

SCAG

COMMERCIAL MOWER

TECHNICAL MANUAL

MODELS

STH-13BV Tractor
STH-13KH Tractor
STH-18KH Tractor
STH-20KH Tractor

SLM-40 Cutter Deck
SLM-42 Cutter Deck
SLM-48 Cutter Deck
SLM-52 Cutter Deck
SM-48 Cutter Deck
SM-61 Cutter Deck
SM-72 Cutter Deck

Scag Power Equipment, Inc.
1000 Metalcraft
Mayville, WI 53050

Revised 10-28-88
Part No. 01043
Printed in USA

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WARNING

If incorrectly used, this machine can cause severe injury. Those who use and maintain the machine should be trained in its proper use, warned of its dangers, and should read the entire manual before attempting to set up, operate, adjust or service the machine.

LIMITED WARRANTY-COMMERCIAL EQUIPMENT

Any part of the Scag commercial mower manufactured by Scag and found, in the reasonable judgment of Scag, to be defective in material or workmanship, will be repaired or replaced by an Authorized Scag Service Dealer without charge for parts and labor.

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 back to the owner after repair or replacement will be paid for by the owner. Scag's responsibility in respect to claims is limited to making the required repairs or replacements, and no claim of breach of warranty shall be cause for cancellation or rescission of the contract of sale of any Scag mower. Proof of purchase will be required by the dealer to substantiate any warranty claim. All warranty work must be performed by an Authorized Scag Service Dealer.

This warranty is limited to one year from the date of original retail purchase for any Scag mower that is used for commercial purposes, or any other income-producing purpose (90 days for rental use).

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 Technical 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 Technical Manual.

The warranty does not cover any mower that has been altered or modified so as to adversely affect the product's operation, performance or durability or that has been altered or modified so as to change the intended use of the product. 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. This warranty does not cover engines, electric starters, batteries, belts and tires which are warranted separately by their manufacturer and for a different period of time.

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 one (1) 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 one-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 back 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.

Your mower was built to the highest standards in the industry. However, your mower is only as safe as the operator. Carelessness or error on the part of the operator may result in serious bodily injury. 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 equipment.

SAFE OPERATION PRACTICES FOR RIDING VEHICLES

1. Know the controls and how to stop quickly. **READ THIS TECHNICAL MANUAL** and instructions furnished with attachments. A replacement manual is available by sending complete model and serial number to:
SCAG Power Equipment, Inc.
1000 Metalcraft Dr.
Mayville, WI 53050
2. Do not allow children to operate the machine. Do not allow adults to operate it without proper instruction.
3. Do not carry passengers. Do not mow when children and others are around.
4. Clear the work area of objects (wires, rocks, etc.) that might be picked up and thrown.
5. Disengage all attachment clutches and engage parking brake before attempting to start the engine.
6. Disengage power to attachments and engage parking brake before leaving the operator's position.
7. Disengage power to attachments and stop the engine before making any repairs or adjustments.
8. Disengage power to attachments when transporting or not in use.
9. Take all possible precautions when leaving the vehicle unattended, such as disengaging the power-take-off, lowering the attachments, setting the parking brake, stopping the engine, and removing the key.
10. Do not stop or start suddenly when going uphill or downhill. Mow up and down the face of steep slopes; never across the face.
11. Reduce speed and exercise extreme caution on slopes and in sharp turns to prevent tipping or loss of control. Be especially cautious when changing direction on slopes.
12. Stay alert for holes, rocks, and roots in the terrain and other hidden hazards. Keep away from drop-offs.
13. Use care when pulling loads or using heavy equipment.
 - a. Use only approved drawbar hitch points.
 - b. Limit loads to those you can safely control.
 - c. Do not turn sharply. Use care when backing.
 - d. Use counterweights or wheel weights when suggested in this technical manual.
14. Watch out for traffic when crossing or near roadways.
15. When using any attachments, never direct discharge of material toward bystanders nor allow anyone near the vehicle while in operation.
16. Handle gasoline with care - it is highly flammable.
 - a. Use approved gasoline container.
 - b. Never remove the fuel cap off, or add gasoline to, a running or hot engine or an engine that has not been allowed to cool for several minutes after running. Never fill the tank indoors and always clean up spilled gas.
 - c. Open doors if the engine is run in the garage- exhaust fumes are dangerous. Do not run the engine indoors.
17. Keep the vehicle and attachments in good operating condition, and keep safety devices and shields in place and in working condition.
18. Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.
19. Never store the equipment with gasoline in the tank inside a building where fumes may reach an open flame or spark. Allow the engine to cool before storing in any enclosure.
20. To reduce fire hazard, keep the engine free of grass, leaves or excessive grease.
21. The vehicle and attachments should be stopped and inspected for damage after striking a foreign object, and the damage should be repaired before restarting and operating the equipment.
22. Do not change the engine governor settings or overspeed the engine.
23. When using the vehicle with mower, proceed as follows:
 - a. Mow only in daylight or in good artificial light
 - b. Never make a cutting height adjustment while the engine is running if the operator must dismount to do so
 - c. Shut the engine off when removing the grass catcher or unclogging chute.
 - d. Check the blade mounting bolts for proper tightness at frequent intervals.
24. Under normal usage, the grass catcher bag material is subject to deterioration and wear. Check bag frequently for deterioration and wear and replace worn bags. Check that replacement bags comply with the original manufacturer's recommendations or specifications.
25. Disengage power to mower before backing up. Do not mow in reverse unless absolutely necessary and then only after observation of the entire area behind the mower.
26. The discharge chute must be installed and in the down position on the side discharge cutting unit except when optional grass catcher is completely installed. If the cutting unit discharge ever plugs, shut engine off and wait for all movement to stop before removing obstruction.
27. Perform only those maintenance instructions described in this manual. If major repairs are ever needed or assistance is desired, contact an Authorized Scag Servicing Dealer. To ensure optimum performance and safety, always purchase genuine SCAG replacement parts and accessories. **NEVER USE "WILL FIT"** replacement parts and accessories made by another manufacture. Use of unapproved replacement parts may void the warranty.

WARNING

DO NOT operate on steep slopes. To check a slope, attempt to back up (with cutter deck down). If unit can back up the slope without the wheels slipping then slope should be manageable with careful operating procedures.

ASSEMBLY INSTRUCTIONS

1. Remove all crating and packing materials. Lay out loose mounting hardware according to the "Where Used" as listed in the loose parts packing list.

⚠ WARNING: Severe chemical burns can result from improper handling of battery electrolyte. Use proper eye, skin and clothing protection to prevent contact with eyes, skin and clothing.

External contact: Flush with water.

Internal contact: Drink large quantities of water, followed with milk of magnesia, beaten egg or vegetable oil. **CALL A PHYSICIAN IMMEDIATELY!**

IMPORTANT - In case of internal contact DO NOT give fluids that would induce vomiting.

Eye contact: Flush with water for at least 15 minutes and get medical attention immediately!

⚠ WARNING: Explosive gases are vented from a battery when being charged or discharged which could explode if exposed to a flame or spark.

2. Remove battery from battery support
Fill with electrolyte solution
Charge at 3 to 5 amps for about 2 hours
Check fluid level and add electrolyte until level is up to the bottom of the split ring.
NOTE: FUTURE NEED TO ADJUST FLUID LEVEL REQUIRES DISTILLED WATER
Wash and dry off battery. Coat terminals with grease to minimize corrosion.

3. Attach the seat assembly to the seat support spring using two 3/8-16 x 1" bolts and lock washers. The seat and/or spring may be positioned forward or back for operator comfort.

4. Attach arm rests to seat back and use set-screws to adjust arm rests so they are horizontal. [Standard on STH-18/20KH]

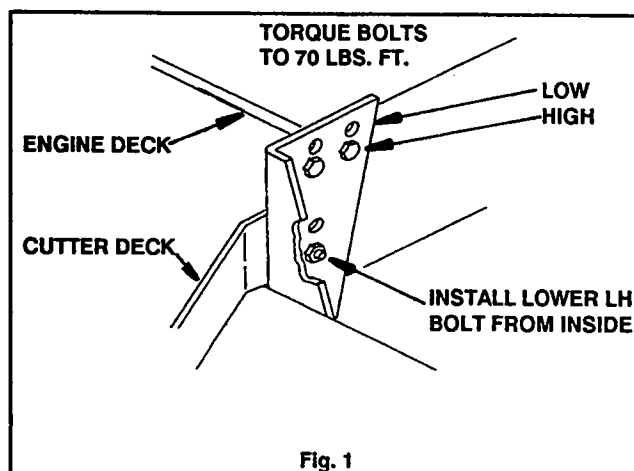


Fig. 1

5. Insert steering handle on shaft and secure with one 5/16-18 x 1 1/2" bolt, two flat washers, and a lock nut. Tighten securely.

6. Set the cutter deck about 2" off of a level floor. Remove the belt cover and control rod.

Determine what height of cut is needed before attaching the cutter deck to the engine deck. See fig.1

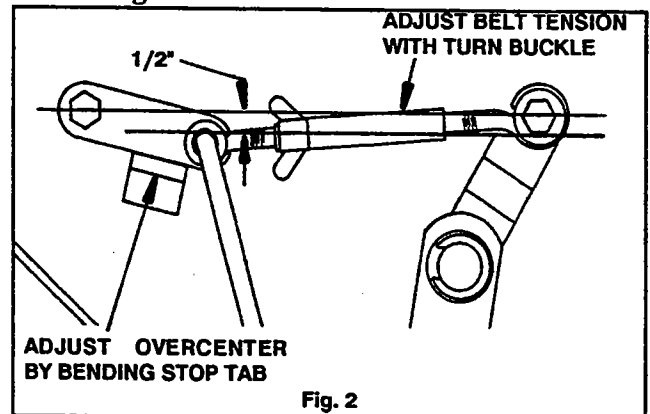


Fig. 2

7. Move the tractor assembly to the cutter deck assembly. Loosen the winch cable and tilt the engine deck to a horizontal position. Align the holes and insert drift pins to assist in assembly. **NOTE:** The lower front bolt on the left hand side must be installed with the nut, lock washer, and flat washer on the outside. Secure together using six 7/16-14 x 1 1/4" bolts, flat washers, lock washers, and hex nuts. Tighten all six bolts to 70 Ft. Lbs. then go back and retorquer each one.

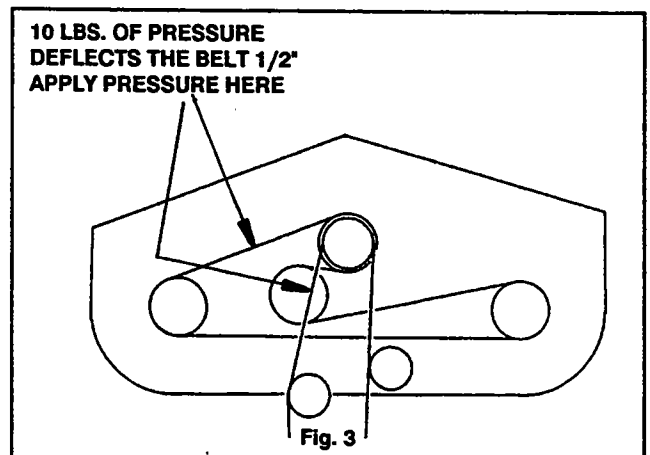


Fig. 3

8. Raise the cutter deck using the winch and attach each front caster wheel using four 5/16-18 x 3/4" bolts, lock washers, and hex nuts.

NOTE: If installing a 72" cutter deck, remove ballast from cutter deck and install under seat prior to raising cutter deck.

CONT'D PAGE 6

ASSEMBLY CONT'D

9. Install the mower engagement control rod, to the mower engagement lever arm located under the engine deck and to the over-center mechanism in the front, with hair pin cotters.

10. Route the blade drive belt around the engine pulley and the cutter deck pulleys.

11. Push the mower engagement lever forward until the over center mechanism snaps into place. Check the over center spacing as shown in figure 2. Adjust belt tension as shown in figure 3 after over-center spacing is set.

12. Attach the discharge chute to the cutter deck using two 5/16-18 x 1" bolts, and elastic stop nuts. Tighten only enough to remove excessive end play. Discharge chute must be free to move up and down.

13. Reduce tire pressures.

Casters Wheels	25 PSI
Drive Wheels	15 PSI
Rear Steering Wheel	15 PSI

14. Install battery into the battery support, connect the positive cable to the positive terminal and cover with the boot, then attach the negative cable. Install the battery box cover and tighten the wing nuts finger tight.

15. Check engine oil level, add as necessary (unit was filled with 30 weight detergent oil at factory).

16. Check hydrostatic transaxle reservoir, oil should be 3" from the top of the reservoir, (3 3/4" below top of filler neck)
!DO NOT OVER FILL!
Add 30 weight detergent oil if necessary.

17. Fill fuel tank with gasoline.

18. Open shut-off valve under tank.

ADJUSTMENTS

TIRE PRESSURES

Caster Wheels	25 PSI
Rear Steering Wheel	15 PSI
Drive Wheels	15 PSI

CONTROLS

PARKING BRAKE

Adjust the clevis so that the handle is parallel to instrument panel when the parking brake is in the released position. The spring should be compressed to approximately 2 5/8" when the parking brake is in the engaged position. Drive wheels should "slide" rather than "roll" when brake is engaged. The pivot spring is adjusted so that the handle just clears the side edge of the instrument panel.

