



Berco
Rotary Broom 60"
For
ALL TERRAIN VEHICLES

- * ASSEMBLY
- * OPERATION

- * REPAIR PARTS
- * 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 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 extends to the original retail purchaser only and is not transferable to any subsequent purchasers.

Warranty Period

(from date of the original retail purchase):

- Residential use: 1 year
- Commercial or rental use: 90 days

Exceptions Noted Below: the following items are guaranteed by the original manufacturer and have their own warranty, conditions and limited time:

- Tire Chains: 90 days
- Engines (supplied with BERCOMAC equipment): 2 years

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, maintained, stored or repaired not in accordance with the instructions in the owner's manual.
- Repair due to normal wear and or any wear items such as shear pins, bolts, belts, 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.

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

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 dealer where equipment was purchased or any other BERCOMAC Service Dealer to arrange service at their dealership. To locate a dealer convenient to you, access our website at www.bercomac.com. Bring the product and your proof of purchase (sales receipt) to the BERCOMAC dealer.

Owner's Responsibilities:

BERCOMAC's defective equipment or part must be returned to an authorized 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 from BERCOMAC must be obtained by dealer 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 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.

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

- Travel time, overtime, after hours 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 labor 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.

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

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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 accessory.

NOTE: All photographs and illustrations in the manual may not necessarily depict the actual models or accessories, 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 accessory's serial number and purchase date in the section reserved below. 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 : _____

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.

1. 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.
2. Never allow children to operate the vehicle nor the accessory. Never allow adults to operate the vehicle nor the accessory without proper instructions.
3. 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.

PREPARATION:

1. 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.
3. 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.
 - c) 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 lock-open device.
 - g) Replace fuel cap securely and wipe up spilled fuel.
 - h) If fuel is spilled on clothing, change clothing immediately.
5. Never attempt to make any adjustments while the engine (motor) is running (except when specifically recommended by manufacturer).
6. Let the vehicle and accessory adjust to outdoor temperatures before starting to clear snow.
7. Always wear safety glasses or eye shields during operation or while performing an adjustment or repairs to protect the eyes from foreign objects that may be thrown from the accessory.
8. **Never modify the accessory or any part without the written consent from the manufacturer.**

SAFETY PRECAUTIONS

OPERATION:

1. Do not put hands or feet near, under or inside rotating parts.
2. Exercise extreme caution when operating on or crossing gravel drives, walks or roads. Stay alert for hidden hazards or traffic. Do not carry passengers.
3. 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.
5. 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 contact 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.
7. Never clean 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 use an accessory without proper guards, plates, or other safety protective devices in place
9. 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.
10. Never operate the rotary broom at high transport speeds on slippery surfaces. Use care when backing up.
11. Do not carry passengers.
12. Disengage power to the accessory when it is transported or not in use.

13. Never operate the accessory without good visibility or light.
14. Keep the accessory away from heat sources or flames.
15. Always wear a dust mask when working in a dusty environment.

MAINTENANCE AND STORAGE

1. When cleaning, repairing or inspecting the vehicle and accessory, make certain that all moving parts have stopped. Disconnect wire from the spark plug (s) and keep wire away to prevent accidental starting.
2. Check all the bolts at frequent intervals to make sure that they are properly tightened .
3. 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.
4. Always refer to the owner's manual when you store the accessory and vehicle for a prolonged or an unspecified length of time.
5. Maintain or replace safety and instruction labels, as necessary.
6. For winter accessories, (if applicable), let the engine run for a few minutes after clean snow in order to prevent the rotary parts from freezing.
7. Inspect the vehicle's and accessory's air filter 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.

WHENEVER YOU SEE THIS SYMBOL



**IT MEANS:
WARNING!
BECOME ALERT !
YOUR SAFETY IS INVOLVED!**

SAFETY DECALS

**REPLACE IF DECALS ARE DAMAGED
SEE PARTS BREAKDOWN FOR DECAL LOCATION**



Decal # 102386



Decal # 102384



Decal # 102128



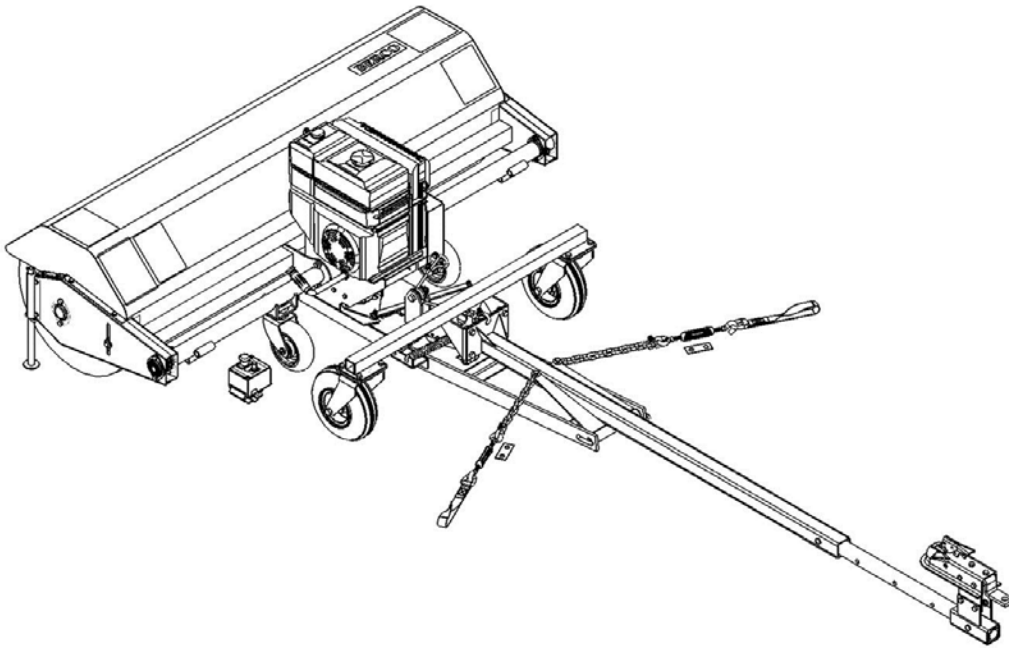
Decal # 102553

ASSEMBLY

STEP 1

ROTARY BROOM PREPARATION

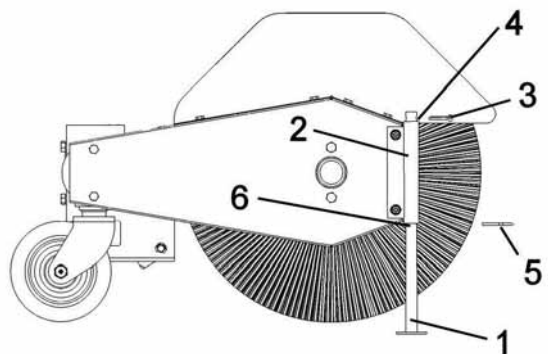
IMPORTANT: TORQUE ALL BOLTS ACCORDING TO TORQUE SPECIFICATION TABLE (SEE TABLE OF CONTENTS) WHEN STATED: TIGHTEN FIRMLY. REFER TO PARTS BREAKDOWN SECTION FOR PART IDENTIFICATION.



Overall view

Insert the parking stands (item 1) in the stand holders (item 2). Secure with a 5/32 x 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.

This will allow the broom to rest on the stand.



Install parking stands

ASSEMBLY

Push frame installation:

Install the push frame (item 1) to the motor frame (item 2) by using two cone bearings (item 3), one on top and the other underneath. Fill the space between the bearings with grease.

Secure with a seal washer (item 4), the hollow portion toward the top and a nylon insert lock nut (item 5). Tighten loosely enough to permit the push frame to move freely.

