



OWNER'S MANUAL
Model Number

700700 Subframe with actuators
700470-2 Compact Drive Mechanism
700471-2 Northeast Drive Mechanism



BERCO
Subframe with electric actuators lift &
Drive mechanism
for
JOHN DEERE TRACTORS D SERIES

- * 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. 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; the following items are guaranteed by the original manufacturer and have their own warranty, conditions and limited time:

- Tire Chains: 90 days
- 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, 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.
- Damages due to product being installed on a vehicle other than stipulated in owner's manual.

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 BERCO 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 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 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 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. In no event 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 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 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.

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.
5. Never start or operate the accessories except from the operator's station on the power unit except if this is impossible.

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 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.
10. 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:

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 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.
7. 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.
14. If applicable, never handle the winch cable or hook while in tension.

MAINTENANCE AND STORAGE

1. 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.
2. Check all the bolts and components 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 clearing snow in order to prevent the rotary parts from freezing.
7. 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.
2. Check with local authorities regarding transport on public roads. Obey all applicable laws and regulations.
3. Make sure all lights and reflectors that are required by the local highway and transport authorities (example : SMV (Slow Moving Vehicle)) are in place, are clean, and can be seen clearly by all overtaking and oncoming traffic.
4. 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 #107151



Failure to observe these instructions could lead to severe injury or death.

To avoid injury to hands or fingers:

--Keep hands away from the hot surface.

DECAL #105946



To avoid serious injury:

Keep all parts of the body away from moving components.

Do not put any part of the body under the accessory when the accessory is in the raised position.

ASSEMBLY

IMPORTANT: TORQUE ALL BOLTS ACCORDING TO TORQUE SPECIFICATION TABLE WHEN STATED: TIGHTEN FIRMLY. THE ACTUATORS KIT IS TO BE USED ONLY TO LIFT BERCO ACCESSORIES, ANY OTHER USE MAY RESULT IN DAMAGE TO THE VEHICLE.

This subframe may be used to install different attachments (see attachments page). Once installed, it may remain permanently on your vehicle (other than actuators).

NOTE:It is not necessary to remove mower deck at this step.

INSTALLING THE REFLECTORS

IMPORTANT: When operating the tractor with the front mounted attachment, install the two red-colored adhesive reflectors on the rear vertical surface of the tractor's fender.

STEP 1

SUBFRAME INSTALLATION:

Refer to parts breakdown section for parts identification.

TOOLS REQUIRED:

Wrenches: 5/16, 7/16, 9/16, 1/2, 10mm

Ratchet

Sockets: 9/16, 1/2

Pliers

1 wrench (for the nuts on the battery posts of the vehicle)

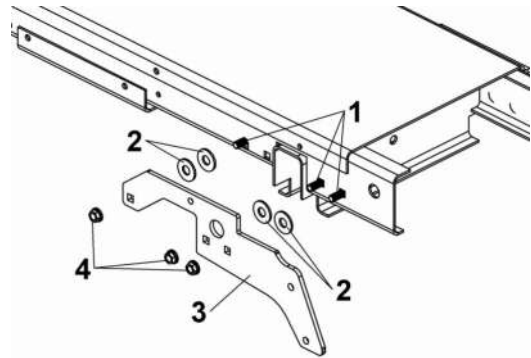
Drill

Drill bit: 1/2

Hammer

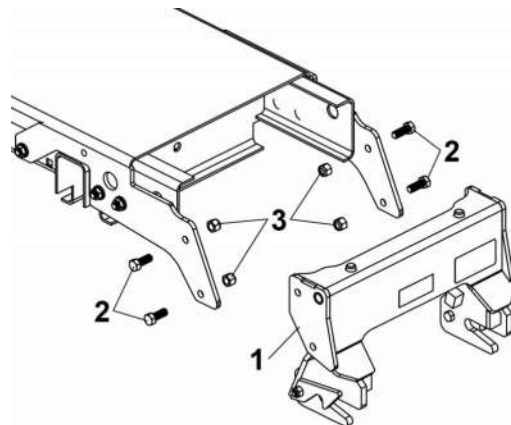
Install the supports (item 3) on each side of the vehicle.		
Item #	Description	Action
1	Carriage bolt, 3/8 x 1" (qty 6)	Insert as shown.
2	Flat washer 1/2", (qty 7)	See
3	Support (qty 2)	Install on the bolts as shown
4	Flange nut 3/8", (qty 6)	Do not tighten now.
*If necessary, use the flat washers to keep the supports flat on the vehicle's frame.		

Please sort out and identify all the hardware before starting installation. Lists for the hardware bag and for the box are supplied in each.



Install supports

Install the female hitch (item 1).		
# Item	Description	Action
1	Female hitch	Install between the two supports.
2	Hex bolt 3/8 x 1" (qty 4)	Insert as shown.
3	Nylon insert lock nut 3/8" (qty 4)	See*
*Put the assembled actuators such as step 3 before tightening the nuts (item 3) then remove the assembled actuators for later installation.		

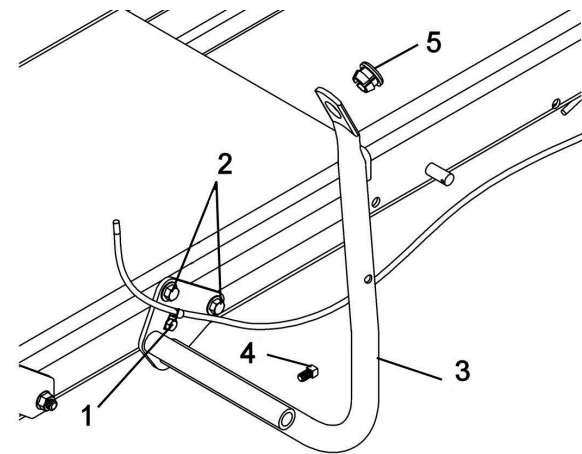
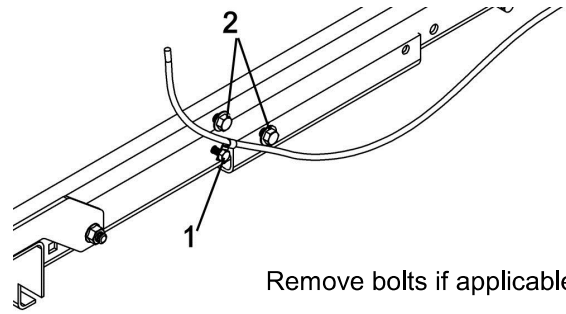


Install female hitch between supports

ASSEMBLY

Install the handle support (item 3) on the left side.

