

# SCAG<sup>®</sup>

## POWER EQUIPMENT

### MODEL SWZU



THIS MANUAL CONTAINS THE OPERATING INSTRUCTIONS AND SAFETY INFORMATION FOR YOUR SCAG MOWER. READING THIS MANUAL CAN PROVIDE YOU WITH ASSISTANCE IN MAINTENANCE AND ADJUSTMENT PROCEDURES TO KEEP YOUR MOWER PERFORMING TO MAXIMUM EFFICIENCY. THE SPECIFIC MODELS THAT THIS BOOK COVERS ARE CONTAINED ON THE INSIDE COVER. BEFORE OPERATING YOUR MACHINE, PLEASE READ ALL THE INFORMATION ENCLOSED.

OPERATOR'S MANUAL



# WARNING:

## **FAILURE TO FOLLOW SAFE OPERATING PRACTICES MAY RESULT IN SERIOUS INJURY.**

- \* Keep all shields in place, especially the grass discharge chute.
- \* Before performing any maintenance or service, stop the machine and remove the spark plug wire and ignition key.
- \* If a mechanism becomes clogged, stop the engine before cleaning.
- \* Keep hands, feet and clothing away from power-driven parts.
- \* Read this manual completely as well as other manuals that came with your mower.
- \* Keep others off the tractor (only one person at a time)

## **REMEMBER - YOUR MOWER IS ONLY AS SAFE AS THE OPERATOR!**

Hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training of the personnel involved in the operation, transport, maintenance, and storage of the equipment.

This manual covers the operating instructions  
and illustrated parts list for:

**SWZU36A-15KA with a serial number of 8160001 to 8169999**  
**SWZU48A-17KA with a serial number of 8170001 to 8179999**  
**SWZU52A-17KA with a serial number of 8180001 to 8189999**  
**SWZU52A-18KH with a serial number of 8190001 to 8199999**  
**SWZU-21KAE with a serial number of 8240001 to 8249999**  
**SWMU-52A with a serial number of 8250001 to 8259999**  
**SWMU-61A with a serial number of 8260001 to 8269999**

Always use the entire serial number listed on the serial number tag when referring to this product.

# SCAG<sup>®</sup>

## POWER EQUIPMENT

### TABLE OF CONTENTS

SUBJECT	PAGE
Introduction .....	1
Direction Reference .....	1
Servicing the Engine and Drive Train Components .....	1
Symbols .....	2-3
General Safety Instructions .....	4
Signal Words .....	4
Before Operating .....	4
Operation Considerations .....	6
Maintenance and Storage .....	7
Initial Run-In Procedures .....	7
Mower Operation .....	8
Cutter Deck Belt Adjustments .....	9
Cutter Deck Adjustments .....	9-10
Cutter Blades .....	10
Custom-Cut Baffle Adjustment .....	10-11
Neutral Adjustment .....	11
Steering Control Rod Adjustment .....	12
Tracking Adjustment .....	12
Parking Brake .....	13
Lubrication and Maintenance Chart .....	14
Checking Hydraulic Oil Level .....	15
Changing Hydraulic Oil .....	15



# TABLE OF CONTENTS

## (CONTINUED)

<b>SUBJECT</b>	<b>PAGE</b>
Changing Hydraulic Oil Filter Element .....	15
Engine Oil Maintenance .....	16
Engine Air Cleaner Maintenance .....	16
Checking Electrolyte Level and Cleaning Battery .....	16
Charging the Battery .....	17
Jump Starting .....	17
Technical Specifications .....	18-19

### **Illustrated Parts List**

SWMU-36"A Cutter Deck .....	20-21
SWMU-48"A, 52"A, & 61"A Cutter Decks .....	22-23
Cutter Deck Frame 36" .....	24-25
Cutter Deck Frame 48" & 52" Small Frame .....	26-27
Cutter Deck Frame 52" & 61" Large Frame .....	28-29
Engine Deck .....	30-31
Drive And Brake Components .....	32-33
Handle Assembly - Small Frame (16") .....	34-35
Handle Assembly - Large Frame (SWZU-21KAE) .....	36-37
Hydraulic Assembly .....	38-39
Hydraulic Pump Assembly .....	40-41
Engine Deck Wire Harness (Manual Start) .....	42
Wire Harness Adaptor - Kawasaki (15 & 17HP) .....	42
Handle Wire Harness (Manual Start) .....	43
Handle Wire Harness - Kawasaki (Electric Start) .....	43
Engine Deck Wire Harness - Kawasaki (Electric Start) .....	44
Replacement Decals .....	45-46
Warranty Statement .....	Inside Back Cover

## GENERAL INFORMATION

### INTRODUCTION

Your mower was built to the highest standards in the industry. However, the prolonged life and maximum efficiency of your mower depends on you following the operating, maintenance and adjustment instructions in this manual.

If additional information or service is needed, contact your Scag Power Equipment Dealer.

We encourage you to contact your dealer for repairs. All Scag dealers are informed of the latest methods to service this equipment and provide prompt and efficient service in the field or at their service shop. They carry a full line of Scag service parts.

**USE OF OTHER THAN ORIGINAL SCAG REPLACEMENT PARTS WILL VOID THE WARRANTY.**

For pictorial clarity, some illustrations and figures in this manual may show shields, guards or plates open or removed. Under no circumstances should your mower be operated without these devices in place.

**All information is based upon product information available at the time of approval for printing. Scag Power Equipment reserves the right to make changes at any time without notice and without incurring any obligation.**

Use only Scag approved attachments and accessories.

Scag Approved Attachments:

GC-F4

GC-4D

Scag Approved Accessories:

Mulch Plate

Mulch Master

Cup Holder

Turbo Baffle

Blade Buddy

Using unapproved attachments, (especially "stand-up" riding attachments) may be hazardous.

### DIRECTION REFERENCE










The "Right" and "Left", "Front" and "Rear" of the machine are referenced from the operator's right and left when seated in the normal operating position and facing the forward travel direction.











### SERVICING THE ENGINE AND DRIVE TRAIN COMPONENTS

The detailed servicing and repair of the engine and hydraulic pumps are not covered in this manual; only routine maintenance and general service instructions are provided. For service of these components during the limited warranty period, it is important to contact your Scag dealer or find a local authorized servicing agent of the component manufacturer. Any unauthorized work done on these components during the warranty period may void your warranty.



ISO Symbols  CE Mark

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	Choke		Transmission
	Parking Brake	 <small>48071S</small>	Spinning Blade
	On/Start		Spring Tension on Idler
	Off/Stop		Oil
		Falling Hazard	

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	Fast		Slow
	Continuously Variable - Linear		Cutting Element - Basic Symbol
	Pinch Point		Cutting Element - Engage
	Hourmeter/Elapsed Operating Hours		Cutting Element - Disengage
	Thrown Object Hazard Keep Bystanders Away		Read Operator's Manual

## SAFETY INFORMATION

### GENERAL SAFETY INFORMATION

Your mower is only as safe as the operator. Carelessness or operator error may result in serious bodily injury or death. Hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training of the personnel involved in the operation, transport, maintenance and storage of the equipment. Make sure every operator is properly trained and thoroughly familiar with all of the controls before operating the mower.

### READ THIS OPERATOR'S MANUAL BEFORE ATTEMPTING TO START YOUR MOWER.

A replacement manual is available from your authorized Scag Service Dealer or by contacting Scag Power Equipment, Service Department at P.O. Box 152, Mayville, WI 53050 or contact us via the Internet at [www.scag.com](http://www.scag.com). Use the contact form to make your request. Please indicate the complete model and serial number of your Scag product when requesting replacement manuals.

### SIGNAL WORDS



This symbol means **“Attention! Become Alert! Your Safety is Involved!”** The symbol is used with the following signal words to attract your attention to safety messages found on the decals on the machine and throughout this manual. The message that follows the symbol contains important information about safety. To avoid injury and possible death, carefully read the message! Be sure to fully understand the causes of possible injury or death.

#### Signal Word:

The signal word is a distinctive word found on the safety decals on the machine and throughout this manual that alerts the viewer to the existence and relative degree of the hazard.

### **DANGER:**

The signal word “DANGER” denotes that an extremely hazardous situation exists on or near the machine that could result in high probability of death or irreparable injury if proper precautions are not taken.

### **WARNING:**

The signal word “WARNING” denotes that a hazard exists on or near the machine that can result in injury or death if proper precautions are not taken.

### **CAUTION:**

The signal word “CAUTION” is a reminder of safety practices on or near the machine that could result in personal injury if proper precautions are not taken.

Your safety and the safety of others depends significantly upon your knowledge and understanding of all correct operating practices and procedures of this machine.

### BEFORE OPERATION CONSIDERATIONS

1. **NEVER** allow children to operate this machine. Do not allow adults to operate this machine without proper instructions.
2. **DO NOT** mow when children and/or others are present.
3. Clear the area to be mowed of objects that could be picked up and thrown by the cutter blades.
4. **DO NOT** wear loose fitting clothing that could get tangled in moving parts. Do not operate the machine wearing shorts; always wear adequate protective clothing including long pants. Wearing safety glasses, safety shoes and a helmet is advisable and is required by some local ordinances and insurance regulations.



## BEFORE OPERATION CONSIDERATIONS (CONT'D)

5. Operator hearing protection is recommended, particularly for continuous operation of the mower. Wear suitable hearing protection. Prolonged exposure to loud noise can cause hearing impairment or hearing loss.
6. Keep the machine and attachments in good operating condition. Keep all shields and safety devices in place. If a shield, safety device or decal is defective or damaged, repair or replace it before operating the machine.

### **WARNING:**

This machine is equipped with an interlock system intended to protect the operator and others from injury. This is accomplished by preventing the engine from starting unless the deck drive is disengaged, the parking brake is on, and the speed adjustment lever is in the neutral position. The system shuts off the engine if the operator releases the operator presence levers with the deck drive engaged and/or the speed adjustment lever not in the neutral position, or the parking brake disengaged. Never operate equipment with the interlock system disconnected or malfunctioning.

7. Gasoline is highly flammable, handle it carefully. Fill the fuel tank outdoors. Never indoors. Fill the fuel tank with clean, fresh gasoline, with a minimum octane rating of 87. Use a funnel or spout to prevent spillage.
  - A. Use an approved gasoline container.
  - B. **DO NOT** add fuel to a running or hot engine. Allow the engine to cool for several minutes before adding fuel.
  - C. Keep flammable objects (cigarettes, matches, etc.), open flames and sparks away from the fuel tank and fuel container.
  - D. Fill the fuel tank outdoors and up to approximately 1" (25 mm) below the bottom of the filler neck.
  - E. Wipe up any spilled gasoline.

8. Before attempting to start the engine, move the speed adjustment lever into the neutral position, move the blade engagement switch to the OFF position, apply the parking brake, and move the neutral latches to neutral.

### **WARNING**

DO NOT OPERATE WITHOUT DISCHARGE CHUTE, MULCHING KIT, OR ENTIRE GRASS CATCHER INSTALLED

9. The discharge chute must always be installed and in the down position on the side discharge cutter deck except when the Scag optional grass catcher or mulching plate are properly installed.

### **DANGER:**

#### **ROTATING BLADES**

**NEVER PUT YOUR HANDS INTO THE DISCHARGE CHUTE FOR ANY REASON! Shut off the engine and remove the key and only then use a stick or similar object to remove material if clogging has occurred.**

10. If the mower discharge ever plugs, shut off the engine, remove the ignition key, and wait for all movement to stop before removing the obstruction. Do not use your hand to dislodge the clogged discharge chute. Use a stick or other device to remove clogged material.
11. Check the blade mounting bolts at frequent intervals for proper tightness.
12. Make sure all hydraulic fluid connections are tight and all hydraulic hoses and lines are in good condition before starting the machine.

## OPERATION CONSIDERATIONS

1. Know the function of all controls and how to stop quickly.
2. Start the engine when the neutral latches are in the neutral lock position, the cutter blades are disengaged, the parking brake is on and the speed adjustment lever is in the neutral position.
3. Be sure the interlock switches are functioning correctly.
4. Using the machine demands attention. To prevent loss of control:
  - A. Mow only in daylight or when there is good artificial light.
  - B. Watch for holes or other hidden hazards.
  - C. Do not drive close to a drop-off, ditch, creek bank, or other hazard.
  - D. Reduce speed when making sharp turns and when turning on hillsides.
  - E. Always be sure of your footing. Keep a firm hold on the handles and walk---never run.
  - F. Do not operate where conditions are slippery

### **WARNING:**

**DO NOT operate on steep slopes. To check a slope, attempt to back up it (with the cutter deck down). If the machine can back up the slope without the wheels slipping, reduce speed and use extreme caution. ALWAYS FOLLOW OSHA APPROVED OPERATION.**

5. Disengage power to the cutter deck before backing up. Do not mow in reverse unless absolutely necessary and then only after observation of the entire area behind the mower.
6. Disengage power to the cutter deck before crossing roads, walks or gravel drives.

7. Shut the engine off and wait until the blades come to a complete stop before removing the grass catcher container.
8. Never raise the cutter deck while the blades are rotating.



### **DANGER: ROTATING BLADES**

**NEVER PUT YOUR HANDS INTO THE DISCHARGE CHUTE FOR ANY REASON!**

9. **DO NOT** operate without the side discharge chute installed and in the down position.
10. **DO NOT** direct the discharge of material toward bystanders or allow anyone near the machine while in operation.
11. If the cutting blades should strike a solid object or the equipment should start to vibrate abnormally, stop the engine, disconnect the spark plug wire, and check immediately for the cause. Vibration is generally a warning of trouble. Check the machine for damaged or defective parts. Repair any damage before starting the engine or operating the cutter deck. Be sure the blades are in good condition and the blade bolts are tight.
12. Take all possible precautions when leaving the machine unattended, such as disengaging the mower, setting the parking brake, stopping the engine, and removing the key.
13. **DO NOT** touch the engine or the muffler while the engine is running or immediately after stopping. These areas may be hot enough to cause a burn.
14. **DO NOT** run the engine inside a building or a confined area without proper ventilation. Exhaust fumes are hazardous and could cause death.

## MAINTENANCE AND STORAGE

1. Allow only trained personnel to service the machine.
2. Never make adjustments to the machine with the engine running unless specifically instructed to do so. If the engine is running, keep hands, feet, and clothing away from moving parts.
3. Remove the key from the ignition switch and disconnect the wire from the spark plug(s) to prevent accidental starting of the engine when servicing, adjusting or storing the machine.
4. If the mower must be tipped to perform maintenance or adjustment, remove the battery, drain the gasoline from the fuel tank and the oil from the crankcase.
5. Be sure the machine is in safe operating condition by keeping nuts, bolts, and screws tight. Check the blade mounting bolts and nuts frequently to be sure they are tightened.
6. Do not change the engine governor settings or overspeed the engine. See the engine operator's manual for information on engine settings.
7. To reduce fire hazard, keep the engine free of grass, leaves, excessive grease, oil and dirt.
8. The engine must be shut off before checking the oil or adding oil to the crankcase.
9. Allow the engine to cool before storing the mower in any enclosure such as a garage or storage shed. Make sure the fuel tank is empty if the machine is to be stored in excess of 30 days. Do not store the mower near any open flame or where gasoline fumes may be ignited by a spark.
10. Always store gasoline in a safety-approved, red container.
11. Be careful when servicing the battery as it contains acid, which is corrosive and could cause burns to skin and clothing.
12. Batteries release explosive gases when being charged or discharged. Keep batteries away from any source of sparks and/or flame.
13. Make sure all hydraulic fluid connections are tight and all hydraulic hoses and lines are in good condition before starting the machine.
14. **Hydraulic fluid is under high pressure.** Keep body and hands away from pinholes or nozzles that eject hydraulic fluid under high pressure. If you need service on your hydraulic system, please see your authorized Scag dealer. Hydraulic fluid under high pressure may have sufficient force to penetrate skin and cause serious injury. If hydraulic fluid is injected into the skin, it must be surgically removed within a few hours by a doctor or gangrene may result.

## INITIAL RUN-IN PROCEDURES (FIRST DAY OF USE OR APPROXIMATELY 10 HOURS)

1. Check the steering control rods and the speed control for neutral adjustment. (See Adjustments, page 11-12)
2. Check the tires for proper pressure.

Caster Wheels	25 psi.
Drive Wheels	12 psi.
3. Check for loose hardware. Tighten as needed.
4. Check the safety switches for proper adjustment:
  - \* On electric start machines the engine should crank and start if the machine is in neutral, the PTO engagement switch is OFF and the parking brake is ON.
5. Apply lubricant to all the grease fittings. Lubricant was applied at the factory. This is just a precautionary check to make sure that all the fittings have been lubricated.

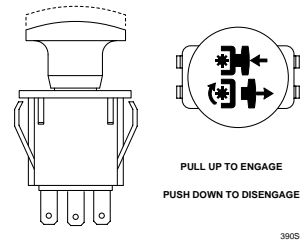
## MOWER OPERATION

1. Read and understand the safety instructions before attempting to operate this machine.
2. Before starting the engine:
  - \* Check the oil level in the engine and the hydraulic reservoir.
  - \* Fill the fuel tank with clean, fresh, lead-free gasoline.
  - \* Open the fuel valve on the bottom of the fuel tank.

**-NOTE-**

Use gasoline with an octane rating no less than 87.

- \* The speed adjustment lever must be in NEUTRAL.
  - \* The blade clutch switch must be in the OFF position.
  - \* The neutral latches must be in the neutral lock position.
  - \* The key switch must be on.
  - \* The parking brake must be on.
3. Start the engine:
    - \* Choke as required. If the engine is cold, pull the choke knob out. When the engine starts, slowly push the choke in. If the engine stalls, repeat the above operation. When the engine is warm, choking may not be necessary.
    - \* Cold starting. In the spring and fall when the morning temperatures are cool it may be difficult to start the machine due to the parastatic load from the hydraulic drive. To relieve this load, pull out and up on the de-clutch chain located on the right side of the machine behind the tire. This will allow you to start the engine easily. When the engine is warmed up, slowly release the de-clutch chain to engage the hydraulic system.
  4. Engage the cutter blades by pulling the blade clutch switch into the ON position. Push the switch to the OFF position to disengage the cutter blades.



**-NOTE-**

When PTO is engaged or (possibly) disengaged, a squealing sound from the underside of the machine is normal. It is caused by the electric clutch plates meshing as the mower comes up to speed. For best equipment life, engage the clutch with the engine at 3/4 throttle, not under full load.

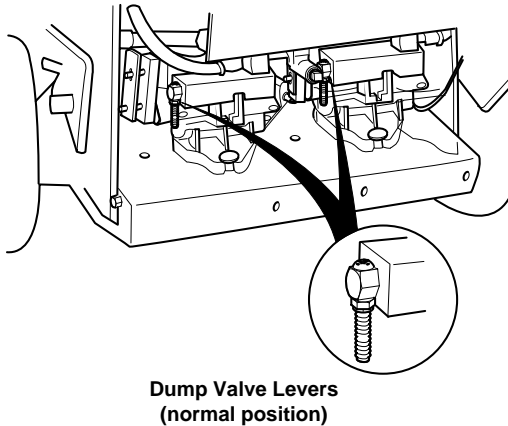


**WARNING:**

If you are not familiar with the operation of the hydrostatic drive and zero turn feature, practice turning and maneuvering with the hand controls before engaging the blades.