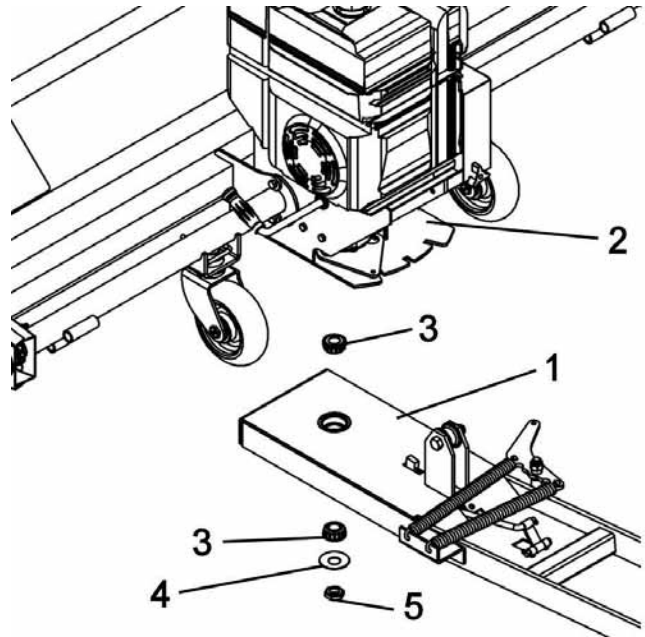


DANGER



**NEVER OPERATE THE ROTARY BROOM WITH-
OUT:**

**Brush hood
Belt guard
Gear box guard
Extension guard and any other safety protection
devices in place.**



Install the push frame



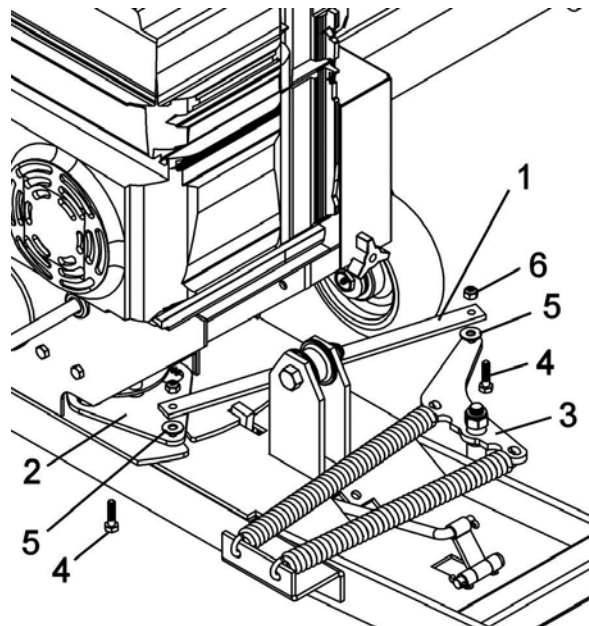
CAUTION



Never use the Rotary Broom without the belt guard.

Install the link (item 1) on the lever (item 2) and on the pivot (item 3) using two 1/4" x 1" hex bolts, two flat washers (item 5) and two nylon insert lock nuts (item 6).

Tighten loosely enough to permit the parts to move freely.



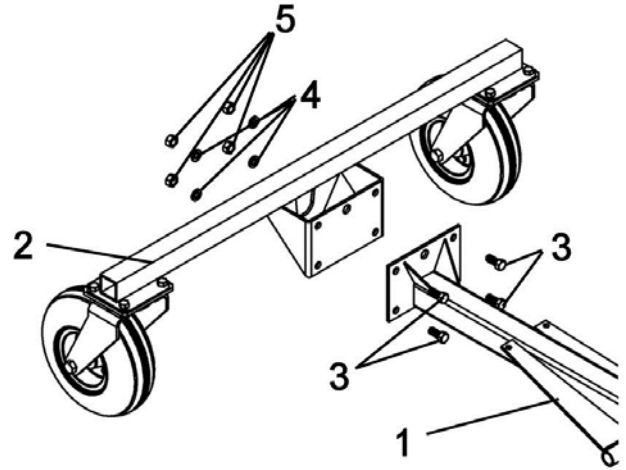
Install the link

ASSEMBLY

STEP 2

SUBFRAME PREPARATION:

Install the wheel support (item 2) to the subframe (item 1) using four 7/16" x 1" hex bolts, four lock washer (item 4) and four hex nuts (item 5).

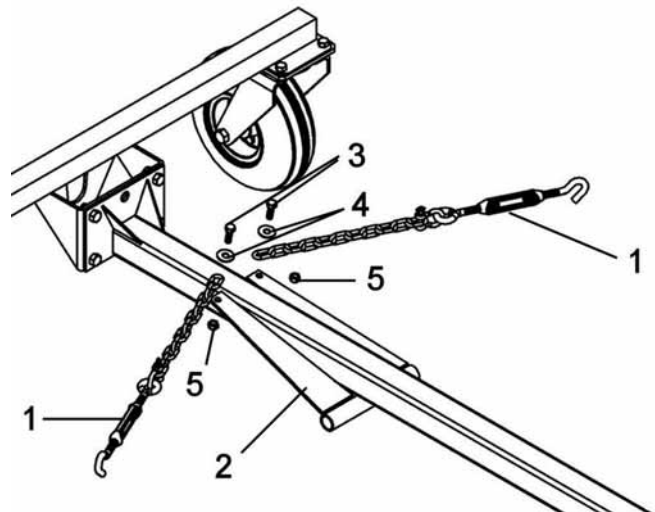


Install the wheel support

Install the assembled turnbuckles (item 1) on the subframe (item 2).

Secure with two 5/16" x 1" hex bolts (item 3), two 3/8" flat washers (item 4) and two nylon insert lock nuts.

Tighten loosely enough to allow the parts to move freely.



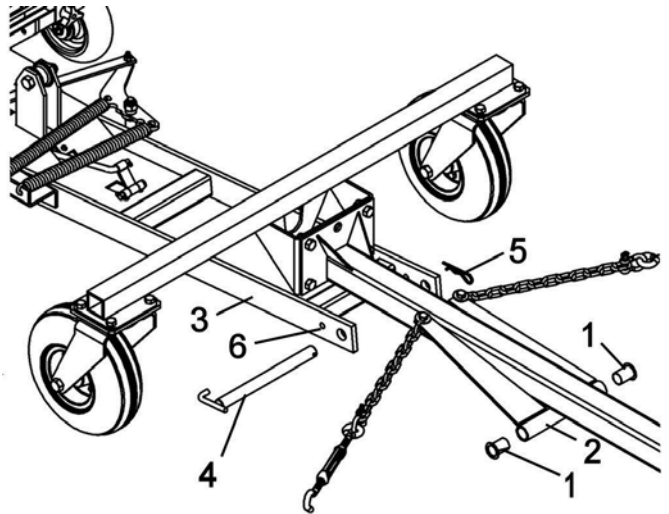
Install the assembled turnbuckles

ASSEMBLY

Insert the nylon bushings (item 1) into the tube welded (item 2) to the subframe. Install the broom's push frame (item 3) to the subframe with the pin (item 4).

Secure with the 3mm hair pin (item 5).

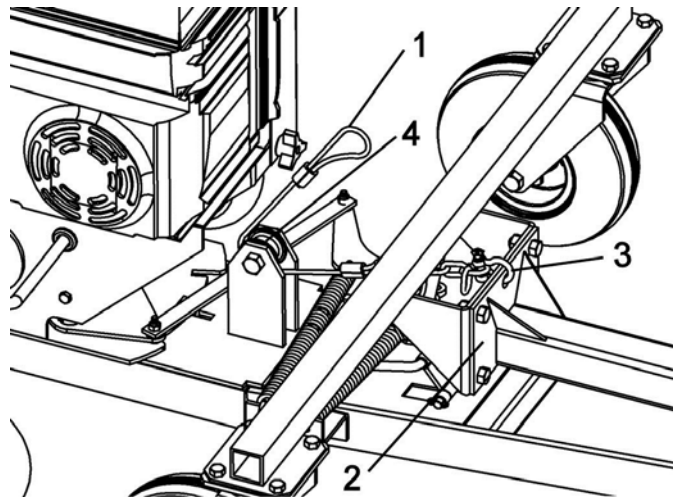
NOTE: The hooked end of the pin must be inserted into the hole (item 6) to lock it in place.



