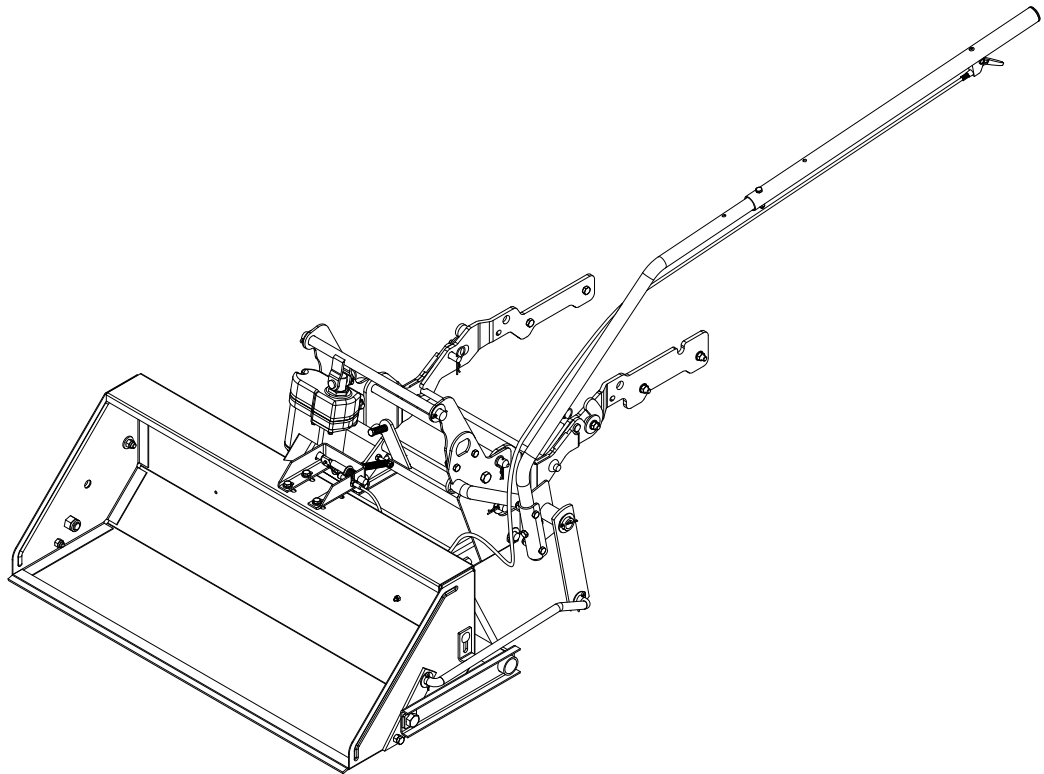


OPERATOR'S MANUAL



Tractor Scoop

Mfg. No.	Description
1695452	Tractor Scoop (Multiple Applications)



CAUTION: BURN HAZARD.
Areas heated by exhaust gas are hot and can cause burns.



WARNING: CRUSHING HAZARD.
Do not place feet under scoop when loading or unloading.

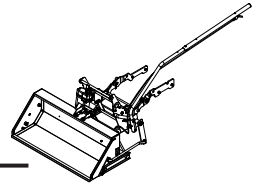


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NOTE: In these instructions, "left" and "right" are referred to as seen from the operating position.

Recommended Accessories

For best performance, it is recommended to use tire chains and two rear wheel weights. A rear-mounted weight carrier can also be added for additional traction. The maximum weight added to the tractor should not exceed 35 lbs. per wheel, plus 100 additional pounds in the rear weight carrier.

Required Accessories

A Lift Lever Kit is required for some of the models covered by this manual, and must be installed as part of hitch installation.



Safety Rules & Information



Read these safety rules and follow them closely. Failure to obey these rules could result in loss of control of unit, severe personal injury or death to you, or bystanders, or damage to property or equipment.

The triangle  in text signifies important cautions or warnings which must be followed.

GENERAL WARNINGS

- Know the controls and how to stop quickly. READ THE TRACTOR OPERATOR'S MANUAL.
- Read this manual and the tractor Operator's Manual carefully. Be thoroughly familiar with the controls and the proper use of the equipment.
- Never allow children to operate the machine. Do not allow adults to operate it without proper instruction.
- Do not carry passengers.
- Use only attachments or accessories designed for your machine. See your dealer for a complete list of recommended attachments or accessories.
- Keep the area of operation clear of all persons, particularly small children, and pets.
- Never dump scoop towards bystanders.
- Make sure all hardware is secure and that scoop is in good operating condition.
- Check to be sure all safety devices and shields are in place.
- Check that all adjustments are correct before using this unit.
- Gasoline is highly flammable. Follow all precautions listed in your tractor's operator's manual.
- Always wear eye protection while operating and performing adjustments to protect eyes from debris thrown by the scoop.
- When cleaning, repairing, or inspecting the unit make sure all moving parts have stopped. Disconnect and secure the spark plug wires and remove the key to prevent accidental starting.

DANGER

OPERATING ON SLOPES CAN BE DANGEROUS

For operation on slopes greater than 15% (8.5°), weight carrier with 100lbs or wheel weights and tire chains are required. NEVER OPERATE ON SLOPES GREATER THAN 17.6% (10°).

PREPARATION

- Disengage the PTO before making any adjustments.
- Never attempt to make any adjustments while engine is running.
- Thoroughly inspect the area where the scoop is to be operated and mark or remove any objects that will interfere with operation of scoop.
- Adjust the scoop aggressiveness depending on surface. See the Adjustments section for procedure.

OPERATING SAFETY

- When using scoop, always drive up and down the face of slopes, never across the face. Exercise extreme caution when changing direction on slopes. Do not attempt to use scoop on steep slopes.
- Exercise extreme caution when operating on, or crossing, gravel drives, walks or roads. Stay alert for hidden hazards or traffic.
- After striking an object or if unit starts to vibrate abnormally, stop the engine and remove the key. Check for the cause and any damage before restarting. Before any inspection, make sure all moving parts have stopped.
- Take all possible precautions before leaving operator's position. Lower the attachment, set the parking brake, stop the engine and remove the key.
- Never operate near glass enclosures, automobiles, window wells, drop-offs, etc.
- Do not put hands or feet near or under the scoop. Keep clear of the scoop at all times.
- Do not overload machine capacity by attempting to carry too much material at too fast a rate.
- Never operate unit at high transport speeds on slippery surfaces. Use care when travelling in reverse.
- Never operate the scoop without good visibility or light. Always be sure your feet are properly placed on the footrests and keep a firm hold on the steering wheel.
- Do not run the engine indoors.
- Never allow anyone in front of the unit.

Features & Controls



CONTROL FUNCTIONS

The information below briefly describes the function of individual controls. Operating the tractor and scoop require the combined use of these controls and additional controls whose operation is described in the tractor Operator's Manual.

Please take a moment and familiarize yourself with the name, location, and function of these controls so that you will better understand the safety and operating instructions provided in this manual.

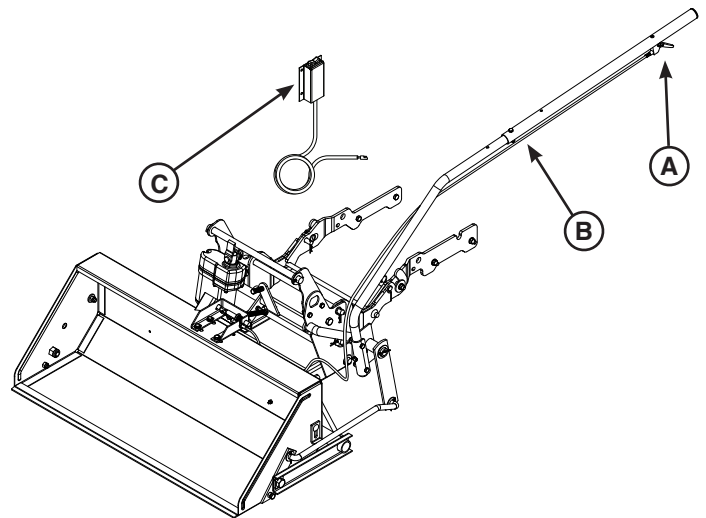


Figure 1. Control Locations

- A. Scoop Dump Trigger**
- B. Scoop Dump Lever**
- C. Actuator Lift Control**

A. Scoop Dump Trigger

The scoop dump trigger controls a spring-loaded pin which locks the from being able to be dumped.