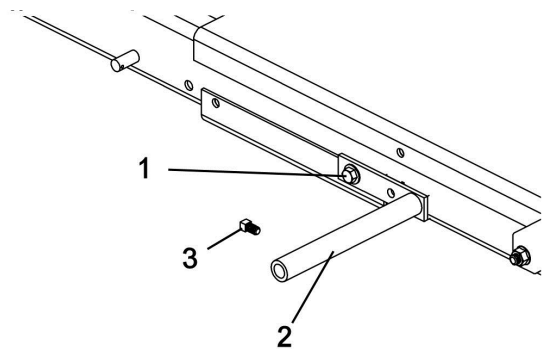
# Item	Description	Action
1	Tractor bolt	Remove if tractor has a cable for manual clutch.
2	Tractor bolts (qty 2)	Remove from tractor.
3	Handle support	Install as shown using the tractor bolts (items 1 & 2). Tighten firmly.
4	Square head set screw 5/16 x 1/2"	Insert in the hole of the handle.
5	Plastic grommet	Insert as shown.



Install handle support

Install the cab support (item 2) on the right side.

# Item	Description	Action
1	Tractor bolt	Remove to install cab support.
2	Cab support	Install as shown with tractor bolt.
3	Square head set screw 5/16 x 1/2"	Insert in the hole of the handle.



Install cab support

ASSEMBLY

STEP 2: INSTALLATION OF THE CONTROL SWITCH FOR THE ACTUATORS

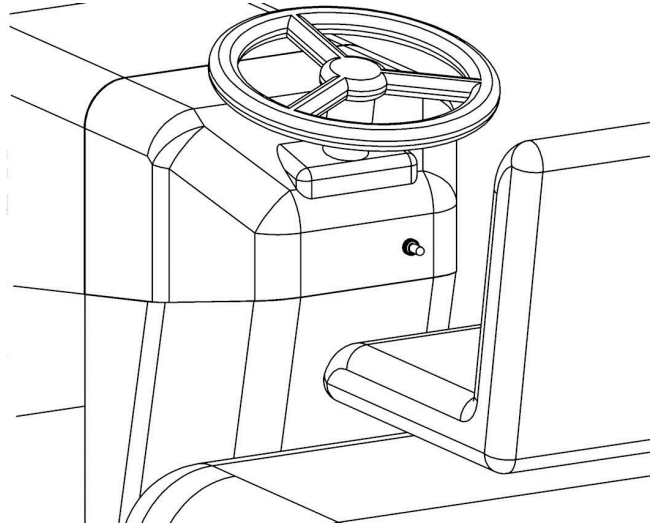
Before drilling the hole, check behind the dashboard to make sure there is enough space to install the switch.

Drill a 1/2" hole in the dashboard or an appropriate place (see reference drawing). Stick the UP/DOWN decal over the hole for the switch.

Insert the switch in the hole and secure in place with the rubber boot.

NOTE: It is important to install the switch vertically. Connect the wires as shown.

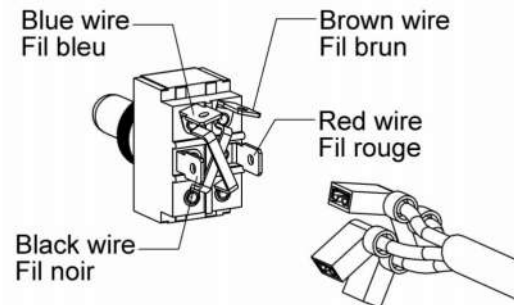
When the switch is raised, the actuators must lift the accessory. If you prefer the contrary, invert the blue and brown wires.



Install the actuators control switch



Up / Down decal



Connect the wires

ASSEMBLY

IDENTIFY THE IGNITION WIRE:

Place the clip of the Hi / Low tester on the negative post (-) on the battery or a metal surface without any paint.

Turn the ignition key to the position: Accessory.

Insert the tip of the tester in a hole at the back of the starter (switch) make sure to touch the metal part of the wire (on most tractors, it is the A1 terminal on the ignition switch that is used for accessories. Before connection, verify with HI/LOW tester).

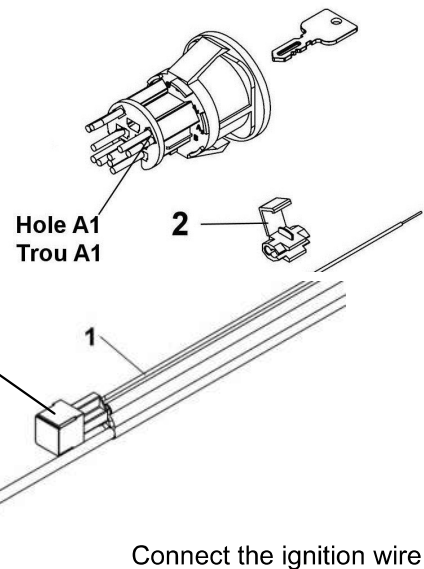
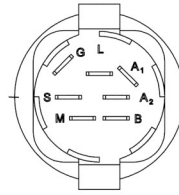
If the tester's light turns on, turn the ignition key to the position, Off. The light must turn off. You have identified the ignition wire, if not repeat the operation on another wire.

INSTALL THE RELAY AND THE CONTROL WIRE:

Install the relay (item 3) on the assembled wire (item 1), as shown.

Join the ignition wire and the orange wire from the wire assembly (item 1) with the instant connector (item 2).

View behind the switch
Vue derrière le commutateur



	CAUTION	
FOR YOUR SECURITY: Read and follow the safety precautions for the battery in the vehicle's manual.		

CONNECT THE WIRES ON THE BATTERY:

Connect the wires from the relay to the vehicle's battery.

The red wire (+) on the positive post of the battery (item 1).

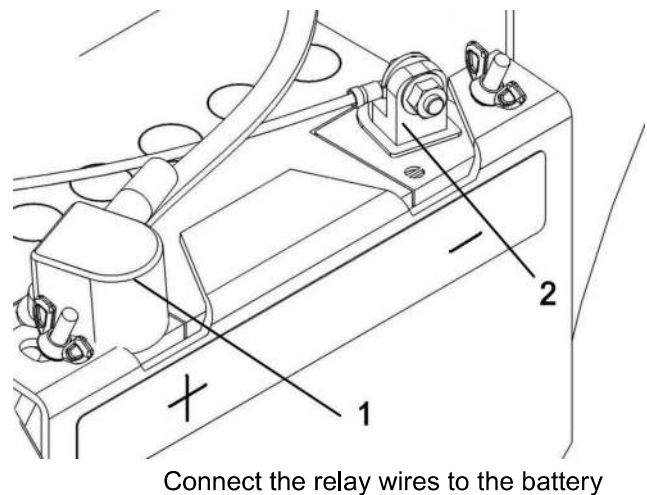
The black wire (-) on the negative post of the battery (item 2).



Make sure to tighten the nuts on the posts.

TIE ALL THE WIRES:

NOTE: Make sure the wires from the control assembly do not interfere with anything on the tractor nor come into contact with any heating, electrical or removable elements of the tractor.

Tie the wires with four nylon tie wraps included in the kit.