5. Release the parking brake. Move the speed adjustment lever to the desired mowing speed.
- NOTE-**
- Top speed is suggested only for transport!*
6. While squeezing the steering brake levers with both hands, release both neutral latches.
  7. When the steering brake levers are released, the machine will travel straight. To make a right turn, squeeze the RH lever. To turn left, squeeze the LH lever.
  8. TO STOP, squeeze both levers, lock the neutral latches, and move the speed adjustment lever to neutral.
  9. To move the machine in reverse, squeeze up on both steering control levers.

10. To "freewheel" or move the machine around without the engine running, turn the dump valve levers located at the back of the pumps to the "freewheel" positions (see Figure 1). To operate the machine, the dump valve levers must be returned to the closed positions.



SGB112

Figure 1. Dump Valves

## CUTTER DECK BELT ADJUSTMENTS

### -NOTE-

All the belts on the SWZU are spring loaded and do not require adjustment. Check the belts for excessive wear or damage daily for the first week. After the first week, check the belts monthly.

1. Remove the belt covers.
2. Inspect the belts for wear, cracking, or glazing. Contact your Scag dealer if any unusual wear is noted.
3. Replace the belt covers.

## CUTTER DECK ADJUSTMENTS

Due to the many cutting conditions that exist, it is difficult to suggest a cutter deck setting that will work for every lawn. There are two adjustments that can be made on these decks, pitch and height.

PITCH is the angle of the blades (comparing front to rear). A 1/4" downward pitch (front of deck down) is recommended for best cutting performance.

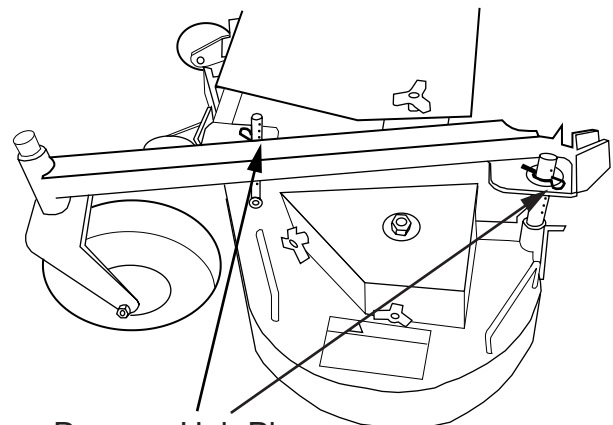
HEIGHT is the nominal distance the blade is off of the ground. This measurement is made with the blades pointed side to side and distance is measured between cutting tip and ground.

Changes to the cutting height can be achieved by repositioning the cutter deck. There are eight available positions from 1" to 4-1/2" (See Figure 2).

### **WARNING:**

Do not adjust the cutting height with the mower blades rotating. Shut off the engine and remove the ignition key. Bodily injury could occur from the rotating blades.

1. Shut off the engine and remove the ignition key.
2. While holding up on the deck support handle, remove the two hairpins from the adjusting pins on one side of the cutter deck (See Figure 2).
3. Lift or lower the deck to the desired cutting height and reinstall the hairpins. A deck height decal is located on the deck mounting frame as an aid in adjusting the deck to the desired height.
4. Repeat the above process on the opposite side of the cutter deck.



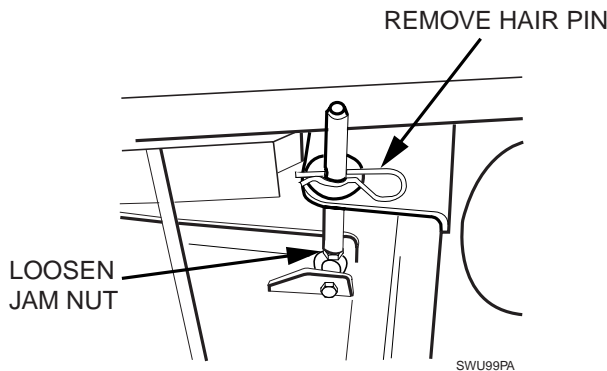
SWU99DHA

Figure 2. Cutting Height Adjustment

## CUTTER DECK PITCH ADJUSTMENTS

The cutter deck pitch adjustment has been set at the factory and normally will not need to be changed. However, if the pitch needs to be adjusted due to service work performed on the deck, follow the procedure below (see Figure 3).

1. Shut off the engine and remove the key.
2. Support the cutter deck with four blocks (you will be removing the hair pins to make this adjustment).
3. Remove the front hair pins from the front deck support pins.
4. Loosen the jam nuts on the deck support pins.
5. Turn the deck support pins to lengthen or shorten the pins to reach the desired result.
6. Tighten the jam nut, replace the hair pin, and remove the blocks. Check that the desired deck pitch is achieved.



**Figure 3. Deck Pitch Adjustment**

## CUTTER BLADES

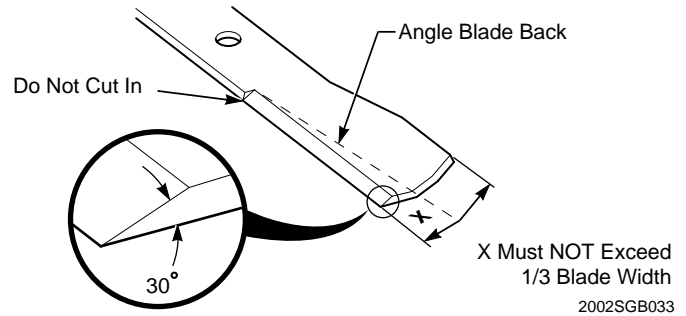
Do not sharpen beyond 1/3 of the width of the blade. (See Figure 4)

### **! WARNING:**

**Always wear proper hand and eye protection when working with cutter blades.**

### **-NOTE-**

*Dress the blade with a file. Using a wheel grinder may burn the blade. Check the balance of the blade. If blades are out of balance, vibration and premature wear of spindle assembly can occur. See your authorized Scag dealer for blade balancing or special tools, if you choose to balance your own blades.*



**Figure 4. Blade Sharpening**

## Custom-Cut Baffle Adjustment

The Custom-Cut Baffle is designed to deliver optimum airflow and superior cutting performance in any type of grass. The Custom-Cut Baffle can be raised or lowered to precisely tailor the deck's performance for the type of grass being cut. The baffle can be set in three (3) different positions for optimum performance.

- A. 3" Position - baffle removed. (See Figure 6). With the baffle removed, the Advantage cutter deck will deliver the best quality-of-cut in very tall, wiry, tough to cut grass.
- B. 3-1/2" Position (factory setting) - baffle is installed using the bottom set of holes on the Custom Cut Baffle. (See Figure 7). For general purpose cutting, place the Custom Cut Baffle in the 3-1/2" position. This gives the best mix of cutting performance in all types of grass.

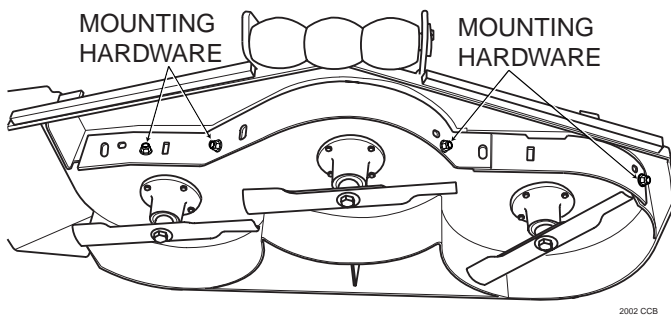
- C. 4" Position - baffle is installed using the top set of holes on the Custom Cut Baffle. (See Figure 8). Placing the baffle in the 4" setting will enhance fall cutting (leaf pickup) and reduce cutter deck "blowout"

### To Adjust the Custom-Cut Baffle height:

1. Remove the hardware securing the Custom-Cut Baffle to the cutter deck (See Figure 5).

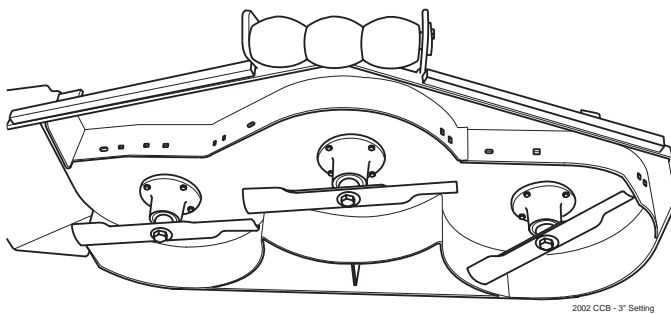
**-NOTE-**

*Hardware location used in the illustrations are for reference only. Location of hardware may vary depending on the cutter deck size.*

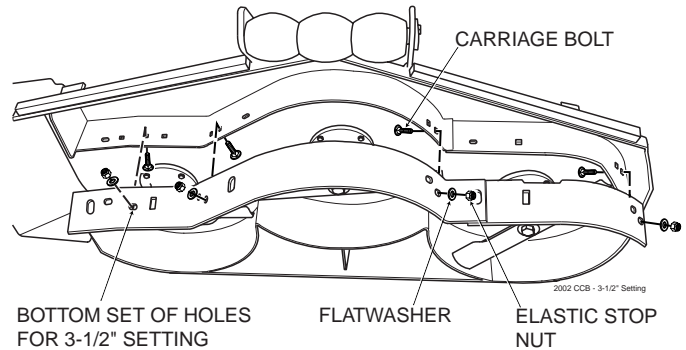


**Figure 5. Custom Cut Baffle**

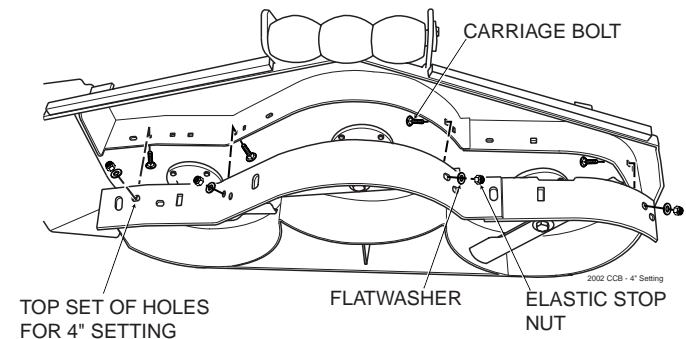
2. Move the Custom-Cut Baffle to desired position. (See Figures 6 through 8 for position).
3. Reinstall the mounting hardware as shown. (See Figures 7 though 8). Torque hardware to 39ft.lbs.



**Figure 6. 3" Custom Cut Baffle Position**



**Figure 7. 3-1/2" Custom Cut Baffle Position**



**Figure 8. 4" Custom Cut Baffle Position**

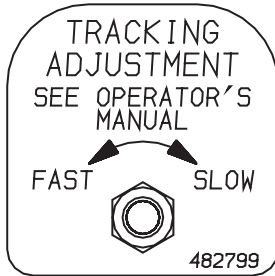
## NEUTRAL ADJUSTMENT

**-NOTE-**

*Neutral has been set by your Scag dealer at the time of setup and normally does not need to be adjusted. If, however, you find that neutral has come out of adjustment, follow the procedure below.*

1. Raise the drive wheels off the ground and block the caster wheels to prevent the machine from moving.
2. Make sure the speed control lever is in neutral, the steering control levers are in the neutral latch position, and the parking brake is on. Start the engine.
3. Release the parking brake and note if the tires are rotating.

- Starting on the left side of the machine, using the adjustment wrench located on the left side of the machine, rotate the tracking adjustment nut counter clockwise just until the LH wheel starts to creep forward. Make a note of the position of the adjustment nut. (See Figure 9)
- Turn the adjustment nut clockwise just until the wheel turns rearward. Make a note of the position of the adjustment nut. To adjust neutral, split the difference between the two noted positions of the adjustment nut. Repeat on the right side as needed.
- Place the wrench in the holder on the left side of the machine and turn the engine off.



**Figure 9. Neutral Adjustment**

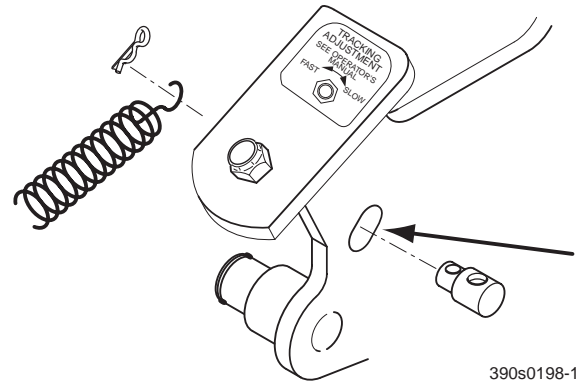
## STEERING CONTROL ROD ADJUSTMENT

### -NOTE-

*This adjustment is made to allow the steering control levers to be moved out of the neutral latch without engaging reverse.*

*Before making this adjustment be sure that the speed control bearing is just touching the speed control cam and that the bellcrank bearing is resting in the center groove of the neutral cam.*

- Remove the speed control spring. Remove the steering control rod swivel hair pin. Check the location of the swivel in the slotted hole in the bell crank.
- Turn the swivel joint on the steering control rods until the swivel joint is centered in the slot in the bellcrank.



**Figure 10. Control Rod Adjustment**

- Reinstall the speed control spring onto the swivel. Install the hair pin onto the swivel. (See Figure 10)

## TRACKING ADJUSTMENT

### -NOTE-

*Before proceeding with this adjustment, be sure that the tire pressures are correct. (see page 7) and that the neutral adjustment and the steering control rod adjustment have been completed.*

- With the machine on a flat level surface, start the engine and place the speed adjustment lever into the speed that will most often be used.
- Squeeze the steering control levers and release the neutral latch. Slowly release the steering control levers, allowing the machine to move forward.

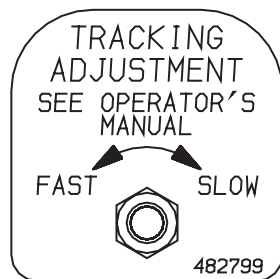
## **! WARNING:**

### **BEFORE ATTEMPTING TO MAKE ANY TRACKING ADJUSTMENTS:**

- 1. Move the speed adjustment lever to the neutral position.**
- 2. Place the blade engagement switch in the OFF position.**
- 3. Apply the parking brake.**
- 4. Move the steering control levers into the neutral position.**



3. If the machine pulls to one side. Stop the mower by placing the steering control levers in the neutral position. Using the adjustment wrench located on the left side of the machine, turn the tracking adjustment nut on the slower side counter clockwise until the machine tracks straight. (See Figure 11)
4. Bring the steering control levers back to the neutral lock position and check to see that the machine does not creep forward on the adjusted wheel.
5. If the machine creeps in neutral you have moved out of the neutral band and will have to turn the tracking adjustment nut clockwise until the machine does not creep.
6. Repeat steps 1 and 2. If the machine continues to pull to one side, stop the mower by placing the steering control levers in the neutral position. Turn the tracking adjustment nut on the faster side clockwise until the machine tracks straight.
7. If tracking cannot be achieved, contact your Scag servicing dealer.



**Figure 11. Tracking Adjustment**

## PARKING BRAKE

1. Adjust the parking brake so that when the brake hand lever is against the stop on the handle bar, the brake levers on the brake shaft weldment are against the stops on the engine deck.

### **CAUTION:**

**Adjust the brake only enough to hold the machine. Excessive force may cause damage to the machine or brake components.**

2. Adjust the brake actuator rod on either side of the machine to obtain proper brake adjustment.

## LUBRICATION & MAINTENANCE

BREAK-IN					
8 HOURS (DAILY)	40 HOURS (WEEKLY)	100 HOURS (BIWEEKLY)	500 HRS OR ANNUALLY		
				+ Grease spindle until grease comes out the relief valve	
				Compatible Greases:	Lidok EP #2 (found at industrial shops) Ronex MP (Exxon service stations) Shell Alvania (Shell service stations) Mobilux #2 (Mobil service stations) Super Lub MEP #2 (Conoco service stations)
				PROCEDURE	COMMENTS
X				Check all hardware for proper tightness	
X				Change engine oil and filter at 5 hours	
X				Check engine oil	Do not over fill
X				Remove debris from under belt cover	More often if needed
X				Sharpen cutter blades	More often if needed
X				Grease spindle bearings	+ US Lithium MP White Grease 2125
X				Clean air filter	More often if needed
X				Check belt tension	Adjust as needed
X				Check tire pressure	Add or adjust as required
	X			Check battery level	Adjust as needed
	X			Replace air filter	More often if needed
	X			Grease caster wheel bearings	Chassis grease
	X			Grease caster wheel pivot shafts	Chassis grease
	X			Grease idler pulley bracket on cutter deck	Chassis grease
	X			Change hydrostatic oil filter	Clean area before removing the filter
	X			Change engine oil and filter	See engine manufacturer information
	X			Grease idler arm pivots	Chassis grease
	X			Grease brake hand lever	Chassis grease
	X			Grease brake actuator levers	Chassis grease
	X			Check all hardware for proper tightness	
	X			Adjust air gap on electric clutch	Contact your Scag dealer for information about making this adjustment.
	X			Drain hydraulic system and replace oil	

## HYDRAULIC SYSTEM

### Checking Hydraulic Oil Level

The hydraulic oil level should be checked after the first 10 hours of operation. Thereafter, check the oil after every 200 hours of machine operation or monthly, whichever occurs first.

#### **-IMPORTANT-**

If the oil level is consistently low, check for leaks and correct immediately.

1. Wipe dirt and contaminants from around the reservoir cap. Remove the cap from the hydraulic oil reservoir.
2. Visually check the level of hydraulic oil. Hydraulic oil must be at least 2" inches from top of the filler neck. If the level cannot be determined visually, use a clean tape measure to check the level. If the fluid is low, add 20W50 motor oil. **DO NOT** overfill; (overfilling the oil reservoir may cause oil seepage around the cap area).
3. Clean the fill cap and install it onto the reservoir.

### Changing Hydraulic Oil

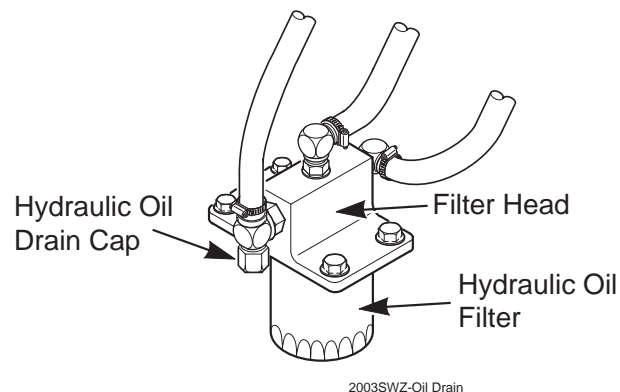
The hydraulic oil should be changed after every 500 hours or annually, whichever occurs first. The oil should also be changed if the color of the fluid has become black or milky. A black color and/or a rancid odor usually indicates possible overheating of the oil, and a milky color usually indicates water in the hydraulic oil.

#### **-NOTE-**

*The hydraulic oil should be changed if you notice the presence of water or a rancid odor to the hydraulic oil.*

1. Park the mower on a level surface and stop the engine.

2. Place a suitable container under the hydraulic oil drain. Remove the fill cap from the reservoir. Remove the drain cap from the T-Fitting located on the hydraulic system filter head. (See Figure 12). Allow the fluid to drain into the container and properly discard it.



