

BERCOMAC
LIMITÉE

OWNER'S MANUAL
MODEL NUMBER

700339-4 Subframe
700329-3 Drive Mechanism



BERCO
Subframe & Drive Mechanism
For
JOHN DEERE L110, L111, L118, L120, L130 SERIES
SABRE 14.542 GS, 1642 HS, 17.542 HS
SCOTT L1742, L17.542, L2548
Tractors

* ASSEMBLY
* OPERATION

* REPAIR PARTS
* MAINTENANCE

CAUTION:

**READ & FOLLOW ALL SAFETY RULES & INSTRUCTIONS
BEFORE OPERATING THIS EQUIPMENT**

WARRANTY

LIMITED ONE YEAR ON BERCO TRACTOR ATTACHMENTS

For one year from date of purchase, Bercomac Limitée will repair or replace free of charge at Bercomac's option, any parts which are defective as a result of defective materials or faulty workmanship.

COMMERCIAL OR RENTAL USE:

Warranty on Berco attachments used for commercial or rental purposes is limited to 90 days.

This warranty does NOT cover:

- * **Wear items, such as shear pins and belts, ect.**
- * **Repairs due to customer abuse or neglect.**
- * **Pre-delivery set-up.**
- * **In home service.**

Warranty service is available by returning the "Berco" attachment to the authorized dealer.

BERCOMAC Limitée
92 Fortin N, Adstock, Québec, Canada, G0N 1S0

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INTRODUCTION

TO THE PURCHASER

This new attachment 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.

9 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 : _____

PURCHASE DATE : _____

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

In this manual, "attachment" means accessories that you install on the tractor, such as, snowblower, rotary broom, blade, rotary tiller, cab, subframe, etc...

SAFETY PRECAUTIONS

Careful operation is your best insurance against an accident. Read this section carefully before operating the tractor and attachment. 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 tractor and attachments before operating. It is the owner's legal obligation to instruct all operators in safe operation.

TRAINING

9 This symbol, "Safety Alert Symbol", is used throughout this manual and on the attachments safety labels to warn of the possibility of serious injuries. Please take special care in reading and understanding the safety precautions before operating the tractor or the attachment.

1. Read this owner's manual carefully. Be thoroughly familiar with the controls and proper use of the tractor and attachment. Know how to stop the unit and disengage the controls quickly.
2. Never allow children to operate the tractor nor the attachment. Never allow adults to operate the tractor nor the attachment without proper instructions.
3. No one should operate the tractor nor the attachment while intoxicated or while taking medication that impairs the senses or reactions.
4. Keep the area of operation clear of all persons, particularly small children and pets.

PREPARATION

1. Thoroughly inspect the area where the attachment is to be used and remove door mats, all foreign objects and the like.
2. Disengage all clutches and shift into neutral before starting engine
3. Do not operate the attachment without wearing adequate 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 refuelling 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 engine is running (except where specifically recommended by manufacturer).
 6. Always wear safety glasses or eye shields during operation or while performing an adjustment or repairs to protect eyes from foreign objects that may be thrown from the machine.
 7. **Never modify the attachment or any part without the written consent from the manufacturer.**

OPERATION

1. Do not run engine indoors except when starting engine and transporting attachment, in or out of building. Do not operate or let motor run in a storage area without ventilation because gas contains carbon monoxide which is odourless, colourless and can cause death.
2. Do not carry passengers on attachment or tractor.
3. Take all possible precautions when leaving the machine unattended. Lower the attachment, shift into neutral, set the parking brake, stop the engine and remove the key. Wait for all moving parts to stop.

SAFETY PRECAUTIONS

4. Use only attachments approved by the manufacturer (such as wheel chains, counterweights, cabs). You must use 100 lbs. of rear counterweight for better traction and a greater stability at all times when using an attachment that is installed on the front of a tractor.
5. Never operate an attachment without good visibility or light.

MAINTENANCE AND STORAGE

1. Check shear bolts, mounting bolts, etc..., at frequent intervals for proper tightness to be sure attachment is in safe working condition.
2. Never store the machine with fuel in the tank inside a building where ignition sources are present, such as hot water tanks, space heaters, clothes dryers and the like. Allow engine to cool before storing in any enclosure.
3. Always refer to the owner's manual when you store the attachment.
4. Maintain or replace safety and instructions labels, as necessary.

WHENEVER YOU SEE THIS SYMBOL

9

IT MEANS:

WARNING!

BECOME ALERT !

YOUR SAFETY IS INVOLVED!

9

WARNING

9

FOR YOUR SECURITY:

Read the attachment owner's manual for safety precautions and rules.

Follow the assembly and operation instructions.

9

WARNING

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TO PREVENT INJURIES AND FOR MORE TRACTION WHEN USING AN ATTACHMENT:

-Rear counterweight of 100 lbs. minimum is required to counterbalance the attachment's weight.

-Tractor manufacturer approved tire chains are required.

-Do not operate on a slope greater than 10°.

-When dismounting an attachment remove rear counterweights.

ASSEMBLY

STEP 1

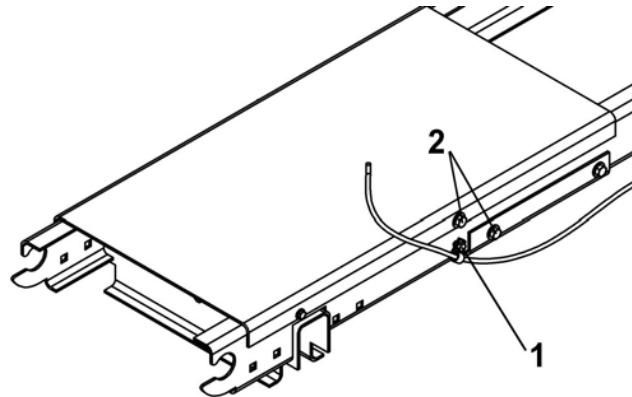
SUBFRAME INSTALLATION:

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

NOTE: You may install the subframe with or without the mower deck. However, you must remove the mower deck if you install the drive mechanism.

If your tractor is equipped with a manual clutch, unscrew the bolt (item 1) on the left hand side that holds the clutch cable to the frame.

