
117	Specifications decal	Décalque spécifications	1	REF
118	Serial number	Numéro de série	1	REF

PARTS BREAKDOWN SUBFRAME



PARTS LIST SUBFRAME

Ref. Réf.	English description	Description française	Qty. Qté.	Part # Pièce #
1	Hair pin 4mm	ir pin 4mm Goupille à ressort 4mm		
2	Pin	Goupille	2	102189
3	Seal washer	Rondelle d'étanchéité	1	102289
4	Shackle Ptd Z	Clevis Pqé Z	2	102343
5	Cone bearing	Roulement conique	2	102369
6	Cup bearing	Cuvette	2	102370
7	Sleeve	Douille	1	102480
8	Hair pin 3mm	Goupille à ressort 3mm	3	102617
9	Tire 280/250-4	Pneu 280/250-4	1	102674
10	Inner tube 250-4	Chambre à air 250-4	1	102675
11	Spring	Ressort	2	103073
12	Lift strap	Sangle de relevage	2	103613
13	Fork	Fourche	1	104173
14	Pin	Goupille	1	104174
15	Spring	Ressort	1	104194
16	Bracket	Fixation	2	104632
17	Chain	Chaîne	2	104633
18	Turnbuckle	Tendeur	2	104634
19	Adjustment tube	Tube d'ajustement	1	104637
20	Hitch support	Support d'attache	1	104638
21	Hitch	Attache	1	104639
22	Hitch ball support	Support de boule d'attelage	1	104640
23	Hitch support plate	Plaque de support d'attache	2	104641
24	Pin	Goupille	1	104642
25	Pivot	Pivot	1	104644
26	Pin	Goupille	1	104759
27	Subframe	Sous-châssis	1	104769
28	Wheel support	Support de roue	1	104770

PARTS LIST SUBFRAME

Ref. Réf.	English description	Description française	Qty. Qté.	Part # Pièce #
29	Caster wheel assembly	Roue pivotante assemblée	2	105679
30	Lift lever	Levier de relevage	1	104914
31	Push frame	Châssis de poussée	1	104915
32	Latch	Loquet	1	104916
33	Push rod	Tige de poussée	1	104917
34	Lock lever	Levier de barrure	1	104918
35	Link	Lien	1	104919
36	Bracket	Fixation	2	105194
37	Hex. bolt 1/2" n.c. x 2 1/4"	Boulon hex. 1/2" n.c. x 2 1/4"	1	O/L
38	Hex. bolt 1/2" n.c. x 3 3/4"	Boulon hex. 1/2" n.c. x 3 3/4"	1	O/L
39	Hex. bolt 1/2" n.c. x 4 1/4"	Boulon hex. 1/2" n.c. x 4 1/4"	1	O/L
40	Hex. bolt 3/8" n.c. x 1"	Boulon hex. 3/8" n.c. x 1"	8	O/L
41	Hex. bolt 3/8" n.c. x 1 1/2"	Boulon hex. 3/8" n.c. x 1 1/2"	1	O/L
42	Hex. bolt 3/8" n.c. x 3/4"	Boulon hex. 3/8" n.c. x 3/4"	12	O/L
43	Hex. bolt 3/8" n.c. x 3"	Boulon hex. 3/8" n.c. x 3"	1	O/L
44	Hex. bolt 5/16" n.c. x 1"	Boulon hex. 5/16" n.c. x 1"	2	O/L
45	Flange nut 3/8" n.c.	Écrou à bride 3/8" n.c.	16	O/L
46	Nylon insert lock nut 5/16" n.c.	Écrou à garniture de nylon 5/16" n.c.	2	O/L
47	Nylon insert lock nut 3/8" n.c.	Écrou à garniture de nylon 3/8" n.c.	6	O/L
48	Nylon Insert lock Nut 1/2" n.c.	Écrou à garniture de nylon 1/2" n.c.	3	O/L
49	Nylon insert lock nut 3/4" n.c. (thin)	Écrou à garniture de nylon 3/4" n.c.(mince)	1	O/L
50	Flat washer 3/8" hole	Rondelle plate 3/8" trou	4	O/L
51	Flat washer 9/16" hole	Rondelle plate 9/16" trou	3	O/L

TORQUE SPECIFICATION TABLE

GENERAL TORQUE SPECIFICATION TABLE USE THE FOLLOWING TORQUES WHEN SPECIAL TORQUES ARE NOT GIVEN

NOTE: These values apply to fasteners as received from supplier, dry or when lubricated with normal oil. They do not apply if special graphited or moly disulphide greases or other extreme pressure lubricants are used. This applies to both UNF and UNC threads.