Install the nylon bushings

Install the assembled cable (item 1) to the wheel support (item 2) with the shackle (item 3).

Thread the cable under the pulley (item 4) as shown.



Install the assembled cable

ASSEMBLY

STEP 3

PREPARATION OF THE VEHICLE:

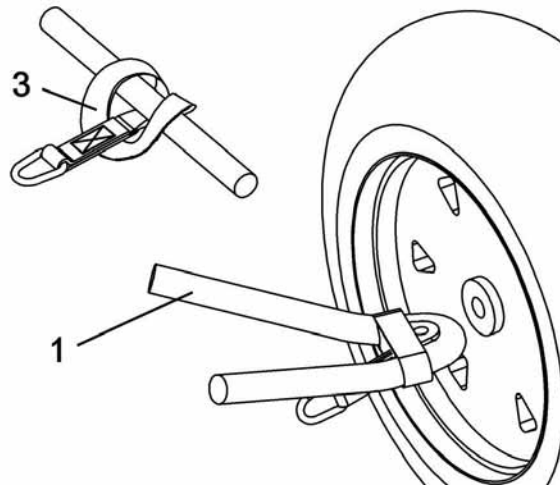
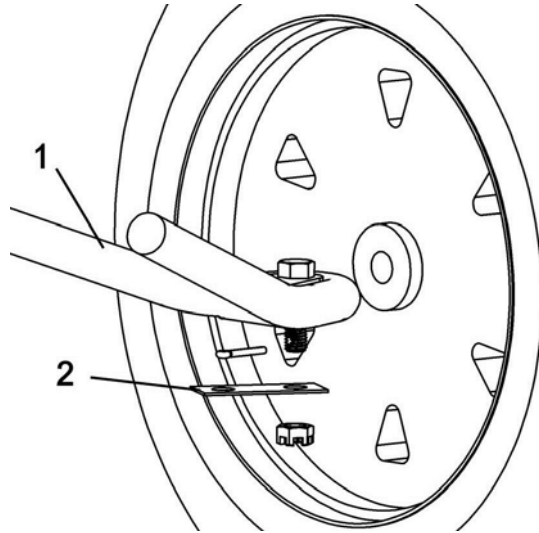
NOTE: A 1 7/8" hitch ball is required.

Remove the nut from the suspension arm (item 1) on the vehicle and install the bracket (item 2). Secure loosely with the original nut. Do the same for the other side.

If you can not install the brackets on your vehicle, install the lift strap (item 3) by looping it around the suspension arm (as shown) on the vehicle.

Tighten the loop firmly.

Do the same for the other side.



Install the brackets or the lift straps

ASSEMBLY

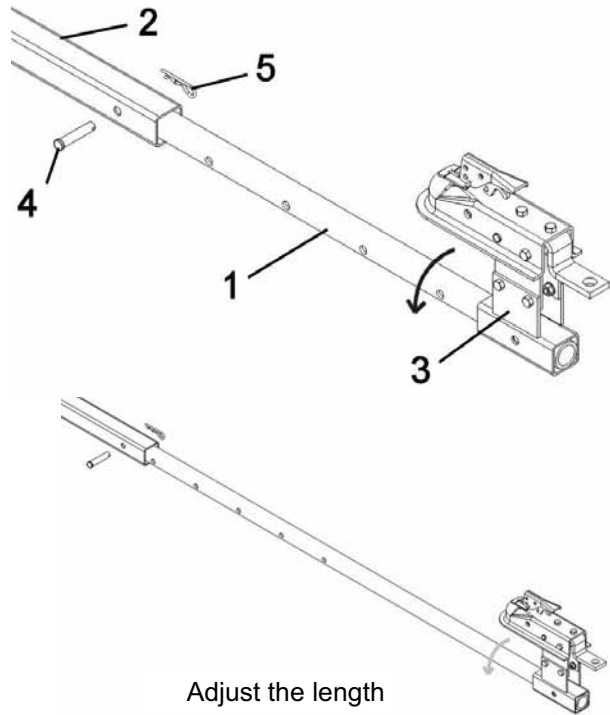
You have nine different positions on the subframe extension (item 1) (the extension can be inverted) to adjust the length of the subframe and three positions to adjust the height of the subframe. To choose the right adjustment, insert the subframe extension (item 1) into the subframe (item 2) and insert the hitch support (item 3) on the subframe extension.

Do not secure.

Turn the hitch support to the side to facilitate installation.

Drive the vehicle over the subframe, make sure the wheels do not touch the front wheels of the vehicle.

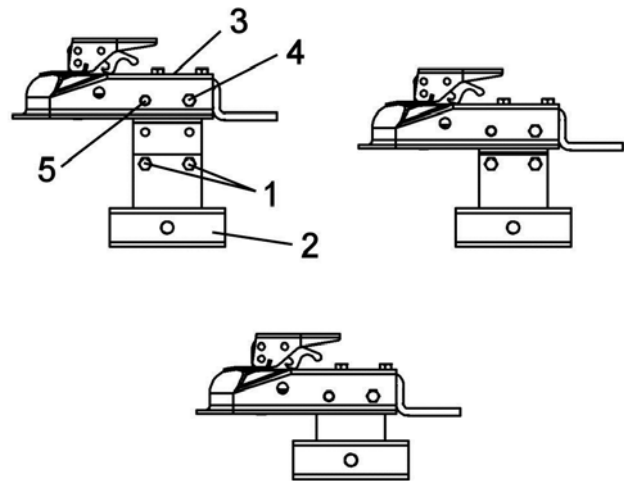
Identify the right length and secure in place with a pin (item 4) and a 3mm hair pin (item 5).



Adjust the length

Identify the right position for the height according to the 3 positions in the figure. Proceed with the assembly with four 3/8" x 3/4" (item 1), flange nuts and the hitch support (item 2) if applicable.

Install the hitch (item 3) with a 3/8" x 3" (item 4) nylon insert lock nut, pin (item 5) and a 3mm hair pin.



3 different positions for the height

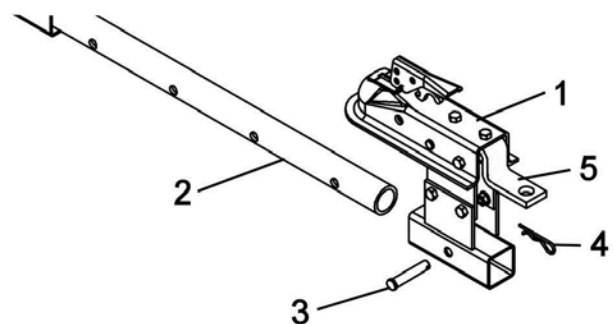
Insert the assembled hitch support (item 1) onto the subframe extension (item 2).

Secure in place with the pin (item 3) and the 3mm hair pin (item 4).

Attach the hitch assembly on the tow hitch ball of the vehicle.

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

NOTE: You can turn the hitch support to facilitate the movement of the vehicle over the subframe by removing the pin (item 3).



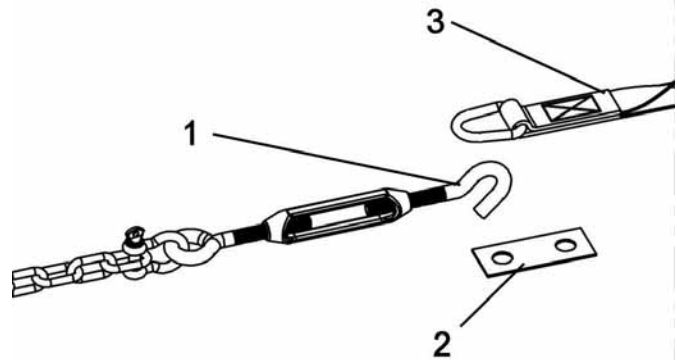
Install the hitch support

ASSEMBLY

Hook the turnbuckles (item 1) into the brackets (item 2) or the lift straps (item 3) and adjust them so that the subframe is centered under the vehicle.