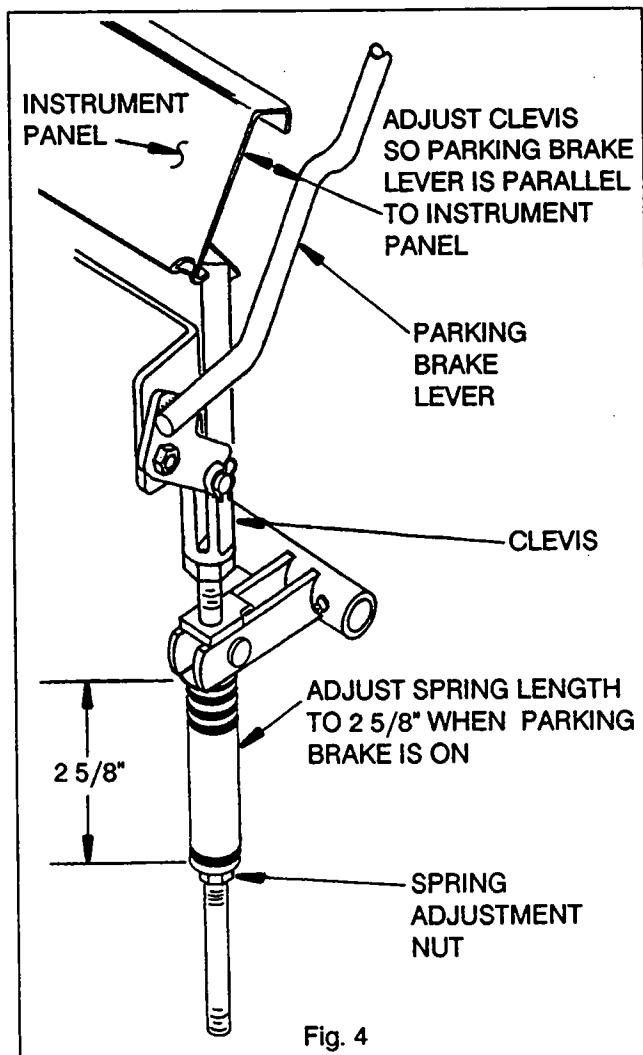
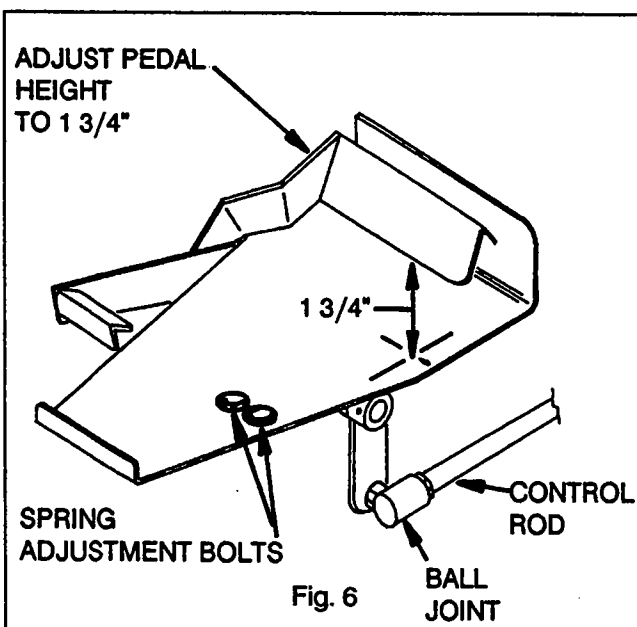


Fig. 4

ADJUSTMENTS CONT'D

FOOT PEDAL HEIGHT AND NEUTRAL ADJUSTMENT

1. Place a 1 3/4" block under the toe pedal.
2. Move the leaf spring forward or rearward so that the pedal just touches the block when the roller bearing is "bottomed" in the cam plate. Align the bearing to the cam and tighten bolts securing the spring in this position. Remove the block.
3. Set the engine deck up on jack stands, so the wheels are off the ground.
4. Start the engine and check that the wheels stop turning when the foot pedal is released to neutral. Reposition the ball joint up or down in the slot of the arm for fine adjustment. NOTE: For accurate adjustment, hold lock nut and tighten ball joint against the flat washer. If necessary adjust the ball joint farther onto or off of the control rod for a course adjustment.. It will be necessary to remove the hex nut securing the ball joint to the foot pedal arm before making course adjustment.
5. Recheck the operation of the foot pedal into forward, release to neutral, then reverse and release to neutral.



MOWER BELT CAM LINK OVER-CENTER ADJUSTMENT

The over-center adjustment must be checked and adjusted before setting the belt tension.

Engage the blade clutch lever and check for proper over-centering. There should be about 1/4" between rod and straight edge (see fig. 2). Bend the stop tab to adjust the clearance.

BELT TENSION

HYDRO DRIVE BELT

This belt is spring loaded and does not require adjustment.

CUTTER DECK DRIVE BELT

Belt tension should not be adjusted until over-center spacing is checked. Adjust the belt tension so that the belt moves 1/2" with 10 pounds of pressure (See fig. 3). Adjustment is made by loosening the wing nut and tightening or loosening the turnbuckle.

BLADE DRIVE BELT

Adjust the belt tension so that the belt moves 1/2" with 10 lbs. of pressure. Adjust tension by tightening or loosening the "J"-bolt.

CUTTER DECK ADJUSTMENTS

Due to the many conditions that exist it is difficult to suggest a 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 positive pitch is when the front (leading) edge of the cutting plane is lower than the rear (trailing) edge, level pitch is when both front and rear are basically level, a negative pitch is when the leading edge is higher than the rear edge.

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).

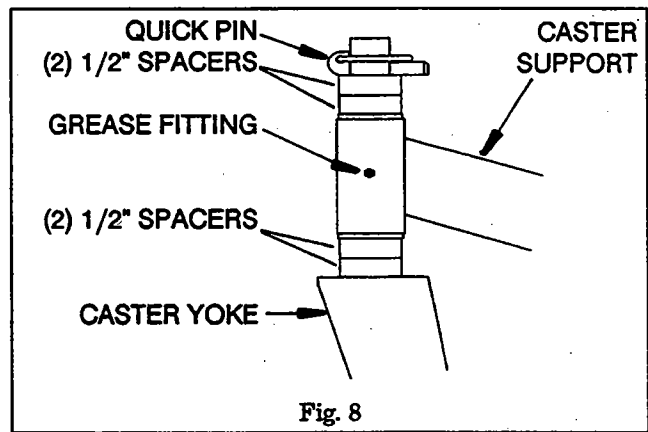
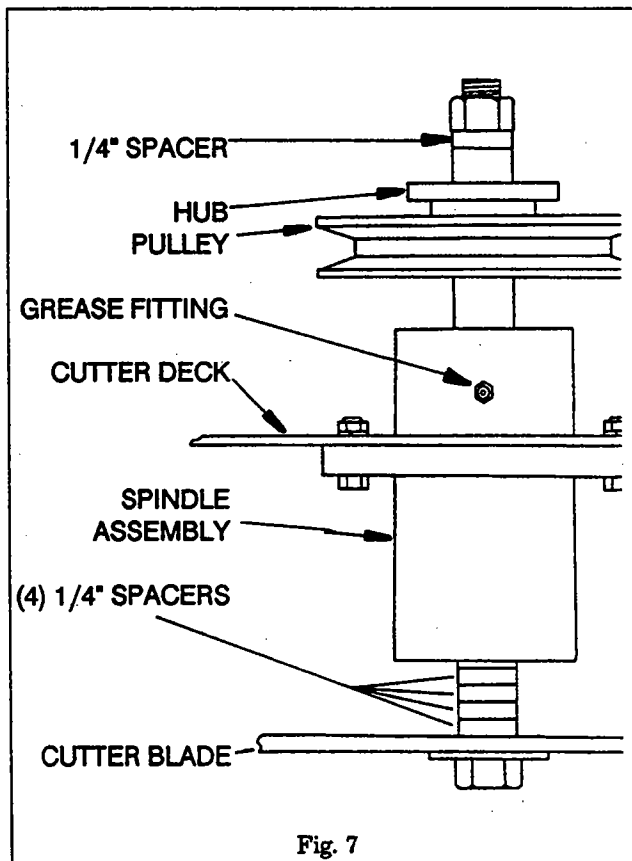
ADJUSTMENTS CONT'D

Adjusting the blade height can be done by moving any number of the five spacers on the blade mounting bolts to the top of the spindle shaft or below the spindle shaft (all blades should be positioned equally). Unit is shipped with one spacer on top and four underneath (see fig. 7). This adjustment does not effect blade pitch.

Additional range to the cutting height can be achieved by repositioning the cutter deck in relationship to the engine deck (This adjustment also changes the pitch of the deck). There are 2 positions (see fig. 1), suggested mounting is the bottom hole. For cutting lower, mount the deck in the upper hole which drops the deck down. Check the cutter deck belt alignment after repositioning the deck.

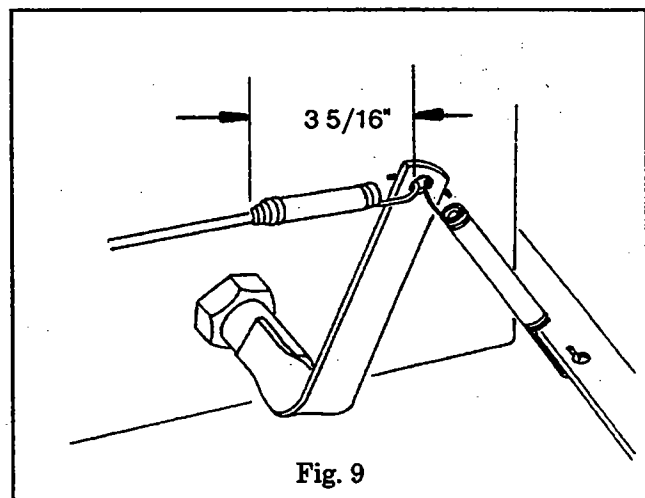
Caster spacers also can be repositioned to change cutting heights and to change the pitch of the deck (see fig. 8).

Under normal cutting conditions it is best to have the cutter blade as low as possible in the deck housing [it must be atleast $1/8$ " above the lip of the deck].



PARKING BRAKE/DUMP VALVE CABLE

With the parking brake in the on position the spring should be $3 \frac{5}{16}$ " long. (see fig. 9) Adjust the spring length by repositioning the cable idler pulley at the front of the engine deck



INITIAL RUN, INSPECTION AND OPERATING INSTRUCTION

1. Check for correct routing of belts and for correct clearance of belt guides.
2. Check for correct alignment and initial tension of cutter blade drive belts.
3. Check that all fasteners are correctly tightened.
4. Check oil levels in engine and hydraulic reservoir.
5. Fill fuel tank with clean fresh lead free gasoline
6. To start engine,
Pull parking brake to on position
Pull mower engagement lever to off position
Depress the left foot pedal
Adjust throttle and choke as required
Turn ignition key to start.
7. Push mower engagement lever forward until over-center snaps into the engaged position.
Allow belts to run-in for 5 minutes.
8. Release the parking brake. Observe to see that the unit does not creep forward or backwards. If it does creep, adjust as specified in adjustment section.
9. Operate the unit forwards and backwards.
Check that all systems function correctly.
Adjust travel speed, if necessary.
10. Shut off engine and recheck cutter deck drive belts for proper tension, and any signs of rubbing. Correct and adjust as necessary.

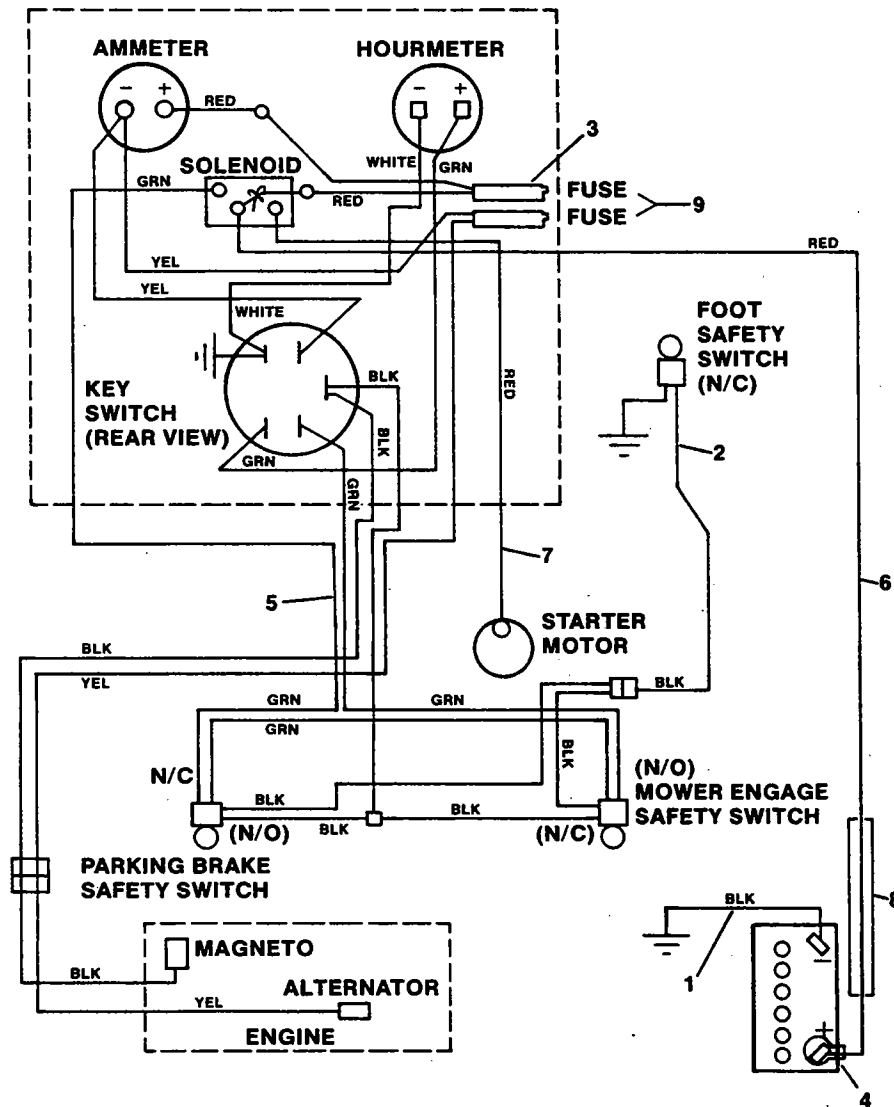
LUBRICATION & MAINTENANCE

BREAK-IN			
8 HOURS (DAILY)			
40 HOURS (WEEKLY)			
100 HOURS (BIWEEKLY)			
200 HOURS (MONTHLY)			
		PROCEDURE	COMMENTS
X	X	Change engine oil and filter after first 5 hours. Change hydrostatic oil filter after first 20 hours.	
X	X	Check engine oil	Do not over fill
X	X	Clean blower screen	MORE OFTEN IF NEEDED
X	X	Remove debris from under belt cover	" " " "
X	X	Sharpen cutter blades	" " " "
*	X	Grease spindle bearings 2 pumps of hand gun	US Lithium MP White Grease 2125
X	X	Clean air filter	MORE OFTEN IF NEEDED
X	X	Change engine oil	Per manufacture's Specifications
X	X	Check battery acid level	Distilled water only
X	X	Check tire pressure	Add or adjust as required
X	X	Change engine oil	See engine mfg. information
X	X	Grease caster wheel bearings	Chassis grease
X	X	Grease caster wheel pivots	Chassis grease
X	X	Grease idler arm pivots	Chassis grease
X	X	Remove hubs from axle & grease	Anti-sieze compound
X	X	Change engine oil filter	See engine mfg. information
X	X	Change hydrostatic oil filter	Clean area before removing filter
X	X	Clean and Adjust spark plugs	See engine mfg. information
X	X	Grease rider frame pivot	Chassis grease
X	X	Grease control bell cranks	Chassis grease
X	X	Grease Left axle pillow block bearing	Chassis grease
X	X	Grease steering handle bearing	Chassis grease
X	X	Grease foot pedal bearings	Chassis grease
X	X	Grease rear wheel pivot vertical	Chassis grease
X	X	Grease rear wheel bearing	US Lithium MP White Grease 2125

- * Depending on climate and enviroment lubrication may be required every 8 to 40 hours.
- * Do not over grease as this may damage seal.

