AcrEase

60" FINISH CUT

OWNER'S MANUAL

With Assembly Instructions

For Model: C60H

KUNZ ENGINEERING, INC. / MENDOTA, IL 61342 / PH (815) 539-6954

12/04

KUNZ ENGINEERING INC.

ASSEMBLY INSTRUCTIONS

READ THE COMPLETE ASSEMBLY INSTRUCTIONS BEFORE STARTING THE ASSEMBLY.

You should have:

- one mower deck assembly
- two caster assemblies
- two rear axle assemblies
- one ATV tongue assembly

A. **ASSEMBLY OF MOWER WHEELS**

1. Set the mower deck assembly on wood blocks so that it is suspended off the ground.
2. Install the two caster assemblies in the retainers on the front of the mower deck. ***See figure 1***. Before securing the caster supports, determine which side of the mower the tongue will be placed on and install the caster support stop on the tongue side. ***See Figure 2.*** Secure with 3/8" x 2-3/4" hex head bolt, lock washer, and nut provided in the retainer areas. Secure remaining caster support with 3/8" x 2-1/2" hex head bolt, lock washer, and nut provided in the retainer areas.

Note: The operator controls are on the front of the deck and the discharge chute is on the right side. (Left and right are determined from looking in the direction of travel.)

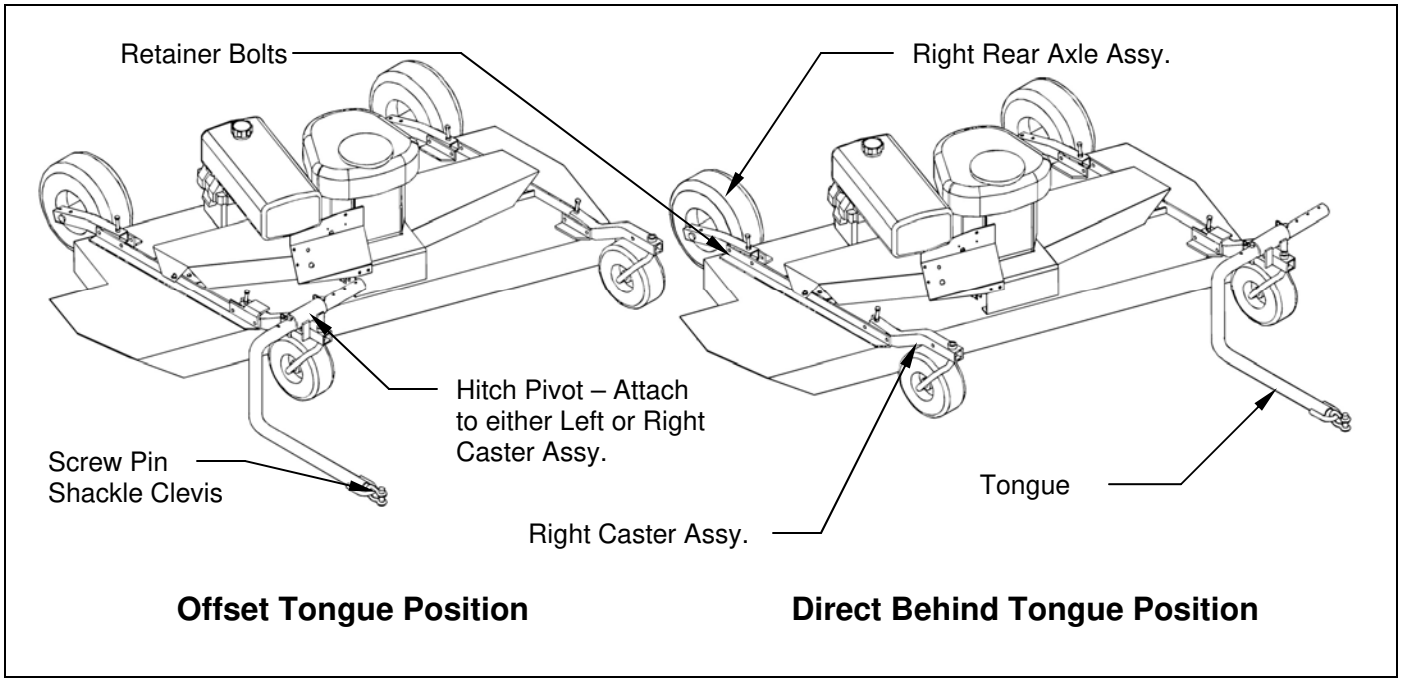


Figure 1. Assembly of Mower Wheels and ATV Tongue

3. Install the two rear axle assemblies in the retainers on the rear of the mower deck. The tire should be to the left of the axle support. ***See figure 1***. Secure with 3/8" x 2-1/2" hex head bolt, lock washer, and nut provided in the retainer areas.

   Note: Tighten the four wheel assembly pivot bolts so that the wheel assemblies will not flop down when the deck is raised off the ground.