IMPORTANT: After adjusting the turnbuckles, firmly tighten the nuts on the wheel supports of the vehicle.

Make sure to block the nuts with the original locks.



Hook the turnbuckles or lift straps

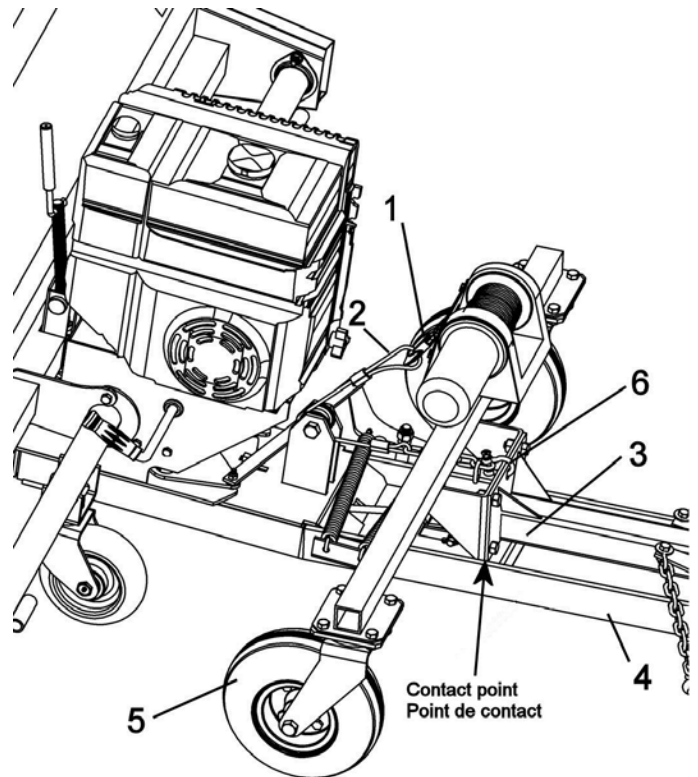
STEP 4 **ADJUSTMENT OF THE LIFT HEIGHT:**

IMPORTANT: If you do not follow these instructions, the subframe may be damaged and it will not be covered by the warranty.

Insert the hook of the winch (item 1) into the cable (item 2) supplied with the subframe. You must adjust the length of the cable with the chain and shackle (item 6).

The required adjustment is as follows: when the push frame (item 3) is blocked (contact point) by the subframe (item 4) as shown, the winch cable must be rolled up to its maximum in order to limit lifting to the right height.

IMPORTANT: In order to avoid any damages to the subframe, the wheels (item 5) must stay in contact with the ground at all times.



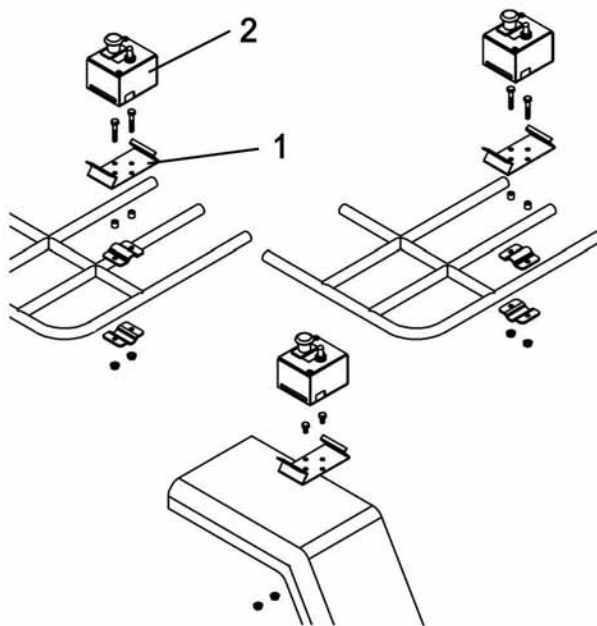
Adjust the lift cable

ASSEMBLY

STEP 5 **INSTALLATION OF THE CONTROL BOX**

You have three different ways to secure the control box support (item 1).
Choose the appropriate way.

Insert the control box (item 2) into the support.

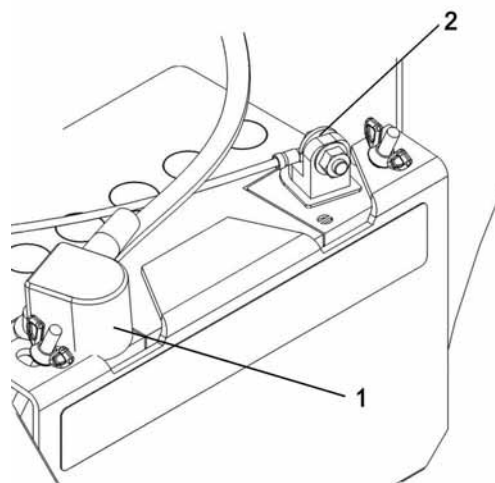


Install the control box

Connect the red wire to the positive post (item 1) and black wire to the negative post (item 2) on the vehicle's battery.
Secure the wires to the vehicle with the nylon tie wraps.

NOTE: This wire will stay on the vehicle.

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



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.

Familiarize yourself with the controls before using.

1. Raise the broom.
2. Start the engine (full throttle).
3. Engage the broom (item 3).
4. Lower to the ground.
5. Adjust the pressure on the brush.

ANGLE ADJUSTMENT:

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

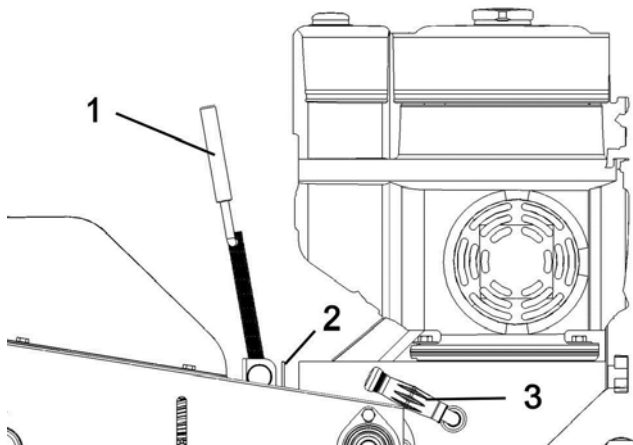
1. Raise the broom to its maximum (the lock mechanism will disengage).
2. Activate the control to turn the broom to the angle desired.
3. Lower the broom to the ground (the locking mechanism will reengage.)

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.

PRESSURE ON THE BRUSH ADJUSTMENT

By turning the adjustment screw (item 1) counter clockwise, the gauge (item 3) moves higher and the pressure of the brush on the ground increases. By turning the adjusting screw clockwise, the gauge moves lower on the gear box frame (item 2) and the pressure of the brush on the ground decreases.

IMPORTANT: Maintain the gauge (item 3) even with the top of the gear box frame (item 2) or lower for general hard surface sweeping. 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%.



Adjust the pressure on the brush

OPERATION

GENERAL SWEEPING

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

SNOW SWEEPING

Adjust the gauge (item 3) to be even with the top of gear box frame. The broom works well for light snow removal.

Sweep with the wind blowing in the direction of broom discharge.

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

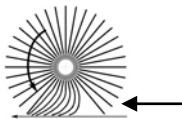
Frequently clean the snow and ice accumulation from the top and bottom of the broom hood.

LAWN DETHATCHING AND LEAF RAKING:

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.

