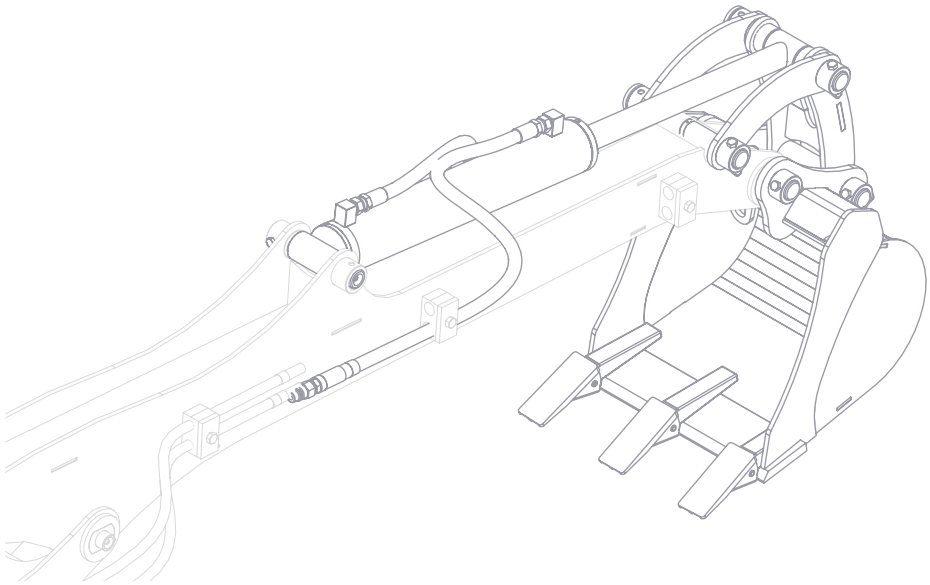
WALLENSTEIN
BY EMB MFG INC.

EMB Manufacturing Inc.
4144 Boomer Line · St. Clements, Ontario · N0B 2M0 · Canada
www.wallensteinequipment.com

TIMBER TALON



BA201

BACK HOE KIT

Accessory Installation Instructions

See inside cover for grapple compatibility chart

Do not attempt to start or operate the equipment without thoroughly reviewing this manual for safe and proper operation.

Keep this manual with the machine at all times

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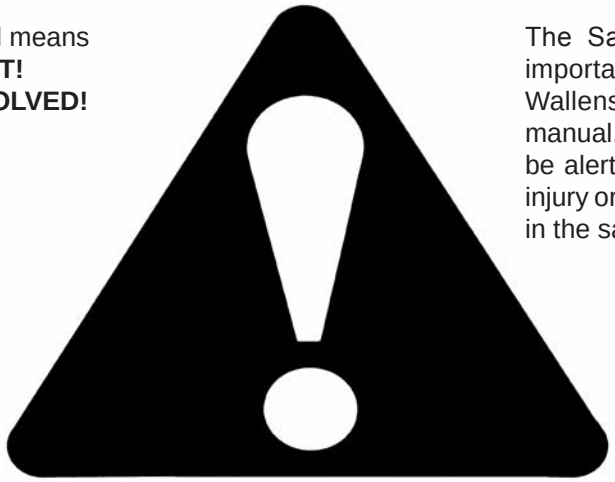
Part No. Z97831

SAFETY ALERT SYMBOL

This Safety Alert symbol means
ATTENTION! BE ALERT!
YOUR SAFETY IS INVOLVED!



The Safety Alert symbol identifies important safety messages on the Wallenstein Equipment and in the manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

Why is SAFETY important to you?

3 Big Reasons

Accidents Disable and Kill
Accidents Cost
Accidents Can Be Avoided

SIGNAL WORDS:

Note: The use of the signal words **DANGER, WARNING, CAUTION** and **NOTICE** with the safety messages. The appropriate signal word for each message has been selected using the following guide-lines:

DANGER - Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations typically for machine components which, for functional purposes, cannot be guarded.

WARNING - Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

CAUTION - Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

NOTICE - Indicates a situation that could result in damage to the machine or other property.

If you have any questions not answered in this manual or require additional copies or the manual is damaged, please contact your dealer or EMB Mfg, 4144 Boomer Line, St. Clements, ON, N0B 2M0. Phone (519) 699-9283 or Fax (519) 699-4146.

Warning
Underground Utility Hazard
Contacting underground utilities can cause electrocution. You must contact an underground utility locating/marking service before digging.

Warning
Handling Hazard
Use caution when handling heavy equipment. Objects may fall and cause crushing injury to hands and feet. Lifting heavy objects may cause back or leg strain injuries.

Grapple Compatibility Chart for Back Hoe Kit BA201

MODEL	Backhoe Kit
	6089A250
Wallenstein	BA201
LX95 Series	x
LX115 Series	x

Accessory Installation Instructions
BA201 BACK HOE KIT

Always wear the appropriate safety gear when installing this kit or working around the machine. This includes but is not limited to:

- Hard hat for protection to the head.
- Safety glasses protection for the eyes.
- Gloves for hand protection.
- Safety shoes with slip resistant soles and steel toes.

Caution: this kit is constructed of heavy gauge steel, be sure to use caution moving and installing the kit, avoid dropping or pinching body parts on edges of the kit.

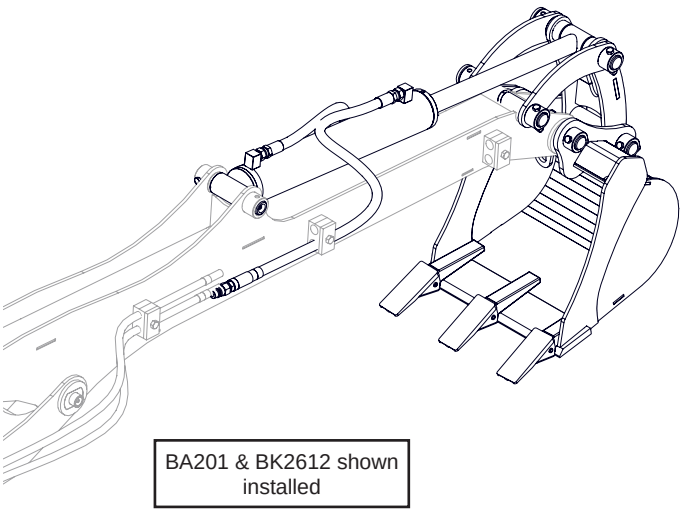
The Wallenstein Timber Talon Log Grapple Trailer is designed for ease of use and built for rugged durability. Outfitting your Timber Talon with the versatile back hoe kit is just one of the many useful options available. The optional Dump Box is an excellent match to the BA201, and will make the most of your Back Hoe Kit.

As well you require, and have the choice four sizes of optional Buckets available to handle the job at hand:
BK 2690 9” 3 Tooth Bucket
BK 2612 12” 3 Tooth Bucket
BK 2615 15” 4 Tooth Bucket
BK 2618 18” 4 Tooth Bucket

This manual features LX95 Log Grapple and a BA201 Back Hoe Kit installed with a BK2612 12” 3-Tooth Bucket. Installation and setup instructions apply to both kits unless specified. Please read this manual thoroughly.

To outfit the LX boom for digging, the grapple / rotor assembly will need to be removed and the BA201 Back Hoe Kit and BK bucket installed. Hydraulic lines will have to be removed, so have some rags on hand for fluid drips, and have a container handy to store parts that have been removed. Note: Installation and operation of the kit BA201 for both the LX95 & LX115 Series, are similar, and all sizes of buckets mount the same.

The **Back Hoe Kit** comes partially assembled. Illustrations show typical assembly to the LX Boom. Once assembled, only regular maintenance and minor adjustments are required. Tighten all hardware using the “Bolt Torque” chart at the back of this manual unless otherwise specified.



BA201 & BK2612 shown installed

WARNING
High Pressure Fluid Hazard

To prevent serious injury or death from high pressure fluid:

- Release pressure on the system before repairing or adjusting.
- wear proper hand and eye protection when searching for leaks.
- keep all components in good repair.

WARNING
Handling Hazard

Use caution when handling heavy equipment. Objects may fall and cause crushing injury to hands and feet. Lifting heavy objects may cause back or leg strain injuries.

