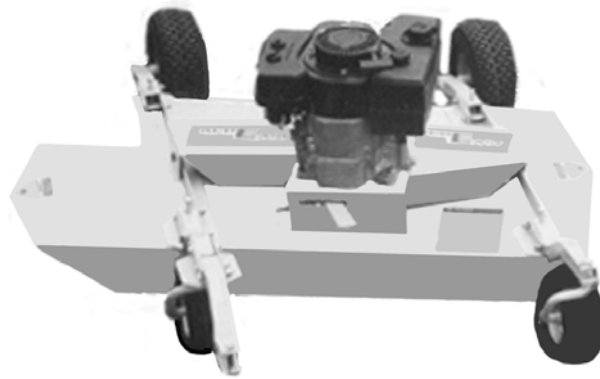


ACR WING EASE MOWER™



H40B

OWNER'S MANUAL

With Assembly Instructions

For Models: **H40B**

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

1/03

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 tongue assembly
- one tow vehicle hitch assembly

Optional hitches:

- one tongue extension
- one rear hitch assembly
- 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.** Secure 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.)

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.

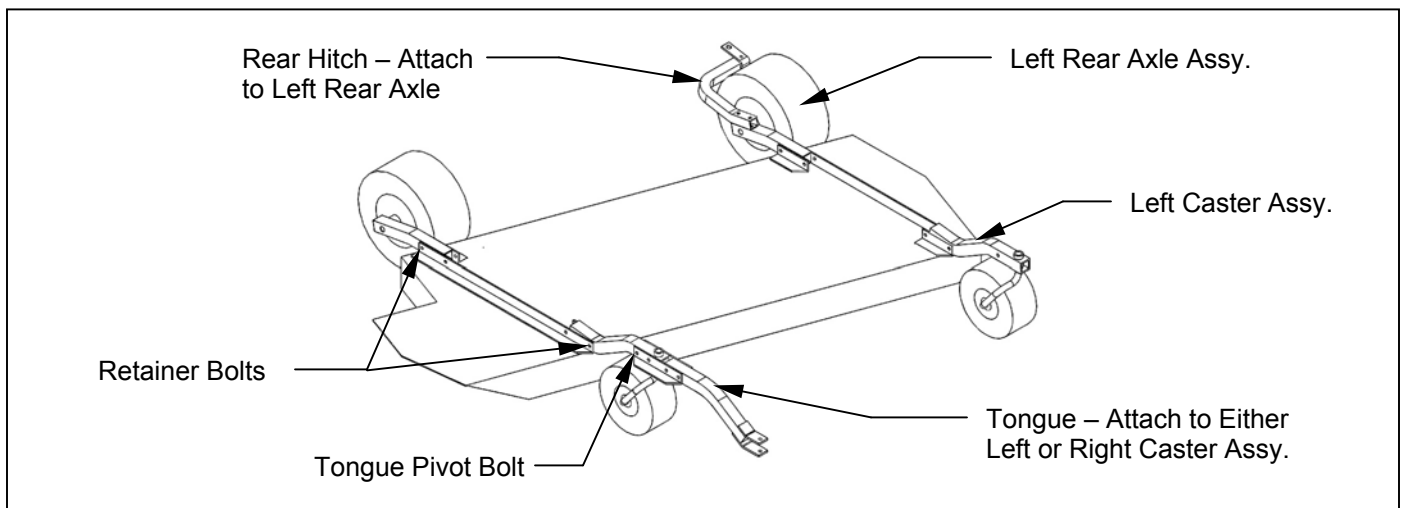


Figure 1: Assembly of Wheels, Tongue and Rear Hitch

- B. INSTALLATION OF TONGUE ASSEMBLY** (refer to the Operation and Adjustment Section for recommended hitching)
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.** Tighten the lock nut on the 3/8" x 2-1/2" pivot bolt so the tongue is free to pivot but does not move sideways.

Note: The tongue can be installed upside down so it will match up with tow vehicles with higher hitches.

C. INSTALLATION OF TOW VEHICLE HITCH ASSEMBLY (Refer to Figure #2)

1. The tow vehicle hitch provided is a universal hitch that should fit most tow vehicles. Slight modifications may be necessary for some tow vehicles.
2. Attach the tow vehicle hitch to the tow vehicle draw bar top or bottom depending on best support, and secure with the longer 1/2" hex head bolt, flatwasher, nut, and lockwasher provided.

Note: On some tow vehicles the draw bar will need to be strengthened to support the hitch assembly securely.