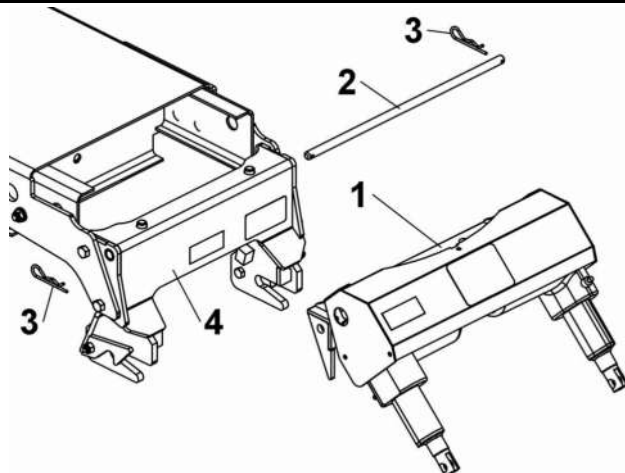


	WARNING	
It is the owner's responsibility to make sure the wiring assembly is grouped together where possible, properly supported, and located so that no portion is in contact with the carburetor, metallic fuel lines, the exhaust system, moving parts, or sharp edges.		

ASSEMBLY

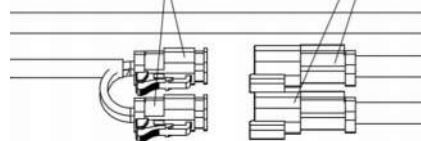
STEP 3: ASSEMBLED ACTUATORS INSTALLATION:

Install the assembled actuators (item 1)		
# Item	Description	Action
1	Assembled actuators	Install on the female hitch (item 4)
2	Pin	Install as shown.
3	Hair pin	Secure the pin



Actuators connectors
Connecteurs des actuateurs

Wire assembly connectors
Connecteurs du fil assemblé



CONNECT THE ACTUATORS TO WIRE ASSEMBLY

Connect the two connectors of the actuators to the connectors of the wire assembly installed previously.

Make sure they are well connected.

STEP 4: DRIVE MECHANISM INSTALLATION:



WARNING



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.

NOTE: You must remove mower deck to install the drive mechanism.

Install the sleeve (item 1) on each side.		
# Item	Description	Action
1	Sleeve (qty 2)	Install as shown.
2	Hex bolt 3/8 x 1 1/4" (qty 2)	Insert in the sleeve.
3	Flange nut 3/8" (qty 2)	Tighten firmly.



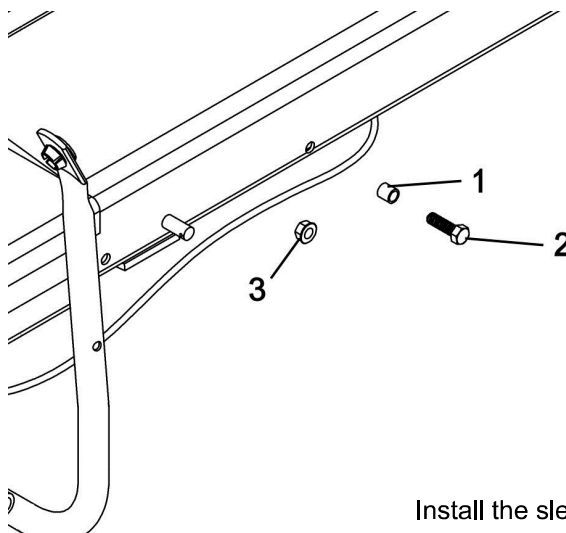
WARNING



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.

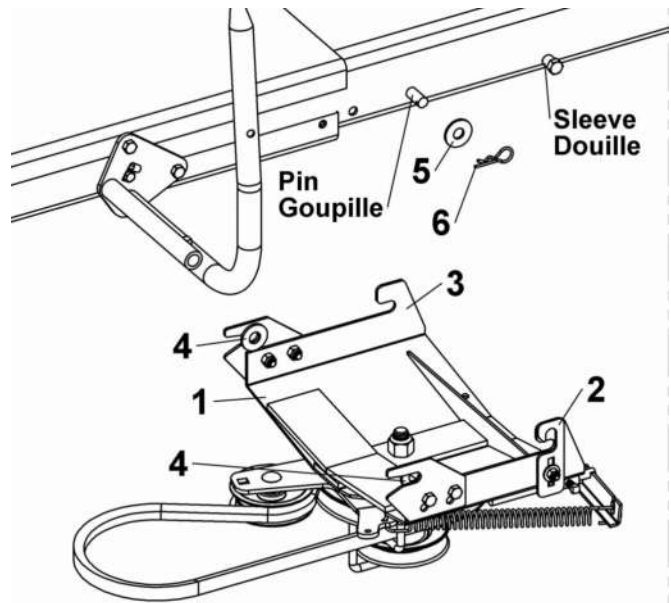
For more information, do not hesitate to contact the technical support.



Install the sleeves

ASSEMBLY

Install the drive mechanism (item 1).		
# Item	Description	Action
1	The front end of drive mechanism	Hook on the pins.
2	Latch	Lift to open.
3	The back end of drive mechanism	Install on the sleeves. Release latch to lock into place.
4	Washer	Install on the pin.
5	Flat washer	See
6	Hair pin	See
*Reinstall the flat washers & hair pins that were on the pins from the mower deck supports.		

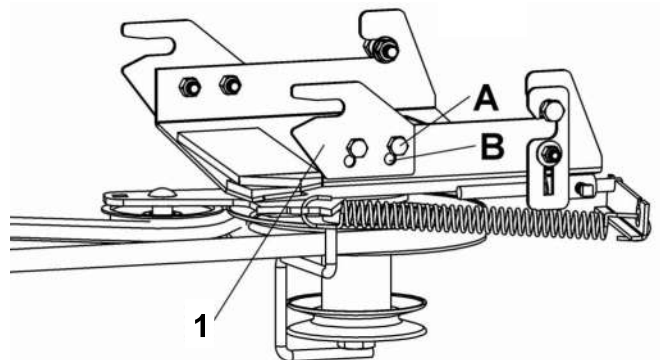


Install the drive mechanism

DRIVE MECHANISM FRAME ALIGNMENT:

This kit can be installed on John Deere with different frame configuration. You may have to adjust the front bracket to ensure that the pulleys are parallel to the tractor frame.

If the pulley on the drive are not parallel with the tractor, move the front support bracket (item 1) by putting the screw and bolt to location B instead of location A .



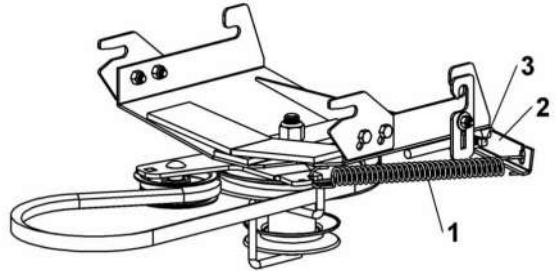
ASSEMBLY

For tractors with Electric Clutch:

Install the belt on the engine pulley of the vehicle.