NOTICE

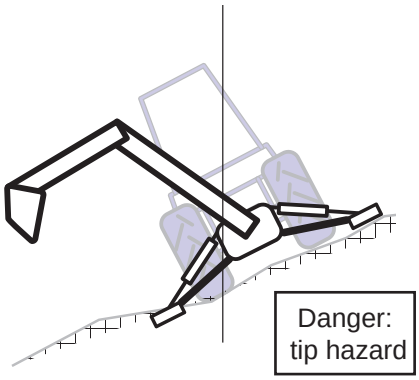
Read and follow installation and setup instructions.
A hazardous condition exists if the unit is improperly installed, or if the kit is modified or changed in any way. Damage to the machine or accessory will result.

Safe Use

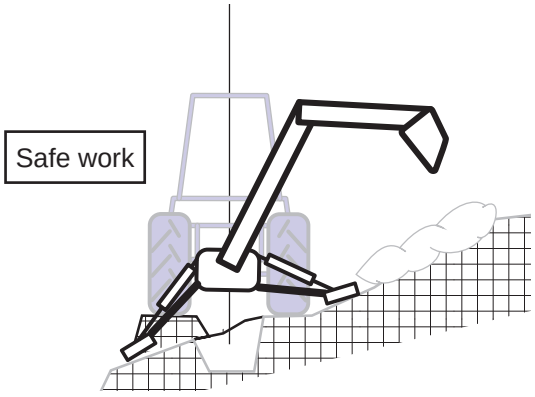
Injury may occur from improper placement of the backhoe in the work area, operator, workers or bystanders in the area could be injured. Follow these important points to keep workers and bystanders safe from potential hazards:

Use extreme caution when excavating on a slope:

- Always lower the stabilizers and bucket, if the ground is soft use pads or timbers under the stabilizers.
- Do not attempt to begin excavating on a slope while the backhoe is positioned on an angle, danger of tip over is much greater since the center of gravity moves to the down side of the backhoe.



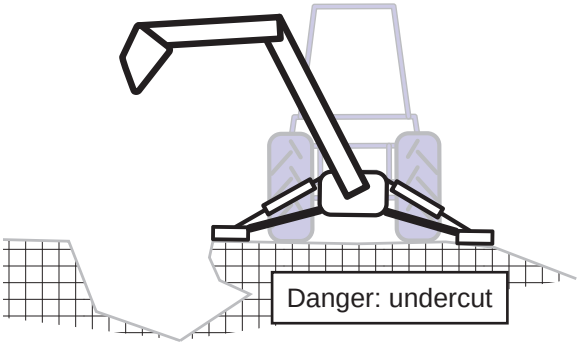
- Refrain from swinging the boom to the downside of the hill, danger of tip over is much greater since the center of gravity moves to the further to the downside of the backhoe as swing increases.
- Do level the backhoe using the stabilizers so the center of gravity is closer to the middle of the backhoe, making the backhoe more stable during excavating (ensure all four wheels are touching the ground).



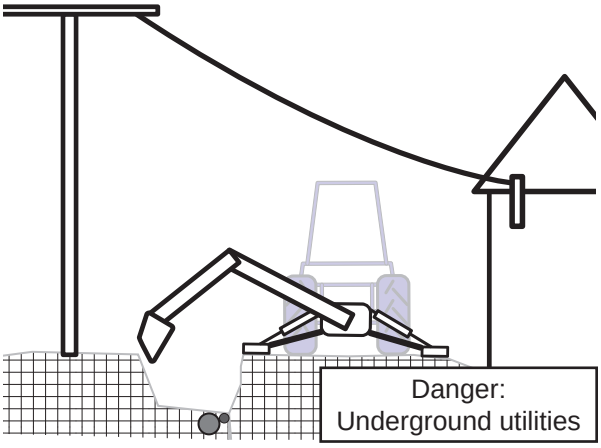
- For greatest stability, swing the boom upside the slope, but if swing downside is required, do so with extreme caution and swing only as far as necessary to dump the bucket.

When excavating:

- Always lower the stabilizers and bucket, if the ground is soft use pads or timbers under the stabilizers.
- Do not undercut your stabilizers, this could cause the stabilizer to give way and the backhoe will tip into the excavation.

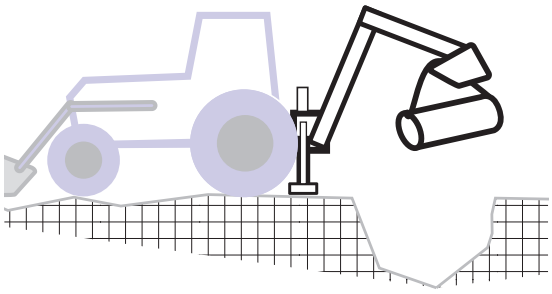


- Know before hand of buried cable and utilities
- Be aware of overhead hazards, utility lines tree's etc.



When using the backhoe for lifting:

- Always lower the stabilizers when lifting.
- Do not lift objects that are beyond the lifting limits of the backhoe.
- When moving a load, travel slowly and be aware of objects and people along the travel path, use a tag line to keep the load from swinging.



INSTALLATION INSTRUCTIONS

Ensure your log grapple trailer and the area around it is clean and free of debris, resting on dry level ground, wheel chock applied and the engine shut off. Have the back hoe kit and tools close by on a work surface.

Unpack the back hoe kit. Lay the parts out on the work surface and use the parts list in the back of this manual to check that all parts are included. All hardware and small parts are assembled to the parts.

WARNING
High Pressure Fluid Hazard

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- Release pressure on the system before repairing or adjusting.
- Wear proper hand and eye protection when searching for leaks.
- Keep all components in good repair.

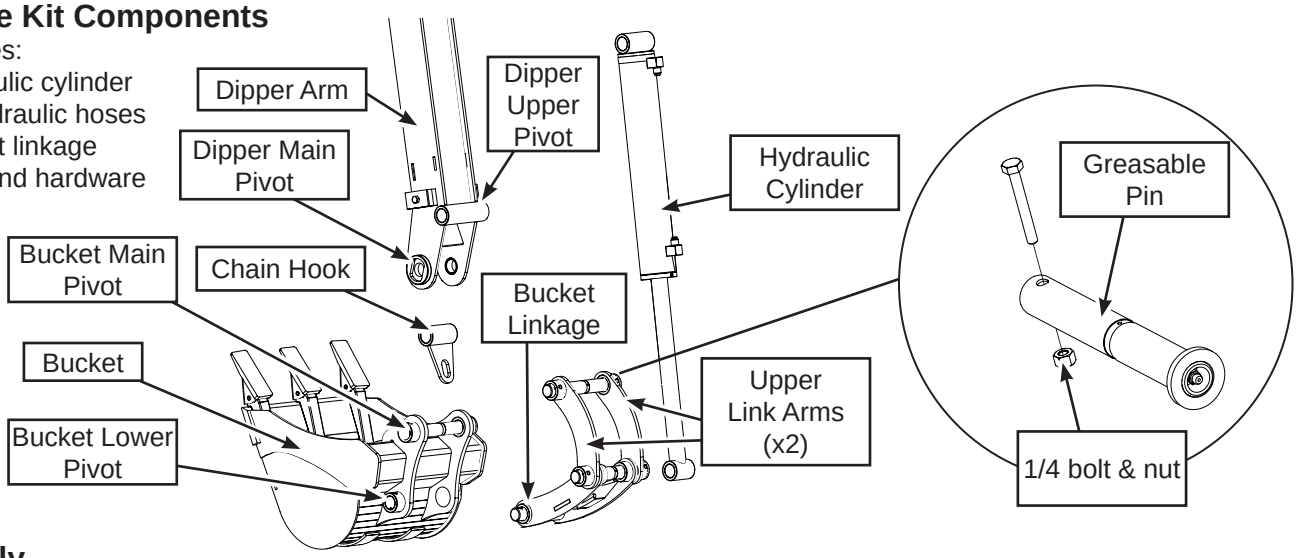
WARNING
Handling Hazard

Use caution when handling heavy equipment. Objects may fall and cause crushing injury to hands and feet. Lifting heavy objects may cause back or leg strain injuries.