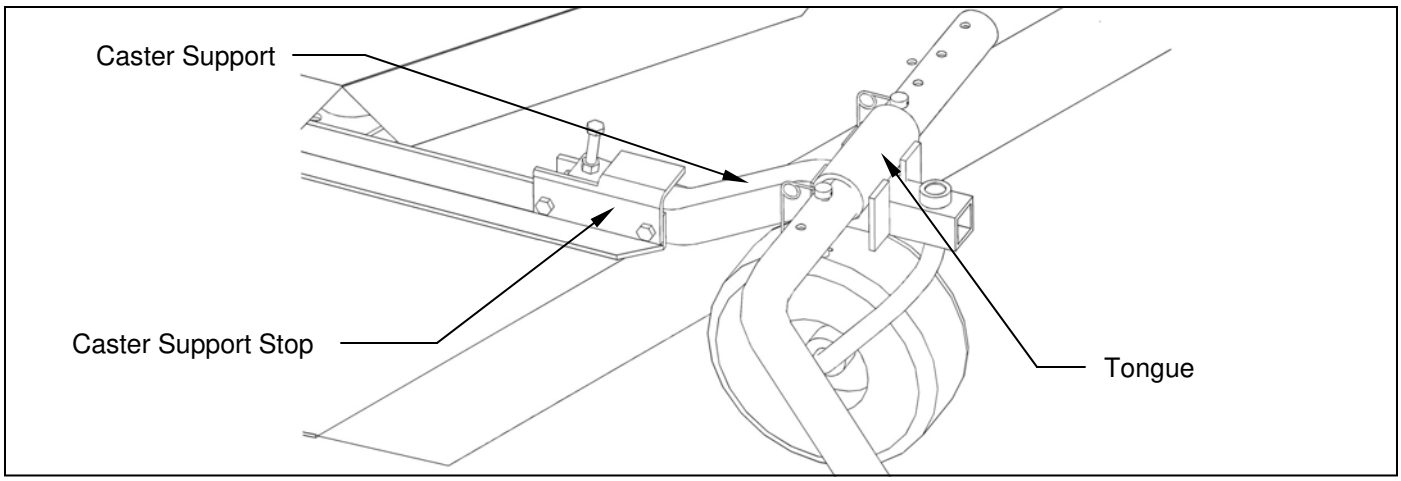


Figure 2: Installation of Caster Support Stop

B. **INSTALLATION OF ATV TONGUE ASSEMBLY**

1. The tongue can be installed either on the left or right caster assembly depending on how the wing mower will be towed. ***See figure 1.*** Secure the hitch pivot on the chosen caster assembly with the 3/8" x 2-1/2" hex head bolt, lock washer, and nut provided.
2. Install the tongue into the hitch pivot and secure by placing a 5/16" wire lock pin on each side of the hitch pivot.

OPERATIONS AND ADJUSTMENTS

This safety alert symbol is used to indicate safety instructions. Follow these instructions to avoid personal injury and/or property damage. Read and follow all instructions in this manual and the included engine manual.

Read all Owners Manuals before using equipment.

Know locations and functions of all controls before operating the mower.

A. **ATV TONGUE CONFIGURATIONS**

Shut off the engine and allow the mower blades to come to a complete stop before adjusting the tongue.

When attaching the tongue to the back of the tow vehicle, tighten the screw pin shackle clevis firmly. Property damage or bodily injury may occur if the screw pin shackle clevis unturns and the wing mower becomes unattached from the tow vehicle.

The hitching system is designed so that the wing mower can be pulled directly behind a tow vehicle without a mower deck or as a left or right wing mower when towed behind a tow vehicle with or without a mower deck.

Note: When pulling the wing mower directly behind, it is most maneuverable when the hitch pivot is fastened on the left carrier arm. ***See Figure 1***. When pulling the wing mower in the offset position, it is most maneuverable to have the hitch pivot fastened on the right carrier arm. ***See Figure 1.***

The tongue is designed to adjust from left to right within the hitch pivot. This allows the wing mower and tow vehicle, with a mower deck, to have proper overlap. Overlap is more critical in tight areas where a lot of maneuvering is required. This overlap will eliminate most skips between the tow vehicle and wing mower. In large open areas the overlap is not as critical and should be adjusted to the user's preference.

B. ADJUSTING CUTTING HEIGHT

Shut off all engines and allow the mower blades to come to a complete stop on the wing mowers and on the tow vehicle before adjusting the cutting height.

The cutting height can be adjusted in a range from 1.0" to 4.0". This is accomplished by adjusting the height adjusting bolts on each of the four corners of the wing mower. ***See Figure 3***. Turn the bolts clockwise to raise the mower cutting height and counter-clockwise to lower the mower cutting height.

When more than one mower is used at a time, it is very important to have all the mowers adjusted as close to the same cutting height as possible to obtain a high quality cutting job.

Adjust the mowers as follows:

1. Pull the mowing unit on to a smooth, level surface.
2. Adjust the tow vehicle mower deck (If applicable) to the desired cutting height and level both fore and aft and side to side.
3. Measure the distance from the level surface to the mower blade cutting edge on the tow vehicle.

Shut off tow vehicle engine and allow mower blades to stop completely before attempting to measure the cutting height.

4. Adjust the cutting height on the wing mower so that it cuts at the same height as the tow vehicle mower. Adjust each corner of the wing mower so that the distance from the smooth surface to the bottom edge of the deck is equal to the cutting height minus 5/16". The mower blade cutting edge is 5/16" above the lower edge of the deck.

   Note: To mow in the lower half of the cutting range, set the front caster axles in the bottom setting and set the anti-scalp wheels in the top hole. To mow in the upper half of the cutting range (original factory setting), set the front caster axles in the top setting and set the anti-scalp wheels in the bottom hole.

   Note: After the cutting height has been set, be sure to tighten the pivot bolts securely to eliminate free pivoting of the front casters or rear axles. The front casters and rear axles should not drop down when the deck is raised off the ground. Snug the four bolts just beyond the height adjust bolt so the front casters and rear axles can be adjusted up and down but cannot move from side to side.