Check the tension on the spring (item 1).

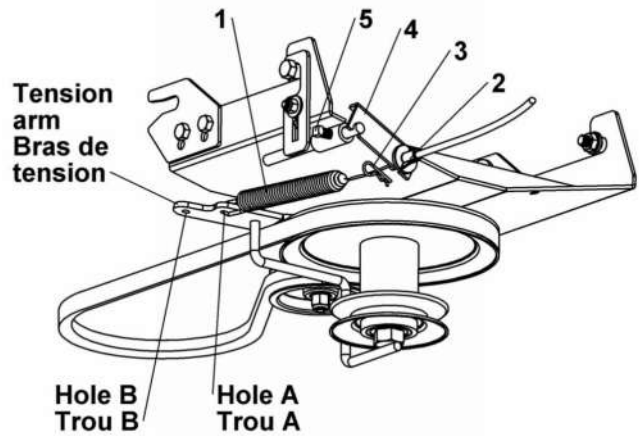
If necessary, adjust the tension by moving the adjustment rod (item 2) and tighten the set screw (item 3).



No modifications to be done

For tractors with Manual Clutch activated by a cable:

Install the tractor's manual clutch cable . * Remove the spring furnished with the drive mechanism.		
# Item	Description	Action
1	Spring from the clutch cable	Install as shown in one of the holes on the idler arm.***
2	Clutch cable	Insert in the slot on the adjustment rod.
3	Hair pin 2mm	Secure the cable.
4	Adjustment rod	Slide towards the back to apply enough tension on the spring.
5	Square head set screw 5/16 x 1/2"	Secure the adjustment rod.
<p>***NOTE: Use Hole A for the 100, LA, series Use Hole B for the D series</p> <p>Install the belt on the engine pulley of the vehicle. Check the tension on the spring. If necessary, adjust the tension by moving the adjustment rod and tighten the set screw.</p>		



Install the manual clutch cable

WARNING

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.

ASSEMBLY

VERIFICATION OF THE BELT AND PULLEY ALIGNMENT:



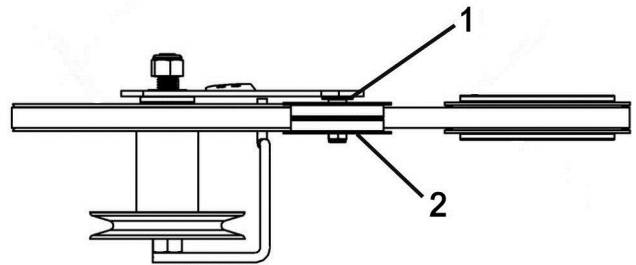
WARNING



TO PREVENT INJURIES:
do this verification when the engine of the vehicle
is not running.

If applicable, you can remove or add a flat washer (item 1) on the tension pulley (item 2) for a better adjustment.

Engage and disengage the clutch a few times and make sure the belt does not touch the belt guide in any place when the drive mechanism is engaged.



Adjust the pulleys

OPERATION & MAINTENANCE



CAUTION



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

IMPORTANT:

THE ACTUATORS KIT IS TO BE USED ONLY TO LIFT BERCO ACCESSORIES, ANY OTHER USE MAY CAUSE DAMAGE TO THE VEHICLE.

CONTROLS

IMPORTANT:

In order to avoid draining the battery of the vehicle, always start the engine before using the actuators. THE ACTUATORS CONTROL SWITCH

Push up or down the actuators control switch to lift or lower the accessory to the ground.

ACTUATORS:

Check actuators before each use. If only one of the two works, make the necessary checks to correct the problem. It is possible to run a single actuator for a few lifts, do this continuously, greatly reduces the life of the actuators.

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.

BELT REPLACEMENT

Belt for the accessories:

SEE ATTACHMENT OWNER'S MANUAL FOR REPLACING INSTRUCTIONS.

Drive Mechanism Belt:

- a) Remove the belt from the engine pulley.
- b) Dismount the drive mechanism.
- c) Remove the bolt which retains the tension pulley.
- d) Replace the belt and re-install the tension pulley. Before tightening make sure the belt guide does not touch the belt at any time.
- e) Re-install the drive mechanism.
- f) Check the alignment of the belt that joins the drive mechanism to the engine pulley.

VERIFY TIRE PRESSURE:

Tire pressure must be even on both sides of the tractor according to the vehicle's owner's manual.

DISMOUNTING & STORAGE

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 (if applicable).
- c) Remove the belt from the engine pulley.
- d) Dismount the drive mechanism by supporting it in hand by opening the latch. Carefully lower to the ground. Remove the V-belt from engine pulley.
Manual clutch activated by cable:
Unhook cable shield by removing the hair pin. Unhook spring. Pull out drive mechanism from underneath tractor.
- e) Remove actuators (Reverse of step 3)
- f) You may leave the subframe on tractor all year long or remove it if preferred.
- g) Reinstall mower if needed.

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.