ELECTRICAL SYSTEM

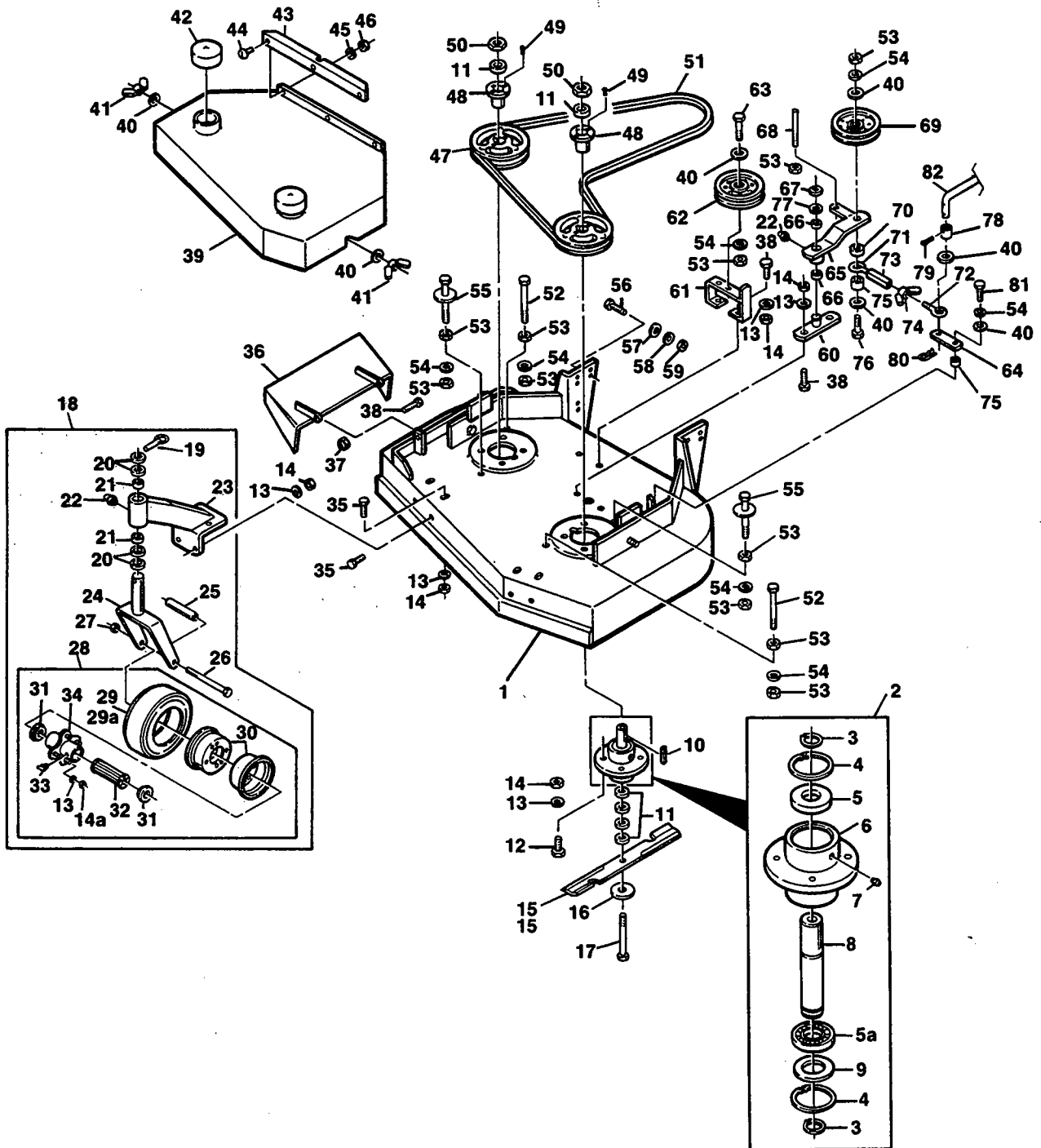
For all STH-13BV/KH
For STH-18/20KH serial #1351 and higher



ELECTRICAL SYSTEM PARTS

Ref. No.	Part Number	Description	STH 13BV	STH 13KH	STH 18KH	STH 20KH
1	48029-05	Battery cable ground			x	x
1	48029-01	Battery cable ground	x	x		
2	48367	Wire harness, foot safety switch	x	x	x	x
3	48368	Wire harness, solenoid to ammeter	x	x	x	x
4	48126	Rubber boot	x	x	x	x
5	48400	Wire harness	x	x	x	x
6	48029-02	Battery cable			x	x
6	48029-03	Battery cable	x	x		
7	48029-03	Battery cable			x	x
7	48029-06	Battery cable	x	x		
8	48033	Conduit, black nylon 10"			x	x
9	48298	Fuse, 20 amp blade type automotive	x	x	x	x
NS	48028-01	Cable tie			x	x
NS	48399	Wiring harness adapter	x			

SLM-40 & SLM-42 CUTTER DECK

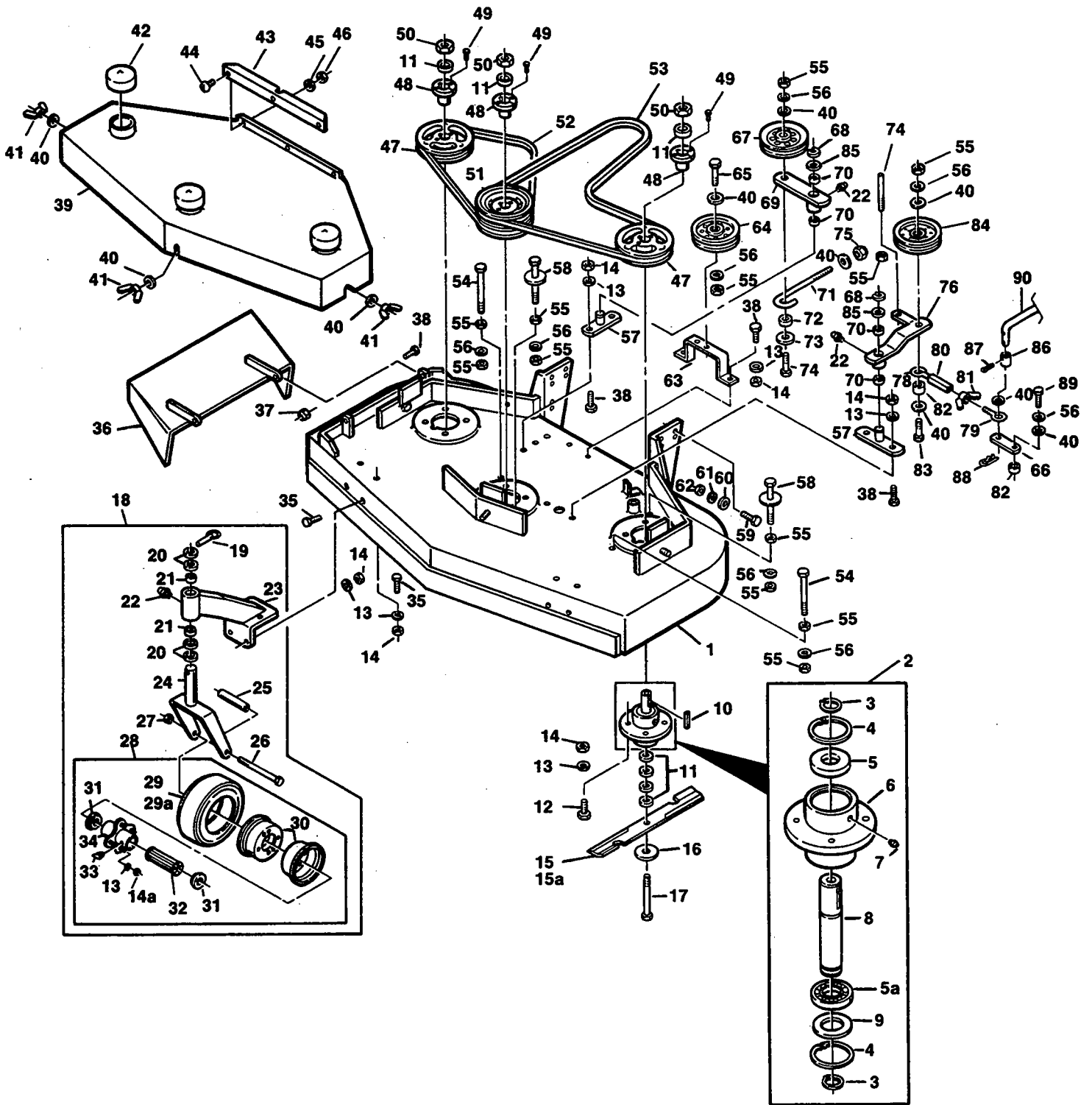


SLM-40 & SLM-42 CUTTER DECK

REF. NO.	PART NUMBER	DESCRIPTION	SLM 40	SLM 42	REF. NO.	PART NUMBER	DESCRIPTION	SLM 40	SLM 42
1	46146	Cutter Deck. (incl. Decals)	x		45	*	Lockwasher, Spring 1/4	x	x
1	46252	Cutter Deck (incl. Decals)		x	46	*	Hex Nut, 1/4-20	x	x
2	46020	Cutter Spindle Assy.(incl 3-9)	x	x	47	48127	Pulley (incl. 48-49)	x	x
3	04050-04	Retaining Ring, 1" Ext.-Inverted	x	x	48	48141	Taper Hub	x	x
4	04050-07	Retaining Ring, 2-7/16 Int-Basic	x	x	49	*	Hex Head Bolt, 1/4-20 x 3/4	x	x
5	48101-01	Bearing, Cutter Spindle upper	x	x	50	*	Hex Nut, 5/8-11	x	x
5a	48101-02	Bearing, Cutter Spindle lower	x	x	51	48086	Belt, blade drive	x	
6	41001	Spindle Housing	x	x	51	48407	Belt, blade drive		x
7	48114-02	Grease Fitting, Str. 5/16 Serr.	x	x	52	*	Hex Head Bolt, 3/8-16 x 5	x	x
8	43001-02	Spindle, Cutter Blade	x	x	53	*	Hex Nut, 3/8-16	x	x
9	04041-02	Washer, 1-15/16 x 2-13/32 x 16 Ga.	x	x	54	*	Lockwasher, Spring, 3/8	x	x
10	04063-08	Key, 1/4 x 1/4 x 2	x	x	55	45098	Belt Guide Wid.	x	x
11	43038	Spacer, Cutter Blade	x	x	56	*	Hex Head Bolt, 7/16-14 x 1	x	x
12	*	Hex Head Bolt, 5/16-18 x 1-1/4	x	x	57	*	Washer, 15/32 x 59/64 x 16 Ga.	x	x
13	*	Lockwasher, Spring, 5/16	x	x	58	*	Lockwasher, Spring, 7/16	x	x
14	*	Hex Nut, 5/16-18	x	x	59	*	Hex Nut, 7/16-14 Elastic Stop	x	x
14a	*	Hex Nut, 5/16-24	x	x	60	45037	Idler Pivot Wid.	x	x
15	48109	Cutter Blade, 20" std.	x		61	45012	Idler Pulley Support	x	x
15	48111	Cutter blade 21" std		x	62	48068	Pulley, Belt Guide	x	x
16	04040-10	Flat Washer, 5/8W	x	x	63	*	Hex Hd Bolt, 3/8-16 x 1-3/4	x	x
17	04001-41	Hex Head Bolt, 5/8-11 x 9-1/2	x	x	64	45084	Cam Link	x	x
18	46079	Caster Assy. (Incl. 19-28)	x	x	65	46145	Idler Arm Assy. (Incl. 22 & 66)	x	x
19	04066-01	Quick Pin	x	x	66	48100-05	Bronze Bearing	x	x
20	43037-01	Spacer, Caster Yoke, 1/2 Long	x	x	67	04050-02	Retaining Ring, 3/4 Ext.-"E"	x	x
21	48100-01	Bronze Bearing	x	x	68	04004-04	Stud	x	x
22	48114-01	Grease Fitting, Str. 1/4-28	x	x	69	48269	Idler Pulley, Belt Clutch	x	x
23	46082	Support Assy. (Incl. 21-22)	x	x	70	43063	Spacer, Idler	x	x
24	45006	Caster Yoke Wid.	x	x	71	04070-02	Eyebolt, LH	x	x
25	43022	Sleeve, Caster Wheel Bearing	x	x	72	04070-01	Eyebolt, Rh	x	x
26	04001-37	Hex Head Bolt, 1/2-13 x 5-1/2	x	x	73	43025	Turnbuckle	x	x
27	*	Hex Locknut, 1/2-13	x	x	74	04022-02	Wing Nut, 5/16-18	x	x
28	48307-01	Wheel Assy. (Incl. 13-14,29-34)	x	x	75	43042	Sleeve, Cam Clutch	x	x
29	48307-02	Tire Only, Caster Wheel	x	x	76	*	Hex Head Bolt, 3/8-16 x 2-3/4	x	x
29a	48006-03	Inner Tube Only, Caster Wheel	x	x	77	04041-08	Washer, 3/4 (49/64x1 1/4x16 ga)	x	x
30	48307-04	Rim Pair, Caster Wheel	x	x	78	43043	Sleeve, Clutch Rod	x	x
31	48006-07	Retainer, Bearing, Caster Wheel	x	x	79	*	Cotter Pin, 3/32 x 1	x	x
32	48006-06	Roller Bearing, Caster Wheel	x	x	80	04062-01	Hair Pin, Large	x	x
33	48114-03	Grease Fitting, 45' 1/4-28	x	x	81	*	Hex Head Bolt, 3/8-16 x 1	x	x
34	48006-05	Hub Assy. w/Bolts, Caster Wheel	x	x	82	44015	Blade clutch rod *	x	x
35	*	Hex Head Bolt, 5/16-18 x 3/436	x	x			* (Gold colored rod is used with 2 hole cam link)		
36	45029	Discharge Chute Wid.	x	x					
37	*	Hex Nut, 5/16-18 Elastic Stop	x	x					
38	*	Hex Head Bolt, 5/16-18 x 1	x	x					
39	46246	Belt cover (incl. Decals)	x						
39	46249	Belt cover (incl. decals)		x					
40	*	Washer, 25/64 x 15/16 x 12 Ga.	x	x					
41	04022-04	Wing Nut, 3/8-16	x	x					
42	48098	Spindle Shield	x						
43	42504	Belt Cover Skirt	x	x					
44	*	Screw Truss Hd Mach 1/4-20x1/2	x	x					