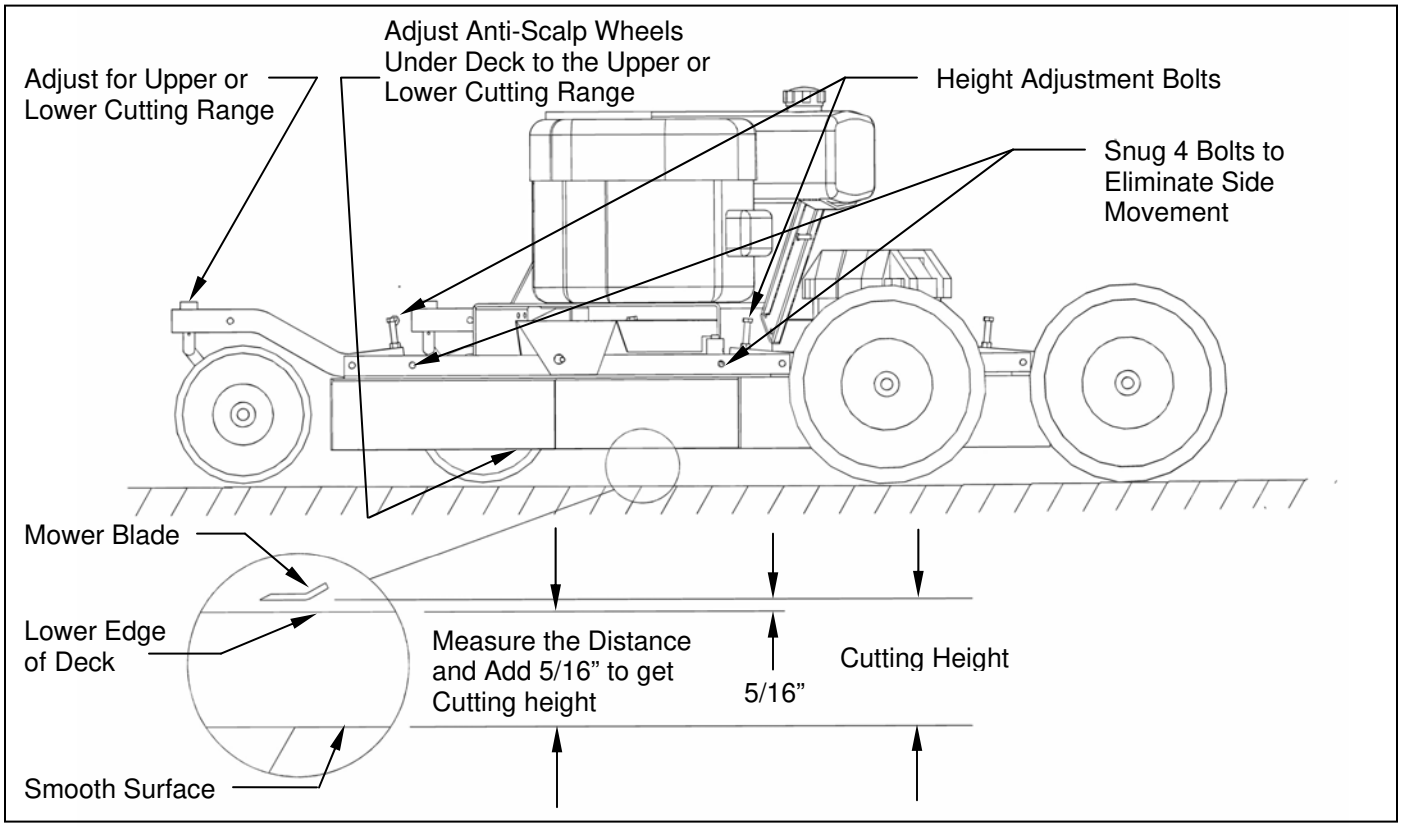


Figure 3: Adjusting Wing Mower Cutting Height

C. **STARTING ENGINE**

Set parking brake on tow vehicle.

Attach wing mower tongue to tow vehicle.

Do not start wing mower unless it is attached to the tow vehicle.

Set the throttle lever in the ***choke*** position to set the choke. (The choke is located beyond the full throttle detent position.)

Start engine and move throttle toward ***slow*** position to disengage choke. The mower blades clutch will engage as the engine comes up to speed. The mower blades clutch engages at 1850 RPM.

Slow engine speed to idle to allow engine to warm up. This will probably allow the mower blade clutch to fully disengage.

Adjust engine speed toward ***fast*** to fully engage the mower blade clutch. (The full throttle is located at the first detent position on the throttle control.)

Clutch overheating or failure may occur if engine is not run at full speed in heavy load conditions.

The engine full speed setting with mower blades running is 3350 RPM.

D. **SHUTTING OFF WING MOWER**

Shift to neutral, disengage power to the mower deck, and set the parking brake before dismounting the tow vehicle.

Set the throttle to slow so the mower blades clutch will disengage.

Allow engine to cool down for a short time before moving the throttle control to the ***stop*** position.

E. **MOWER OPERATION**

Clean or replace any safety signs that are not readable or damaged.

Remove all objects from the work area that might be picked up and thrown by the blades.

Do not mow when children and others are around.

Do not fill fuel tank while engine is running or hot.

Keep all safety shields and deflectors in place during operation.

Remove grass build up from under safety shields before each use. Do not remove safety shields while engine is running. Dry grass build up around belts and sheaves can cause fires.

Shut off engine before disconnecting the wing mower from the tow vehicle or attempting to move the wing mower by hand.

Never carry children or passengers.

Do not allow children to operate this machine.

Slow down and watch the ends of the wing mowers when making turns so objects are not struck and/or run over.

Depending on the number of wing mowers being towed, it is usually more efficient to mow the large areas first with the full system. Once the large areas are completed, mowers can be dropped off to mow narrower areas.

Look down, to the sides, and behind before and while backing to avoid backing over something or someone. Care should also be taken while backing so that the wing mower or mowers do not jackknife and damage hitches.

Backing up with one wing mower is easy. Backing becomes a greater challenge as additional wing mowers are towed. Avoid backing up by planning ahead. Make loops instead of backing.

Stop the mower blades on both the tow vehicle and all wing mowers if the tow vehicle becomes stuck or stops going forward because of loss of traction. Shut off the engines on the wing mowers before attempting to push or pull the tow vehicle.

Do not turn too sharply when the wing mowers are pulled in tandem or pulled behind a zero turn mower. Sharp turns can force the mowers into each other causing damage to the hitches.

Listen to the wing mower engines while mowing. The engines should run free and not work too hard. Working the engine too hard will cause overheating and premature failure.

Do not allow material to build up on the air inlet to the engine cooling system. If the wing mowers are towed with one on the left and one on the right side, there will be a lot of material blowing around the right wing mower engine. Special care should be taken to make sure the engine is getting enough inlet air. Do not allow the engine cooling fins under the shroud to be blocked. Air flow over the engine will be restricted causing the engine to overheat.