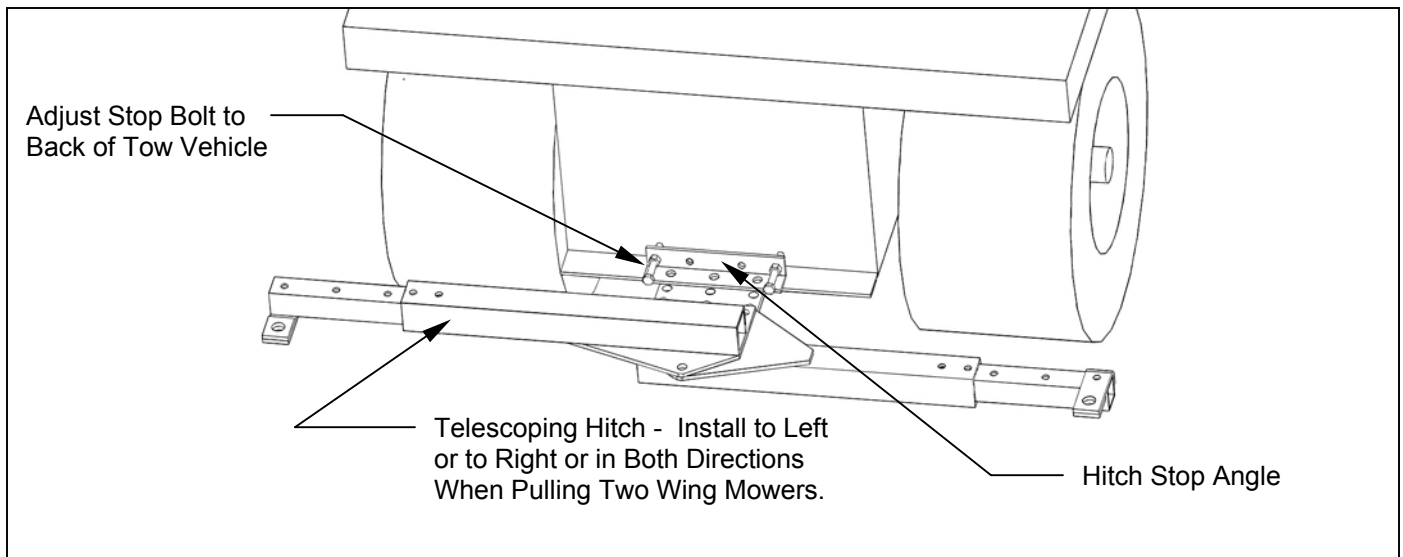


Figure 2: Installation of Tow Vehicle Hitch

3. Adjust the hitch stop angle with stop bolts as close as possible to the vertical member on the back of the tow vehicle and adjust stop bolts securely against vertical member to keep hitch from pivoting from side to side.

Note: The hitch should be positioned on the tow vehicle so the stop bolts have a solid member to adjust to. On most tow vehicles two bolts can be used to attach the hitch assembly to the draw bar, eliminating the need for the hitch stop angle.

4. The telescoping hitch can either be installed to the left or right and should clear the back of the tire by about 2".

5. If one mower is pulled on both the left and right side of the tow vehicle, then one telescoping hitch can be mounted to the left and one to the right.

D. INSTALLATION OF OPTIONAL HITCHES

1. When a long tongue is needed, remove the tongue pivot angles and spacer from the tongue assembly and attach to the tongue extension. **See figure 3.** Slip the tongue in between the two flats on the tongue extension and secure with 3/8" x 2-1/2" hex head bolts, lock washers, and nuts provided.
2. When a second mower is pulled behind the first mower in tandem, then the rear hitch can be installed on the left rear axle assembly. **See figure 1 and 3.** Secure with 3/8" x 3-1/4" hex head bolts, lock washers, and nuts provided.

Note: The long tongue assembly (Part # 900008) and rear hitch assembly (Part # 900009) must be ordered separately.

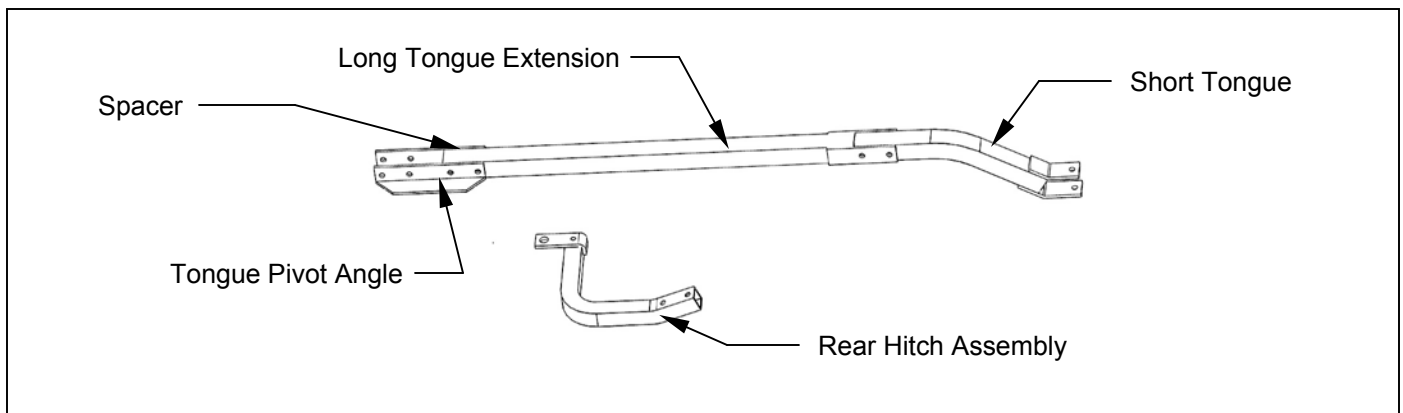


Figure 3: Long Tongue Assembly and Rear Hitch Assembly

E. INSTALLATION OF OPTIONAL 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 4.** 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.