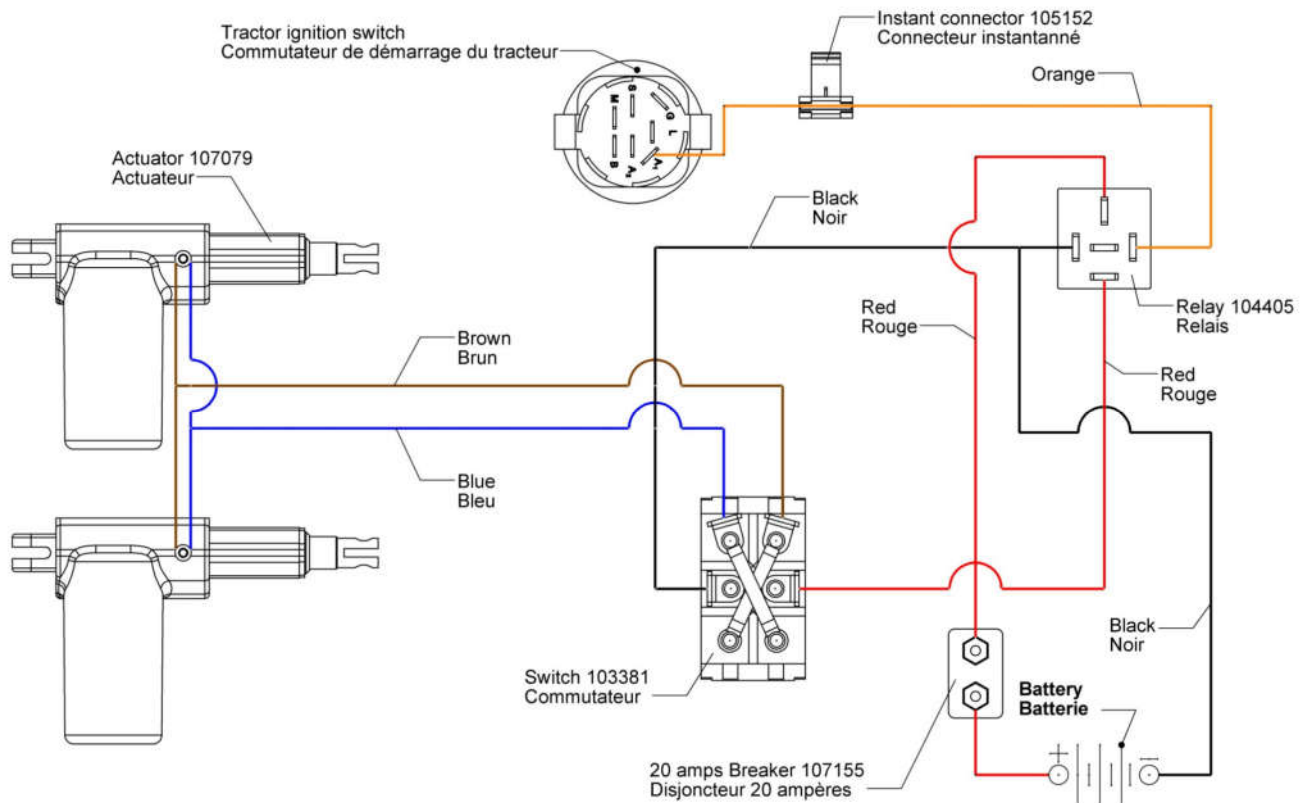
TROUBLESHOOTING

* Please refer to parts breakdown section for parts identification.

PROBLEM	POSSIBLE CAUSES	CORRECTIVE ACTION
Actuators that do not hold their charge	Actuators overload (too much weight)	Remove weight (too much snow accumulated)
	New actuators	It may be necessary to 100-200 lifts before the actuators hold their charge due to internal lubrication.
	Only one actuator runs	See section on this problem.
Actuators run backwards	Switch wires reversed.	Recheck wiring.
	Battery wires reversed.	Recheck wiring.
Actuators (or one) will not operate	Vehicle's ignition switch is at OFF position.	Turn vehicle's ignition switch at ON position.
	Broken wires or bad connection.	Check for poor connections.
	Control switch is inoperative.	Replace control switch.
	Relay or breaker is damaged.	Replace the relay or breaker.
	Actuators are damaged.	Replace or repair actuators.
Actuators runs but with insufficient power or line speed.	Weak battery.	Recharge or replace battery. Check charging system
	Poor battery connection.	Check battery terminals for corrosion. Clean when required.
	Actuators are damaged.	Replace or repair actuators.
	Too much weight	Remove weight.
	Very low temperature	Enable actuators few times to heat the components or allow the actuators to be heated by the tractor.

TROUBLESHOOTING

HOW TO KNOW	POINTS TO CHECK
Poor connections.	Recheck wiring with the owner's manual
HI/LOW voltage tester does not work.	Connect it on battery posts (+ and -) of a functional battery. If there is no light, the tester is damaged.
The control switch inoperative.	Test both connectors with HI/LOW voltage tester. If light comes ON or the relay is clicking in both positions (UP & DOWN), the control switch is operative.
Relay is damaged	If there is voltage on battery wire posts 1 & 2 on the relay and no voltage on posts 3 & 4 when control switch is activated and relay is clicking in both directions, the relay is defective. (see relay assembly section in owner's manual for relay post identification). Check connections with HI/LOW voltage tester.
Actuators are damaged	The ultimate test is to connect the actuators directly to the battery and reverse the wires to test both directions. If the actuators don't work, they are damaged.
The breaker is damaged.	Place clip of the HI / LOW voltage tester on negative (-) post of the battery. Check the voltage with the tip of the tester on both terminals of the breaker. If voltage only on 1 terminal replace the breaker. (sometimes it could take a few minutes for the breaker to automatically reset itself)



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.

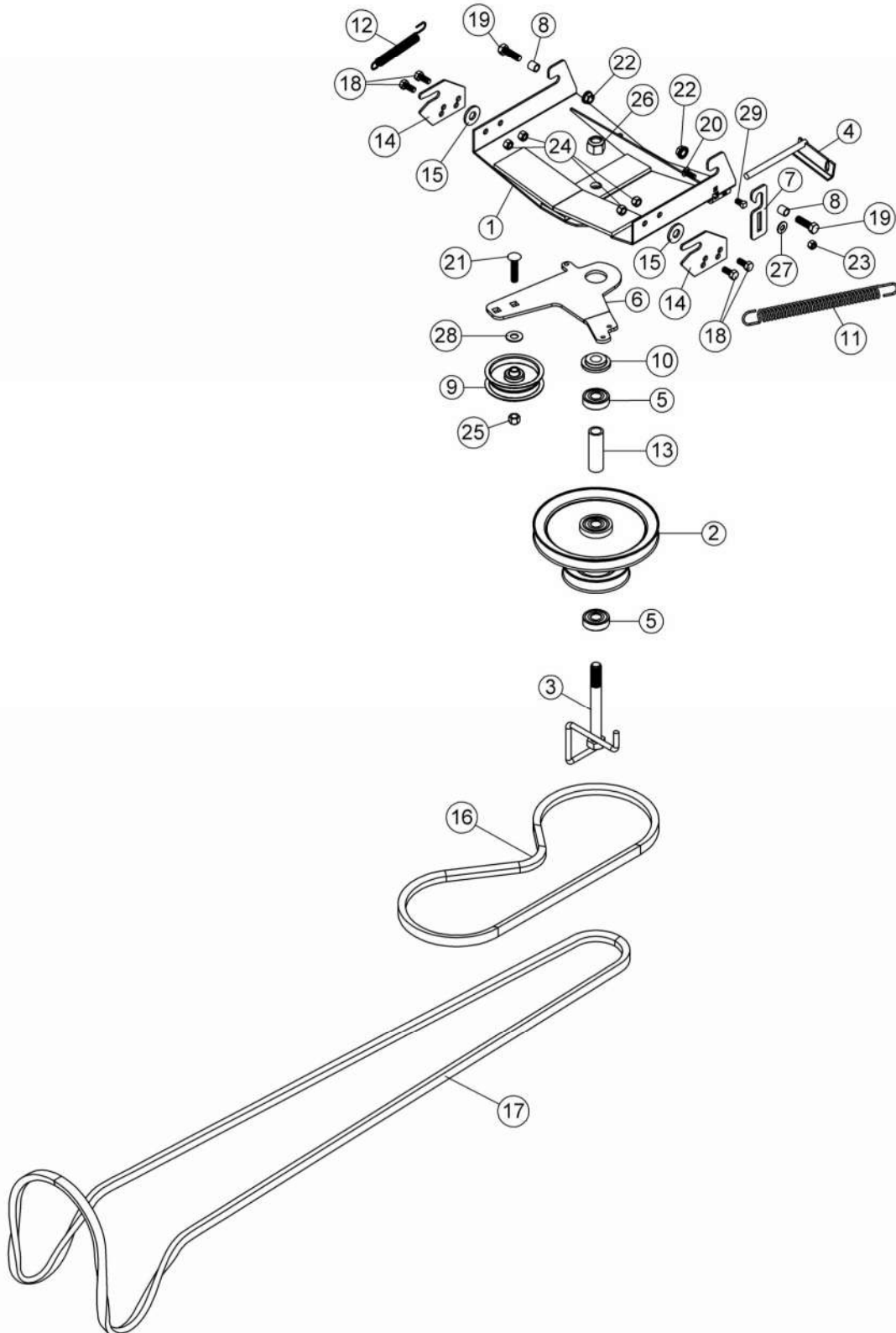
* Thick nuts must be used with grade 8 bolts