**Figure 12 Hydraulic Oil Drain Cap**

3. Reinstall the drain cap onto the T-Fitting and be sure it is tight.

#### **-NOTE-**

*Before refilling the hydraulic oil reservoir the hydraulic oil filter should be changed as well. See instructions outlined below.*

4. Fill the reservoir to 2" inches from the top of the filler neck with 20W50 motor oil.
5. Replace the reservoir fill cap. Start the engine and drive forward and backward for two minutes. Check the oil level in the reservoir. If necessary, add oil to the reservoir.

### Changing Hydraulic Oil Filter Element

The hydraulic oil filter should be changed after every 500 hours of operation or annually, whichever occurs first.

1. Remove the oil filter element (Figure 12) and properly discard it. Fill the new filter with clean oil and install the filter. Hand tighten only.

2. Run the engine at idle speed with the speed control lever in neutral for five minutes.
3. Check the oil level in the hydraulic tank. It must be 2" inches from the top of the filler neck. If necessary, add SAE 20W50 motor oil.

## Checking Engine Crankcase Oil Level

The engine oil level should be checked after every 8 hours of operation or daily as instructed in the Engine Operator's Manual furnished with this mower.

## Changing Engine Crankcase Oil

After the first 5 hours of operation, change the engine crankcase oil and replace the oil filter. Thereafter, change the engine crankcase oil after every 100 hours of operation or bi-weekly, whichever occurs first. Refer to the Engine Operator's Manual furnished with this mower for instructions.

## Changing Engine Oil Filter

After the first 5 hours of operation, replace the engine oil filter. Thereafter, replace the oil filter after every 200 hours of operation or every month, whichever occurs first. Refer to Engine Operator's Manual for instructions.

## Engine Air Cleaner

For any air cleaner, the operating environment dictates how often the air cleaner should be serviced. Refer to the Engine Operator's Manual furnished with this mower for instructions.

### **-NOTE-**

*In extremely dusty conditions it may be necessary to service the air cleaner daily to prevent engine damage.*

## BATTERY (ELECTRIC START UNITS ONLY)

### Checking Electrolyte Level and Cleaning Battery

This machine was equipped from the factory with a sealed battery. Maintenance is not required to maintain the electrolyte level. Dirt and fluid on the top of the battery can cause the battery to discharge. Corrosion of the battery terminals or loose connections will cause poor battery performance.

### **WARNING:**

**Lead-acid batteries produce flammable and explosive gases. To avoid personal injury when checking, testing or charging batteries, DO NOT use smoking materials near batteries. Keep arcs, sparks and flames away from batteries. Provide proper ventilation and wear safety glasses.**

### **WARNING:**

**Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to cause cancer and reproductive harm. Wash hands after handling.**

1. Loosen the two plastic wing nuts and then remove the battery cover.
2. Clean the cable ends and battery posts with steel wool. Use a solution of baking soda and water to clean the battery. Do not allow the solution to enter the battery cells.
3. Tighten the cable connections securely and apply a light coat of silicone dielectric grease to the terminal connections to prevent corrosion.
4. Install the battery cover.

 **WARNING:**

Electric storage battery fluid contains sulfuric acid which is **POISON** and can cause **SEVERE CHEMICAL BURNS**. Avoid contact of fluid with eyes, skin, or clothing. Use proper protective gear when handling batteries. **DO NOT** tip any battery beyond 45° angle in any direction. If fluid contact does occur, follow first aid suggestions below.

**BATTERY ELECTROLYTE FIRST AID**

**EXTERNAL CONTACT - Flush with water.**

**EYES - Flush with water for at least 15 minutes and get medical attention immediately.**

**INTERNAL - Drink large quantities of water. Follow with Milk Of Magnesia, beaten egg, or vegetable oil. Get medical attention immediately. In case of internal contact, DO NOT give fluids that would induce vomiting.**

## Charging the Battery

Refer to the battery charger's manual for specific instructions.

Under normal conditions the engine's alternator will have no problem keeping a charge on the battery. If the battery has been completely discharged for a long period of time, the alternator may not be able to recharge the battery, and a battery charger will be required.

**DO NOT** charge a frozen battery. It may explode and cause injury. Let the battery warm before attaching a charger.

Whenever possible, remove the battery from the mower before charging.

 **WARNING:**

**BATTERIES PRODUCE EXPLOSIVE GASES.**  
Charge the battery in a well ventilated space so gases produced while charging can dissipate.

Charging rates between 3 and 50 amperes are satisfactory if excessive gassing or spewing of electrolyte does not occur or the battery does not feel excessively hot (over 125°F). If spewing or gassing occurs or the temperature exceeds 125°F, the charging rate must be reduced or temporarily stopped to permit cooling.

## Jump Starting

1. The booster battery must be a 12 volt type. If a vehicle is used for jump starting, it must have a negative ground system.
2. When connecting the jumper cables, connect the positive cable to the positive battery post, then connect the negative cable to the negative battery post.

## TECHNICAL SPECIFICATIONS

### ENGINES

General Type:	Heavy duty industrial/commercial
Brand:	Kohler, Kawasaki,
Models:	Kohler CV493T, Kawasaki FH451V (15HP), FH500V (17HP) FH641V(21HP)
Horsepower:	Kohler 18HP; Kaw. 15HP; Kaw. 17HP; Kaw. 21HP.
Type:	4 cycle gas, vertical shaft engines
Displacement:	Kohler: 18HP = 490cc Kawasaki: 15HP = 494cc, 17HP = 494cc, 21HP = 675cc.
Cylinders:	Varied - see manufacturer's specifications
Governor:	Mechanical type governor with variable speed control. Settings: Kawasaki 15HP= 3600 rpm ( $\pm 75$ rpm), idle set at 1200 rpm ( $\pm 75$ rpm), 17HP & 21HP= 3600 rpm ( $\pm 75$ rpm), idle set at 1550 rpm ( $\pm 75$ rpm), Kohler 18HP= 3600 rpm ( $\pm 50$ rpm), idle set at 1500 rpm ( $\pm 75$ rpm).
Exhaust Group:	Single & dual exhaust canister muffler
Fuel Pump Group:	Varied - See manufacturer's specifications
Oil Pump Group:	Varied - See manufacturer's specifications
Valve Group:	Varied - See manufacturer's specifications
Starter/Electrical:	Electronic Ignition with recoil starter or 12 volt battery with alternator, solid state ignition with key start
Charging System:	15 amp

### ENGINE DECK

Thickness:	7 gauge steel
Fuel Tank:	5 gallon (19.0 litres) seamless polyethylene
Drive Wheels/Tires:	SWZU36A - 16x6.50-8 four-ply pneumatic tubeless SWZU 48A & 52A - 18 x 8.50-8 four-ply pneumatic tubeless
Brakes:	Dynamic braking through hydro drive system
Axles:	1" tapered
Handle Bars:	1-1/4" diameter

### DRIVE SYSTEM

Type:	Hydro drive with two variable displacement pumps and two cast-iron high torque motors
Hydro Pumps:	Two Hydro-Gear Model BDP 10L pumps with dump valves for movement without running the engine
Drive Wheel Motors:	Two 12 cu. inch cast-iron high torque motors
Hydro Fluid Cooling Group:	4qt. capacity nylon cooling reservoir, uses, SAE 20W50 fluid and 10 micron filter
Steering / Travel Control::	Independent handle controls for each wheel, squeeze to move from forward to neutral to reverse, neutral lock lever, speed range controlled with single lever (patented design), in-field tracking adjustment with no tools necessary
Parking Brakes:	7.5" drum, band brake, one on each wheel
Dump Valves:	Allows for movement without engine running
Axles:	1" tapered motor shafts
Wire Harness:	14 gauge wire
Safety Group:	Handle actuated operator presence system (patented design), blade / clutch and transmission interlock to engine kill
Forward Speed Range:	0 to 7.4 mph
Reverse Speed Range:	0 to 3.0 mph

## TECHNICAL SPECIFICATIONS (CON'T)

### CUTTER DECKS

Type:	SWMU 36 Advantage, SWMU 48 Advantage, SWMU 52 Advantage, SWMU 61 Advantage
Construction:	Out-front design with anti-scalp rollers
Cutting Width:	SWMU36A, 48A: 7-gauge steel with 7-gauge (3/16") steel skirt SWMU52A, 61A: 10-gauge steel with 7-gauge (3/16") steel skirt 35.5" (90.2 cm), 48.0 (122.0 cm), 52.0" (132.0 cm), 61.0" (155.0 cm).
Cutting Height Adjustment:	Adjustable from 1-3/4" to 4-1/4" in 1/4" increments
Cutter Blades:	Marbain™, .197 thickness SWMU 36: Two (2) 18"; SWMU 48: Three (3) 16.5" SWMU 52: Three (3) 18"; SWMU 61: Three (3) 21"
Blade Engagement:	Electric blade brake clutch with instrument panel switch
Discharge Opening:	Extra wide 11.5", 13.75" discharge opening with hinged chute
Caster Wheels:	11 x 4.5 -5 smooth tread flotation, inner tubes, split rims, roller bearings, with quick pin removal
Spindles:	Cast housing, taper roller bearing, low maintenance with top access grease fitting and grease overfill relief poppet
Spindle Pulleys:	Cast-iron with easily removed taper hubs
Idler Pulley:	5" diameter pulley, welded and riveted construction, 1-3/8" O.D. Bearings
Idler Arm:	Heavy duty dual ball bearing mounting
Cutter Deck Belts:	B-section with Kevlar cord

### ADDITIONAL SPECIFICATIONS

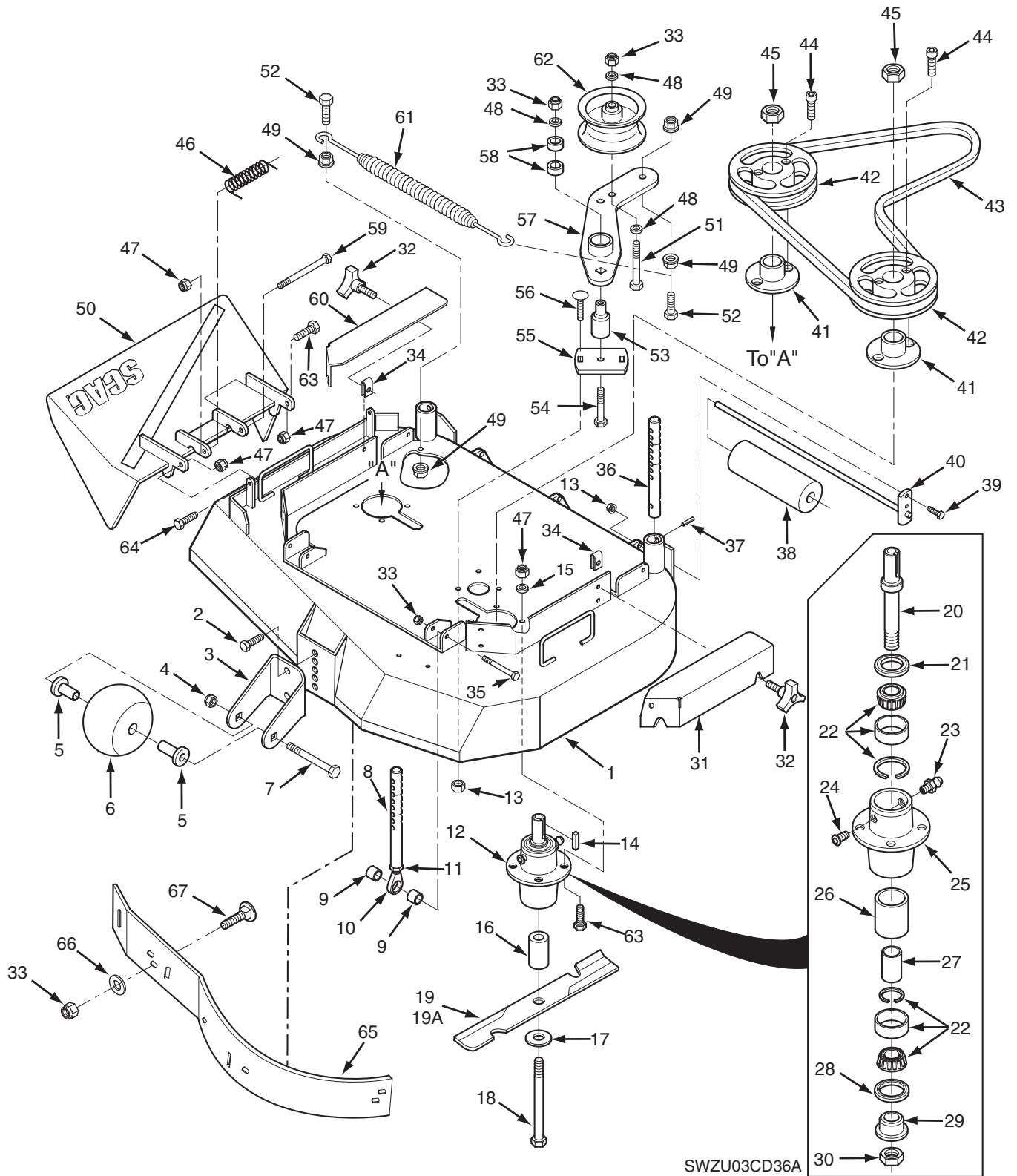
#### OPTIONAL ITEMS/ATTACHMENTS

Fabric Grass Catcher:	GC-F4 Grass Catcher with 4 cubic ft. capacity
Metal Grass Catcher:	GC-4D Grass Catcher with 4 cubic ft. capacity and rope pull dump or pick-up and dump
Turbo-Baffle	High velocity discharge baffle. Improves quality-of-cut, and discharge disbursement.
Mulch Master:	Steel plate fits over discharge opening and steel baffles between each blade with Eliminator Blades. Installs and removes in the field.

#### APPROXIMATE DIMENSIONS

	<b>SWZU36A</b>	<b>SWZU48A</b>	<b>SWZU52A</b>	<b>SWZU61A</b>
Length:	77.5"	78"	79"	79.0"
Length with Grass Catcher:	77.5"	78"	79"	79.0"
Tracking Width:	36.0"	37.0"	37.0"	41.0"
Width:	46.5"	59.0"	60"	70.0"
Width (with discharge chute up):	37.5"	49.0"	53"	62.0"
With with grass catcher:	55.0"	68.0"	71"	80.0"
Height:	43"	41"	40.5"	40.5"
Height with grass catcher:	43"	41"	40.5"	40.5"
Weight	575 lbs.	650 lbs	655 lbs	665 lbs.
Weight with grass catcher:	615 lbs.	690 lbs	695 lbs.	705 lbs.
Turning Radius:	Zero	Zero	Zero	Zero