BackHoe Kit Components

Kit includes:

- hydraulic cylinder
- all hydraulic hoses
- bucket linkage
- pins and hardware



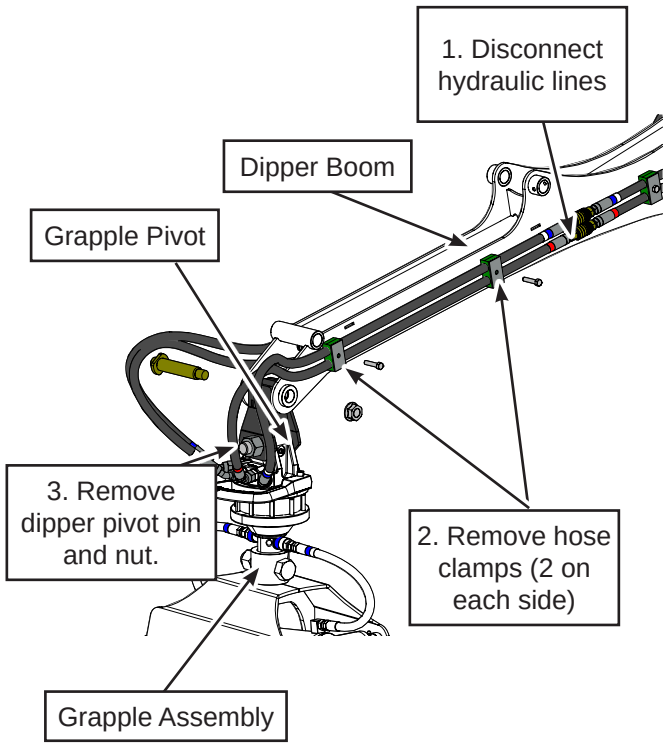
Assembly

Basic tools needed:

- standard set of wrenches or sockets

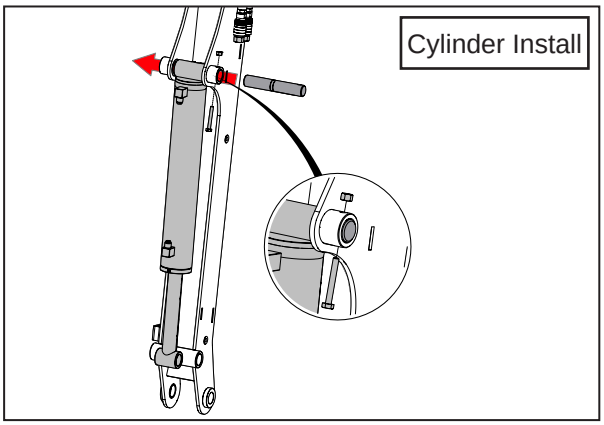
Prepare for Installation

1. Ensure the grapple is fully closed
2. Move the boom / grapple off to the side of the trailer with the grapple sitting on the ground.
3. Power down the boom (shut off the engine and remove the key).
4. Move control levers back and fourth to equalize the pressure in the hydraulic lines.
5. Disconnect the 4 hydraulic lines from the quick connects on the dipper boom (To prevent fluid contamination, wrap the ends with a clean cloth or install connector covers.)
6. Remove the 4 hose clamps (2 each side) to free up the grapple hydraulic lines.
7. Locate the grapple pivot, remove the nut on the dipper pivot pin, and using a drift punch and mallet, gently tap the pivot pin out of the pivot.
8. Reassemble the pivot & nut to the grapple pivot. (Ensure the two conex bushings remain inside the pivot)
9. The entire grapple assembly should be free, coil up the hydraulic hoses and set aside with the grapple.

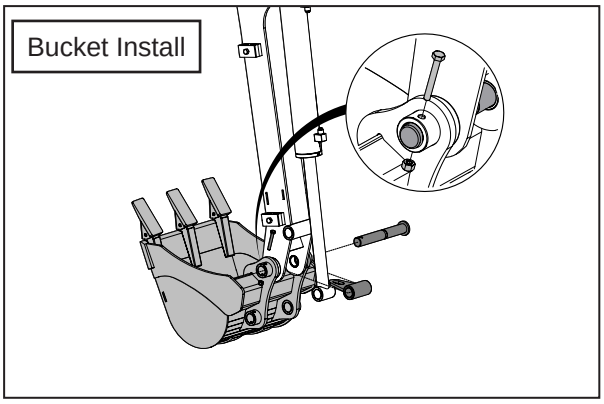


Install the Kit

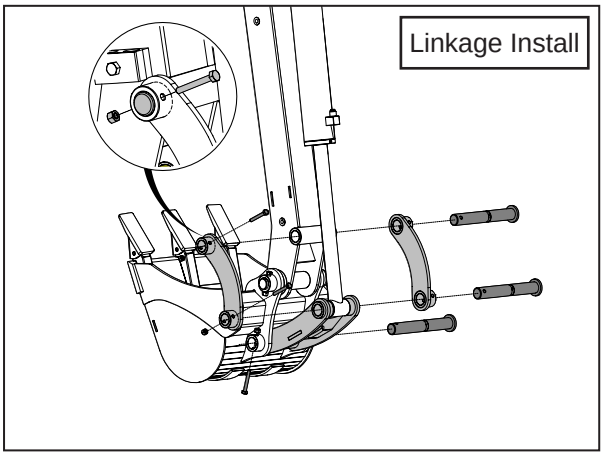
1. Install the bucket cylinder:
   - Line up the cylinder end bushing to the cylinder attach point on the dipper arm.
   - Insert the 1.0 x 5.66” greasable pin.
   - Secure with the 1/4 x 2.0 bolt and matching nut.



2. Install the bucket
   - Align the bucket main pivot to the dipper main pivot.
   - Position the chain hook with the dipper main pivot.
   - Insert a 1.0 x 7.45” greasable flanged pin, through dipper, hook and pivot.
   - Secure with the 1/4 x 2.0 bolt and matching nut.



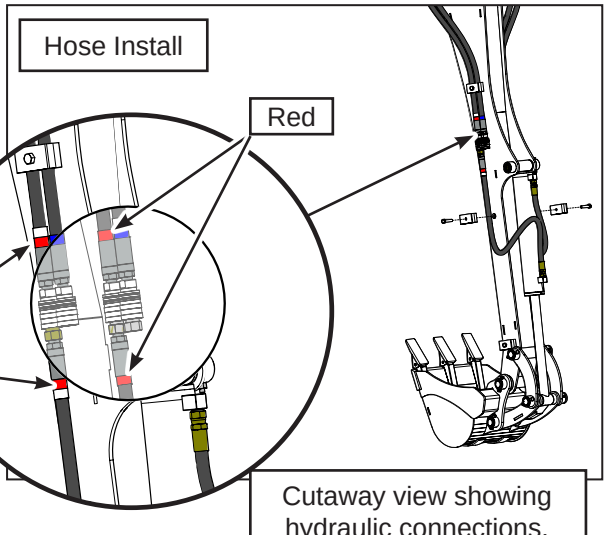
3. Install the linkage:
   - Fit the bucket link into the secondary bucket pivot.
   - Insert a 1.0 x 7.45” greasable flanged pin through secondary pivot and link.
   - Secure with the 1/4 x 2.0 bolt and matching nut.
   - Fit the linkage arms to the secondary dipper pivot
   - insert a 1.0 x 7.45” greasable flanged pin through secondary dipper pivot and link arms.
   - Secure with the 1/4 x 2.0 bolt and matching nut.
   - Align the cylinder rod end bushing, the two linkage arms, and the bucket linkage.
   - Insert a 1.0 x 7.45” greasable flanged pin, and secure with the 1/4 x 2.0 bolt and matching nut.



4. Connect hydraulic hoses:
   Each hose is colour coded to the colour coded quick connects on the dipper arm:
   - red
   - red and white,

   Match the hoses up to the corresponding colour and connect the quick connects (first, wipe the connectors to prevent fluid contamination).

5. Secure the hoses to the dipper arm with one hose clamp on each side. Fasten the 2 remaining unused hose clamps to the dipper boom for safe keeping.



Cutaway view showing hydraulic connections.