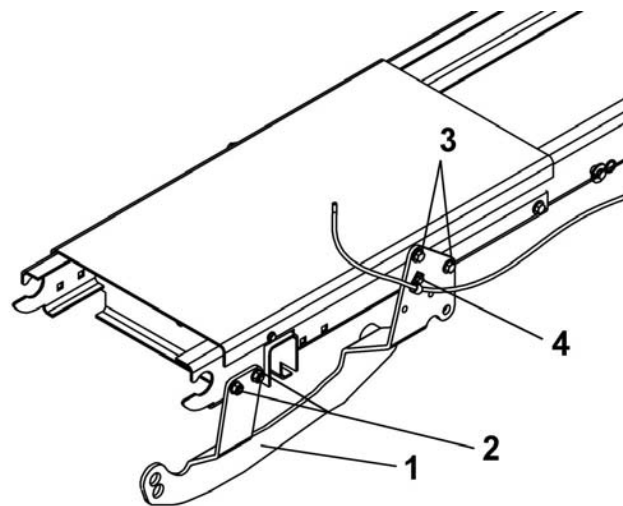
Unscrew the two bolts (item 2) on the left hand side in order to install the left support.



Unscrew the nuts and bolts

Install the left support (item 1) to the tractor frame with two 3/8 x 1" carriage bolts (item 2) at the front (heads on the inside) and two flange nuts. Do not tighten now.

Secure the rear part of the support with the original tractor bolts (item 3) and secure the cable with a M6 x 16 mm bolt (item 4). Do not tighten now.



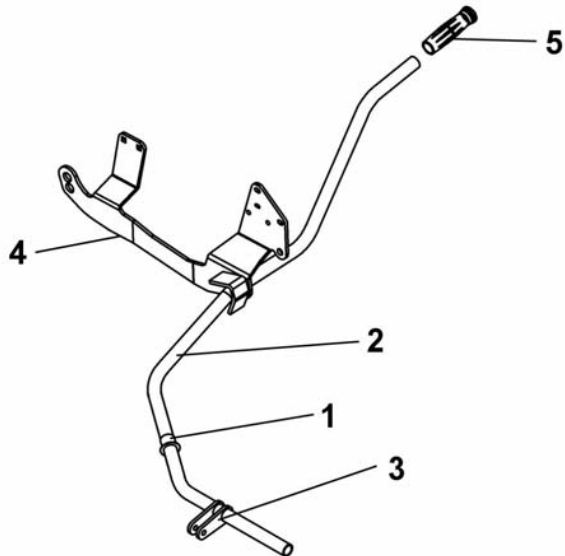
Install the left support

ASSEMBLY

Slide the nylon bushing (item 1) the flange first, down the lift arm (item 2) to the fork (item 3).

Slide the right support (item 4) down the lift arm and to the nylon bushing.

Install the handgrip (item 5) on the lift arm.

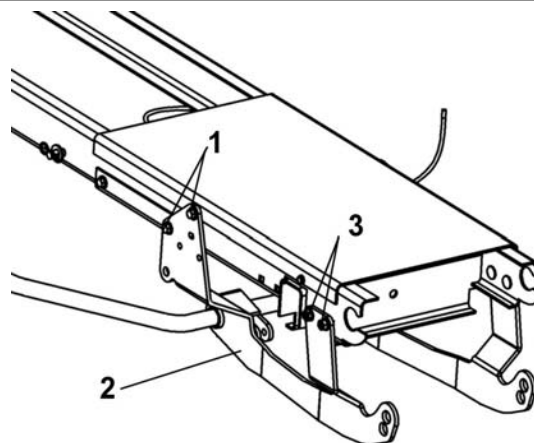


Install the bushing and the lift arm

Unscrew the two bolts (item 1) from the right hand side of the tractor frame.

Install the assembled support (item 2) to the front of the tractor frame by making sure to insert the end of the lift arm into the sleeve on the left support with two carriage bolts (item 3) (the heads inside) and two flange nuts on the outside.

Secure the rear with the original bolts (item 1). Do not tighten the bolts now.



Install the right assembled support

FOR JOHN DEERE MODELS L120 & L130:

Install the pivot support (item 1) inside the front supports in the bottom holes (item 4) with the pin (item 2). Lock in place by placing the bended part of the pin in the top hole (item 5)

Secure in place with one 3 mm hair pin (item 3).

Tighten all the bolts firmly.

FOR JOHN DEERE L110

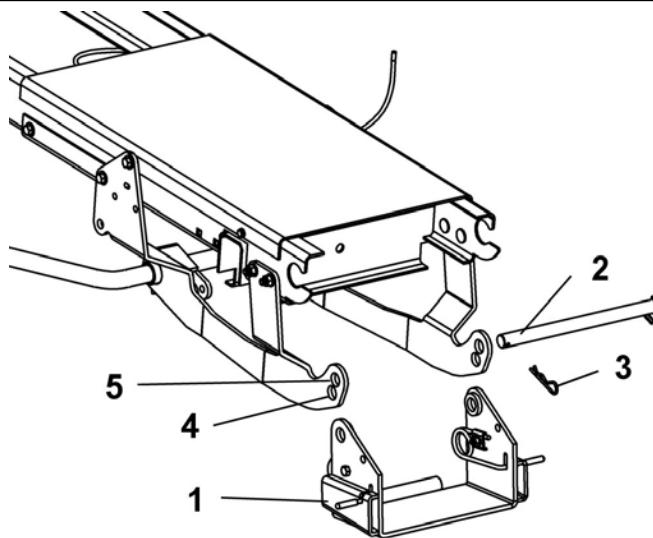
SABRE 14.542 GS,1642HS, 17.542HS

SCOTT L1742,L17.542, L2548 MODEL TRACTORS:

Install the pivot support (item 1) inside the front supports in the top holes (item 5) with the pin (item 2). Lock in place by placing the bended part of the pin in the bottom hole (item 4)

Secure in place with one 3 mm hair pin (item 3).

Tighten all the bolts firmly.

