



2810632-Rev.G-GB



# Parts & Maintenance Manual

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## Tri King® Triplex Mower with ROPS

67043 – 1900D Kubota D662-EB Engine



### WARNING

If incorrectly used, this machine can cause severe injury. Those who use and maintain this 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.



**When Performance Matters.™**



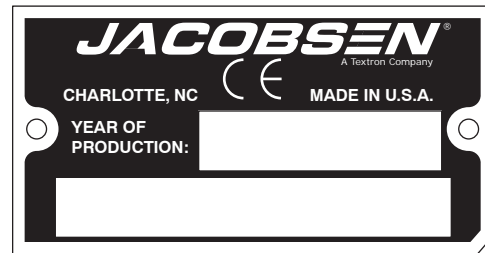
## FOREWORD

This manual contains adjustment, maintenance, troubleshooting instructions and parts list for your new Jacobsen machine. This manual should be stored with the equipment for reference during operation.

Before you operate your machine, you and each operator you employ should read the manual carefully in its entirety. By following the safety, operating and maintenance instructions, you will prolong the life of your equipment and maintain its maximum efficiency.

If additional information is needed, contact your Jacobsen Dealer.

The serial plate is located on the left rear frame rail. Jacobsen recommends you record these numbers below for easy reference.



## Suggested Stocking Guide

To Keep your Equipment fully operational and productive, Jacobsen suggests you maintain a stock of the more commonly used maintenance items. We have included part numbers for additional support materials and training aids.

To order any of the following material:

1. Write your full name and complete address on your order form.

2. Explain where and how to make shipment:

☐ UPS

☐ Regular Mail

☐ Overnight

☐ 2nd Day

3. Order by the quantity desired, the part number, and the description of the part.

4. Send or bring the order to your authorized Jacobsen Dealer.

## Service Parts

Qty.	Part No.	Description	Qty.	Part No.	Description
	550489	Fuel Filter, Diesel Engine		549579	Hydraulic Oil Filter (2 Req'd)
	5000913	Air Filter, Diesel Engine		3001950	Pump Drive Belt
	502644	Oil Filter, Diesel Engine		1001958	Ignition Key Switch

## Service Support Material

Qty.	Part No.	Description
	2810631	Safety & Operation Manual
	2810632	Parts & Maintenance
	3004386	Engine Parts Catalog
	2810628	Video, Operator Training

Qty.	Part No.	Description
	4171674	Service Manual

### Proposition 65 Warning

This product contains or emits chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

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# 1 SAFETY

## 1.1 OPERATING SAFETY



### WARNING

#### **EQUIPMENT OPERATED IMPROPERLY OR BY UNTRAINED PERSONNEL CAN BE DANGEROUS.**

Familiarize yourself with the location and proper use of all controls. Inexperienced operators should receive instruction from someone familiar with the equipment before being allowed to operate the machine.

1. Safety is dependent upon the awareness, concern, and prudence of those who operate or service the equipment. Never allow minors to operate any equipment.
2. It is your responsibility to read this manual and all publications associated with this equipment (Safety and Operation Manual, Engine Manual, and attachments/accessories instruction sheets). If the operator cannot read English it is the owner's responsibility to explain the material contained in this manual to them.
3. Learn the proper use of the machine, the location and purpose of all the controls and gauges before you operate the equipment. Working with unfamiliar equipment can lead to accidents.
4. Never allow anyone to operate or service the machine or its attachments without proper training and instructions; or while under the influence of alcohol or drugs.
5. Wear all the necessary protective clothing and personal safety devices to protect your head, eyes, ears, hands, and feet. Operate the machine only in daylight or in good artificial light.
6. Evaluate the terrain to determine what accessories and attachments are needed to properly and safely perform the job. Only use accessories and attachments approved by Jacobsen.
7. Stay alert for holes in the terrain and other hidden hazards.
8. Inspect the area where the equipment will be used. Pick up all the debris you can find before operating. Beware of overhead obstructions (low tree limbs, electrical wires, etc.) and also underground obstacles (sprinklers, pipes, tree roots, etc.). Enter a new area cautiously. Stay alert for hidden hazards.
9. Never direct discharge of material toward bystanders, nor allow anyone near the machine while in operation. The owner/operator can prevent and is responsible for injuries inflicted to themselves, to bystanders, and damage to property.
10. Do not carry passengers. Keep bystanders and pets a safe distance away.
11. Never operate equipment that is not in perfect working order or is without decals, guards, shields, discharge deflectors, or other protective devices securely fastened in place.
12. Never disconnect or bypass any switch.
13. Do not change the engine governor setting or overspeed the engine.
14. Carbon monoxide in the exhaust fumes can be fatal when inhaled. Never operate the engine without proper ventilation or in an enclosed area.
15. Fuel is highly flammable; handle with care.
16. Keep the engine clean. Allow the engine to cool before storing and always remove the ignition key.
17. Disengage all drives and engage parking brake before starting the engine (motor). Start the engine only when sitting in operator's seat, never while standing beside the unit.
18. Equipment must comply with the latest federal, state, and local requirements when driven or transported on public roads. Watch out for traffic when crossing or operating on or near roads.
19. Local regulations may restrict the age of the operator.
20. Operate the machine up and down the face of slopes (vertically), not across the face (horizontally).
21. To prevent tipping or loss of control, do not start or stop suddenly on slopes. Reduce speed when making sharp turns. Use caution when changing directions.
22. Always use the seat belt when operating mowers equipped with a Roll Over Protective Structure (ROPS).  
*Never use a seat belt when operating mowers without a ROPS.*  
  
Accessory operator protective structures will continue to be offered for all equipment currently covered. This allows for the outfitting of any machines without previous ROPS installations or replacement of damaged structures.
23. Keep legs, arms, and body inside the seating compartment while the vehicle is in motion.
24. Disconnect battery and controller electrical connectors before performing any welding on this mower.

***This machine is to be operated and maintained as specified in this manual and is intended for the professional maintenance of specialized turf grasses. It is not intended for use on rough terrain or long grasses.***

## 1.2 IMPORTANT SAFETY NOTES



*This safety alert symbol is used to alert you to potential hazards.*

**DANGER** - Indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.

**WARNING** - Indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.

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

**NOTICE** - Indicates a potentially hazardous situation which, if not avoided, **MAY** result in property damage. It may also be used to alert against unsafe practices.

*For pictorial clarity, some illustrations in this manual may show shields, guards or plates open or removed. Under no circumstances should this equipment be operated without these devices securely fastened in place.*



### WARNING

The Interlock System on this mower prevents the mower from starting unless the brake lever is engaged, reel switch is off, and traction pedal is in Neutral. The system will stop the engine if the operator leaves the seat without engaging the parking brake or setting the reel switch off.

NEVER operate mower unless the Interlock System is working.



### WARNING

1. Before leaving the operator's position for any reason:
  - a. Return traction pedal to Neutral.
  - b. Disengage all drives.
  - c. Lower all implements to the ground.
  - d. Engage parking brake.
  - e. Stop engine and remove the ignition key.
2. Keep hands, feet, and clothing away from moving parts. Wait for all movement to stop before you clean, adjust, or service the machine.
3. Keep the area of operation clear of all bystanders and pets.
4. Never carry passengers, unless a seat is provided for them.
5. Never operate mowing equipment without the discharge deflector securely fastened in place.

By following all instructions in this manual, you will prolong the life of your machine and maintain its maximum efficiency. Adjustments and maintenance should always be performed by a qualified technician.

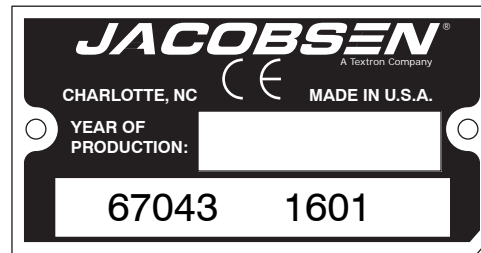
If additional information or service is needed, contact your Authorized Jacobsen Dealer who is kept informed of the latest methods to service this equipment and can provide prompt and efficient service. **Use of other than original or authorized Jacobsen parts and accessories will void the warranty.**

## 2 SPECIFICATIONS

### 2.1 PRODUCT IDENTIFICATION

67043..... Tri-King 1900D Mower, 3-WD,  
18.5 hp diesel engine with ROPS.  
Without front lift arms, mowers or  
battery.

Serial Number ..... An identification plate, like the one  
shown, listing the serial number, is  
attached to the frame of the  
mower and is located to the  
operator's left just behind the front  
wheel motor. Always provide the  
serial number of the unit when  
ordering replacement parts or  
requesting service information.



Product	EEC Sound Power	Sound Pressure Level Operator Ear	Vibration M/S <sup>2</sup>	
			Arms	Body
67043	101 dba	87 dba	1.4	<0.08

### 2.2 ENGINE

Make ..... Kubota  
Model ..... D662-E  
Horsepower..... 18.5 hp (13.9 kW) @3600 rpm  
*Note: Actual sustained horsepower will likely be lower than listed in specifications due to operating limitations and environmental factors*

Displacement ..... 40.03 cu. in. (656 cc)  
Torque ..... 26 ft. lbs. (35 Nm) @ 2600 rpm  
Fuel:  
Type ..... No. 2 Diesel  
Rating ..... Min. Cetane rating 45  
Capacity ..... 6.5 U.S. Gal. (24.6 liters)

Governor..... Ball Type Governor  
Low Idle ..... 1100 RPM  
High Idle ..... 3400 RPM

Lubrication:

Capacity..... 3.4 quarts (3.2 liter) with filter  
Type ..... SAE 20W, SAE 30W  
API Classification ..... CD, CE

Air Filter ..... Dry type with evacuator valve and service indicator

Alternator ..... 40 amp

### 2.3 CUTTING UNITS:

Reel ..... 3 Reels, 26 in. (660 mm) wide or,  
3 Reels, 30 in. (762 mm) wide.

Reel Diameter ..... 7 in. (178 mm)

Bearings..... Self adjusting tapered roller bearings

Blade Options ..... 7 blades

Cutting Width:

26 in. Reels..... 72 in. (1828 mm)

30 in. Reels..... 84 in. (2134 mm)

Overall Width:

26 in. Reels..... 78.5 in. (1994 mm)

30 in. Reels..... 90.5 in. (2298 mm)

Cutting Frequency:

7 Blade ..... 0.151 in./mph (3.8 mm/kph)

### 2.4 MOWER

Tires:

Front ..... 20 x 10 - 10 tubeless

Rear ..... 20 x 10 - 8 tubeless

Pressure:

Front..... 10-12 psi (69-83 kPa)

Rear ..... 8-10 psi (55-69 kPa)

Battery:

Type ..... 12 Volt Lead/Acid

Group ..... 22 NF

Parking Brake ..... Mechanical front wheel disk  
Hand lever actuated

Speed:

Mow ..... 0 - 5 mph (8 kph)

Transport ..... 0 - 8.5 mph (13.7 kph)

Reverse ..... 0 - 2.3 mph (3.7 kph)

**Hydraulic System:**

Capacity..... 5.5 U.S. gal. (20.8 liters) System

Fluid Type ..... GreensCare 68 Biodegradable

Charge Filter..... 10 micron

Return Line Filter ..... 10 micron

Steering ..... Hydrostatic power steering

## 2.5 WEIGHTS AND DIMENSIONS

Dimensions:	Inches	(mm)	Weights:	Lbs.	(kg)
Length .....	99	(2519)	67043 1900D (Base Mower, No Reels) .....	1445	(655)
Height .....	51.5	(1308)			
Width - Wheel .....	64.5	(1638)			

## 2.6 ACCESSORIES & SUPPORT LITERATURE

Contact your area Jacobsen Dealer for a complete listing of accessories and attachments.



### CAUTION

Use of other than Jacobsen authorized parts and accessories may cause personal injury or damage to the equipment and will void the warranty

#### Accessories

Air Blow Gun .....	JAC5098
Orange Touch-up Paint (12 oz. spray) .....	554598
2-Post ROPS with Seat Belt .....	69157
Light Kit .....	69149
Arm Rest .....	4139431
Grass Catchers for 26 in. Reel .....	69151
Grass Catchers for 30 in. Reel .....	69150
600 RPM Reel Kit (1900D Units) .....	5003062
Down Pressure Kit .....	1002588

#### Reels

7 Blade, 26 in. Left Hand Reel .....	67114
7 Blade, 26 in. Right Hand Reel .....	67115
7 Blade, 26 in. Center Reel .....	67116
7 Blade, 30 in. Left Hand Reel .....	67123
7 Blade, 30 in. Right Hand Reel .....	67124
7 Blade, 30 in. Center Reel .....	67125
Vertical Mower, 26 in. Left Hand .....	67139
Vertical Mower, 26 in. Right Hand .....	67140
Vertical Mower, 26 in. Center .....	67141

#### Rollers

Grooved Front Roller (Steel) for 26 in. Reel .....	67731
Grooved Front Roller (Steel) for 30 in. Reel .....	67729
Solid Roller for 26 in. Reel .....	132639
Solid Roller for 30 in. Reel .....	132640
Grooved Front Roller Scraper for 26 in. Reel .....	69147
Grooved Front Roller Scraper for 30 in. Reel .....	69148
Rear Roller Scraper for 26 in. Reel .....	67909
Rear Roller Scraper for 30 in. Reel .....	67910

#### Support Literature

Safety & Operation Manual .....	2810631
Parts & Maintenance Manual .....	2810632
Diesel Engine Parts Catalog .....	3004386
Operator Training Video .....	2810628
Service & Repair Manual .....	4171674

## 3 ADJUSTMENTS

### 3.1 GENERAL



#### WARNING

To prevent injury, lower implements to the ground, disengage all drives, engage parking brake, stop engine, and remove key from ignition switch before making any adjustments or performing maintenance.

Make sure the mower is parked on a solid and level surface. Never work on a mower that is supported only by the jack. Always use jack stands.

If only the front or rear of the mower is raised, place chocks in front of and behind the wheels that are not raised.

1. Adjustments and maintenance should always be performed by a qualified technician. If proper

adjustment cannot be made, contact an authorized Jacobsen Dealer.

2. Replace, do not adjust, worn or damaged components.
3. Do not wear jewelry or loose fitting clothing when making adjustments or repairs.



#### CAUTION

Be careful to prevent entrapment of the hands and fingers between moving and fixed components of the machine.

4. Do not change governor settings or overspeed the engine.

### 3.2 FAN BELT

Inspect and adjust new belt after first ten hours of operation. Adjust every 100 hours thereafter.

1. Adjust alternator pulley so belt (B) deflects 9/32 to 11/32 in. (7 to 9 mm) with a 22 lb. (10 kg) push at midspan between pulleys.
2. If tension is incorrect, loosen alternator mounting bolts (A), and adjust alternator until proper belt tension is achieved. Tighten hardware (A).

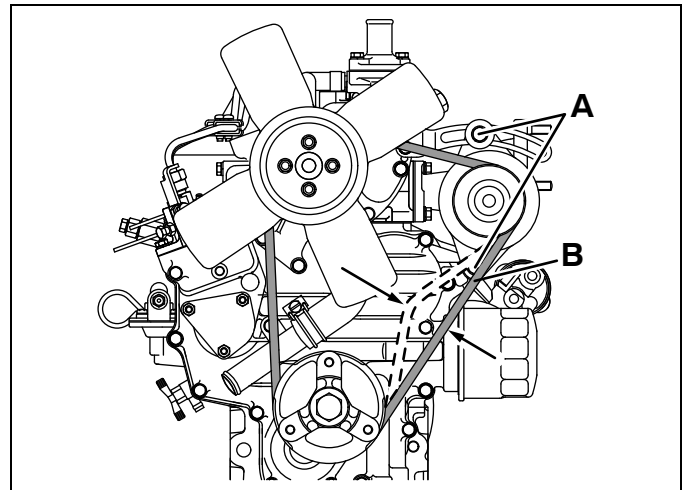


Figure 3A

### 3.3 PUMP DRIVE BELT

Adjust reel pump belt (C) to deflect 1/4 in. (6 mm) with a force of 5-7 lb. (2-3 kg) applied at midspan.

1. Loosen hardware (D and E).
2. Move pump/clutch assembly down to increase tension on belt (C) then tighten hardware (D and E).
3. Torque hardware (D and E) to 27 - 33 ft. lb. (37-45 Nm).

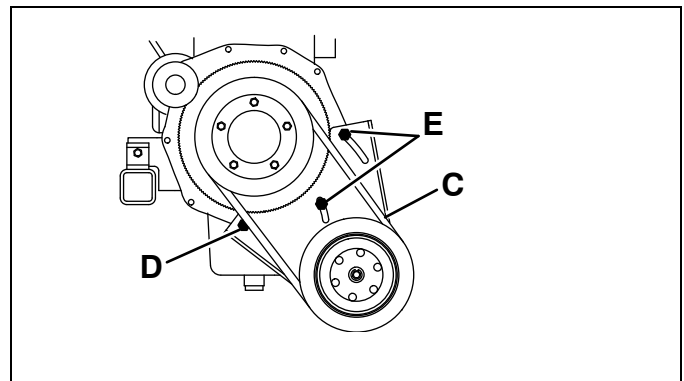


Figure 3B



## 3.4 NEUTRAL AND 3WD SWITCHES

1. Check traction pedal adjustment.
2. Use a volt/ohm meter to determine when switch opens or closes.
  - a. Adjust switch **(G)** so “finger” of actuating arm **(F)** is centered over sensing portion of switch. Switch contacts should be closed with traction pedal in neutral and open with minimal pedal travel in forward or reverse direction.
  - b. Adjust 3WD switch **(H)** so contacts are open with traction pedal in neutral, and contacts close with minimal pedal travel in forward direction.

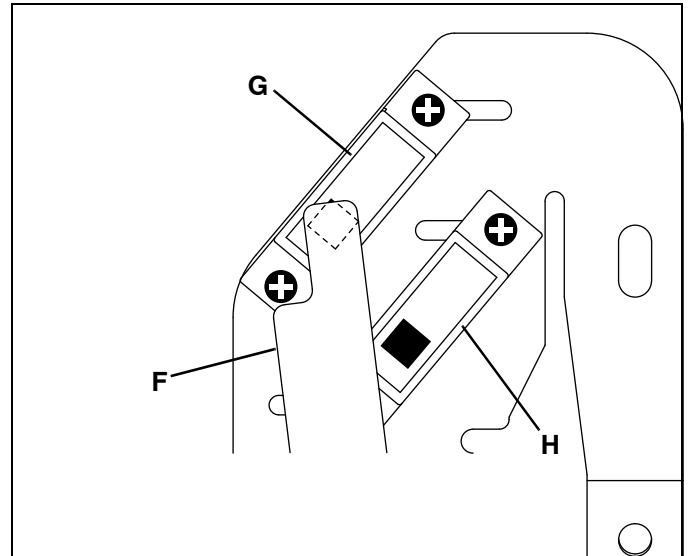


Figure 3C

## 3.5 PARKING BRAKE SWITCHES

Loosen screws **(K)** and adjust both switches so contacts just close as the brake lever is moved to the engaged position then tighten screws.

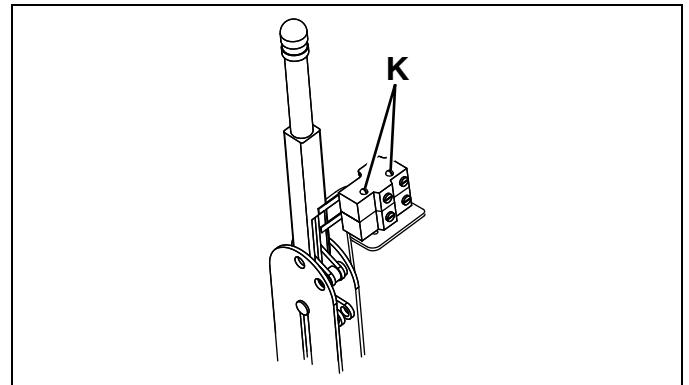


Figure 3D

## 3.6 LIFT LIMIT SWITCH

The lift limit switch must be adjusted so the reels stop turning before the cutting plane between the reel and ground reach 15-3/4 in. (400 mm). To adjust, loosen screw **(L)**, and adjust arm **(M)**.

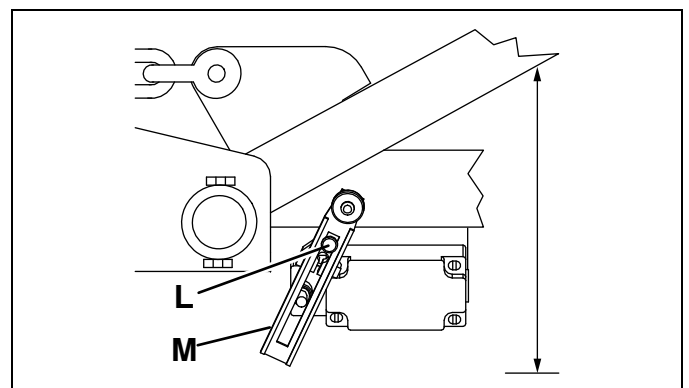


Figure 3E

## 3 ADJUSTMENTS

### 3.7 TRACTION PEDAL NEUTRAL

1. If the mower “creeps” in either direction when the engine is running, but the traction pedal is not depressed, adjust spring tension so that the pedal always returns to neutral when released.

**Note:** The mower may “creep” when the hydraulic oil is cold. Operate the mower for 15 minutes before determining if adjustment is required.

2. Use extreme caution when making this adjustment as the wheels will be off the ground and the engine will be running.
3. Engage parking brake, stop the engine, open hoods, then lubricate all linkage pivot points.
4. Chock the rear wheel, and place the front of the mower on jackstands.
5. Loosen all nuts (**N**) and adjust rear spring to position traction arm in neutral.