## 36"A CUTTER DECKS

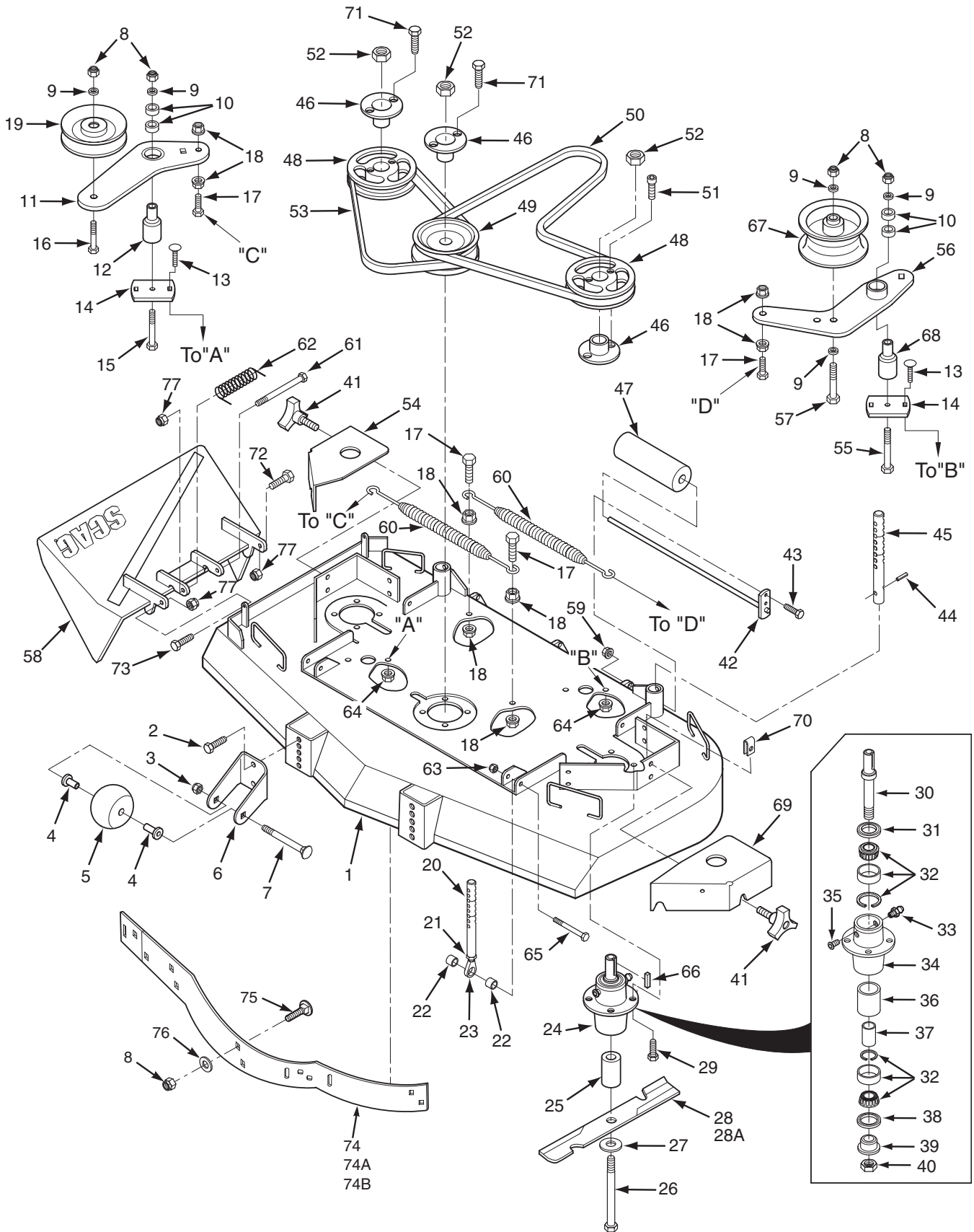




## 36"A CUTTER DECKS

Ref. Part No. Number	Description	Ref. Part No. Number	Description		
1	461485	Cutter Deck (Includes Decals)	35	04001-31	Bolt, Hex Head 3/8-16 x 2-1/2"
2	04017-27	Capscrew, 3/8-16 x 1.0" Serrated Flange Hex Hd	36	43515	Pin, Deck Adj. Rear
3	422478	Bracket, Anti-Scalp Wheel	37	04060-08	Pin, Slotted Spring 3/16 x 1-1/2"
4	04021-05	Lock Nut, 3/8-16 Center Lock	38	48038	Guide, Roller
5	48100-15	Bushing, .376" ID Oilite	39	04001-09	Bolt, Hex Head 5/16-18 x 1"
6	481632	Wheel, Anti-Scalp (Incl. Item 5)	40	451118	Roller Shaft
7	04003-26	Bolt, Carriage 3/8-16 x 4"	41	48926	Tapered Hub
8	481838	Pin Assy., Deck Adj. (Incl. Items 10 & 11)	42	48924	Pulley
9	43512	Spacer, Deck Adjustment Pin	43	481880	Belt, Cutter Deck
10	481539	Rod End, Male 3/8-24 RH Thread	44	04015-14	Capscrew, Socket Head. 1/4-20 x 1-3/8"
11	04020-25	Nut, 3/8-24 Jam	45	04020-09	Hex Nut, 5/8-11
12	46631	Spindle Assembly	46	482245	Spring, Chute Return
13	04019-03	Nut, 5/16-18 Serrated Flange	47	04021-10	Hex Nut, 5/16-18 Elastic Stop
14	04063-08	Key, 1/4" x 1/4" x 2"	48	04043-04	Flatwasher, 3/8" (.938 x .391 x .105)
15	04030-03	Lock Washer 5/16"	49	04019-04	Nut, 3/8-16 Serrated Flange
16	43590	Spacer, Spindle	50	461295	Discharge Chute
17	04043-06	Flatwasher, 5/8 W	51	04001-51	Capscrew, Hex Head 3/8-16 x 3-3/4"
18	04001-41	Bolt, Hex Head 5/8-11 x 9-1/2"	52	04001-136	Capscrew, Hex Head 3/8-16 x 1-1/2"
19	481707	Cutter Blade, 18"	53	43510	Pivot, Idler - Long
19A	481711	Cutter Blade, 18" Hi Lift	54	04001-62	Capscrew, Hex Head 3/8-16 x 3-1/4"
20	43589	Spindle Shaft	55	422713	Base, Idler Pivot
21	481024	Seal, Cutter Spindle Top	56	04003-04	Bolt, Carriage 5/16-18 x 1"
22	481022	Tapered Bearing Set (Two Bearings W/Race)	57	461174	Idler Arm Weldment (Includes Item 58)
23	48114-04	Grease Fitting	58	48224	Ball Bearing
24	48677	Relief Fitting, Cutter Spindle	59	04001-108	Bolt, Hex Head 5/16-18 x 4-1/4"
25	43294	Spindle Housing	60	422763	Belt Cover, RH
26	43312	Spacer, Outside	61	481597	Spring, Deck Idler
27	43296	Spacer, Inside	62	481962	Pulley, Idler
28	481025	Seal, Cutter Spindle Bottom	63	04001-11	Bolt, Hex Head 5/16-18 x 1-1/2"
29	43297	Spindle Bushing	64	04001-12	Bolt, Hex Head 5/16-18 x 1-3/4"
30	481035	Nut, Spindle	65	423655	Baffle Weldment
31	422762	Belt Cover, LH	66	04041-07	Flatwasher, 3/8" (.391 x .938 x .105)
32	481625-01	Wing Nut, 3/8-16	67	04003-23	Bolt, Carriage 3/8-16 x 1"
33	04021-09	Nut, 3/8-16 Elastic Stop			
34	04110-03	U-Nut, 3/8-16			

## 48"A, 52"A & 61"A CUTTER DECKS



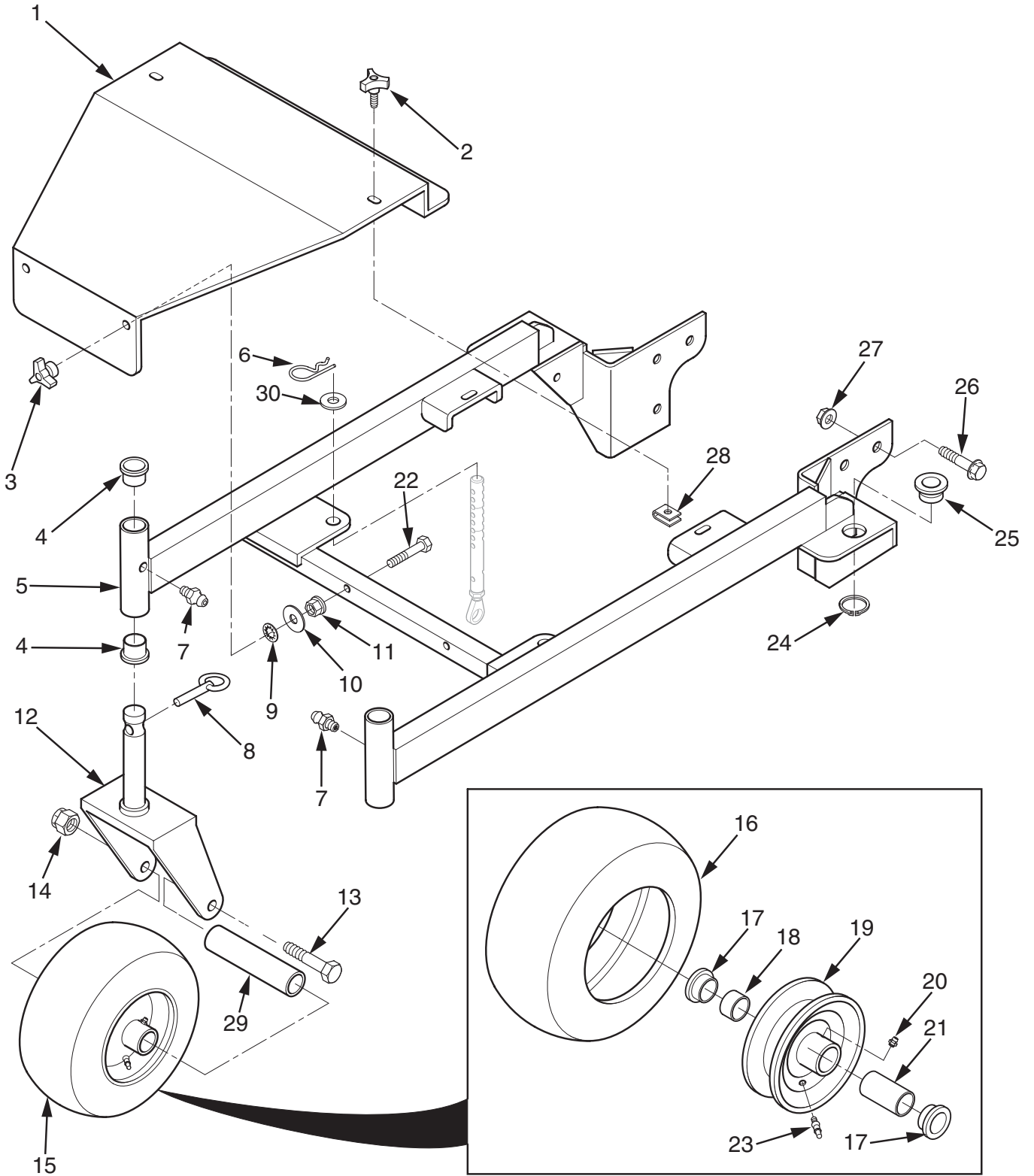
SWZU03CD48A,52A&61A

## 48"A, 52"A & 61"A CUTTER DECKS

Ref. Part No.	Part No.	Description	48	52	61	Ref. Part No.	Part No.	Description	48	52	61
1	461489	Cutter Deck W/ Decals	x			51	04015-14	Capscrew, Sckt. Hd. 1/4-20 x 1-3/8"	x	x	x
	461495*	Cutter Deck W/ Decals (small frame)		x		52	04020-09	Hex Nut, 5/8-11	x	x	x
	461497*	Cutter Deck W/ Decals (large frame)			x	53	48087	Belt, Cutter Deck RH	x		
	461503	Cutter Deck W/ Decals			x		48285	Belt, Cutter Deck RH		x	
2	04017-27	Capscrew, 3/8-16 x 1" Serr. Flng.	x	x	x		48265	Belt, Cutter Deck RH			x
3	04021-05	Lock Nut, 3/8-16 Center Lock	x	x	x	54	422745	Belt Cover, RH	x	x	
4	48100-15	Bushing, .376" ID Oilite	x	x	x		422911	Belt Cover, RH			x
5	481632	Wheel, Anti-Scalp	x	x	x	55	04001-62	Capscrew, HH 3/8-16 x 3-1/4"	x	x	x
6	422478	Bracket, Anti-Scalp Wheel	x	x	x	56	461174	Idler Arm Weldment (Incl. Item 10)	x	x	x
7	04003-26	Bolt, Carriage 3/8-16 x 4"	x	x	x	57	04001-51	Capscrew, Hex Head 3/8-16 x 3-3/4"	x	x	x
8	04021-09	Hex Nut, 3/8-16 Elastic Stop	x	x	x	58	461295	Discharge Chute	x	x	
9	04043-04	Flatwasher, 3/8" (.938 x .391 x .105)	x	x	x		461296	Discharge Chute			x
10	48224	Ball Bearings	x	x	x	59	04019-03	Nut, 5/16-18 Serrated Flange	x	x	x
11	461175	Idler Arm RH (Includes Item 10)	x	x	x	60	481597	Spring, Deck Idler	x	x	x
12	43503	Pivot, Idle - Short	x	x	x	61	04001-154	Bolt, Hex Head 5/16-18 x 4-1/4"	x	x	x
13	04003-04	Bolt, Carriage 5/16-18 x 1"	x	x	x	62	482245	Spring, Chute Return	x	x	x
14	422713	Base, Idler Pivot	x	x	x	63	04021-09	Nut, 3/8-16 Elastic Stop	x	x	x
15	04001-31	Capscrew, Hex Head 3/8-16 x 2-1/2"	x	x	x	64	04019-03	Nut, 5/16-18 Serrated Flange	x	x	x
16	04001-45	Capscrew, Hex Head 3/8-16 x 2"	x	x	x	65	04001-31	Bolt, Hex Head 3/8-16 x 2-1/2"	x	x	x
17	04001-136	Capscrew, Hex Head 3/8-16 x 1-1/2"	x	x	x	66	04063-08	Key, 1/4" x 1/4" x 2"	x	x	x
18	04019-04	Nut, 3/8-16 Serrated Flange	x	x	x	67	481962	Pulley, Idler	x	x	x
19	48181	Pulley, Idler	x	x	x	68	43510	Pivot, Idler - Long	x	x	x
20	481838	Pin Assembly (Incl. 21 & 23)	x	x	x	69	422744	Belt Cover LH	x	x	
21	04020-25	Nut, 3/8-24 Jam	x	x	x		422910	Belt Cover LH			x
22	43512	Spacer, Deck Adjustment Pin	x	x	x	70	04110-03	U-Nut, 3/8-16	x	x	x
23	481539	Rod End, Male 3/8-24	x	x	x	71	04001-14	Bolt, Hex Head 1/4-20 x 1"	x	x	x
24	46631	Spindle Assembly	x	x	x	72	04001-11	Bolt, Hex Head 5/16-18 x 1-1/2"	x	x	x
25	43590	Spacer, Spindle	x	x	x	73	04001-12	Bolt, Hex Head 5/16-18 x 1-3/4"	x	x	x
26	04001-41	Bolt, Hex Head 5/8-11 x 9-1/2"	x	x	x	74	451507	Baffle Weldment 48A	x		
27	04043-06	Flatwasher, 5/8 W	x	x	x	74A	451508	Baffle Weldment 52A		x	
28	481706	Cutter Blade 16-1/2"	x			74B	451509	Baffle Weldment 61A			x
28	481707	Cutter Blade 18"		x		75	04003-23	Bolt, Carriage 3/8-16 x 1"	x	x	x
28	481708	Cutter Blade 21"			x	76	04041-07	Flatwasher, 3/8" (.391 x .938 x .105)	x	x	x
28A	481710	Cutter Blade 16-1/2" Hi Lift	x			77	04021-10	Hex Nut, 5/16-16 Elastic Stop	x	x	x
28A	481711	Cutter Blade 18" Hi Lift		x							
28A	481712	Cutter Blade 21" Hi Lift			x						
29	04001-11	Bolt, Hex Head 5/16-18 x 1-1/2"	x	x	x						
30	43589	Spindle Shaft	x	x	x						
31	481024	Seal, Cutter Spindle - Top	x	x	x						
32	481022	Tapered Bearings (Two)	x	x	x						
33	48114-04	Grease Fitting	x	x	x						
34	43294	Spindle Housing	x	x	x						
35	48677	Relief Fitting, Cutter Spindle	x	x	x						
36	43312	Spacer Outside	x	x	x						
37	43296	Spacer, Inside	x	x	x						
38	481025	Seal, Cutter Spindle - Bottom	x	x	x						
39	43297	Spindle Bushing	x	x	x						
40	481035	Nut, Spindle	x	x	x						
41	481625-01	Wing Nut, 3/8-16	x	x	x						
42	451118	Roller Shaft (small frame)	x	x							
	45944	Roller Shaft (large frame)		x	x						
43	04001-09	Bolt, Hex Head 5/16-18 x 1"	x	x	x						
44	04060-08	Pin, Slotted Spring 3/16 x 1-1/2"	x	x	x						
45	43515	Pin, Deck Adjustment Rear	x	x	x						
46	48926	Tapered Hub	x	x	x						
47	48038	Guide, Roller	x	x	x						
48	48924	Pulley	x	x	x						
49	48923	Pulley, 5.75 Double Groove	x	x							
	48940	Pulley, 6.35 Double Groove			x						
50	481881	Belt, Deck Drive	x								
	481922	Belt, Deck Drive		x							
	481923	Belt, Deck Drive			x						

\* Measure the engine deck to determine frame size. 461495 is for small frame (16") & 461497 is for large frame (20")

## 36"A DECK FRAME



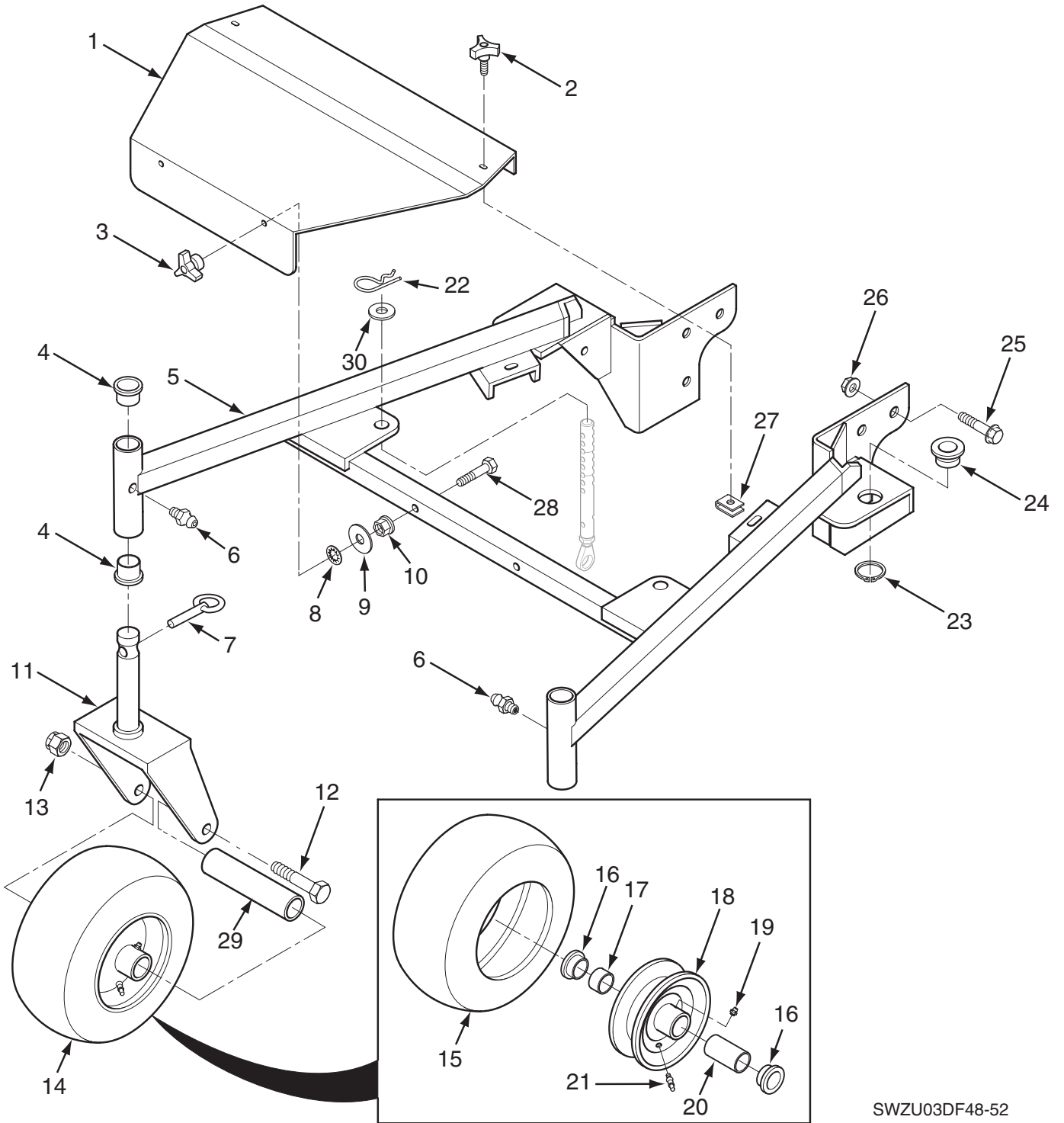
SWZU03DF36

## 36" A DECK FRAME

Ref. Part No. No.	Description
1	461170 Belt Cover With Decal
2	481625-01 Knob With Stud
3	04029-03 Knob, Deck Cover Mounting
4	48100-08 Bushing, Caster
5	461569 Frame Weldment, Deck Mounting - 36" (Includes #24, 25 & 28)
6	04062-04 Hair Pin Cotter, .177" x 3-1/4"
7	48114-04 Grease Fitting Str. 1/4-28 Self Tap
8	04066-01 Quick Pin, .438" Dia.
9	04024-02 Nut, Push-On - 3/8" Dia.
10	04041-07 Flatwasher, 3/8" (.391 x .938 x .105)
11	04019-04 Nut, 3/8-16 Serrated Flange Hex Head
12	45325 Yoke, Caster Wheel
13	04001-80 Capscrew, Hex Head 1/2-13 x 6-1/2"
14	04021-07 Locknut, 1/2-13 Elastic Stop
15	481843 Wheel Assembly, Caster
16	481845 Tire, 11 x 4.00-5
17	481770 Retainer
18	481846 Roller Bearing
19	481844 Rim, 5.0" x 2.75" (Includes #20 & 23)
20	48114-05 Grease Fitting Str. 1/4-28
21	481769 Roller Bearing .625 x 3.25"
22	04001-46 Capscrew, Hex Head 3/8-16 x 2-1/4"
23	* Tire Valve, Purchase Locally
24	04050-16 Retaining Ring 1.50 Ext.
25	43530 Bushing, Deck Adjustment Pin
26	04017-36 Capscrew, 1/2-13 x 1" Serrated Flange Hex Head
27	04112-05 Nut, 1/2-13 Spirallock
28	04110-03 U-Nut, 3/8-16
29	43511 Sleeve, Caster Wheel
30	04040-10 Flatwasher, 5/8" - (.688 x 1.75 x .134)

\* Common hardware which should be purchased locally. All bolts are Grade 5 plated, all other fasteners zinc plated.