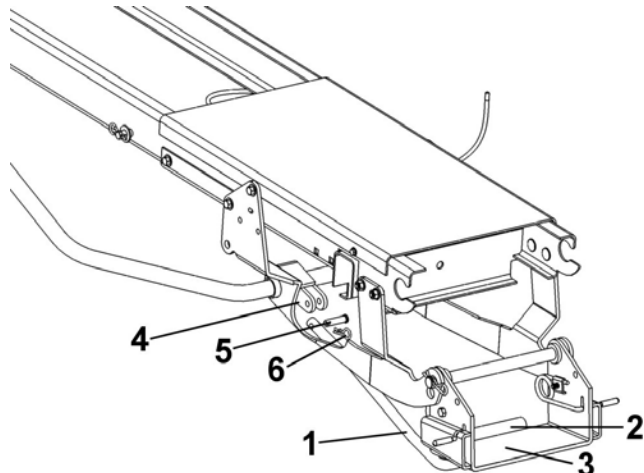


Install the pivot support

ASSEMBLY

Install the push bar (item 1) by inserting it into the sleeve (item 2) welded on the pivot support (item 3).

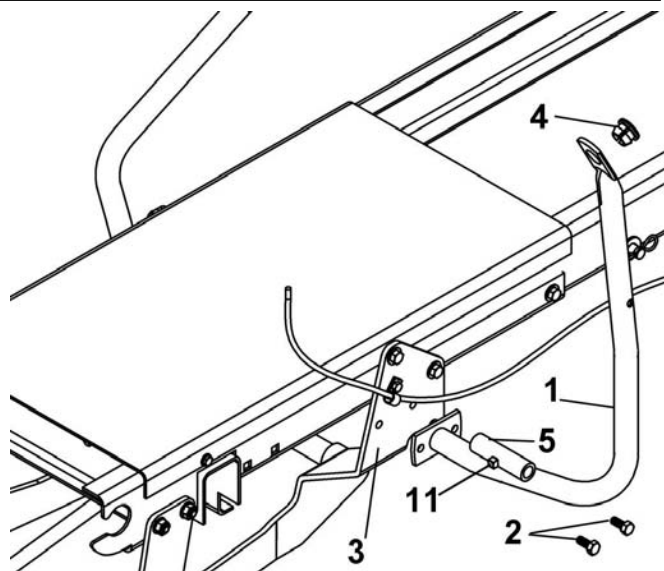
Install the other end in the fork (item 4) of the lift arm with a pin (item 5), the head on the inside and secure with a 2.5 mm hair pin (item 6).



Install the push bar

Install the handle support (item 1) on the left support (item 3) with two 5/16 x 3/4" hex. bolts (item 2) and flange nuts.

Install the plastic grommet (item 4) on the handle support (item 1).



Install the handle support

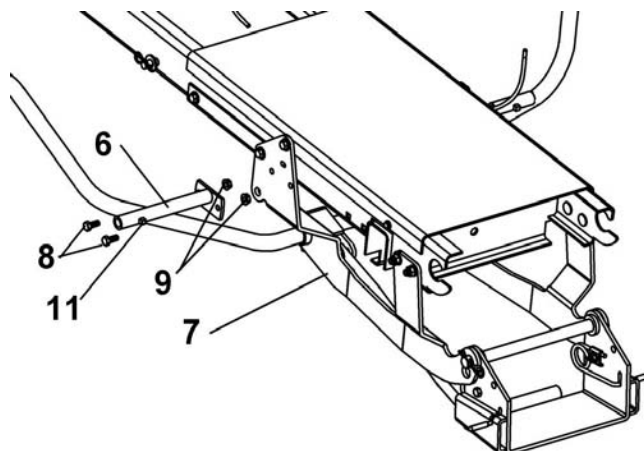
INSTALLATION OF THE SUPPORTS FOR THE BERCO CAB:(all models) (if required).

This subframe includes the front supports to be able to install the Berco cab.

The left support for the cab (item 5) is welded to the handle support (item 1).

Install the right support for the cab (item 6) on the rear right support (item 7) with two 5/16 x 3/4" hex bolts (item 8) and two flange nuts (item 9).

Use the 5/16 x 1/2" square head socket set screws (item 11) to secure the cab supports.



Install the cab support

ASSEMBLY

STEP 2 DRIVE MECHANISM INSTALLATION:

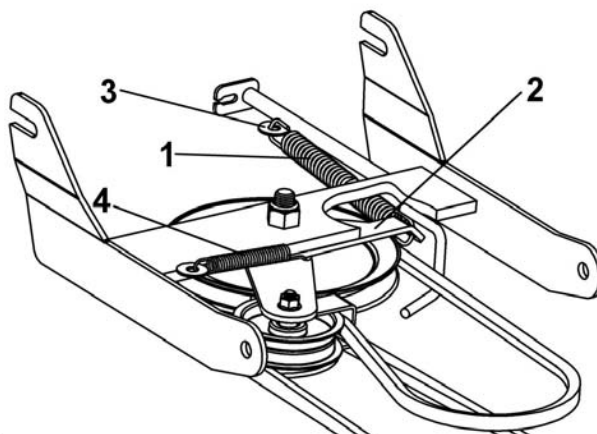
NOTE: Remove the mower deck in order to install the drive mechanism.

If your tractor is equipped with a manual clutch, remember where the clutch cable was installed because you must reinstall it in the same place when the mower deck is reinstalled.

Tractors equipped with an electric clutch:

Remove the spring (item 4), it is not required.

Install the spring (item 1), hook the smallest hook to the idler arm (item 2), so that the opening is towards the bottom. Hook the other end to the welded washer (item 3).



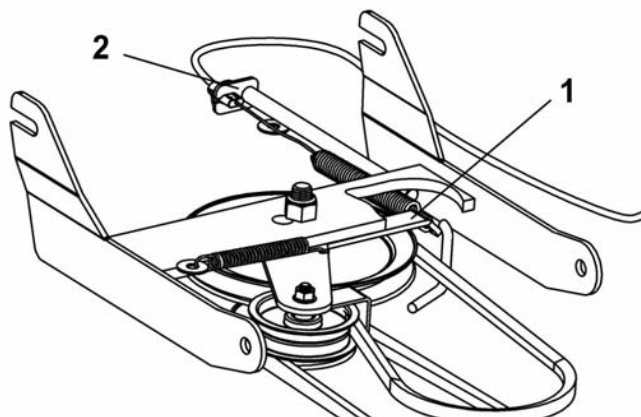
Install the spring

Tractors equipped with a manual clutch:

Hook the clutch cable spring to the tension arm (item 1) so that the opening on the hook is towards the top after installation.

Attach the cable to the cable holder (item 2) and secure in place with the original hair pin.

NOTE: After preparing the subframe, remove the tractor's belt guide situated close to the motor pulley in order to install or to remove the mower or the drive mechanism belt.