Mowing to fast in very heavy, long grass can cause the wing mower engine to pull down and disengage the blade clutch. The engine can then start to accelerate again while slipping the clutch. Small amounts of clutch slippage for a few seconds will not cause damage. If the clutch is allowed to slip for longer periods, it will overheat and could be damaged. Watch the discharge chute; if material is not being discharged, then the clutch is slipping. In normal conditions, clutch slippage will not be a problem. In most cases the clutch can be repaired by replacing the clutch springs and clutch bearing.

If the mower blades are allowed to stall out (stop turning) at engine speeds above the clutch engagement speed, this will cause the clutch to slip. If the clutch is allowed to slip for more than five minutes, the clutch will get red hot and could cause the drive belt to start burning.

F. **DRIVE BELT REMOVAL AND TENSION (Refer to Figure #4)**

Shut off engine and allow mower blades to stop turning before making any adjustments or repairs.

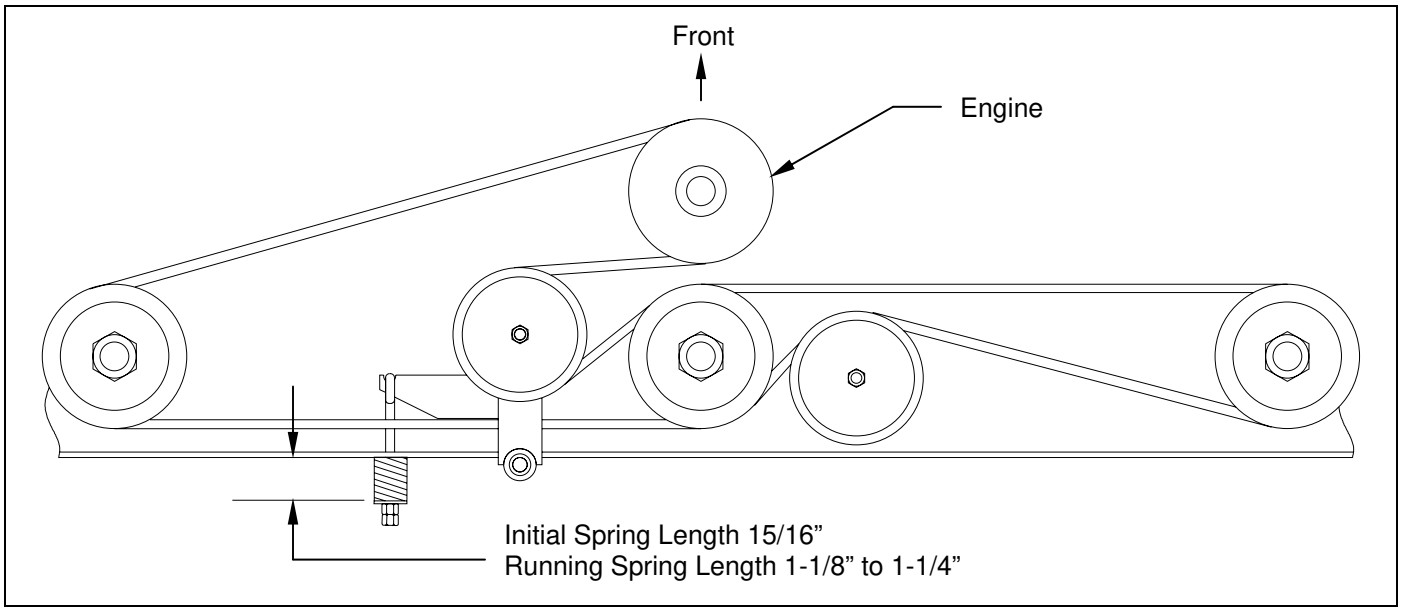


Figure 4: Belt Pattern and Spring Adjustment

Remove the safety shields.

Loosen the nuts on the spring-loaded idler; adjust the nut until the belt can be slipped off the idler and drive sheaves.

Slip the belt down under the drive sheave and off the blade spindle sheaves.

Install the new belt as follows:

Adjust the spring-loaded idler springs to a compressed length of 15/16” initially for a few hours until the belts run in; then adjust the spring to 1-1/8” to 1-1/4” compressed length.

G. MOWER BLADE REMOVAL, BALANCING & INSTALLATION

Sharp blades can cause bodily injury if not handled properly.

When removing the blade, it is recommended that a block of wood be placed between the blade and the underside of the mower deck. This will allow the removal of the blade without the need to hold the blade by hand.

Always balance the mower blades each time they are sharpened.

Out of balance mower blades cause excess vibrations which lead to premature bearing failures, bolts coming loose, and overall deterioration of the wing mowers.

Always properly tighten the blade bolts to the specified torque. Failure to do so can lead to unwanted loosening of the blade and damage to the blade holding saddle.

The Model C60H uses the Kunz Engineering Part # (202136) blade bolt. This particular hex head bolt is a 1/2” – 20NF x 1.00” long, grade 5 and it’s proper torque is 85 ft-lbs.

To ease in the blade installation process, use the same block of wood and method used during the removal of the blades.

H. LUBRICATION

There are up to six lubrication points on the wing mower -- one spring-loaded idler pivot, two caster wheel pivots, and three blade spindles (on models that apply). Lubricate at approximately 10 hr. intervals or more often as required in dusty conditions. Lubricate the blade spindles 2-5 pumps every 50 hours. (The bearings have trash guard seals to hold the seals in place during lubrication.) Lubricate with a high grade of pressure gun grease.

Note: Do not over grease blade spindles. Blade spindles are initially greased at the factory. Greasing before 50 hrs. may cause bearing seal damage which will result in premature bearing failure.

I. TIRE PRESSURE

To reduce wing mower bounce on rough yards, the rear tire pressure can be reduced so they feel slightly soft (approximately 15 PSI) when they are stepped on.