## 48"A AND 52"A - DECK FRAME (SMALL FRAME)



SWZU03DF48-52

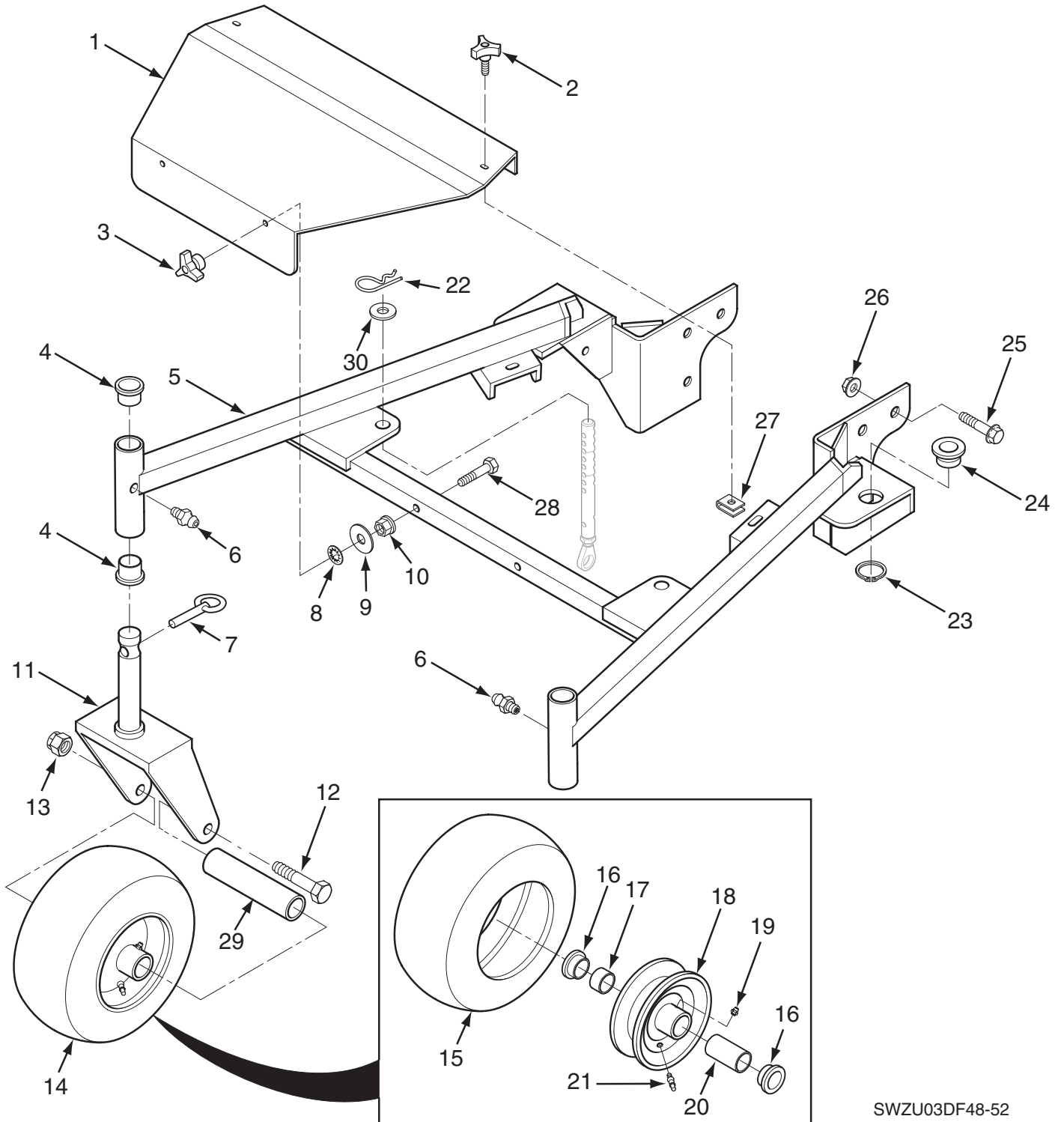
## 48"A AND 52"A - DECK FRAME (\*SMALL FRAME)

Ref. Part No. No.	Description
1	461171 48" Belt Cover With Decal
	461279 52" Belt Cover With Decal
2	481625-01 Knob With Stud
3	04029-03 Knob, Deck Cover Mounting
4	48100-08 Bushing, Caster
5	461571 Frame Weldment, Deck Mounting - 48" (Includes #23, 24 & 27)
	461573 Frame Weldment, Deck Mounting - 52" (Includes #23, 24 & 27)
6	48114-04 Grease Fitting Str. 1/4-28 Self Tap
7	04066-01 Quick Pin, .438" Dia.
8	04024-02 Nut, Push-On - 3/8" Dia.
9	04041-07 Flatwasher, 3/8" (.391 x .938 x .105)
10	04019-04 Nut, 3/8-16 Serrated Flange Hex Head
11	45325 Yoke, Caster Wheel
12	04001-80 Capscrew, Hex Head 1/2-13 x 6-1/2"
13	04021-07 Locknut, 1/2-13 Elastic Stop
14	481843 Wheel Assembly, Caster
15	481845 Tire, 11 x 4.00-5
16	481770 Retainer
17	481846 Roller Bearing
18	481844 Rim, 5" x 2-3/4" (Includes #19 & 21)
19	48114-05 Grease Fitting Str. 1/4-28
20	481769 Roller Bearing .625 x 3.25"
21	** Tire Valve, Purchase Locally
22	04062-04 Hair Pin Cotter, .177 x 3-1/4"
23	04050-16 Retaining Ring 1.50 Ext.
24	43530 Bushing, Deck Adjustment Pin
25	04017-36 Capscrew, 1/2-13 x 1" Serrated Flange Hex Head
26	04112-05 Nut, 1/2-13 Spiralock
27	04110-03 U-Nut, 3/8-16
28	04001-46 Capscrew, Hex Head 3/8-16 x 2-1/4"
29	43511 Sleeve, Caster Wheel
30	04040-10 Flatwasher, 5/8" - (.688 x 1.75 x .134)

\* Measure the width of the engine deck to determine frame size. "Small Frame" is 16" wide.

\*\* Common hardware which should be purchased locally. All bolts are Grade 5 plated, all other fasteners zinc plated.

## 52"A & 61"A - DECK FRAME (LARGE FRAME)



SWZU03DF48-52



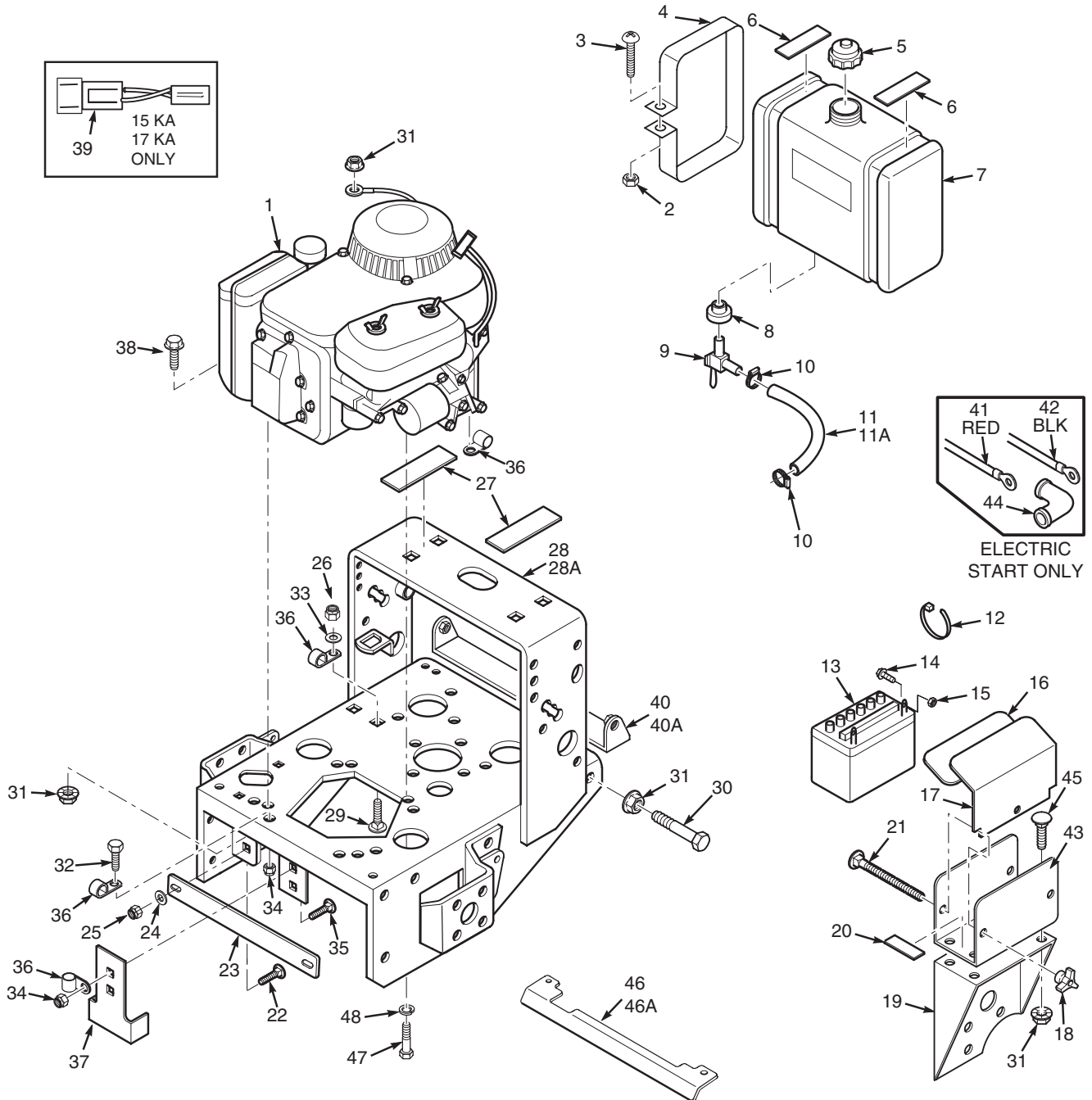
## 52"A & 61"A - DECK FRAME (\*LARGE FRAME)

Ref. No.	Part No.	Description	52A	61A
1	461280	Belt Cover With Decals	x	
	461281	Belt Cover With Decals		x
2	481625-01	Knob With Stud	x	x
3	04029-03	Knob, Deck Cover Mounting	x	x
4	48100-08	Bushing, Caster	x	x
5	461575	Frame Weldment, Deck Mounting (Incl. #23, 24 & 27)	x	
	461577	Frame Weldment, Deck Mounting (Incl. #23, 24 & 27)		x
6	48114-04	Grease Fitting Str. 1/4-28 Self Tap	x	x
7	04066-01	Quick Pin, .438" Dia.	x	x
8	04024-02	Nut, Push-On - 3/8" Dia.	x	x
9	04041-07	Flatwasher, 3/8" (.391 x .938 x .105)	x	x
10	04019-04	Nut, 3/8-16 Serrated Flange Hex Head	x	x
11	45325	Yoke, Caster Wheel	x	x
12	04001-80	Capscrew, Hex Head 1/2-13 x 6-1/2"	x	x
13	04021-07	Locknut, 1/2-13 Elastic Stop	x	x
14	481843	Wheel Assembly, Caster	x	x
15	481845	Tire, 11 x 4.00-5	x	x
16	481770	Retainer	x	x
17	481846	Roller Bearing	x	x
18	481844	Rim, 5.0" x 2-3/4" (Incl. #19 & 21)	x	x
19	48114-05	Grease Fitting Str. 1/4-28	x	x
20	481769	Roller Bearing .625 x 3.25"	x	x
21	**	Tire Valve, Purchase Locally	x	x
22	04062-04	Hair Pin Cotter, .177 x 3-1/4"	x	x
23	04050-16	Retaining Ring 1.50 Ext.	x	x
24	43530	Bushing, Deck Adjustment Pin	x	x
25	04017-36	Capscrew, 1/2-13 x 1" Serrated Flange Hex Head	x	x
26	04112-05	Nut, 1/2-13 Spiralock	x	x
27	04110-03	U-Nut, 3/8-16	x	x
28	04001-46	Capscrew, Hex Head 3/8-16 x 2-1/4"	x	x
29	43511	Sleeve, Caster Wheel	x	x
30	04040-10	Flatwasher, 5/8" - (.688 x 1.75 x .134)	x	x

\* Measure the width of the engine deck to determine frame size. "Large Frame" is 20" wide.

\*\* Common hardware which should be purchased locally. All bolts are Grade 5 plated, all other fasteners zinc plated.

## ENGINE DECK



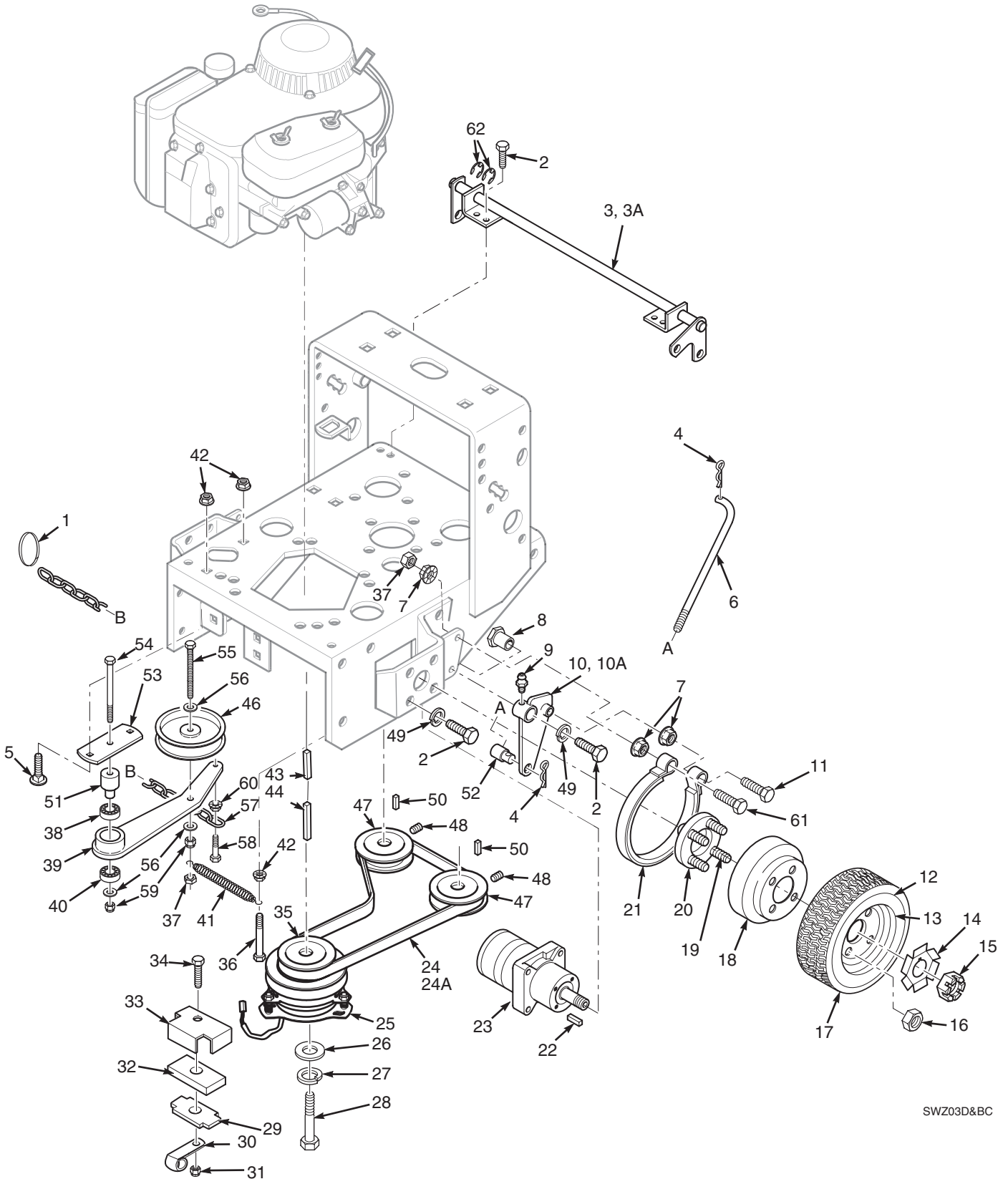
SWZ2003ED

## ENGINE DECK

Ref. No.	Part No.	Description	15KA	17KA	21KAE	18KH
1	482144	Engine 15KA Kawasaki	x			
	481563	Engine 17KA Kawasaki		x		
	481964	Engine 21KAE Kawasaki			x	
	482677	Engine 18KH Kohler				x
2	04020-02	Hex Nut, 1/4-20	x	x	x	x
3	04010-10	Screw, 1/4-20 x 2" Rnd. Hd. Phil.	x	x	x	x
4	421239	Strap, Fuel Tank	x	x	x	x
5	481603	Cap, Fuel Tank	x	x	x	x
6	48292	Pad, Rubber-Fuel Tank - Upper	x	x	x	x
7	46846	Fuel Tank Assy. (Incl. Items 8 & 9)	x	x	x	x
8	48309	Bushing	x	x	x	x
9	48308	Valve, Fuel Shut-off	x	x	x	x
10	48059-01	Clamp, Fuel Hose	x	x	x	x
11	48058	Fuel Hose, 1/4 ID x 20" KA	x	x	x	
11A	48058	Fuel Hose, 1/4 ID x 10" KH				x
12	48028-05	Cable Tie	x	x	x	x
13	482700	Battery			x	
14	04001-44	Bolt, 1/4-20 x 1/2" Hex Head			x	
15	04020-02	Nut, 1/4-20			x	
16	48099	Pad			x	
17	42392	Battery Cover			x	
18	04029-01	Wing Nut, 1/4-20			x	
19	423746	Battery Support			x	
20	48661	Pad, Rubber			x	
21	04003-01	Bolt, Carriage, 1/4-20 x 6"			x	
22	04003-11	Bolt, Carriage, 3/8-16 X 1-1/4"	x	x	x	x
23	423748	Brace, 16"	x	x		x
	423749	Brace, 20"			x	
24	04043-04	Flat Washer .391 x .938 x .105	x	x	x	x
25	04021-09	Nut, 3/8-16 Elastic Stop	x	x	x	x
26	04021-08	Nut, 1/4-20 Elastic Stop	x	x	x	x
27	48205	Pad, Rubber-Fuel Tank Lower	x	x	x	x
28	461542	Engine Deck, 16" Wide, w/decals	x	x		x
28A	461546	Engine Deck, 20" Wide, w/decals			x	
29	04003-09	Bolt, Carriage, 1/4-20 x 1-1/4"	x	x	x	x
30	04001-17	Bolt, 5/16-18 x 2" Hex Head	x	x	x	x
31	04019-03	Nut, 5/16-18 Serr. Flange	x	x	x	x
32	04001-08	Hex Head Bolt, 5/16-18 x 3/4"	x	x	x	x
33	04040-14	Flat Washer 1/4"	x	x	x	x
34	04021-10	Nut, 5/16-18 Elastic Stop	x	x	x	x
35	04003-04	Bolt, Carriage, 5/16-18 x 1"	x	x	x	x
36	48030-09	Clamp	x	x	x	x
37	421370	Clutch Bracket	x	x	x	x
38	04017-19	CapScrw, 5/16-18 x 1-1/2" Sr. Flg	x	x	x	
39	481717	Wire Hrns. Adapter, 15 & 17KA	x	x		
40	45418	Pulley Guard, 16" Frame	x	x		x
40A	45419	Pulley Guard, 20" Frame			x	
41	48029-02	Battery Cable, 31-1/2" Red			x	
42	48029-14	Battery Cable, 31-1/2" Black			x	
43	423308	Battery Box			x	
44	48126	Rubber Boot			x	
45	04003-12	Bolt, Carriage, 5/16-18 x 3/4"			x	
*46	423476	Heatshield (16" Small Frame)	x	x		x
*46A	422885	Heatshield (20" Large Frame)			x	
47	04017-19	Bolt, 5/16-18 x 1" Serrated Flange Hex Head				x
48	04030-03	Lock Washer 5/16"				x