Note: Blue coded quick connects are not required for the back hoe kit installation.

OPERATION

The BA201 Back Hoe Kit for the LX boom is ideal for those light duty, but essential excavating jobs. Great for moving and distributing material piles over the job site.

Before beginning work be sure to review the work area and ensure the operator is fully trained in the use of the LX boom, review the control layout section, and note the differences between grapple control and back hoe control configurations. Practice will be required to achieve the best results.

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Handling Hazard

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WARNING
Underground Utility Hazard

Contacting underground utilities can cause electrocution. You must contact an underground utility locating/marking service before digging.

OPERATING SAFETY

- Please remember it is important that you read the operator's manual and heed the safety signs on the equipment. They are there for your safety, as well as the safety of others. **The safe use of this machine is strictly up to you, the operator.**
- Before moving, making, adjustments or servicing, put the machine in safe condition:
  - install boom pin lock
  - shut off the engine
  - turn fuel valve off
  - ensure boom is in safe position
  - secure the tow vehicle / trailer from movement
- Review section on Boom Safety in the **operators manual** and set up the operator safe zone and work zone.
- Position the trailer to provide a firm base for the stabilizer pads before beginning excavation.
- Extend stabilizers to support frame while excavating.
- Keep the unit attached to the tow vehicle for extra stability.
- Review the work site and plan the project before starting, clearly mark the area to be excavated.
- To avoid cave in hazards, keep stabilizer and trailer tires at least 2 ft (1 m) away from the edge of the trench.
- Have the area surveyed for underground utilities before starting to dig.
- Stay 50 ft (15 m) away from power lines. Electrocution can occur without direct contact.
- Do not allow riders, move or carry people on this machine at any time.
- Be aware of your operator safe zone, and keep boom and material out.
- Keep all bystanders out of the work zone, at least 6m (20 ft) feet away from trailer and boom while excavating or when engine is running.
- Position the controls and operate the machine opposite the work zone.
- Do not run machine inside a closed building to prevent asphyxiation from engine exhaust.
- Do not walk or work under a raised machine or attachment. It is potentially hazardous to depend on the hydraulic system to hold the machine or attachment in place.
- Never use alcoholic beverages or drugs which can hinder alertness or coordination while operating this equipment. Consult your doctor about operating this machine while taking prescription medications.
- Stay away from overhead utilities and obstructions.
- Never allow children or unauthorized people to operate or be around this machine.
- Keep hydraulic lines and fittings tight, free of leaks, in good condition and clean.
- Keep the working area clean and free of debris to prevent tripping. Operate only on level ground.
- When operating this equipment it is recommended to have at least 2 operators present and trained in safe operation of the machine. All operators must be completely familiar with all components of the machine and their function.
- Review safety instructions before each use or at least annually.

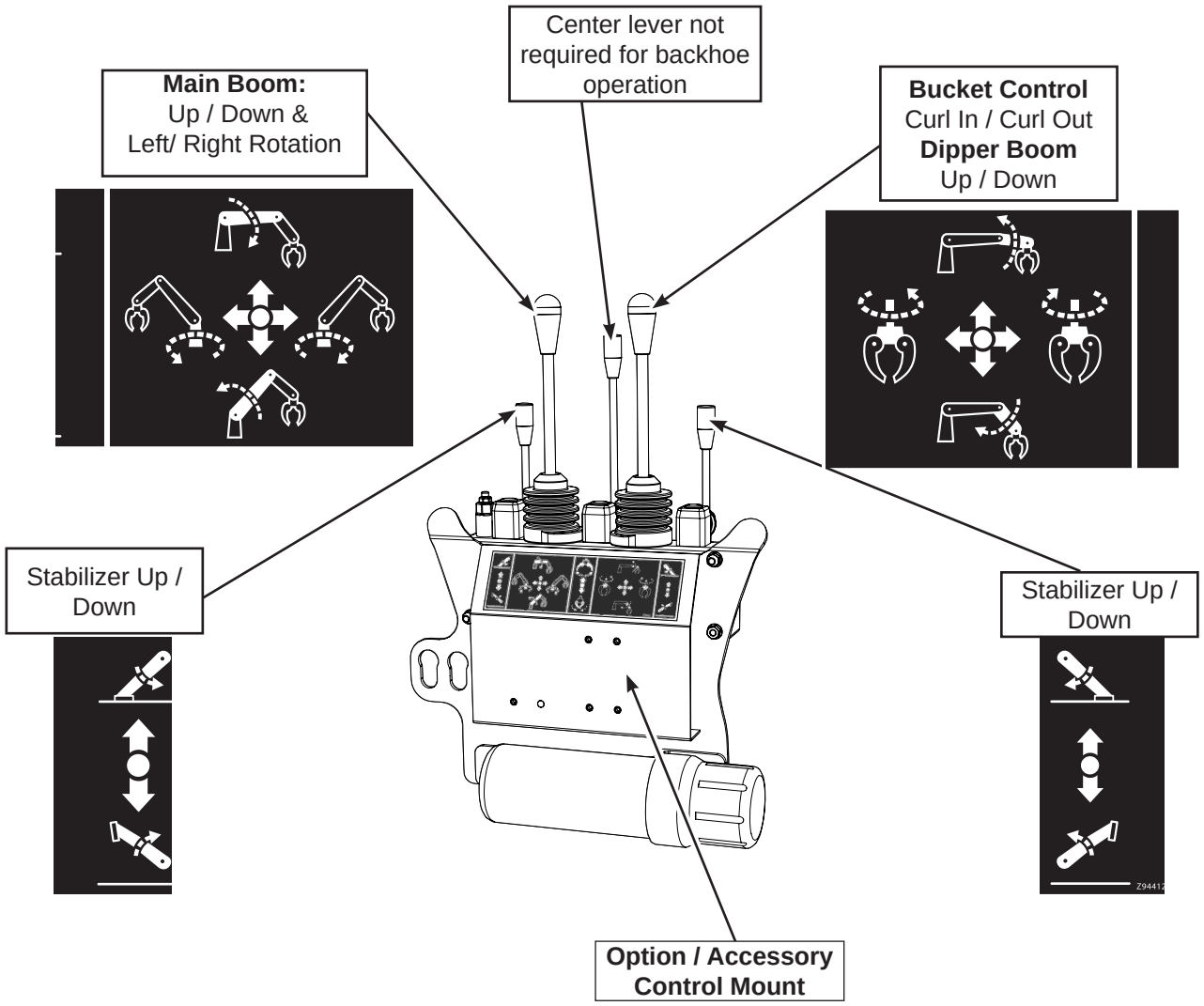
Control Panel

The LX comes complete with hydraulic hose and connectors to connect to your tractor hydraulics. An optional Hydraulic Power Pack is also available (trailer models only).

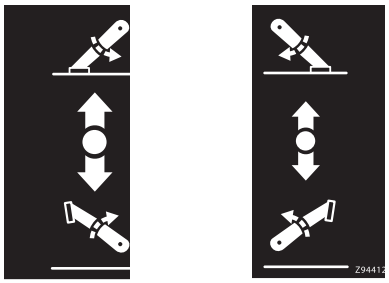
The control panel is laid out so that the controls are easy to see and use. All hydraulic control valves are mounted on control panel attached to the main frame. The two outer levers control the position of the stabilizers and the inner joy stick controls operate the function of the boom, dipper and bucket.

As an added safety feature, the main boom has been fitted with a hydraulic "lock". Which means that if hydraulic pressure is lost (broken hose, engine stops) the boom cylinder will keep its position until hydraulic pressure is returned.

Below the main controls is a **Option / Accessory Control Mount**, for the optional Hydraulic Winch Accessory control (LX95 Series / LX115 Series).

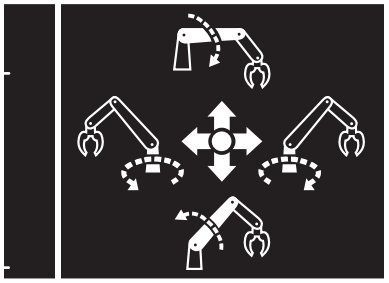


1. **Left and Right Stabilizer Controls:**
   The levers located on the far left and far right. These 2 position spring-loaded-to-neutral-center levers control the flow of oil to the stabilizer cylinder.
   - Push and hold to lower the stabilizer to the desired position.
   - Pull and hold the lever to raise the stabilizer.
   - Release the lever when the stabilizer is in its desired position, and it will spring return to its neutral position.