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

SLM-48 & SLM-52 CUTTER DECK

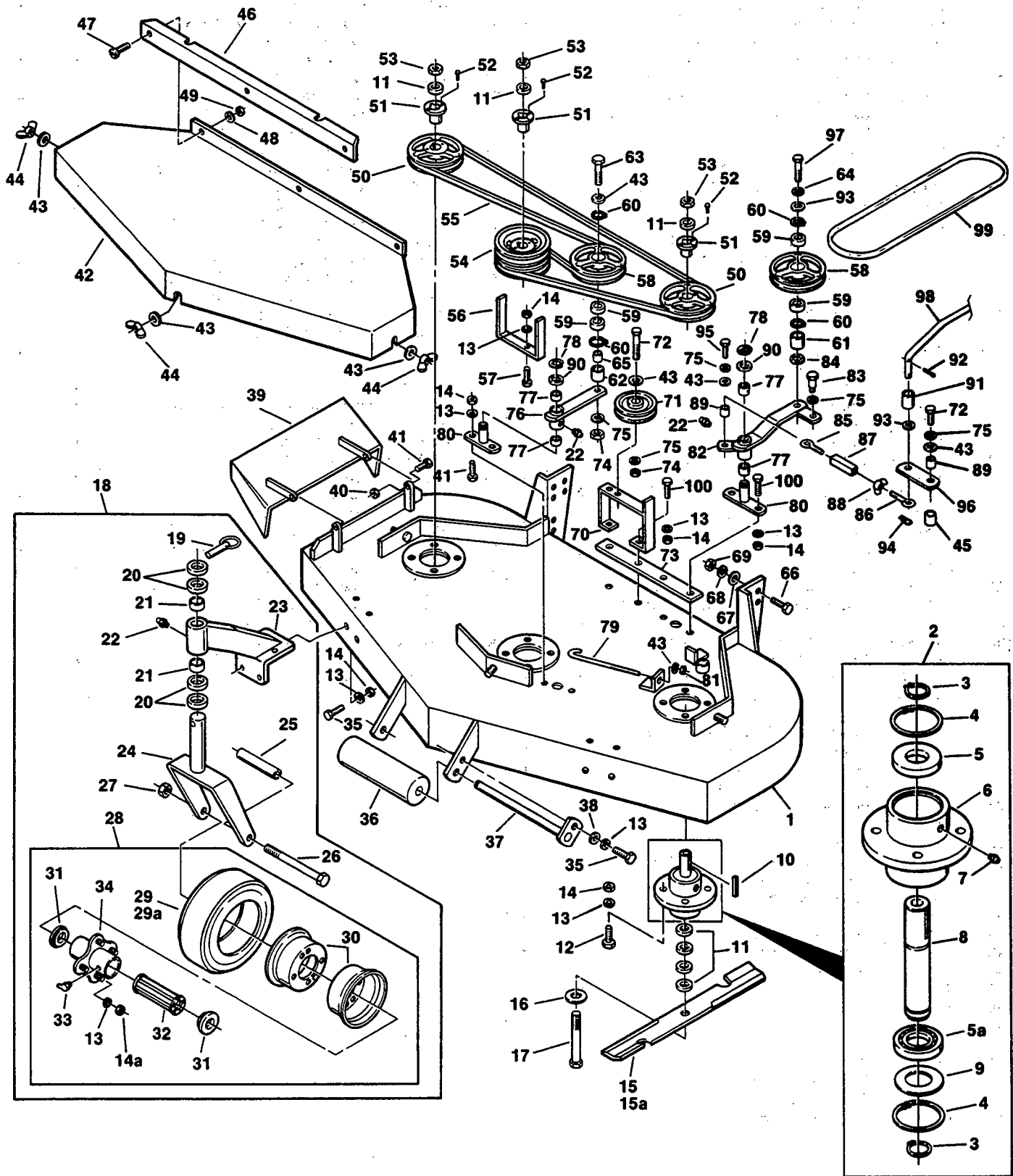


SLM-48 & SLM-52 CUTTER DECK

REF. NO.	PART NUMBER	DESCRIPTION	SLM 48	SLM 52	REF. NO.	PART NUMBER	DESCRIPTION	SLM 48	SLM 52
1	46152	Cutter deck (incl. Decals)	x		53	48085 48114	Belt, blade drive		x
1	45203	Cutter deck		x	54	*	Hex Head Bolt, 3/8-16 x 5	x	x
2	46020	Cutter Spindle Assy. (Incl. 3-9)	x	x	55	*	Hex Nut, 3/8-16	x	x
3	04050-04	Retaining Ring, 1" Ext.-Inverted	x	x	56	*	Lockwasher, Spring, 3/8	x	x
4	04050-07	Retaining Ring, 2-7/16 Int.-Basic	x	x	57	45037	Idler Pivot Wld.	x	x
5	48101-01	Bearing, Cutter Spindle lower	x	x	58	45098	Belt Guide Wld.	x	x
5a	48101-02	Bearing, Cutter Spindle upper	x	x	59	*	Hex Head Bolt, 7/16-14 x 1	x	x
6	41001	Spindle Housing	x	x	60	*	Washer, 15/32 x 59/64 x 16 Ga.	x	x
7	48114-02	Grease Fitting, Str. 5/16 Serr.	x	x	61	*	Lockwasher, Spring, 7/16	x	x
8	43001-02	Spindle, Cutter Blade	x	x	62	*	Hex Nut, 7/16-14, Elastic Stop	x	x
9	04041-02	Washer, 1-15/16 x 2-13/32 x 16 Ga.	x	x	63	42523	Idler Pulley Support	x	x
10	04063-08	Key, 1/4 x 1/4 x 2	x	x	64	48068	Pulley, Belt Guide	x	x
11	43038	Spacer, Cutter Blade	x	x	65	*	Hex Hd. Bolt, 3/8-16 x 1-3/4	x	x
12	*	Hex Head Bolt, 5/16-18 x 1-1/4	x	x	66	45084	Cam Link	x	x
13	*	Lockwasher, Spring, 5/16	x	x	67	48181	Idler Pulley, "V" Groove	x	x
14	*	Hex Nut, 5/16-18	x	x	68	04050-02	Retaining Ring, 3/4 Ext.-"E"69	x	x
14a	*	Hex Nut, 5/16-24	x	x	69	46081	Idler Arm Assy. (Incl. 22 & 70)	x	x
15	48110	Cutter blade, 16-1/2" Std.	x		70	48100-05	Bronze Bearing	x	x
15	48108	Cutter blade, 18" std.		x	71	43028	Rod, Idler Pull, J	x	x
15a	48184	Cutter blade, 16-1/2" High Lift	x		72	43077	Spacer, J Pull Rod	x	x
15a	48185	Cutter blade, 18" High lift		x	73	04041-12	Washer, 3/8 x 1-1/2 x 16 Ga.	x	x
16	04040-10	Flat Washer, 5/8W	x	x	74	04004-04	Stud	x	x
17	0400-41	Hex Head Bolt, 5/8-11 x 9-1/2	x	x	75	*	Hex Nut, 3/8-16 Elastic Stop	x	x
18	46079	Caster Assy. Comp. (Incl. 19-28)	x	x	76	46145	Idler Arm Assy. (Incl. 22 & 70)	x	x
19	04066-01	Quick Pin	x	x	77	43063	Spacer, Idler	x	x
20	43037-01	Spacer, Caster Yoke, 1/2 Long	x	x	78	04070-02	Eyebolt, LH	x	x
21	48100-01	Bronze Bearing	x	x	79	04070-01	Eyebolt, RH	x	x
22	48114-01	Grease Fitting, Str. 1/4-28	x	x	80	43025	Turnbuckle	x	x
23	46082	Support Assy. (Incl. 21-22)	x	x	81	04022-02	Wing Nut, 5/16-18	x	x
24	45006	Caster Yoke Wld.	x	x	82	43042	Sleeve, Cam Clutch	x	x
25	43022	Sleeve, Caster Wheel Bearing	x	x	83	*	Hex Head Bolt, 3/8-16 x 2-3/4	x	x
26	04001-37	Hex Head Bolt, 1/2-13 x 5-1/2	x	x	84	48269	Idler Pulley, Belt Clutch	x	x
27	*	Hex Locknut, 1/2-13	x	x	85	04041-08	Washer 3/4 (49/64x1 1/4x16 ga)	x	x
28	48307-01	Wheel Assy. (Incl. 13-14, 14a, 29-34)	x	x	86	43043	Sleeve, Clutch Rod	x	x
29	48307-02	Tire Only, Caster Wheel	x	x	87	*	Cotter Pin, 3/32 x 1	x	x
29a	48006-03	Inner Tube Only, Caster Wheel	x	x	88	04062-01	Hair Pin, Large	x	x
30	48307-04	Rim Pair, Caster Wheel	x	x	89	*	Hex Head Bolt, 3/8-16 x 1	x	x
31	48006-07	Retainer, Bearing, Caster Wheel	x	x	90	44015	Blade clutch rod	x	x
32	48006-06	Roller Bearing, Caster Wheel	x	x			* Gold colored rod is used with 2 hole cam link)		
33	48114-03	Grease Fitting, 45' 1/4-28	x	x					
34	48006-05	Hub Assy. w/Bolts, Caster Wheel	x	x					
35	*	Hex Head Bolt, 5/16-18 x 3/4	x	x					
36	45029	Discharge Chute Wld.	x	x					
37	*	Hex Nut, 5/16-18 Elastic Stop	x	x					
38	*	Hex Head Bolt, 5/16-18 x 1	x	x					
39	46250	Belt cover (incl. decals)	x						
39	42511	Belt cover (incl. decals)		x					
40	*	Washer, 25/64 x 15/16 x 12 Ga.	x	x					
41	04022-04	Wing Nut, 3/8-16	x	x					
42	48068	Spindle Shield	x						
43	42504	Belt Cover Skirt	x	x					
44	*	Stl. Truss Hd.Mach.Screw, 1/4-20x1/2	x	x					
45	*	Lockwasher, Spring 1/4	x	x					
46	*	Hex Nut, 1/4-20	x	x					
47	48127	Pulley (Incl. 48-49)	x	x					
48	48141	Taper Hub	x	x					
49	*	Hex Head Bolt, 1/4-20 x 3/4	x	x					
50	*	Hex Nut, 5/8-11	x	x					
51	48129	Pulley, Double (Incl. 48-49)	x	x					
52	48087	Belt, RH blade drive	x						
52	48285	Belt, RH blade drive		x					
53	48088	Belt, Blade Drive	x						