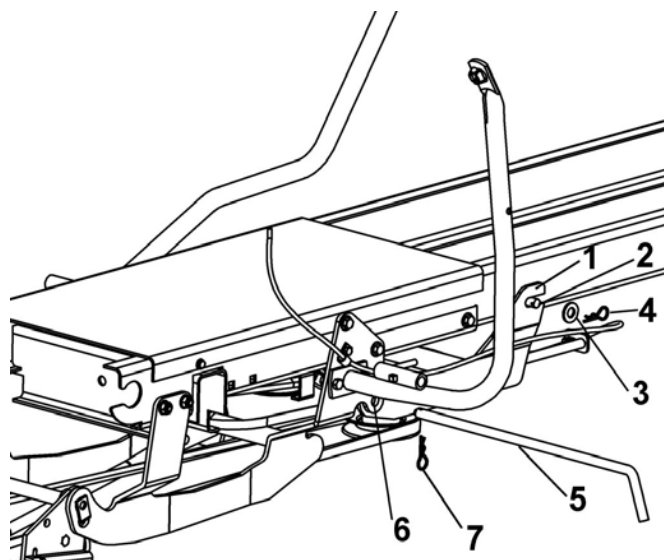
Install the cable

ASSEMBLY

Install the drive mechanism under the tractor by hooking the back part (item 1) on the tractor pins (item 2). (Remove the flat washers (item 3) and the hair pins (item 4) to facilitate installation).

Secure the front part of the drive mechanism with a pin (item 5) in the holes of the supports (item 6) and secure with a 2.5 mm hair pin (item 7).

Secure the rear part of the drive mechanism by installing the original flat washer (item 3) and hair pin (item 4) on the tractor pins (one on each side of tractor).



Install the drive mechanism

In order to facilitate belt installation, remove belt from the large pulley, insert it around the motor pulley, and then on the large pulley.

NOTE: Make sure the clutch mechanism works well.

MANUAL CLUTCH:

Make sure when you disengage the clutch, that the snowblower or the broom stops turning immediately.

Make sure the belt does not touch in any way the belt guides when the clutch is engaged. **(DO THIS VERIFICATION WHEN THE MOTOR IS TURNED OFF.**

ASSEMBLY

STEP 3

SNOWBLOWER INSTALLATION:

Refer to Snowblower owner's manual, parts breakdown section for their identification.

9

WARNING

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FOR YOUR SECURITY:

**Read the Snowblower's owner's manual for safety precautions and rules.
Follow the assembly and operation instructions.**

9

WARNING

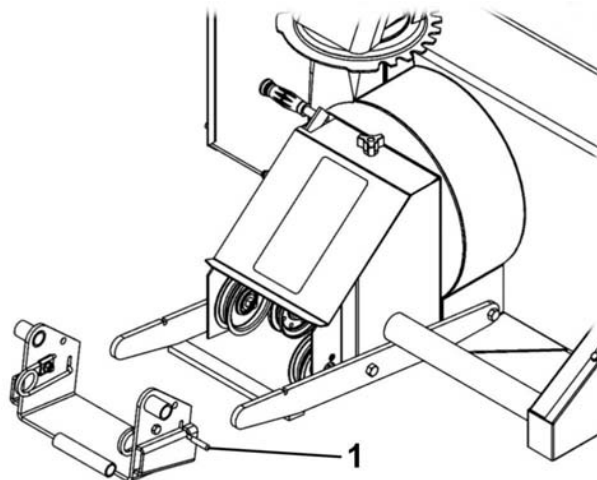
9

TO PREVENT INJURIES:

**Stop the motor.
Apply parking brake.
Remove the ignition key.
Disconnect the wire from the spark plug(s) and keep away from spark plug(s) to prevent accidental starting.**

Install the snowblower to the subframe as shown.

Make sure the snowblower is pushed in until locked into place by the springs (item 1).



Install snowblower

Remove belt guard.

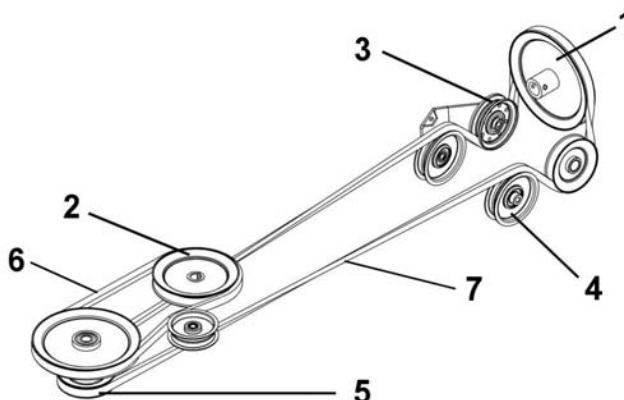
Install the belt around the snowblower pulleys as shown.

Install the belt on the drive mechanism pulley (item 5) under the tractor.

Apply tension on the belt by pulling up the belt tension arm.

Reinstall the belt guard.

NOTE: See belt replacement instructions in the maintenance section of the snowblower owner's manual.



- Item 1: Snowblower pulley
- Item 2: Tractor engine pulley
- Item 3: Flat pulley L.H.
- Item 4: Flat pulley R.H.
- Item 5: Drive mechanism pulley
- Item 6: Drive mechanism belt
- Item 7: Snowblower belt

9

CAUTION

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The belt tension arm is spring loaded & needs to be held firmly while displacing to prevent injury.

9

CAUTION

9

Never use the snowblower without the belt guard.

Install V-belt and belt guard

ASSEMBLY

VERIFY BELT ROUTING:

- Remove the belt guard.
- Lower the snowblower to the ground and let it run for a few seconds under supervision.
- Disengage the snowblower and stop the engine.
- Check the belts to make sure they are well inserted on the pulleys and have not flipped on their sides in the pulleys and that they do not touch the belt guides.
- Reinstall the belt guard.

9

WARNING

9

TO PREVENT INJURIES:

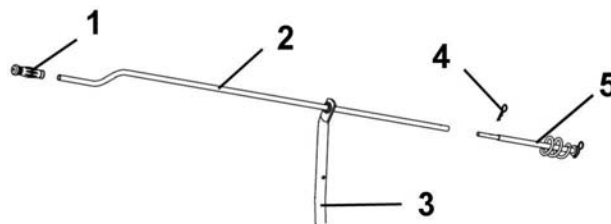
It is the person who installs the drive mechanism responsibility to make sure that when the clutch is disengaged that all moving parts stop.