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

METRIC BOLT TORQUE SPECIFICATIONS							
		COARSE THREAD			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		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

COMPACT DRIVE MECHANISM 700470-2



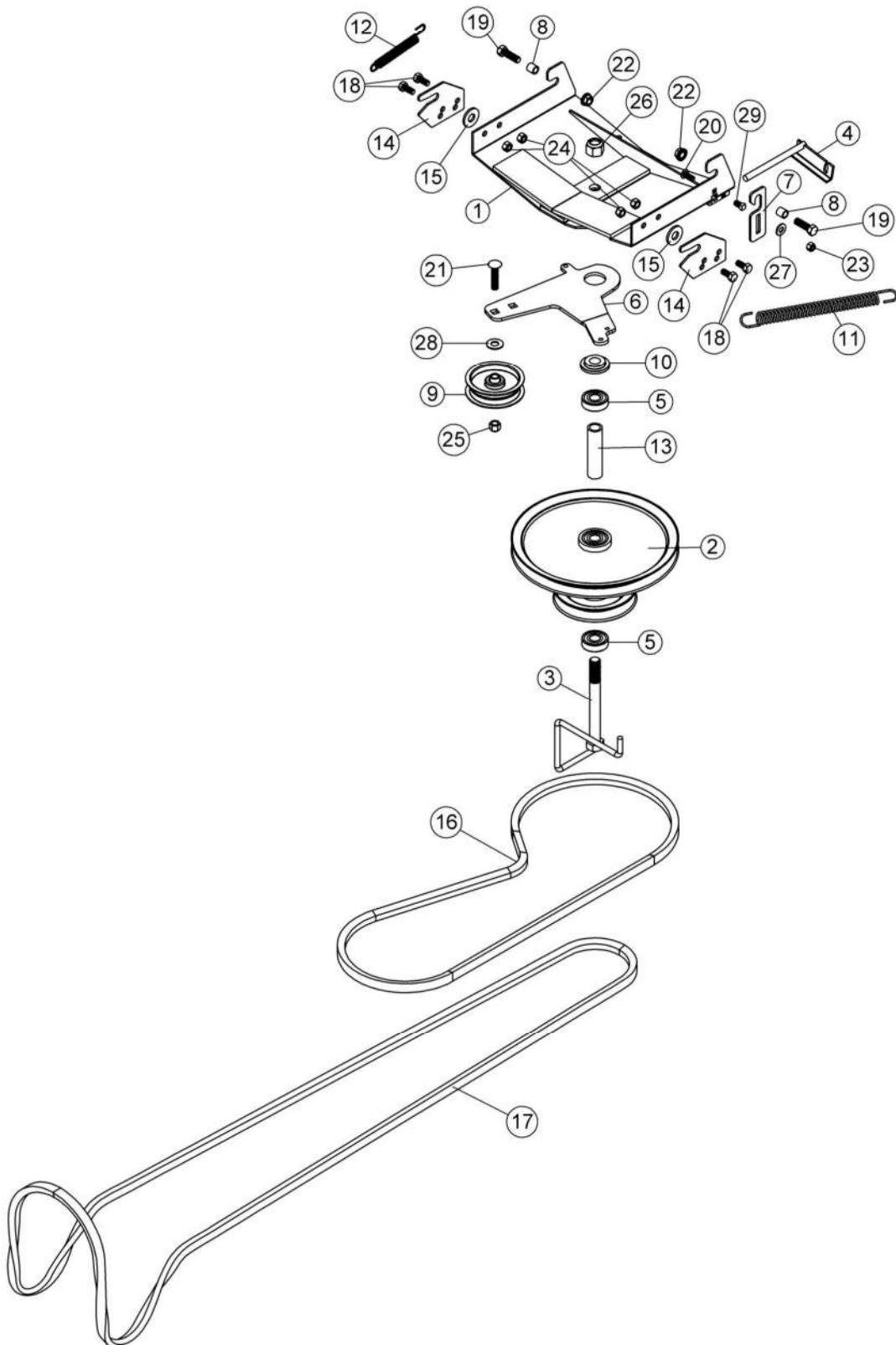
PARTS LIST

COMPACT DRIVE MECHANISM 700470-2

Ref. Réf.	English description	Description française	Qty. Qté.	Part # Pièce #
1	Drive frame	Châssis d'entraînement	1	106820
2	Double pulley inc. 102736 & 102782	Poulie double inc. 102736 & 102782	1	102692
3	Belt guide	Guide-courroie	1	104095
4	Adjustment rod	Tige d'ajustement	1	104841
5	Ball bearing	Roulement à billes	2	102736
6	Idler arm	Bras de tension	1	104883
7	Latch	Loquet	1	104885
8	Sleeve	Douille	2	104886
9	Flat pulley	Poulie plate	1	102839
10	Flange washer	Rondelle à bride	1	102969
11	Spring	Ressort	1	102304
12	Spring 1/2"	Ressort 1/2"	1	102003
13	Sleeve	Douille	1	102782
14	Support	Support	2	106821
15	Washer	Rondelle	2	106822
16	V-Belt , A-61	Courroie en V , A-61	1	104523
17	V-Belt , B-130	Courroie en V , B-130	1	104887
18	Hex. bolt 5/16" n.c. x 3/4" GR5	Boulon hex. 5/16" n.c. x 3/4" GR5	4	O/L
19	Hex. bolt 3/8" n.c. x 1 1/4" GR5	Boulon hex. 3/8" n.c. x 1 1/4" GR5	2	O/L
20	Carriage bolt 1/4" n.c. x 3/4 " GR5	Boulon à carrosserie 1/4" n.c. x 3/4" GR5	1	O/L
21	Carriage bolt 3/8" n.c. x 1 3/4 " GR5	Boulon à carrosserie 3/8" n.c. x 1 3/4 " GR5	1	O/L
22	Flange nut 3/8" n.c.	Écrou à bride 3/8" n.c.	2	O/L
23	Nylon Insert lock Nut 1/4" n.c.	Écrou à garniture de nylon 1/4" n.c.	1	O/L
24	Nylon Insert lock Nut 5/16" n.c.	Écrou à garniture de nylon 5/16" n.c.	4	O/L
25	Nylon Insert lock Nut 3/8" n.c.	Écrou à garniture de nylon 3/8" n.c.	1	O/L
26	Nylon Insert lock Nut 5/8" n.c.	Écrou à garniture de nylon 5/8" n.c.	1	O/L
27	Flat washer 5/16" hole	Rondelle plate 5/16" trou	1	O/L
28	Flat washer 7/16" hole	Rondelle plate 7/16" trou	1	O/L
29	Square head set screw 5/16" x 1/2"	Vis à pression à tête carré 5/16" x 1/2"	1	O/L