\* Measure the engine deck to determine frame size. 423476 is for small frame (16") & 422885 is for large frame (20")

## DRIVE AND BRAKE COMPONENTS

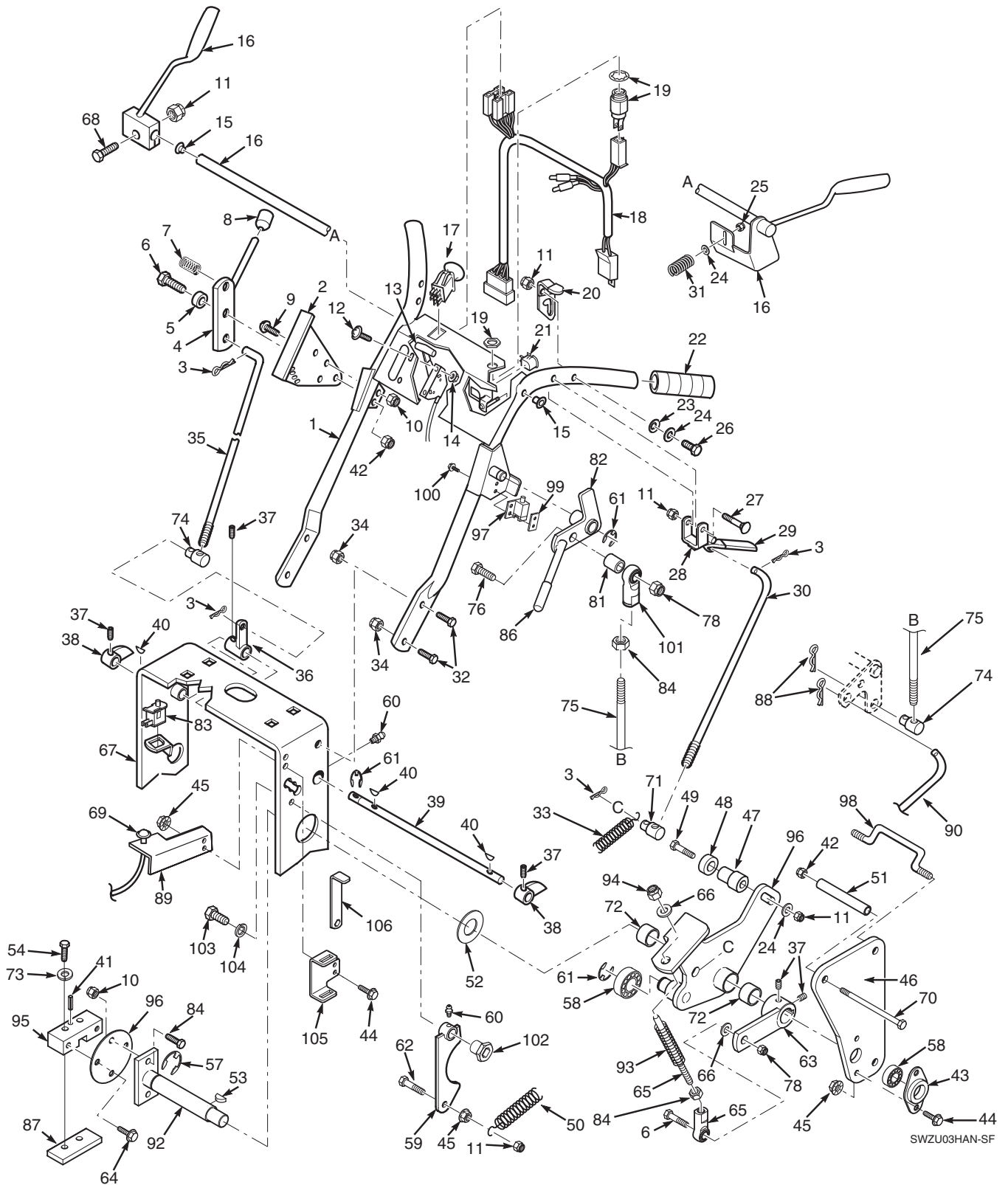


SWZ03D&BC

## DRIVE AND BRAKE COMPONENTS

Ref. No.	Part. No.	Description	15KA	17KA	21KAE	18KH
1	481876	Ring, Split	x	x	x	x
2	04001-19	Bolt, 3/8-16 x 1" Hex Head	x	x	x	
3	45842	Brake Shaft Assembly (16" Small Frame)	x	x		x
3A	45854	Brake Shaft Assembly (20" Large Frame)			x	
4	04062-01	Hair Pin Cotter, .094 x 1.62	x	x	x	x
5	04003-12	Carrage Bolt, 5/16-18 x 3/4"	x	x	x	x
6	44126	Rod, Brake Lower	x	x	x	x
7	04019-04	Nut, 3/8-16 Serr. Flange	x	x	x	x
8	43415	Bushing, Brake	x	x	x	x
9	48114-05	Grease Fitting	x	x	x	x
10	45860	Brake Actuator Wlmt., LH	x	x	x	x
10A	45861	Brake Actuator Wlmt., RH	x	x	x	x
11	04001-46	Bolt, 3/8-16 x 2-1/4"	x	x	x	x
12	481871	Tire, 18 x 6.50, 4 ply	x			
	481869	Tire, 18 x 8.50, 4 ply		x	x	x
13	481890	Rim Assy	x			
	481868	Rim Assy		x	x	x
14	422214	Lock Washer, Wheel Motor	x	x	x	x
15	04027-01	Hex Castle Nut, 3/4-16 UNF	x	x	x	x
16	04028-02	Nut, Lug	x	x	x	x
17	481870	Wheel Assy., (incl. #12 & 13)	x			
	481867	Wheel Assy., (Incl. #12 & 13)		x	x	x
18	422215	Brake Drum	x	x	x	x
19	04008-01	1/2-20 Serrated Bolt	x	x	x	x
20	46928	Hub, Wheel	x	x	x	x
21	481470	Brake Band, 7.5"	x	x	x	x
22	04063-07	Key, 3/16" X 3/4" Woodruff	x	x	x	x
23	481416	Wheel Motor	x	x	x	x
24	481837	Belt, Pump Drive (16" Frame)	x	x		x
24A	481864	Belt, Pump Drive (20" Frame)			x	
25	461397	Electric Clutch	x	x	x	x
26	04041-28	Flat Washer .469 x 1.75 x .25	x	x	x	x
27	04030-05	Lock Washer, 7/16"	x	x	x	x
28	04102-05	Hex Head Bolt, 7/16-20 x 2-3/4"	x	x	x	x
29	422534	Plate, Backing	x	x	x	x
30	48030-09	Clamp	x	x	x	x
31	04021-10	Nut, 5/16-18 Elastic Stop	x	x	x	x
32	481716	Rubber Pad, Clutch Stop	x	x	x	x
33	422533	Retainer, Clutch Stop	x	x	x	x
34	04001-12	Hex Head Bolt, 5/16-18 x 1-3/4"	x	x	x	x
35	481934	Pulley, Pump Drive Engine	x	x	x	x
36	04001-13	Hex Head Bolt, 5/16-18 x 2-3/4"	x	x	x	x
37	04021-05	Nut, 3/8-16 Center Lock	x	x	x	x
38	48224	Ball Bearings	x	x	x	x
39	461183	Idler Arm Assembly (incl. #38 & 40)	x	x	x	x
40	48224	Ball Bearings	x	x	x	x
41	481835	Spring, Pump Belt Idler	x	x	x	x
42	04019-03	Nut, 5/16-18 Serr. Flange	x	x	x	x
43	04063-20	Key, 1/4" x 1/4" x 1" Clutch Mtg.	x	x	x	x
44	04063-24	Key, 1/4" x 1/4" x 2-3/4" Pulley Mtg.	x	x	x	x
45	04041-07	Flat Washer, 3/8"	x	x	x	x
46	482306	Pulley, Idler 4.5"	x	x	x	x
47	48586	Pulley, Pump Shaft	x	x	x	x
48	04012-04	Setscrew, 5/16-18 x 3/8"	x	x	x	x
49	04030-04	Lockwasher, 3/8"	x	x	x	x
50	04063-14	Key, 5.0 x 5.0 x 25mm	x	x	x	x
51	43504	Pivot, Idler (Long)	x	x	x	x
52	43032	Swivel Joint	x	x	x	x
53	422713	Base, Idler Pivot	x	x	x	x
54	04001-54	Bolt, Hex Head 3/8-16 x 3"	x	x	x	x
55	04001-161	Bolt, Hex Head 3/8-16 x 2-3/4"	x	x	x	x
56	04043-04	Flatwasher 3/8"	x	x	x	x
57	481873	Chain	x	x	x	x
58	04001-59	Bolt, Hex Head 1/4-20 x 1-1/4"	x	x	x	x
59	04021-09	Nut, Hex Elastic Stop 3/8-16	x	x	x	x
60	04019-02	Nut, Serrated Flange 1/4-20	x	x	x	x
61	04001-151	Bolt, Hex Head 3/8-16 x 2-1/4"	x	x	x	x
62	04050-02	Retaining Ring, 3/4" Ext. "E"	x	x	x	x

## HANDLE ASSEMBLY SMALL FRAME (16")

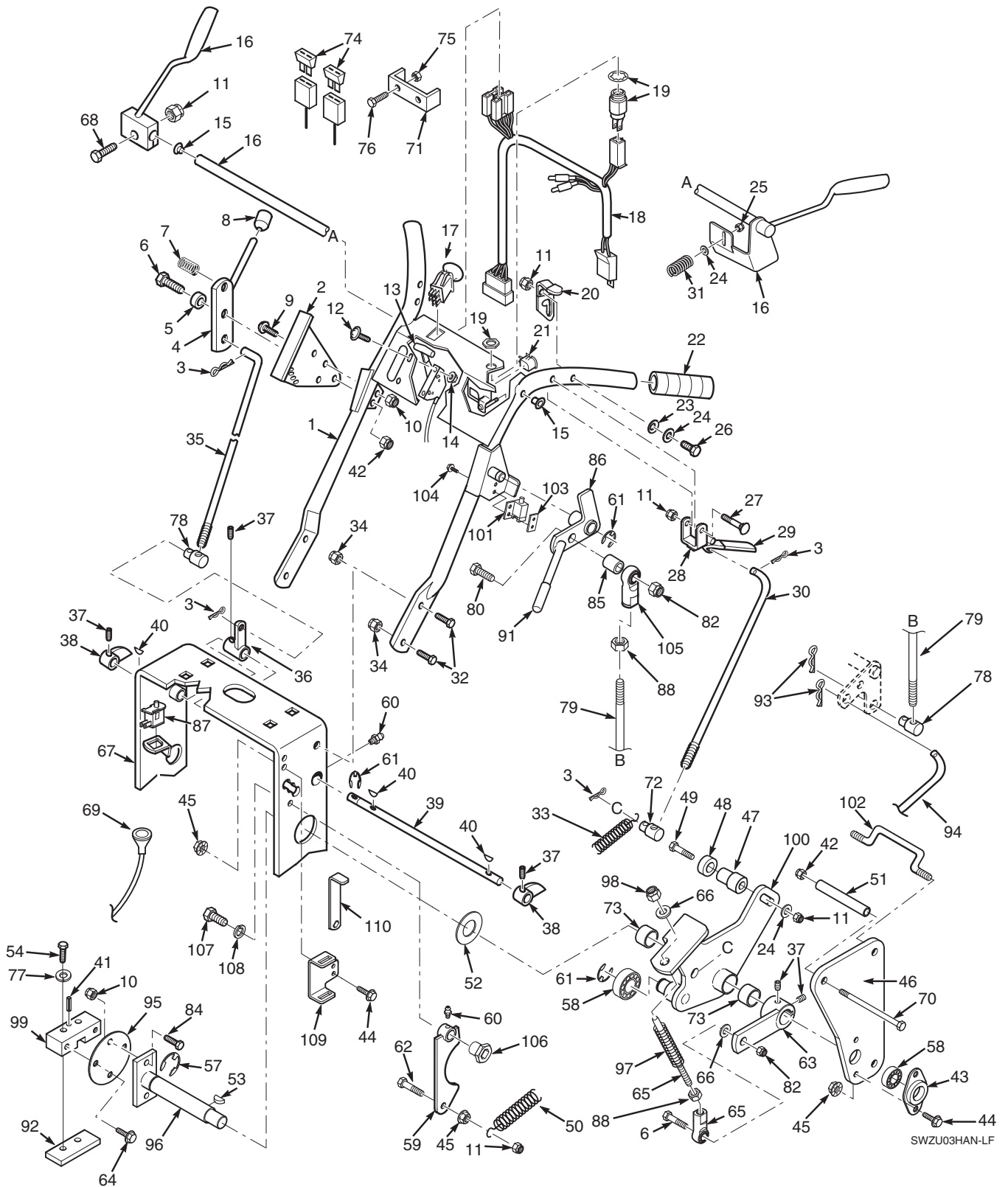


## HANDLE ASSEMBLY \*SMALL FRAME (16")

Ref. No.	Part No.	Description				Ref. No.	Part No.	Description			
			15KA	17KA	18KH				15KA	17KA	18KH
1	461598	Upper Handle Wlmt. W/Decals	x	x	x	56	04030-03	Lock Washer, 5/16"	x	x	x
2	42675	Quadrant, Speed Control	x	x	x	57	04050-02	Clip, Retaining, 3/4" diameter	x	x	x
3	04062-02	Hairpin, .094 x 1.19	x	x	x	58	48224	Bearing, Ball Neutral Return	x	x	x
4	45282	Lever, Speed Adjustment	x	x	x	59	46747	Cam, Neutral (incl. grease fitting)	x	x	x
5	43086	Bushing, Speed Adjustment Lever	x	x	x	60	48114-05	Grease Fitting, 1/4-28 UNF	x	x	x
6	04001-20	Hex Head Bolt, 3/8-16 x 1-1/2"	x	x	x	61	04050-01	Retaining Ring, 5/8"	x	x	x
7	48493-01	Ball Plunger	x	x	x	62	04001-09	Hex Head Bolt, 5/16-18 x 1"	x	x	x
8	48092	Knob, Speed Adjustment	x	x	x	63	482146	Lever, Speed Control	x	x	x
9	04014-01	Capscrew, 1/4-20 x 3/4" FHHS	x	x	x	64	04001-01	Bolt, Hex Head 1/4-20 x 3/4"	x	x	x
10	04021-08	Nut, 1/4-20 Elastic Stop	x	x	x	65	482431	Linkage Assembly	x	x	x
11	04021-10	Nut, 5/16-18 Elastic Stop	x	x	x	66	04041-07	Flat Wshr., 15/16" x .3906 x 12 ga	x	x	x
12	04010-01	Screw, #10-32 x 1/2" PW HD	x	x	x	67	461542	Deck, Engine 16" Wide	x	x	x
13	48946	Throttle Control	x	x		68	04001-10	Hex Head Bolt, 5/16-18 x 1-1/4"	x	x	x
	482814	Throttle Control			x	69	482314	Choke Control	x	x	
14	04019-01	Nut, #10-32 Serr. Flange	x	x	x	70	04001-152	Bolt, Hex Head 3/8-16 x 4-1/4"	x	x	x
15	48312	Bushing	x	x	x	71	43520	Swivel Joint, Steering Rod	x	x	x
16	45572	Handle, Oper. Presence-RH	x	x	x	72	48100-06	Bushing	x	x	x
	45573	Handle, Oper. Presence-LH	x	x	x	73	04030-02	Lockwasher, 1/4"	x	x	x
17	481687	Switch,Elec.Clutch Eng. (incl.Nut)	x	x	x	74	43032	Swivel Joint	x	x	x
18	482686	Wire Harness, Manual Start	x	x	x	75	44143	Rod, Brake Lever	x	x	x
19	48609	Key Switch, Manual Srt. (inc. Hdw)	x	x	x	76	04001-45	Hex Hd. Bolt, 3/8-16 x 2"	x	x	x
20	461242	Neutral Latch-RH	x	x	x	77	04015-13	Soc. Hd. Capscrew, #8-32 x 1/2"	x	x	x
	461241	Neutral Latch-LH	x	x	x	78	04021-09	Nut, 3/8-16 Elastic Stop	x	x	x
21	48717	Switch, Neutral Interlock	x	x	x	79	04041-23	Washer #8-.170 x .375 x .032	x	x	x
22	48159	Grip	x	x	x	80	04001-01	Bolt, 1/4-20 x 3/4"	x	x	x
23	04032-01	Washer, Curved Spring	x	x	x	81	43286	Spacer	x	x	x
24	04040-15	Flat Washer	x	x	x	82	461605	Parking Brake Lever with Grip	x	x	x
25	04021-10	Nut, 5/16-18 Elastic Stop	x	x	x	83	48717	Switch, Safety	x	x	x
26	04001-17	Hex Head Bolt, 5/16-18 x 2"	x	x	x	84	04020-14	Nut, 3/8-24	x	x	x
27	04001-53	Hex Hd. Bolt, 5/16-18 x 2-1/2"	x	x	x	85	481420	Bearing, Neutral Lock	x	x	x
28	46089	Lever, Steering Control (incl. 29)	x	x	x	86	48342	Grip, Parking Brake	x	x	x
29	48144	Grip, Steering Control	x	x	x	87	421203	Plate, Threaded	x	x	x
30	44141	Rod, Steering Control	x	x	x	88	04062-01	Hairpin, .094 x 1.62"	x	x	x
31	48951	Spring, Handle Return	x	x	x	89	421622	Bracket, Choke Mtg.	x	x	
32	04017-27	Capscr., 3/8-16 x 1" Ser. Flange	x	x	x	90	44126	Rod, Lower Brake	x	x	x
33	482348	Spring	x	x	x	91	422273	Plate, Coupler	x	x	x
34	04019-04	Nut, 3/8-16 Serr. Flange	x	x	x	92	451113	Shaft, Pump Control	x	x	x
35	44142	Rod Speed Control	x	x	x	93	481879	Spring	x	x	x
36	451562	Bellcrank, Speed Control	x	x	x	94	04021-09	Nut, 3/8-16 Elastic Stop	x	x	x
37	04012-02	Setscrew, 1/4-28 x .25"	x	x	x	95	48829	Block, Pump Control	x	x	x
38	46335	Cam, Speed Control (incl. SS)	x	x	x	96	461481	Control, LH (inc. bush. & decal)	x	x	x
39	43166	Jackshaft, Speed Control	x	x	x		461482	Control, RH (inc. bush. & decal)	x	x	x
40	04063-13	Key, 1/8 x 1/2" Woodruff	x	x	x	97	481545	Switch, Parking Brake	x	x	x
41	04060-06	Roll Pin, 3/16-.75	x	x	x	98	44144	Rod, Offset	x	x	x
42	04021-10	Nut, Elastic Stop 3/8-16	x	x	x	99	422373	Plate, Threaded	x	x	x
43	48223	Flange, Bearing	x	x	x	100	04010-12	Screw #10-32 Slt'd Hex Wshr Hd	x	x	x
44	04017-17	Capscrew, 5/16-18 x 1" Serr. Flg.	x	x	x	101	48464	Ball Joint, RH Thread	x	x	x
45	04019-03	Nut, 5/16-18 Serrated Flange	x	x	x	102	43415	Bushing, Brake	x	x	x
46	422795	Plate, Side	x	x	x	103	04001-19	Bolt, Hex Head 3/8-16 x 1"	x	x	x
47	43536	Spacer, Neutral Bearing	x	x	x	104	04030-04	Lockwasher, 3/8 Spring	x	x	x
48	48409	Bearing, Speed Ctrl. Bellcrank	x	x	x	105	423876	Mounting Bracket, Wrench	x	x	x
49	04001-69	Hex Head Bolt, 5/16-18 x 1-3/4"	x	x	x	106	423875	Wrench	x	x	x
50	48494-02	Spring, Return	x	x	x						
51	43522	Spacer, Side Plate	x	x	x						
52	04041-08S	Flat Washer, .766 x 1.25 x .035	x	x	x						
53	04063-07	Key, Woodruff, 3/16 x 3/4"	x	x	x						
54	04001-59	Bolt, Hex Head, 1/4-20 x 1-1/4"	x	x	x						
55	04001-08	HH Bolt, 5/16-18 x 3/4"	x	x	x						

\* Measure the width of the engine deck to determine frame size. "Small Frame" is 16" wide.