Squeeze and hold the trigger to keep the spring-loaded pin in the unlocked position. Once the pin is in the unlocked position, the scoop can be dumped using the scoop dump lever.



NOTE: Always make sure the spring-loaded pin is in the locked position while scoop is in transport position.

B. Scoop Dump Lever

The scoop dump lever is used to dump the scoop and return it to the locked position. To dump the scoop, push and hold on the scoop dump trigger while pressing down on the scoop dump lever. Once the scoop is empty, lift up on the lever until the scoop locks into position.

NOTE: The scoop should only be dumped while in the raised position.

C. Actuator Lift Control

The actuator lift control raises and lowers the scoop. To RAISE the scoop, press on the button labelled . To LOWER the scoop, press on the button labelled .

NOTE: Exercise caution while raising and lowering the scoop.



TRACTOR CONTROLS

Before you begin operating the tractor with the scoop attachment, make certain you have:

- **Read and understood the instructions in the tractor Operator's Manual.**
- **Become thoroughly familiar with all of the tractor controls and their operation, including how to safely and properly start and stop the unit.**
- **Practice driving in an open area—with nothing in scoop—to become accustomed to the unit.**



General Operating Instructions

Checks Before Starting

1. Refer to the Maintenance & Adjustments sections of this manual and perform any needed service. Also, refer to the tractor Operator's Manual and perform any required service.
2. Remove any objects from the work area which might interfere with using the scoop.
3. Adjust scoop aggressiveness if needed and surface warrants it. See Adjustments section for more information.
4. Make sure all hardware is present and secure.

Engine & Ground Speed Selection

Always run the engine at full throttle.

Set tractor speed to obtain the needed power to move material. Operate at a safe speed, depending on conditions, so that you have complete control of the tractor. Rear wheel weights and chains are recommended for slippery surfaces.

A weight box is recommended for additional traction.

Transporting

For maximum ground clearance, transport the scoop to and from work areas fully raised.

Starting & Stopping

1. Start the tractor engine. Set engine throttle to full.
2. Raise the scoop and travel to the work site.
3. Lower the scoop and begin filling.
4. Raise the scoop before transporting materials.
5. Travel to dump site and dump contents.
6. Lower scoop before leaving tractor.
7. To stop the tractor, set ground speed to neutral and set the parking brake. Before leaving the seat, stop the engine, set the parking brake, remove the key, and wait for all moving parts to stop.

WARNING

Perform the Safety System Interlock test found in your tractor Operator's Manual. If tractor does not pass the test, do not operate the tractor. See your authorized dealer. Under no circumstances should you attempt to defeat the safety system.

Use caution when plowing a snow covered area. Snow can cover objects such as curbs, drop-offs, and other obstacles. Be familiar with the area you are plowing.

To prevent an explosion or fire, never store the tractor with fuel in the tank inside a building where an ignition source is present.



IMPORTANT NOTE

To prevent damage to the unit, always raise the scoop BEFORE turning or backing up.

DANGER

OPERATING ON SLOPES CAN BE DANGEROUS

Never operate on slopes greater than 17.6% (10°) which is a rise of 3-1/2 feet (106cm) vertically in 10 feet (607cm) horizontally.

Operate the unit at a slow ground speed when driving onto slope. Avoid using brakes to control ground speed.

When operating on slopes that are greater than 15% (8.5°) but less than 17.6% (10°), use additional wheel weights (35 lbs.) or counterweights (100 lbs.).

In addition to counterweights, use extra caution when operating on slopes. Drive UP and DOWN the slope, never across the face, use caution when changing directions and DO NOT START OR STOP ON SLOPE.

Maximum weight added to tractor should not exceed 35 lbs. per wheel and 100 additional lbs. in weight box.

General Operating Instructions

Using the Tractor Scoop

DO NOT EXCEED 300 LB. CAPACITY OF BUCKET

One cubic foot of dirt weighs approximately 80 lbs.
One cubic foot of dry sand or gravel weighs approximately 100 lbs.




CAUTION: Vehicle braking and stability may be affected with the addition of an accessory or an attachment. Be aware of changing conditions on slopes.

- Refer to the vehicle owner's manual for instructions on safe operation on slopes.
- Follow the operation on slopes information provided on pages 3 and 5 of this manual for proper usage on slopes and safety hazards.
- Always test to make sure your vehicle has adequate power and braking capabilities whenever hauling a substantial amount of weight in your front end scoop. Use extra caution when operating on slopes.
- For best handling and traction, distribute the weight of the load evenly in the bucket.



CAUTION: Always lower the scoop bucket to the ground before leaving the tractor.

- Keep the actuator in the raised position when tilting the scoop bucket forward to dump.
- The actuator must be in the raised position to allow the dump handle to lock the scoop bucket back in the upright position after dumping.
- Do not scrape or push material with the scoop bucket while it is tilted forward.
- Add wheel weights for improved traction when using the scoop.
- To dump material from the bucket, squeeze the dump trigger and push the dump tube handle down. Release the trigger before returning the bucket to the upright position.
- To lower the bucket, press on the button labelled  on the actuator controls.
- Do not exceed mowing speed (3 mph) when the front end scoop is attached to the tractor.



CAUTION: To avoid possible injury, make sure that no one is near the bucket before dumping the bucket.



CAUTION: Never ram the scoop into material at high speeds.



Storage



IMPORTANT NOTE
Refer to Tractor Operator's Manual for important information concerning safely storing your tractor.

Daily Storage

1. Allow tractor engine to cool before storing in any enclosure.
2. After moving of material is completed, clean out scoop to remove excess dirt.
3. Lightly oil all pivot points. Coat bare metal surfaces to prevent corrosion.

Off-Season Storage

1. Remove scoop from the tractor.
2. Thoroughly clean the scoop. Avoid using water next to actuator.
3. Paint, or lightly coat with oil, any area where paint has been worn or chipped away.
4. Lubricate the scoop pivot points.
5. Store the scoop in a dry place.



Maintenance

⚠ WARNING

To avoid serious injury, perform maintenance on the tractor or scoop only when the engine is stopped, parking brake is set and all moving parts have stopped. Always remove the ignition key before beginning maintenance or adjustments to prevent accidental starting of the engine.

Lubricate Tractor Scoop

Lubricate the tractor scoop as shown in Figure 2. Where an oil can is shown, wipe the area clean, apply a few drops of oil (SAE 30), then wipe up drips or spills.

In general, linkage connections and other parts that have partial rotational or sliding movement should be lubricated periodically with SAE 30 weight oil. Avoid applying excessive amounts of oil since this may cause a build-up of dirt around the lubricated area, making subsequent lubrication more difficult to accomplish.

Schedule For Normal Care

Care Required	Schedule
Check for loose fasteners.	Before each use.
Clean debris from scoop frame.	After each use.
Lubricate tractor scoop.	Every 10 hours or at least once a year.