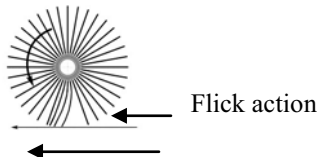
Low brush speed and ground speed is best for lawn dethatching and leaf raking.

Never sweep with the sides of bristles!



Too much pressure=
Shortens brush life!

Sweep with the tips!
Do not mop!



Road surface



WARNING



TO PREVENT INJURIES AND FOR MORE TRACTION WHEN ROTARY BROOM:

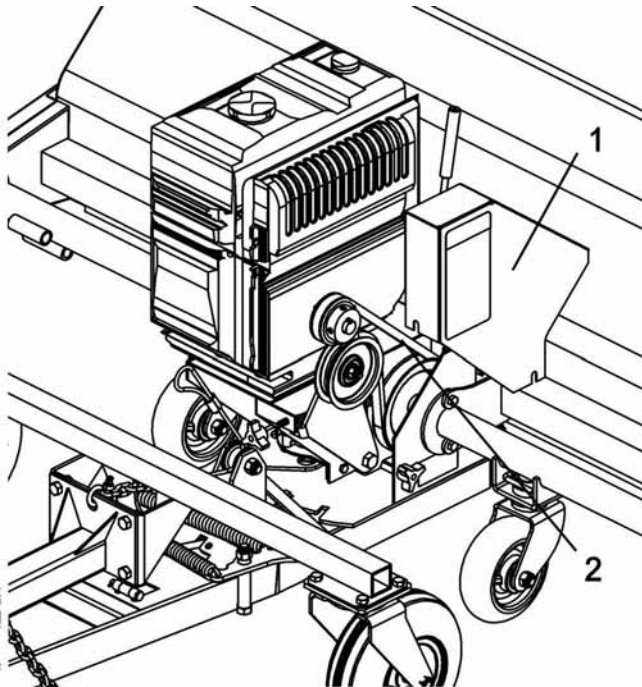
- Do not drive faster than 3 km/hr (2 m/hr) with rotary broom on the ground.
- Do not drive faster than 10 km/hr (6 m/hr) with the rotary broom in raised position.
- Do not operate on a slope greater than 10°.
- A.T.V. manufacturer approved tire chains are required.

MAINTENANCE & DISMOUNTING

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

MAINTENANCE

1. Check oil level in gear box every fifty hours and fill to plug level with SAE-90-EP oil when necessary.
2. Grease the wheel axles after every eight hours of use.
3. Chain: do not lubricate when used in dusty conditions. After use, wash clean and lubricate.
4. Adjust the chain frequently by moving the idler sprocket to give 1/2" deflection.
5. 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.
6. Check mounting bolts at frequent intervals for proper tightness to be sure equipment is in safe working conditions.
7. Apply oil at all pivot points.



BRUSH REPLACEMENT:

See parts breakdown section for parts identification.

1. Remove the hood.
2. Loosen the chain idler sprocket.
3. Remove the bolts from both flangettes that holds the brush hollow shaft.
4. Remove the brush hollow shaft (from the broom frame).
5. Loosen the set screw and remove the right bearing from the brush hollow shaft.
6. Remove the bolt which retains the brush to the brush hollow shaft.
7. Remove the brush tube from axle.
8. Install the new brush by reversing the procedure.
9. Adjust the tension on the chain by moving the idler sprocket to give a 1/2" deflection on the chain.



CAUTION



Never use the Rotary Broom without the belt guard.

BELT REPLACEMENT:

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

1. Remove the belt guard (item 1).
2. Replace the belt (item 2).
3. Engage the accessory.
4. Make sure the pulleys are well aligned.
5. Disengage and reinstall the belt guard.

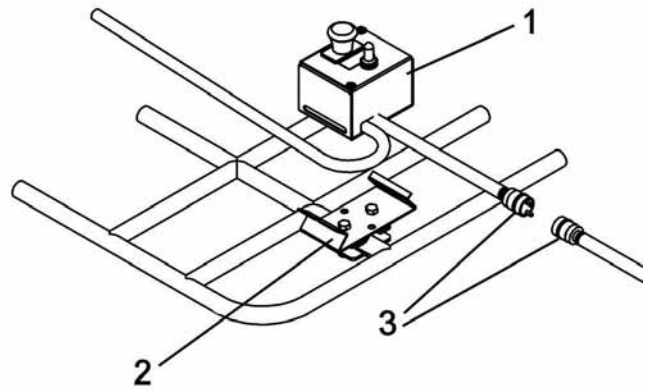
MAINTENANCE & DISMOUNTING

DISMOUNTING

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

END OF SEASON STORAGE

1. Clean the broom and inside of the hood and paint all the parts where the paint has worn off.
2. Take note of the replacement parts needed for next season.
3. Lubricate all grease fittings and all moving parts.
4. Store broom on parking stands. Make sure the brush bristles never touch the ground.
5. If brush bristles are exposed to direct sunlight, protect the bristles with a tarp.
6. Store the broom in a dry place.



TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSES	CORRECTIVE ACTION
<p>Brush wears out prematurely or does not wear out evenly.</p> <p>The brush turns jerkily.</p>	<p>The pressure on the brush is not well adjusted.</p> <p>Too much pressure on the brush, it will wear out up to 5 times faster.</p>	<p>Reduce the pressure on the brush when on the ground.</p> <p>Adjust when needed to compensate for the wearing out of the brush.</p> <p>Always sweep with the tips of the bristles like a broom and not with the sides of the bristles like a mop.</p> <p>Maintain the gauge even with the top of the gear box frame or lower when sweeping hard surfaces.</p>
<p>The brush does not sweep well.</p>	<p>Debris accumulation.</p>	<p>Clean the inside and outside of the hood frequently during operation.</p> <p>Dirt, mud, ice, etc.. accumulation adds weight on the brush and could result in premature wear of the brush.</p>
<p>The brush is too aggressive when lawn dethatching or leaf raking.</p> <p>The brush does not turn on the grass.</p>	<p>Too much pressure on the brush.</p>	<p>Lower the broom on a hard surface and lift brush 1" from the ground by turning the adjusting screw clockwise.</p> <p>Adjust from time to time if necessary.</p>
<p>The chain wears out prematurely.</p>	<p>Inappropriate lubrication.</p>	<p>Do not lubricate the chain during operation. Wait until the job is finished.</p> <p>Wash the rotary broom and lubricate the chain.</p> <p>Let the broom turn a few moments so the oil penetrates in the chain.</p>
<p>The sprocket wears out prematurely.</p>	<p>Chain is not adjusted.</p>	<p>Check the chain adjustment frequently (too tight, too loose).</p>
<p>Loss of steering.</p>	<p>Too much pressure on the brush.</p>	<p>Reduce pressure on the brush. If problem persists, contact your dealer for more information.</p>
<p>The bristles take a bad form or shape.</p>	<p>The broom was not stored on the parking stands.</p>	<p>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.</p>