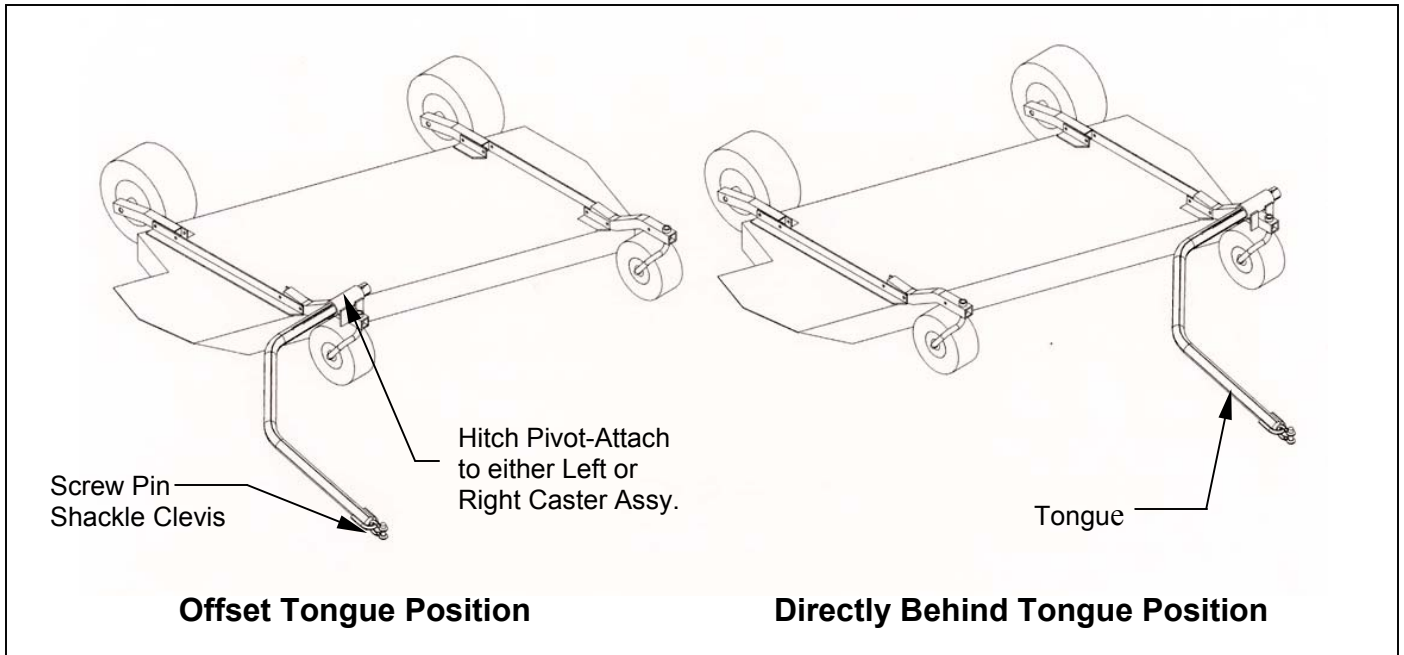


Figure 4. Assembly of Hitch Pivot and Tongue

A. HITCH CONFIGURATIONS (Refer to Figure 5)

⚠ Shut off the engine and allow the mower blades to come to a complete stop before adjusting the spreader hitch on 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.

If more than one wing mower is towed, they can be pulled in tandem or one on the left and one on the right or a combination of the above conditions until the desired cutting width is obtained.

⚠ Do not operate two wing mowers in tandem on slopes greater than 25% (1 foot rise, 4 foot run). This can create an unstable condition where the rear wing mower could push the front wing mower sideways.

When mowing large open areas, adjust the spreader hitch on the tow vehicle so that the wing mower tongue center line aligns with the outside cut line on the tow vehicle mower. When trimming around objects or mowing contours, it is best to adjust the tow vehicle hitch in to eliminate skips. The spreader hitch can be adjusted in and out to get the desired overlap to fit your mowing job.

B. ATV TONGUE CONFIGURATIONS (Refer to Figure 5)

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

Tow Vehicle without a Mower Deck



1 & 2 combined
or 5



1, 2, & 3 combined
or 5



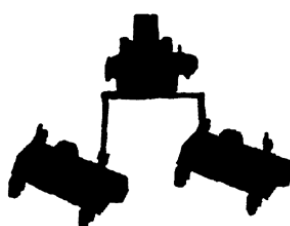
2 & 4
combined

2 & 3
combined

Tow Vehicle with a Mower Deck

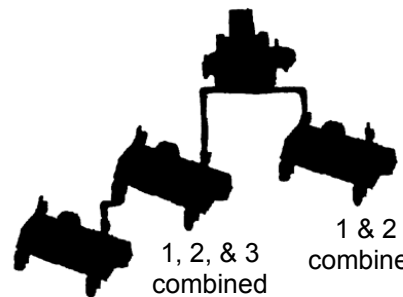


1 & 2 combined
or 5



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)
2. Short Tongue
3. Long Tongue Extension
4. Rear Hitch Assembly
5. ATV Tongue Assembly

Figure 5: Wing Mower Towing Suggestions and Required Hitches



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 4.** 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 4.**

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.

C. 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 6.** 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. 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.