J. **TRANSPORTATION OF MOWER**

When transporting the mowers between jobs turn off the fuel shut-off valve below the fuel tank.

M. **STORAGE**

If the mower is stored outside, the engine should be covered to prevent water from getting inside the engine during heavy rainstorms. See the Engine Manual for additional information.

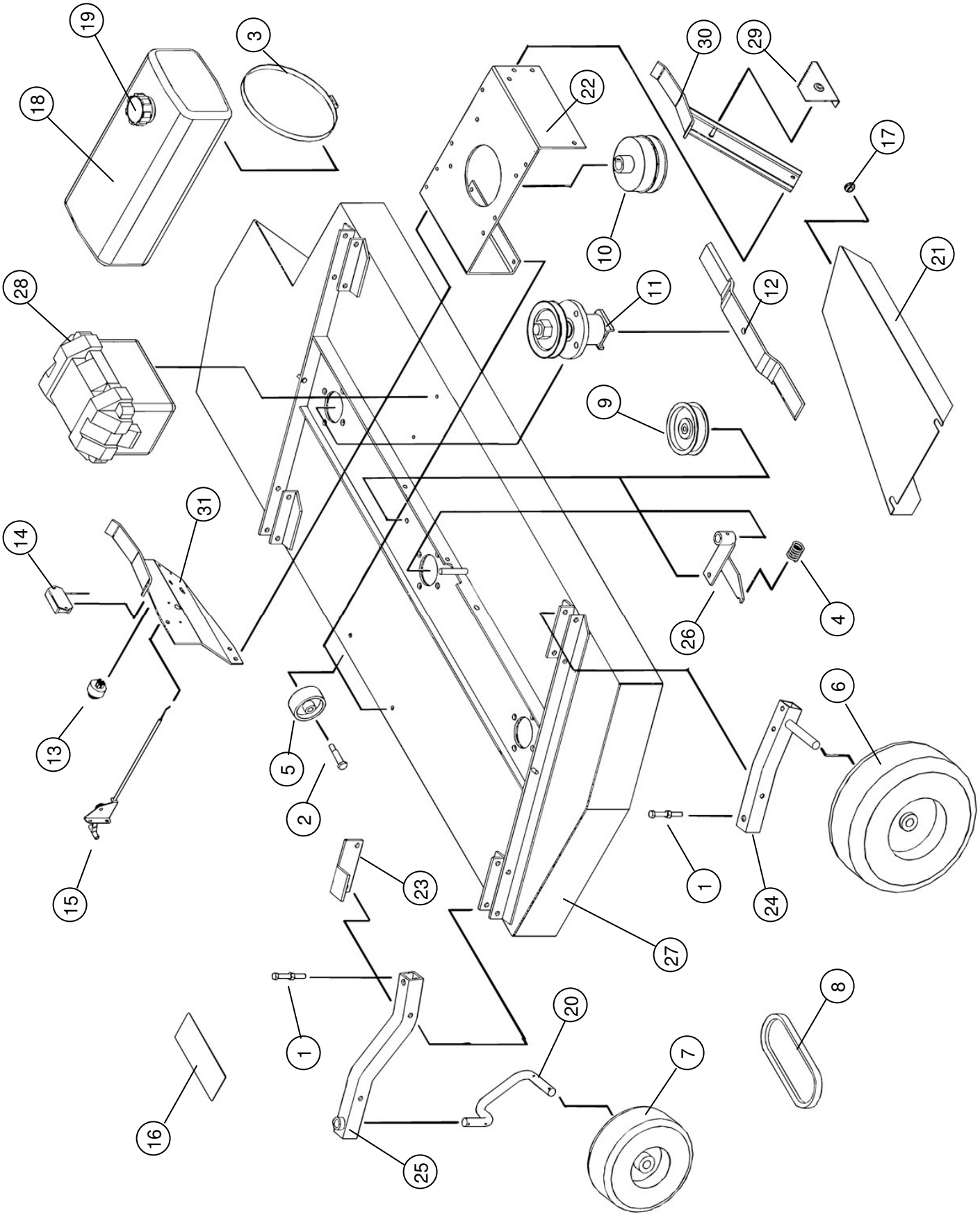
WING MOWER SPECIFICATIONS

	Model C60H
ENGINE:	
Engine Make	Honda
Engine Model	GXV390
Cylinders	1
Cycles	4
Crankshaft	Vertical
Engine HP	13
Bore	3.46"
Stroke	2.52"
Displacement	23.7 cu.in.
Oil Capacity	1.2 U.S. qts.
Crankshaft Dia.	1"
Key Slot	1/4"
Crankshaft Length	3.12"
Threaded Hole in End of Crankshaft	7/16-20
Engine Mounting Bolts	5/16-18 x 1-1/2" and 5/16"-24 x 1"
Starter	Electric
Choke	With Throttle Control
MOWER:	
Fuel Tank	3-3/4 gal.
Effective Cutting Width	58"
Deck Construction	10 ga. Welded steel
Cutting Height	1" to 4"
Height Adjustment	4 screws
Anti-Scalp Wheels (3" O.D. x 1-1/4" wide)	4 in front, 2 in rear
Rear Wheels (Fixed) (2 ply Turf Pnuematic)	2 13/500 x 6
Front Wheels (Caster) (Semi Pnuematic)	2 9/350 x 4
Blade Dia.	3-20"
Engine Speed, Blades Running	3350 RPM
CLUTCH TYPE	Centrifugal
Engagement Speed	1850 RPM
DIMENSIONS	
Length	52"
Width	72-1/4"
Height	25"
Weight	380 lbs
TOUCH-UP PAINT COLOR	Pewter Gray, Krylon #1606