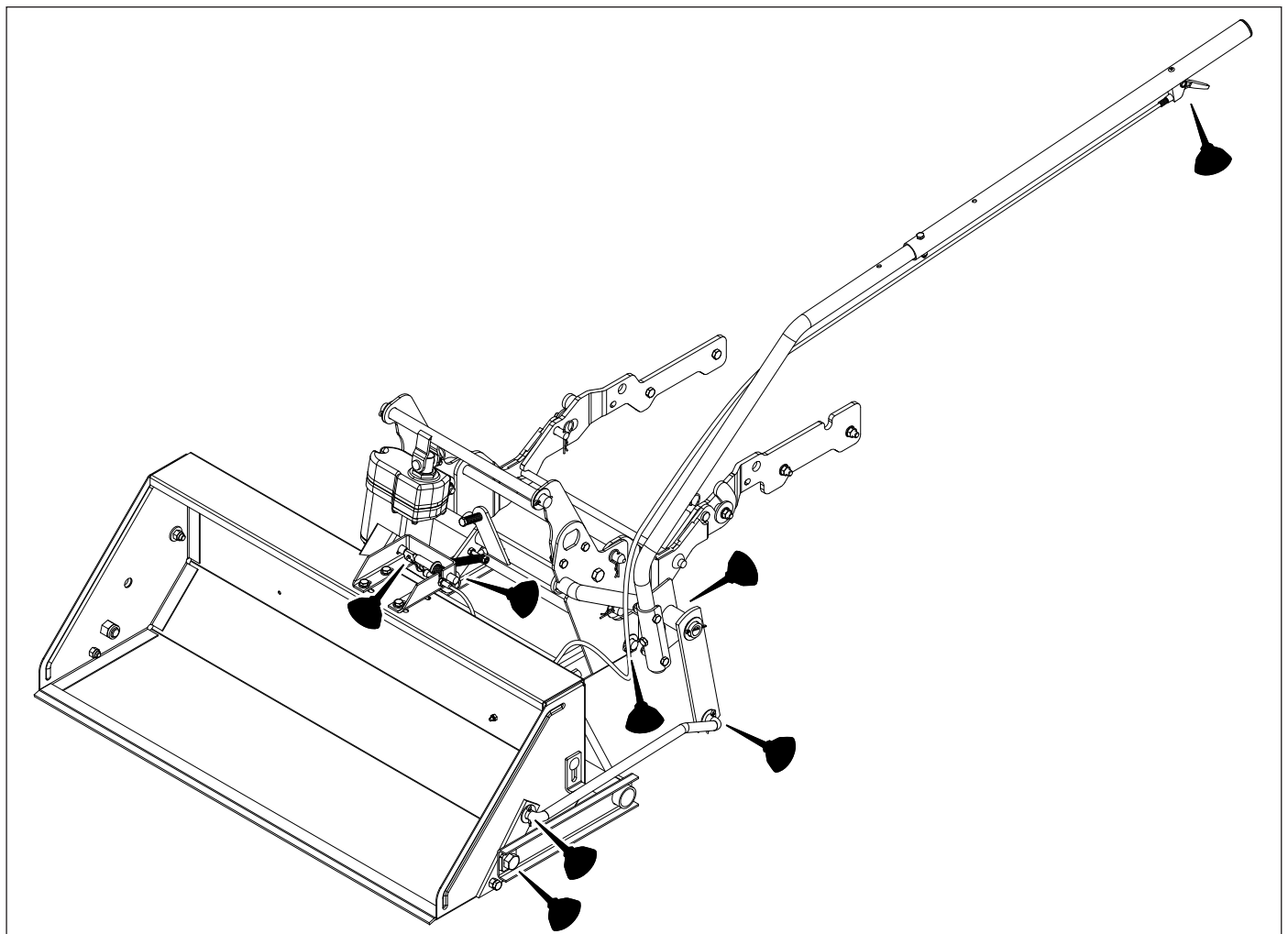
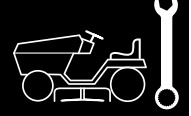


Figure 2. Lubrication Points



Adjustments

Adjust Tilt and Pin Stop Brackets

- Lower scoop onto a smooth level surface. For normal use, let bottom of bucket rest flat on ground. For more aggressive scraping action, place 1/4" shims under rear of bucket at each end.
- If they are tightened, slightly loosen the two smaller bolts in the tilt bracket. If they are tightened, slightly loosen the four bolts in the pin stop bracket.
- Swing the tilt bracket forward and position the pin stop bracket so the end of the dump control pin inserts into the hole in the tilt bracket.
- Adjust pin stop bracket so that it is square with the bucket leaving a small gap between pin stop bracket and tilt bracket. The tapered end of the pin should now extend through the tilt bracket. **TIGHTEN** bolts and nuts in pin stop bracket
- **TIGHTEN** the two bolts and nuts in the tilt bracket.

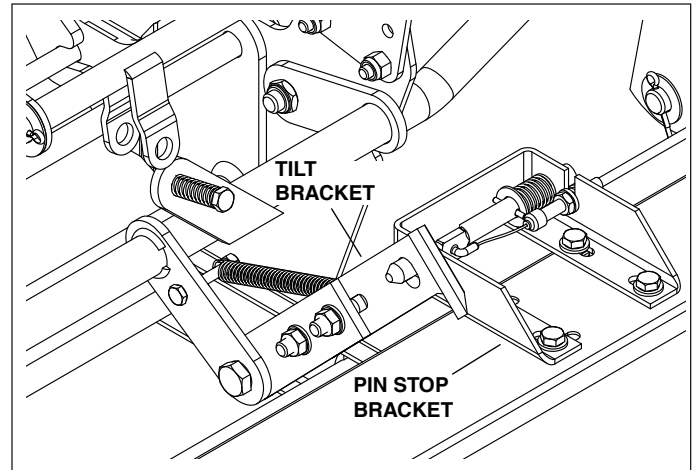


Figure 3.

Adjust Stop Bracket Bolt

- With the scoop in the TRANSPORT position, tighten or loosen the stop bracket bolt until it pushes against the tilt bracket. The stop bracket bolt should apply enough pressure on the tilt bracket so that the hole in the tilt bracket lines up with the pin.

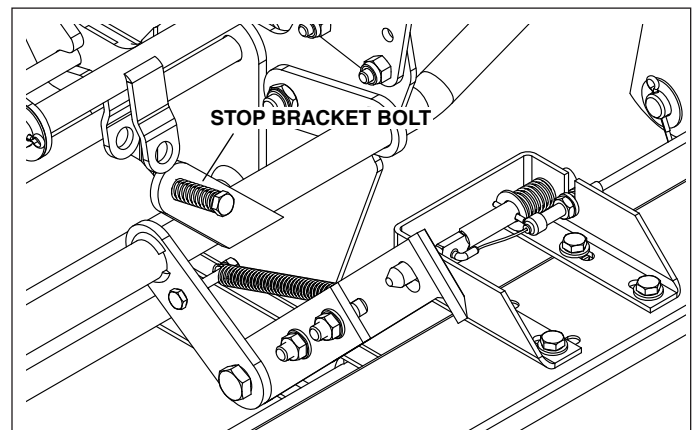


Figure 4.

Checking Dumping Operation

- With the scoop in the transport position, squeeze the dump trigger and push down on the dump handle to dump the bucket. Release the dump trigger and lift up on the handle to lock the bucket in the upright position. If the dump control pin does not lock into the tilt bracket, repeat the Adjust Tilt and Pin Stop Brackets and Adjust Stop Bracket Bolt sections.

Adjust Tilt Stop Brackets

- If they are tightened, loosen the nuts and bolts that fasten the tilt stop brackets.
- Raise the scoop until it is in the TRANSPORT position.
- Push the tilt stop brackets on each side of the bucket down against the lift frame arms and **TIGHTEN** the nuts.

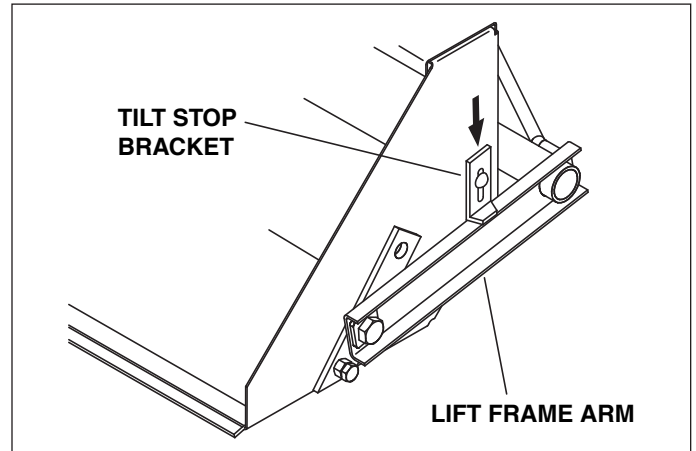


Figure 5.