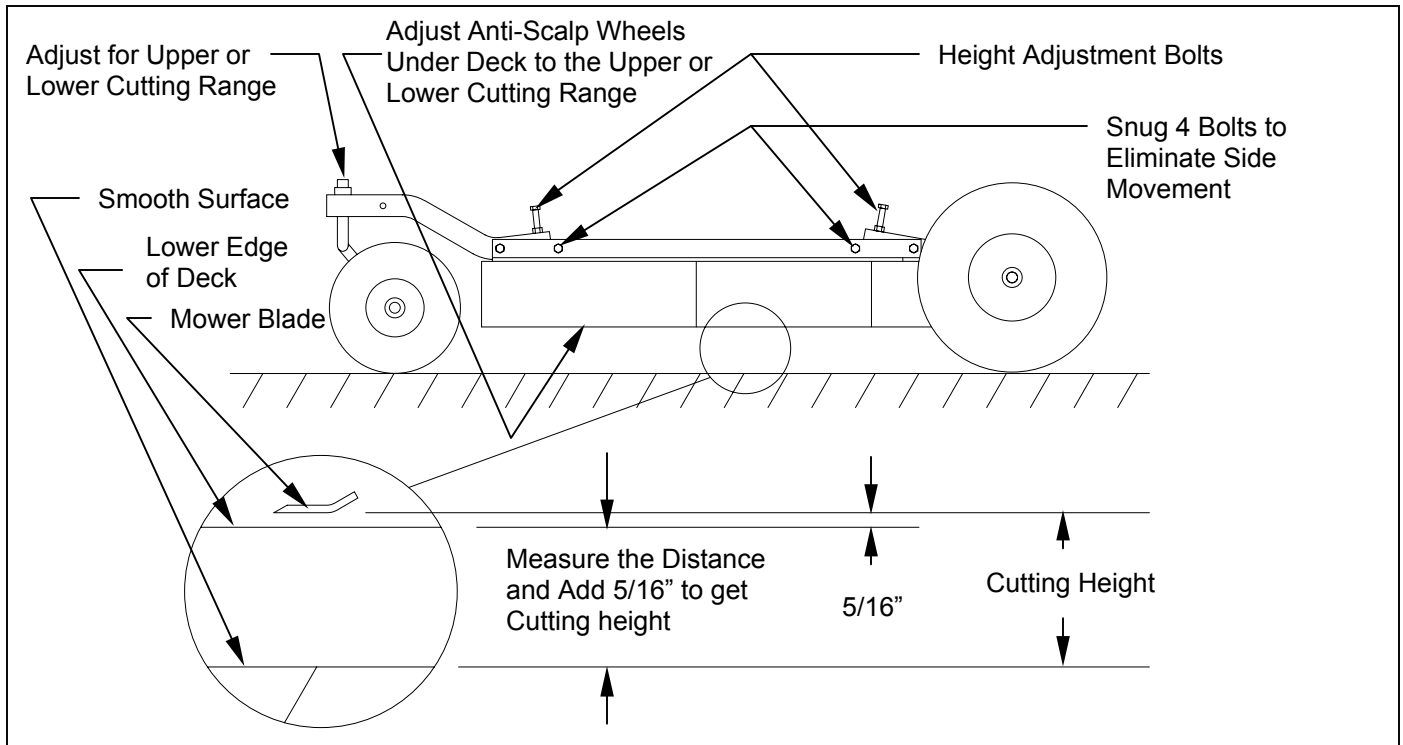


Figure 6: Adjusting Wing Mower Cutting Height

D. 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.

For Model H40B:

Set the throttle lever in the **fast** position to set the choke.

Start engine and move throttle toward **slow** position to disengage choke.

Slow engine speed and engage mower blades clutch handle. (The clutch handle is located at the front of the mower under the engine.)

Note: Some belt squealing may occur on engagement. This is normal for a manual clutch engagement design.



If the mower's engine dies while in use, remove the wing mower from the uncut area before attempting to engage the clutch. Also inspect the blades and remove obstructions that may prevent blade engagement. Failure to do either may result in premature belt failure or even a fire.

Adjust engine speed to full throttle.

For Models H60T & C60K:

Set the choke to the desired position.

Set the throttle lever in the start position at about half throttle. The mower blades clutch should probably engage as the engine comes up to speed. The mower blades clutch engages at 1850 RPM.

Start engine and allow engine to warm up.

Adjust the choke to off.

Adjust engine speed to full throttle to fully engage the mower blades clutch.



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.

E. SHUTTING OFF WING MOWER



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

For Model H40B:

Slow the engine speed down and disengage the clutch handle.

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

For Models H60T & C60K:

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

Allow engine to cool down for a short time before turning the engine off.

F. 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.

For Model H40B – See Figure 7

With the clutch disengaged, adjust the nuts on the spring-loaded idler adjuster bolt until the outside spring-loaded idler spring is just touching both end stops. With the clutch engaged, there should be a 3/8" to 1/2" clearance between the belt stop bolt and belt. The outside spring-loaded idler spring length should be 1-1/8" to 1-1/4" long with the clutch engaged.

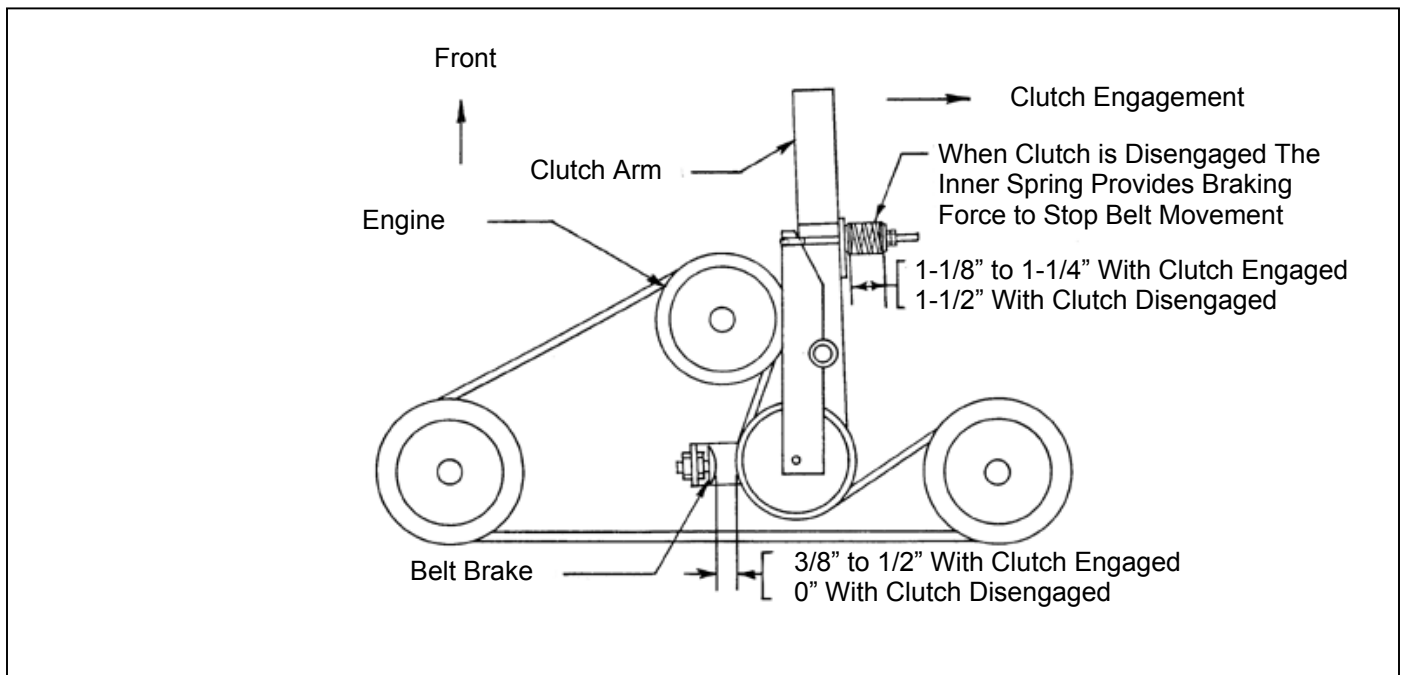


Figure 7: Belt Pattern and Spring Adjustment (Model H40B)

G. MOWER BLADE BALANCING



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.