PARTS BREAKDOWN

NORTHEAST DRIVE MECHANISM 700471-2

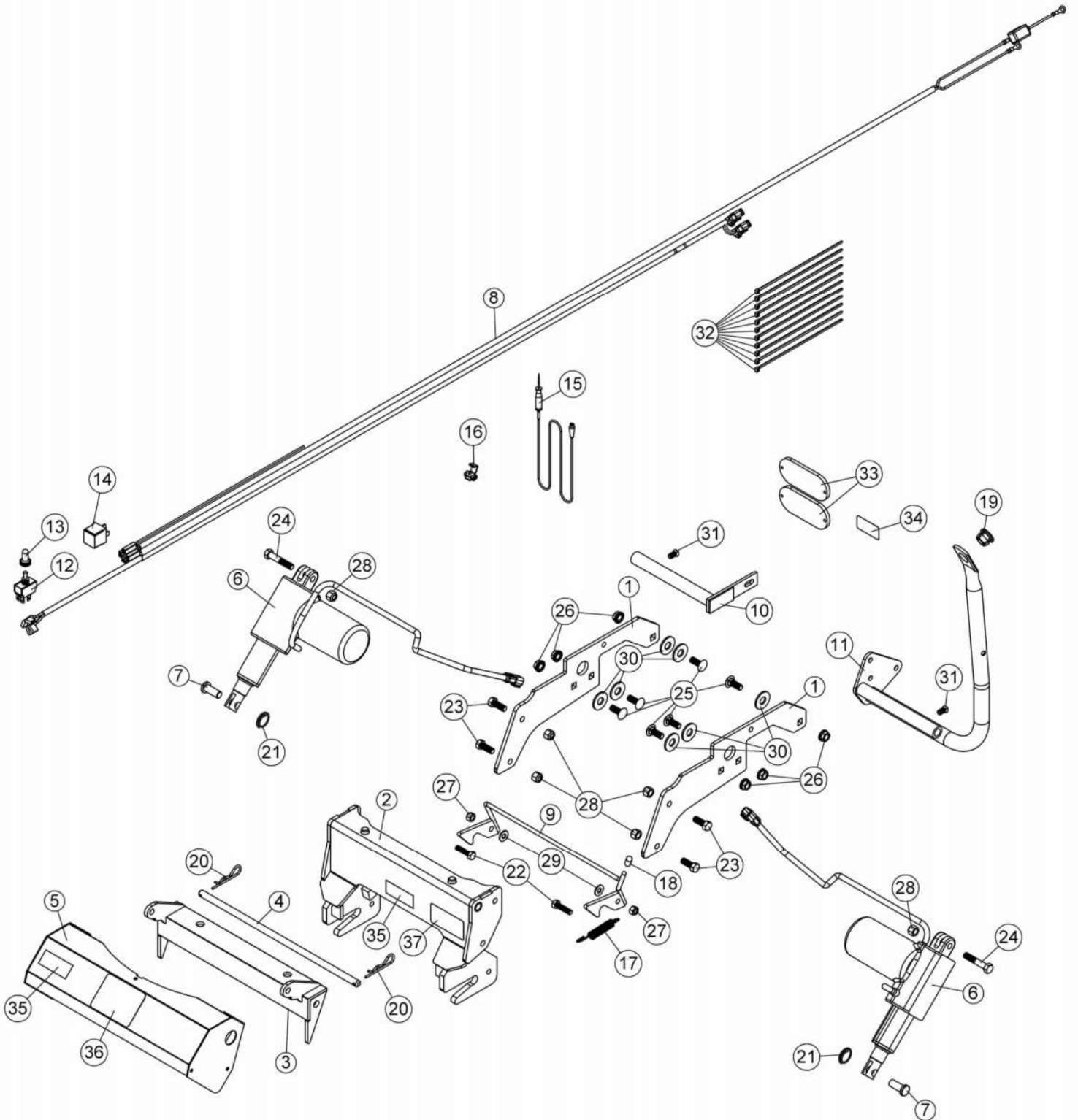


PARTS LIST

NORTHEAST DRIVE MECHANISM 700471-2

Ref. Réf.	English description	Description française	Qty. Qté.	Part # Pièce #
1	Drive frame	Châssis d'entraînement	1	106820
2	Double pulley inc. 102736 & 103035	Poulie double inc. 102736 & 103035	1	103040
3	Belt guide	Guide-courroie	1	104043
4	Adjustment rod	Tige d'ajustement	1	104841
5	Ball bearing	Roulement à billes	2	102736
6	Idler arm	Bras de tension	1	104883
7	Latch	Loquet	1	104885
8	Sleeve	Douille	2	104886
9	Flat pulley	Poulie plate	1	102839
10	Flange washer	Rondelle à bride	1	102969
11	Spring	Ressort	1	102304
12	Spring 1/2"	Ressort 1/2"	1	102003
13	Sleeve	Douille	1	103035
14	Support	Support	2	106821
15	Washer	Rondelle	2	106822
16	V-Belt , A-65	Courroie en V , A-65	1	104888
17	V-Belt , B-136	Courroie en V , B-136	1	104889
18	Hex. bolt 5/16" n.c. x 3/4" GR5	Boulon hex. 5/16" n.c. x 3/4" GR5	4	O/L
19	Hex. bolt 3/8" n.c. x 1 1/4" GR5	Boulon hex. 3/8" n.c. x 1 1/4" GR5	2	O/L
20	Carriage bolt 1/4" n.c. x 3/4 " GR5	Boulon à carrosserie 1/4" n.c. x 3/4" GR5	1	O/L
21	Carriage bolt 3/8" n.c. x 1 3/4 " GR5	Boulon à carrosserie 3/8" n.c. x 1 3/4 " GR5	1	O/L
22	Flange nut 3/8" n.c.	Écrou à bride 3/8" n.c.	2	O/L
23	Nylon Insert lock Nut 1/4" n.c.	Écrou à garniture de nylon 1/4" n.c.	1	O/L
24	Nylon Insert lock Nut 5/16" n.c.	Écrou à garniture de nylon 5/16" n.c.	4	O/L
25	Nylon Insert lock Nut 3/8" n.c.	Écrou à garniture de nylon 3/8" n.c.	1	O/L
26	Nylon Insert lock Nut 5/8" n.c.	Écrou à garniture de nylon 5/8" n.c.	1	O/L
27	Flat washer 5/16" hole	Rondelle plate 5/16" trou	1	O/L
28	Flat washer 7/16" hole	Rondelle plate 7/16" trou	1	O/L
29	Square head set screw 5/16" x 1/2"	Vis à pression à tête carré 5/16" x 1/2"	1	O/L