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

SM-48, SM-61 & SM-72 CUTTER DECK



SM-48, SM-61 & SM-72 CUTTER DECK See Page 16 for Illustration

REF. NO.	PART NUMBER	DESCRIPTION	SM 48	SM 61	SM 72
1	46148	Cutter Deck (incl. Decal)	x		
1	46150	Cutter Deck (incl. Decal)		x	
1	46245	Cutter Deck (incl. Decal)			x
2	46020	Cutter Spindle Assy. (incl. 3-9)	x	x	x
3	04050-04	Retaining Ring, 1" Ext.-Inverted	x	x	x
4	04050-07	Retaining Ring, 2-7/16 Int.-Basic	x	x	x
5	48101-01	Bearing, Cutter Spindle Upper	x	x	x
5a	48101-02	Bearing, Cutter Spindle Lower	x	x	x
6	41001	Spindle Housing	x	x	x
7	48114-02	Grease Fitting, Str. 5/16 Serr.	x	x	x
8	43001-02	Spindle, Cutter Blade 1/16	x	x	x
9	04041-02	Washer, 1-5/16x2-13/32x16 Ga	x	x	x
10	04063-08	Key, 1/4 x 1/4 x 2	x	x	x
11	43038	Spacer, Cutter Blade	x	x	x
12	*	Hex Head Bolt, 5/16-18 x 1-1/4	x	x	x
13	*	Lockwasher, Spring, 5/16	x	x	x
14	*	Hex Nut, 5/16-18	x	x	x
14a	*	Hex Nut, 5/16-24	x	x	x
15	48111	Cutter Blade, 21" Std		x	
15	48110	Cutter Blade, 16-1/2" Std.	x		
15	48112	Cutter blade, 24"Std.			x
15a	48184	Cutter Blade, 16-1/2" High Lift	x		
16	04040-10	Flat Washer, 5/8W	x	x	x
17	04001-41	Hex Head Bolt, 5/8-11 x 9-1/2	x	x	x
18	46079	Caster Assy, Comp. (incl. 19-28)	x	x	x
19	04066-01	Quick Pin	x	x	x
20	43037-01	Spacer, Caster Yoke, 1/2 Long	x	x	x
21	48100-01	Bronze Bearing	x	x	x
22	48114-01	Grease Fitting, Str, 1/4-28	x	x	x
23	46082	Support Assy. (Inc. 21-22)	x	x	x
24	45006	Caster Yoke Wid.	x	x	x
25	43022	Sleeve, Caster Wheel Bearing	x	x	x
26	04001-37	Hex Head Bolt, 1/2-13 x 5-1/2	x	x	x
27	*	Hex Locknut, 1/2-13	x	x	x
28	48307-01	Wheel Assy. (Incl. 13-14, 14a, 29-34)	x	x	x
29	48307-02	Tire Only, Caster Wheel	x	x	x
29a	48006-03	Inner Tube Only, Caster Wheel	x	x	x
30	48307-04	Rim Pair, Caster Wheel	x	x	x
31	48006-07	Retainer, Bearing, Caster Wheel	x	x	x
32	48006-06	Roller Bearing, Caster Wheel	x	x	x
33	48114-03	Grease Fitting, 45° 1/4-28	x	x	x
34	48006-05	Hub Assy. w/Bolts	x	x	x
35	*	Hex Head Bolt, 5/16-18 x 3/4	x	x	x
36	48038	Guide Roller		x	x
37	45046	Roller Shaft Wid		x	x
38	*	Washer, 11/32 x 11/16 x 16 Ga.		x	x
39	45029	Discharge Chute Wid.	x	x	x
40	*	Hex Nut, 5/16-18 Elastic Stop	x	x	x
41	*	Hex Head Bolt, 5/16-18 x 1	x	x	x
42	46149	Belt Cover Assy. (incl. Decals)	x		
42	45032	Belt Cover		x	
42	45144	Belt Cover			x
43	*	Washer, 25/64 x 15/16 x 12 Ga.	x	x	x
44	04022-04	Wing Nut, 3/8-16	x	x	x
45	43123	Spacer	x	x	x
46	42045	Belt Cover Skirt	x	x	x
47	*	Mach Scrw, 1/4-20x1/2 Truss Hd.	x	x	x
48	*	Lockwasher, Spring, 1/4	x	x	x
49	*	Hex Nut, 1/4-20	x	x	x
50	48127	Pulley (incl. 51-52)	x	x	x
51	48141	Taper Hub	x	x	x
52	*	Hex Head Bolt, 1/4-20 x 3/4	x	x	x
53	*	Hex Nut, 5/8-11	x	x	x
54	48129	Pulley, Double (incl. 51-52)	x		
54	48128	Pulley, Double (incl. 51-52)		x	

Cont'd

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

SM48, SM61, & SM72 CUTTER DECK cont'd See Page 16 for Illustration

REF. NO.	PART NUMBER	DESCRIPTION	SM 48	SM 61	S M 72
54	48302	Pulley, Double (Incl. 51-52)			x
55	48082	Belt, Blade Drive	x		
55	48084	Belt, Blade drive		x	
55	48397	Belt, Blade drive			x
56	42004	Belt Guide	x		
56	42063	Belt Guide		x	
56	*	Bolt, hex hd 3/8-16 x 5 (used in place of belt guide)			x
57	*	Hex Hd. Bolt, 5/16-18 x 1-1/2	x	x	x
58	48062	Pulley Idler	x	x	x
59	48102	Bearing	x	x	x
60	04050-06	Retaining Ring, 1-9/16 Int. Basic	x	x	x
61	43045	Sleeve, Idler Bearing	x	x	x
62	43040	Spacer, Idler Bearing	x	x	x
63	*	Hex Hd. Bolt, 3/8-16 x 2 3/4	x	x	x
64	*	Lockwasher, spring 1/2	x	x	x
65	43105	Sleeve, Idler pulley	x	x	x
66	*	Hex Head Bolt, 7/16-14 x 1	x	x	x
67	*	Washer, 15/32 x 59/64 x 16 GA	x	x	x
68	*	Lockwasher, Spring, 7/16	x	x	x
69	*	Hex Nut, 7/16-14, Elastic Stop	x	x	x
70	45012	Idler Pulley Support	x	x	x
71	48068	Pulley, Belt Guide	x	x	x
72	*	Hex Hd. Bolt, 3/8-16 x 1 3/4	x	x	x
73	42483	Spacer	x	x	x
74	*	Hex Nut, 3/8-16	x	x	x
75	*	Lockwasher, Spring, 3/8	x	x	x
76	461061	Idler Arm Assy. (Incl. 22 & 77)	x	x	x
77	48100-05	Bronze Bearing	x	x	x
78	04050-02	Retaining Ring, 3/4 Ext.-"E"	x	x	x
79	43028	Rod, Idler Pull, J	x	x	x
80	45037	Idler Pivot Wld.	x	x	x
81	*	Hex Nut, 3/8-16 Elastic Stop	x	x	x
82	46155	Idler Arm Assy. (Incl. 22 & 77)	x	x	x
83	43054	Shoulder Bolt	x	x	x
84	43041	Spacer, Idler	x	x	x
85	04070-02	Eyebolt, LH	x	x	x
86	04070-01	Eyebolt, RH	x	x	x
87	43025	Turnbuckle	x	x	x
88	04022-02	Wing Nut, 5/16-18	x	x	x
89	43042	Sleeve, Cam Clutch	x	x	x
90	04041-06	Washer 3/4(49/64x1 1/4x16 Ga)	x	x	x
91	43043	Sleeve, Clutch Rod	x	x	x
92	*	Cotter Pin, 3/32 x 1	x	x	x
93	*	Washer, 33/64 x 1 x 16 Ga.	x	x	x
94	04062-01	Hair Pin, Large	x	x	x
95	*	Hex Head Bolt, 3/8-16 x 1	x	x	x
96	42057	Cam Link	x	x	x
97	*	Hex Hd. Bolt 1/2-20 x 2	x	x	x
98	44017	Rod, blade engagement (approx. 27" long)	x	x	x
99	48081	Belt, cutter drive	x		
99	48083	Belt, cutter drive		x	
99	48359	Belt, cutter drive			x
100	*	Bolt, hex hd 5/16-18 x 1 3/4	x	x	x

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

REPLACEMENT DECALS & INFORMATION

**HEAVY DUTY
COMMERCIAL**

SCAG

1

2

MOWER
ON
↑
↓
MOWER
OFF

IMPORTANT

- ALWAYS TRANSPORT WITH CUTTER DECK DOWN AND LIFT CABLE SLACK.
- MOW WITH WINCH CABLE SLACK TWO FULL TURNS.

OFF
■
ON
◆

fast
⬆

slow
⬆

NEUTRAL
ADJUSTMENT

CAUTION
• RELEASE BRAKE BEFORE DRIVING
• DRIVING WITH BRAKE ON WILL DAMAGE TRANSAXLE

3

4

5

6-7

8

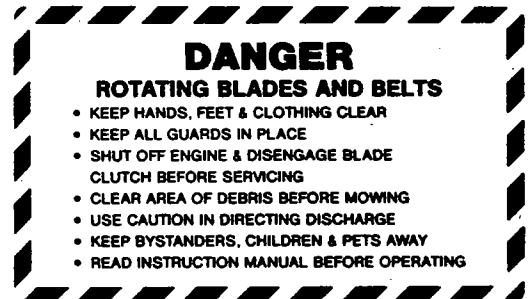
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48

10-15



16



17

READ OPERATOR'S MANUAL

START / DRIVE PROCEDURE

- ENGAGE PARKING BRAKE
- DISENGAGE MOWER DRIVE
- DEPRESS FOOT SAFETY SWITCH (LH) PEDAL
- START ENGINE
- RELEASE PARKING BRAKE
- SELECT FORWARD OR REVERSE SPEED WITH HYDRO CONTROL (RH) PEDAL

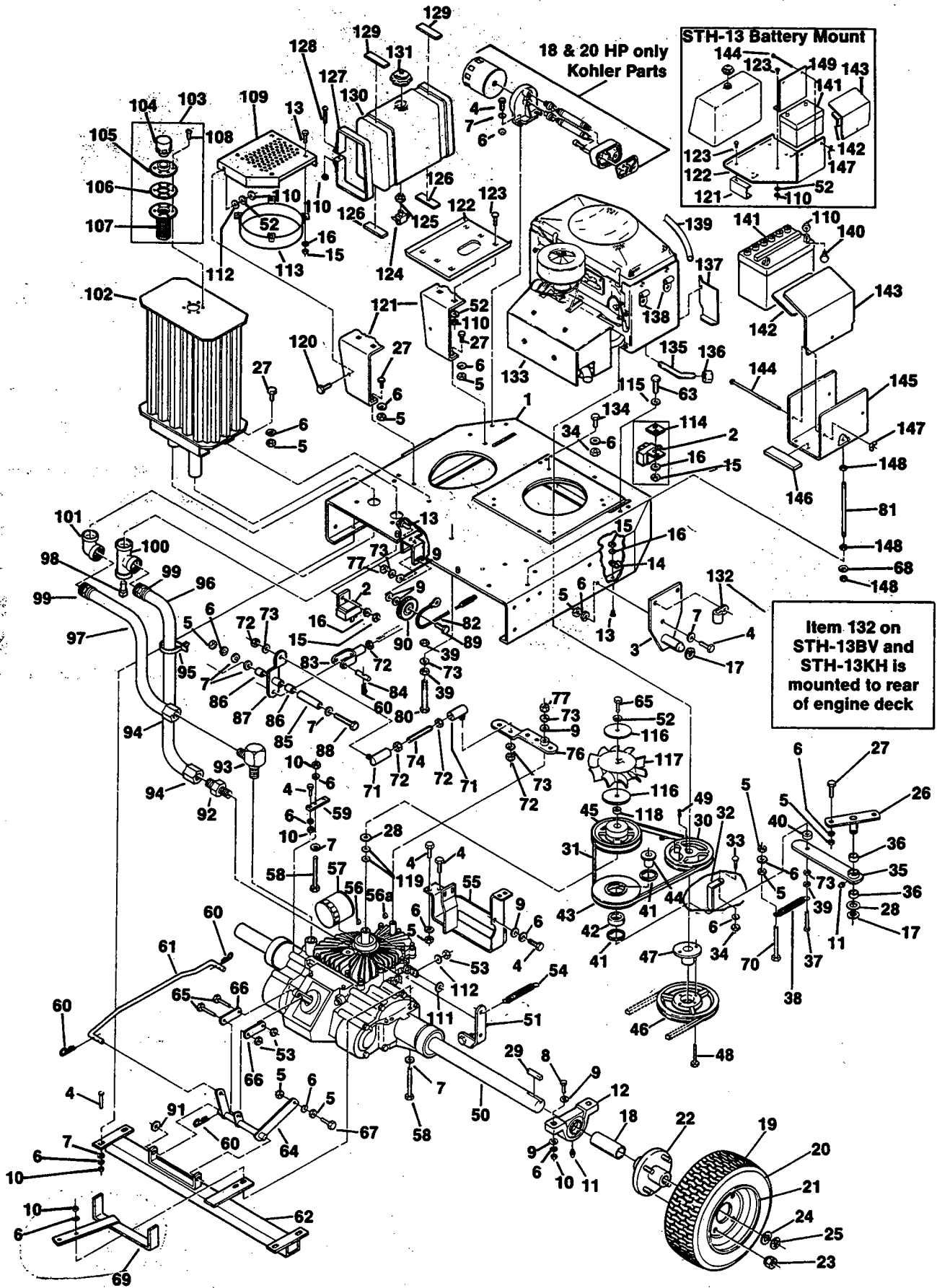
PATENT NO. 4,487,006

18

19

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	48072	Decal, Heavy Duty Commercial	13	48319	Decal, 52
2	48314	Decal, Scag logo	14	48320	Decal, 61
3	48382	Decal, mower engage	15	48327	Decal, 72
4	48383	Decal, transport down	16	48071	Decal, OPEI safety
5	48079	Decal, key switch	17	48073	Decal, Danger
6	48076	Decal, throttle FOR 18KH & 20KH	18	48182	Decal, patent
7	48186	Decal, throttle FOR 13KH & 13BV	19	48393	Decal, Start/drive procedure
8	48384	Decal, neutral adjustment	NS	01015	Engine manual FOR 18KH & 20KH
9	48386	Decal, warning damage to trans	NS	01039	Eaton Hyd Trans Manual
10	48317	Decal, 40	NS	01038	Engine manual FOR 13KH
11	48406	Decal, 42	NS	01041	Engine manual FOR 13BV
12	48318	Decal, 48			