TORQUE SPECIFICATION TABLE

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

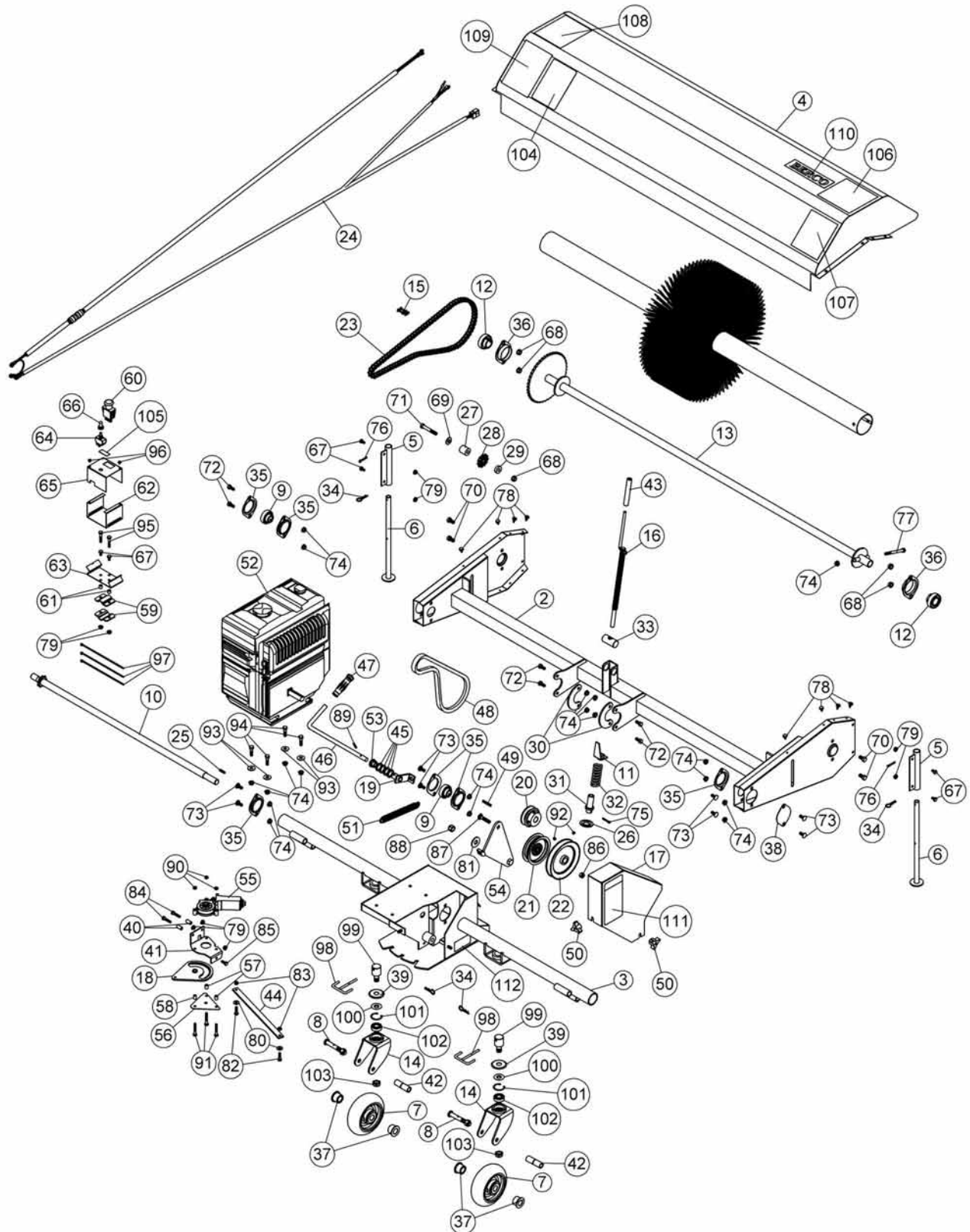
NOTE: These values apply to fasteners as received from supplier, dry or when lubricated with normal oil. They do not apply if special graphited or moly disulphide greases or other extreme pressure lubricants are used. This applies to both UNF and UNC threads.

SEE Grade No.		2				5				8 *			
BOLT HEAD IDENTIFICATION MARKS AS PER GRADE NOTE MANUFACTURING MARKS WILL VARY		TORQUE				TORQUE				TORQUE			
BOLT SIZE		POUNDS FEET		NEWTON-METERS		POUNDS FEET		NEWTON-METERS		POUNDS FEET		NEWTON-METERS	
Inches	Millimetre	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	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

*Thick nuts must be used with grade 8 bolts

METRIC BOLT TORQUE SPECIFICATIONS							
Size Screw	Grade No.	Pitch (mm)	COARSE THREAD		FINE THREAD		
			Pounds Feet	Newton-Meters	Pitch (mm)	Pounds Feet	Newton-Meters
M6	4T	1.00	3.6 - 5.8	4.9 - 7.9	-	-	-
	7T		5.8 - 9.4	7.9 - 12.7		-	-
	8T		7.2 - 10	9.8 - 13.6		-	-
M8	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

PARTS BREAKDOWN / NOMENCLATURE DES PIÈCES ROTARY BROOM / BALAI ROTATIF



PARTS LIST / LISTE DES PIÈCES

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	104649
4	Hood	Capot	1	104457
5	Stand holder	Support de pied	2	102392
6	Parking stand	Pied de stationnement	2	102394
7	Wheel 6"	Roue 6"	2	103484
8	Axle and nut	Essieu et écrou	2	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	2	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	104652
18	Lever	Levier	1	104707
19	Tension arm	Bras de tension	1	104656
20	Pulley 2.5" with set screw	Poulie 2.5" avec vis à pression	1	104629
21	Flat pulley	Poulie plate	1	102765
22	V pulley	Poulie en V	1	103288
23	Roller chain #40 x 90 links/conn.link	Chaîne #40 x 90 mailles/maille acc.	1	104449
24	Wire assembly	Fil assemblé	1	104662
25	Key 3/16" x 3/16" x 1"	Clé 3/16" x 3/16" x 1"	1	102026
26	Special washer	Rondelle spéciale	1	102429
27	Spacer	Douille	1	102286
28	Idler sprocket	Pignon tendeur	1	102027

O/L= Obtain locally / Obtenir localement

PARTS LIST / LISTE DES PIÈCES

Ref. Réf.	English description	Description française	Qty. Qté.	Part # Pièce #
29	Spacer	Espaceur	1	102241
30	Collar	Collet	2	102402
31	Spring holder	Support de ressort	1	102197
32	Spring	Ressort	1	102201
33	Special nut	Écrou spécial	1	102288
34	Hair pin 2.5mm	Goupille à ressort 2.5mm	4	102013
35	Flangette	Flangette	6	102212
36	Flangette	Flangette	2	102680
37	Delrin bushing	Coussinet Delrin	4	103482
38	Cap	Capuchon	1	104517
39	Cap	Capuchon	2	102586
40	Sleeve	Douille	2	104186
41	Bracket	Support	1	104653
42	Wheel bushing	Douille de roue	2	103483
43	Foam grip	Poignée de mousse	1	104630
44	Link	Lien	1	104655
45	Washer	Rondelle	4	104113
46	Tension arm	Bras de tension	1	104657
47	Handgrip	Poignée	1	102062
48	V-Belt , B-31	Courroie en V , B-31	1	104658
49	Key 3/16 x 3/16 x 1 1/2"	Clé 3/16 x 3/16 x 1 1/2"	1	104536
50	Knob	Bouton	2	103027
51	Spring	Ressort	1	102592
52	Engine	Moteur	1	103899
53	Plastic grommet	Oeillet de plastique	1	102063
54	Idler arm	Bras de tension	1	104654
55	Electric motor	Moteur électrique	1	103378
56	Plate	Plaque	1	103363
57	Spacer	Espaceur	2	103361