- a. Lock rear nuts and adjust front nuts (**N**) to maintain 3/8 in. (9 mm) of extension in spring (**O**).
- b. Start the engine and check for “creep” then repeat the process if necessary.

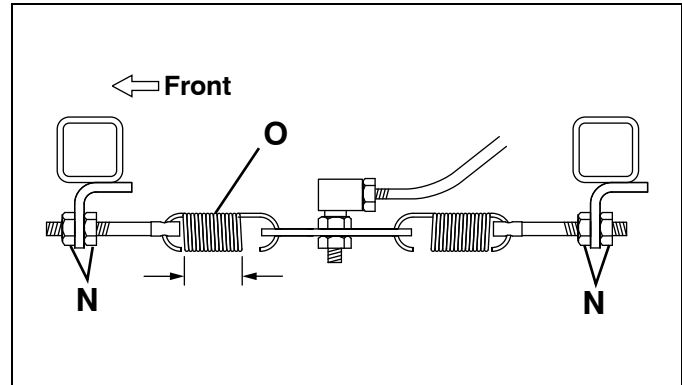


Figure 3F

### 3.8 TRACTION PEDAL FORWARD STOP

Loosen nuts (**P**) move the traction pedal to its maximum forward position. Adjust screw (**Q**) until the head just touches the traction pedal arm. Return traction pedal to neutral and turn screw (**Q**) out one full turn. Tighten nuts (**P**).

**Important:** Screw (**Q**) must stop traction pedal before the internal stops in the hydrostatic transmission are contacted.

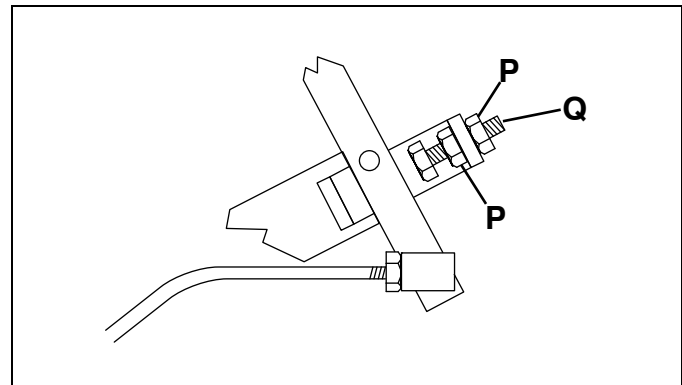


Figure 3G

### 3.9 LIFT / LOWER PEDAL STOP

Adjust bolts (**R** and **S**) to stop spool valve from hitting the internal stops, while maintaining the full stroke of the spool.

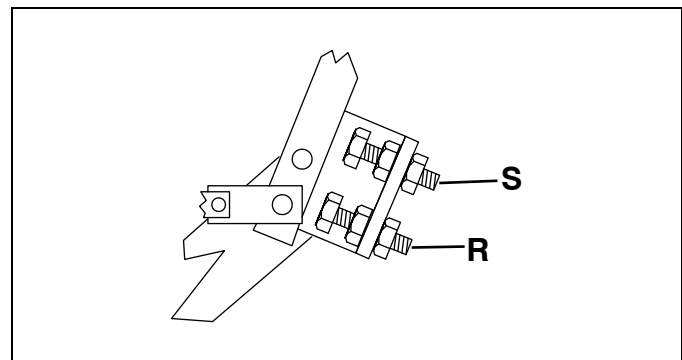


Figure 3H

## 3.10 PARKING BRAKE

1. Check linkage cables and pivots to ensure they are operating smoothly.
2. Park the mower on a 30% slope (16.7°) near the bottom of the hill, with the front of the mower facing downhill. Engage the parking brake and stop the engine.
  - a. The mower should stay on the hill without creeping.
  - b. If the brakes do not hold, start the engine, disengage the brake, and drive to the bottom of the hill.



### CAUTION

**DO NOT** disengage the brakes with the engine off.

3. With parking brake disengaged, turn adjusting knob in a clockwise direction, applying and releasing brake every quarter turn, until a definite “snap over center” action is achieved.
4. Repeat the test on the hill if required.

**Note:** Over adjustment causes hard lever action, but does not increase brake efficiency.

## 3.11 REAR LIFT ARM

1. Rear lift arm position is properly adjusted when the rear mower bumpers are putting slight pressure against the underside of the foot rests.
2. Disconnect lift chain (T) from crank and adjust ball joint (U) as required.

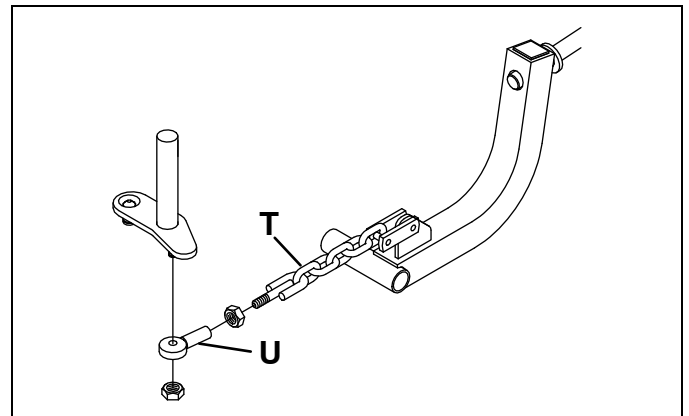


Figure 3I

## 3.12 DOWN PRESSURE

1. Place mowers in the Fixed Mode (**Section 3.18**) and lower the mowers onto a scale, capable of weighing 250 lb. (113 kg). The rear roller of the mower must rest on the scale.
2. To adjust pressure on rear mower loosen nuts (V) and adjust to obtain the desired pressure.
3. To adjust pressure on front mowers, loosen nut (W) and adjust bolt (X). Minimum thread engagement should be 1/2 in. (13 mm).
4. To maintain a consistent height of cut, the down pressure should be adjusted evenly on all three mowers.
5. Jacobsen, recommends the mower weight for Floating Mode at 60 lb. (27 kg), and for Fixed Mode at 90 lb. (41 kg).

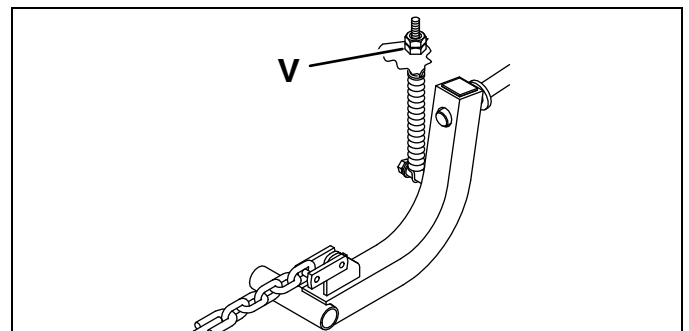


Figure 3J

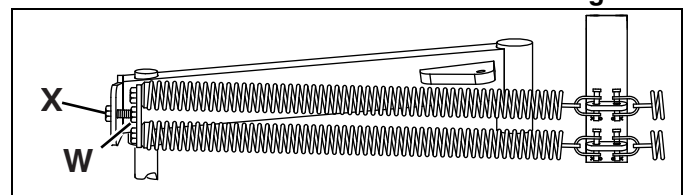


Figure 3K

## 3 ADJUSTMENTS

### 3.13 REEL TO BEDKNIFE

#### (Pre-adjustment Check)

1. Check the reel bearings for end play or radial play. If there is any abnormal movement of the reel, up and down or side to side, adjust or replace components as needed.



#### CAUTION

To prevent personal injury and damage to the cutting edges, handle the reel with extreme care.

2. Inspect the reel blades and bedknife to insure good sharp edges without bends or nicks.
  - a. The cutting edges of the reel blades and bedknife must be sharp, free of burrs, and show no signs of rounding off.
  - b. The bedknife and bedknife backing must be securely tightened. The bedknife must be straight and sharp.
  - c. A flat surface of 5/32 in. (4 mm) minimum must be maintained on the front face of the bedknife. Use a standard flat file to dress the bedknife.
3. If wear or damage is beyond the point where the reel or bedknife can be corrected by the lapping process, they must be reground.
4. Proper reel-to-bedknife adjustment is critical. A gap of 0.001 to 0.003 in. (0.025 to 0.076 mm) must be

maintained across the entire length of the reel and bedknife.

5. The reel must be parallel to the bedknife. An improperly adjusted reel will lose its sharp edges prematurely and may result in serious damage to the reel and bedknife.
6. Grass conditions will also affect the adjustment.
  - a. Dry, sparse conditions will require a wider gap to prevent heat buildup and damage to the reel and bedknife.
  - b. High quality grass with a good moisture content requires a closer gap (near zero).

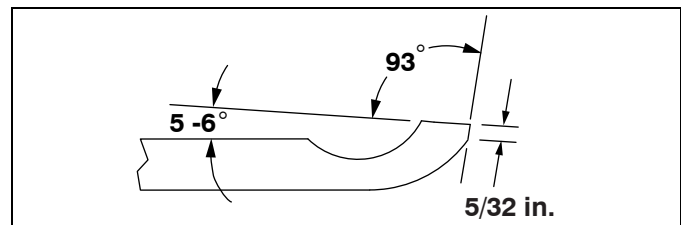
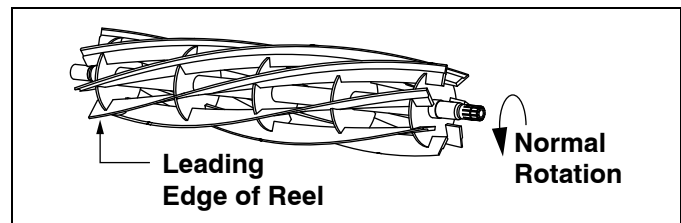


Figure 3L



### 3.14 REEL TO BEDKNIFE ADJUSTMENT

1. Read **Section 3.13** before making the adjustment.
2. Start adjustment at the leading edge of the reel, followed by the trailing end. *The leading end of the blade is the end that passes over the bedknife first during normal rotation.*
3. Loosen nut (C) 1/4 turn on both ends of the cutting unit.
  - a. Turn adjuster (A) in 1/16 to 1/8 turn increments.
  - b. Slide a feeler gauge or shim stock .001 in. (.025 mm) between the reel blade and the bedknife. Do not turn reel.
  - c. Adjust the trailing end of the reel in the same manner then recheck the adjustment at the leading end.
  - d. Tighten all hardware and recheck the adjustment.

- e. When properly adjusted, the reel will spin freely, and you should be able to cut a piece of newspaper along the full length of the reel, when the paper is held at 90°.

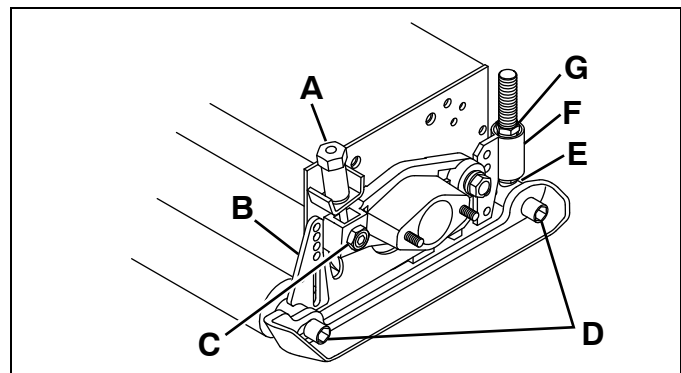


Figure 3N

## 3.15 CUTTING MODES

1. The mower may be operated in the Fixed Mode or the Floating Mode.
2. Fixed Mode is generally used for cutting heights greater than 1 in. (25 mm) and the mower does not require a front roller unless the terrain is rough and uneven.

If a front roller is required, the roller should be raised 1/4 in. (6 mm) higher than the rear roller and used for anti-scalp purposes only.

3. Floating Mode is generally used for cutting heights less than one inch (25 mm) and a front roller is required.

If a 2-1/2 in. (63 mm) solid front roller is used, the cutting height will range from 3/8 to 2-1/8 in. (9 to 54 mm).

If a 3 in. (76 mm) grooved front roller is used, the cutting height will range from 3/8 to 2-1/4 in. (9 to 57 mm).

4. To convert the mower from Fixed to Floating Mode, remove hardware (H) from each side of the three mower frames.

Install a front roller and store hardware (H) for future conversion to fixed mode.

5. To convert the mower from Floating to Fixed Mode, assemble hardware (H) as shown and remove or raise the front roller.

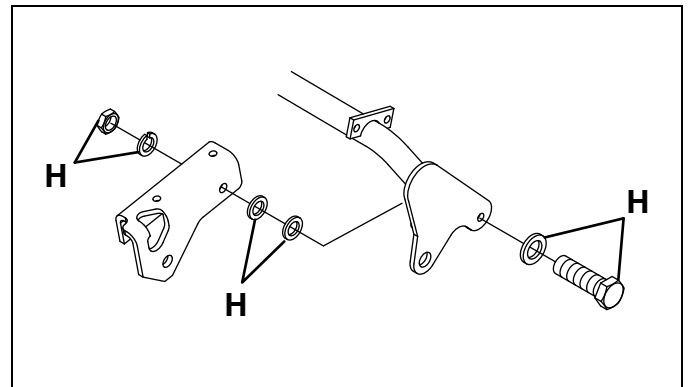


Figure 3O

## 3.16 CUTTING HEIGHT ADJUSTMENT

1. Raise and lock the lift arms in transport mode.
2. For easier access to the height adjusters on the motor end of the front reels, Jacobsen recommends raising the front end of the mower just a few inches off the ground then, being careful not to damage the hydraulic hoses, tilt the front mowers 90 degrees, and tether the mowers together.
3. On the rear mower (center) remove the pin and collar on the shaft and slide the mower backwards.
4. Always make the reel-to bedknife adjustment (**Sections 3.13 and 3.14**) **before** making the cutting height adjustment.
5. Select Fixed or Floating Mode and convert the mower accordingly.
6. Loosen skid mounting hardware (D - **Figure 3N**) then adjust the cutting height. (A special tool is provided with the mowers. A 5/8 in. socket and ratchet are required).

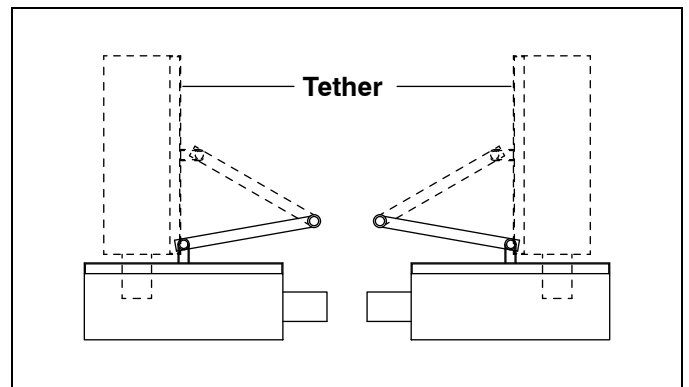


Figure 3P

## 3 ADJUSTMENTS

### 3.17 REMOVING THE CUTTING UNIT

1. To prevent contamination of the hydraulic system, as well as loss of oil, do not disconnect the hoses from the motor.



#### CAUTION

Disconnect lift springs before removing mowers.

2. Raise and lock the lift arms in transport mode (**Section 3.4**) and disconnect the down pressure springs.
3. Remove transport pin then lower the lift arms to the ground.
4. Remove hardware securing motor to drive housing and carefully pull the motor away.
5. Place motor in a clean plastic bag and cover the opening in the gear box.
6. Remove pin and collar from center (rear) lift arm and pull the center cutting unit away from the mower.
7. Remove the hardware securing the front lift arms to the cutting units, and slide the mowers out of the way.

### 3.18 CUTTING HEIGHT - FIXED MODE

*Follow the procedures outlined in Section 3.16.*

1. Reposition the rear roller adjuster.
  - a. For cutting heights from 3/8 to 1-3/4 in. (9 to 44 mm), use holes (**M**) on the mower frame, and two holes (shown in black) of the height adjuster (**F**) as shown.
  - b. For cutting heights greater than 1-3/4 inches (44 mm), disassemble adjuster (**F**) and turn the mounting bracket upside down; then use holes (**N**) of the frame, and the two holes (shown in black) of the adjuster (**F**).
2. Remove the tether, and lower the cutting units to the ground.
3. Place spacers of the desired height (**J**) under each end of the reel, adjacent to the front edge of the bedknife.
4. Loosen nut (**G**) and lower rear roller to the ground. Tighten nut (**E**) against the adjuster then recheck the setting on both side of the reel. Readjust if necessary.
5. Assemble the front roller adjuster (**B**) (If a roller is required) to holes number 2 and 4 only of the mower frame. Do not use holes number 1 and 3. Set roller to 1/4 in. (6 mm) above rear roller.

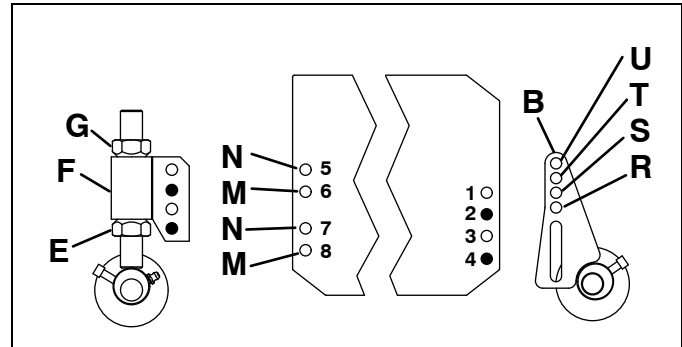


Figure 3Q

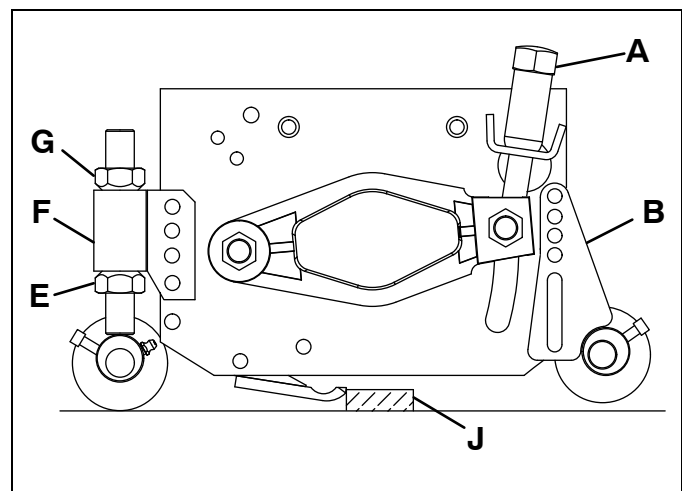


Figure 3R

## 3.19 CUTTING HEIGHT - FLOATING MODE

Follow the procedures outlined in Section 3.16.

1. Assemble the front roller adjuster (B) to holes number 2 and 4 only of the mower frame. Do not use hole numbers 1 and 3. Refer to the chart below for correct hole of front roller adjuster to use.
2. Reposition the rear roller adjusters (F).
  - a. For cutting heights from 3/8 to 1-3/4 in. (9 to 44 mm), use holes (M) on the mower frame, and two holes (shown in black) of adjuster (F) as shown.
  - b. For cutting heights greater than 1-3/4 in. (44 mm), disassemble adjuster (F) and turn the mounting bracket upside down; then use holes (N) of the frame, and the two holes (shown in black) of adjuster (F).
3. Loosen nut (L) and adjust screw (K) to obtain desired cutting height (X) then lock nut (L) against gauge (P).
4. Place one end of the gauge under the front roller at either end of the reel, and slide the head of screw (K) over the bedknife.
  - a. Adjust nut (G) to lower the rear roller to the gauge, then tighten nut (E) against the adjuster.
  - b. Move the gauge to the other end of the reel and repeat Steps 4a and 4b.

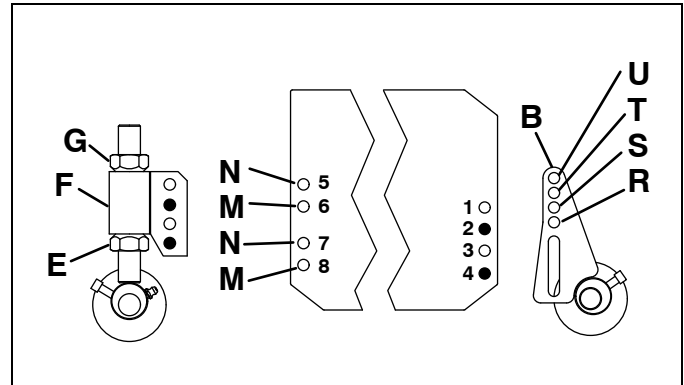


Figure 3S

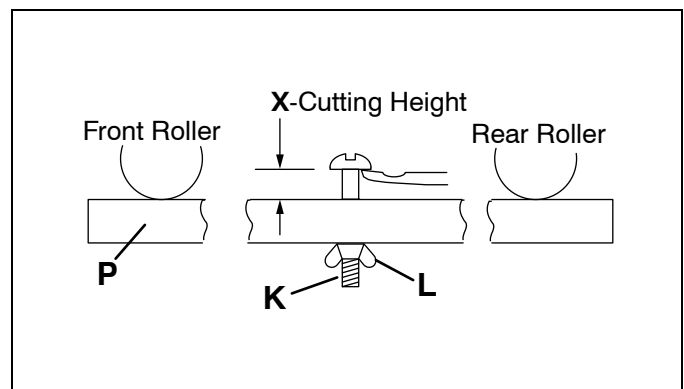


Figure 3T

Range of Cut					
Grooved Roller		Solid Roller		Front	Rear
Inches	Millimeters	Inches	Millimeters		
3/8 - 3/4	10 - 19	3/8 - 5/8	10 - 16	R	M
3/4 - 1-1/4	19 - 32	5/8 - 1-1/8	16 - 29	S	M
1-1/4 - 1-3/4	32 - 44	1-1/8 - 1-5/8	29 - 41	T	M
1-3/4 - 2-1/4	44 - 57	1-5/8 - 2-1/8	41 - 54	U	N

### 3 ADJUSTMENTS

#### 3.20 TORQUE SPECIFICATION





#### NOTICE

All torque values included in these charts are approximate and are for reference only. Use of these torque values is at your sole risk. Jacobsen is not responsible for any loss, claim, or damage arising from the use of these charts.