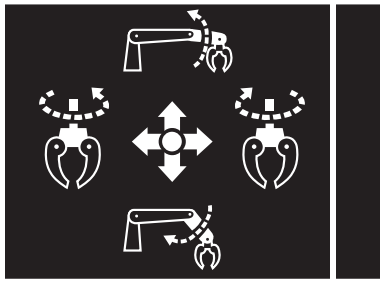


CAUTION
Operation Hazard
Always have the stabilizers in position when operating the backhoe**.**

2. **Main Boom Up/Down & Boom Left/Right Rotation:**
   The joy stick located left of center. This 4 position spring-loaded-to-neutral-center lever (joy stick) controls the horizontal rotation and up / down position of the main boom.
   - Move and hold the lever to the left to swing the boom to the left.
   - Move and hold the lever to the right to swing the boom to the right.
   - Push and hold the lever to lower (extend) the boom.
   - Pull and hold the lever to raise (retract) the boom.
   - Release the joystick, it will spring return to its neutral position and stop movement of the boom.



3. **Dipper Boom: Up / Down & Bucket In / Out**
   The joy stick located right of center.
   This 4 position spring-loaded-to-neutral-center lever (joy stick) controls the up / down position of the dipper and rotation of the grapple.
   - Move and hold the lever to left to curl the bucket in.
   - Move and hold the lever to the right to left to curl the bucket out.
   - Push and hold the lever to move the dipper up.
   - Pull and hold the lever to move the dipper down.
   - Release the lever to stop the motion of the dipper boom and the grapple rotation and they will remain in their position.



4. **Center Lever - NOT USED**
   This lever control is not required for backhoe operation.

OPERATION

1. Training:

Each operator must be trained in the proper operating procedures prior to being allowed to operate the machine.

a. Review control location, function and movement directions.
b. Move the unit to a large open area to allow the operator to become familiar with control function and machine response.
c. When a new operator is familiar and comfortable with the machine, they can proceed with the work. Do not allow untrained operators to use the machine. They can endanger themselves and others or damage property and the machine.

2. Job Site:

It is the responsibility of the operator to be thoroughly familiar with the work site prior to starting. Prevent the chance or possibility of problems or accidents by not being in the situation to start with. Some items the operators should check include but are not limited to:

a. Underground wires, cables, pipes or other obstructions. Contact your local utility to identify exactly the location of the lines, pipes, etc. Turn off, disconnect, etc. as required to prevent a problem if contact is made.
b. Overhead power lines, obstructions or overhangs. Power lines can lead to electrocution if the machine gets too close without contacting the line. Overhead obstructions can cause a loss of control or tipping from the contact. Overhangs can collapse or give way causing it to move as the footing gives way.
c. Close or cramped work site. Be sure there is sufficient space and clearance for the machine to dig, swing and dump while working. If the working area is cramped, modify the work site to provide more area. Unplanned contact with adjacent buildings, equipment or terrain can cause the operator to lose control of the machine leading to injury or damage to buildings or equipment.

3. Working Lay-Out:

Organize the work site to minimize the distance the support equipment has to travel between digging and dumping. The shorter the travel distance the faster the dig / dump cycle will be and the more that can be done.

a. Prevailing Winds:

Set-up the work site so the prevailing winds will blow dust, dirt, debris, etc. away from the air intakes for the engine and cooling system. As a result, there will be less need to clean these systems and more time can be spent working.

b. Smooth the Surfaces:

A rough surface will require slow speeds of support equipment while working. Smoothing the surface prior to starting to work will shorten the work cycle and result in higher productivity.

4. Machine Placement:

It is the responsibility of the operator to review the work site layout and how to best position the machine. Items to consider include but are not limited to:

a. Enclosed Area's:

Gas engines produce carbon monoxide that can asphyxiate operators and bystanders in a very short amount of time. Do not operate in an enclosed area or near open windows or doors.

b. Bystanders:

Do not place the backhoe where there will be any bystanders, on-lookers or unauthorized personnel. Stop the machine whenever unauthorized personnel enter the working area. Unauthorized personnel can get in the way or get pinched / caught by components. Do not resume work until the unauthorized people have left.

c. Slopes:

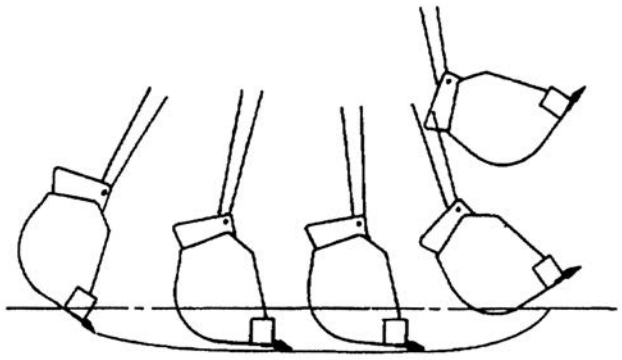
The machine is designed to carry the operating loads when the frame is vertical. Working on a slope creates the potential for tipping, avoid working on slopes.

- Never operate the machine on a severe slope.
- To minimize tipping hazard, always position the trailer so it is up and down the slope and not across the slope.
- Swing the boom up the slope when dumping the bucket to minimize the chance of tipping.
- Always keep the bucket close to the ground when swinging the boom to reduce tipping loads.
- Always block and chock the wheels and apply the brakes on the tow vehicle.

BEGIN WORK

Dipper Method:

1. Set the bucket at the appropriate angle as shown by profile.
2. Set the dipper so the bucket teeth hit the ground approximately 2 feet (0.6 m) ahead of pivot.
3. Retract the dipper to pull the bucket through the soil until it is full.
4. Raise the boom and dump the bucket.
5. Repeat this procedure to continue digging by extending the bucket 75 to 150 mm (3 to 6 inches) further each time.



NOTE

Be sure the dipper and bucket angles are set so that the heel of the bucket does not hit the bottom of the hole.

WARNING
Underground Utility Hazard

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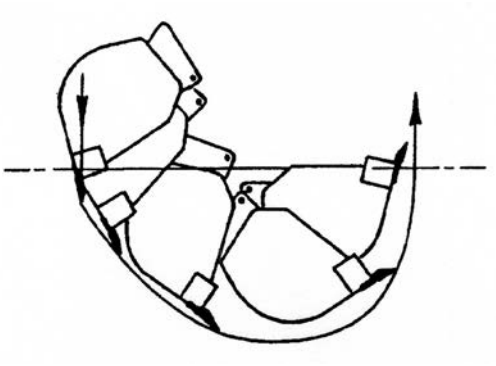
Bucket Method:

This is the procedure recommended when a vertical wall is desired at the end of a trench.

1. Set the bucket so the bucket teeth are nearly vertical.
2. Use the boom to force the bucket into the ground.
3. Use the boom to force the bucket further into the ground and at the same time roll the bucket back (curl) until it is full.
4. Raise the boom and dump the bucket.
5. Continue to dig in the same way by digging 3 to 6 inches (75 to 150 mm) deeper each time.



WARNING
Operation Hazard

Place boom in safe position when not in use or when transporting.