Initial Setup & Assembly

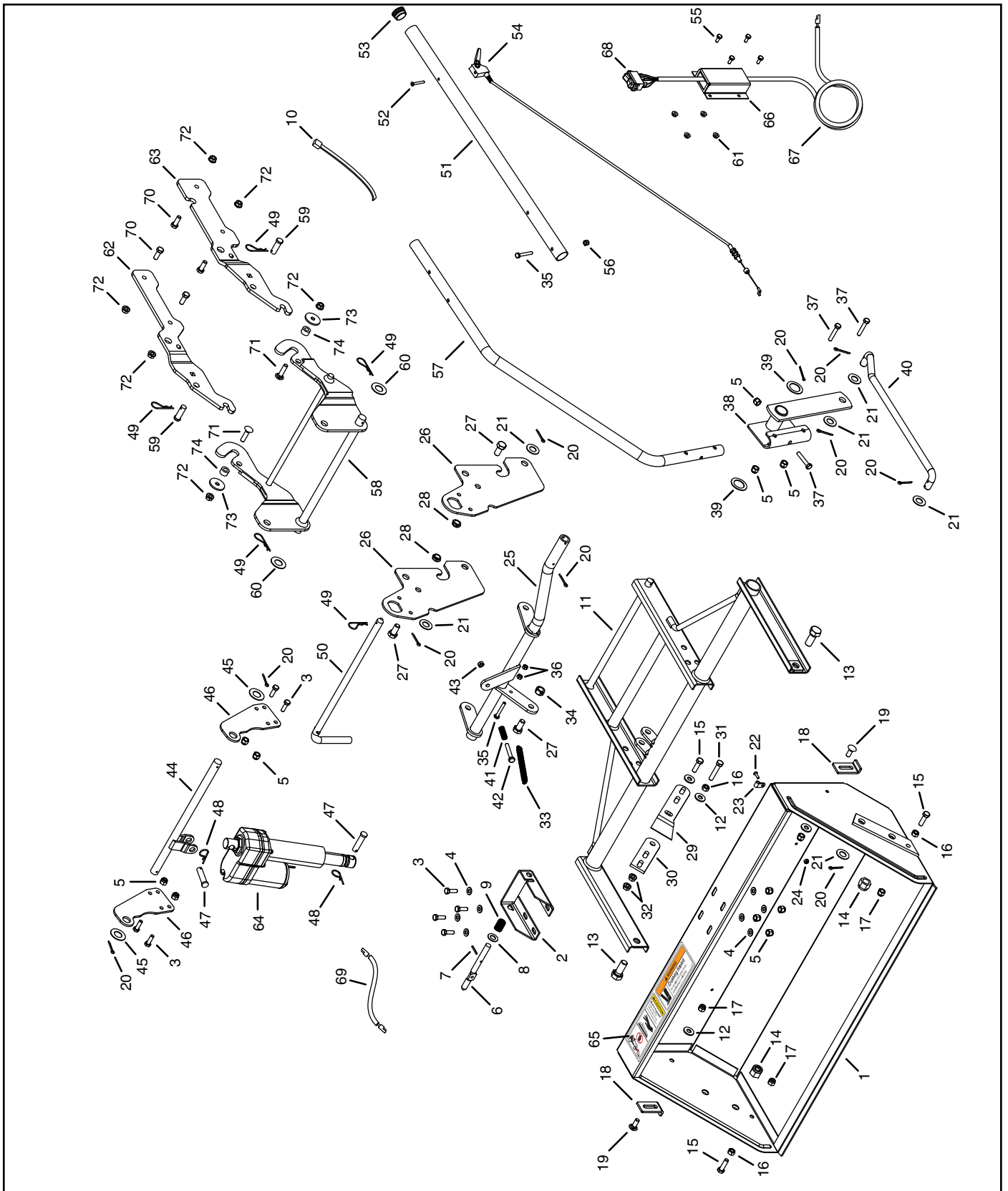
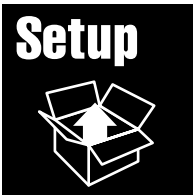


Figure 7. Scoop

Initial Setup & Assembly

Ref	Qty	Description	Ref	Qty	Description	Ref	Qty	Description
1	1	Bucket Assembly	26	2	Mounting Bracket	51	1	Dump Handle Extension
2	1	Pin Stop Bracket	27	3	Hex Bolt, 1/2-13 x 1"	52	1	Oval Screw
3	8	Hex Bolt, 5/16-18 x 1"	28	2	Nylock Jam Nut, 1/2"	53	1	Tube Plug, 1-1/4"
4	8	Washer, 5/16	29	1	Tilt Bracket	54	1	Trigger Assembly
5	11	Nylock Nut, 5/16"	30	1	Tilt Bracket Extension Strap	55	4	Hex Bolt, 1/4-20 x 5/8"
6	1	Pin Tilt Control	31	1	Hex Bolt, 3/8-16 x 2"	56	1	Nylock Nut, 1/4"
7	1	Spring Pin, 1/8" x 1"	32	2	Flange Lock Nut, 3/8"	57	1	Tilt Handle Extension
8	1	Washer, 1/2"	33	1	Extension Spring	58	1	Adapter Assembly
9	1	Compression Spring	34	1	Lock Nut, 1/2"	59	2	Clevis Pin, 1/2" x 1-7/16"
10	10	Nylon Tie	35	2	Hex Bolt, 1/4-20 x 1-3/4"	60	2	Washer, .76 x 1.49 x .06
11	1	Lift Frame Assembly	36	2	Lock Nut, 1/4"	61	4	Flange Lock Nut, 1/4-20
12	6	Washer, 3/8"	37	3	Hex Bolt, 5/16-18 x 1-3/4"	62	1	RH Mounting Plate
13	2	Hex Bolt, 5/8-11 x 1-1/2"	38	1	Tilt Bracket Assembly	63	1	LH Mounting Plate
14	2	Nylock Nut, 5/8"	39	2	Washer, 1-1/2"	64	1	Linear Actuator
15	3	Hex Bolt, 3/8-16 x 1-1/4"	40	1	Tilt Control Rod	65	1	Label
16	3	Hex Nut, 3/8"	41	1	Compression Spring	66	1	Switch Mounting Bracket
17	4	Nylock Nut, 3/8"	42	1	Hex Bolt, 5/16-18 x 2"	67	1	Wire Harness
18	2	Tilt Stop Bracket	43	1	Lock Nut, 5/16-18	68	1	Actuator Switch
19	2	Carriage Bolt, 3/8-16 x 1"	44	1	Lift Anchor Assembly	69	1	Actuator Extension
20	10	Cotter Pin, 1/8 x 1-1/4"	45	2	Washer	70	4	Hex Bolt, 3/8-16 x 1"
21	6	Washer, 21/32"	46	2	Lift Bracket	71	2	Carriage Bolt, 3/8-16 x 1-1/2"
22	1	Truss Bolt, 10-32 x 5/8"	47	2	Clevis Pin, 1/2" x 2"	72	6	Whizlock Nut, 3/8"
23	1	Cable Clip, 3/8"	48	2	Hair Pin, 3/32 x 1.8"	73	2	Washer, .375 x 1.5 x .134
24	1	Nylock Nut, 10-32	49	5	Hair Cotter Pin, 3/32 x 2-5/16"	74	2	Spacer, .39 x .75 x .45
25	1	Tilt Anchor Assembly	50	1	Attachment Rod			

Initial Setup & Assembly

INITIAL SETUP & ASSEMBLY

NOTE: Some of the following setup procedures may already be completed.

Assemble Scoop

1. Place the scoop on a flat surface.
2. See figure 8. Remove the three pre-assembled bolts and nuts from the tilt bracket assembly. Set aside to use in step 4.
3. See figure 8. Insert the tilt handle extension into the tilt bracket assembly.
4. See figure 8. Reassemble the three bolts and nuts that were removed in step 2. Tighten the nuts.
5. See figure 9. Slide the dump handle extension onto the tilt handle extension.
6. See figure 9. Fasten the front hole of the dump handle extension to the rear hole of the tilt handle extension with a bolt and nut.