PARTS BREAKDOWN SUBFRAME 700700



PARTS LIST SUBFRAME 700700

Ref. Réf.	English description	Description française	Qty. Qté.	Part # Pièce #
1	Support	Support	2	107114
2	Female hitch	Attache femelle	1	107115
3	Actuators support	Support d'actuateur	1	107116
4	Pin	Goupille	1	107117
5	Actuators guard	Garde des actuateurs	1	107126
6	Electric actuator	Actuateur électrique	2	107079
7	Pin	Goupille	2	107131
8	Wire assembly	Fil assemblé	1	107118
9	Latch	Loquet	1	104818
10	Cab support	Support de cabine	1	104878
11	Handle support	Support de manivelle	1	104879
12	Switch	Commutateur	1	103381
13	Rubber boot	Capuchon de caoutchouc	1	103379
14	Relay	Relais	1	104405
15	Hi/low voltage tester	Testeur de haute/basse tension	1	105151
16	Instant connector	Connecteur instantané	1	105152
17	Spring 1/2"	Ressort 1/2"	1	102003
18	Handgrip	Poignée	1	104825
19	Plastic grommet	Oeillet de plastique	1	102063
20	Hair pin 3mm	Goupille à ressort 3mm	2	102617
21	Cotter ring	Anneau de retenue	2	107152
22	Hex. bolt 5/16" n.c. x 1 1/4" GR5	Boulon hex. 5/16" n.c. x 1 1/4" GR5	2	O/L
23	Hex. bolt 3/8" n.c. x 1" GR5	Boulon hex. 3/8" n.c. x 1" GR5	4	O/L
24	Hex. bolt 3/8" n.c. x 2" GR5	Boulon hex. 3/8" n.c. x 2" GR5	2	O/L
25	Carriage bolt 3/8" n.c. x 1 " GR5	Boulon à carrosserie 3/8" n.c. x 1 " GR5	6	O/L
26	Flange nut 3/8" n.c.	Écrou à bride 3/8" n.c.	6	O/L
27	Nylon Insert lock Nut 5/16" n.c.	Écrou à garniture de nylon 5/16" n.c.	2	O/L
28	Nylon Insert lock Nut 3/8" n.c.	Écrou à garniture de nylon 3/8" n.c.	6	O/L
29	Flat washer 5/16" hole	Rondelle plate 5/16" trou	2	O/L
30	Flat washer 1/2" hole	Rondelle plate 1/2" trou	7	O/L

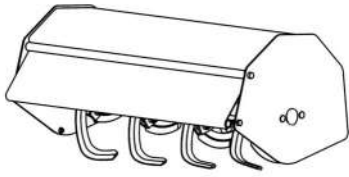
O/L = Obtain Locally

PARTS LIST
SUBFRAME 700700

Ref. Réf.	English description	Description française	Qty. Qté.	Part # Pièce #
31	Square head set screw 5/16" x 1/2"	Vis à pression à tête carré 5/16" x 1/2"	2	O/L
32	Tie wrap 8"	Attache de nylon 8"	11	O/L
33	Reflector (Pack of 2)	Réflecteur (Ensemble de 2)	1	106108
34	Lift decal	Décalque de relevage	1	106124
35	Decal caution hot surfaces	Décalque attention surfaces chaudes	2	107151
36	Decal pinch point	Décalque point de pincement	1	105946
37	Model number	Numéro de modèle	1	REF

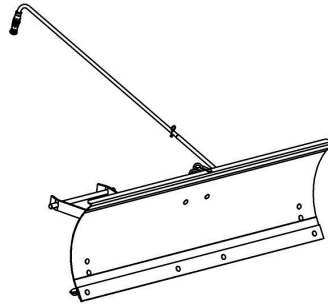
O/L = Obtain Locally

ATTACHMENTS



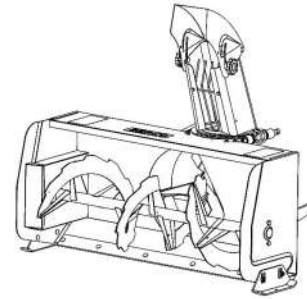
ROTARY TILLER #700312

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



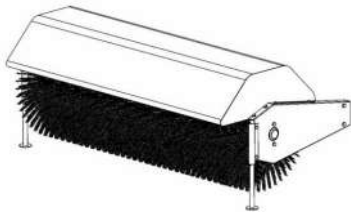
BLADE #700463

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



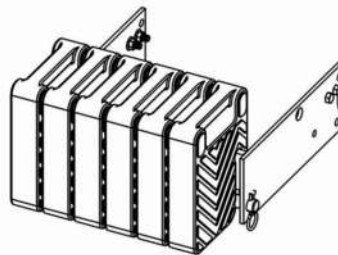
SOUFFLEUSE
700465 40"
700474 44"
700478 48"

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



ROTARY BROOM
#700380 with nylon brush
#700381 with polypropylene brush.

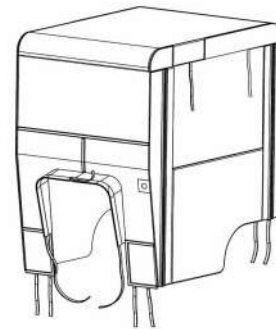
Fits on same subframe as snowblower & utility blade.
Requires an adaptor.



COUNTERWIEGHT

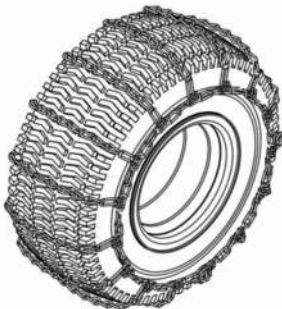
According to tractor model

Required for safety and traction. Counterbalances weight of attachment.



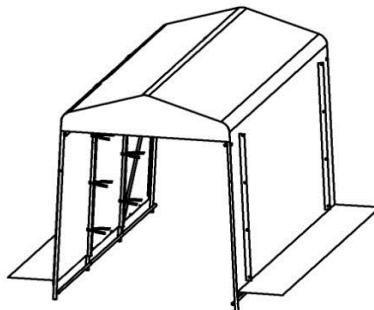
TRACTOR WINTER CAB
#700271 34"
#700423 40"

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



TIRE CHAINS

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



WINTER SHELTER #700438

Perfect to protect the tractors, A.T.Vs and snowmobiles from the weather.
Dimensions: 5'W x 12'L x 7' 8"H



***WHEN PERFORMANCE
& DEPENDABILITY
ARE NON NEGOTIABLE!***

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