**Extreme caution should always be used when using any torque value.**

Jacobsen uses Grade 5 Plated bolts as standard, unless otherwise noted. For tightening plated bolts, use the value given for lubricated.

#### AMERICAN NATIONAL STANDARD FASTENERS

SIZE	UNITS	 GRADE 5		 GRADE 8		SIZE	UNITS	 GRADE 5		 GRADE 8	
		Lubricated	Dry	Lubricated	Dry			Lubricated	Dry	Lubricated	Dry
#6-32	in-lb (Nm)	—	20 (2.3)	—	—	7/16-14	ft-lb (Nm)	37 (50.1)	50 (67.8)	53 (71.8)	70 (94.9)
#8-32	in-lb (Nm)	—	24 (2.7)	—	30 (3.4)	7/16-20	ft-lb (Nm)	42 (56.9)	55 (74.6)	59 (80.0)	78 (105)
#10-24	in-lb (Nm)	—	35 (4.0)	—	45 (5.1)	1/2-13	ft-lb (Nm)	57 (77.2)	75 (101)	80 (108)	107 (145)
#10-32	in-lb (Nm)	—	40 (4.5)	—	50 (5.7)	1/2-20	ft-lb (Nm)	64 (86.7)	85 (115)	90 (122)	120 (162)
#12-24	in-lb (Nm)	—	50 (5.7)	—	65 (7.3)	9/16-12	ft-lb (Nm)	82 (111)	109 (148)	115 (156)	154 (209)
1/4-20	in-lb (Nm)	75 (8.4)	100 (11.3)	107 (12.1)	143 (16.1)	9/16-18	ft-lb (Nm)	92 (124)	122 (165)	129 (174)	172 (233)
1/4-28	in-lb (Nm)	85 (9.6)	115 (13.0)	120 (13.5)	163 (18.4)	5/8-11	ft-lb (Nm)	113 (153)	151 (204)	159 (215)	211 (286)
5/16-18	in-lb (Nm)	157 (17.7)	210 (23.7)	220 (24.8)	305 (34.4)	5/8-18	ft-lb (Nm)	128 (173)	170 (230)	180 (244)	240 (325)
5/16-24	in-lb (Nm)	173 (19.5)	230 (26.0)	245 (27.6)	325 (36.7)	3/4-10	ft-lb (Nm)	200 (271)	266 (360)	282 (382)	376 (509)
3/8-16	ft-lb (Nm)	23 (31.1)	31 (42.0)	32 (43.3)	44 (59.6)	3/4-16	ft-lb (Nm)	223 (302)	298 404	315 (427)	420 (569)
3/8-24	ft-lb (Nm)	26 (35.2)	35 (47.4)	37 (50.1)	50 (67.8)	7/8-14	ft-lb (Nm)	355 (481)	473 (641)	500 (678)	668 (905)

#### METRIC FASTENERS

SIZE	UNITS	 4.6		 8.8		 10.9		 12.9		Non Critical Fasteners into Aluminum
		Lubricated	Dry	Lubricated	Dry	Lubricated	Dry	Lubricated	Dry	
M4	Nm (in-lb)	—	—	—	—	—	—	3.83 (34)	5.11 (45)	2.0 (18)
M5	Nm (in-lb)	1.80 (16)	2.40 (21)	4.63 (41)	6.18 (54)	6.63 (59)	8.84 (78)	7.75 (68)	10.3 (910)	4.0 (35)
M6	Nm (in-lb)	3.05 (27)	4.07 (36)	7.87 (69)	10.5 (93)	11.3 (102)	15.0 (133)	13.2 (117)	17.6 (156)	6.8 (60)
M8	Nm (in-lb)	7.41 (65)	9.98 (88)	19.1 (69)	25.5 (226)	27.3 (241)	36.5 (323)	32.0 (283)	42.6 (377)	17.0 (150)
M10	Nm (ft-lb)	14.7 (11)	19.6 (14)	37.8 (29)	50.5 (37)	54.1 (40)	72.2 (53)	63.3 (46)	84.4 (62)	33.9 (25)
M12	Nm (ft-lb)	25.6 (19)	34.1 (25)	66.0 (48)	88.0 (65)	94.5 (70)	125 (92)	110 (81)	147 (108)	61.0 (45)
M14	Nm (ft-lb)	40.8 (30)	54.3 (40)	105 (77)	140 (103)	150 (110)	200 (147)	175 (129)	234 (172)	94.9 (70)

#### 3.21 SPECIFIC TORQUE

1. Tie rod ball joints: (2) 30 - 35 ft. lb. (41 - 47 Nm)
2. Engine drain plugs: 22 ft. lb. (30 Nm)
3. Steering ball joints: 50 - 55 ft. lb. (68 - 75 Nm)
4. Steering wheel nut: 30-40 ft. lb (41 - 51 Nm)
5. Wheel hardware: 65 - 85 ft. lb. (88 - 116 Nm)



## 4.1 GENERAL



### WARNING

Before you clean, adjust, or repair this equipment, disengage all drives, lower implements to the ground, engage parking brake, stop engine, and remove key from ignition switch to prevent injuries

Make sure the mower is parked on a solid and level surface. Never work on a mower that is supported only by the jack. Always use jack stands.

1. Adjustment and maintenance should always be performed by a qualified technician. If proper adjustments cannot be made, contact an Authorized Jacobsen Dealer.
2. Inspect the equipment on a regular basis, establish a maintenance schedule, and keep detailed records.
  - a. Keep the equipment clean.

- b. Keep all moving parts properly adjusted and lubricated.
  - c. Replace worn or damaged parts before operating the machine.
  - d. Keep all fluids at their proper levels.
  - e. Keep shields in place and all hardware securely fastened.
  - f. Keep tires properly inflated.
3. Do not wear jewelry or loose fitting clothing when making adjustments or repairs.
4. Use the illustrations in the Parts Catalog as reference for the disassembly and reassembly of components.
5. Recycle or dispose of all hazardous materials (batteries, fuel, lubricants, anti-freeze, etc.) according to local, state, or federal regulations.

## 4.2 ENGINE

**IMPORTANT: A separate Engine Manual, prepared by the engine manufacturer, is supplied with this mower. Read the Engine Manual carefully until you are familiar with the operation and maintenance of the engine. Proper attention to the engine manufacturer's directions will assure maximum service life of the engine. To order replacement engine manuals contact the engine manufacturer.**

The proper break-in of a new engine can make a considerable difference to the performance and life of the engine.

### NOTICE

The mower is designed to operate and cut most efficiently at the preset governor setting. Do not change the engine governor settings or overspeed the engine.

During the break-in period, Jacobsen recommends the following:

1. During the first 50 hours of operation, a new engine should be allowed to reach an operating temperature of at least 140°F (60°C) prior to operation at full load.
2. Check the engine oil level twice daily during the first 50 hours of operation. Higher than normal oil consumption is not uncommon during the initial break-in period.
3. Change engine oil and oil filter element after first 50 hours of operation.
4. Check and adjust fan and alternator belts.

5. Refer to **Section 6.3** and Engine Manual for specific maintenance intervals.

If the injection pump, injectors, or the fuel system require service, contact an authorized Jacobsen Dealer.

## 4 MAINTENANCE

### 4.3 ENGINE OIL

Check the engine oil at the start of each day, before starting the engine. If the oil level is low, remove oil filler cap, and add oil as required.

Perform initial oil change after first 50 hours of operation and every 100 hours thereafter. See Engine Manual.

Use only engine oils with API classification CD/CE.

Above 77°F (25°C)	SAE 30W or SAE10W30/10W40
32 to 77°F (0 to 25°C)	SAE 20W or SAE 10W30/10W40
Below 32° (0°C)	SAE10W or SAE 10W30/10W40

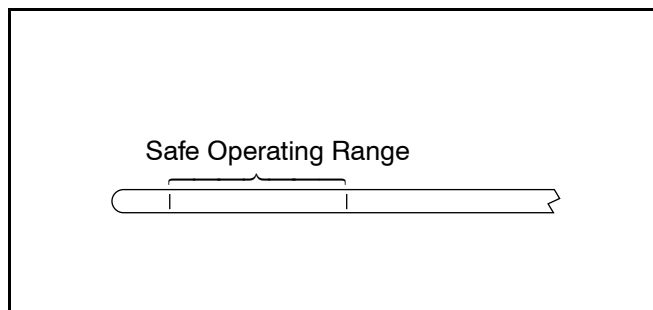


Figure 4A

### 4.4 AIR FILTER

Check the service indicator daily. If red band appears in the window **(C)** replace the element.

**Do not remove the element for inspection or cleaning.** Unnecessary removal of the filter increases the risk of injecting dust and other impurities into the engine.

When service is required, first clean the outside of the filter housing; then remove the old element as gently as possible and discard.

1. Carefully clean the inside of the filter housing without allowing dust into the air intake.
2. Inspect the new element. Do not use a damaged element and never use an incorrect element.
3. Assemble the new element and make sure it seats properly. Reset the indicator by depressing button **(D)**.
4. Reassemble cap making sure it seals completely around the filter housing. Dust evacuator **(E)** must be facing down.
5. Check all hoses and air ducts. Tighten hose clamps.

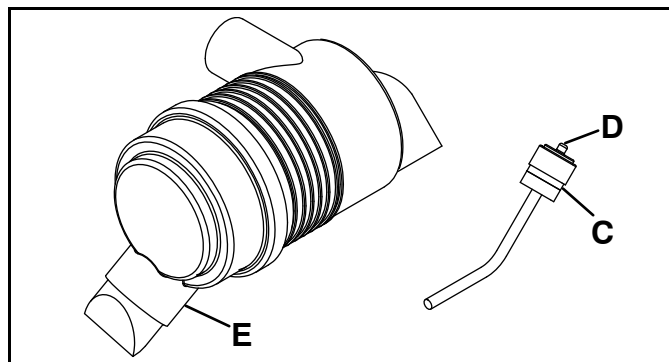


Figure 4B

## 4.5 FUEL

**Handle fuel with care - it is highly flammable.** Use an approved container, the spout must fit inside the fuel filler neck. Avoid using cans and funnels to transfer fuel.



### WARNING

Never remove the fuel cap from the fuel tank, or add fuel, when the engine is running or while the engine is hot.

Do not smoke when handling fuel. Never fill or drain the fuel tank indoors.

Do not spill fuel and clean spilled fuel immediately.

Never handle or store fuel containers near an open flame or any device that may create sparks and ignite the fuel or fuel vapors.

Be sure to reinstall and tighten fuel cap securely.

- Fill the fuel tank to within 1 in. (25 mm) of the bottom of the filler neck.
- Store fuel according to local, state, or federal ordinances and recommendations from your fuel supplier.
- Never overfill or allow the tank to become empty.
- Check fuel lines and clamps every 50 hours. Replace fuel lines and clamps at the first sign of damage.
- Use clean, fresh, #2 Diesel fuel. Minimum Cetane rating 45. Refer to Engine Manual for additional information.

## 4.6 FUEL SYSTEM

Refer to **Section 6.3** for specific maintenance intervals.

Before replacing any filter, thoroughly clean the filter housing and the area around the filter. Dirt must not be allowed to enter into fuel system.

For diesel engines, bleed the fuel system after the fuel filter and lines have been removed, or the fuel tank has become empty. See Engine Manual.

## 4.7 BATTERY

Make absolutely certain the ignition switch is OFF and the key has been removed before servicing the battery.



### CAUTION

Always use insulated tools, wear protective glasses or goggles and protective clothing when working with batteries. You must read and obey all battery manufacturer's instructions.

Tighten cables securely to battery terminals and apply a light coat of silicone dielectric grease to terminals and cable ends to prevent corrosion. Keep vent caps and terminal covers in place.

Check the electrolyte level every 100 hours. Keep the cable ends, battery, and battery posts clean.

Verify battery polarity before connecting or disconnecting the battery cables.

1. When installing the battery, always assemble the RED, positive (+) battery cable first, and the ground, BLACK, negative (-) cable last.

2. When removing the battery, always remove the ground, BLACK, negative (-) cable first, and the RED, positive (+) cable last.
3. Make sure battery is properly installed and secured to the battery tray.



### WARNING

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

## 4 MAINTENANCE

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### 4.8 JUMP STARTING

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Before attempting to “jump start” the mower, check the condition of the discharged battery. **Section 4.7**



#### WARNING

Batteries generate explosive hydrogen gas. To reduce the chance of an explosion, avoid creating sparks near battery. Always connect the negative jumper cable to the frame of the mower with the discharged battery, away from the battery.

#### When connecting jumper cables:

1. Stop the engine on the vehicle with a good battery.
2. Connect RED jumper cable to the positive (+) terminal on the good battery and to the positive (+) terminal on the “discharged” battery.
3. Connect the BLACK jumper cable from the negative (-) terminal on the good battery to the frame of the mower with the discharged battery.

After cables have been connected, start the engine on the vehicle with the good battery then start the mower.

### 4.9 CHARGING BATTERY

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#### WARNING

Charge battery in a well ventilated area. Batteries generate explosive gases. To prevent an explosion, keep any device that may create sparks or flames away from the battery.

To prevent injury, stand away from battery when the charger is turned on. A damaged battery could explode.

1. Refer to **Section 4.7**. Read the Battery and Charger's manual for specific instructions.
2. Whenever possible, remove the battery from the mower before charging. If battery is not sealed, check that the electrolyte covers the plates in all the cells.
3. Make sure the charger is Off Then connect the charger to the battery terminals as specified in the charger's manual.
4. Always turn the charger Off before disconnecting charger from the battery terminals.

### 4.10 HYDRAULIC HOSES

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#### WARNING

To prevent serious injury from hot, high pressure oil, never use your hands to check for oil leaks, use paper or cardboard.

Hydraulic fluid escaping under pressure can have sufficient force to penetrate skin. If fluid is injected into the skin it must be surgically removed within a few hours by a doctor familiar with this form of injury or gangrene may result.

**IMPORTANT:** The hydraulic system can be permanently damaged if the oil becomes contaminated. Before disconnecting any hydraulic component, clean the area around fittings and hose ends to keep impurities out of the system.

1. Always lower implements to ground, disengage all drives, engage parking brake, stop engine, and remove key before inspecting or disconnecting hydraulic lines or hoses.
  2. Check visible hoses and tubes daily. Look for wet hoses or oil spots. Replace worn or damaged hoses and tubes before operating the machine.
  3. The replacement tube or hoses must be routed in the same path as the existing hose, do not move clamps, brackets, and ties to a new location.
  4. Thoroughly inspect all tubes, hoses, and connections every 250 hours.
- a. Before disconnecting any hydraulic component, tag or mark the location of each hose then clean the area around the fittings.
  - b. As you disconnect the component, be prepared to assemble plugs or caps to the hose ends and open ports. This will keep impurities out of the hydraulic system and also prevent oil spills.
  - c. Make sure “O” rings are clean and hose fittings are properly seated before tightening.
  - d. Keep the hose from twisting. Twisted hoses can cause couplers to loosen as the hose flexes during operation resulting in oil leaks.
  - e. Kinked or twisted hoses can restrict the oil flow causing the system to malfunction and the oil to overheat and also lead to hose failure.

## 4.11 HYDRAULIC OIL

Refer to **Section 6.3** for specific maintenance intervals.

The hydraulic reservoir on this machine is filled with Jacobsen Greens Care 68 Biodegradable fluid.

Drain and replace the hydraulic oil after a major component failure, or if you notice the presence of water or foam in the oil, or a rancid odor (indicating excessive heat).

Always replace the hydraulic filter when changing oil.

### To change hydraulic oil:

1. Clean the area around the oil cap to prevent impurities from entering and contaminating the system.
  - a. Oil temperature should be at 60° to 90°F (16° - 32°C). Do not check oil level when oil is hot.

- b. The hydraulic oil level should never fall below the lower line on the dipstick or be above the top line on dipstick.
2. Remove drain plug from bottom of tank and loosen or remove breather cap on top of tank. Check and clean the breather cap, replace as necessary.
  3. After oil has drained install drain plug and fill with Jacobsen GreensCare 68 Biodegradable Fluid.
  4. Purge air from system.
    - a. Operate all mower functions for about 5 minutes to purge air out of the system and stabilize the oil level.
    - b. Once the level has stabilized and the air is purged, fill the tank to the full mark on dipstick.

## 4.12 HYDRAULIC OIL FILTERS

The hydraulic system is protected by two 10 micron filters.

### To replace hydraulic oil filter:

1. Remove the old filters.
2. Fill new filter with oil then install new filter. Hand tighten only.

3. Operate engine at idle speed with hydraulic system in neutral for five minutes.
4. Check hydraulic oil level in reservoir and fill to full mark on dipstick.

## 4.13 ELECTRICAL SYSTEM



### CAUTION

Always turn the ignition switch off and remove the negative battery cable (BLACK) before inspecting or working on the electrical system.

General precautions that can be taken to reduce electrical problems are listed below.

1. Make certain all terminals and connections are clean and properly secured.
2. Check the operator backup system, fuses, and circuit breakers regularly.

If the operator backup does not function properly and the problem cannot be corrected, contact an authorized Jacobsen Dealer.
3. Keep the wire harness and all individual wires away from moving parts to prevent damage.
4. Make sure the seat switch harness is connected to the main wire harness.
5. Check the battery and battery charging circuit.

6. Do not wash or pressure spray around electrical connections and components.

## 4 MAINTENANCE

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### 4.14 MUFFLER AND EXHAUST

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#### WARNING

Exhaust fumes contain carbon monoxide that is toxic and can be fatal when inhaled.

**NEVER** operate an engine without proper ventilation.

To protect from carbon monoxide poisoning, inspect the complete exhaust system regularly and always replace a defective muffler.

If you notice a change in the color or sound of the exhaust, stop the engine immediately. Identify the problem and have the system repaired.

Torque all exhaust manifold hardware evenly. Tighten or replace exhaust clamps.

### 4.15 TIRES

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1. Keep tires properly inflated to prolong tire life. Check inflation pressure while the tires are cool. Inspect tread wear.
2. Check the pressure with an accurate, low pressure tire gauge.
3. Keep tires inflated to:  
Front: - 10-12 psi (69-83 kPa).  
Rear: - 8-10 psi (55-69 kPa).



#### CAUTION

Unless you have the proper training, tools, and experience, **DO NOT** attempt to mount a tire on a rim. Improper mounting can produce an explosion which may result in serious injury.

### 4.16 WHEEL MOUNTING PROCEDURE

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#### WARNING

Make sure the mower is parked on a solid and level surface. Never work on a mower that is supported only by the jack. Always use jack stands.

If only the front or rear of the mower is raised, place chocks in front of and behind the wheels that are not raised.

1. Remove dirt, grease, and oil from stud thread. Do not lubricate threads.
2. Position wheel on hub and inspect to insure full contact between mounting surface of wheel and hub or brake drum.
3. Finger tighten all hardware then torque hardware in criss-cross order; always tighten nuts in the top position.
4. Check and retorque daily until torque is maintained, 85-95 ft.lbs. (115-128 Nm).

## 4.17 CARE AND CLEANING

Wash the mower and implements after each use. Keep the equipment clean.

### NOTICE

Do not wash any portion of the equipment while it is hot. Do not use high pressure spray or steam. Use cold water and automotive cleaners.

1. Use compressed air to clean engine and radiator fins. A special blow gun is available through Jacobsen Dealer.
2. Use only fresh water for cleaning your equipment.

### NOTICE

Use of salt water or affluent water has been known to encourage rust and corrosion of metal parts resulting in premature deterioration or failure. Damage of this nature is not covered by the factory warranty.

3. Do not spray water directly at the instrument panel, ignition switch, controller, any other electrical components, bearing housings, or seals.

4. Clean all plastic or rubber trim with a mild soap solution or use commercially available vinyl/rubber cleaners.
5. To maintain the original high luster of the fiberglass, periodically wax with a good grade of One-Step cleaner wax.

Repair damaged metal surfaces and use Jacobsen touch-up paint. Wax the equipment for maximum paint protection.



### CAUTION

Clean grass and debris from cutting units, drives, muffler, and engine to prevent fires.



### WARNING

**NEVER** use your hands to clean cutting units. Use a brush to remove grass clippings from blades. Blades are extremely sharp and can cause serious injuries.

## 4.18 RADIATOR



### WARNING

To prevent serious bodily injury from hot coolant or steam blow-out, never attempt to remove the radiator cap while the engine is running. Stop the engine and wait until it is cool. Even then, use extreme care when removing the cap.



### CAUTION

Do not pour cold water into a hot radiator. Do not operate engine without a proper coolant mixture. Install cap and tighten securely.

Check coolant level daily. Radiator should be full and recovery bottle should be up to the **cold** mark.

Drain and refill annually. Remove the radiator cap, open the engine block drain and the radiator drain. Empty and clean the recovery bottle.

Mix clean water with ethylene glycol based anti-freeze for the coldest ambient temperature. Read and follow the instructions on the anti-freeze container and engine manual.

Keep radiator air passages clean. Use compressed air (30 psi maximum) to clean the fins.

Check and tighten the fan belt. Replace clamps and hoses every two years.

If you have to add coolant more than once a month, or add more than one quart at a time, have a authorized Jacobsen Dealer check the cooling system.

## 4 MAINTENANCE

### 4.19 BACKLAPPING



#### WARNING

To prevent injury, keep hands, feet, and clothing away from rotating reels.