H. LUBRICATION

There are ten (nine on Model H40B) lubrication points on the wing mower -- one spring-loaded idler pivot, two caster wheel pivots, four wheels, and three blade spindles. 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. 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 H40B

ENGINE:

Engine Make	Briggs & Stratton
Engine Model	195702-4015-01
Cylinders	1
Cycles	4
Crankshaft	Vertical
Engine HP	8
Bore	3.0"
Stroke	2.75"
Displacement	19.44 cu.in.
Oil Capacity	2.25 U.S. pts.
Crankshaft Dia.	1"
Key Slot	1/4"
Crankshaft Length	3.15"
Threaded Hole in End of Crankshaft	7/16-20
Engine Mounting Bolts	5/16-18 x 1-1/2
Starter	Manual
Choke	With Throttle Control

MOWER:

Fuel Tank	3 qts.
Effective Cutting Width	39"
Deck Construction	11 ga. Welded steel
Cutting Height	1" to 4"
Height Adjustment	4 screws
Anti-Scalp Wheels (3" O.D. x 1-1/4" wide)	2 in front, 1 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.	2-20"
Engine Speed, Blades Running	3350 RPM

CLUTCH TYPE

Engagement Speed	Manual
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DIMENSIONS

Length	52"
Width	51-5/8"
Height	24"
Weight	235#

HITCH

Can be expanded to work behind tow vehicles with mower deck sizes	38" to 60"
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TOUCH-UP PAINT COLOR