ACREASE WING MOWER PARTS MODEL C60H

Item	Part #	Description	Quantity
1	202135	Hex Head Bolt, 3/8" x 3" Fully Threaded	4
2	204000	Shoulder Bolt, 1/2" x 1-5/8" Shoulder Length	6
3	222005	Worm Drive Hose Clamp (7-7/8" to 9-1/8" Clamping Dia.	2
4	225000	Compression Spring, 1-1/2"L x 1-3/32" O.D. x .135" Wire dia.	1
5	226000	Plastic Wheel, 3" O.D. x 1/2" I.D. x 1-1/4" Wide	6
6	226001	Offset Wheel Assy., 13/500 x 6, 2 Ply Turf	2
7	226002	Centered Wheel Assy., 9/350 x 4, Semi Pneumatic	2
8	238002	"V" Belt, B Section, 127" O.C. Dayco B124 Super II	1
9	241001	Flat Idler, 4" O.D. x 3/8" Hole	2
10	258016	Centrifugal Clutch	1
	258017	Clutch Shoe (3)	~
	225004	Spring, 1850 RPM Engagement (3)	~
	243004	Bearing (1)	~
11	258014	Spindle Assy.	3
	900046	Spindle Shaft (1)	~
	600088	Sheave Spacer (2" Long) (1)	~
	900048	Housing Assy. (With Two Bearings) (1)	~
	243003	Bearing (2)	~
	600086	Bearing Spacer (1-5/8" Long) (1)	~
	241007	Sheave, 5-1/4" (1)	~
12	259001	Offset Mower Blade, 2" Wide, 20" Long, 1/2" Hole	3
13	264001	Ignition Switch	1
14	264003	Hour/Tack Meter	1
15	269009	Throttle Control, 27"	1
16	275002	Warning Decal General	1
16	275003	Danger Decal, Cut Finger	2
16	275007	Warning Decal, Belt Sheild	2
16	275012	Control Panel Decal	1
16	275013	Throttle Control Decal	1
16	275017	Name Decal, AcrEase	2
17	277002	Rubber Grommet	7
18	277010	Fuel Tank, 3.75 Gal. (Plastic) (Use Gas Cap 277013)	1
19	277013	Gas Cap (For Fuel Tank 277010)	1
20	600059	Caster Axle	2
21	600062	Belt Sheild L.H.	1
21	600063	Belt Sheild R.H. (Discharge Side)	1
22	600065	Engine Support Bracket	1
23	600188	Caster Support Stop	1
24	900005	Rear Axle	2
25	900021	Caster Support	2
26	900025	Idler Arm Assy.	1
	243000	Bronze Bearing, 1/2"I.D. x 3/4" O.D. x 1-1/2" Long	~
27	900029	Mower Deck	1
28	900049	Battery Box Assy.	1
29	900051	Depth Gage	1
30	900052	Tank Support	1
31	900089	Control Panel	1

MODEL C60H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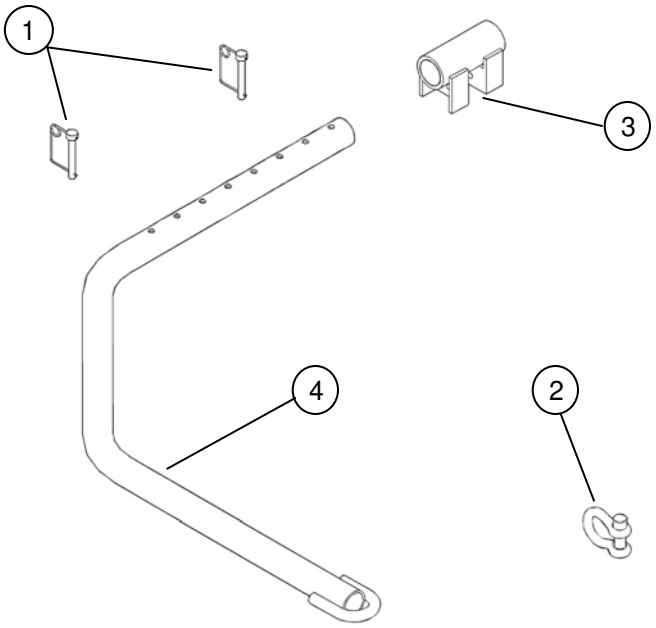
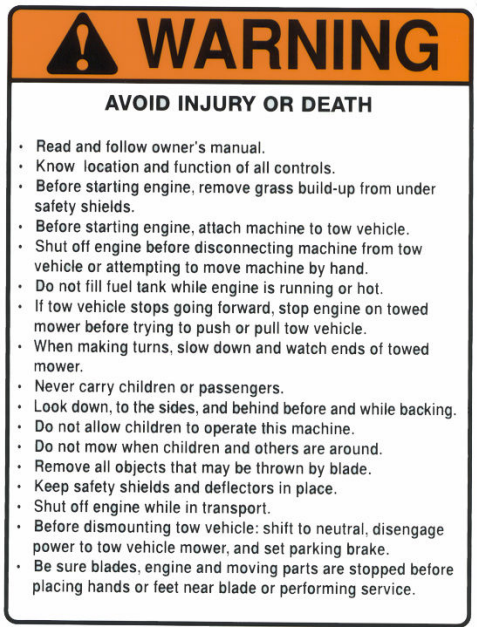
ATV TONGUE PARTS



PARTS LIST

Item	Part #	Description	Quantity
1	216002	Wire Lock Pin .31" X 2.50"	2
2	216009	Screw Pin Shackle Clevis	1
3	900057	Hitch Pivot	1
4	900082	Tongue	1