When the backlap switch is in the BACKLAP position, the reels will turn without the operator in the seat.

Carbon Monoxide in exhaust fumes can be fatal when inhaled, never operate an engine without proper ventilation.

Check the reel and bedknife to determine if backlapping or grinding will restore the cutting edge.

If wear or damage is beyond the point where the cutting edges can be corrected by the lapping process, they must be reground.

#### To Backlap:

1. Adjust reel to bedknife as described in **Sections 3.13 and 3.14**.
2. Obtain and engage the mechanics (backlap) key.
  - a. Make absolutely certain your feet and clothing are far away from the reel.
  - b. Make sure the parking brake is Engaged, reel switch is Off, backlap switch is Off, and the traction pedal is in Neutral.
  - c. Start the engine, turn the mechanics key to Backlap then engage the reel switch. If any of the reels turn, adjust nut **(A)** to stop the reel.
3. Turn nut **(A)** on the reel to be backlapped so the reel turns in reverse. Adjust the reel speed to 100-150 RPM.
  - a. Apply lapping compound with a long handle brush to high spots first then along entire length of the reel.
  - b. Continue lapping and at the same time make a slight adjustment on the reel until there is a uniform clearance along the full length of the cutting edges.
  - c. When the blades have been evenly honed, turn adjusting nut **(A)** to neutral. Carefully and thoroughly remove all lapping compound from reels and bedknife before running the reel in forward direction.
  - d. Disengage reel switch and turn backlap switch to Off.
4. Reset reel motors to forward rotation. If reel speeds vary, check nut **(A)** to insure it is turned completely to full forward rotation.
5. Remove and store the backlap key.

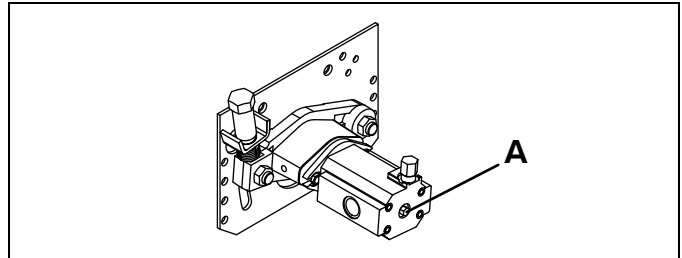


Figure 4C



## 4.20 STORAGE

### General

1. Wash the mower thoroughly and lubricate. Repair and paint damaged or exposed metal.
2. Inspect the mower, tighten all hardware, replace worn or damaged components.
3. Drain and refill radiator.
4. Clean the tires thoroughly and store the mower so the load is off the tires. If mower is not on jack stands, check tires at regular intervals and reinflate as necessary.
5. Keep the machine and all its accessories clean, dry, and protected from the elements during storage. Never store equipment near an open flame or spark which could ignite fuel or fuel vapors.

### Battery

1. Remove, clean, and store battery in upright position in a cool, dry place.
2. Check and recharge battery every 60 to 90 days while in storage.
3. Store batteries in a cool, dry place. To reduce the self discharge rate, room temperature should not be above 80°F (27°C) or fall below 20°F (-7°C) to prevent electrolyte from freezing.

### Engine (General)

1. While the engine is warm, remove the drain plug, drain the oil from the crankcase, and change oil filter. Install drain plug and refill with fresh oil. Let engine cool before starting.
2. Clean exterior of engine. Paint exposed metal, or apply a light coat of rust preventative oil.
3. Add a fuel conditioner or biocide to prevent gelling or bacterial growth in fuel. See your local fuel supplier.

### Cutting Units

1. Wash the cutting units thoroughly, then repair and paint any damaged or exposed metal.
2. Lubricate all fittings and friction points.
3. Backlap the reels then back the reel away from the bedknife. Apply a light coat of rust preventative oil to the sharpened edges of the reel and bedknife.



## CAUTION

To prevent personal injury and damage to the cutting edges, handle the reel with extreme care

### After Storage

1. Check and reinstall battery.
2. Check or service fuel filter and air cleaner.
3. Check the radiator coolant level.
4. Check oil level in the engine crankcase and hydraulic system.
5. Fill the fuel tank with fresh fuel. Bleed the fuel system.
6. Make certain that the tires are properly inflated.
7. Remove all oil from the reels and bedknife. Adjust bedknife and cutting height.
8. Start and operate the engine at 1/2 throttle. Allow enough time for the engine to become properly warmed and lubricated.



## WARNING

Never operate the engine without proper ventilation; exhaust fumes can be fatal when inhaled.

## 5 TROUBLESHOOTING

### 5.1 GENERAL

The troubleshooting chart below lists basic problems that may occur during start-up and operation. For more detailed information regarding the hydraulic and electrical systems contact your area Jacobsen Dealer.

Symptoms	Possible Causes	Action
Engine will not start.	<ol style="list-style-type: none"> <li>1. Parking brake disengaged, traction pedal not in Neutral or reel/3WD switch on.</li> <li>2. Battery low on charge or defective.</li> <li>3. Fuel tank empty or dirty.</li> <li>4. Fuse blown.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check operator back-up system and start-up procedure.</li> <li>2. Inspect condition of battery and battery connections.</li> <li>3. Fill with fresh fuel. Change fuel filter. Bleed fuel lines.</li> <li>4. Replace fuse.</li> </ol>
Engine hard to start or runs poorly.	<ol style="list-style-type: none"> <li>1. Fuel level low, fuel or fuel filter dirty.</li> <li>2. Air cleaner dirty.</li> <li>3. Injectors, fuel pump.</li> <li>4. Engine problem.</li> </ol>	<ol style="list-style-type: none"> <li>1. Fill with fresh fuel. Change fuel filter. Bleed fuel lines.</li> <li>2. Inspect and replace air filter.</li> <li>3. Consult engine manual.</li> <li>4. Consult engine manual.</li> </ol>
Engine stops.	<ol style="list-style-type: none"> <li>1. Fuel tank empty.</li> <li>2. Interlocks not set before leaving operator's seat.</li> </ol>	<ol style="list-style-type: none"> <li>1. Fill with fresh fuel and bleed fuel lines.</li> <li>2. Engage parking brake, move traction lever to "N" and set reel control to OFF.</li> </ol>
Engine overheating.	<ol style="list-style-type: none"> <li>1. Coolant level low.</li> <li>2. Air intake restricted.</li> <li>3. Water pump belt broken or loose.</li> <li>4. Engine overload.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inspect and add coolant.</li> <li>2. Clean cooling air intake.</li> <li>3. Tighten or replace belt.</li> <li>4. Reduce forward speed.</li> </ol>
Battery not holding charge.	<ol style="list-style-type: none"> <li>1. Loose or corroded battery terminals.</li> <li>2. Low electrolyte.</li> <li>3. Alternator belt loose or broken.</li> <li>4. Charging system defective.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inspect and clean terminals.</li> <li>2. Refill to correct level.</li> <li>3. Tighten or replace belt.</li> <li>4. See engine manual.</li> </ol>
Reels cut unevenly.	<ol style="list-style-type: none"> <li>1. Bedknife-to-reel not adjusted correctly.</li> <li>2. Engine speed too low.</li> <li>3. Low hydraulic oil.</li> </ol>	<p>Inspect bedknife-to-reel adjustment.</p> <p>Check engine speed. Run engine at full throttle.</p> <p>Check reservoir level and fill if needed.</p>
Mower does not react to traction pedal.	<ol style="list-style-type: none"> <li>1. Parking brake engaged.</li> <li>2. Tow Valve Open.</li> <li>3. Low hydraulic oil.</li> </ol>	<p>Disengage parking brake.</p> <p>Close Tow Valve.</p> <p>Check reservoir level and fill if needed.</p>
Implement does not raise or lower.	<ol style="list-style-type: none"> <li>1. Low hydraulic oil.</li> </ol>	<p>Check reservoir level and fill as needed.</p>
Gauges/Indicator not operating.	<ol style="list-style-type: none"> <li>1. Circuit Breaker.</li> <li>2. Loose wiring.</li> </ol>	<p>Reset circuit breaker, check bulb.</p> <p>Check electrical connections.</p>

## 6.1 GENERAL



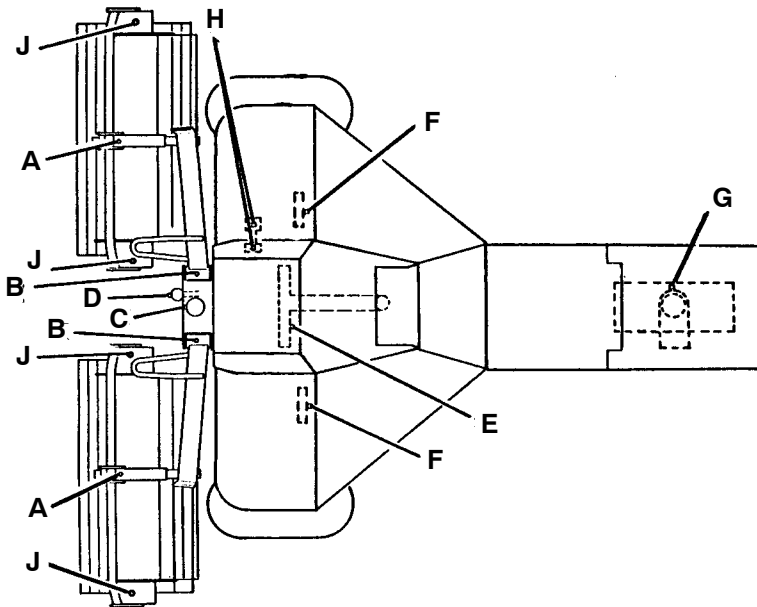
### WARNING

Before you clean, adjust, or repair this equipment, disengage all drives, lower implements to the ground, engage parking brake, stop engine and remove key from ignition switch to prevent injuries

1. Always clean the grease fitting before and after lubricating.

2. Lubricate with grease that meets or exceeds NLGI Grade 2 LB specifications. Apply grease with a manual grease gun and fill slowly until grease begins to seep out. Do not use compressed air guns.
3. Periodically apply a small amount of lithium based grease to the seat runners.
4. For smooth operation of all levers, pivot points, and other friction points that are not shown on the lubrication chart apply several drops of SAE 30 oil every 40 hours or as required.
5. Grease fittings (A - F) every 50 hours and fittings (G - K) every 100 hours.

## 6.2 LUBRICATION CHART



- A. Mower Pivot (3 Fittings)
- B. Front Lift Arms (2 Fittings)
- C. Crank Hub
- D. Hydraulic Cylinder
- E. Center Lift Arm

- F. Control Pedal Pivot (2 Fittings)
- G. Steering Yoke
- H. Drive Shaft Bearings (2 Fittings)
- J. Reel Bearings (6 Fittings)
- K. Rollers (As Required)

## 6 MAINTENANCE & LUBRICATION CHARTS

### 6.3 MAINTENANCE CHARTS

Recommended Service and Lubrication Intervals

	Every 8-10 Hours	Every 50 Hours	Every 100 Hours	Every 250 Hours	Every 400 Hours	Every 500 Hours	Every 1000 Hours	Yearly	See Section	Lubricant Type
Air Filter	I		AR					R	4.4	
Battery Charge			I						4.7	
Belts	I-A*		I-A			R			3.2, 3.3	
Brake		I-A*		A					3.10	
Cooling System	I-C-A							R	4.18	IV
Electrical System		I*		I					4.13	
Engine Oil	I	R*	R						4.3	II
Engine Oil Filter		R*	R							
Fuel System		I							4.6	
Fuel Filter						R			4.6	
Grease Fittings - All	L	L	L			L			6.2	I
Hydraulic Hoses and Tubes	I***			I					4.10	
Hydraulic Oil	I-A			R**				R**	4.11	III
Hydraulic Oil Filter	I	R*		R					4.12	
Muffler and Exhaust	I			I					4.14	
Radiator Screens	I-C/AR								4.18	
Tires		I-A							4.15	

**A - Add or Adjust    C - Clean    I - Inspect    L - Lubricate    R - Replace    AR - As Required**

\* Indicates initial service for new machines.

\*\* Every 250 hours, or yearly whichever comes first.

\*\*\* Inspect visible hoses and tubes for leaks or oil marks.

I - Manual grease gun with NLGI Grade 2 (Service Class LB).

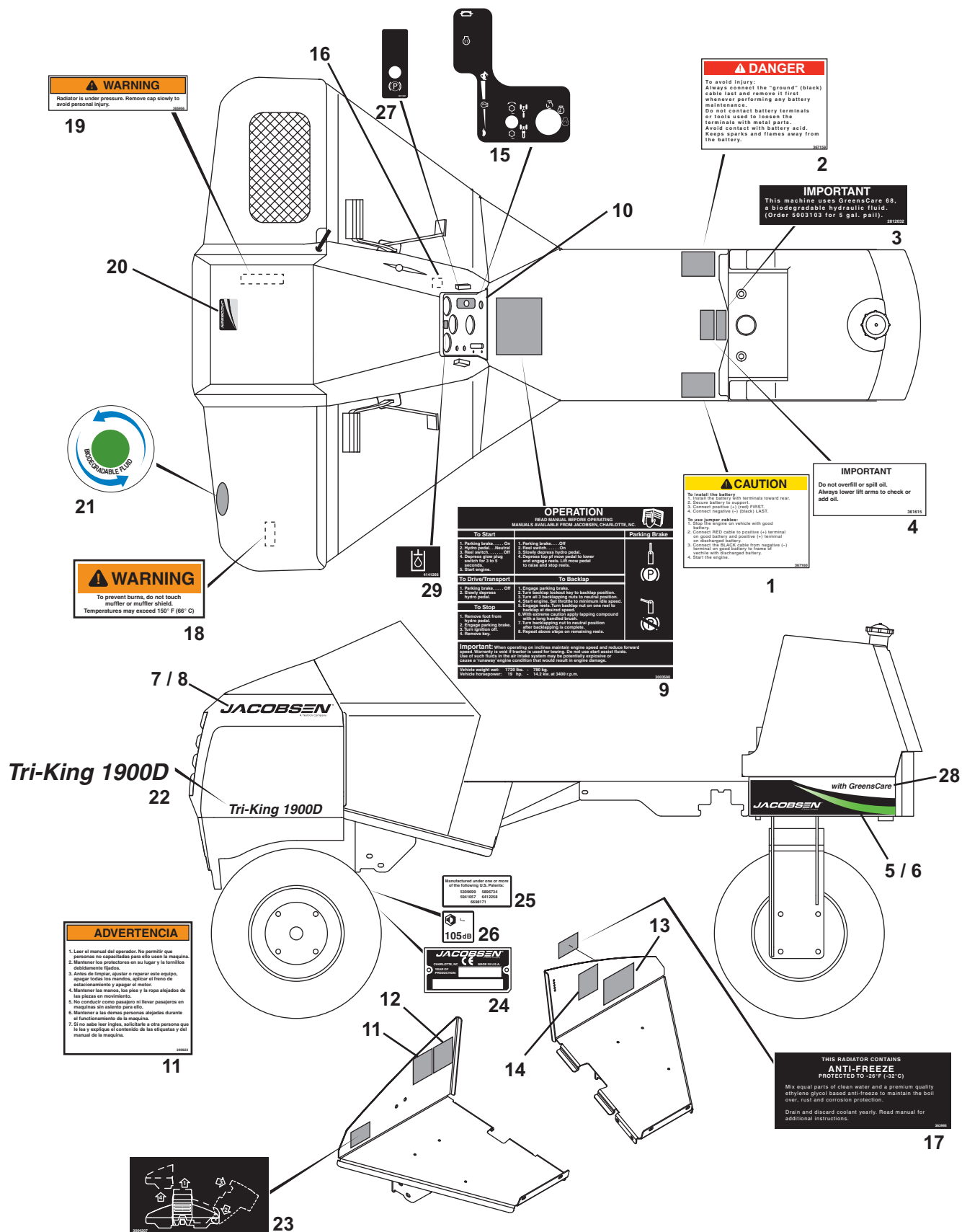
II - Engine Oil - See **Section 4.3**.

III - Use Jacobsen GreensCare 68 Biodegradable fluid: Capacity: 5 gallons (19 Liters). Order Part No. 5003103 containing 5 gal. (19 l), pail or Part No. 5003102, 55 gal. (208 l) Drum.

IV - Capacity: 3qt. (2.8 l) 50/50 water ethylene glycol mix.

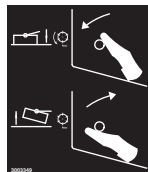
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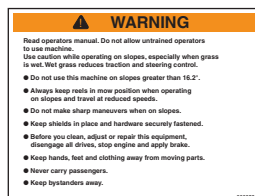




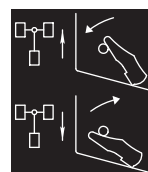
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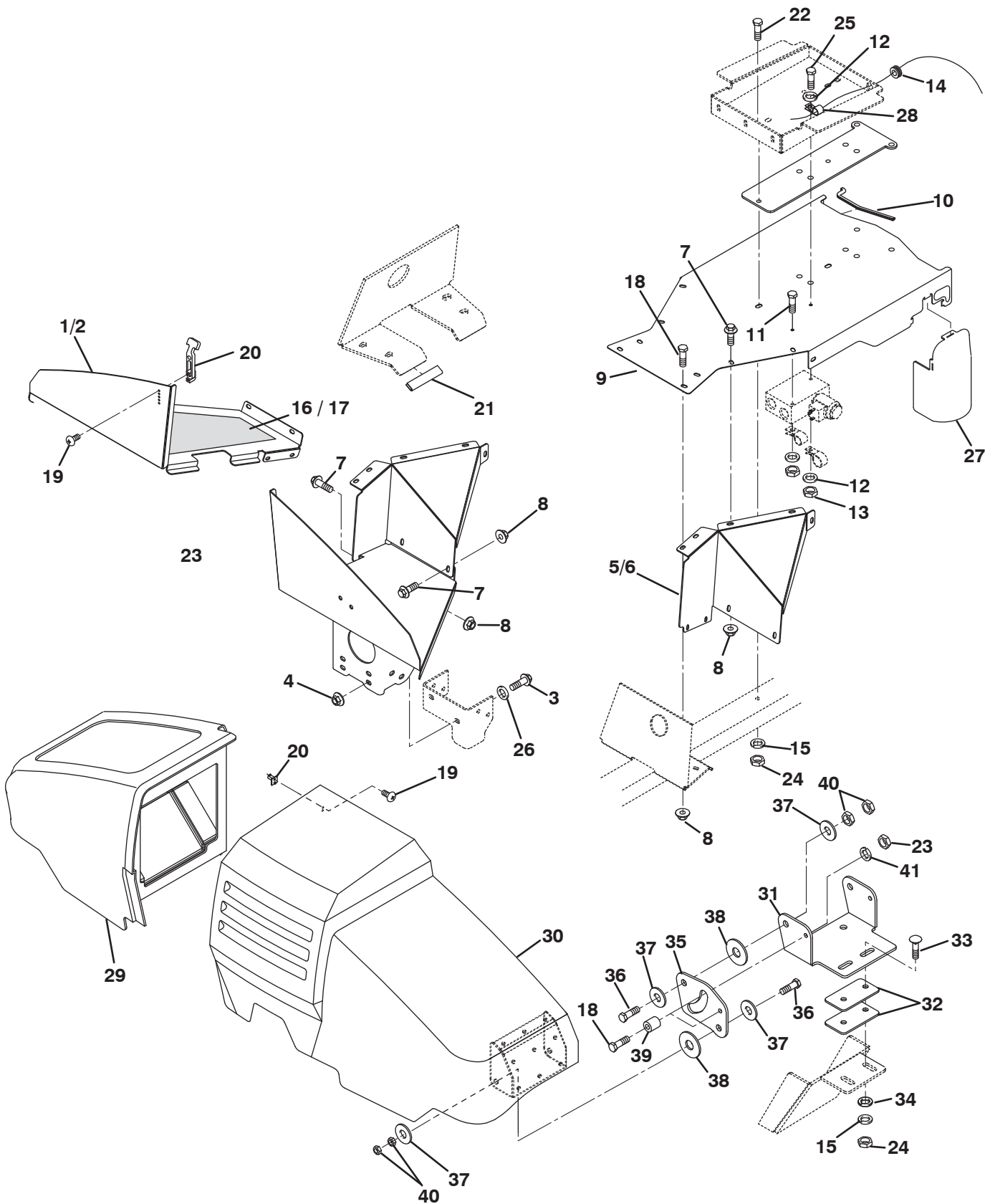
16

Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	367160	1	Decal, Battery Caution	<p>Located on Hood Pivot</p> <p>Located on Radiator</p> <p>On Left Front Wheel Motor Mount</p>
2	367159	1	Decal, Battery Danger	
3	2812032	1	Decal, Hydraulic Fluids	
4	361615	1	Decal, Oil Overfill	
5	4124358	1	Decal, Right Side Stripe	
6	4124357	1	Decal, Left Side Stripe	
7	4124790	1	Decal, Jacobsen 12"	
8	4125789	1	Decal, Jacobsen 10"	
9	3003590	1	Decal, Operating Instructions	
10	3002053	1	Decal, Backlap Switch	
11	340623	1	Decal, Spanish Caution	
12	3003349	1	Decal, Lift/Lower	
13	3003594	1	Decal, Caution	
14	3003348	1	Decal, Forward/Reverse	
15	3003350	1	Decal, Dash Overlay	
16	3003606	1	Decal, Fuse Panel	
17	363995	1	Decal, Antifreeze	
18	339237	1	Decal, Heat Warning	
19	365956	1	Decal, Radiator Warning	
20	4124759	1	Decal, Jacobsen Emblem	
21	4111408	1	Decal, Biodegradable Fluids	
22	4124691	2	Decal, Tri-King 1900D	
23	3004207	1	Decal, Opening Hood	
24	REF	1	Serial Plate	
25	4125772	1	Decal, Patent	
26	4117468	1	Decal, Noise 105 dB	
27	2811597	1	Decal, Parking Brake Light	
28	4124721	1	Decal, GreensCare	
29	4141266	1	Decal, Oil	