ENGINE DECK



ENGINE DECK

See Page 20 For Illustration

Ref. No.	Part Number	Description	STH 13BV	STH 13KH	STH 18KH	STH 20KH
1	45150	Engine deck			x	x
1	45204	Engine deck	x	x		
2	48395	Switch, interlock	x	x	x	x
3	45149	Hitch bracket	x	x	x	x
4	*	Bolt, hex hd 5/16-18 x 1	x	x	x	x
5	*	Hex nut, 5/16-18	x	x	x	x
6	*	Lock washer, 5/16 spring	x	x	x	x
7	*	Flat washer, 5/16	x	x	x	x
8	*	Bolt, hex hd 5/16-18 x 1 1/2	x	x	x	x
9	04041-07	Flat washer, 3/8 (25/64 x 15/16 x 12ga)	x	x	x	x
10	*	Hex locknut, 5/16-18	x	x	x	x
11	48114-01	Grease fitting	x	x	x	x
12	48104-02	Bearing, pillow block 1"	x	x	x	x
13	*	Screw, Phillips washer hd #10-32 x 1/2	x	x	x	x
14	48030-01	Clip, cable	x	x	x	x
15	*	Hex nut, #10-32	x	x	x	x
16	*	Lock washer, external tooth #10	x	x	x	x
17	04050-02	Retaining ring, 3/4" "E"	x	x	x	x
18	43107	Spacer, drive axle	x	x	x	x
19	48321	Wheel assy complete (incl. 20 - 23) AA			x	x
20	48321-02	Tire, 18 x 8.50-8 4 ply			x	x
21	48321-04	Rim			x	x
22	48321-05	Hub and flange (incl. bolt & nut)			x	x
23	48321-06	Bolt and nut			x	x
<div style="text-align: center;"> AA <i>TORQUED 45 TO 52 FT. LBS. (HUB)</i> </div>						
19	48374	Wheel assy complete (incl. 20 - 23) BB	x	x		
20	48004-02	Tire, 18 x 8.50-8 4 ply	x	x		
21	48004-04	Rim	x	x		
22	48374-05	Hub and flange (incl. bolt & nut)	x	x		
23	48004-06	Bolt and nut	x	x		
<div style="text-align: center;"> BB </div>						
24	*	Flat washer, 1.062 x 1 1/2 x 18ga	x	x	x	x
24	*	Flat washer, 1.062 x 1 3/4 x .100	x	x	x	x
25	04050-08	Retaining ring, 1" "E"	x	x	x	x
26	45037	Pivot base, idler	x	x	x	x
27	*	Bolt, hex hd 5/16-18 x 3/4	x	x	x	x
28	04041-08S	Flat washer, 49/64 x 1 1/4 x .035	x	x	x	x
29	04063-03	Key, 1/4 x 1/4 x 2 1/2	x	x	x	x
30	48063	Pulley, engine transaxle drive	x	x	x	
30	48377	Pulley, engine transaxle drive				x
31	48344	Belt, transaxle drive	x	x	x	x
32	42199	Guide, engine belt	x	x	x	x
33	*	Carriage bolt, 5/16-18 x 1	x	x	x	x
34	04021-10	Hex nut, Elastic stop lock 5/16-18	x	x	x	x
35	45153	Idler arm, transmission	x	x	x	x
36	48100-05	Bronze bushings	x	x	x	x
37	*	Bolt, hex hd 3/8-16 x 1 3/4	x	x	x	x
38	48051	Spring, transmission idler	x	x	x	x
39	*	Hex nut, jam 3/8-16	x	x	x	x
40	43063	Spacer, idler	x	x	x	x
41	04050-06	Retaining ring, 1 9/16 internal	x	x	x	x
42	48102	Bearing, idler pulley	x	x	x	x
43	48065	Pulley, transaxle idler	x	x	x	x
44	43117	Sleeve, idler tapped	x	x	x	x
45	48346	Pulley, transaxle drive	x	x	x	x
46	48168	Pulley, engine blade drive (incl. 46, 47)	x	x	x	
46	48378	Pulley, engine blade drive (incl. 46, 47)				x
47	48168-03	Hub, tapered	x	x	x	
47	48378-03	Hub, tapered				x
48	*	Bolt, hex hd 1/4-20 x 1 3/8	x	x	x	x
49	04063-11	Key, 1/4 x 1/4 x 2 1/2 plated	x	x	x	x
50	48410	Transaxle, Eaton (850-030)			x	x
50	48388	Transaxle, Eaton (850-026)	x	x		
51	45181	Control arm, dump valve	x	x	x	x

cont'd

* Common hardware purchased locally. All bolts grade 5 plated, all other fasteners zinc plate.

ENGINE DECK cont'd See Page 20 For Illustration

Ref. No.	Part Number	Description	STH 13BV	STH 13KH	STH 18KH	STH 20KH
52	*	Lock washer, 1/4 spring	x	x	x	x
53	04021-01	Hex nut, Elastic stop lock 1/4-20	x	x	x	x
54	48052	Spring, return	x	x	x	x
55	45156	Protector, transaxle	x	x	x	x
56	04063-12	Key, woodruff #51 3/16 x 5/8	x	x	x	x
56a	04063-13	Key, woodruff #3 1/8 x 1/2	x	x	x	x
57	E103144	Filter, Eaton 10 micron	x	x	x	x
58	*	Bolt, hex hd 5/16-18 x 3	x	x	x	x
59	42391	Spacer, transaxle	x	x	x	x
60	04062-02	Hair pin cotter, small	x	x	x	x
61	44021	Brake rod	x	x	x	x
62	45155	Support, transaxle			x	x
62	45188	Support, transaxle	x	x		
63	*	Screw, hex hd #10-32 x 3/4	x	x	x	x
64	45174	Bellcrank, brake shaft	x	x	x	x
65	*	Bolt, hex hd 1/4-20 x 1 1/4	x	x	x	x
66	42428	Link, brake	x	x	x	x
67	*	Bolt, hex hd 5/16-18 x 2	x	x	x	x
68	*	Lock washer, 7/16 spring	x	x	x	x
69	45119	Belt guide, blade drive	x	x	x	x
71	48118	Ball joint	x	x	x	x
72	*	Hex nut, 3/8-24	x	x	x	x
73	*	Lock washer, 3/8 spring	x	x	x	x
74	44023	Connector rod	x	x	x	x
75	*	Bolt, hex hd 5/16-18 x 1 1/4	x	x	x	x
76	45157	Control arm	x	x	x	x
77	*	Hex nut, 3/8-16	x	x	x	x
80	*	Bolt, hex hd deck support 3/8-16 x 5	x	x	x	x
81	44025	Rod, battery support	x	x	x	x
82	48387	Spring/cable assy.	x	x	x	x
83	48343-01	Clevis, hydro control	x	x	x	x
84	44024	Clevis pin	x	x	x	x
85	43110	Sleeve, control arm bellcrank	x	x	x	x
86	48100-04	Bronze bushing	x	x	x	x
87	45159	Bellcrank, control arm	x	x	x	x
88	*	Bolt, hex hd 5/16-18 x 2 3/4	x	x	x	x
89	*	Bolt, hex hd 3/8-16 x 1 3/8	x	x	x	x
90	48066	Pulley, spring/cable	x	x	x	x
91	*	1/2" flat washer	x	x	x	x
92	48347	Adapter, 37" flare	x	x	x	x
93	48350	Elbow, O-ring seal adapter	x	x	x	x
94	48353	Coupling 37" flare	x	x	x	x
95	48028-01	Cable tie	x	x	x	x
96	48351-01	Hose, long	x	x	x	x
97	48351-02	Hose, short	x	x	x	x
98	48363	Pipe plug, 1/2 NPT	x	x	x	x
99	48352	Coupling 1/2 NPT	x	x	x	x
100	48365	Tee, 1/2 NPT	x	x	x	x
101	48364	Elbow 90° 1/2 NPT	x	x	x	x
102	45160	Oil reservoir	x	x	x	x
103	48354	Filler cap and mounting ass. y (incl. 104 - 107)	x	x	x	x
104	48354-01	Cap	x	x	x	x
105	48354-02	Seal ring	x	x	x	x
106	48354-03	Gasket	x	x	x	x
107	48354-04	Basket	x	x	x	x
108	*	Screw, Phillips pan hd type F #10-24 x 1/2	x	x	x	x
109	42387	Fan shield			x	x
109	42484	Fan shield	x	x		
110	*	Hex nut, 1/4-20	x	x	x	x
111	04042-07	Flat washer, .594 x 1.125 x .063	x	x	x	x
112	*	Flat washer, 1/4	x	x	x	x
113	45166	Fan shroud			x	x
113	45190	Fan shroud	x	x		
114	42459	Stop, mower engage	x	x	x	x
115	*	Flat washer #10	x	x	x	x
116	04041-10	Flat washer, 3/8 x 2 x 16ga	x	x	x	x

cont'd

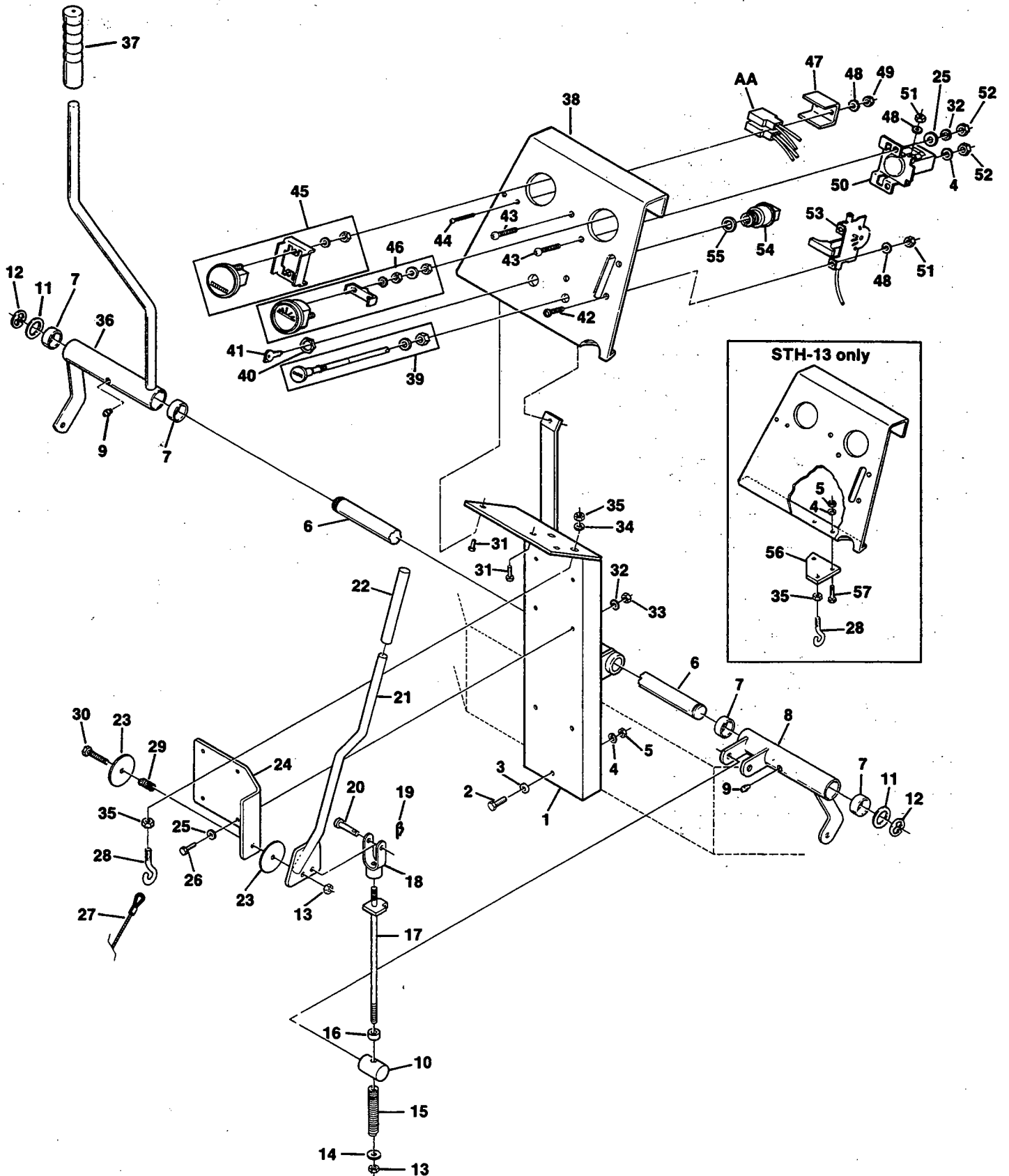
* Common hardware purchased locally. All bolts grade 5 plated, all other fasteners zinc plate.

ENGINE DECK cont'd See Page 20 For Illustration

Ref. No.	Part Number	Description	STH 13BV	STH 13KH	STH 18KH	STH 20KH
117	48349	Fan, hydro	x	x	x	x
118	43077	Spacer, fan	x	x	x	x
119	04041-08	Flat washer, 49/64 x 1 1/4 x 16ga	x	x	x	x
120	*	Bolt, hex hd 1/4-20 x 3/4	x	x	x	x
121	42386	Bracket, fuel tank mtg.			x	x
121	42505	Bracket, fuel tank and battery	x	x		
122	42377	Support, fuel tank			x	x
122	42487	Plate, fuel tank and battery mtg.	x	x		
123	*	Carriage bolt, 1/4-20 x 3/4	x	x	x	x
124	48308	Fuel shut-off valve	x	x	x	x
125	48309	Bushing, fuel tank/valve	x	x	x	x
126	48205	Pad, tank support	x	x	x	x
127	42369	Strap, fuel tank	x	x	x	x
128	*	Screw, slotted rd hd machine 1/4-20 x 2	x	x	x	x
129	48292	Pad, strap cushion	x	x	x	x
130	46174	Fuel tank assy. (incis tank, 124, 125, 131)	x	x	x	x
131	48311	Fuel tank cap	x	x	x	x
132	48030-07	Clip, Battery overflow tube	x	x	x	x
133	48392	Engine, 12.5 hp Briggs & Stratton (Vanguard 261777 0120 01)	x			
133	48356	Engine, 12.5 hp Kohler (CV12.5 PS-1214)		x		
133	48362	Engine, 18hp Kohler (MV18S PS-58527)			x	
133	48371	Engine, 20hp Kohler (MV20S PS-57511)				x
134	*	Bolt, hex hd 5/16-18 x 1 3/4			x	x
134	04002-01	Metric hex hd. bolt 8 x 30		x		
134	*	Bolt, hex hd 5/16-18 x 1 3/4	x			
134	04011-07	Bolt, hex hd tapline 3/8-16 x 1 1/4	x			
134	*	Bolt, hex hd 5/16-18 x 1 1/2	x			
135	48115	Oil drain extension			x	x
135	48402	Oil drain extension	x	x		
136	48257	Pipe cap, 3/8 hex	x	x	x	x
137	42328	Air baffle			x	
138	48059-01	Clamp, battery cable			x	
139	48058-07	Hose, fuel	x		x	x
139	48058-10	Hose, fuel		x		
140	*	Bolt, hex hd 1/4-20 x 1/2	x	x	x	x
141	48405	Battery	x	x		
141	48015	Battery (U1-9LM)			x	x
142	48099	Insulation, battery cover	x	x	x	x
143	42392	Battery cover			x	x
143	42506	Battery cover	x	x		
144	*	Carriage hd bolt 1/4-20 x 4 1/2	x	x		
144	*	Carriage bolt, 1/4-20 x 6			x	x
145	45161	Battery box			x	x
146	48333	Pad, battery support	x	x	x	x
147	04022-01	Wing nut, ESNA self lock 1/4-20	x	x	x	x
148	*	Hex nut, 7/16-14	x	x	x	x
149	42486	Battery clamp	x	x		

* Common hardware purchased locally. All bolts grade 5 plated, all other fasteners zinc plate.