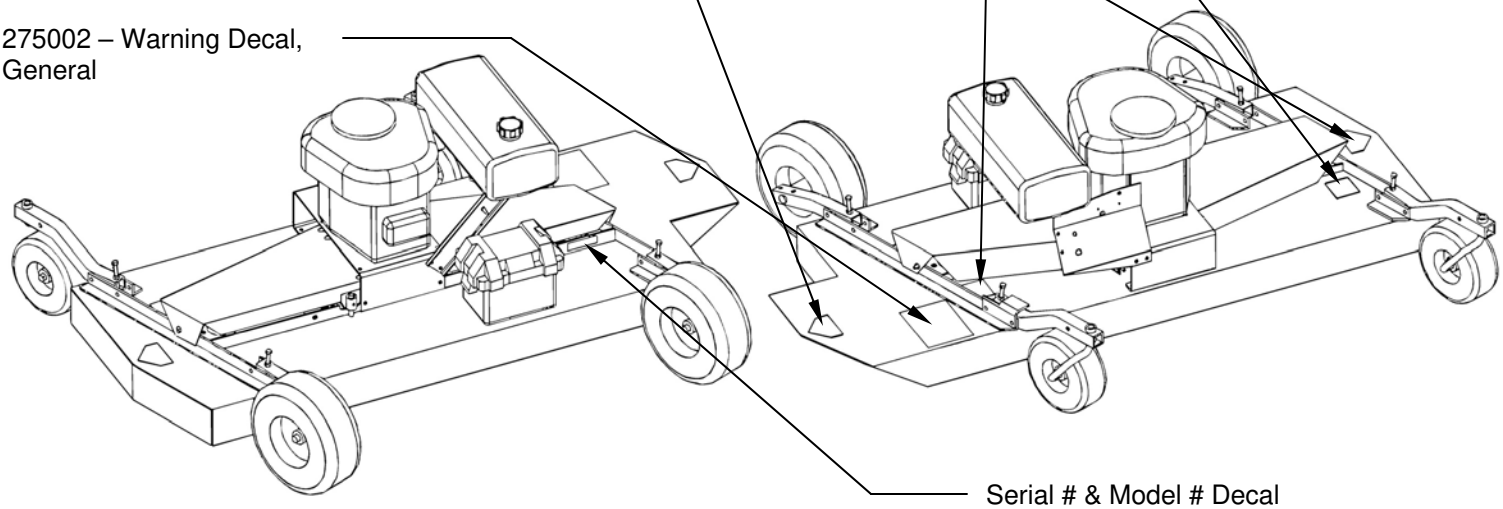
SAFETY SIGNS AND LOCATIONS



275003 – Danger Decal, Cut Hand & Foot

275007 – Warning Decal, Belt Shield

275002 – Warning Decal, General



Serial # & Model # Decal

Clean or Replace Any Safety Signs That Are not Readable or Damaged

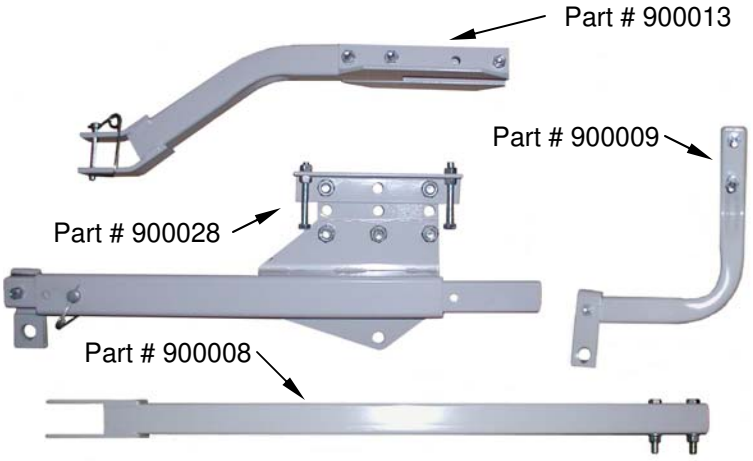
Replacement decals can be purchased from your local dealer or

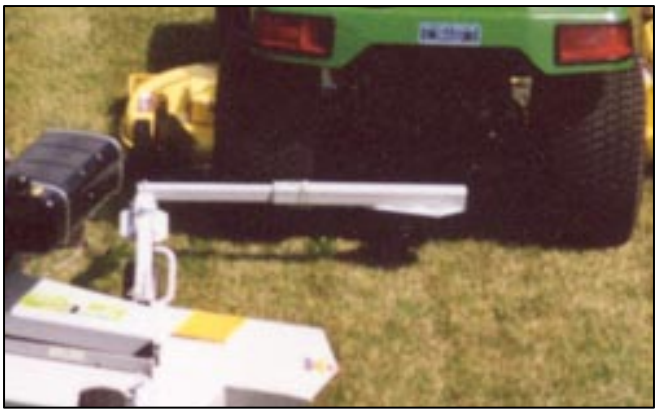
Kunz Engineering Inc.
Mendota, IL 61342
(815) 539-6954

OPTIONAL EQUIPMENT

A. OPTIONAL LAWN & GARDEN HITCHING

Your mower came equipped with the ATV Tongue. The ATV Tongue is a universal hook-up for all tow vehicles.

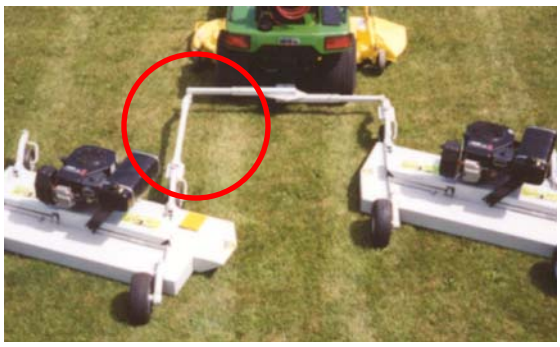




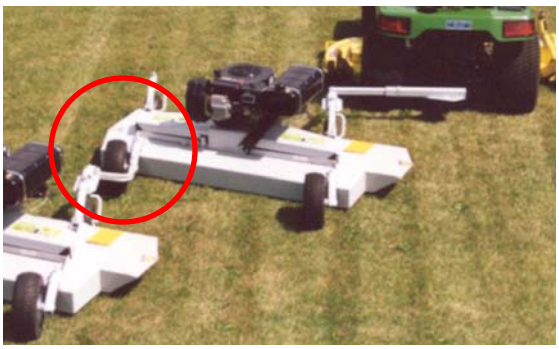
Telescoping Hitch Part # 900028
Short Tongue Part # 900013

The Lawn & Garden Hitching is a great choice for the operator that chooses to specifically use either a riding mower or a zero turn radius mower for a tow vehicle. This optional feature is for those who desire the following increased performance.