O/L= Obtain locally / Obtenir localement

PARTS LIST / LISTE DES PIÈCES

Ref. Réf.	English description	Description française	Qty. Qté.	Part # Pièce #
58	Oil lite bushing	Coussinet imprégné d'huile	1	103362
59	Support bracket	Fixation du support	2	103068
60	P.T.O. switch	Commutateur de p.d.f.	1	104016
61	Spacer	Espaceur	2	103368
62	Box	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	Hex. bolt 1/4" n.c. x 1/2"	Boulon hex. 1/4" n.c. x 1/2"	6	O/L
68	Flange nut 3/8" n.c.	Écrou à bride 3/8" n.c.	5	O/L
69	Flat washer 7/16" hole	Rondelle plate 7/16" trou	1	O/L
70	Hex. bolt 3/8" n.c. x 3/4"	Boulon hex. 3/8" n.c. x 3/4"	4	O/L
71	Hex. bolt 3/8" n.c. x 2 1/2"	Boulon hex 3/8" n.c. x 2 1/2"	1	O/L
72	Hex. bolt 5/16" n.c. x 3/4"	Boulon hex. 5/16" n.c. x 3/4"	6	O/L
73	Carriage bolt 5/16" n.c. x 3/4"	Boulon à carrosserie 5/16" n.c. x 3/4"	8	O/L
74	Flange nut 5/16" n.c.	Écrou à bride 5/16" n.c.	19	O/L
75	Cotter pin 5/32" x 1 1/4"	Goupille fendue 5/32" x 1 1/4"	1	O/L
76	Cotter pin 5/32" x 1"	Goupille fendue 5/32" x 1"	2	O/L
77	Hex. bolt 5/16" n.c. x 3 1/2"	Boulon hex. 5/16" n.c. x 3 1/2"	1	O/L
78	Tapping screw 1/4"-14 x 1/2"	Vis taraudeuse 1/4"-14 x 1/2"	8	O/L
79	Flange nut 1/4" n.c.	Écrou à bride 1/4" n.c.	9	O/L
80	Flat washer 5/16" hole	Rondelle plate 5/16" trou	2	O/L
81	Flat washer 9/16" hole	Rondelle plate 9/16" trou	1	O/L
82	Hex. bolt 1/4" n.c. x 1"	Boulon hex. 1/4" n.c. x 1"	2	O/L
83	Nylon insert lock nut 1/4" n.c.	Écrou a garniture de nylon 1/4" n.c.	2	O/L
84	Hex. bolt 1/4" n.c. x 1 1/4"	Boulon hex. 1/4" n.c. x 1 1/4"	2	O/L
85	Hex. bolt 1/4" n.c. x 3/4"	Boulon hex. 1/4" n.c. x 3/4"	1	O/L

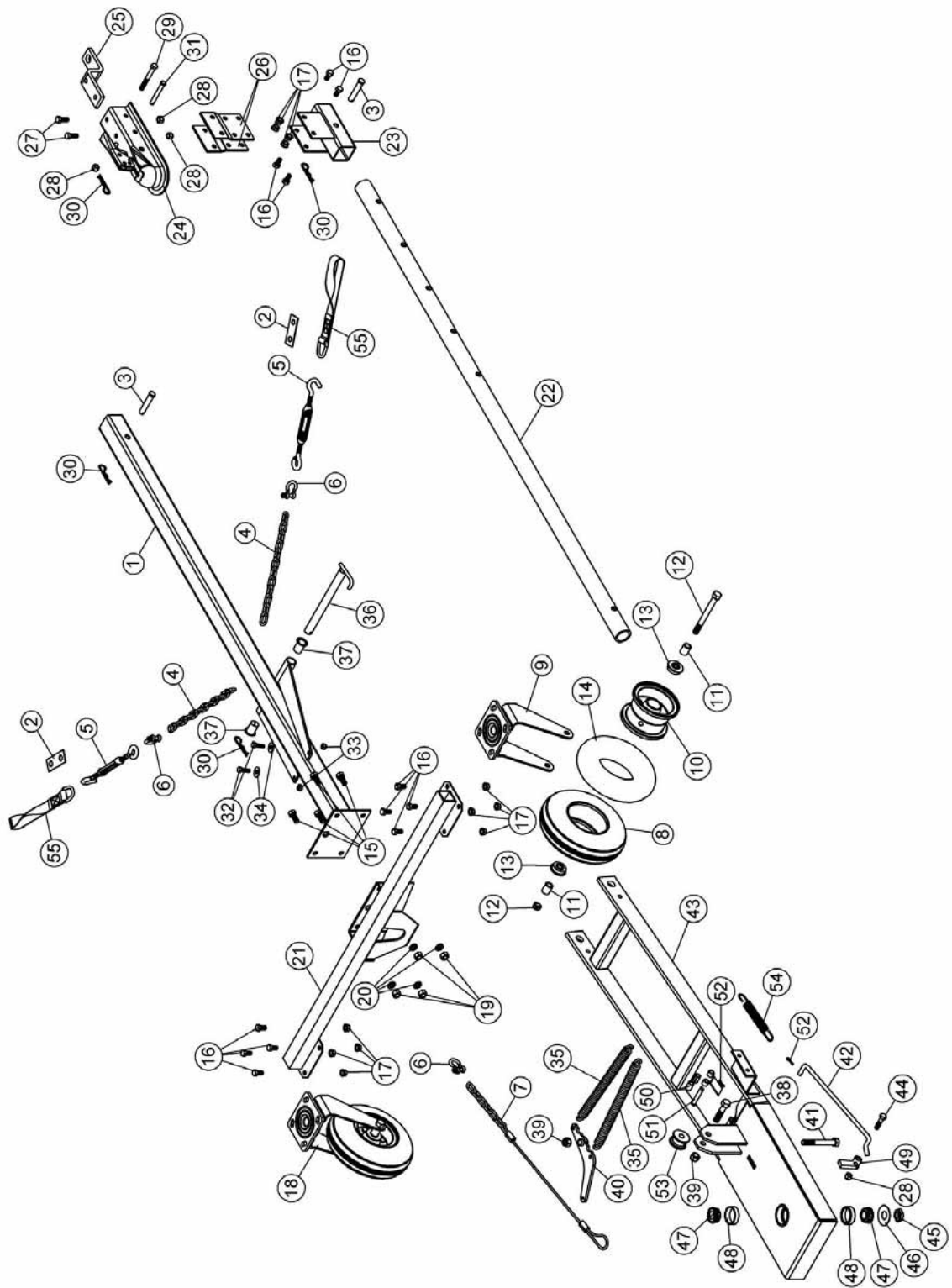
O/L= Obtain locally / Obtenir localement

PARTS LIST / LISTE DES PIÈCES

Ref. Réf.	English description	Description française	Qty. Qté.	Part # Pièce #
86	Nylon insert lock nut 3/8" n.c.	Écrou à garniture de nylon 3/8" n.c.	1	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	Nylon Insert lock Nut 1/2" n.c.	Écrou à garniture de nylon 1/2" n.c.	1	O/L
89	Roll pin 3/16" x 1"	Goupille roulée 3/16" x 1"	1	O/L
90	Nylon insert lock nut 1/4" n.c. (thin)	Écrou à garniture de nylon 1/4" n.c.(mince)	3	O/L
91	Hex. bolt 1/4" n.c. x 1 3/4"	Boulon hex. 1/4" n.c. x 1 3/4"	3	O/L
92	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
93	Flat washer 3/8" hole	Rondelle plate 3/8" trou	4	O/L
94	Hex. bolt 5/16" n.c. x 1 1/4"	Boulon hex. 5/16" n.c. x 1 1/4"	4	O/L
95	Hex. bolt 1/4" n.c. x 1 1/2"	Boulon hex. 1/4" n.c. x 1 1/2"	2	O/L
96	Metal screw pan head #8 x 1/4"	Vis à métal tête pan #8 x 1/4"	2	O/L
97	Tie wrap 8"	Attache de nylon 8"	3	O/L
98	Lock pin	Goupille de barrure	2	104677
99	Adaptor pin	Goupille adaptateur	2	104678
100	Spacer	Douille d'espacement	2	104679
101	Retaining ring	Bague de retenue	2	102600
102	Bearing	Roulement à billes	2	102599
103	Nylon insert lock nut 5/8" n.c. (thin)	Écrou à garniture de nylon 5/8" n.c. (mince)	2	O/L
104	Warning decal	Décalque attention	1	102553
105	Lift decal	Décalque	1	104229
106	Important decal	Décalque important	1	102386
107	Warning decal	Décalque warning	1	102384
108	Important decal	Décalque important	1	102387
109	Attention decal	Décalque attention	1	102385
110	Berco decal	Décalque Berco	1	102471
111	Danger decal	Décalque danger	1	102128
112	Serial number	Numéro de série	1	REF