For more information, do not hesitate to contact the technical support.

Insert the handgrip (item 1) on the handle (item 2).

Insert the handle (item 2) through the support (item 3) as shown.

Insert the handle (item 2) in the rotation worm (item 5) and secure with a 2.5 mm. hair pin (item 4).



Install handle

VERIFY SKID SHOE ADJUSTMENT:

LEVEL PAVED SURFACE: Adjust skid shoes to allow 3/16" to 1/4" clearance (A) between cutting edge and surface.

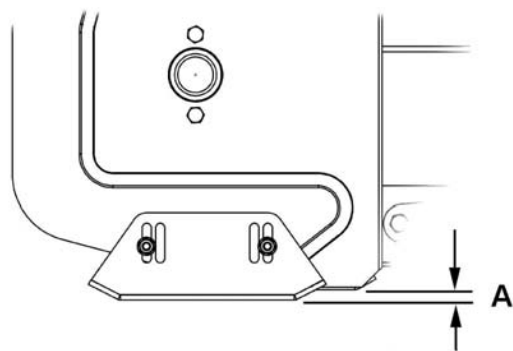
UNEVEN OR GRAVEL SURFACE: Adjust skid shoes to allow 1/2" to 5/8" clearance (A) between cutting edge and surface.

VERIFY TIRE PRESSURE:

Attachments should raise 3" to 4" above ground (no more, no less) if not, check and adjust tractor tire pressure as follows:

Front tires: 14-15 psi
Back tires: 7-8 psi

Tire pressure must be even on both sides of tractor.



Adjust skid shoes

ASSEMBLY

ROTARY BROOM INSTALLATION:

Refer to Rotary Broom owner's manual, parts breakdown section for their identification.

9

WARNING

9

FOR YOUR SECURITY:

Read the Rotary Broom owner's manual for safety precautions and rules.

Follow the assembly and operation instructions.

Install the rotary broom to the subframe as shown.

Make sure the rotary broom is pushed in until locked into place by the springs (item 1).

9

CAUTION

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Never use the Rotary Broom without the belt guard.

9

WARNING

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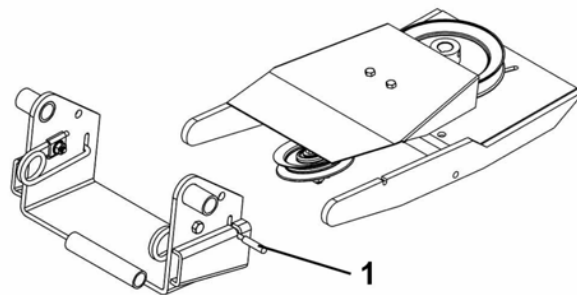
TO PREVENT INJURIES:

Stop the motor.

Apply parking brake.

Remove the ignition key.

Disconnect the wire from the spark plug(s) and keep away from spark plug(s) to prevent accidental starting.



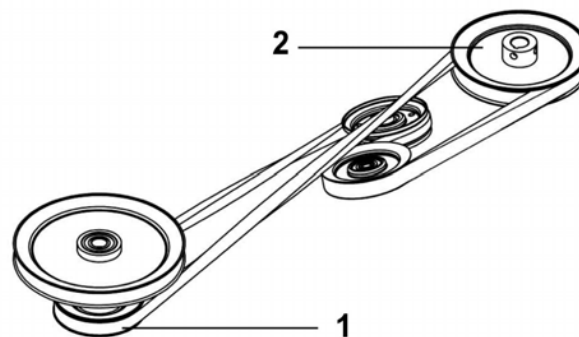
Install rotary broom to subframe

NOTE: See belt replacement instructions in the maintenance section of the rotary broom owner's manual.

Remove the belt guard.

Install the belt on the drive mechanism pulley (item 1) as shown.

Reinstall the belt guard.



Item 1: Drive mechanism pulley

Item 2: Rotary broom pulley

Install belt

ASSEMBLY

VERIFY BELT ROUTING:

- Lower the rotary broom to the ground and let it run for a few seconds under supervision.
- Disengage the rotary broom and stop the engine.
- Check the belts to make sure they are well inserted on the pulleys and have not flipped on their sides in the pulleys and that they do not touch the belt guides.

9

WARNING

9

TO PREVENT INJURIES:

It is the person who installs the drive mechanism responsibility to make sure that when the clutch is disengaged that all moving parts stop.

For more information, do not hesitate to contact the technical support.

Insert handgrip on the handle.

Insert the handle (item 1) through the support (item 2) as shown.

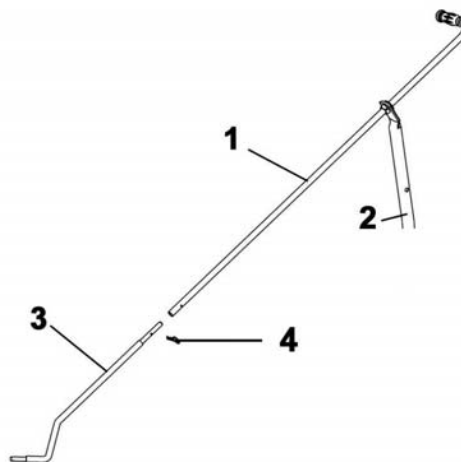
Install the handle on the control rod (item 3) as shown and secure with a 2.5 mm. hair pin (item 4).

VERIFY TIRE PRESSURE:

Attachments should raise 3" to 4" above the ground (no more, no less) if not, check and adjust tractor tire pressure as follows:

Front tires: 14-15 psi
Back tires: 7-8 psi

Tire pressure must be even on both sides of the tractor.



Install handle

ASSEMBLY

UTILITY BLADE INSTALLATION:

Refer to Utility Blade owner's manual, parts breakdown section for parts identification.

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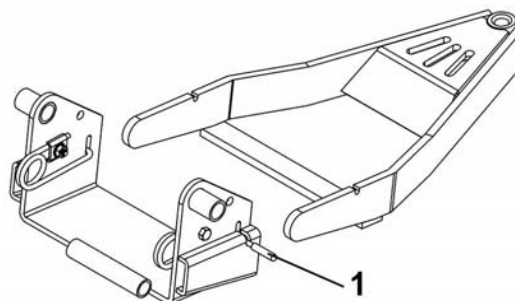
WARNING

9

FOR YOUR SECURITY:

Read the Utility Blade owner's manual for safety precautions and rules.