- The Lawn and Garden Hitching bolts directly to the existing hitch on any riding lawn mower or zero turning radius mower.
- Allows for close hitching of the AcrEase and provides an increased range of telescoping in or out to adjust for the tow vehicles deck width.
- Provides a maneuverable quick response system with maximum stability at high mowing speeds and on steep banks.
- Allows the option of pulling multiple wing mowers. The following pictures are suggested ways to pull multiple wing mowers with a tow vehicle that has a mower deck. For a complete description of the combination of hitches needed, please refer to the ***Figure 5***.



Long Tongue Extension Part # 900008
Left and right wing mower set-up.

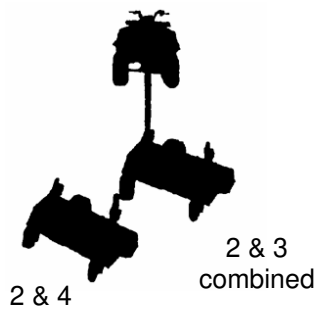


Rear Hitch Part # 900009
Tandem wing mower set-up.

Tow Vehicle without a Mower Deck

1 & 2 combined
or 5

1, 2, & 3 combined
or 5

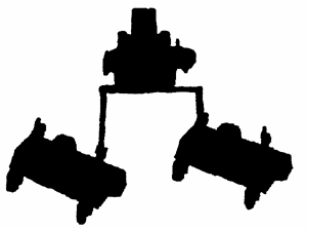


2 & 4
combined

2 & 3
combined

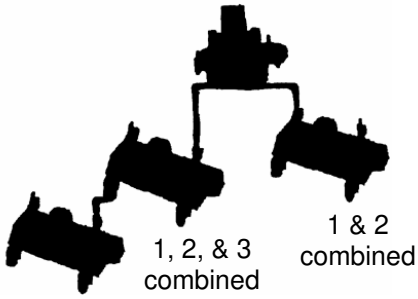
Tow Vehicle with a Mower Deck

1 & 2 combined
or 5



1, 2, & 3
combined

1 & 2
combined



2 & 4
combined

1, 2, & 3
combined

1 & 2
combined

Listed above are all of the possible configurations of the wing mowers. The numbers listed below each wing mower correspond to the hitch or combination of hitches required to complete that possible configuration.

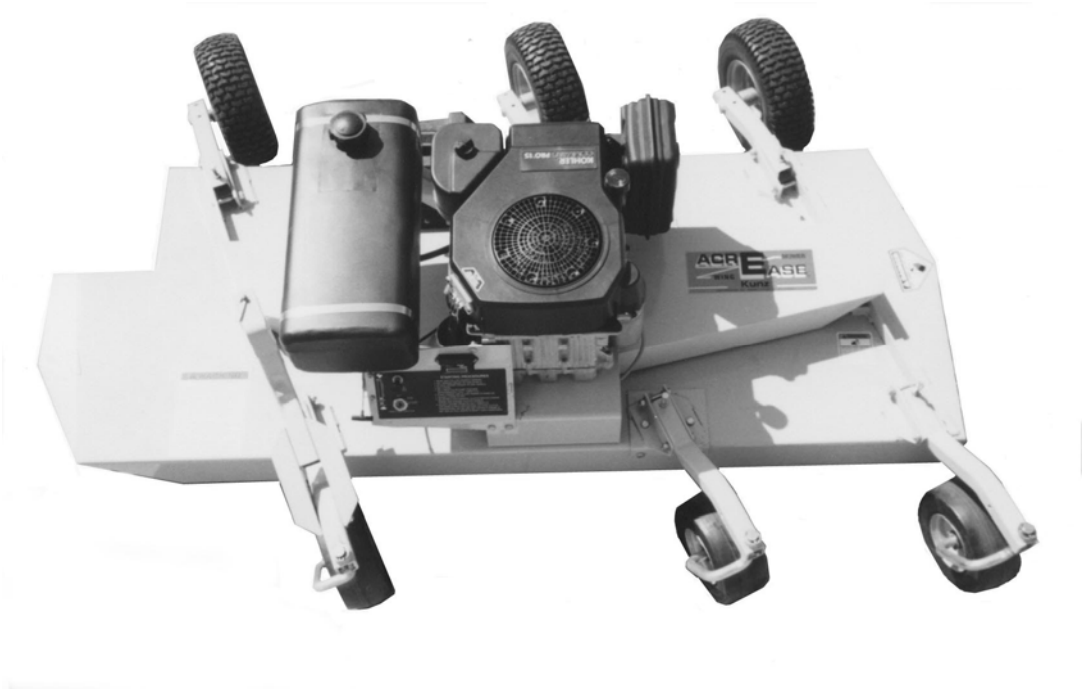
1. Tow Vehicle Hitch (Telescoping Hitch) (Part # 900028)
2. Short Tongue (Part # 900013)
3. Long Tongue Extension (Part # 900008)
4. Rear Hitch Assembly (Part # 900009)
5. ATV Tongue Assembly (Part # 900084) (Standard hitch)

Figure 5: Hitch configurations

B. **OPTIONAL FLOATATION KIT**

This optional floatation kit features an extra front and back tire that can be bolted in the center section of the mower deck. This is a great anti-scalp feature that helps to carry the center section of the mower deck and works well in the following applications:

- Rough, uneven ground where added floatation is needed.
- Hard to reach areas at the water's edge around ponds.
- Extending over a creek banks edge.
- Steep road banks where added traction is needed.
- Gradual crowned or peaked areas in a lawn.



The front and rear are sold separately.
Rear Floatation Kit (Part # 003902)
Front Floatation Kit (Part # 003904)