* Thick nuts must be used with grade 8 bolts

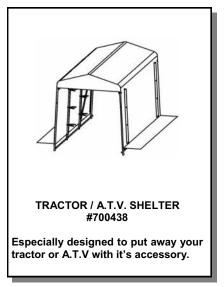
SEE Grade	No.		2	2		5			8 *				
BOLT HEAD IDENTIFICATION MARKS AS PER GRADE NOTE MANUFACTURING MARKS WILL VARY			TOR	QUE		TORQUE					TORQUE		
во	LT SIZE	FOOT	POUNDS	NEW TON-N	IETERS	FOOT POUNDS		NEW TON-N	IETERS	FOOT P	OUNDS	NEW TON-M	ETERS
Inches	Millimetre	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min. Max.	Max.	Min. Max.	Max.
1/4"	6.35	5	6	6.8	8.13	9	11	12.2	14.9	12	15	16.3	30.3
5/16"	7.94	10	12	13.6	16.3	17	20.5	23.1	27.8	24	29	32.5	39.3
3/8"	9.53	20	23	27.1	31.2	35	42	47.5	57	45	54	61	73.2
7/16"	11.11	30	35	40.7	47.4	54	64	73.2	86.8	70	84	94.9	113.9
1/2"	12.7	45	52	61	70.5	80	96	108.5	130.2	110	132	149.2	179
9/16"	14.29	65	75	88.1	101.6	110	132	149.2	179	160	192	217	260.4
5/8"	15.88	95	105	128.7	142.3	150	180	203.4	244.1	220	264	298.3	358
3/4"	19.05	150	185	203.3	250.7	270	324	366.1	439.3	380	456	515.3	618.3
7/8"	22.23	160	200	216.8	271	400	480	542.4	650.9	600	720	813.6	976.3
1"	25.4	250	300	338.8	406.5	580	696	786.5	943.8	900	1080	1220.4	1464.5

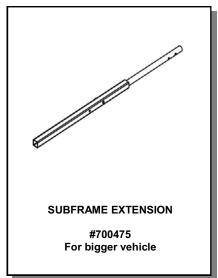
METRIC BOLT TORQUE SPECIFICATIONS								
			COARSE THRE	AD	FINE THREAD			
Size Screw	Grade No.	Pitch (mm)	Foot Pounds	Newton-Meters	Pitch (mm)	Foot Pounds	Newton-Meters	
M6	4T	1.00	3.6 - 5.8	4.9 - 7.9	-	-	-	
	7T	1	5.8 - 9.4	7.9 - 12.7		-	-	
	8T		7.2 - 10	9.8 - 13.6		-	-	
М8	4T	1.25	7.2 - 14	9.8 - 19	1.00	12 - 17	16.3 - 23	
	7T]	17 - 22	23 - 29.8		19 - 27	25.7 - 36.6	
	8T		20 - 26	27.1 - 35.2		22 - 31	29.8 - 42	
M10	4T	1.50	20 - 25	27.1 - 33.9	1.25	20 - 29	27.1 - 39.3	
	7T		34 - 40	46.1 - 54.2		35 - 47	47.4 - 63.7	
	8T		38 - 46	51.5 - 62.3		40 - 52	54.2 - 70.5	
M12	4T	1.75	28 - 34	37.9 - 46.1	1.25	31 - 41	42 - 55.6	
	7T]	51 - 59	69.1 - 79.9		56 - 68	75.9 - 92.1	
	8T		57 - 66	77.2 - 89.4		62 - 75	84 - 101.6	
M14	4T	2.00	49 - 56	66.4 - 75.9	1.50	52 - 64	70.5 - 86.7	
	7T		81 - 93	109.8 - 126		90 - 106	122 - 143.6	
	8T		96 - 109	130.1 - 147.7		107 - 124	145 - 168	
M16	4T	2.00	67 - 77	90.8 - 104.3	1.50	69 - 83	93.5 - 112.5	
	7T		116 - 130	157.2 - 176.2		120 - 138	162.6 - 187	
	8T		129 - 145	174.8 - 196.5		140 - 158	189.7 - 214.1	
M18	4T	2.00	88 - 100	119.2 - 136	1.50	100 - 117	136 - 158.5	
	7T		150 - 168	203.3 - 227.6		177 - 199	239.8 - 269.6	
	8T		175 - 194	237.1 - 262.9		202 - 231	273.7 - 313	
M20	4T	2.50	108 - 130	146.3 - 176.2	1.50	132 - 150	178.9 - 203.3	
	7T		186 - 205	252 - 277.8		206 - 242	279.1 - 327.9	
	8T		213 - 249	288.6 - 337.4		246 - 289	333.3 - 391.6	

ATTACHMENTS









NOTES



WHEN PERFORMANCE & DEPENDABILITY ARE NON NEGOTIABLE!

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