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## 2.1 Hood and Cowlings

Serial No. All



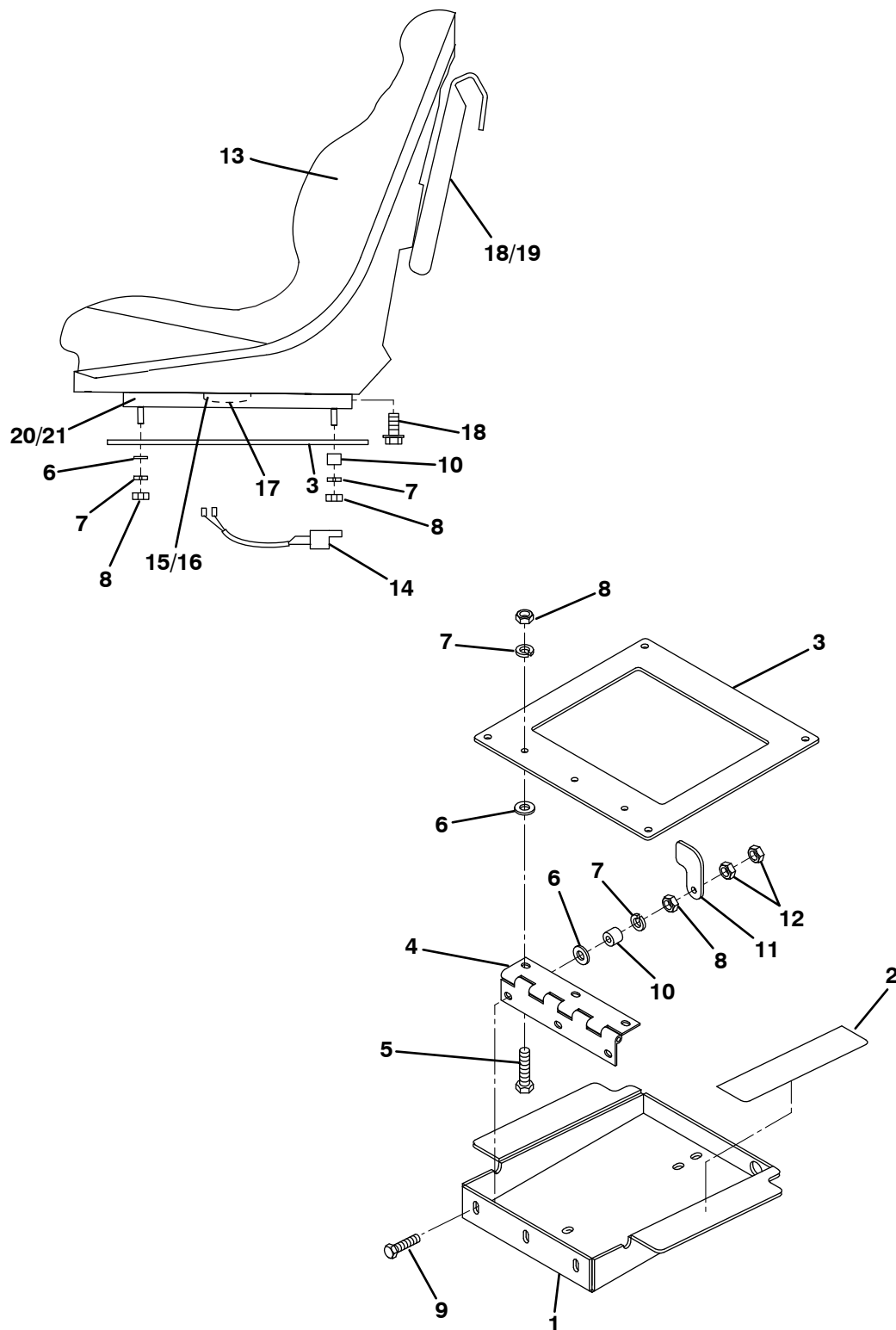


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	2810411	1	Left Foot Rest	See 11.1
2	2810413	1	Right Foot Rest	
3	400260	12	Screw, 3/8-16 x 7/8" Hex Head	
4	445796	12	Nut, 3/8-16 Spiralock Flange	
5	3002803	1	Left Hand Transition	
6	3002804	1	Right Hand Transition	
7	403770	14	Screw, 5/16-18 x 3/4" Flanged Head	
8	445795	18	Nut, 5/16-18 Spiralock Flange	
9	5001665	1	Seat Pan	
10	3003749	2	Edging	
11	400124	1	Screw, 1/4-20 x 2-1/2" Hex Head	
12	452004	4	Flat Washer, 1/4	
13	444708	2	Locknut, 1/4-20 Center	
14	303567	1	Grommet	
15	446142	4	Lockwasher, 3/8 Hvy	
16	2810061	1	Right Footrest Pad	
17	2810062	1	Left Footrest Pad	
18	400188	7	Screw, 5/16-18 x 1" Hex Head	
19	403910	3	Screw, #10-24 x 1/2" Truss Head	
20	1001758	1	Rubber Latch	
21	3003748	2	Edging	
22	440134	2	Carriage Bolt, 3/8-16 x 3"	
23	443106	3	Nut, 5/16-18 Hex	
24	443110	10	Nut, 3/8-16 Hex	
25	400126	1	Screw, 1/4-20 Hex Head	
26	452008	12	Flat Washer, 3/8	
27	3003968	1	Filter Cover	
28	360343	1	Hose Clamp	
29	2810029	1	Right Hood	
30	2810018	1	Left Hood	
31	2810064	1	Pivot Bracket	
32	2811139	2	Shim	
33	441676	2	Carriage Bolt, 3/8-16 x 1-1/4"	
34	453011	2	Flat Washer, 3/8	
35	2811495	2	Pivot Link	
36	400408	4	Screw, 1/2-13 x 1-1/2" Hex Head	
37	452012	8	Flat Washer, 1/2	
38	3000576	4	Washer	
39	3004410	3	Spacer	
40	443818	8	Nut, 1/2-13 Hex Jam	
41	446136	3	Lockwasher, 5/16 Hvy	
42	REF	1	ROPS Drill Template	

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## 3.1 Seat and Base

Serial No. 67043-1601~4743

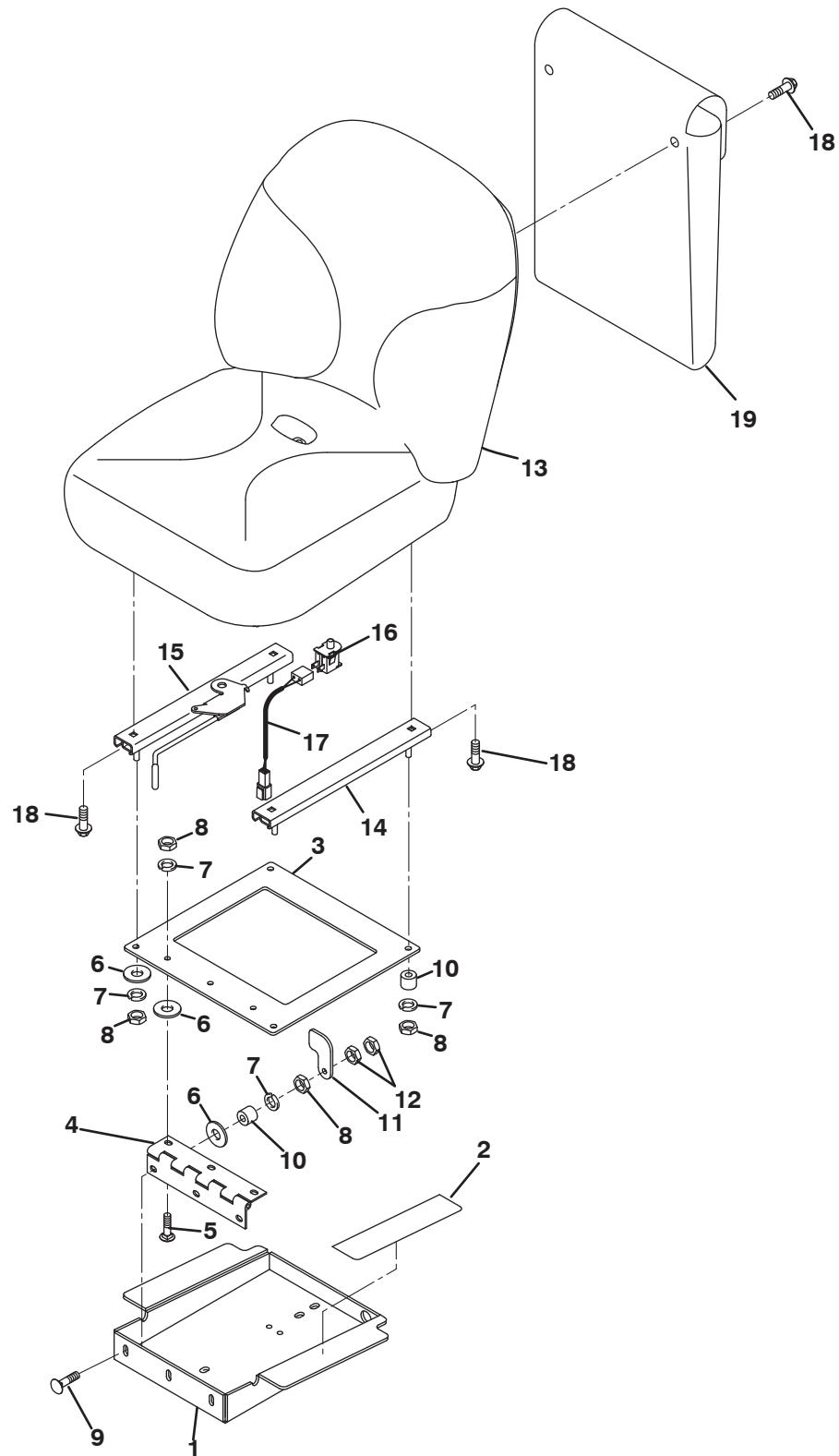


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	3003301	1	Seat Base	Reference <b>SW6</b>
2	558012	2	Pad	
3	3003368	1	Plate	
4	3003299	1	Hinge	
5	440078	5	Carriage Bolt, 5/16-18 x 3/4"	
6	452006	10	Flat Washer, 5/16	
7	446136	10	Lockwasher, 5/16 Hvy	
8	443106	10	Nut, 5/16 Hex	
9	440088	1	Carriage Bolt, 5/16-18 x 1-3/4"	
10	3004410	2	Spacer	
11	3003402	1	Seat Latch	
12	443806	2	Nut, 5/16-18 Hex Jam	
13	66172	1	Seat	
14	163583	1	• Seat Switch Wire Harness	
15	434011	2	• Screw, 1/4-20 x 5/8" Soc. Hd.	
16	446130	2	• Lockwasher, 1/4	
17	554390	1	• Switch, Seat	
18	3001328	6	Screw, 5/16-18 x 5/8" Wsh Head	
19	3003928	1	Literature Pouch	
20	3006988	1	Seat Adjuster	
21	3006991	1	Seat Adjuster with Handle	

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## 3.2 Seat and Base

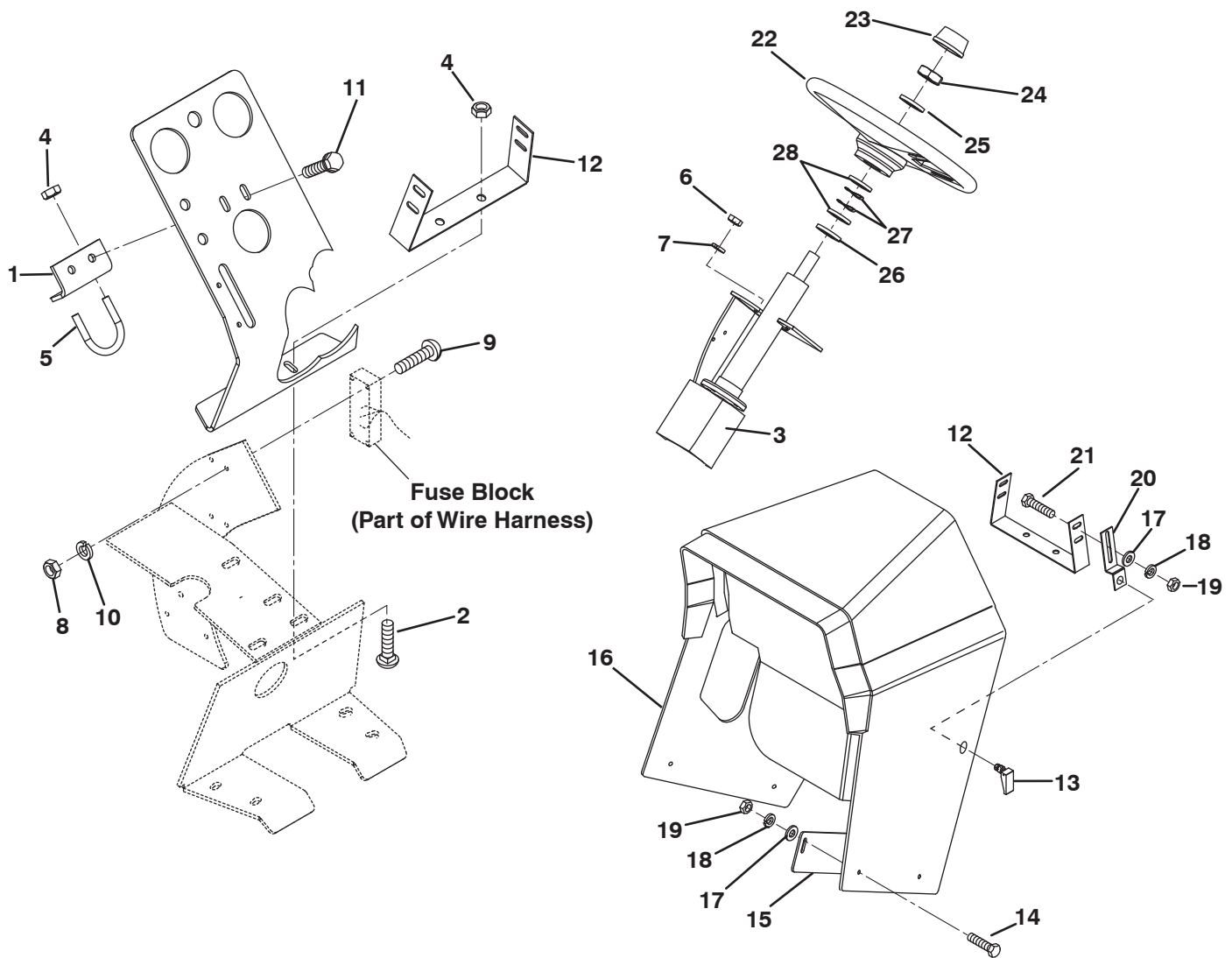
Serial No. 67043-4744 and Up



Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	3003301	1	Seat Base	Reference <b>SW6</b>
2	558012	2	Pad	
3	3003368	1	Plate	
4	3003299	1	Hinge	
5	440078	5	Carriage Bolt, 5/16-18 x 3/4"	
6	452006	10	Flat Washer, 5/16	
7	446136	10	Lockwasher, 5/16 Hvy	
8	443106	10	Nut, 5/16 Hex	
9	440088	1	Carriage Bolt, 5/16-18 x 1-3/4"	
10	3004410	2	Spacer	
11	3003402	1	Seat Latch	
12	443806	2	Nut, 5/16-18 Hex Jam	
13	4139430	1	Seat	
14	523357	1	• Seat Adjuster	
15	523356	1	• Seat Adjuster with Handle	
16	4139450	1	• Switch, Seat	
17	5003769	1	Harness, Seat	
18	3001328	6	Screw, 5/16-18 x 5/8" Wsh Head	
19	3003928	1	Literature Pouch	

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## 4.1 Dash Installation

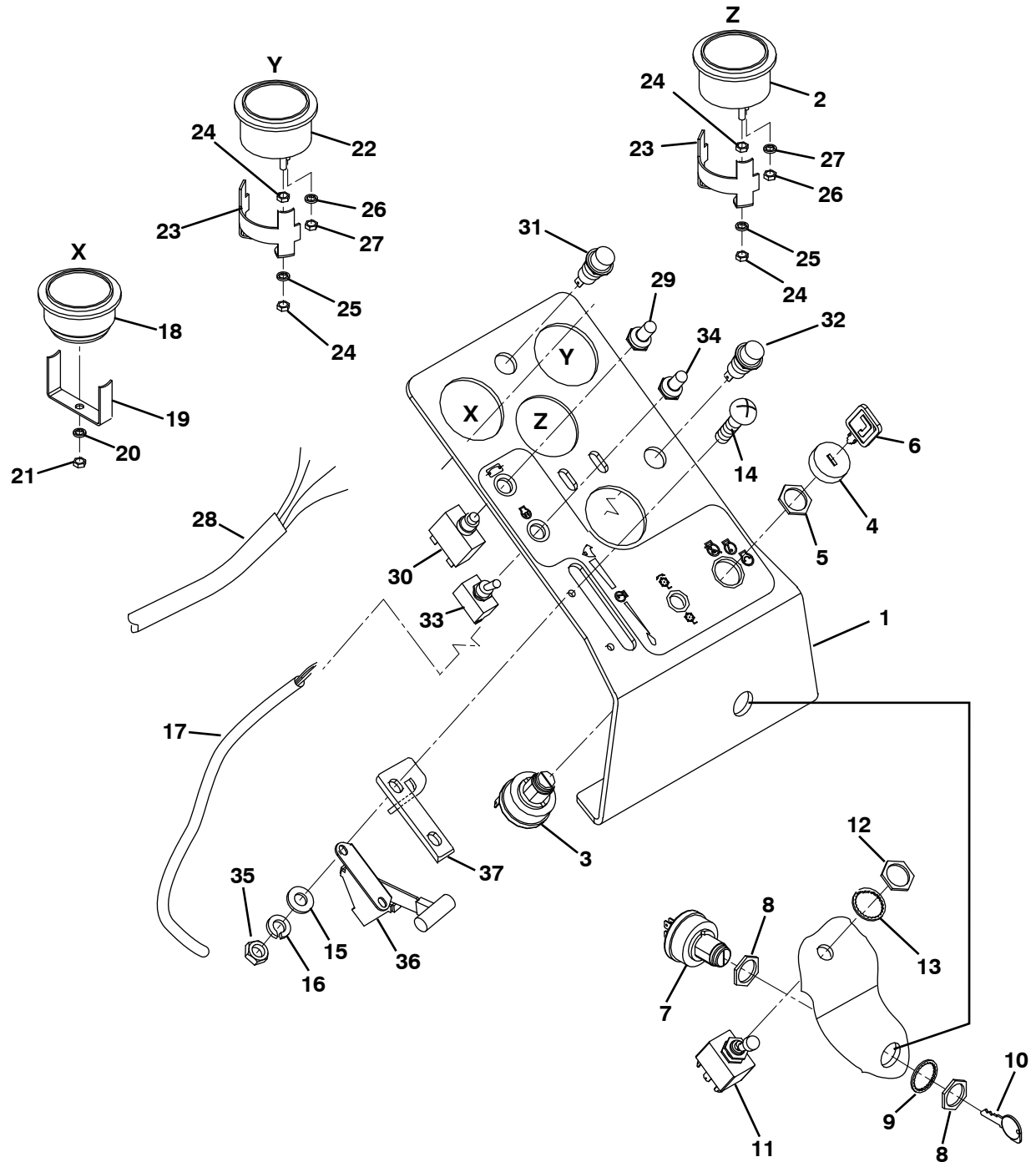


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	1002264.7	1	Angle Bracket	
2	441602	4	Carriage Bolt, 5/16-18 x 3/4"	
3	1002898	1	Steering Valve	
	557738	1	• Seal Kit	
	502924	1	• Spring Kit	
4	444718	4	Locknut, 5/16-18 Center	
5	362469	1	U-Bolt Clamp	
6	444754	4	Nut, 5/16-24 Hex Lock	
7	453009	2	Washer, 5/16 Flat	
8	444310	4	Nut, #10-24 Hex	
9	403914	4	Screw, #10-24 x 3/4" Truss Head	
10	446116	4	Lockwasher, #10	
11	403770	2	Screw, 5/16-18 x 3/4 Hex Flange	
12	3003540.7	1	Mounting Bracket	
13	3002098	2	Latch	
14	404016	4	Screw, 1/4-20 x 5/8" Truss Head	
15	3003468	2	Plastic Plate	
16	2810209	1	Console Cover	
17	452004	8	Flat Washer, 1/4	
18	446130	8	Lockwasher, 1/4 Hvy	
19	443102	8	Nut, 1/4-20 Hex	
20	3003541	2	Latch Bracket	
21	441664	4	Screw, 1/4-20 x 5/8" Round Head	
22	2811364	1	Steering Wheel	
23	2811365	1	• Steering Wheel Cap	
24	3002861	1	Nut, M16-1.5 Hex Jam	
25	447224	1	Lockwasher, 5/8 Internal Tooth	
26	2811547	1	Washer	
27	454001	2	Wave Washer, 3/4	
28	455048	2	Flat Washer, 3/4	