WARNING
Operation Hazard

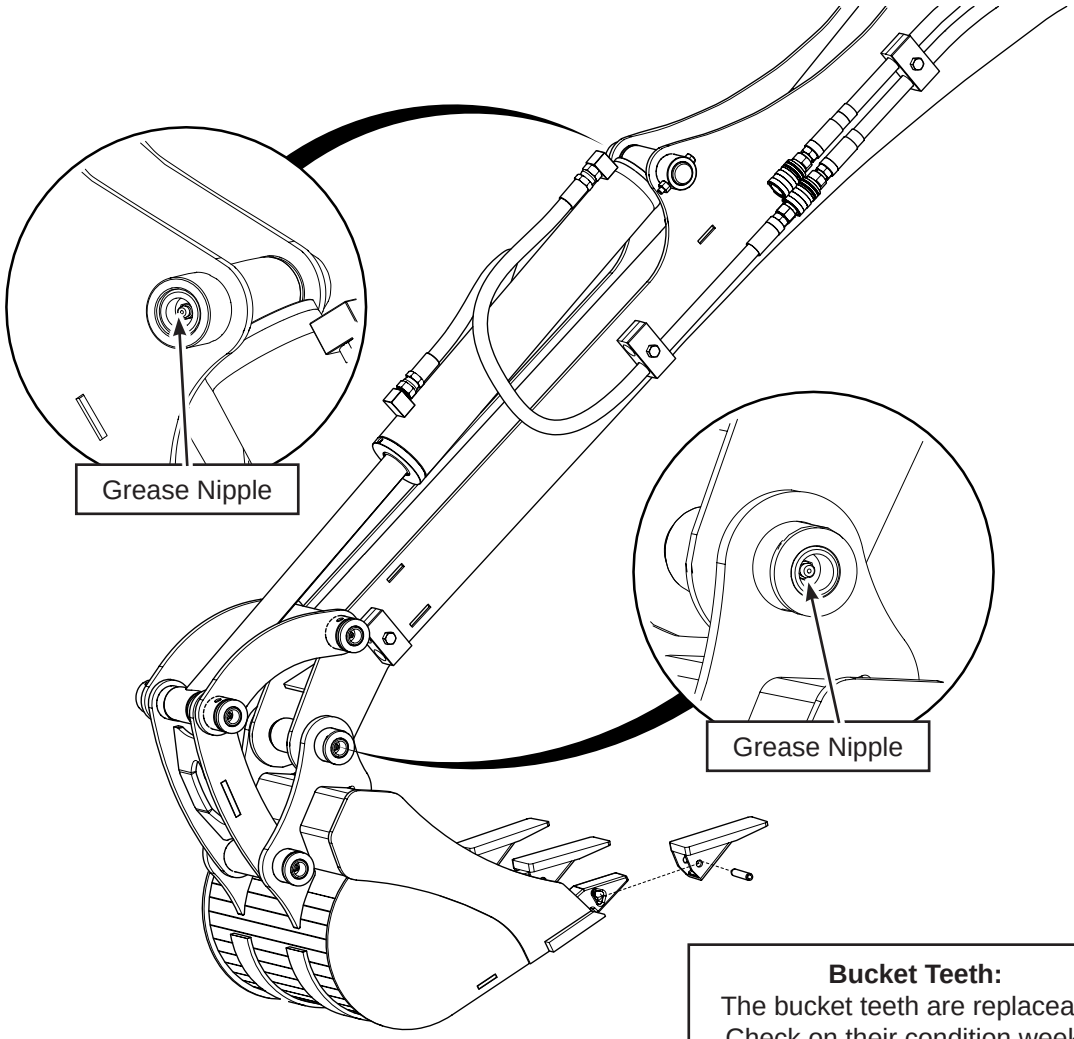
Keep all bystanders away of the work zone, at least 20 ft (6 m) away from the excavation work area.

BACKHOE KIT / BUCKET SERVICE ILLUSTRATION

This illustration shows the location of service grease points for BA-201 and BK series buckets. BK-2612 bucket is shown, but grease points are the same for all BK series buckets.
Follow the maintenance schedule in the owners manual.

Every 100 hours or annually.
Wash and clean the boom and bucket, remove entangled material, small debris

Every 50 hours or annually.
5 x grease points:
greasable pins.



Bucket Teeth:
The bucket teeth are replaceable
Check on their condition weekly.
Replace if chipped, bent or damaged.

On a regular basis check the condition of all hydraulic lines, hoses and fittings. Replace any that are damaged. Re-route those that are rubbing, pinched or crimped. Tighten any fitting that is leaking. Ensure fittings are clean and free of dirt.

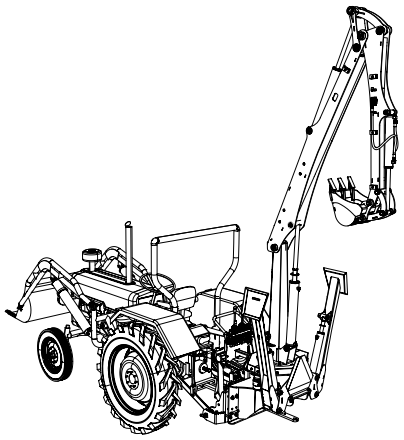
TRANSPORT SAFETY

- Comply with state and local laws governing safety and transporting of machinery on public roads.
- Check that all the lights, reflectors and other lighting requirements are installed and in good working condition.
- Do not exceed a safe travel speed. Slow down for rough terrain and cornering.
- Place the boom and bucket in safe position before moving or transporting.
- Do not drink and drive.
- Be sure the trailer is hitched positively to the tractor and a retainer is used through the drawbar. Always attach a safety chain between the hitch and the tractor.
- Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc. Watch for traffic when operating near or crossing roadways.
- Never allow riders on the machine.
- Review the transport safety section of the LX / LT owners manual.

When transporting the machine, review and follow these instructions:

Tractor mount

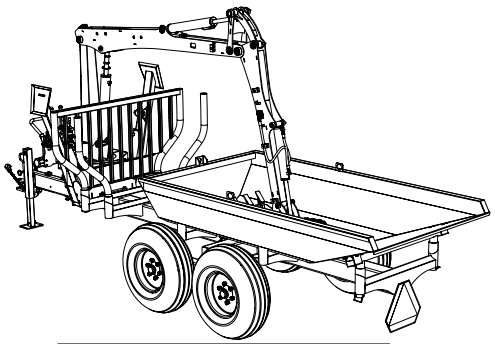
1. Be sure the three point hitch connections are secure, and pins are installed in all retainers.
2. Raise the main boom to its highest position and curl the in dipper arm and bucket. The main boom features a counter balance valve to prevent the boom from dropping due to cylinder drift.
3. Install the boom swing pin and secure with its retainer.
4. Be aware of overhead utilities and obstructions in your travel path.
5. When transporting by highway, check that a Slow Moving Vehicle (SMV) sign is attached,