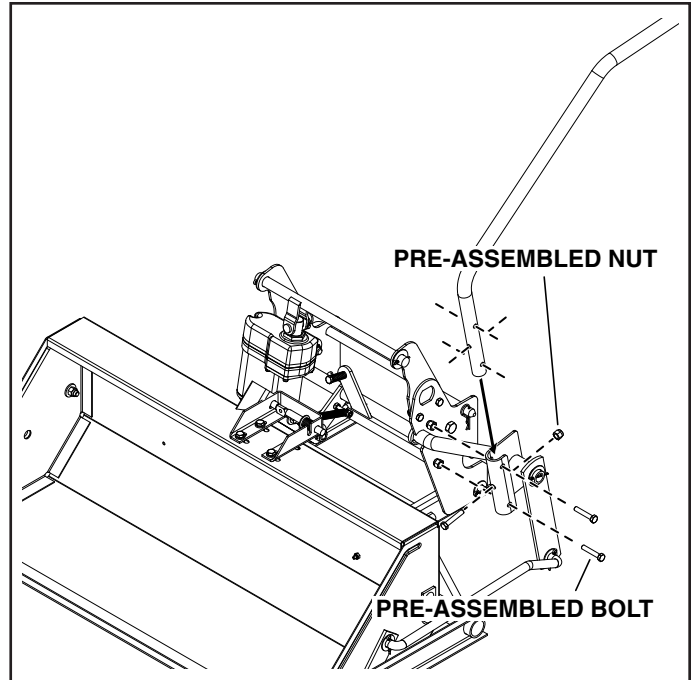


Figure 8.

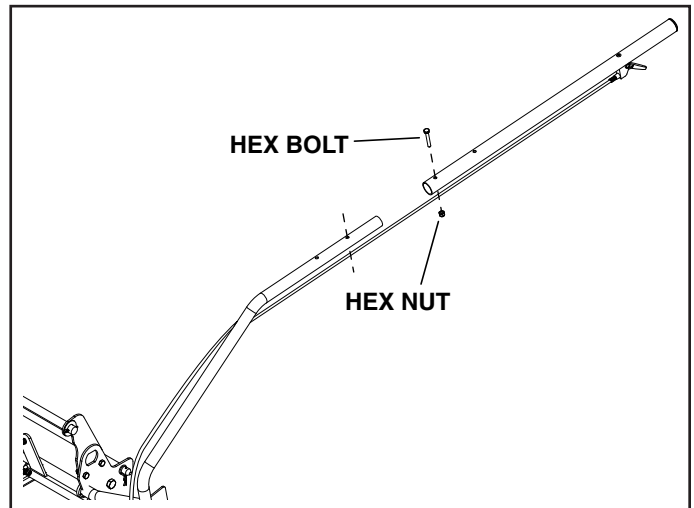


Figure 9.

Assemble Side Plates to Tractor

1. See figure 10. Assemble a 3/8-16 x 1-1/2" carriage bolt, .39 x .75 x .45 spacer, .375 x 1.5 x .134 washer, and 3/8-16 whizlock nut to the RH and LH mounting plates.
2. See figure 11. Attach the LH mounting plate to the front left side of the tractor frame using two 3/8-16 x 1" hex bolts and 3/8-16 whizlock nuts.
3. See figure 12. Attach the RH mounting plate to the front right side of the tractor frame using two 3/8-16 x 1" hex bolts and 3/8-16 whizlock nuts.
4. See figure 13. Slide the cross bar of the adapter assembly in to the slots on the side plates.
5. See figure 14. Secure the side plates to the adapter assembly using two clevis pins and two hair pin cotters.

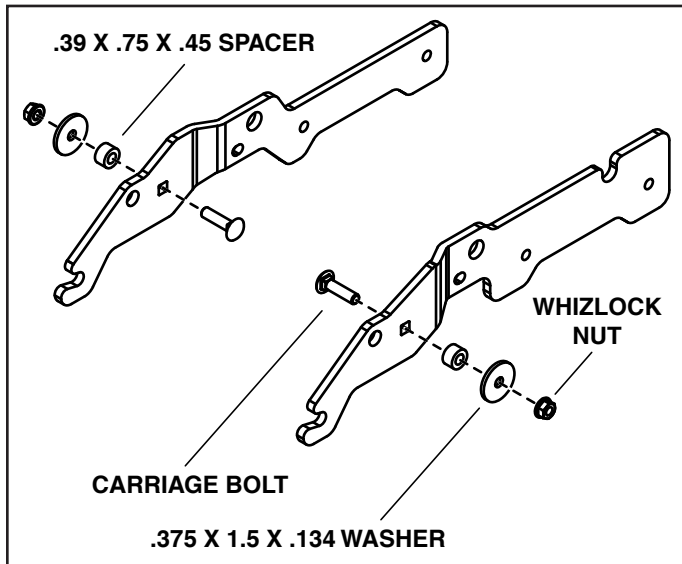


Figure 10.

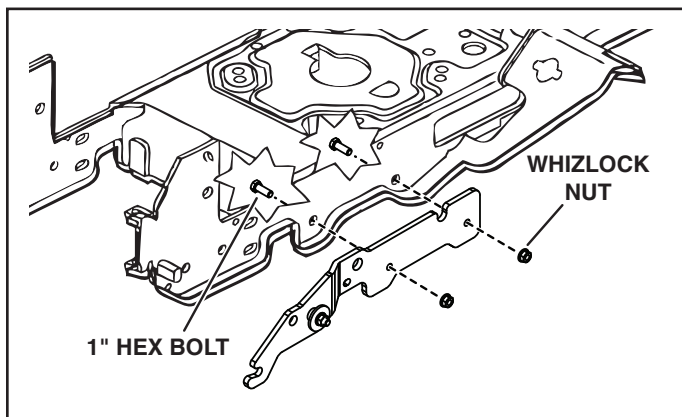


Figure 11.

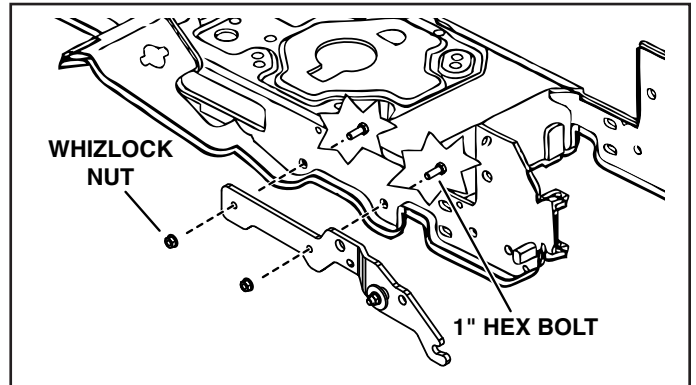


Figure 12.

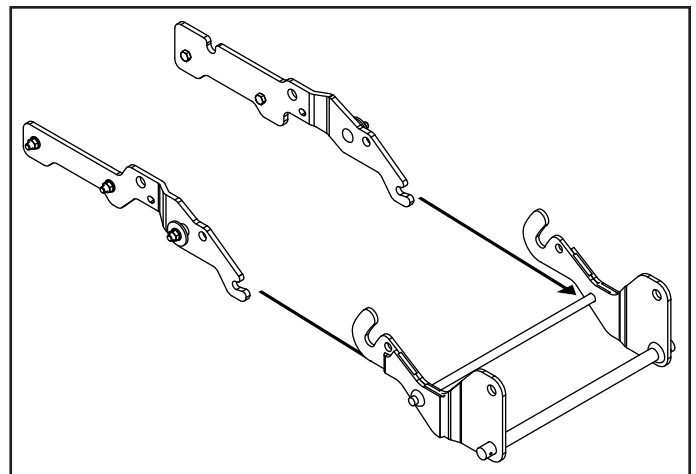


Figure 13.

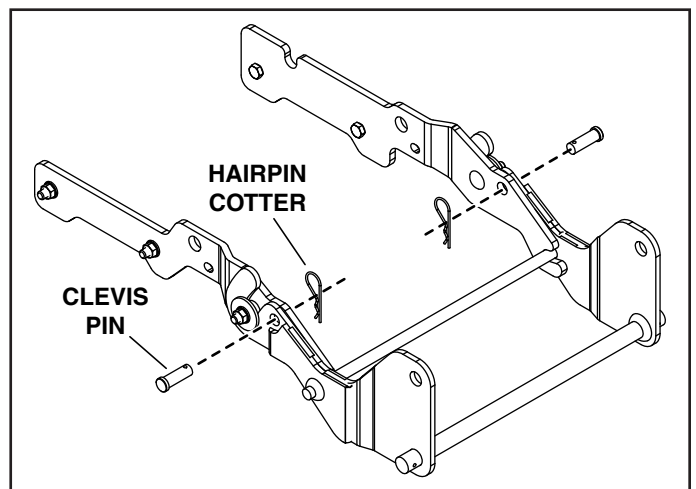


Figure 14.