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## 5.1 Instrument Panel

Serial No. All





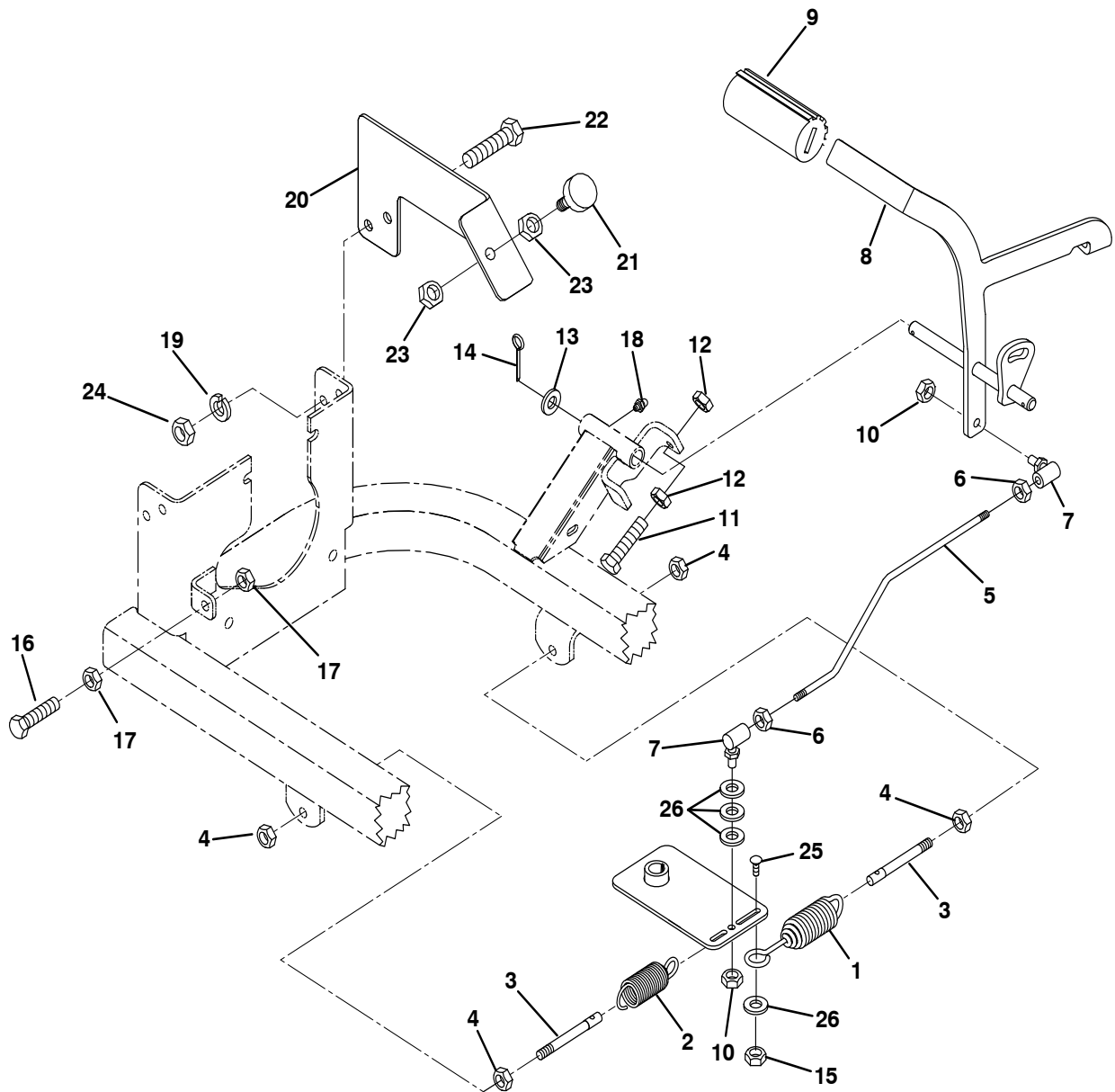
Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	2811437	1	Dash Panel	Reference <b>U4</b> Reference <b>SW9</b>
2	162720	1	Water Gauge	
3	1001958	1	Ignition Switch	
4	5002101	1	• Bezel	Reference <b>SW10</b>
5	5002102	1	• Nut	
6	5000039	1	• Ignition Key	
7	1001010	1	Backlap Switch	Reference <b>SW2</b>
8	558036	2	• Nut	
9	N/S	1	• Lockwasher	
10	5001428	1	• Mechanics Key	Reference <b>U3</b>
11	3001780	1	PTO Switch	
12	361862	2	• Nut	
13	447220	2	• Lockwasher	Reference <b>U2</b>
14	403912	2	Screw, #10-24 x 5/8" Tr. Hd.	
15	452002	2	Washer, #10 Flat	
16	446118	2	Lockwasher, #10	See Note ●
17	2811632	1	Harness, Brake Light	
18	162723	1	Hour Meter	
19	N/S	1	• Bracket	Reference <b>CB2</b> Reference <b>L3</b> Reference <b>L4</b> Reference <b>SW1</b>
20	447006	1	• Lockwasher	
21	444310	1	• Nut, #10-24 Hex	
22	162721	1	Volt Meter	Reference <b>CB2</b> Reference <b>L3</b> Reference <b>L4</b> Reference <b>SW1</b>
23	N/S	1	• Bracket	
24	444306	4	• Nut, #8-32 Hex	
25	447206	2	• Lockwasher, #8	See Note ●
26	447002	2	• Lockwasher, #6	
27	444304	2	• Nut, #6	
● 28	1004795	1	Wire Harness	Reference <b>CB2</b> Reference <b>L3</b> Reference <b>L4</b> Reference <b>SW1</b>
29	364774	1	Circuit Breaker Boot	
30	338601	1	10 Amp Circuit Breaker	
31	164194	1	Oil Pressure Light	Reference <b>CB2</b> Reference <b>L3</b> Reference <b>L4</b> Reference <b>SW1</b>
32	366751	1	Light, Parking Brake	
33	363961	1	Toggle Switch	
34	363962	1	Toggle Boot	Reference <b>CB2</b> Reference <b>L3</b> Reference <b>L4</b> Reference <b>SW1</b>
35	444310	2	Nut, #10-24 Hex	
36	1004340	1	Throttle Cable	
37	3008433	1	Plate, Stop	

- Serial Number 67043-1601~4743  
Seat Harness 5003769 will be required when replacing main wire harness.

> Change from previous revision

## 6.1 Hydro Control Linkage

Serial No. All

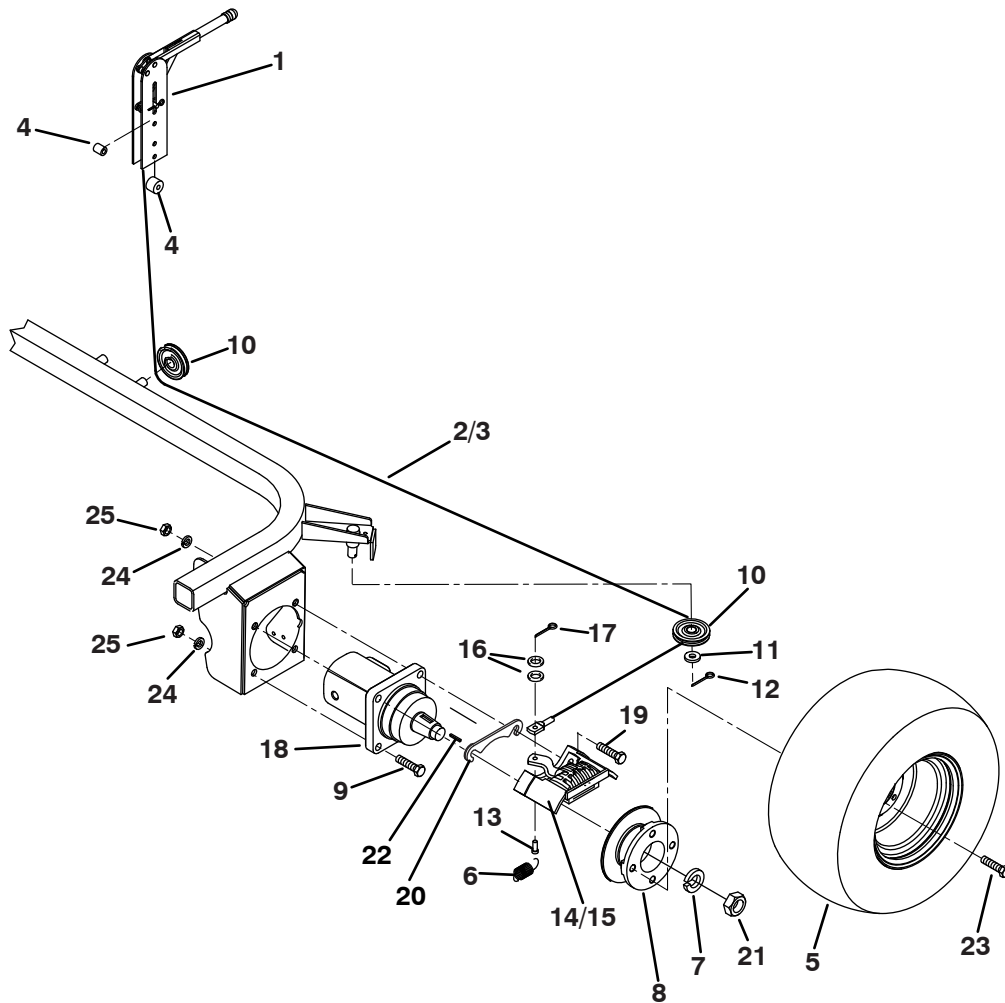


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	3006746	1	Extension Spring	
2	3006745	1	Extension Spring	
3	3002372	2	Spring Bolt	
4	443110	2	Nut, 3/8-16 Hex	
5	3002399	1	Traction Rod	
6	443108	4	Nut, 5/16-24 Hex	
7	343398	2	Ball Joint	
8	2811387	1	Traction Pedal	
9	3003475	1	Pedal Grip	
10	444754	2	Locknut, 5/16-24 Center	
11	400192	1	Screw, 5/16-18 x 1-1/2" Hex Head	
12	443106	2	Nut, 5/16-18 Hex	
13	453017	1	Flat Washer, 1/2	
14	460028	1	Cotter Pin, 1/8 x 1"	
15	444708	1	Locknut, 1/4-20 Center	
16	400264	1	Screw, 3/8-16 x 1-1/4" Hex Head	
17	443810	2	Nut, 3/8-16 Hex Jam	
18	471214	1	Grease Fitting	
19	446142	4	Lockwasher, 3/8 Hvy	
20	3002673.7	2	Bracket	
21	354989	2	Rubber Stop	
22	400260	4	Screw, 3/8-16 x 7/8 Hex Hd	
23	443812	4	Nut, 3/8-24 Jam	
24	443110	4	Nut, 3/8-16 Hex	
25	441606	1	Carriage Bolt, 1/4-20 x 3/4"	
26	452006	4	Flat Washer, 1/4	

&gt; Change from previous revision

## 7.1 Front Motors and Brakes

Serial No. All

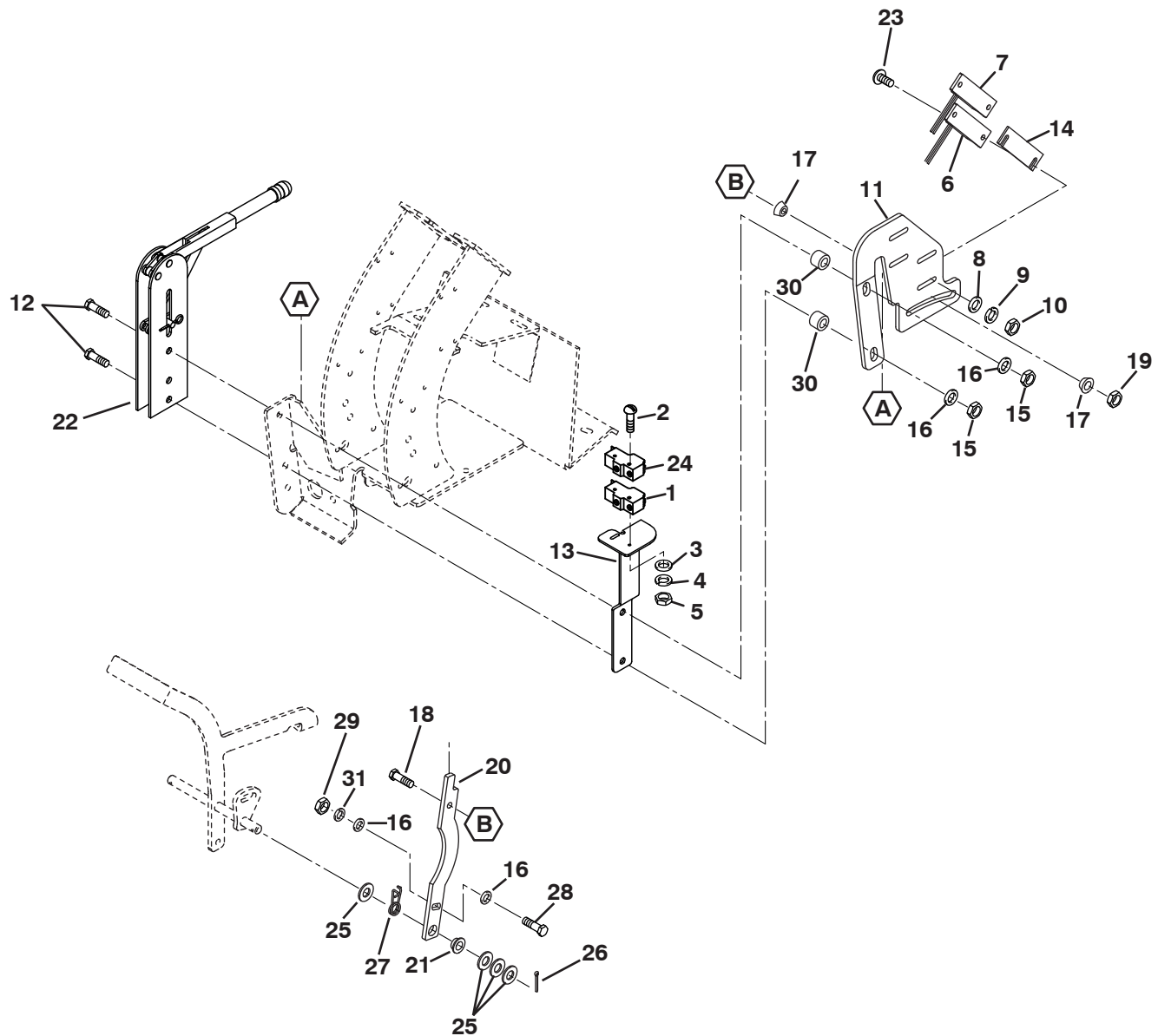


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	2500127	1	Brake Lever	
2	3002628	1	R.H. Brake Cable	
3	3002627	1	L.H. Brake Cable	
4	545237	2	Spacer	
5	—	2	Tire and Wheel Assembly	
	5001348	1	• Tire, 20 x 10 x 10	
	5002906	1	• Rim	
	360111	1	• Valve Stem	
6	352204	2	Spring	
7	447030	2	Lockwasher, 1 External Tooth	
8	395388	2	Wheel Hub	
9	400410	4	Screw, 1/2-13 x 1-3/4" Hex Head	
10	338383	4	Pulley	
11	453020	4	Washer, 5/8	
12	460028	4	Cotter Pin, 1/8 x 1"	
13	346771	2	Pin, 5/16	
14	1001634	1	L.H. Caliper	See 35.1 for Service Parts
15	1001635	1	R.H. Caliper	See 35.1 for Service Parts
16	453009	2	Flat Washer, 5/16	
17	460008	2	Cotter Pin, 5/64 x 3/4" Plated	
18	4182425	1	Wheel Motor, Left Front	
18	4189920	1	Wheel Motor, Right Front	
	4178561	1	• Rear Seal Kit	
	4178562	1	• Shaft Seal Kit	Includes Shaft Seal & Seal Guards
	5003384	1	• Shaft and Bearing	
	556450	4	• Bolt	4182425 Motors Only
	554782	4	• Bolt	4189920 Motors Only
19	400414	4	• Screw, 1/2-13 x 2-1/4" Hex Head	
20	3008482	2	• Spacer	
21	554779	2	• Nut	
22	554780	2	• Key	
23	353914	8	Wheel Bolt	
24	446154	8	Lockwasher, 1/2 Hvy	
25	443118	8	Nut, 1/2-13 Hex	

> Change from previous revision

## 8.1 Parking Brake, Neutral Start and 3WD Switches

Serial No. All

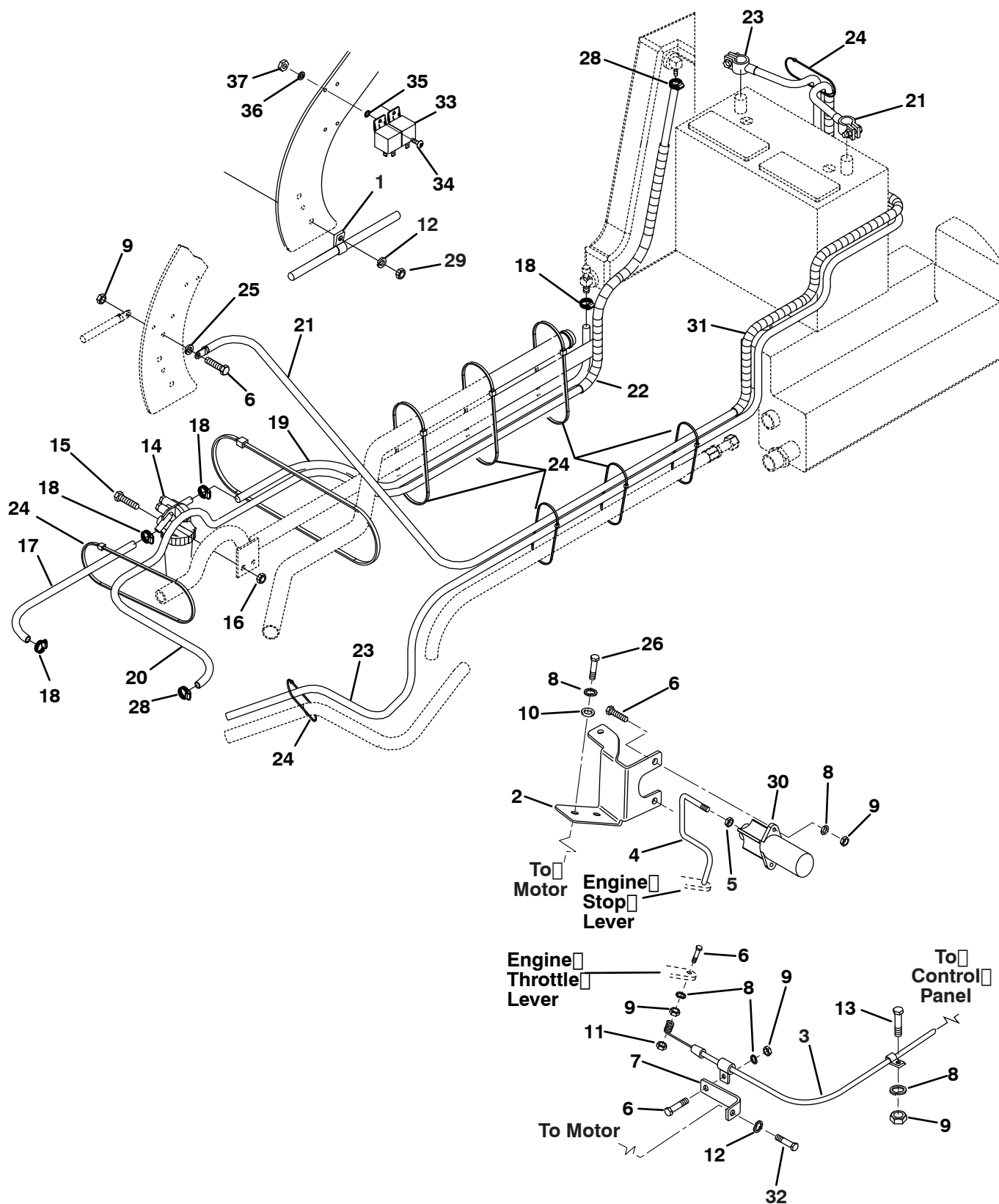


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	3002056	1	Switch, Parking Brake	Reference <b>SW8</b>
2	402022	2	Screw, #6-32 x 2" Round Head	
3	453005	2	Flat Washer, #6	
4	447204	2	Lockwasher, #6 Internal Tooth	
5	444304	2	Nut, #6-32 Hex	
6	4140149	1	Switch, Proximity	Reference <b>SW5</b>
7	4140149	1	Switch, Proximity	Reference <b>SW7</b>
8	453004	4	Flat Washer, #8	
9	446110	4	Lockwasher, #8	
10	444306	4	Nut, #8-32 Hex	
> 11	2812215	1	Plate, Switch Mounting	
12	400216	2	Screw, 5/16-18 x 2-3/4" Hex Head	
13	3002788	1	Bracket, Parking Brake Switch	
14	3009193	AR	Shim, Proximity Switch	
15	444718	2	Locknut, 5/16-18 Center	
16	453009	4	Flat Washer, 5/16	
17	2811659	1	Spacer, Nylon	
18	400118	1	Screw, 1/4-20 x 1-3/4" Hex Head	
19	444708	1	Locknut, 1/4-20 Center	
20	2811654	1	Arm, Switch Actuating	
21	352936	1	• Bushing	
22	REF	1	Parking Brake	See 7.1
23	403860	4	Screw, #8-32 x 5/8" Truss Head	
24	3002056	1	Switch, Parking Brake Light	Reference <b>SW12</b>
25	453017	4	Flat Washer, 1/2	
26	460028	2	Cotter Pin, 1/8 x 1"	
27	2811390	1	Spring, Torsion	
28	400190	1	Screw, 5/16-18 x 1-1/4" Hex Head	
29	443806	1	Nut, 5/16-18 Hex Jam	
30	3004410	2	Spacer	
31	446136	1	Lockwasher, 5/16 Heavy	