Follow the assembly and operation instructions.



Install the utility blade to the subframe as shown.

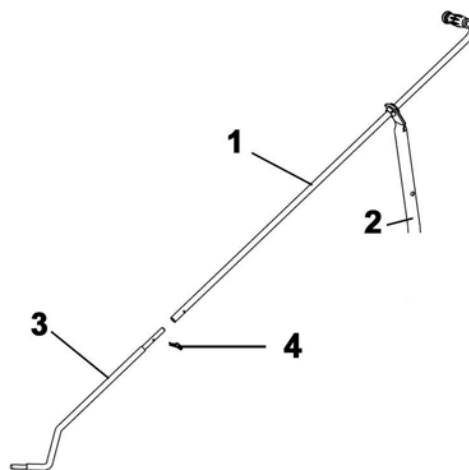
Make sure the utility blade is pushed in until locked into place by the springs (item 1).

Install utility blade to subframe

Insert the handgrip on the handle.

Insert the handle (item 1) through the support (item 2) as shown.

Install the handle on the control rod (item 3) as shown and secure with a 2.5 mm hair pin (item 4).



Install handle

VERIFY TIRE PRESSURE:

Attachments should raise 3" to 4" above the ground (no more, no less) if not, check and adjust tractor tire pressure as follows:

Front tires: 14-15 psi
Back tires: 7-8 psi

Tire pressure must be even on both sides of the tractor.

MAINTENANCE & DISMOUNTING

MAINTENANCE

- a) Check mounting bolts at frequent intervals for proper tightness to be sure equipment is in safe working condition.
- b) Apply oil at all pivot points.

DRIVE MECHANISM DISMOUNTING

SEE ATTACHMENT OWNER'S MANUAL (SNOWBLOWER, BROOM AND BLADE) FOR DISMOUNTING INSTRUCTIONS.

- a) Dismount the attachment.
- b) Remove the rear counterweight when you remove the front attachment.
- c) Tractor with manual clutch:
Remove the tractor belt guide and disconnect the P.T.O.. clutch cable.
- c) Dismount the drive mechanism by removing the front pin. Carefully lower to the ground. Remove the belt from engine pulley.
- d) You may leave the subframe on tractor all year long or remove it if preferred.
- e) Reinstall mower if needed.

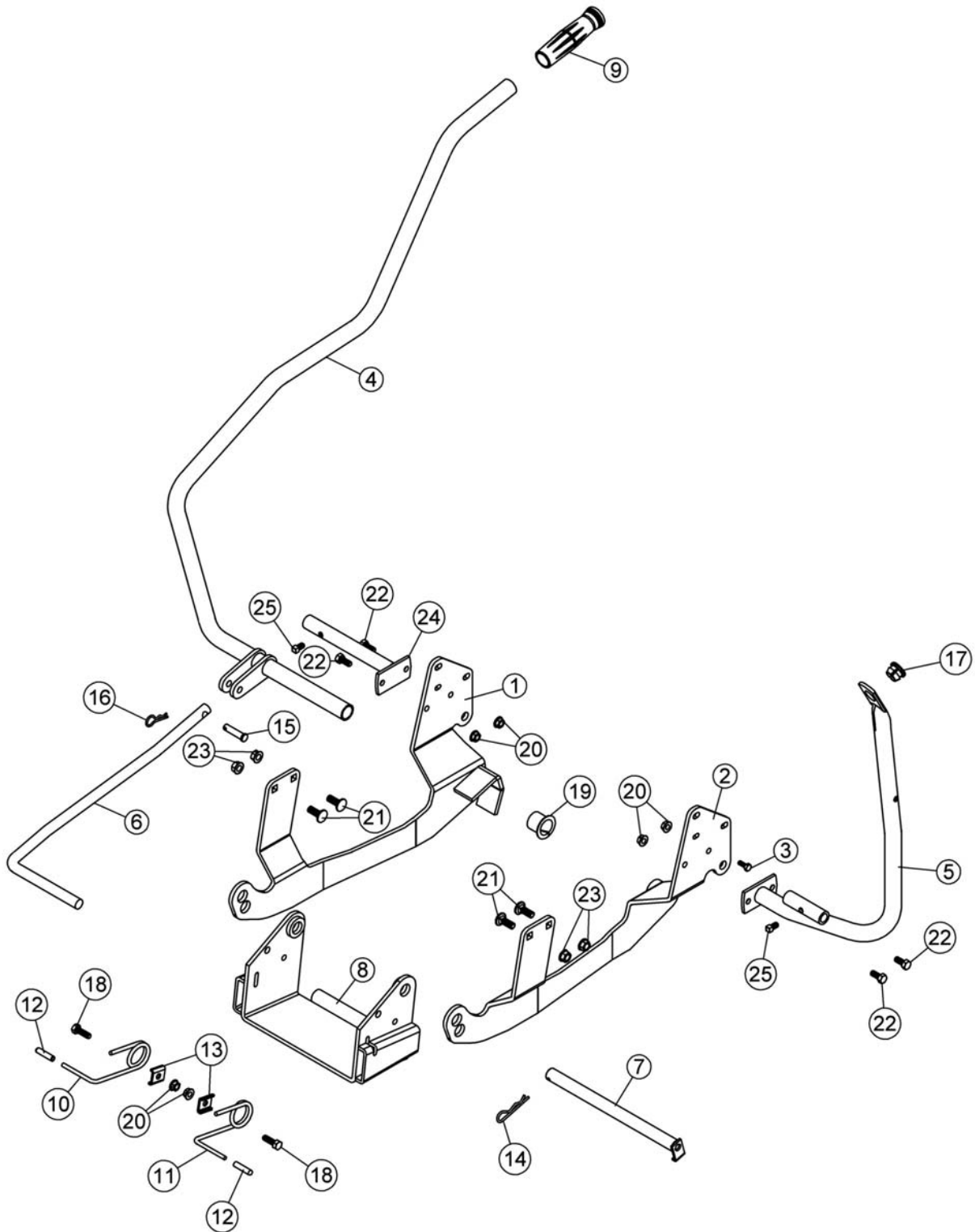
BELT REPLACEMENT **Drive Mechanism Belt:**

Before proceeding with this step, notice carefully how the belt guide is installed to avoid damage to the belt. When re-installing, remove the bolt which retains the tension pulley and the belt guide. Replace the belt and re-install the tension pulley and belt guide. Before tightening make sure the belt guide does not touch the belt at any time. Re-install the drive mechanism.