Tractor mount boom ready for transport

Trailer mount

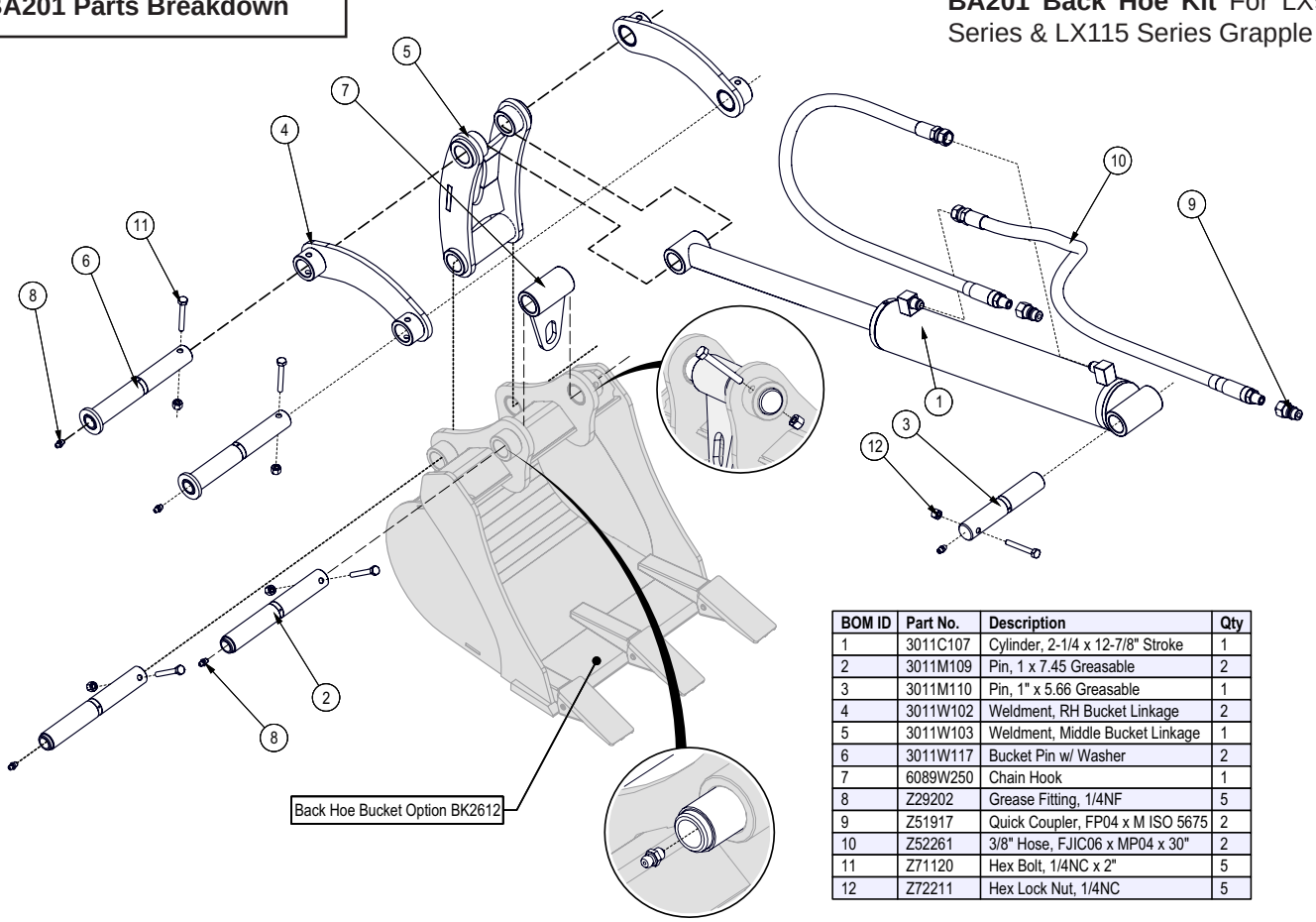
1. Be sure the trailer is hitched positively to the vehicle and a retainer is used through the drawbar.
2. Manoeuvre the boom and rest the bucket in the dump box / trailer.
3. Install the boom swing pin and secure with its retainer.
4. Retract the drop leg jack.
5. Do not exceed maximum load capacity:
   - LT 30 5000 lb (2267 kg)
   - LT 60 10,000 lb (4536 kg)
6. When transporting by highway, check that a Slow Moving Vehicle (SMV) sign is attached, and reflectors are installed and in good working condition.
7. Check that trailer brakes (if installed) are functioning properly.
8. Ensure your tow vehicle has the correct sized towing ball (**LT30** - 2", **LT60** 2 5/16") and a retainer is used through the ball hitch latch.
9. **LT60** articulating drawbar: ensure drawbar is straight and drawbar pin is installed.



Trailer mount boom ready for transport

BA201 Parts Breakdown

BA201 Back Hoe Kit For LX95 Series & LX115 Series Grapple

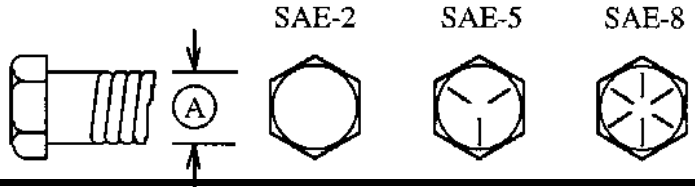


BOM ID	Part No.	Description	Qty
1	3011C107	Cylinder, 2-1/4 x 12-7/8" Stroke	1
2	3011M109	Pin, 1 x 7.45 Greasable	2
3	3011M110	Pin, 1" x 5.66 Greasable	1
4	3011W102	Weldment, RH Bucket Linkage	2
5	3011W103	Weldment, Middle Bucket Linkage	1
6	3011W117	Bucket Pin w/ Washer	2
7	6089W250	Chain Hook	1
8	Z29202	Grease Fitting, 1/4NF	5
9	Z51917	Quick Coupler, FP04 x M ISO 5675	2
10	Z52261	3/8" Hose, FJIC06 x MP04 x 30"	2
11	Z71120	Hex Bolt, 1/4NC x 2"	5
12	Z72211	Hex Lock Nut, 1/4NC	5

CHECKING BOLT TORQUE

The tables shown below give correct torque values for various bolts and capscrews. Tighten all bolts to the torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same strength bolt.

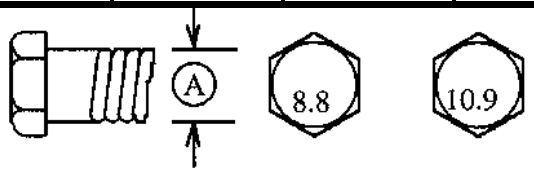
ENGLISH TORQUE SPECIFICATIONS						
Bolt Diamter "A"	Bolt Torque*					
	SAE 2 (N.m)	(lb-ft)	SAE 5 (N.m)	(lb-ft)	SAE 8 (N.m)	(lb-ft)
1/4"	8	6	12	9	17	12
5/16"	13	10	25	19	36	27
3/8"	27	20	45	33	63	45
7/16"	41	30	72	53	100	75
1/2"	61	45	110	80	155	115
9/16"	95	60	155	115	220	165
5/8"	128	95	215	160	305	220
3/4"	225	165	390	290	540	400
7/8"	230	170	570	420	880	650
1"	345	225	850	630	1320	970



Torque figures indicated above are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or capscrews unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

* Torque value for bolts and capscrews are identified by their head markings.

METRIC TORQUE SPECIFICATIONS				
Bolt Diameter "A"	Bolt Torque*			
	8.8 (N.m)	(lb-ft)	10.9 (N.m)	(lb-ft)
M3	0.5	0.4	1.8	1.3
M4	3	2.2	4.5	3.3
M5	6	4	9	7
M6	10	7	15	11
M8	25	18	35	26
M10	50	37	70	52
M12	90	66	125	92
M14	140	103	200	148
M16	225	166	310	229
M20	435	321	610	450
M24	750	553	1050	774
M30	1495	1103	2100	1550
M36	2600	1917	3675	2710



Tightening Flare Type Tube Fittings *

1. Check flare and flare seat for defects that might cause leakage.
2. Align tube with fitting before tightening.
3. Lubricate connection and hand tighten swivel nut until snug.
4. To prevent twisting the tube(s), use two wrenches. Place one wrench on the connector body and with the second tighten the swivel nut to the torque shown.

- The torque values shown are based on lubricated connections as in reassembly.

HYDRAULIC FITTING TORQUE					
Tube Size OD	Nut Size Across Flats	Torque Value*		Recommended Turns To Tighten (After Finger Tightening)	
(in.)	(in.)	(N.m)	(lb-ft)	(Flats)	(Turn)
3/16	7/16	8	6	1	1/6
1/4	9/16	12	9	1	1/6
5/16	5/8	16	12	1	1/6
3/8	11/16	24	18	1	1/6
1/2	7/8	46	34	1	1/6
5/8	1	62	46	1	1/6
3/4	1-1/4	102	75	3/4	1/8
7/8	1-3/8	122	90	3/4	1/8

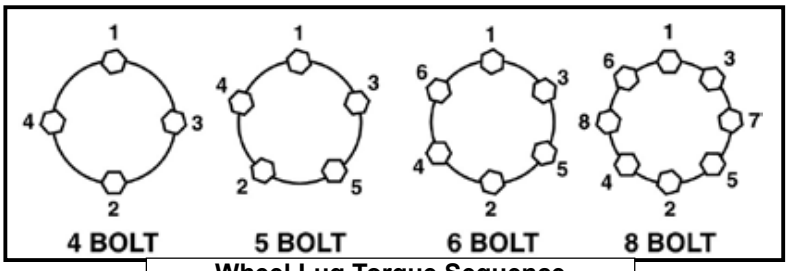
It is extremely important safety procedure to apply and maintain proper wheel mounting torque on your trailer axle. Torque wrenches are the best method to assure the proper amount of torque is being applied to a fastener.

Wheel lugs should be torqued before first road use and after each wheel removal. Check and re torque after the first 10 miles, 25 miles, and again at 50 miles. Check periodically thereafter.

Note: Wheel lugs must be applied and maintained at the proper torque levels to prevent loose wheels, broken studs, and possible dangerous separation of wheels from your axle.