## HANDLE ASSEMBLY LARGE FRAME (SWZU-21KAE)



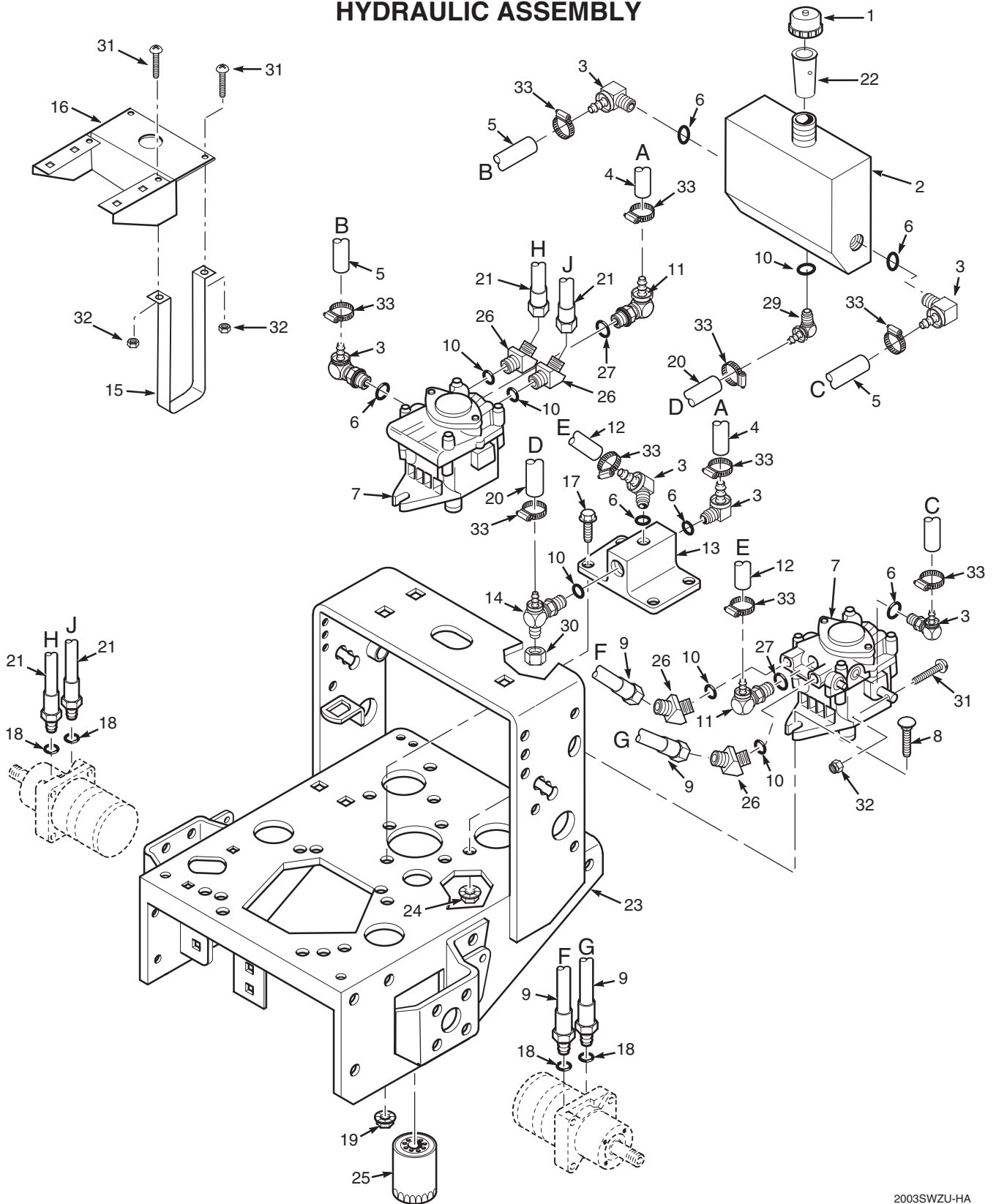
SWZU03HAN-LF



## HANDLE ASSEMBLY LARGE FRAME (SWZU-21KAE)

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	461599	Upper Handle W/mt. W/Decals	56	04030-03	Lock Washer, 5/16"
2	42675	Quadrant, Speed Control	57	04050-02	Clip, Retaining, 3/4" diameter
3	04062-02	Hairpin, .094 x 1.19	58	48224	Bearing, Ball Neutral Return
4	45282	Lever, Speed Adjustment	59	46747	Cam, Neutral (incl. grease fitting)
5	43086	Bushing, Speed Adjustment Lever	60	48114-05	Grease Fitting, 1/4-28 UNF
6	04001-20	Hex Head Bolt, 3/8-16 x 1-1/2"	61	04050-01	Retaining Ring, 5/8"
7	48493-01	Ball Plunger	62	04001-09	Hex Head Bolt, 5/16-18 x 1"
8	48092	Knob, Speed Adjustment	63	482146	Lever, Speed Control
9	04014-01	Capscrew, 1/4-20 x 3/4" FHHS	64	04001-01	Bolt, Hex Head 1/4-20 x 3/4"
10	04021-08	Nut, 1/4-20 Elastic Stop	65	482431	Linkage Assembly
11	04021-10	Nut, 5/16-18 Elastic Stop	66	04041-07	Flat Wshr., 15/16 x .3906 x 12 ga
12	04010-01	Screw, #10-32 x 1/2" PW HD	67	461546	Deck, Engine 20" Wide
13	48946	Throttle Control	68	04001-10	Hex Head Bolt, 5/16-18 x 1-1/4"
14	04019-01	Nut, #10-32 Serr. Flange	69	482314	Choke Control
15	48312	Bushing	70	04001-152	Bolt, Hex Head 3/8-16 x 4-1/4"
16	45572	Handle, Oper. Presence-RH	71	42413	Fuse Holder
	45571	Handle, Oper. Presence-LH	72	43520	Swivel Joint, Steering Rod
17	481687	Switch, Elec. Clutch Eng. (incl. Nut)	73	48100-06	Bushing
18	482687	Wire Harness, Electric Start	74	48298	Blade Fuse, 20A
19	48798	Key Switch, Electric Srt. (inc. Hdw)	75	04021-01	Nut, #10-32 Elastic Stop
20	461242	Neutral Latch-RH	76	04010-03	Screw, #10-32 x 1-1/2" Phillips
	461241	Neutral Latch-LH	77	04030-02	Lockwasher, 1/4"
21	48717	Switch, Neutral Interlock	78	43032	Swivel Joint
22	48159	Grip	79	44143	Rod, Brake Lever
23	04032-01	Washer, Curved Spring	80	04001-45	Hex Hd. Bolt, 3/8-16 x 2"
24	04040-15	Flat Washer	81	04015-13	Soc. Hd. Capscrew, #8-32 x 1/2"
25	04021-10	Nut, 5/16-18 Elastic Stop	82	04021-09	Nut, 3/8-16 Elastic Stop
26	04001-17	Hex Head Bolt, 5/16-18 x 2"	83	04041-23	Washer #8-.170 x .375 x .032
27	04001-53	Hex Hd. Bolt, 5/16-18 x 2-1/2"	84	04001-01	Bolt, 1/4-20 x 3/4"
28	46089	Lever, Steering Control (incl. 29)	85	43286	Spacer
29	48144	Grip, Steering Control	86	461605	Parking Brake Lever with Grip
30	44141	Rod, Steering Control	87	48717	Switch, Safety
31	48951	Spring, Handle Return	88	04020-14	Nut, 3/8-24
32	04017-27	Capscre., 3/8-16 x 1" Ser. Flange	89	481411	Bushing, Bearing Retainer
33	482348	Spring	90	481420	Bearing, Neutral Lock
34	04019-04	Nut, 3/8-16 Serr. Flange	91	48342	Grip, Parking Brake
35	44142	Rod Speed Control	92	421203	Plate, Threaded
36	451562	Bellcrank, Speed Control	93	04062-01	Hairpin, .094 x 1.62"
37	04012-02	Setscrew, 1/4-28 x .25"	94	44126	Rod, Lower Brake
38	46335	Cam, Speed Control (incl. SS)	95	422273	Plate, Coupler
39	43155	Jackshaft, Speed Control	96	451113	Shaft, Pump Control
40	04063-13	Key, 1/8 x 1/2" Woodruff	97	481879	Spring
41	04060-06	Roll Pin, 3/16-.75	98	04021-09	Nut, 3/8-16 Elastic Stop
42	04021-10	Nut, Elastic Stop 3/8-16	99	48829	Block, Pump Control
43	48223	Flange, Bearing	100	461481	Control, LH (inc. bush. & decal)
44	04017-17	Capscrew, 5/16-18 x 1" Serr. Flg.		461482	Control, RH (inc. bush. & decal)
45	04019-03	Nut, 5/16-18 Serrated Flange	101	481545	Switch, Parking Brake
46	422795	Plate, Side	102	44144	Rod, Offset
47	43536	Spacer, Neutral Bearing	103	422373	Plate, Threaded
48	48409	Bearing, Speed Ctrl. Bellcrank	104	04010-12	Screw #10-32 Slt'd Hex Wshr Hd
49	04001-69	Hex Head Bolt, 5/16-18 x 1-3/4"	105	48464	Ball Joint, RH Thread
50	48494-02	Spring, Return	106	43415	Bushing, Brake
51	43522	Spacer, Side Plate	107	04001-19	Bolt, Hex Head 3/8-16 x 1"
52	04041-08S	Flat Washer, .766 x 1.25 x .035	108	04030-04	Lockwasher, 3/8 Spring
53	04063-07	Key, Woodruff, 3/16 x 3/4"	109	423876	Mounting Bracket, Wrench
54	04001-59	Bolt, Hex Head, 1/4-20 x 1-1/4"	110	423875	Wrench
55	04001-08	Bolt, Hex Head, 5/16-18 x 3/4"			

## HYDRAULIC ASSEMBLY

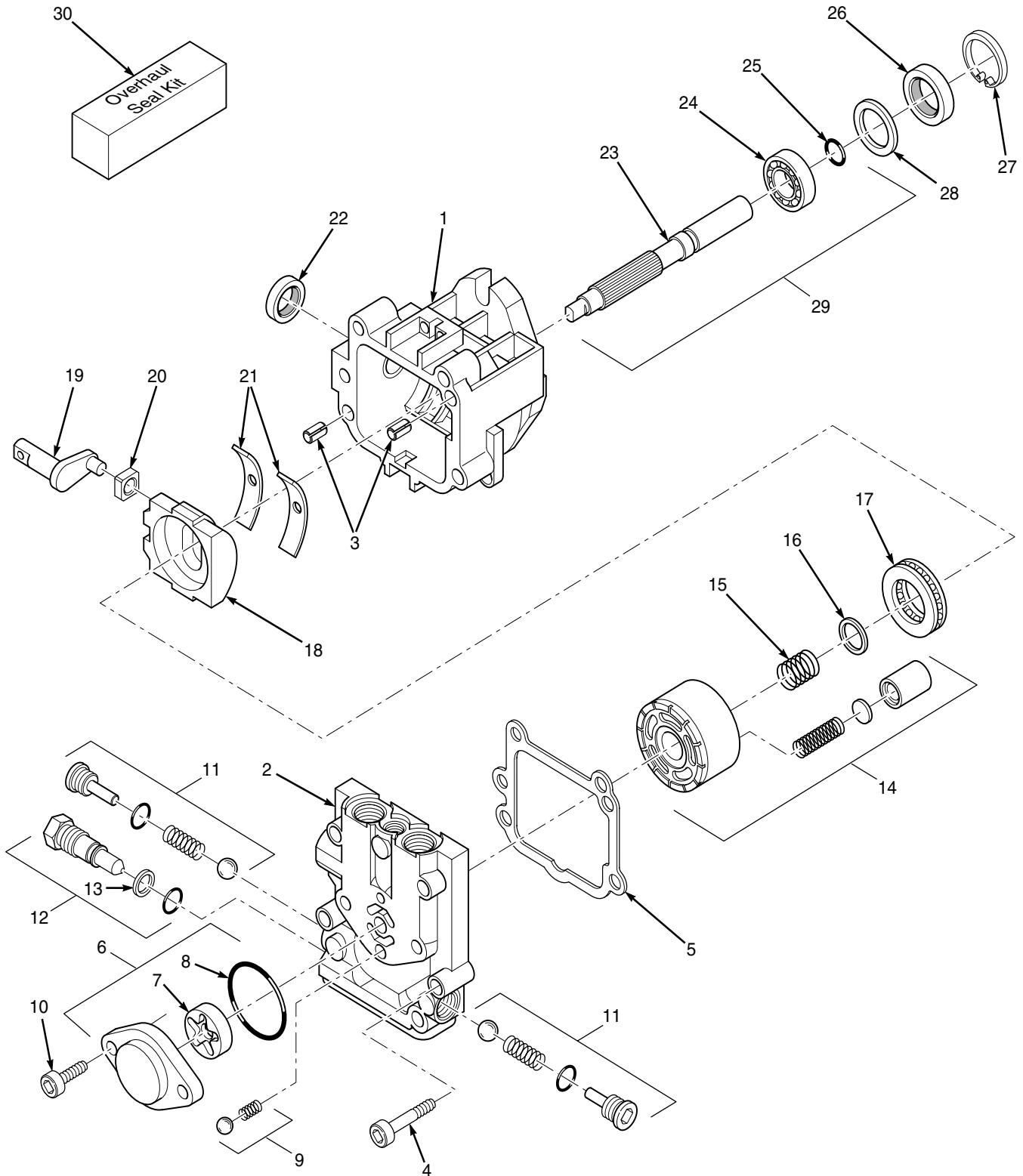


2003SWZU-HA

## HYDRAULIC ASSEMBLY

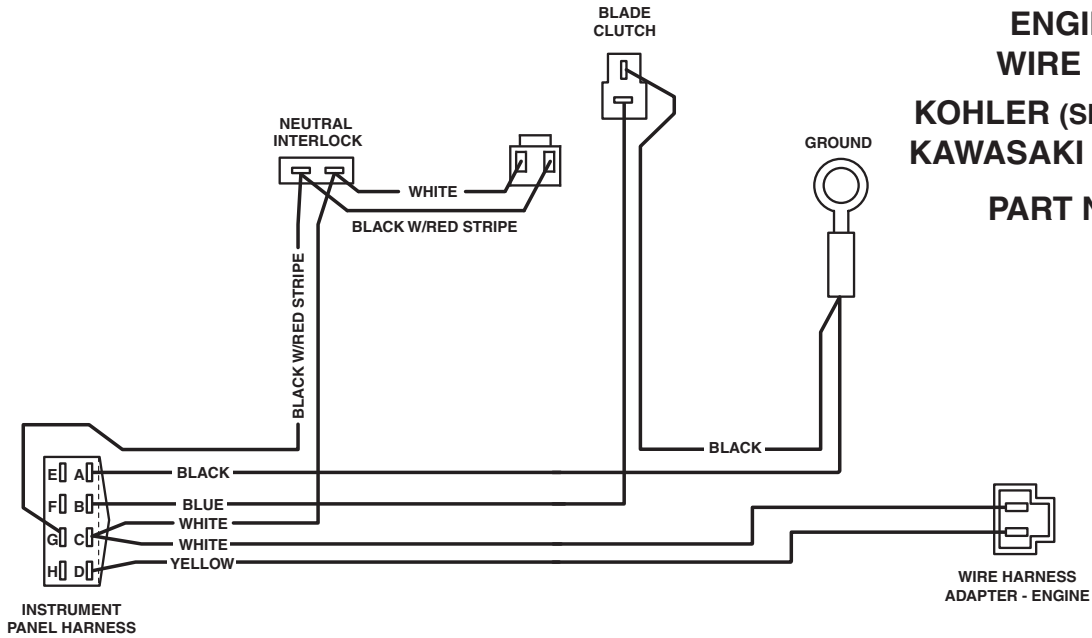
Ref. No.	Part Number	Description
1	481164	Cap, Oil Reservoir
2	461428	Oil Reservoir (With Fittings)
3	482266-01	Elbow, 9/16" O-Ring x 3/8" Hose
4	48811	Hose, 3/8" ID - 16" Long (Order By The Inch)
5	48811	Hose, 3/8" ID - 7" Long (Order By The Inch)
6	48603-06	O-Ring
7	48551	Pump, Hydro-Gear BDP-10L117
8	04003-11	Bolt, Carriage, 3/8-16 x 1-1/4"
9	481265	Hose, Pump to Wheel Motor
10	48603-02	O-Ring
11	482266-03	Elbow, 7/16" O-Ring x 3/8" Hose
12	48811	Hose, 3/8" ID - 10-1/4" Long (Order By The Inch)
13	482417	Oil Filter Base
14	482477	Tee, 3/8" O-Ring x JIC x 1/2" Hose
15	422794	Strap, Hydraulic Tank
16	422793	Bracket, Hydraulic Tank
17	04017-16	Capscrew, 5/16-18 x 3/4" Serr. Flange
18	48603-04	O-Ring
19	04019-03	Nut, 5/16-18 Serr. Flange
20	482305	Hose, Formed 1/2" ID
21	481849	Hose, Pump to Wheel Motor
22	481507	Tube, Filler Neck
23	461542	Engine Deck (16" Wide) W/Decals - Small Frame
	461546	Engine Deck (20" Wide) W/Decals - Large Frame
24	04019-04	Nut, 3/8-16 Serr. Flange
25	48462-01	Oil Filter
26	48485-01	Elbow, 45 Deg.-3/4-16 JIC Male x Male 3/4-16 O-Ring
27	48603-03	O-Ring
28	481537-02	Coupling, 3/8" Pipe to 1/2" Push-on
29	482202	Elbow, 3/4-16 O-Ring x 1/2" Hose
30	48571-02	Cap, 3/4-16
31	04010-10	Screw, 1/4-20 x 2" Round Head Phillips
32	04021-08	Nut, 1/4-20
33	48136-05	Clamp, .87" max dia.