END OF SEASON STORAGE

- a) Clean and paint all parts from which paint has worn.
- b) Apply oil at all pivot points.
- c) Inspect and replace all defective parts before using again.

**PARTS BREAKDOWN / NOMENCLATURE DES PIÈCES
SUBFRAME / SOUS-CHÂSSIS**

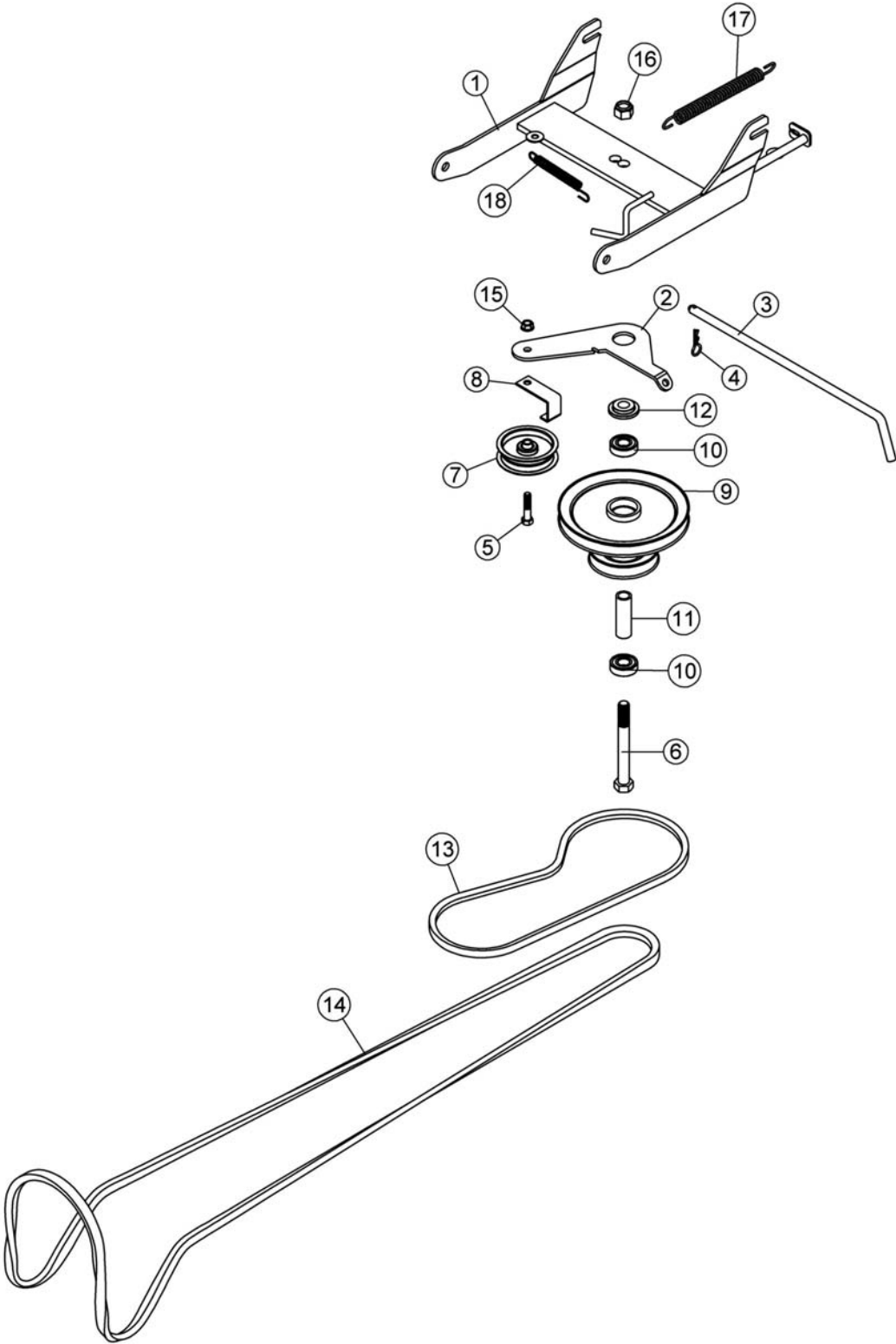


PARTS LIST / LISTE DES PIÈCES

Ref. Réf.	English description	Description française	Qty. Qté.	Part # Pièce #
1	Right support	Support droit	1	103655
2	Left support	Support gauche	1	103656
3	Hex. bolt M6 x 1.00 x 16	Boulon hex. M6 x 1.00 x 16	1	O/L
4	Lift arm	Bras de relevage	1	103654
5	Handle support	Support de manivelle	1	103653
6	Push bar	Barre de poussée	1	103652
7	Pin	Goupille	1	103651
8	Pivot support	Support de pivot	1	102981
9	Handgrip	Poignée de plastique	1	102025
10	Right spring lock	Ressort de barrure droit	1	102209
11	Left spring lock	Ressort de barrure gauche	1	102208
12	Handgrip	Poignée	2	102248
13	Spring bracket	Fixation du ressort	2	102210
14	Hair pin 3mm	Goupille à ressort 3mm	1	102617
15	Pin	Goupille	1	102772
16	Hair pin 2.5mm	Goupille à ressort 2.5mm	1	102013
17	Plastic grommet	Oeillet de plastique	1	102063
18	Hex. bolt 5/16" n.c. x 1"	Boulon hex. 5/16" n.c. x 1"	2	O/L
19	Nylon bushing	Coussinet en nylon	1	103087
20	Flange nut 5/16" n.c.	Écrou à bride 5/16" n.c.	6	O/L
21	Carriage bolt 3/8" n.c. x 1"	Boulon à carrosserie 3/8" n.c. x 1"	4	O/L
22	Hex. bolt 5/16" n.c. x 3/4"	Boulon hex. 5/16" n.c. x 3/4"	4	O/L
23	Flange nut 3/8" n.c.	Écrou à bride 3/8" n.c.	4	O/L
24	Cab support	Support de cabine	1	103973
25	Square head set screw 5/16" n.c. x 1/2"	Vis à pression à tête carrée 5/16" n.c. x 1/2"	2	O/L