1. Start all lugs by hand to prevent cross threading.
2. Tighten lugs in sequence, per wheel lug torque sequence chart.
3. The tightening of the fasteners should be done in stages. Following the recommended sequence, tighten fasteners per wheel torque requirements chart.

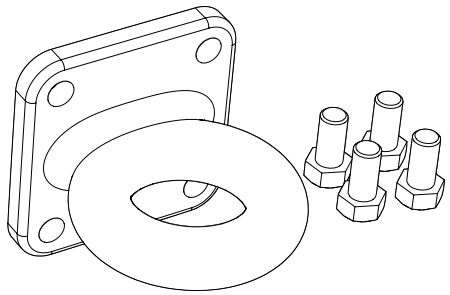
Wheel Torque Requirements			
Wheel Size	1st Stage	2nd Stage	3rd Stage
8"	12 - 20	30 - 35	45 - 55
12"	20 - 25	35 - 40	50 - 60
13"	20 - 25	35 - 40	50 - 60
14"	20 - 25	50 - 60	90 - 120
15"	20 - 25	50 - 60	90 - 120
16"	20 - 25	50 - 60	90 - 120



Wheel Lug Torque Sequence

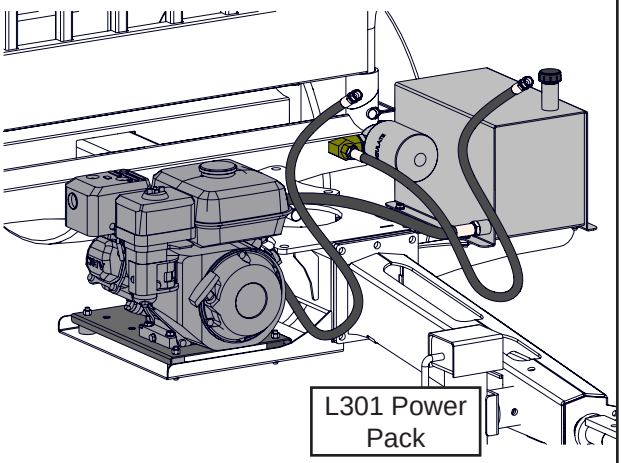
ACCESSORIES

Call your dealer for pricing and availability
For replacement parts, go to **www.wallensteinequipment.com** and click on "Parts and Manuals" to download the latest parts manual for your model, then call your dealer to order.



#L640 PINTLE HITCH

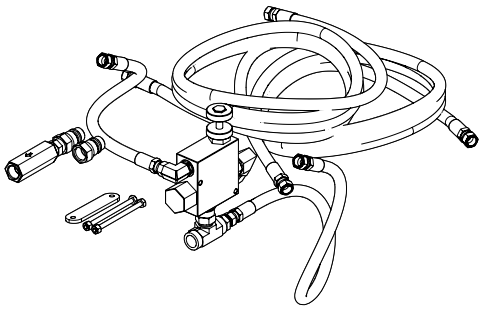
For **LT60 trailer only**.
Pintle hitch accessory to match up to your existing pintle hook.



L301 Power Pack

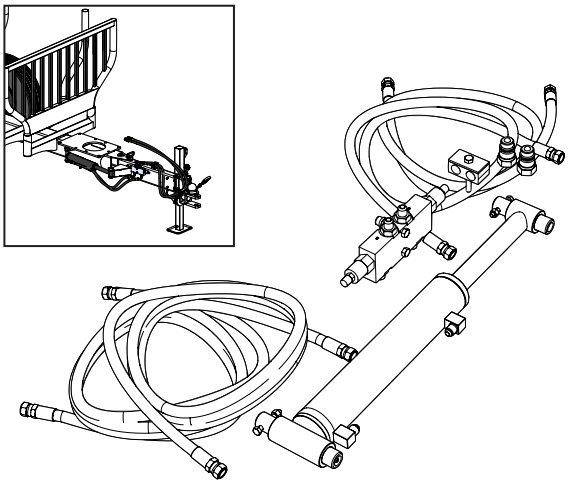
#L601 LX115 POWER PACK
#L301 LX95 POWER PACK

Independently power your LX grapple: **L601 for LX115** features a Honda 9 HP engine, and the **L301 for LX95** contains a 6 HP Honda. Both power packs include hydraulic pump and 4.6 US gal (17.5 L) reservoir tank.



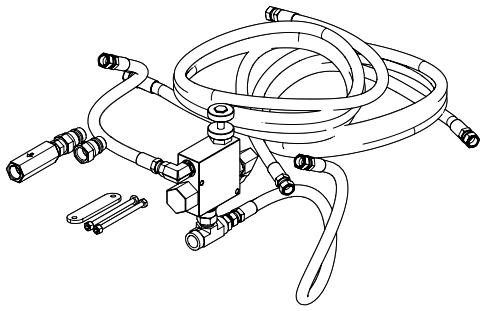
#L101 TRACTOR HYDRAULIC KIT

For **all LX models**
Makes use your existing tractor remotes, comes with everything you need to attach and control your hydraulics. Includes: flow control, hoses, and hardware. (L101 included in L400 3-point hitch grapple version.)



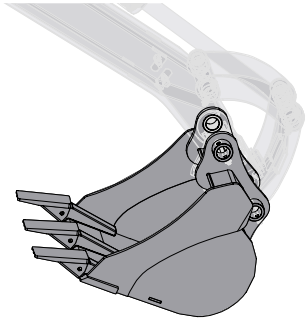
#L650 HYDRAULIC ARTICULATED DRAWBAR (tractor remote hydraulics required)

For **LT60 trailer only**.
Tight bush trail corner navigation made easy with this handy hydraulic articulating drawbar. Available for off road use only. It is controlled by your tractor's remote hydraulics.



#L101 TRACTOR HYDRAULIC KIT

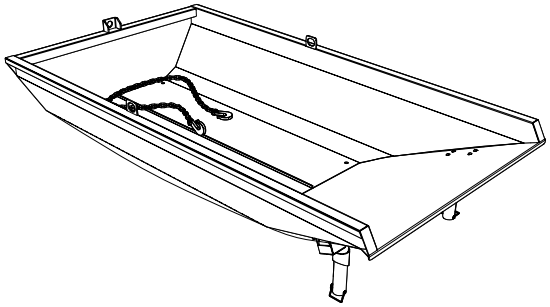
For **all LX models**
Makes use your existing tractor remote hydraulic ports, comes with everything you need to attach and control your hydraulics. Includes: flow control, hoses, and hardware. (L101 included in L400 3-point hitch grapple version.)



#BACK HOE BUCKET OPTIONS

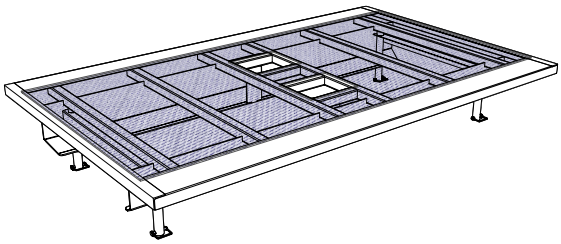
for #BA201 Back Hoe Kit:

Choose the bucket you need for the job at hand.
BK2690 – 9" 3-Tooth Bucket
BK2612 – 12" 3-Tooth Bucket
BK2615 – 15" 4-Tooth Bucket
BK2618 – 18" 4-Tooth Bucket



#L310 LT30 DUMP BOX
#L620 LT60 DUMP BOX

One for each **LT trailer**.
Load, transport and easily dump your loads, made for use with the back hoe kit. For **LT30 trailer the L310** holds 25 ft^3 (0.7 m^3). For the **LT60 trailer the L620** holds 45 ft^3 (1.3 m^3) both dump boxes come complete with a 6 ft (1.8m) chain used for dumping.



#L330 LT30 EXPANDED METAL FLAT BED
#L630 LT60 EXPANDED METAL FLAT BED

One for each **LT trailer**.
Transporting material and equipment made easy. Simply drop on this flat bed and your set to go!
LT30 trailer L330 has a 9.0' x 5.0' (274 cm x 152 cm) cargo bed.
LT60 trailer the L620 has a 10' -6".' x 5'-8" (321 cm x 179 cm)cargo bed.