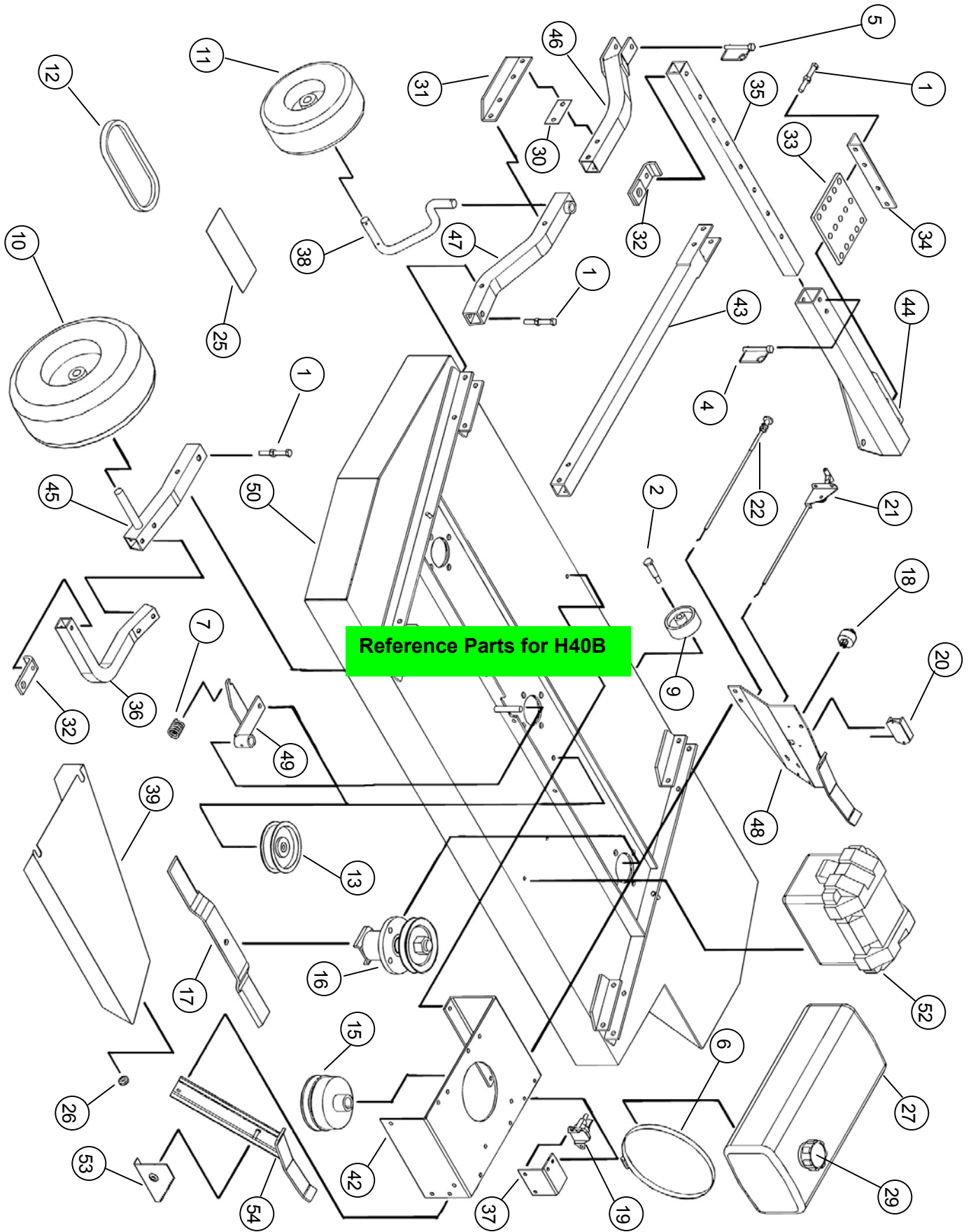
Pewter Gray, Krylon #1606

ACREASE WING MOWER PARTS

<u>Item</u>	<u>Part #</u>	<u>Description</u>	<u>H40B</u>
1	202135	Hex Head Bolt, 3/8" x 3" Fully Threaded	6
2	204000	Shoulder Bolt, 1/2" x 1-5/8" Shoulder Length	3
3	204003	Shoulder Bolt, 1/2" x 2" Shoulder Length	1
4	216002	Wire Lock Pin, 5/16" x 2-1/4" Opening	1
5	216006	Wire Lock Pin, 3/8" x 2-1/4"	1
6	222005	Worm Drive Hose Clamp (7-7/8" to 9-1/8" Clamping Dia.	0
7	225000	Compression Spring, 1-1/2"L x 1-3/32" O.D. x .135" Wire dia.	1
8	225002	Compression Spring, 3"L x 23/32" O.D. x .055" Wire dia.	1
9	226000	Plastic Wheel, 3" O.D. x 1/2" I.D. x 1-1/4" Wide	3
10	226001	Offset Wheel Assy., 13/500 x 6, 2 Ply Turf	2
11	226002	Centered Wheel Assy., 9/350 x 4, Semi Pneumatic	2
12	238002	"V" Belt, B Section, 127" O.C. Dayco B124 Super II	0
12	238003	"V" Belt, A Section, 65" O.C. Gates Power Rated 6865	1
13	241001	Flat Idler, 4" O.D. x 3/8" Hole	1
14	241006	"V" Sheave, 5" Dia. 1" Bore	1
15	258007	Centrifugal Clutch	0
	258003	Clutch Shoe (3)	~
	225001	Spring, 1850 RPM Engagement (3)	~
	243004	Bearing (1)	~
16	258013	Spindle Assy.	2
	900045	Spindle Shaft (1)	~
	600087	Sheave Spacer (1-1/4" 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)	~
16	258014	Spindle Assy.	0
	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)	~
17	259000	Offset Mower Blade, 2" Wide, 20" Long, 3/8" Hole	2
17	259001	Offset Mower Blade, 2" Wide, 20" Long, 1/2" Hole	0
18	264001	Ignition Switch	0
19	264002	Solenoid	0
20	264003	Hour/Tack Meter	0
21	269001	Throttle Control, 15"	0
22	269000	Choke Control, 20"	0
22	269004	Choke Control, 14"	0
23	269005	Throttle Control, Modified	1
24	269006	Throttle Wire	1
25	275000	Name Decal, AcrEase	2
25	275001	Control Panel Decal, Starting Instructions	0
25	275002	Warning Decal General	1

<u>Item</u>	<u>Part #</u>	<u>Description</u>	<u>H40B</u>
25	275003	Danger Decal, Cut Finger	2
25	275006	Clutch Engagement Decal	1
25	275007	Warning Decal, Belt Sheild	2
26	277002	Rubber Gromet	6
27	277010	Fuel Tank, 3.75 Gal. (Plastic) (Use Gas Cap 277013)	0
28	277011	Handle Grip	1
29	277013	Gas Cap (For Fuel Tank 277010)	0
30	600001	Spacer	1
31	600002	Tongue Pivot Angle	2
32	600006	Hitch Flat (5/16" Mounting Hole)	1
32	900050	Hitch Draw Bar	0
33	600008	Hitch Adaptor Plate	1
33	600044	Hitch Adaptor Plate	0
34	600009	Hitch Stop Angle	1
35	600010	Hitch Extension	1
35	600043	Hitch Extension	0
36	600020	Rear Hitch Tube	0
37	600048	Solenoid Support	0
38	600059	Caster Axle	2
39	600062	Belt Sheild L.H.	0
39	600063	Belt Sheild R.H. (Discharge Side)	0
39	600076	Belt Sheild L.H.	1
39	600077	Belt Sheild R.H. (Discharge Side)	1
40	600071	Spacer, 1.38" O.D. x 1.33" Wall x 2.19" Long	1
41	600161	Throttle Support	1
42	600065	Engine Support Bracket	0
42	600082	Engine Support Bracket	0
42	900036	Engine Support Bracket	1
43	900000	Long Tongue Extension	0
44	900001	Telescope Hitch	1
44	900026	Telescope Hitch	0
45	900005	Rear Axle	2
46	900007	Short Tongue	1
47	900021	Caster Support	2
48	900023	Control Panel	0
49	900025	Idler Arm Assy.	0
	243000	Bronze Bearing, 1/2" I.D. x 3/4" O.D. x 1-1/2" Long	~
49	900035	Idler Arm Assy.	1
	243000	Bronze Bearing, 1/2" I.D. x 3/4" O.D. x 1-1/2" Long	~
49	900040	Idler Arm Assy.	0
	243000	Bronze Bearing, 1/2" I.D. x 3/4" O.D. x 1-1/2" Long	~
50	900029	Mower Deck	0
50	900032	Mower Deck	1
50	900042	Mower Deck	0
51	900033	Clutch Arm	1
52	900049	Battery Box Assy.	0
53	900051	Depth Gage	0
54	900052	Tank Support	0