Initial Setup & Assembly

Install Actuator Controls (Tractors with Electric Cut Height Control)

1. See figure 15. Place the switch mounting bracket up to the left hand side of the dash. Drill a hole into the dash for each of the four holes in the switch mounting bracket.
2. See figure 15. Attach the switch mounting bracket with actuator switch to the dash using four 1/4-20 x 5/8" hex bolts and 1/4-20 flange lock nuts.
3. See figure 16. Route the wiring of the actuator lift control as shown, going up through the top vent opening in the dash and then underneath the firewall.

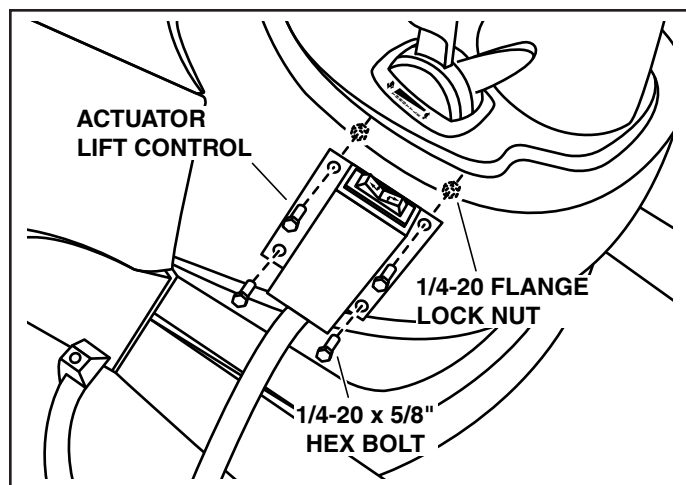


Figure 15.

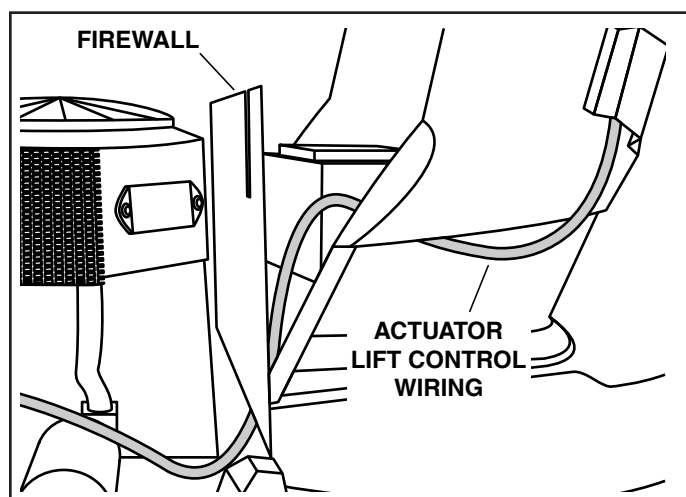


Figure 16.

Install Actuator Controls (Tractors without Electric Cut Height Control)

1. See figure 17. Remove the switch cover indicated.
2. See figure 18. Place the actuator switch into the hole that the switch cover was removed from in step 1.
3. See figure 19. Route the wiring of the actuator lift control as shown, going underneath the firewall.

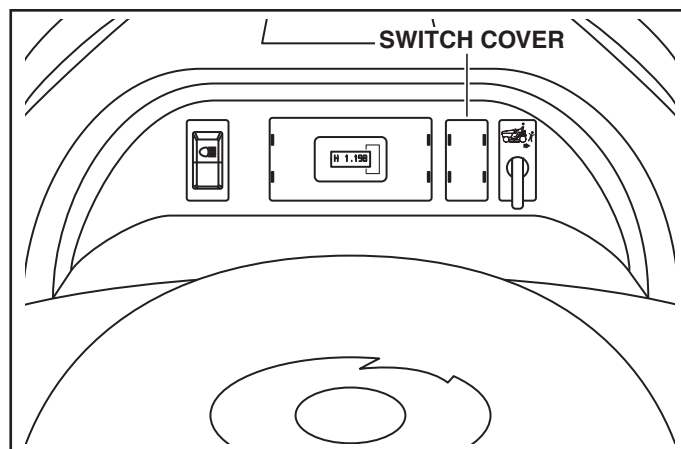


Figure 17.

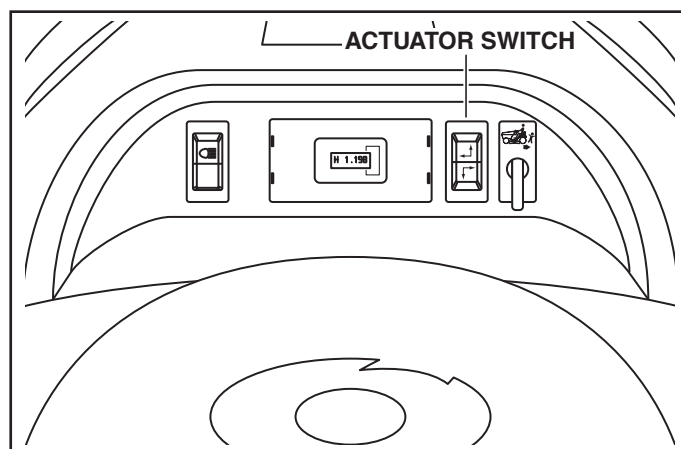


Figure 18.

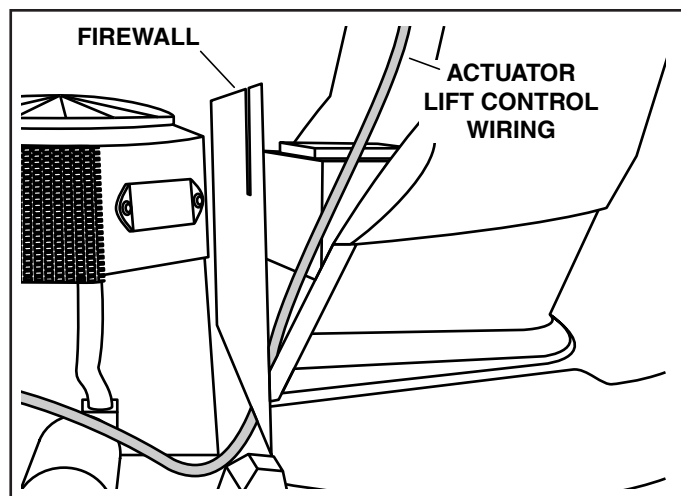


Figure 19.

Run Wiring to Actuator (All Tractors)

1. See figure 20. Continue routing the wiring of the actuator lift control towards the front of the tractor. Make sure to route wiring behind existing engine wiring as shown.
2. See figure 21. Finish routing the wiring of the actuator lift control to the front of the bumper. Use zip-ties on the hood support and engine lift bracket to secure the wiring to those locations.
3. See figure 22. Attach the actuator extension to the end of the actuator lift control coming out of the front bumper.
4. See figure 22. Attach the other end of the actuator extension to the actuator.

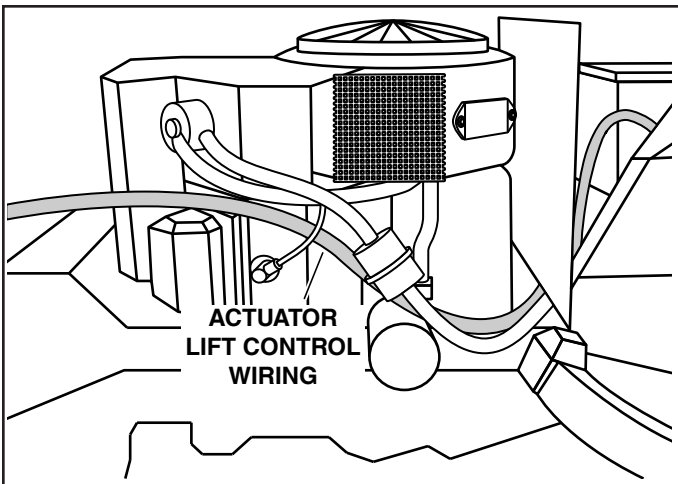


Figure 20.