> Change from previous revision

## 9.1 Fuel Control

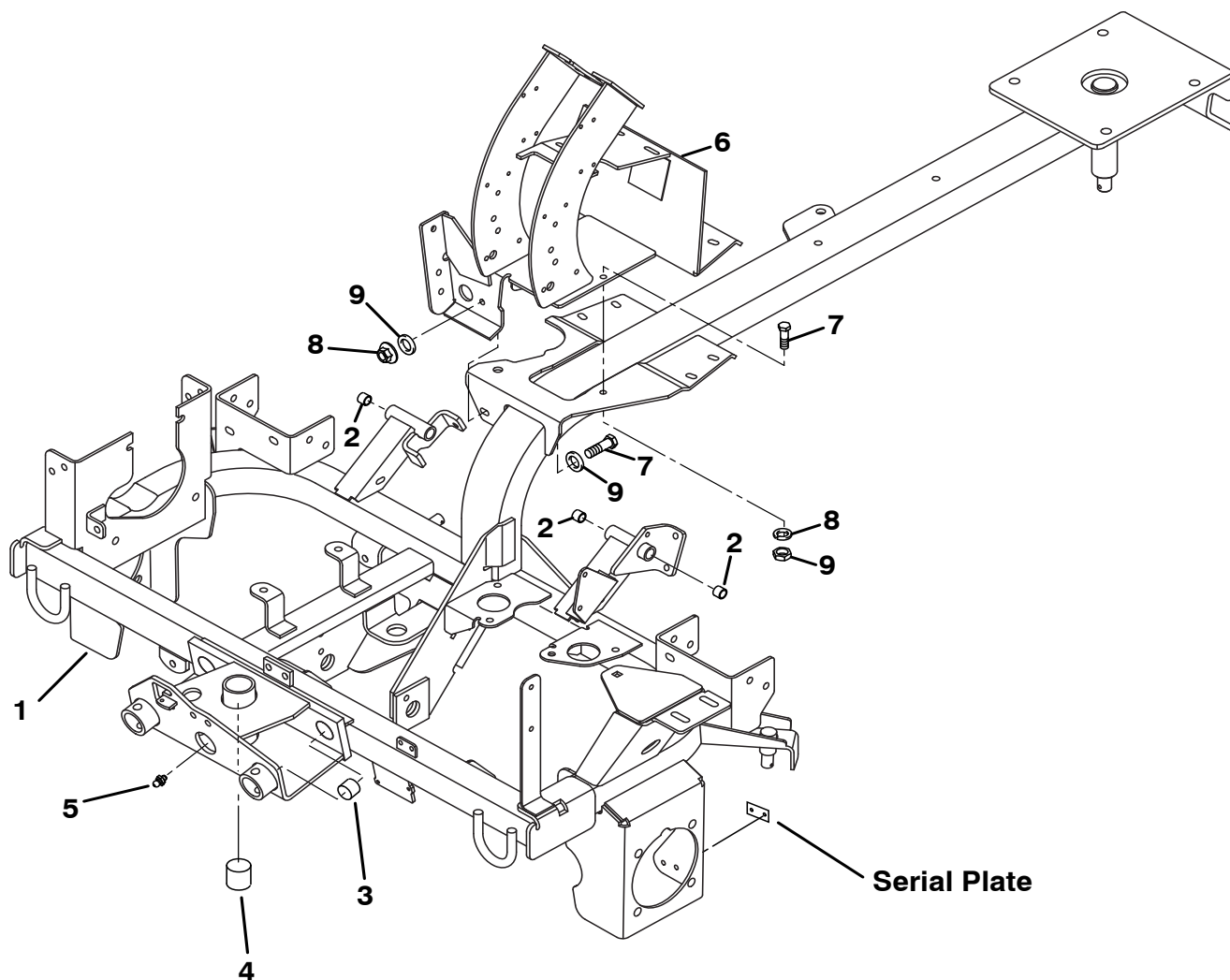
Serial No. All





Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	345671	1	Clamp	See 5.1
2	2810088	1	Bracket, Solenoid	
3	REF	1	Throttle Cable	
4	2810546	1	Rod, Solenoid	
5	443104	1	Nut, 1/4-28, Hex	
6	400112	5	Screw, 1/4-20 x 1" Hex Head	
7	2810134	1	Throttle Cable Bracket	
8	446130	8	Lockwasher, 1/4 Hvy	
9	443102	7	Nut, 1/4-20 Hex	
10	453023	2	Flat Washer, 1/4	
11	444708	1	Locknut, 1/4-20 Center	
12	446136	2	Lockwasher, 5/16 Hvy	
13	400108	1	Screw, 1/4-20 x 3/4" Hex Head	
14	550553	1	Fuel Filter	
	550489	1	• Fuel Filter Element	
15	400200	1	Screw, 5/16-18 x 2-1/2" Hex Head	Cut to 13"
16	444718	1	Locknut, 5/16-18 Center	
17	554748	1	Fuel Line Hose	
18	366526	4	Hose Clamp	
19	554748	1	Fuel Line Hose	
20	554752	1	Fuel Line Hose	
21	3003523	1	Negative Battery Cable	
22	3003764	1	Convoluted Conduit	
23	2810624	1	Positive Battery Cable	
24	473142	15	Nylon Tie	
25	447010	1	Washer, 1/4 Star	Cut to 37" Cut to 88"
26	362535	2	Screw	
27	3004410	2	Spacer	
28	366526	2	Hose Clamp	
29	443106	1	Nut, 5/16-18 Hex	
30	338289	1	Fuel Solenoid	
31	3004539	1	Convoluted Circuit	
32	361898	1	Screw, M8-1.25 x 16MM Hex	
33	3001307	2	Relay	
34	403912	1	Screw, #10-24 x 5/8" Truss Head	
35	447006	1	Lockwasher, #10 External Tooth	Reference K1
36	446118	1	Lockwasher, #10 Heavy	
37	444310	1	Nut, #10-24 Hex	

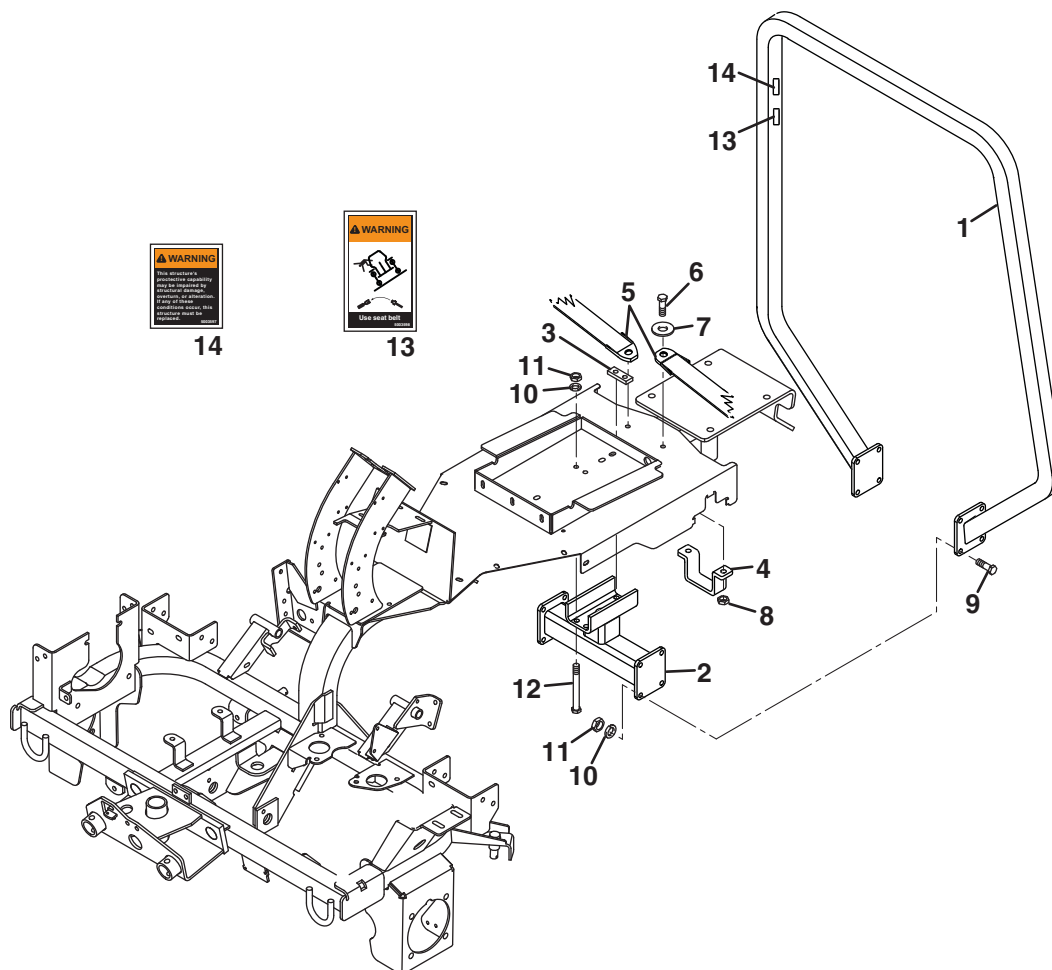
> Change from previous revision



Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	4130752	1	Frame	
2	328133	4	• Bushing	
3	3002170	4	• Bushing	
4	365106	2	• Bushing	
5	471216	1	• Grease Fitting	
6	2811393	1	Column Assembly	
7	400188	2	Screw. 5/16-18 x 1" Hex Head	
8	445781	2	Nut, 5/16-18 Whizlock Flange	
9	452006	2	Flat Washer, 5/16	

> Change from previous revision

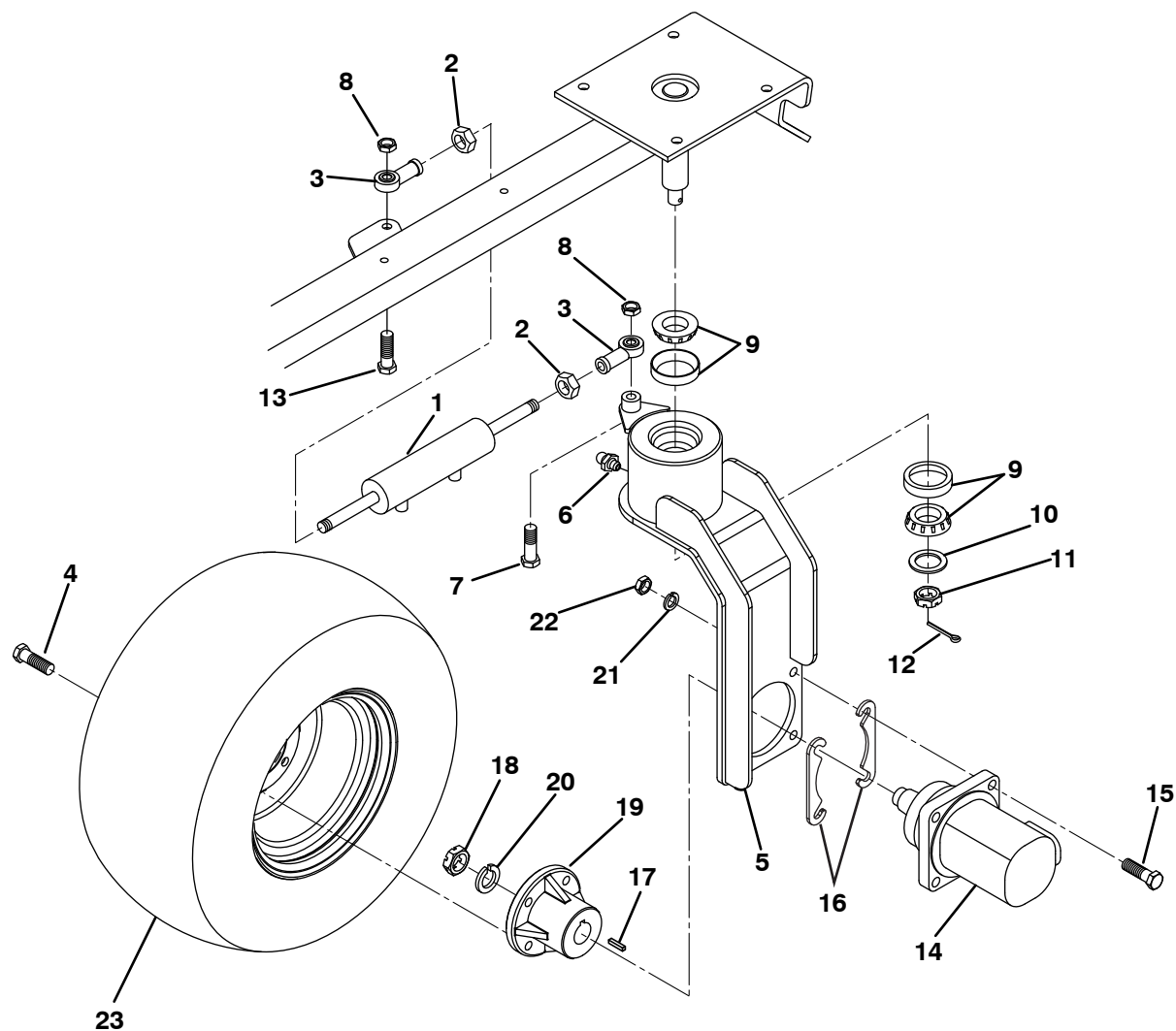
# 11.1 ROPS



Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	69157	1	ROPS Assembly	Not Shown, See 2.1
2	4187944	1	• Base, ROPS	
3	5003595	1	• Rear Backing Plate	
4	5003596	1	• Seat Belt Bracket	
5	5000629	1	• Seat Belt, 60"	
6	400370	2	• Screw, 7/16-20 x 1" Hex Head	
7	452010	2	• Flat Washer, 7/16	
8	444730	2	• Locknut, 7/16-20 Uni-Torque	
9	400408	8	• Screw, 1/2-13 x 1-1/2" Hex Head	
10	446154	12	• Lockwasher, 1/2 Heavy	
11	443118	12	• Nut, 1/2-13 Hex	
12	400420	4	• Screw, 1/2-13 x 3-1/2" Hex Head	
13	5003598	1	• Decal, Seat Belt Warning	
14	5003597	1	• Decal, Structure Warning	
15	5003599	1	• Drill Template	

> Change from previous revision

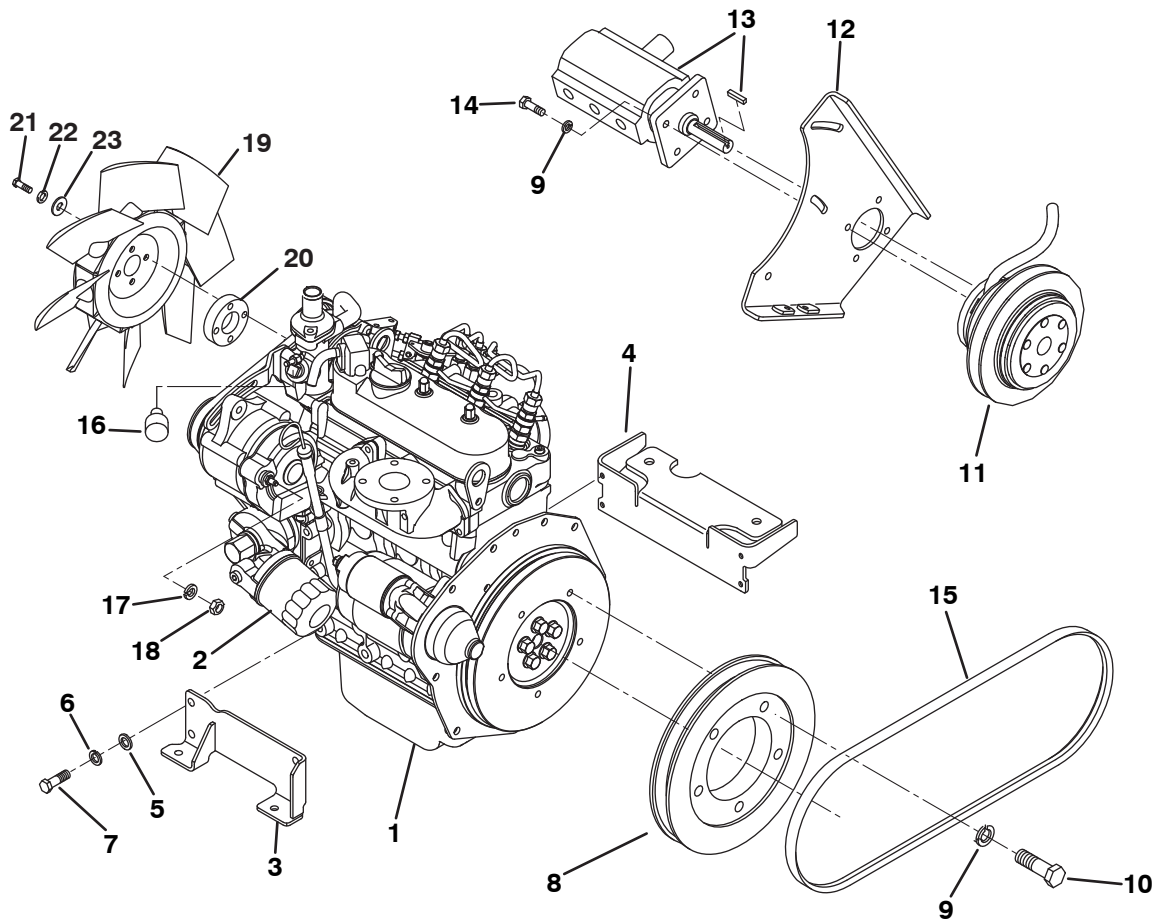
## 12.1 Rear Steering



Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	4138501	1	Steering Cylinder (Includes 1A)	Includes Shaft Seal & Seal Guards
	4137139	1	• Seal Kit	
2	443820	2	Nut, 1/2-20 Hex	
3	3010485	2	Ball Joint	
4	353914	4	Wheel Bolt	
5	1001129.7	1	Steering Fork	
6	471231	1	Grease Fitting	
7	400414	1	Screw, 1/2-13 x 2-1/4" Hex Head	
8	444758	2	Locknut, 1/2-13 Center	
9	5002916	2	Bearing, Cup and Cone with Seal	
10	452018	1	Flat Washer, 3/4	
11	445676	1	Nut, 3/4-16 Slotted	
12	460054	1	Cotter Pin, 3/16 x 1-3/4"	
13	400408	1	Screw, 1/2-13 x 1-1/2" Hex Head	
14	4182425	1	Wheel Motor	
	4178561	1	• Rear Seal Kit	
	4178562	1	• Shaft Seal Kit	
	5003384	1	• Shaft and Bearing	
	556450	4	• Bolt	
15	400414	4	• Screw, 1/2-13 x 2-1/4" Hex Head	
16	3008482	2	• Spacer	
17	554780	1	• Key	
18	554779	1	• Nut	
19	220290.7	1	Rear Wheel Hub	
20	447030	1	Lockwasher, 1 External Tooth	
21	446154	4	Lockwasher, 1/2 Hvy	
22	443118	4	Nut, 1/2-13 Hex	
23	—	1	Tire and Wheel Assembly	
	366790	1	• Tire, 20 x 10 x 8	
	1003638	1	• Rim	
	360111	1	• Valve Stem	