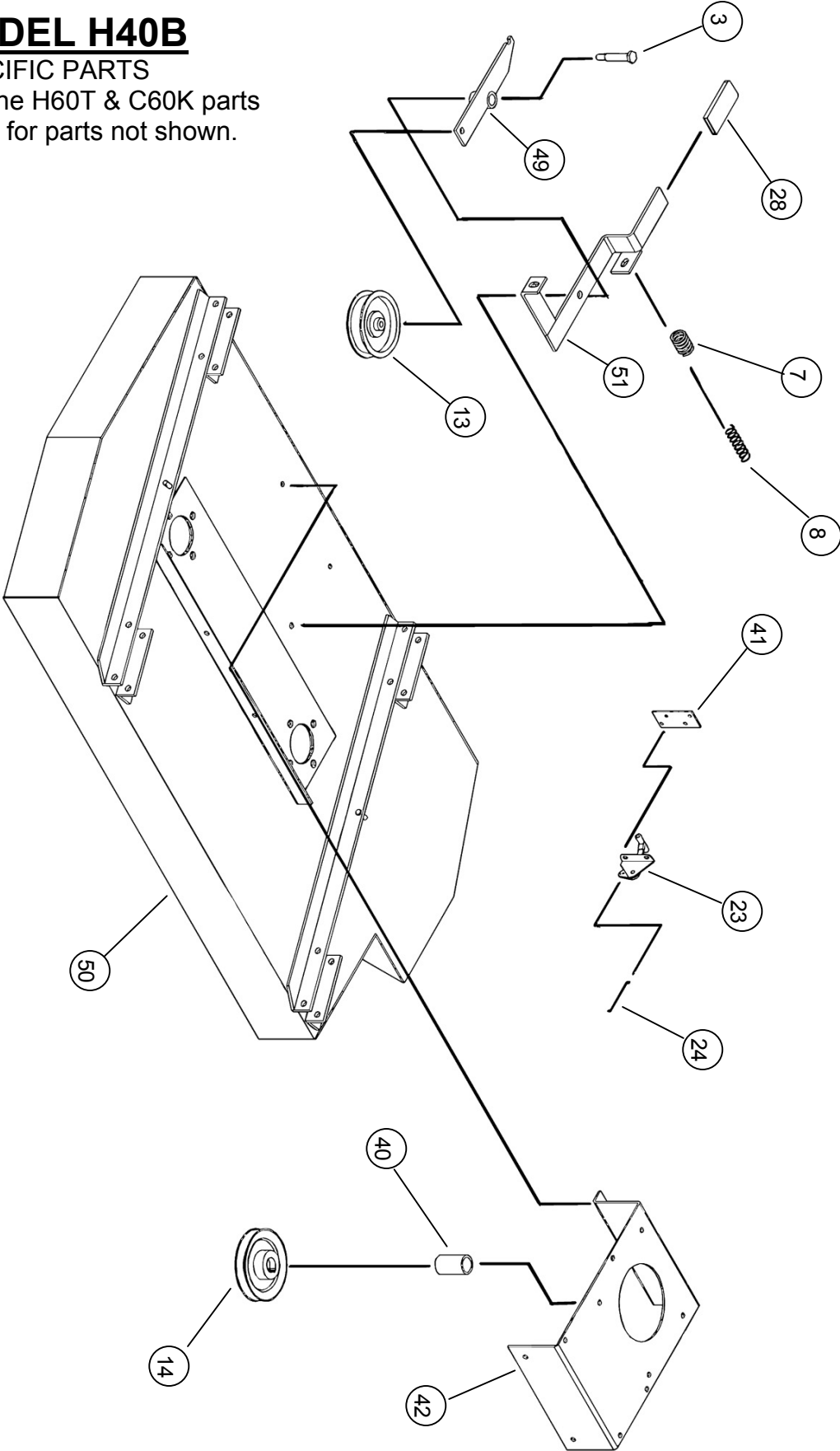
MODELS H60T & C60K



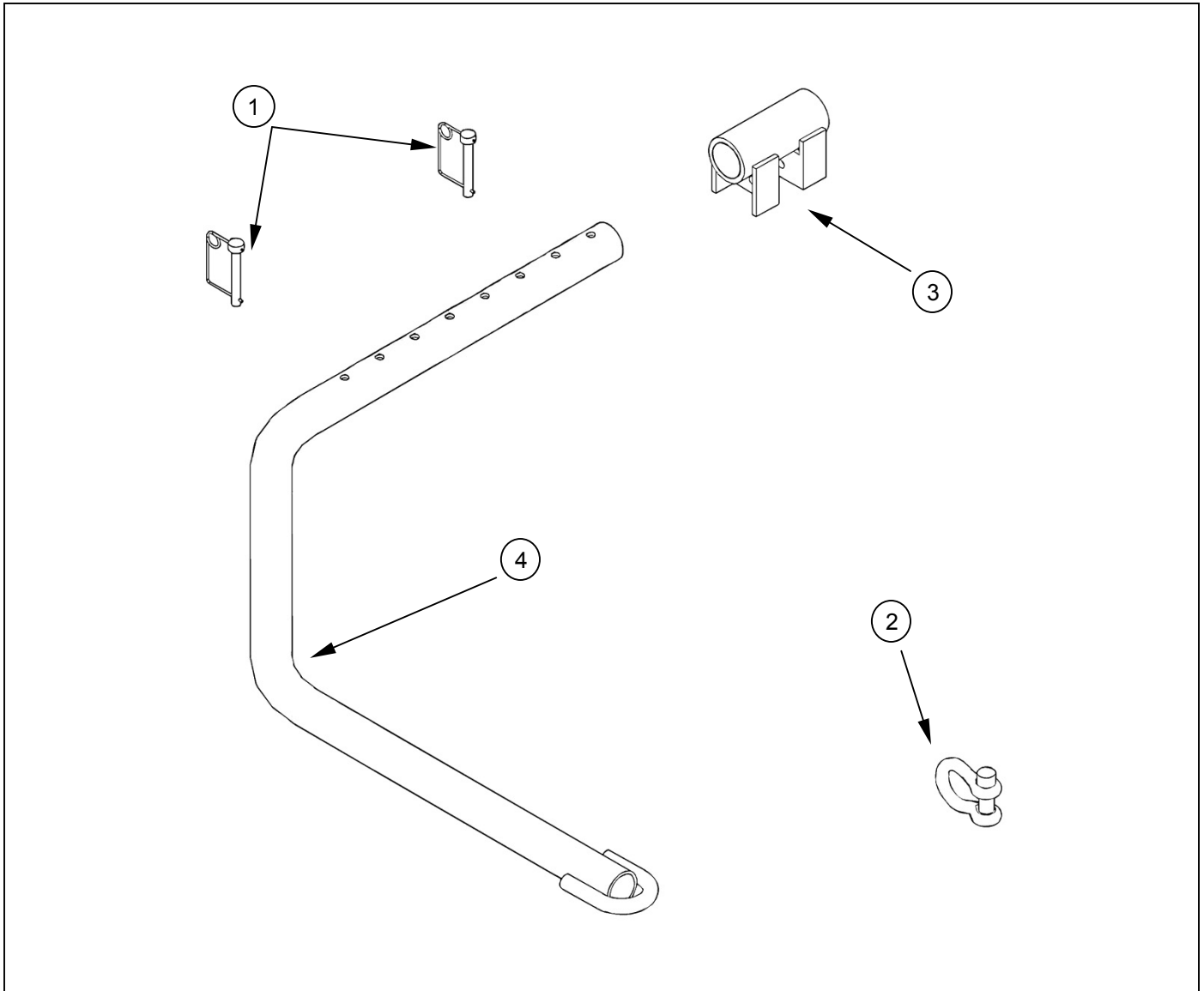
MODEL H40B

SPECIFIC PARTS

See the H60T & C60K parts figure for parts not shown.