INSTRUMENT PANEL



INSTRUMENT PANEL SEE PAGE 24 FOR ILLUSTRATION

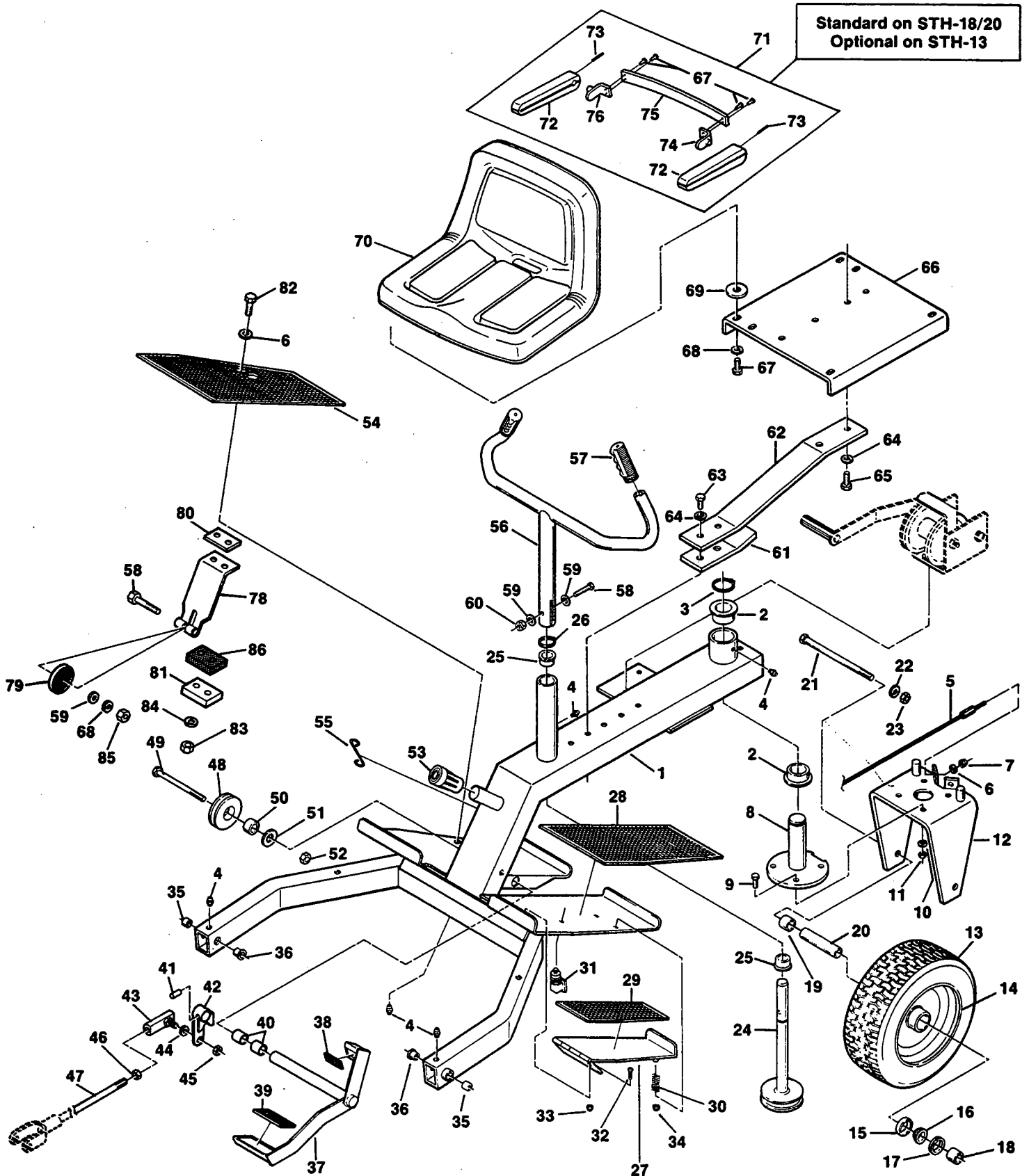
Ref. No.	Part Number	Description	STH 13BV	STH 13KH	STH 18KH	STH 20KH
1	45025	Console support	x	x	x	x
2	*	Bolt, hex hd 5/16-18 x 2 1/4	x	x	x	x
3	*	Flat washer, 5/16	x	x	x	x
4	*	Lock washer, 5/16 spring	x	x	x	x
5	*	Hex locknut, 5/16	x	x	x	x
6	43017	Shaft, bell crank pivot	x	x	x	x
7	48100-06	Bronze bushing	x	x	x	x
8	45169	Brake bellcrank	x	x	x	x
9	48114-01	Grease fitting	x	x	x	x
10	43122	Pivot, brake rod	x	x	x	x
11	*	Flat washer, 49/64 x 1 1/4 x 16ga	x	x	x	x
12	04050-02	Retaining ring, 5/8" "E"	x	x	x	x
13	04021-09	Hex nut, Elastic stop lock 3/8-16	x	x	x	x
14	04041-07	Flat washer, 3/8 (25/64 x 15/16 x 12ga)	x	x	x	x
15	48339	Spring, parking brake	x	x	x	x
16	43038	Spacer, parking brake	x	x	x	x
17	45176	Brake lever adjustment rod	x	x	x	x
18	48343-02	Clevis, parking brake	x	x	x	x
19	04062-02	Hair pin cotter, small	x	x	x	x
20	04064-02	Clevis pin, 3/8 x 1 1/16	x	x	x	x
21	45167	Handle, Parking brake	x	x	x	x
22	48342	Grip, parking brake	x	x	x	x
23	04041-12	Flat washer, 3/8 x 1 1/2 x 16ga	x	x	x	x
24	42435	Pivot support	x	x	x	x
25	*	Flat washer, 1/4	x	x	x	x
26	*	Bolt, hex hd 1/4-20 x 1	x	x	x	x
27	48045	Cable, winch	x	x	x	x
28	04070-03	Eye bolt, 3/8-16 x 2	x	x	x	x
29	48050	Spring, shift lever	x	x	x	x
30	*	Bolt, hex hd 3/8-16 x 1 3/4	x	x	x	x
31	*	Bolt, hex hd 1/4-20 x 3/4	x	x	x	x
32	*	Lock washer, 1/4 spring	x	x	x	x
33	*	Hex nut, 1/4-20	x	x	x	x
34	*	Lock washer, 3/8 spring	x	x	x	x
35	*	Hex nut, 3/8-16	x	x	x	x
36	45022	Bellcrank, belt clutch	x	x	x	x
37	48093	Grip, clutch lever	x	x	x	x
38	42414	Instrument panel	x	x	x	x
39	48091	Choke control, includes hardware			x	x
39	*	Phillips truss hd screw 1/4-20 x 3/4	x	x		
40	48017-04	Hex nut, 5/8-11	x	x	x	x
41	48017-02	Key, ignition	x	x	x	x
42	*	Screw, Phillips washer hd #10-32 x 1/2	x	x	x	x
43	*	Screw, Phillips truss hd 1/4-20 x 3/4	x	x	x	x
44	*	Screw, Phillips hd #10-32 x 1 1/2	x	x	x	x
45	48023	Hour meter, includes hardware	x	x	x	x
46	48022	Ammeter, includes hardware	x	x	x	x
47	42413	Bracket, fuse holder	x	x	x	x
48	04031-01	Lock washer, #10 external tooth	x	x	x	x
49	04021-01	Hex nut, Elastic stop lock #10-32	x	x	x	x
50	48016	Solenoid, starter	x	x	x	x
51	*	Hex nut, #10-32	x	x	x	x
52	*	Hex nut, 5/16-18	x	x	x	x
53	48090	Throttle control			x	x
53	48408	Throttle control	x	x		
54	48017	Switch starter (incl. 40, 41, 55)	x	x	x	x
55	48017-03	Lock washer, 5/8 internal tooth	x	x	x	x
56	42507	Winch cable anchor	x	x		
57	*	Bolt, hex hd 5/16-18 x 3/4	x	- x		

*

Common hardware purchased locally.

All bolts grade 5 plated, all other fasteners zinc plate.

RIDER FRAME ASSEMBLY



RIDER FRAME ASSEMBLY

Ref. No.	Part Number	Description	STH 13BV	STH 13KH	STH 18KH	STH 20KH
1	46247	Steering frame (incl. bushings & grease fittings)			x	x
1	46248	Steering frame (incl. bushings & grease fittings)	x	x		
2	48100-02	Bronze bushing	x	x	x	x
3	04050-05	Retaining ring, 1 1/8 external	x	x	x	x
4	48114-01	Grease fitting	x	x	x	x
5	48042	Cable, steering			x	x
5	48153	Cable, steering	x	x		
6	*	Flat washer, 1/4	x	x	x	x
7	*	Hex nut, 1/4-28 lock	x	x	x	x
8	45008	Rear wheel pivot	x	x	x	x
9	*	Bolt, hex hd 3/8-16 x 1 3/8	x	x	x	x
10	*	Lock washer, 3/8 spring	x	x	x	x
11	*	Hex nut, 3/8-16	x	x	x	x
12	45035	Rear wheel yoke	x	x	x	x
13	48005-01	Rear wheel assembly (incl. 14, 15, 16, 17)	x	x	x	x
14	48005-03	Firm only	x	x	x	x
15	48005-04	Bearing cup	x	x	x	x
16	48005-05	Bearing cone	x	x	x	x
17	48005-06	Seal, grease	x	x	x	x
18	43020-01	Spacer, rear wheel short	x	x	x	x
19	43020-02	Spacer, rear wheel long	x	x	x	x
20	43021	Sleeve, rear wheel	x	x	x	x
21	*	Bolt, hex hd 5/8-11 x 9	x	x	x	x
22	*	Lock washer, 5/8 spring	x	x	x	x
23	*	Hex nut, 5/8-11	x	x	x	x
24	45009	Steering shaft	x	x	x	x
25	48100-07	Bronze bushing	x	x	x	x
26	04050-03	Retaining ring, 7/8" external	x	x	x	x
27	45175	Pedal, foot safety switch	x	x	x	x
28	48369	Pad, LH	x	x	x	x
29	48370	Pad, Safety pedal	x	x	x	x
30	48049	Spring, Foot safety switch	x	x	x	x
31	48026	Switch, foot safety	x	x	x	x
32	*	Screw, slotted flat hd #10-32 x 3/4	x	x	x	x
33	*	Hex nut, #10-32	x	x	x	x
34	04021-08	Hex nut, Elastic stop lock 1/4-20	x	x	x	x
35	48100-06	Bronze bushing	x	x	x	x
36	48100-03	Bronze bushing	x	x	x	x
37	45151	Foot pedal	x	x	x	x
38	48338	Pad, foot pedal reverse	x	x	x	x
39	48337	Pad, foot pedal forward	x	x	x	x
40	48100-06	Bronze bushing	x	x	x	x
41	04065-01	Pin, drive lock 3/16 x 1 1/4	x	x	x	x
42	45209	Foot pedal arm	x	x	x	x
43	48118	Ball joint	x	x	x	x
44	*	Flat washer, 3/8	x	x	x	x
45	*	Hex locknut, 3/8	x	x	x	x
46	*	Hex nut, 3/8-24	x	x	x	x
47	44022	Control rod	x	x	x	x
48	48208	Pulley, winch cable	x	x	x	x
49	*	Bolt, hex hd 1/2-13 x 5 1/2	x	x	x	x
50	48100-04	Bronze bushing	x	x	x	x
51	*	Flat washer, 1/2 (.531 x 1.062 x .095)	x	x	x	x
52	04021-07	Hex nut, Elastic stop lock 1/2-13	x	x	x	x
53	48097	Bumper stop cover	x	x	x	x
54	48336	Pad, RH	x	x	x	x
55	44028	Retainer, winch cable	x	x	x	x
56	46029	Steering handle (incl. 57)	x	x	x	x
57	48159	Grip	x	x	x	x
58	*	Bolt, hex hd 5/16-18 x 1 1/2	x	x	x	x
59	*	Flat washer, 11/32 x 11/16 x 16 ga.	x	x	x	x
60	*	Hex nut, 5/16-18 center lock	x	x	x	x
61	42366	Reinforcement, seat spring	x	x	x	x
62	42026	Seat spring	x	x	x	x
63	*	Bolt, hex hd 7/16-14 x 1 1/2	x	x	x	x