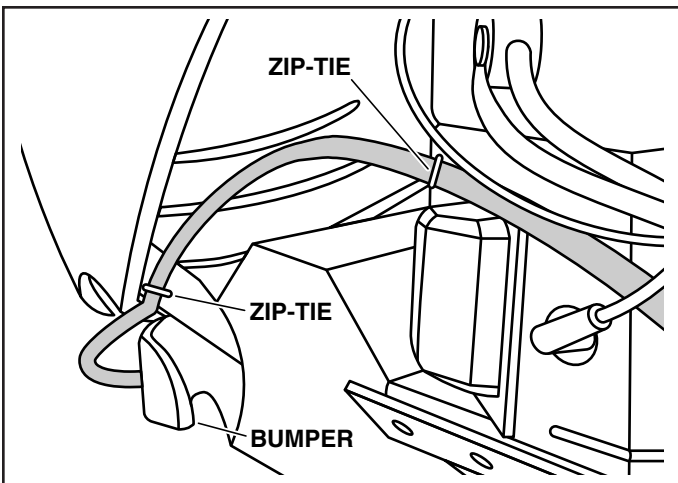


Figure 21.

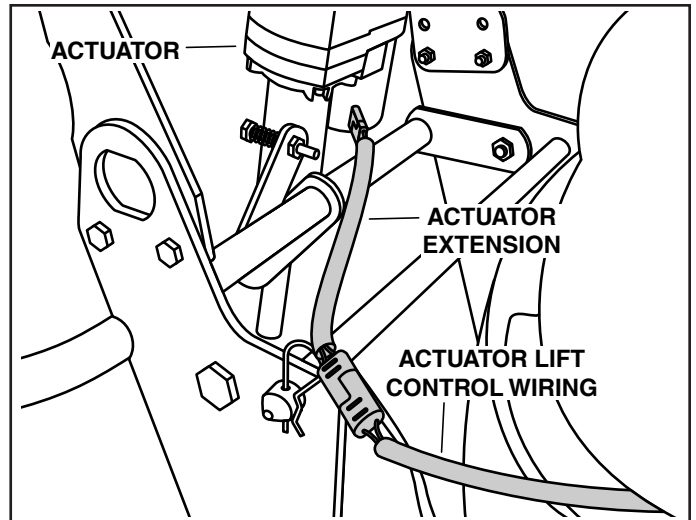


Figure 22.

Initial Setup & Assembly

Wiring Power to Actuator (Kohler Engine)

1. See figure 23. Locate the ground wire (black) attached to the wiring harness of the tractor.
2. See figure 23. Insert the ground wire (black) from the actuator lift control wiring into the ground wire (black) of the tractor wiring harness.
3. See figure 23. Locate the lower headlight wire (red) attached to the headlight switch in the dash.
4. See figure 23. Unplug the lower headlight wire (red) and plug it into the 'hot' wire (red) of the actuator lift control wiring as shown.
5. See figure 23. Plug the 'hot' wire (red) of the actuator lift control wiring into the headlight switch in the dash that the lower headlight wire was removed from in step 4.

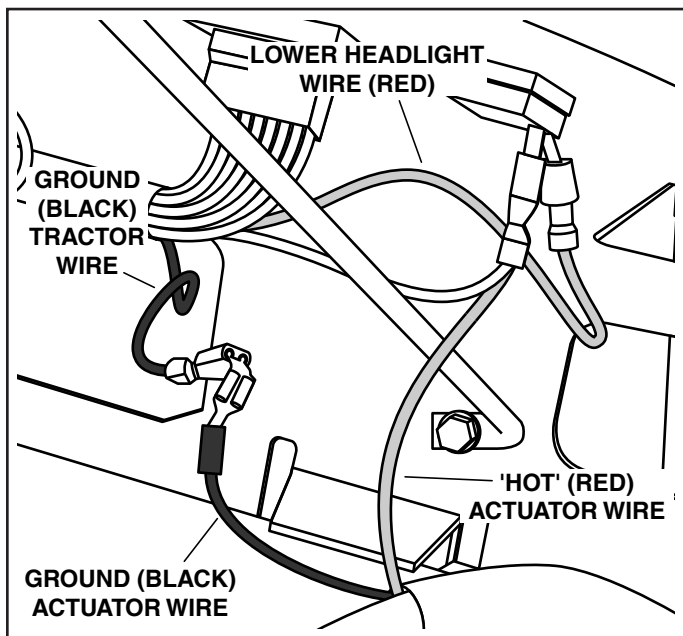


Figure 23.

Wiring Power to Actuator (Briggs Engine)

1. See figure 24. Locate the ground wire (black) attached to the solenoid of the tractor.
2. See figure 24. Unplug the ground wire (black) from the solenoid and plug it into the ground wire (black) from the actuator lift control wiring as shown.
3. See figure 24. Plug the ground wire (black) of the actuator lift control into the solenoid that the ground wire (black) was removed from in step 2.
4. See figure 24. Locate the lower headlight wire (red) attached to the headlight switch in the dash.
5. See figure 24. Unplug the lower headlight wire (red) and plug it into the 'hot' wire (red) of the actuator lift control wiring as shown.
6. See figure 24. Plug the 'hot' wire (red) of the actuator lift control wiring into the headlight switch in the dash that the lower headlight wire was removed from in step 5.

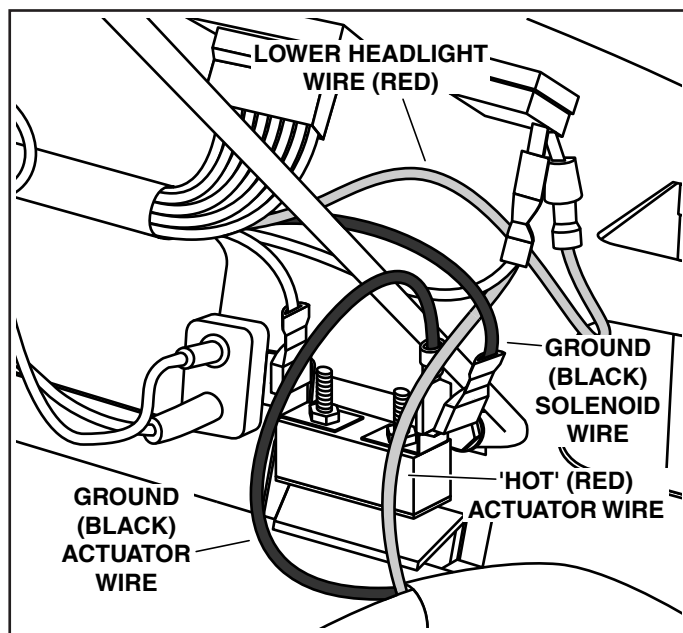


Figure 24.



Removing and Attaching the Scoop

IMPORTANT NOTE

Make sure scoop is in the LOWERED position before attaching or removing scoop.

Attach Scoop

1. See figure 25. Slide the adapter assembly into the slots on the mounting brackets.
2. See figure 26. Secure the top of the adapter assembly to the top of the mounting brackets by sliding the attachment rod through the holes and securing it in place with a hairpin cotter.
3. See figure 27. Secure the bottom of the adapter assembly to the bottom of the mounting brackets with a .76 x 1.49 x .06 washer and hairpin cotter on each side.

Remove Scoop

4. See figure 27. Remove the .76 x 1.49 x .06 washers and hairpin cotters that hold the bottom of the adapter assembly to the mounting brackets.
5. See figure 26. Remove the hairpin cotter from the attachment rod and then remove the attachment rod from the adapter assembly and mounting brackets.
6. See figure 25. Slide the adapter assembly off of the slots on the mounting brackets.

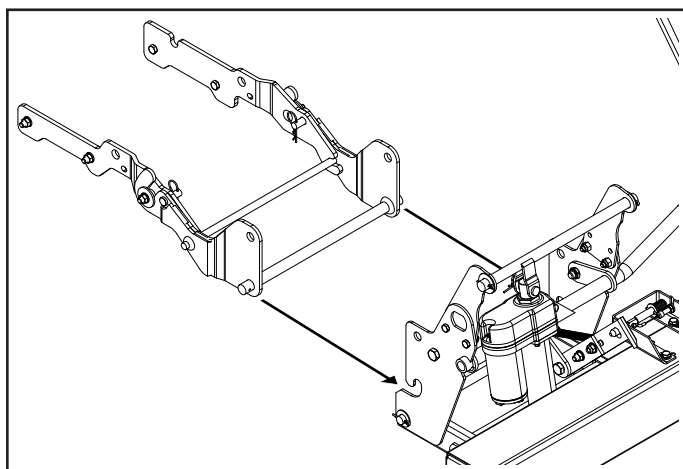


Figure 25.