O/L = Obtain locally/obtenir localement

**PARTS BREAKDOWN / NOMENCLATURE DES PIÈCES
DRIVE MECHANISM / MÉCANISME D'ENTRAÎNEMENT**



PARTS LIST / LISTE DES PIÈCES

Ref. Réf.	English description	Description française	Qty. Qté.	Part # Pièce #
1	Drive frame	Châssis d'entraînement	1	103608
2	Idler arm	Bras de tension	1	103609
3	Pin	Goupille	1	103620
4	Hair pin 2.5mm	Goupille à ressort 2.5mm	1	102013
5	Hex. bolt 3/8" n.c. x 1 3/4"	Boulon hex. 3/8" n.c. x 1 3/4"	1	O/L
6	Hex. bolt 5/8" n.c. x 5 1/2"	Boulon hex. 5/8" n.c. x 5 1/2"	1	O/L
7	Flat pulley	Poulie plate	1	102839
8	Belt guide	Guide-courroie	1	102840
9	Double pulley inc. 102736 & 102782	Poulie double inc. 102736 & 102782	1	102692
10	Bearing	Roulement à billes	2	102736
11	Sleeve	Douille	1	102782
12	Flange washer	Rondelle à bride	1	102969
13	V-Belt, A-44	Courroie en V, A-44	1	103615
14	V-Belt, B-112	Courroie en V, B-112	1	103010
15	Flange nut 3/8" n.c.	Écrou à bride 3/8" n.c.	1	O/L
16	Nylon insert lock nut 5/8" n.c.	Écrou à garniture de nylon 5/8" n.c.	1	O/L
17	Spring	Ressort	1	102304
18	Spring 1/2"	Ressort 1/2"	1	102003

O/L = Obtain locally/obtenir localement

TORQUE SPECIFICATION TABLE

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

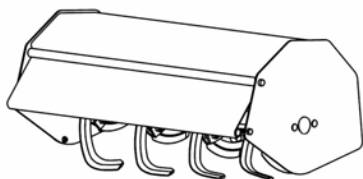
NOTE: These values apply to fasteners as received from supplier, dry or when lubricated with normal oil. They do not apply if special graphited or moly disulphide greases or other extreme pressure lubricants are used. This applies to both UNF and UNC threads.

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

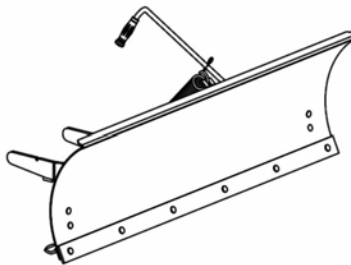
METRIC BOLT TORQUE SPECIFICATIONS							
Size Screw	Grade No.	Pitch (mm)	COARSE THREAD		FINE THREAD		
			Pounds Feet	Newton-Meters	Pitch (mm)	Pounds Feet	Newton-Meters
M6	4T	1.00	3.6 - 5.8	4.9 - 7.9	-	-	-
	7T		5.8 - 9.4	7.9 - 12.7		-	-
	8T		7.2 - 10	9.8 - 13.6		-	-
M8	4T	1.25	7.2 - 14	9.8 - 19	1.00	12 - 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

ATTACHMENTS



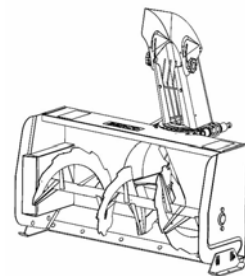
ROTARY TILLER #700312

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



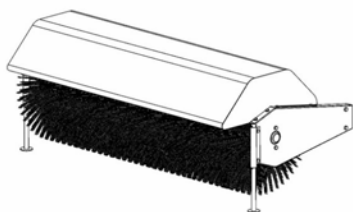
UTILITY BLADE #700266

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



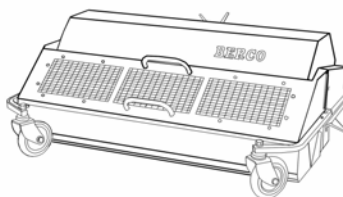
SNOWBLOWER

#700255 40"
Fits on same subframe as rotary broom and utility blade.



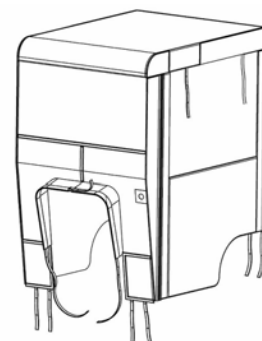
ROTARY BROOM
#700286 with nylon brush
/#700316 with polypropylene brush.

Fits on same subframe as snowblower & utility blade. Requires an adaptor.



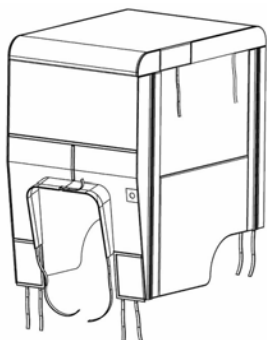
DEBRIS COLLECTOR #700235

Quickly & easily fitted on front of rotary brooms #700286 and #700316. Collects debris in container with easy manual dumping. Reduces dust.



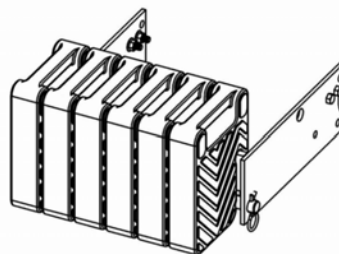
TRACTOR WINTER CAB
#700271

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



TRACTOR SCREEN CAB
#700313

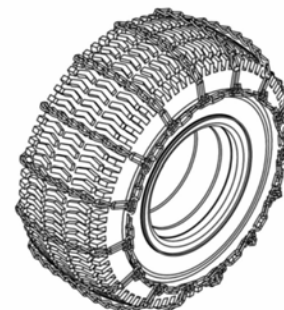
Universal type fits on a wide variety of lawn and garden tractors.



COUNTERWEIGHT

#700240 Universal rear weights

Required for safety and traction. Counterbalances weight of attachment.



TIRE CHAINS

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