ATV TONGUE PARTS



PARTS LIST

<u>Item</u>	<u>Part #</u>	<u>Description</u>	<u>Quantity</u>
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

⚠ WARNING

AVOID INJURY OR DEATH

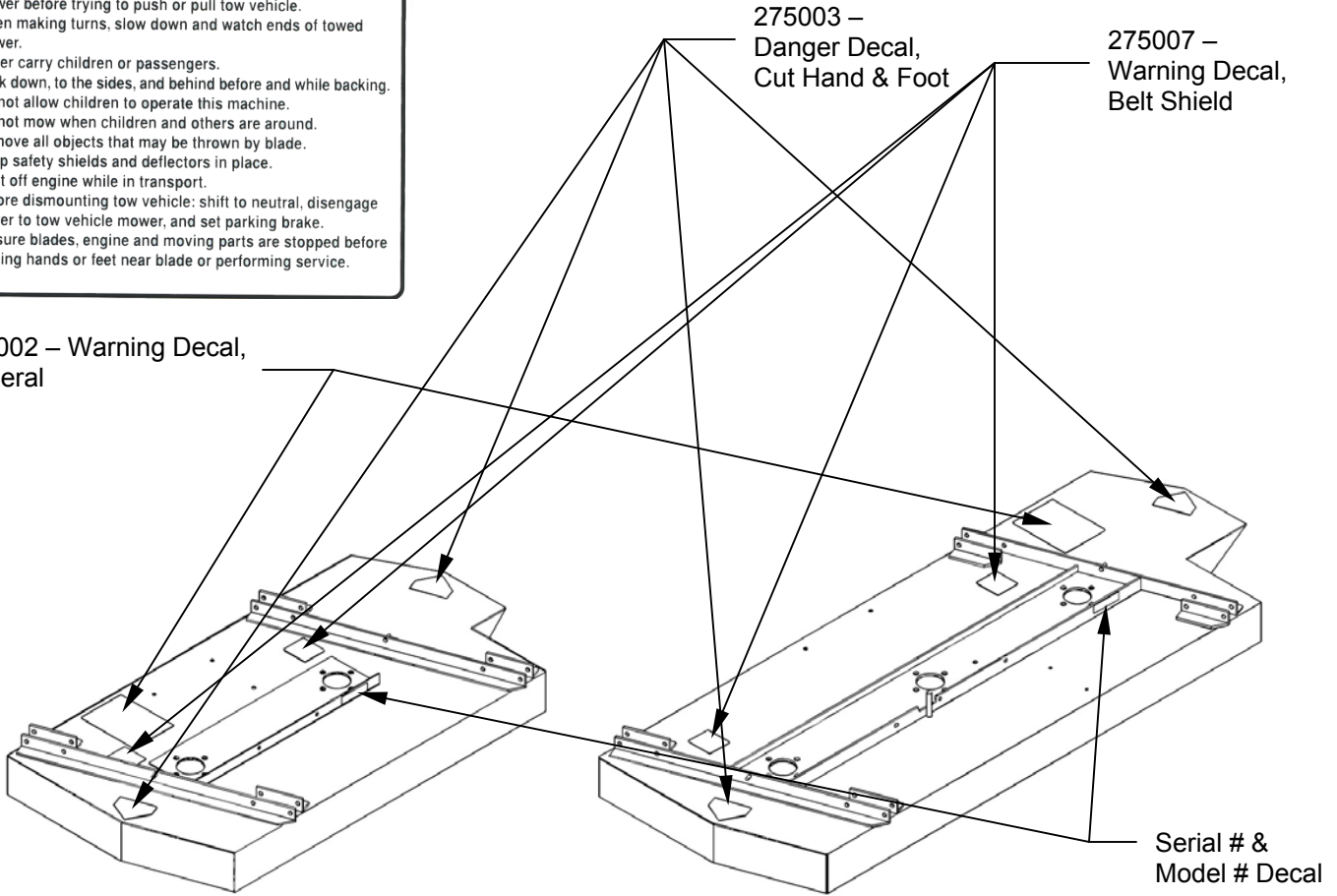
- Read and follow owner's manual.
- Know location and function of all controls.
- Before starting engine, remove grass build-up from under safety shields.
- Before starting engine, attach machine to tow vehicle.
- Shut off engine before disconnecting machine from tow vehicle or attempting to move machine by hand.
- Do not fill fuel tank while engine is running or hot.
- If tow vehicle stops going forward, stop engine on towed mower before trying to push or pull tow vehicle.
- When making turns, slow down and watch ends of towed mower.
- Never carry children or passengers.
- Look down, to the sides, and behind before and while backing.
- Do not allow children to operate this machine.
- Do not mow when children and others are around.
- Remove all objects that may be thrown by blade.
- Keep safety shields and deflectors in place.
- Shut off engine while in transport.
- Before dismounting tow vehicle: shift to neutral, disengage power to tow vehicle mower, and set parking brake.
- Be sure blades, engine and moving parts are stopped before placing hands or feet near blade or performing service.



275002 – Warning Decal, General

275003 – Danger Decal, Cut Hand & Foot

275007 – Warning Decal, Belt Shield



Model H40B

Models H60T & C60K



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