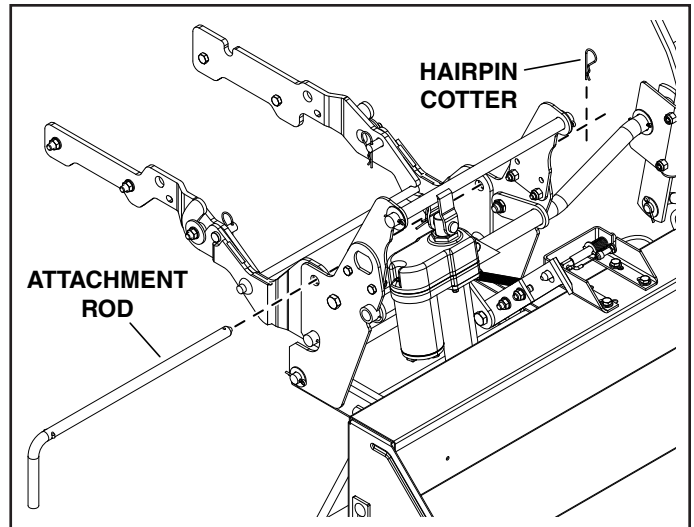


Figure 26.

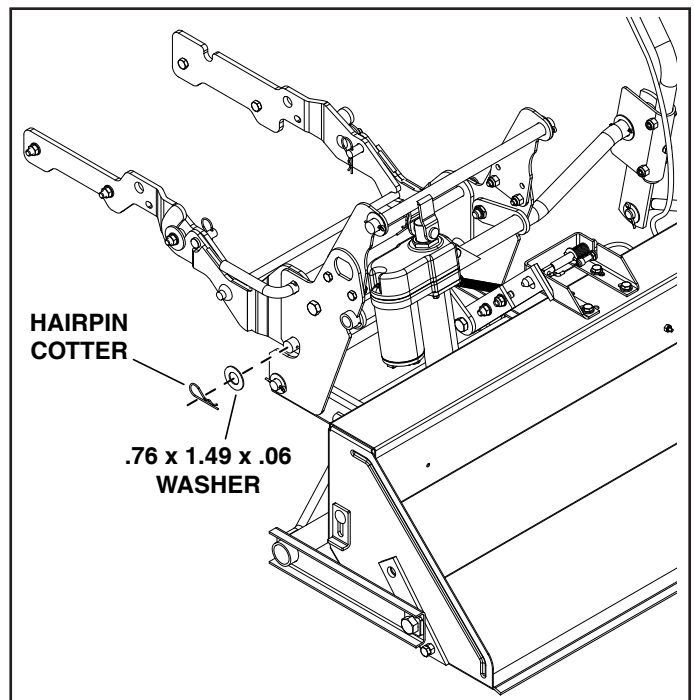
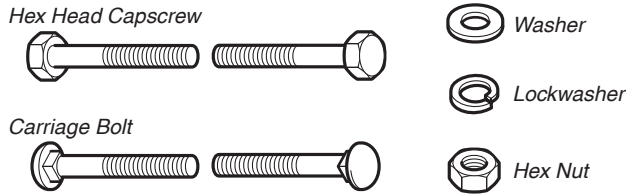


Figure 27.

Hardware Identification & Torque Specifications

Common Hardware Types

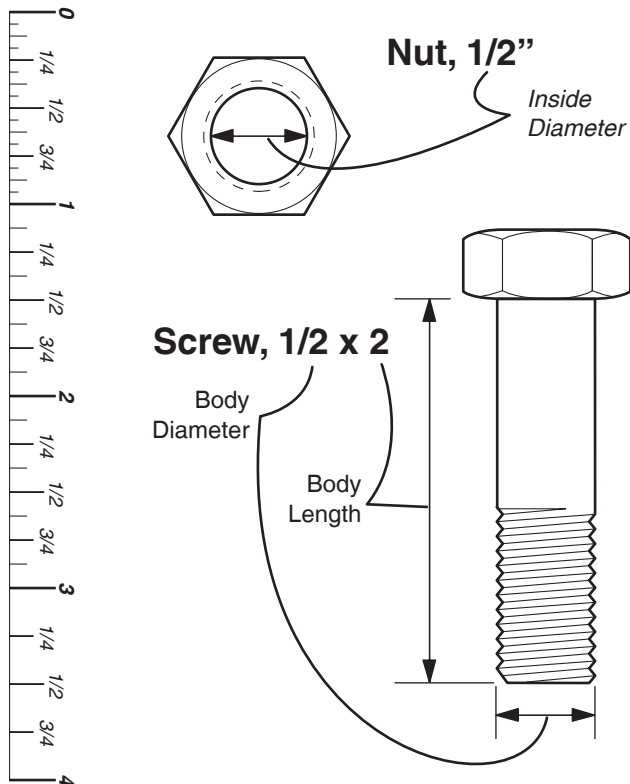


Standard Hardware Sizing

When a washer or nut is identified as **1/2"**, this is the *Nominal size*, meaning the *inside diameter* is 1/2 inch; if a second number is present it represent the *threads per inch*

When bolt or capscrew is identified as **1/2 - 16 x 2"**, this means the *Nominal size*, or *body diameter* is 1/2 inch; the second number represents the *threads per inch* (16 in this example, and the final number is the *body length* of the bolt or screw (in this example 2 inches long).

The guides and ruler furnished below are designed to help you select the appropriate hardware and tools.



Torque Specification Chart

FOR STANDARD MACHINE HARDWARE (Tolerance ± 20%)

Hardware Grade	No Marks SAE Grade 2		SAE Grade 5		SAE Grade 8	
	in/lbs ft/lbs	Nm.	in/lbs ft/lbs	Nm.	in/lbs ft/lbs	Nm.
8-32	19	2.1	30	3.4	41	4.6
8-36	20	2.3	31	3.5	43	4.9
10-24	27	3.1	43	4.9	60	6.8
10-32	31	3.5	49	5.5	68	7.7
1/4-20	66	7.6	8	10.9	12	16.3
1/4-28	76	8.6	10	13.6	14	19.0
5/16-18	11	15.0	17	23.1	25	34.0
5/16-24	12	16.3	19	25.8	27	34.0
3/8-16	20	27.2	30	40.8	45	61.2
3/8-24	23	31.3	35	47.6	50	68.0
7/16-14	30	40.8	50	68.0	70	95.2
7/16-20	35	47.6	55	74.8	80	108.8
1/2-13	50	68.0	75	102.0	110	149.6
1/2-20	55	74.8	90	122.4	120	163.2
9/16-12	65	88.4	110	149.6	150	204.0
9/16-18	75	102.0	120	163.2	170	231.2
5/8-11	90	122.4	150	204.0	220	299.2
5/8-18	100	136	180	244.8	240	326.4
3/4-10	160	217.6	260	353.6	386	525.0
3/4-16	180	244.8	300	408.0	420	571.2
7/8-9	140	190.4	400	544.0	600	816.0
7/8-14	155	210.8	440	598.4	660	897.6
1-8	220	299.2	580	788.8	900	1,244.0
1-12	240	326.4	640	870.4	1,000	1,360.0

NOTES

- These torque values are to be used for all hardware excluding: locknuts, self-tapping screws, thread forming screws, sheet metal screws and socket head setscrews.
- Recommended seating torque values for locknuts:
 - for prevailing torque locknuts - use 65% of grade 5 torques.
 - for flange whizlock nuts and screws - use 135% of grade 5 torques.
- Unless otherwise noted on assembly drawings, all torque values must meet this specification.

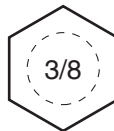
Wrench & Fastener Size Guide



1/4" Bolt or Nut
Wrench—7/16"



5/16" Bolt or Nut
Wrench—1/2"



3/8" Bolt or Nut
Wrench—9/16"



7/16" Bolt or Nut
Wrench (Bolt)—5/8"
Wrench (Nut)—11/16"



1/2" Bolt or Nut
Wrench—3/4"



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