## HYDRAULIC PUMP ASSEMBLY (BDP-10L117)



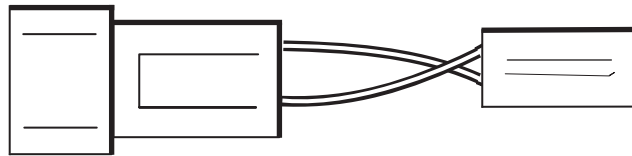
## HYDRAULIC PUMP ASSEMBLY

Ref. No.	Part Number	Description
1	HG 2513017	Housing Kit (Incl. Housing, Journal Bearing)
2	HG 2513016	End Cap
3	HG 9004800-2506	Straight Headless Pin
4	HG 9007314-0810	Socket Head Screw
5	HG 2003067	End Cap Gasket
6	HG 2513027	Charge Pump Kit (Incl. Charge Cover, Gerotor Assy., O-Ring)
7	HG 50273	Gerotor Assembly
8	HG 9004101-1340	O-Ring
9	HG 2510064	Charge Relief Valve Kit
10	HG 50095	Socket Head Screw
11	HG 2510027	Check Valve Kit (Incl. Check Plug, Spring, O-Ring, Orifice Check Valve)
12	HG 2513030	Bypass Valve Kit (Incl. Bypass Valve, O-Ring, Back-up Ring)
13	HG 9006110-0120	Backup Ring
14	HG 70079	Cylinder Block Kit
15	HG 2003014	Block Spring
16	HG 2003017	Block Thrust Washer
17	HG 2003044	Roller Thrust Bearing
18	HG 2003087	Swash Plate
19	HG 2003005	Trunnion Arm
20	HG 2000015	Guide Slot
21	HG 2003023	Cradle Bearing
22	HG 9008000-0126	Lip Seal
23	HG 2003020	Pump Shaft
24	HG 2003043	Ball Bearing
25	HG 2003016	Retaining Ring
26	HG 9008000-0128	Lip Seal
27	HG 2003052	Retaining Ring
28	HG 2003018	Spacer
29	HG 2513038	Shaft Kit (Incl. Pump Shaft, Ball Bearing, Retaining Ring)
30	HG 2513018	Overhaul Seal Kit (Incl. Gasket, Trunnion Seal, Input Shaft Seal, Charge Pump O-Ring)



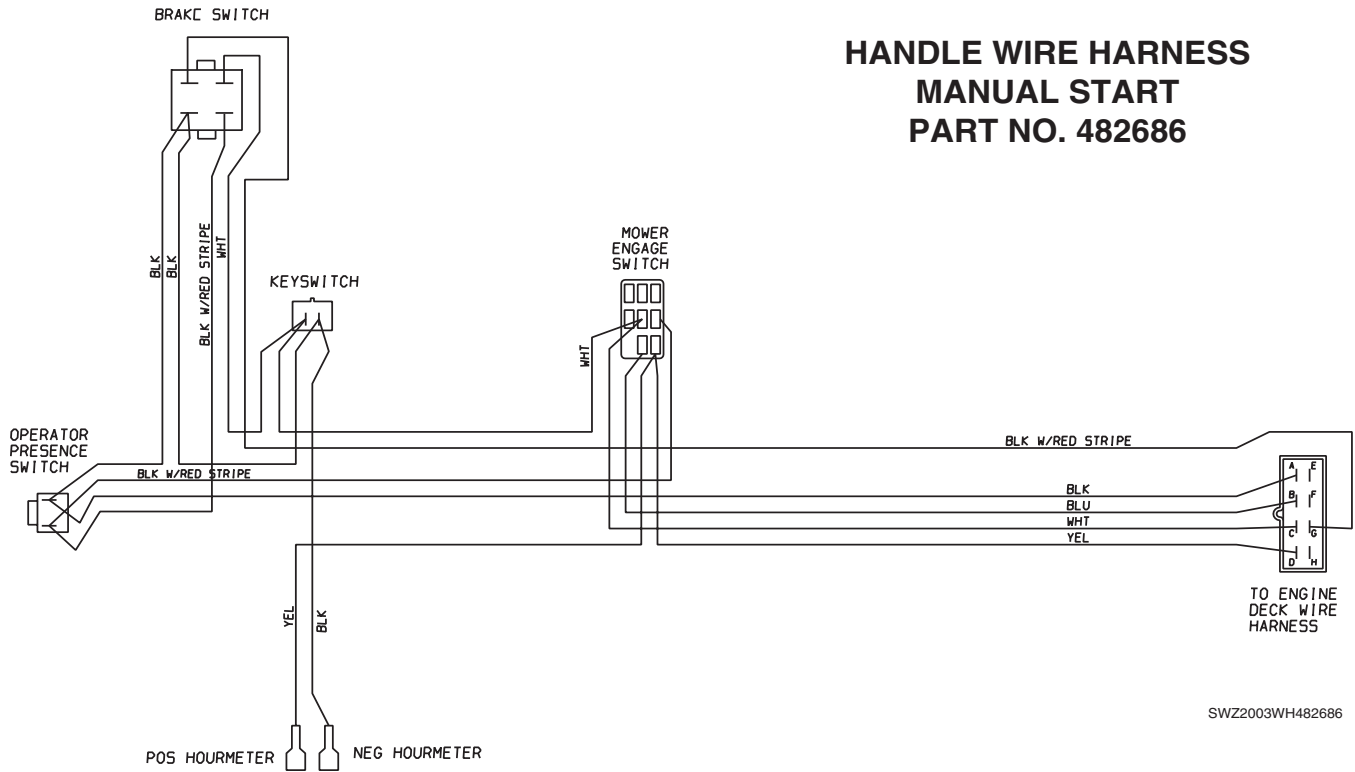
SW2003WH482683

**WIRE HARNESS ADAPTER**  
**KAWASAKI (15 HP & 17 HP)**  
**PART NO. 481717**

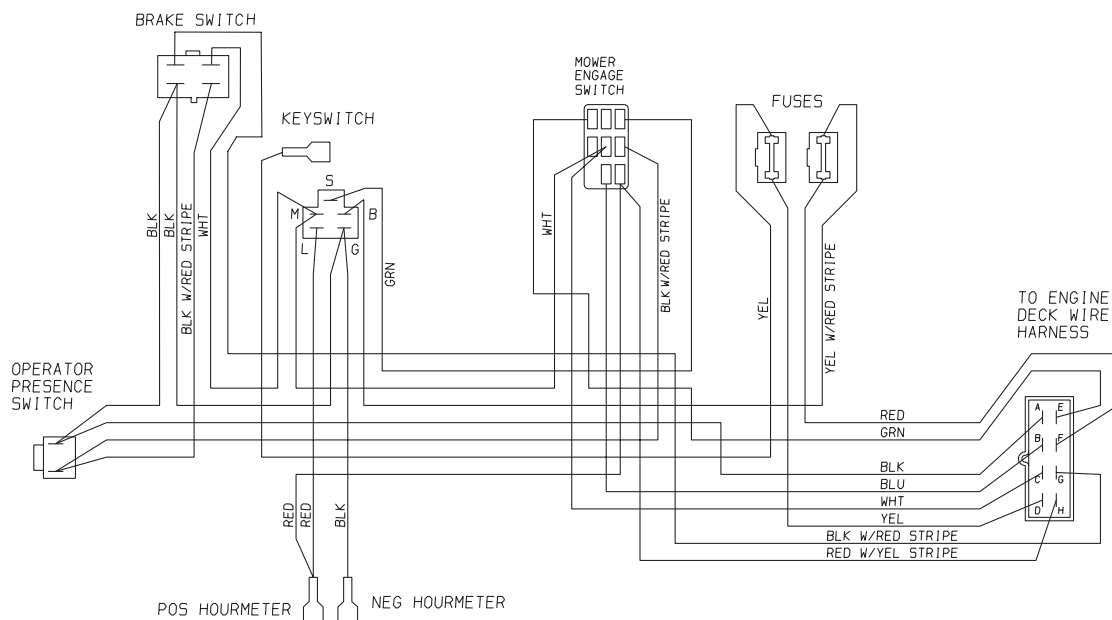


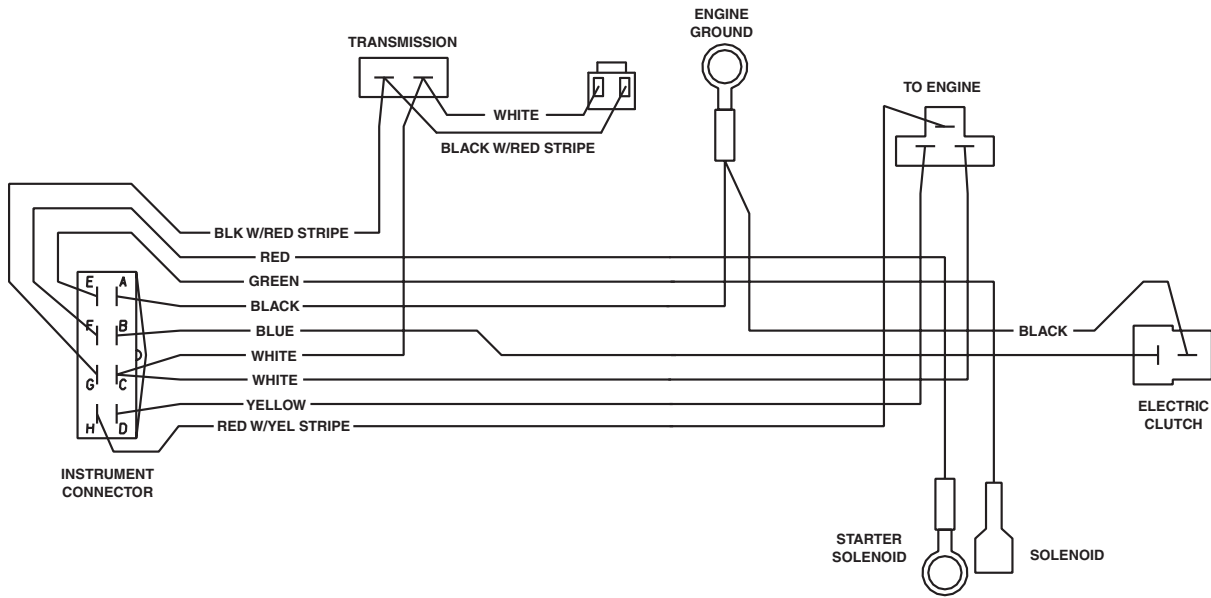
SW2003WH481717

## HANDLE WIRE HARNESS MANUAL START PART NO. 482686



## HANDLE WIRING HARNESS KAWASAKI ELECTRIC START PART NO. 482687





**ENGINE DECK  
WIRING HARNESS  
KAWASAKI ELECTRIC START  
PART NUMBER: 482685**



## REPLACEMENT DECALS & INFORMATION



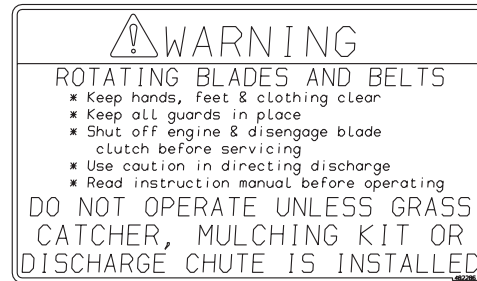
481971



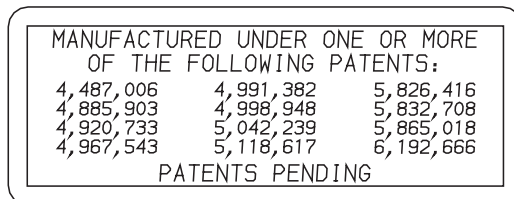
36" A - 482297  
48" A - 481953  
52" A - 481954  
61" A - 481955



482285



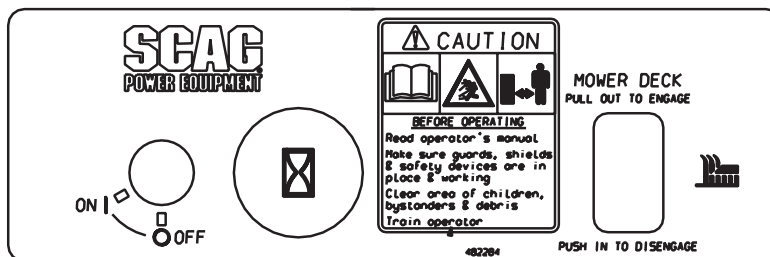
482286



48656



481039



482284



48404

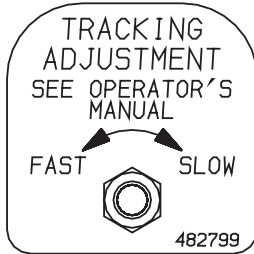


481109

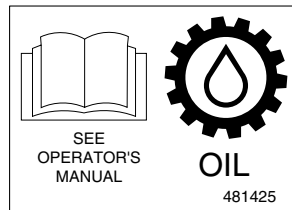


482165

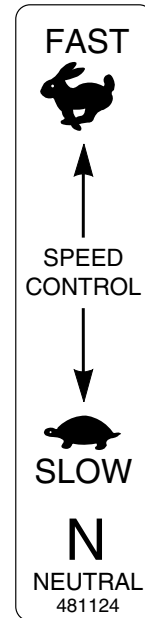
## REPLACEMENT DECALS & INFORMATION



482799



481425



481124

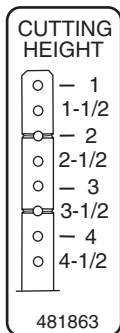


481942

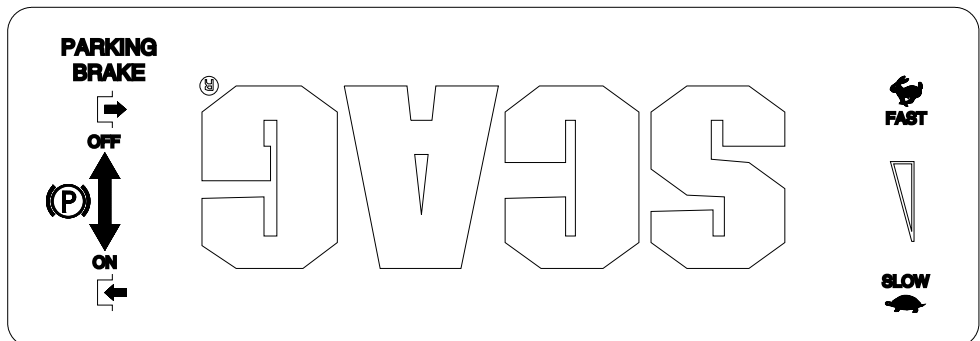


481906

481906



481863



481438 - SWZU 15KA & 17KA

481414 - SWZU 18KH

481423 - SWZU 21 KAE

# LIMITED WARRANTY - COMMERCIAL EQUIPMENT

---

Any part of the Scag commercial mower manufactured by Scag Power Equipment and found, in the reasonable judgment of Scag, to be defective in materials or workmanship, will be repaired or replaced by an Authorized Scag Service Dealer without charge for parts and labor. This warranty is limited to the original purchaser and is not transferable. Proof of purchase will be required by the dealer to substantiate any warranty claims. All warranty work must be performed by an Authorized Scag Service Dealer.

This warranty is limited to the following specified periods from the date of the original retail purchase for defects in materials or workmanship:

- \* Wear items including drive belts, blades, hydraulic hoses and tires are warranted for ninety (90) days.
- \* Batteries are covered for ninety (90) days.
- \* Frame and structural components including oil reservoir, fittings, and oil coolers are warranted for 2 years (Parts and labor 1st year; Parts only 2nd year).
- \* Cutter decks are warranted against cracking for a period of three (3) years. (Parts and labor 1st year; Parts only 2nd and 3rd year) The repair or replacement of the cutter deck will be at the option of Scag Power Equipment. We reserve the right to request components for evaluation. This warranty does not cover any mower that has been subject to misuse, neglect, negligence, or accident, or that has been operated in any way contrary to the operating instructions as specified in the Operator's Manual.
- \* Engines and electric starters are covered by the engine manufacturer's warranty period.
- \* Major drive system components are warranted for two (2) years by Scag Power Equipment. (Parts and labor 1st year; Parts only 2nd year) (Two year warranty exclude fittings, hoses, drive belts). The repair or replacement of the hydraulic pump or hydraulic motor will be at the option of Scag Power Equipment. This warranty does not cover any mower that has been subject to misuse, neglect, negligence, or accident, or that has been operated in any way contrary to the operating instructions as specified in the Operator's Manual.
- \* Electric clutches have a Limited Warranty for 2 year (Parts and labor 1st year; Parts only 2nd year).
- \* Cutter Spindle Assemblies 46631 have a Limited Warranty for three years (Parts and labor 1st year; Parts only 2nd and 3rd year).
- \* Any Scag product used for rental purposes is covered by a 90 day warranty.

The Scag mower, including any defective part must be returned to an Authorized Scag Service Dealer within the warranty period. The expense of delivering the mower to the dealer for warranty work and the expense of returning it to the owner after repair will be paid for by the owner. Scag's responsibility is limited to making the required repairs and no claim of breach of warranty shall be cause for cancellation or rescission of the contract of sale of any Scag mower.

**This warranty does not cover any mower that has been subject to misuse, neglect, negligence, or accident, or that has been operated in any way contrary to the operating instructions as specified in the Operator's Manual.** The warranty does not apply to any damage to the mower that is the result of improper maintenance, or to any mower or parts that have not been assembled or installed as specified in the Operator's Manual and Assembly Manual. The warranty does not cover any mower that has been altered or modified, changing performance or durability. In addition, the warranty does not extend to repairs made necessary by normal wear, or by the use of parts or accessories which, in the reasonable judgment of Scag, are either incompatible with the Scag mower or adversely affect its operation, performance or durability.

**Scag Power Equipment reserves the right to change or improve the design of any mower without assuming any obligation to modify any mower previously manufactured.** All other implied warranties are limited in duration to the two (2) year warranty period or ninety (90) days for mowers used for rental purpose. Accordingly, any such implied warranties including merchantability, fitness for a particular purpose, or otherwise, are disclaimed in their entirety after the expiration of the appropriate two year or ninety day warranty period. Scag's obligation under this warranty is strictly and exclusively limited to the repair or replacement of defective parts and Scag does not assume or authorize anyone to assume for them any other obligation. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

Scag assumes no responsibility for incidental, consequential or other damages including, but not limited to, expense for gasoline, expense of delivering the mower to an Authorized Scag Service Dealer and expense of returning it to the owner, mechanic's travel time, telephone or telegram charges, rental of a like product during the time warranty repairs are being performed, travel, loss or damage to personal property, loss of revenue, loss of use of the mower, loss of time or inconvenience. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

© 2002  
SCAG POWER EQUIPMENT  
DIVISION OF METALCRAFT OF MAYVILLE, INC.

PART NO. 03115  
PRINTED 8/02  
PRINTED IN USA