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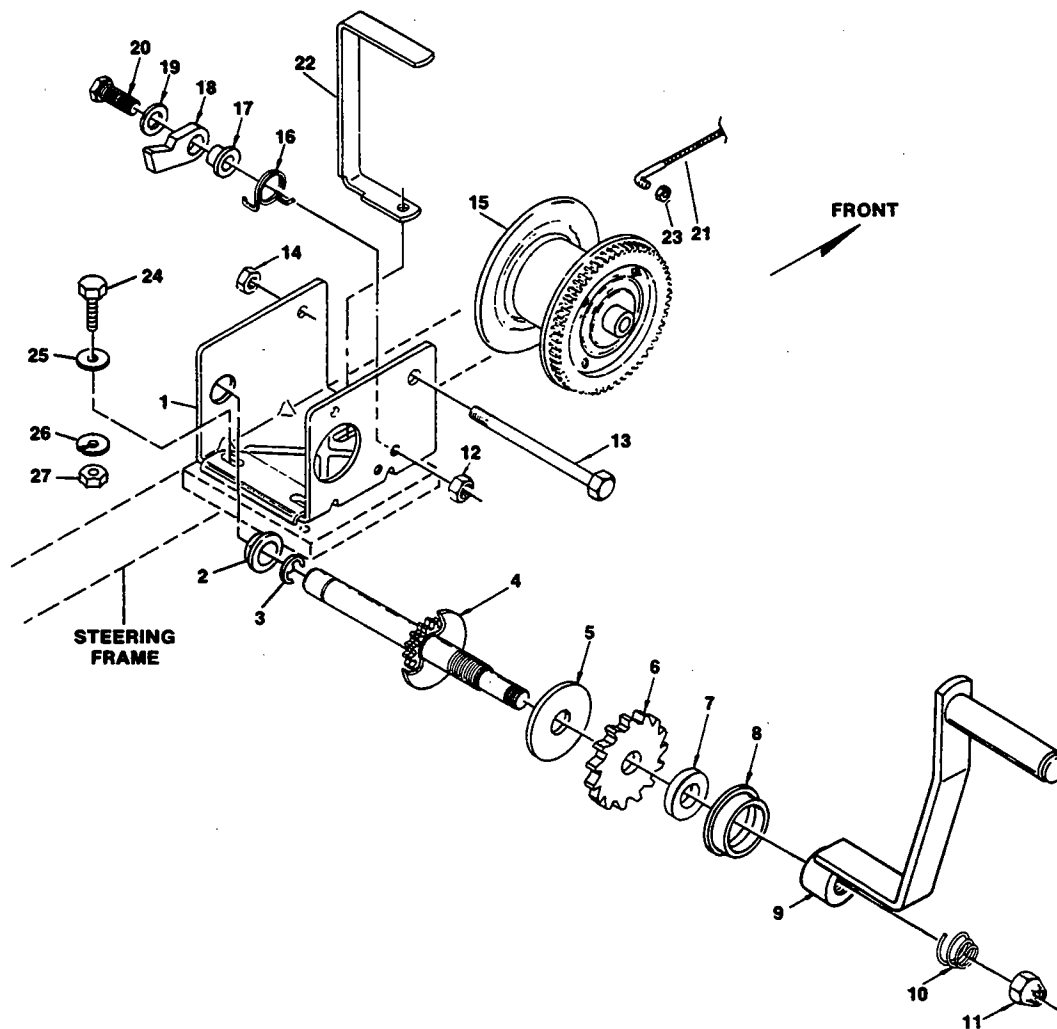
* Common hardware purchased locally. All bolts grade 5 plated, all other fasteners zinc plate.

RIDER FRAME ASSEMBLY cont'd see page 26 for illustration

Ref. No.	Part Number	Description	STH 13BV	STH 13KH	STH 18KH	STH 20KH
64	*	Lock washer, 7/16 spring	x	x	x	x
65	*	Bolt, hex hd 3/8-16 x 1	x	x	x	x
66	45111	Seat plate	x	x	x	x
67	*	Bolt, hex hd 5/16-18 x 3/4	x	x	x	x
68	*	Lock washer, 5/16 spring	x	x	x	x
69	04041-11	Flat washer, 13/32 x 1 1/2 x 7 ga	x	x	x	x
70	48014-01	Seat only	x	x	x	x
71	48014-02	Arm rest kit (incl. 71-77 & 67)	x	x	x	x
72	48014-03	Arm rest	x	x	x	x
73	*	Setscrew, 3/8-16 x 3/4 flat point	x	x	x	x
74	48014-05	Mounting bracket, LH	x	x	x	x
75	48014-07	Back strap	x	x	x	x
76	48014-04	Mounting bracket, RH	x	x	x	x
77	42482	Ballast for use with 72" deck				x
78	42527	Spring, neutral	x	x	x	x
79	48409	Bearing, neutral detent	x	x	x	x
80	42528	Shim, spring	x	x	x	x
81	42529	Keeper, spring	x	x	x	x
82	*	Bolt, hex hd. 1/4-20 x 1 1/4	x	x	x	x
83	*	Hex nut, 1/4-20	x	x	x	x
84	*	Lock washer 1/4	x	x	x	x
85	*	Hex nut, 5/16-18	x	x	x	x
86	48411	Rubber block	x	x	x	x

* Common hardware purchased locally. All bolts grade 5 plated, all other fasteners zinc plate.

WINCH LIFT SYSTEM

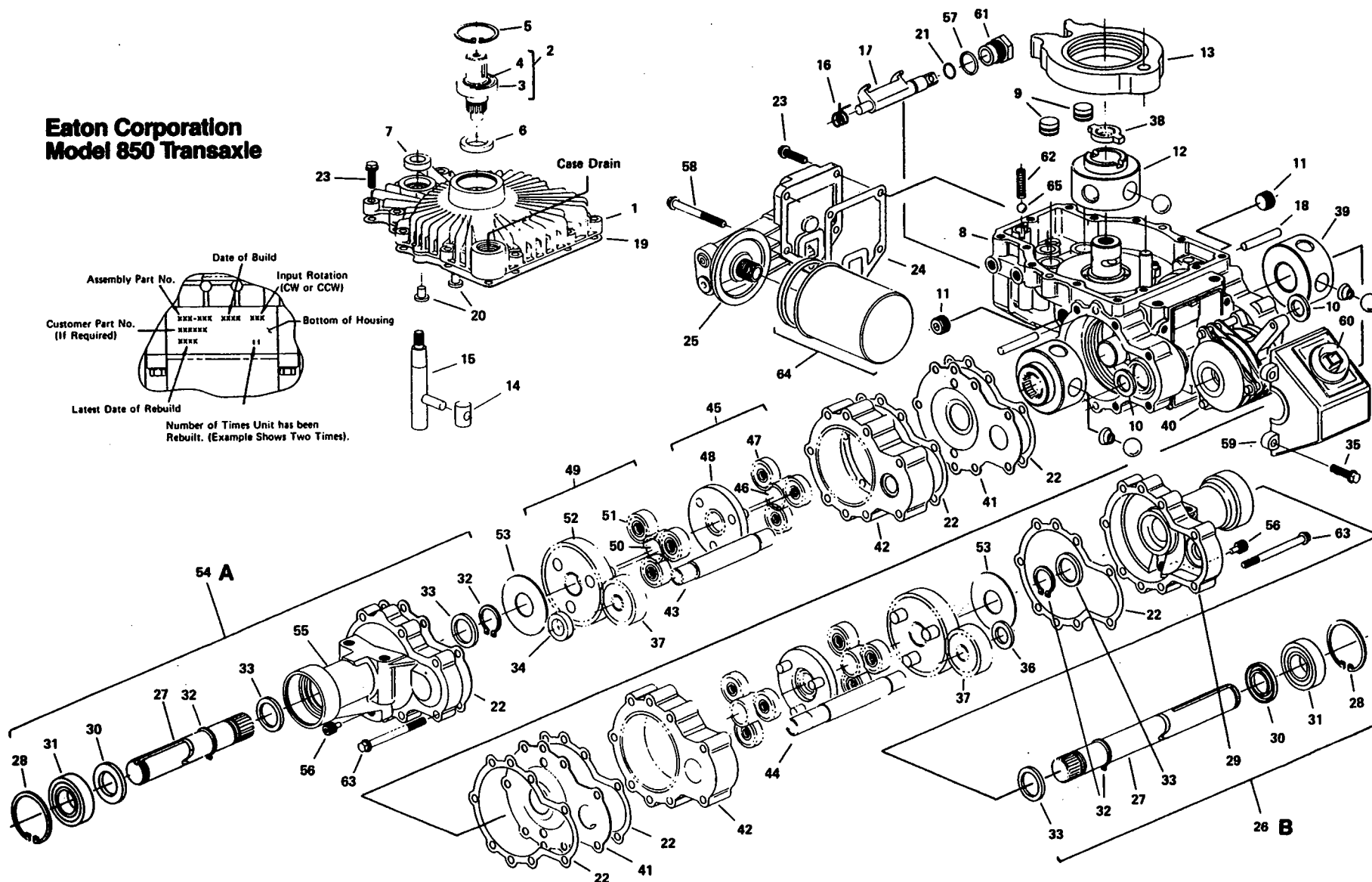


REF. PART NO.	DESCRIPTION	ALL	REF. PART NO.	DESCRIPTION	ALL
1 48043	Winch assembly(incl. 1-8, 10-20)	x	15 304227	Winch Reel	x
2 204009	Shaft Bushing	x	16 204363	Ratchet Spring	x
3 205116	E-Ring	x	17 404166	Ratchet Spacer	x
4 304228	Drive Shaft	x	18 404409	Ratchet Pawl	x
5 204362	Pressure Plate	x	19 205024	Flat Washer	x
6 404164	Ratchet Wheel	x	20 205167	Ratchet Bolt	x
7 404163	Pressure Washer	x	21 48045	Winch Cable Assembly	x
8 204359	Shaft Bushing	x	22 42127	Cable Guide	x
9 48044	Winch Handle	x	23 04021-03	Hex Lock Nut, 1/4-28	x
10 204364	Handle Spring	x	24 *	Hex hd bolt, 3/8-16 x 1	x
11 205015	Handle Nut	x	25 *	Flat washer, 13/32x13/16x16ga	x
12 205011	Hex Locknut, 3/8-16	x	26 *	Lock washer, 3/8 spring	x
13 205008	Reel Shaft	x	27 *	Hex nut, 3/8-16	x
14 205155	Lock Nut, 7/16-14	x			

* Common hardware purchased locally. All bolts grade 5 plated, all other fasteners zinc plate.

Eaton Corporation **Model 850 Transaxle**

Assembly Part No. _____ Date of Build _____ Input Rotation (CW or CCW) _____
 Customer Part No. (If Required) _____ Bottom of Housing _____
 Latest Date of Rebuild _____
 Number of Times Unit has been Rebuilt. (Example Shows Two Times).



EATON 850 HYDROSTATIC TRANSAXLE

! ITEMS IN BOLD REQUIRE IDENTIFICATION FROM NUMBER ON TRANSAXLE !

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	E104410	Cover subassembly S/A	34	E103930-142	Spacer, thick
2	E103768	Shaft, input, S/A Contains items 3, 4	35	E104436-100	Screw, 1/4 self tapping
3	nss	Bearing, input shaft	36	E103930-125	Spacer, thin
4	nss	Ring, retaining, external	37	E103933	Brake gear
5	E101680-156	Ring, retaining, internal	38	E104107	Drive
6	E104538	Seal, input shaft	39	E104551	Motor, Rotor-ball, A&B S/A, 15T [For 850-030]
7	E93895	Seal, control shaft		E104073	Motor, Rotor-ball, A&B S/A, 18T [For 850-021 & 026]
8	E104431	Housing, S/A CW Contains items 9, 10	40	E104733	Parking brake assy.
9	E104294	Piston, dampening, S/A	41	E104337	Plate, wear
10	E104020	Seal, brake shaft	42	E104340	Ring gear, A&B S/A, 57T [For 850-030]
11	E95653-038	Plug, socket pipe		E104341	Ring gear, A&B S/A, 54T [For 850-021 & 026]
12	E104414	Pump rotor-ball-pln, S/A	43	E104426	Brake shaft - side A
13	E104131	Cam ring, S/A	44	E104425	Brake shaft - side B
14	E103621	Insert	45	E990408	Planetary gear, first, A&B S/A [For 850-030]
15	E103611	Control shaft, S/A		E990405	Planetary gear, first, A&B S/A [For 850-021 & 026]
16	E104684	Spring, dump valve	46	nss	Sun gear, first, 15T
17	E104633	Bracket, dump valve	47	nss	Primary carrier, A&B S/A, 15T
18	E104537	Dowel	48	nss	Planetary gear, first, A&B S/A, 21T
19	E104479	Gasket, cover	49	E990474	Planetary gear, second, A&B S/A [For 850-030]
20	E101597	Button		E990406	Planetary gear, second, A&B S/A [For 850-021 & 026]
21	E8761-013	"O"-ring, dump valve bracket	50	nns	Sun gear, second, 15T
22	E104442	Gasket, axle housing	51	nss	Secondary carrier, A&B S/A
23	E103757-088	Screw, 1/4-20 hex flange	52	nss	Planetary gear, second, A&B S/A, 21T
24	E104392	Gasket, filter base or port plate	53	E104542	Washer, thrust
25	E104382	Filter base, S/A	54	E104821-000	Axle housing, S/A side A [For 850-030 & 021]
26	E104822-005	Axle housing, S/A side B [For 850-030 & 021] Contains items 27b, 28, 29, 30, 31, 32, 33			Contains items 27a, 28, 30, 31, 32, 33, 55
27B	E104815-005	Shaft, axle side B [For 850-030 & 021]	55	E104366	Housing axle A
	E104815-012	Shaft, axle side B [For 850-026 only]	56	E103772	Plug, magnetic
27A	E104815-000	Shaft, axle side A	57	E8785-010	"O"-ring, dump valve
28	E101680-206	Retaining ring, internal	58	E103757-250	Screw, 1/4-20 hex flange
29	E104367	Housing, axle B	59	E104387	Cover, parking brake
30	E103960	Seal, axle shaft	60	E104391	Boot, dust
31	E104928	Bearing, axle shaft	61	E104664	Dump valve nut
32	E103983-100	Retaining ring	62	E104421	Spring, relief valve
33	E103966	Washer, thrust	63	E103757-275	Screw, 1/4-20 hex flange
			64	E103144	Filter, w/seal
			65	E95881-038	Ball, grade 200
			NS	E990407	Gasket Overhaul kit Contains items 19, 22, 24

And finally:

PLEASE BE CAREFUL

1. Keep all shields in place, especially grass discharge guard.
2. Stop machine and remove spark plug wire to adjust or service.
3. When mechanism becomes clogged, stop engine before cleaning.
4. Keep hands, feet and clothing away from power-driven parts.
5. Keep off implement unless seat or platform is provided.
6. Keep others off of the tractor (only one person at a time).

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

FAILURE TO FOLLOW CAUTIOUS OPERATING PRACTICES MAY RESULT IN SERIOUS BODILY INJURY. BESIDES, WE WOULD LIKE YOU TO CONTINUE TO ENJOY AND PROFIT BY USING OUR PRODUCTS.

OWNER REFERENCE

TRACTOR MODEL _____

TRACTOR SERIAL NUMBER _____

MOWER MODEL _____

MOWER SERIAL NUMBER _____