O/L= Obtain locally / Obtenir localement

PARTS BREAKDOWN / NOMENCLATURE DES PIÈCES SUBFRAME / SOUS-CHÂSSIS



PARTS LIST / LISTE DES PIÈCES

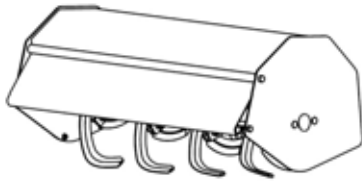
Ref. Réf.	English description	Description française	Qty. Qté.	Part # Pièce #
1	Subframe	Sous-châssis	1	104631
2	Bracket	Fixation	2	104632
3	Pin	Goupille	2	102189
4	Chain	Chaîne	2	104633
5	Turnbuckle	Tendeur	2	104634
6	Shackle Ptd Z	Clevis Pqé Z	3	102343
7	Cable assembly	Câble assemblé	1	104635
8	Tire 280/250-4	Pneu 280/250-4	1	102674
9	Fork assembly	Fourche assemblée	1	102686
10	Rim & bearing	Jante & roulement	1	102687
11	Sleeve	Douille	2	103276
12	Axle bolt & nut	Boulon essieu & écrou	1	102685
13	Ball bearing	Roulement à billes	2	102688
14	Inner tube 250-4	Chambre à air 250-4	1	102675
15	Hex. bolt 7/16" n.c. x 1"	Boulon hex. 7/16" n.c. x 1"	4	O/L
16	Hex. bolt 3/8" n.c. x 3/4"	Boulon hex. 3/8" n.c. x 3/4"	12	O/L
17	Flange nut 3/8" n.c.	Écrou à bride 3/8" n.c.	12	O/L
18	Caster wheel assembly	Roue pivotante assemblée	2	102341
19	Hex. nut 7/16" n.c.	Écrou hex. 7/16" n.c.	4	O/L
20	Lock washer 7/16"	Rondelle de blocage 7/16"	4	O/L
21	Wheel support	Support de roue	1	104636
22	Subframe extension	Extension du sous-châssis	1	104637
23	Hitch support	Support d'attache	1	104638
24	Hitch	Attache	1	104639
25	Hitch ball support	Support de boule d'attelage	1	104640
26	Hitch support	Support d'attache	2	104641
27	Hex. bolt 3/8" n.c. x 1"	Boulon hex. 3/8" n.c. x 1"	2	O/L

PARTS LIST / LISTE DES PIÈCES

Ref. Réf.	English description	Description française	Qty. Qté.	Part # Pièce #
28	Nylon insert lock nut 3/8" n.c.	Écrou à garniture de nylon 3/8" n.c.	4	O/L
29	Hex. bolt 3/8" n.c. x 3"	Boulon hex. 3/8" n.c. x 3"	1	O/L
30	Hair pin 3mm	Goupille à ressort 3mm	4	102617
31	Pin	Goupille	1	104642
32	Hex. bolt 5/16" n.c. x 1"	Boulon hex. 5/16" n.c. x 1"	2	O/L
33	Nylon insert lock nut 5/16" n.c.	Écrou à garniture de nylon 5/16" n.c.	2	O/L
34	Flat washer 3/8" hole	Rondelle plate 3/8" trou	2	O/L
35	Spring	Ressort	2	103073
36	Pin	Goupille	1	104643
37	Nylon bushing	Coussinet en nylon	2	104039
38	Hex. bolt 1/2" n.c. x 2 1/4"	Boulon hex. 1/2" n.c. x 2 1/4"	1	O/L
39	Nylon Insert lock Nut 1/2" n.c.	Écrou à garniture de nylon 1/2" n.c.	2	O/L
40	Pivot	Pivot	1	104644
41	Hex. bolt 1/2" n.c. x 3 3/4"	Boulon hex. 1/2" n.c. x 3 3/4"	1	O/L
42	Push rod	Tige de poussée	1	104645
43	Push frame	Châssis de poussée	1	104646
44	Hex. bolt 3/8" n.c. x 1 1/2"	Boulon hex. 3/8" n.c. 1 1/2"	1	O/L
45	Nylon insert lock nut 3/4" n.c. (thin)	Écrou à garniture de nylon 3/4" n.c.(mince)	1	O/L
46	Seal washer	Rondelle d'étanchéité	1	102289
47	Cone bearing	Roulement conique	2	102369
48	Cup bearing	Cuvette	2	102370
49	Latch	Loquet	1	104647
50	Pivot	Pivot	1	104648
51	Pin	Goupille	1	103580
52	Cotter pin 1/8" x 3/4"	Goupille fendue 1/8" x 3/4"	2	O/L
53	Pulley	Poulie	1	103993
54	Spring	Ressort	1	104194
55	Lift strap	Sangle de relevage	2	103613

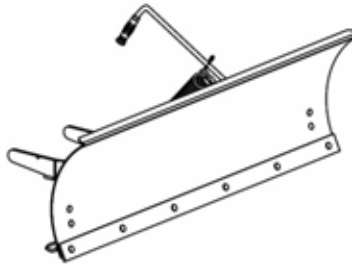
O/L= Obtain locally / Obtenir localement

ATTACHMENTS



ROTARY TILLER #700312

Mounts to the rear of lawn, yard & garden tractors 14 to 25 HP. Comes complete with drive & manual lift mechanisms & mounting hardware.



UTILITY BLADE #700266

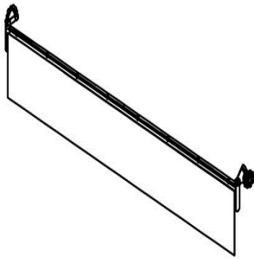
Mounts on the same subframe as the snowblower & rotary broom.



SNOWBLOWER

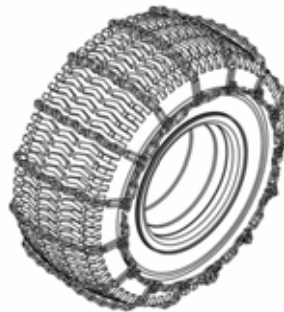
#700255 40"
#700374-44"
#700378-48"

Fits on same subframe as rotary broom and utility blade.



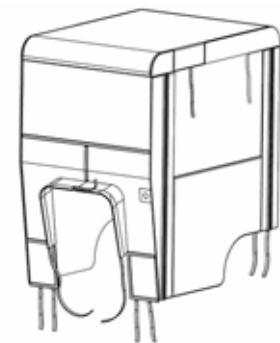
**DUST PROTECTOR
#700449-60"**

Especially designed to reduce flying debris.



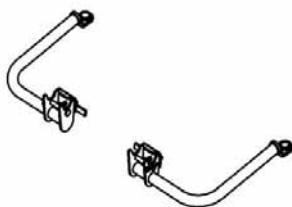
TIRE CHAINS

Two link spacing. Required for traction and safety.
Pkg. of 2



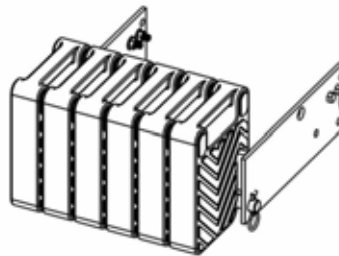
**TRACTOR SCREEN CAB #700424
TRACTOR WINTER CAB #700423**

Universal type fits on a wide variety of lawn and garden tractors.



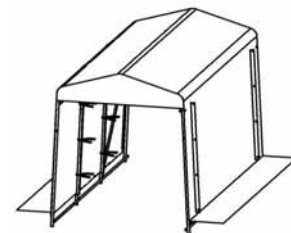
**SIDE WHEEL SUPPORT KIT
#700451**

Especially designed for uneven ground.



COUNTERWEIGHT

#700240 Universal rear weights
#700246 Rear weights Electrolux
Required for safety and traction.
Counterbalances weight of attachment.



**TRACTOR / A.T.V. SHELTER
#700438**

Especially designed to put away your tractor or A.T.V with it's accessory.