> Change from previous revision

## 13.1 Engine and Pump

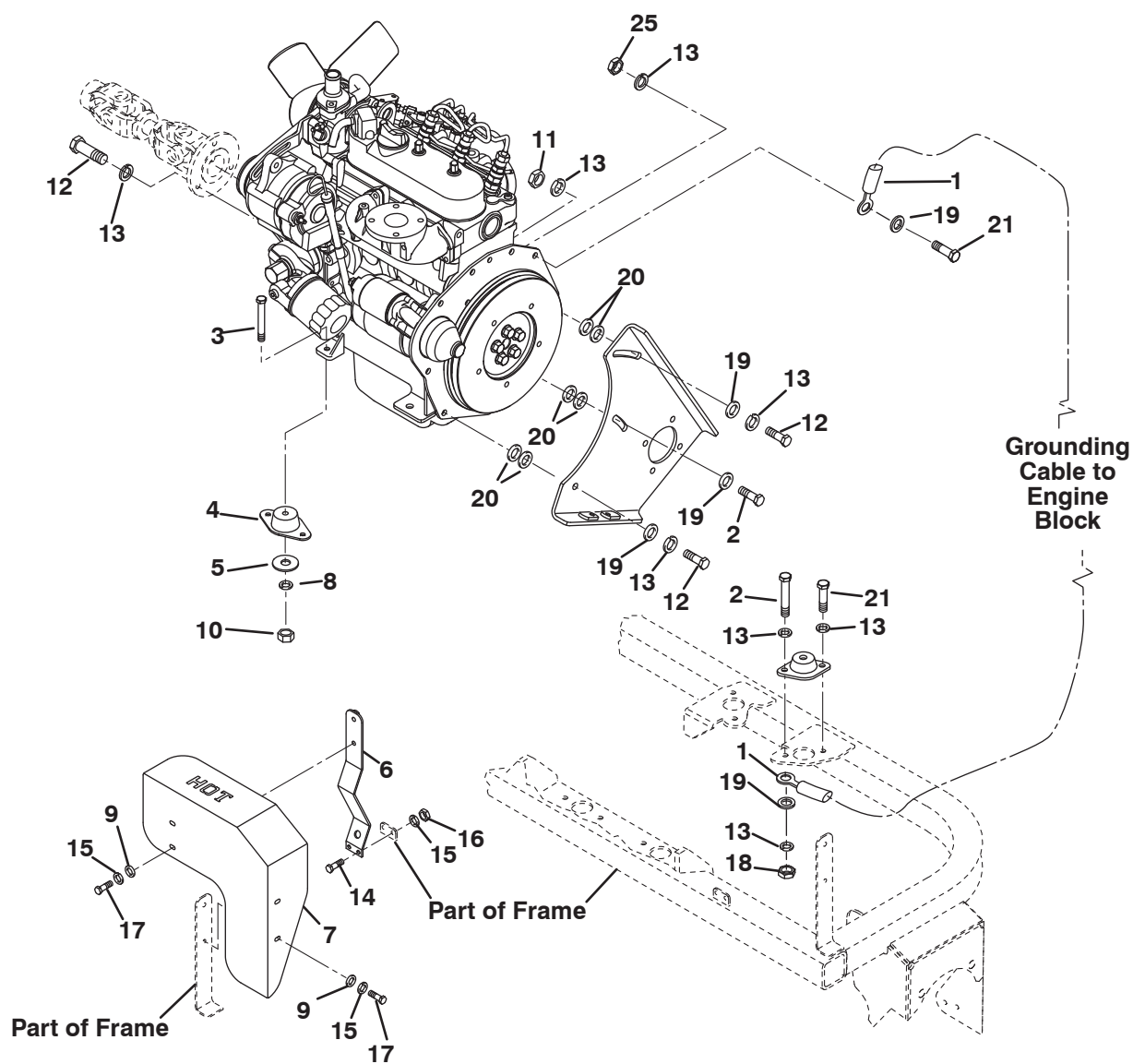


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	1001889	1	Diesel Engine (Kubota D662)	Serial No. 1601~4995
1	4143350	1	Diesel Engine (Kubota D662)	Serial No. 4996 and Up
2	5002644	1	• Oil Filter Cartridge	
3	4127309.7	1	Engine Front Bracket	
4	2811637.7	1	Engine Rear Bracket	
5	452008	8	Flat Washer, 3/8	
6	363485	8	Lockwasher, M10	
7	362263	8	Bolt M10-1.25 x 25mm	
8	2810499.7	1	Engine Pulley	
9	446136	8	Lockwasher, 5/16 Hvy	
10	2810545	5	Screw, SKT Button Cap	
11	2809727	1	Clutch	
12	4130754.7	1	Pump Mount Bracket	
13	1000970	1	Hydraulic Pump, Reel	See 31.1 for Service Parts
14	400226	4	Screw, 5/16-24 x 1" Hex Head	
15	3001950	1	V-Belt	
16	364501	1	Temperature Sender	Reference <b>U5</b>
17	446128	1	Lockwasher, 1/4	
18	361001	1	Nut, M6-1	
19	4141024	1	Fan, Engine Cooling	Serial No. 4996 and Up
20	4125492	1	Spacer, Fan	Serial No. 4996 and Up
21	363448	4	Screw, M6-1 x 35 mm Hex Head	Serial No. 4996 and Up
22	446130	4	Lockwasher, 1/4 Heavy	Serial No. 4996 and Up
23	452004	4	Flat Washer, 1/4	Serial No. 4996 and Up
<p>● 67043-1601~3969 units updated with 4123033 Muffler Kit and 4124824 Stay Bar Kit</p>				

> Change from previous revision

## 14.1 Diesel Engine Mounting

### Diesel Engine



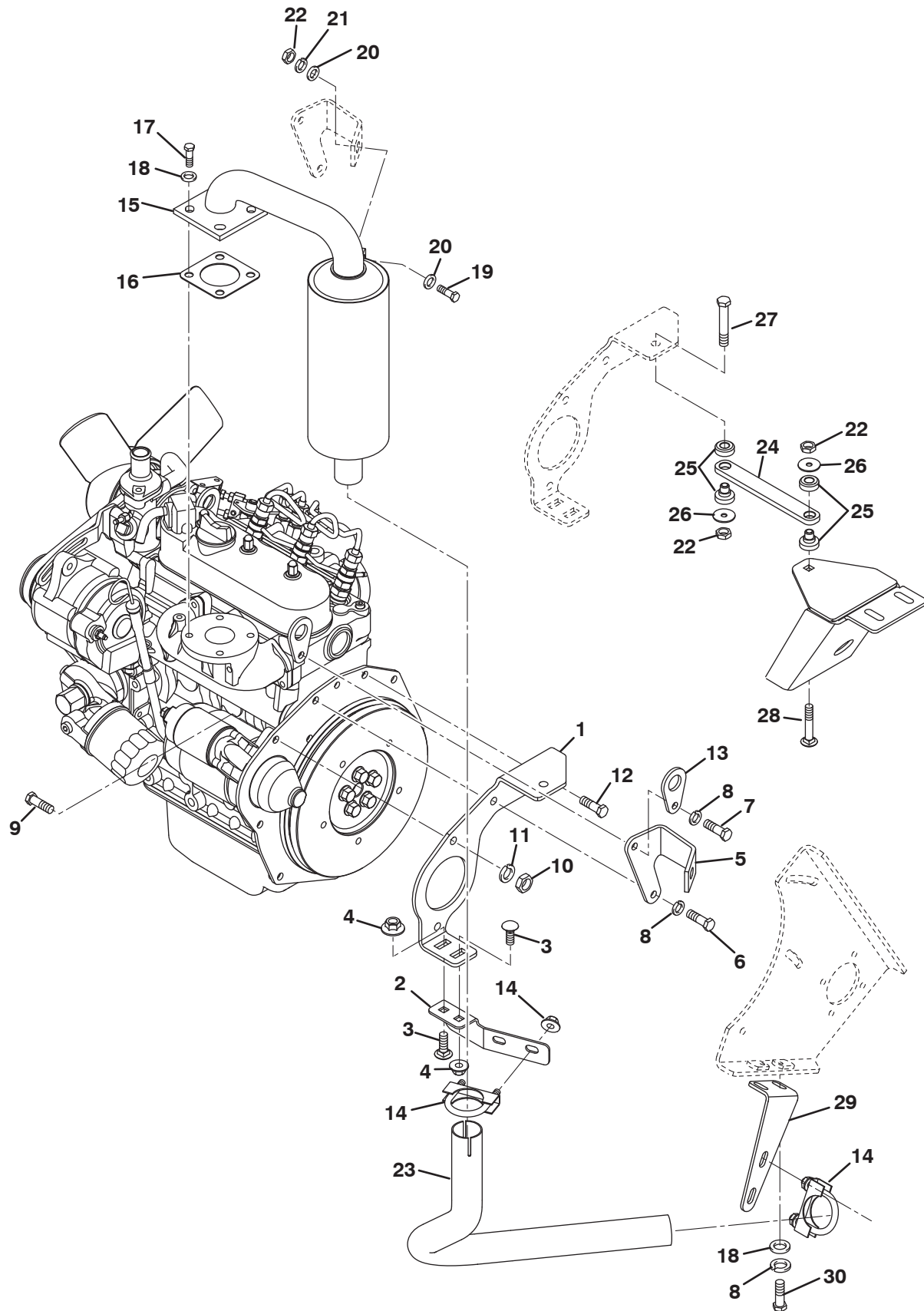


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	346006	1	Cable, Grounding	
2	400190	2	Screw, 5/16-18 x 1-1/4" Hex Head	
3	400272	4	Screw, 3/8-16 x 2-1/4" Hex Head	
4	3004523	4	Mount, Isolation	
5	3004526	4	Washer, Mount Isolator	
6	4121872.7	1	Bracket, Heat Shield	
7	4121856.7	1	Muffler Shield	
8	446142	4	Lockwasher, 3/8 Hvy	
9	452004	4	Flat Washer, 1/4	
10	443110	4	Nut, 3/8-16 Hex	
11	444718	2	Locknut, 5/16-18 Center	
12	361005	3	Bolt, M8-1.25 x 25mm	
13	446136	13	Lockwasher, 5/16 Hvy	
14	400108	2	Screw, 1/4-20 x 3/4" Hex Head	
15	446130	6	Lockwasher, 1/4 Heavy	
16	443102	2	Nut, 1/4-20 Hex	
17	400106	4	Screw, 5/16-18 x 5/8" Hex Head	
18	443106	1	Nut, 5/16 Hex	
19	452006	5	Flat Washer, 5/16	
20	457016	6	Washer, 5/16 x 1/16"	
21	400186	8	Screw, 5/16-18 x 3/4" Hex Head	
<p>● 67043-1601~3969 units updated with 4123033 Muffler Kit and 4124824 Stay Bar Kit</p>				

> Change from previous revision

## 15.1 Diesel Engine Exhaust

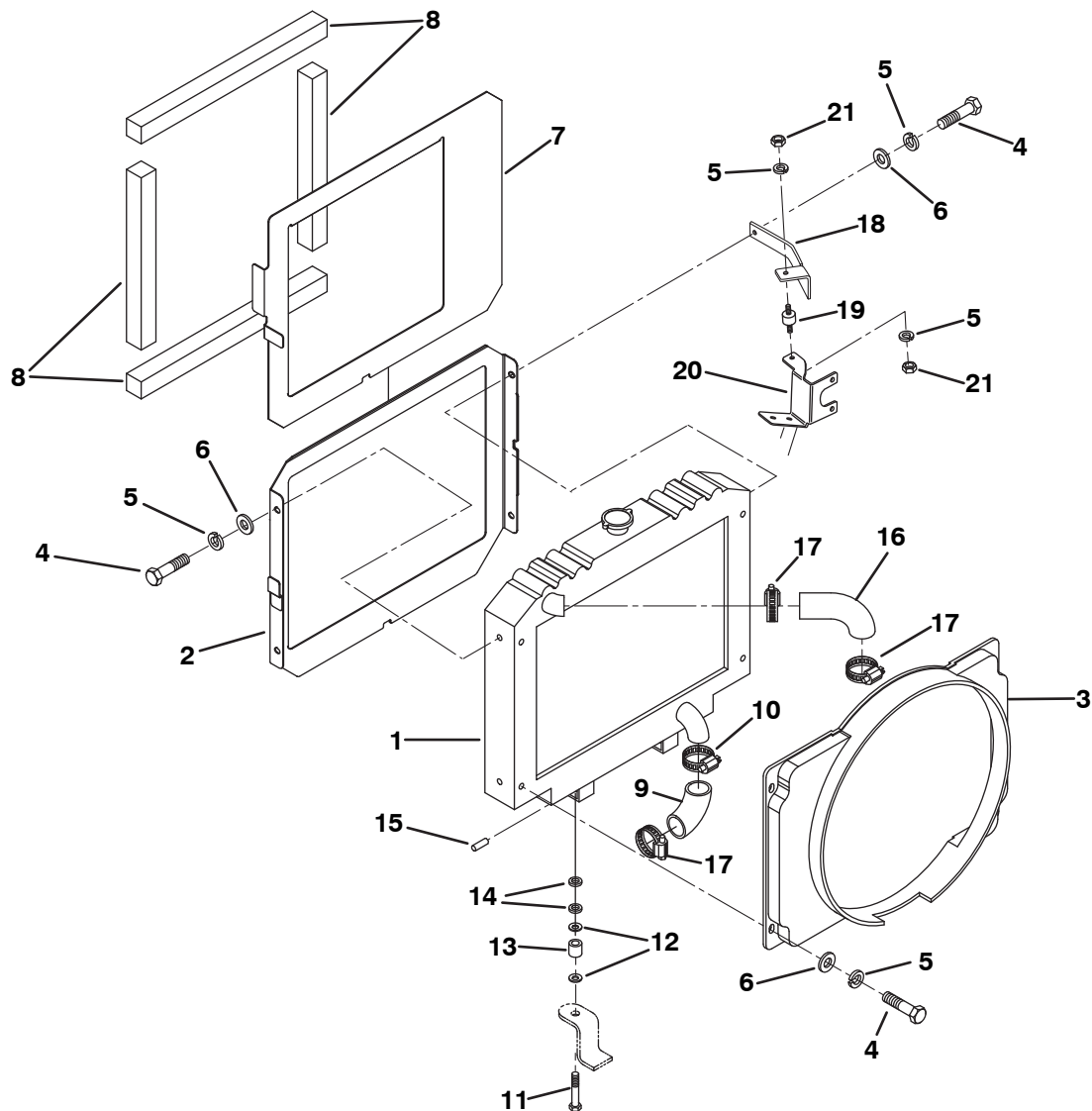
Serial No. All





## 16.1 Radiator Installation

Serial No. 1601~4995



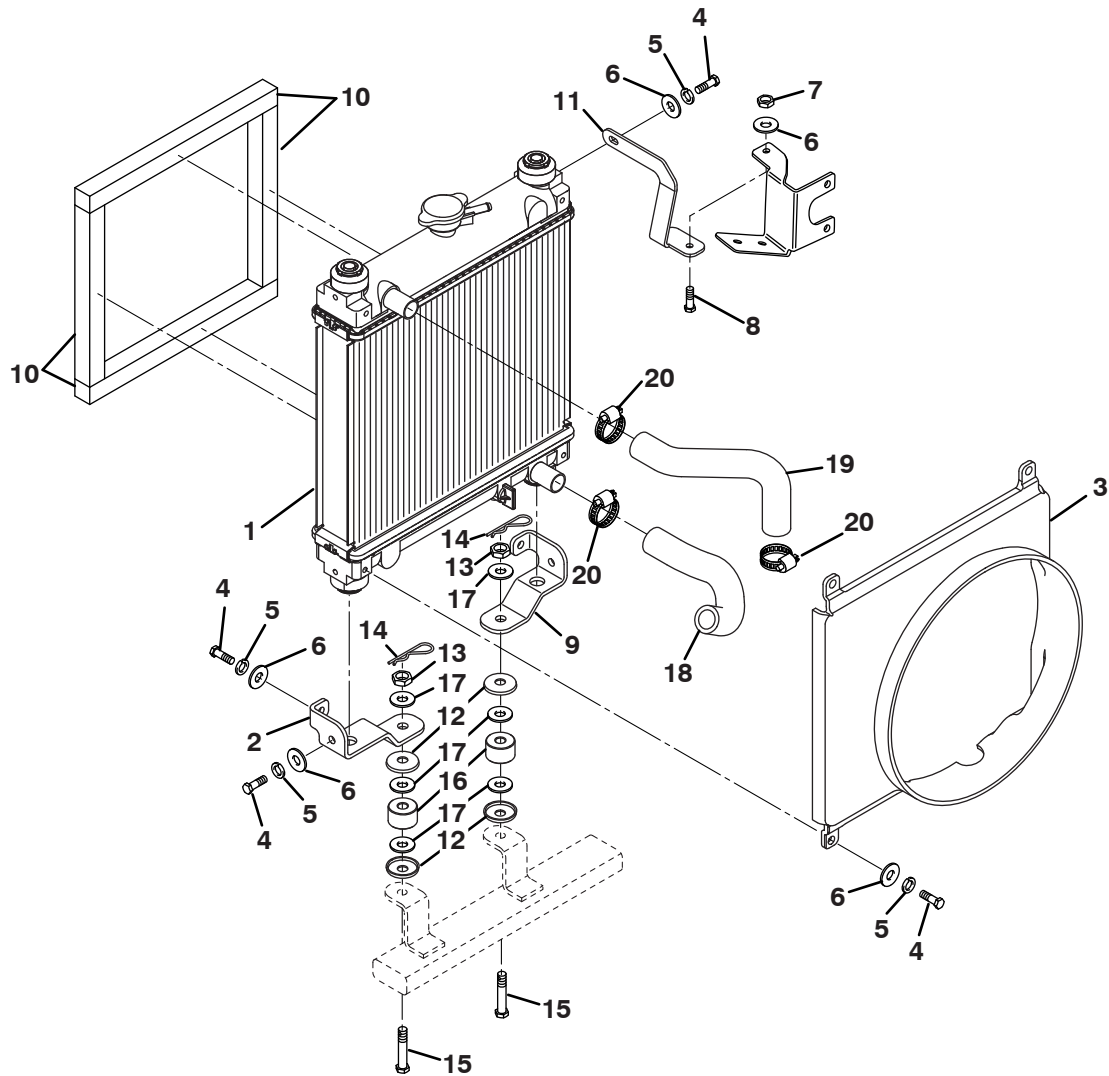
Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	554896	1	Radiator	See 9.1
2	1002101.7	1	Front Shroud	
3	5001666	1	Rear Shroud	
4	355174	8	Bolt, M6-1 x 12mm	
5	446130	10	Lockwasher, 1/4 Hvy	
6	452004	8	Flat Washer, 1/4	
7	1001964.7	7	Front Slide Shroud	
8	3004187	AR	Weather Strip	
9	557578	1	Lower Hose	
10	557563	1	Hose Clamp	
11	554244	2	Bolt	
12	553887	4	Cup Washer	
13	553886	2	Cushion	
14	452008	AR	Flat Washer, 3/8	
15	553859	2	Snap Pin	
16	554241	1	Upper Hose	
17	554083	3	Hose Clamp	
18	2810662	1	Radiator Support	
19	3006127	1	Iso-Mount, Radiator	
20	REF	1	Bracket, Solenoid	
21	443102	2	Nut, 1/4-20 Hex	

&gt; Change from previous revision

**16.2 Radiator Installation**

Diesel Engine

Serial No. 4996 and Up

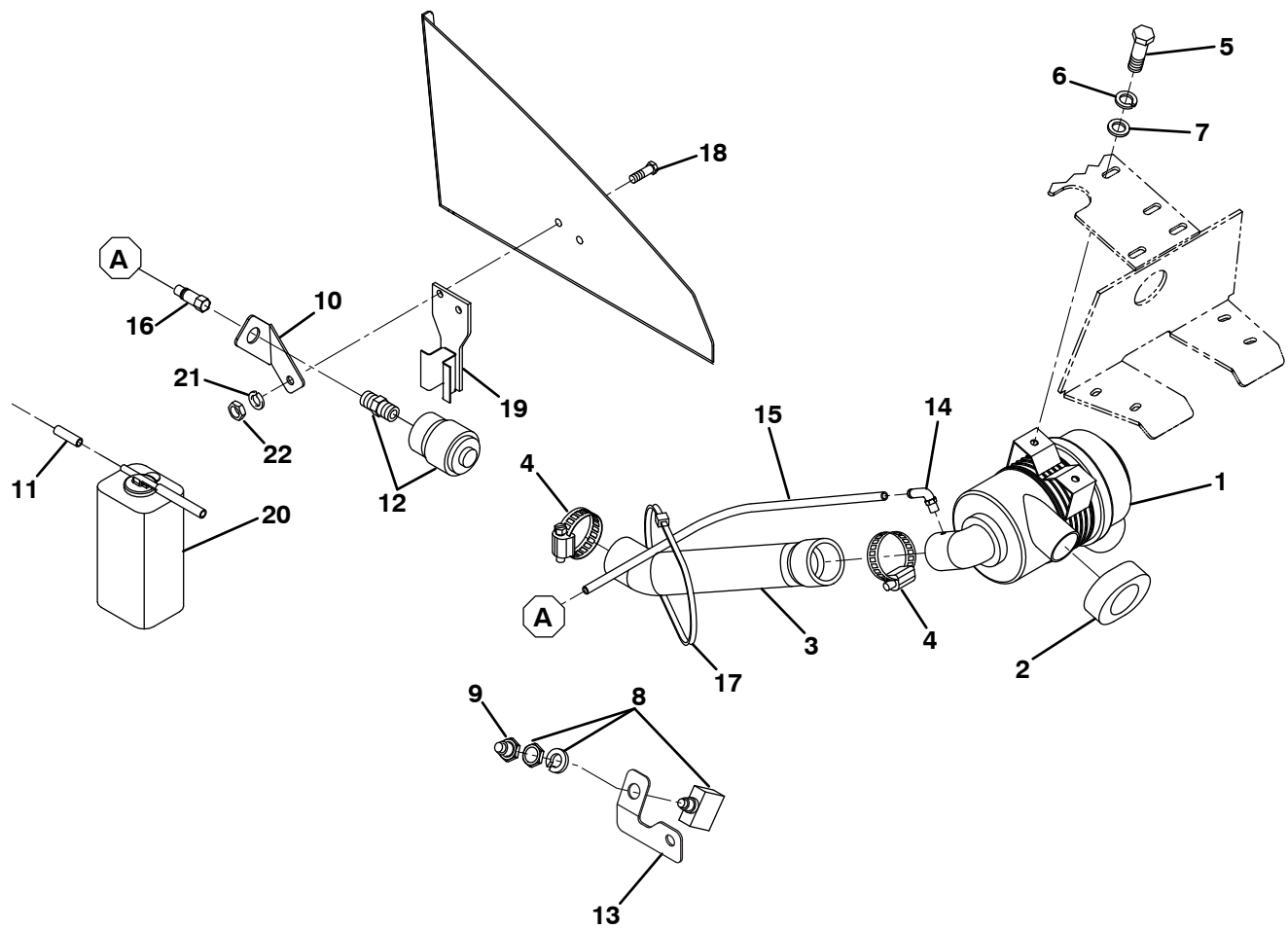


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	4141036	1	Radiator	Hole in end for hairpin
2	4150417	1	Bracket, Radiator Mount	
3	4140846	1	Fan Shroud	
4	362535	9	Bolt, M6-1 x 16mm	
5	446130	9	Lockwasher, 1/4 Hvy	
6	452004	10	Flat Washer, 1/4	
7	444708	1	Locknut, 1/4-20 Hex Center	
8	400108	1	Screw, 1/4-20 x 3/4" Hex Head	
9	4150418	1	Bracket, Radiator Mount	
10	4149217	AR	Weather Strip	
11	4140788	1	Bracket, Upper Radiator Mount	
12	553887	4	Washer, Cup	
13	443810	2	Nut, 3/8-16 Hex Jam	
14	460312	2	Hain Pin	
15	4150598	2	Screw, 3/8-16 x 2" Hex Head	
16	553886	2	Cushion, Radiator	
17	452008	6	Flat Washer, 3/8	
	4141392	1	Radiator Hose Kit	
18	N/S	1	• Lower Hose	
19	N/S	1	• Upper Hose	
20	319914	4	• Hose Clamp	

&gt; Change from previous revision

## 17.1 Air Filter and Circuit Breaker

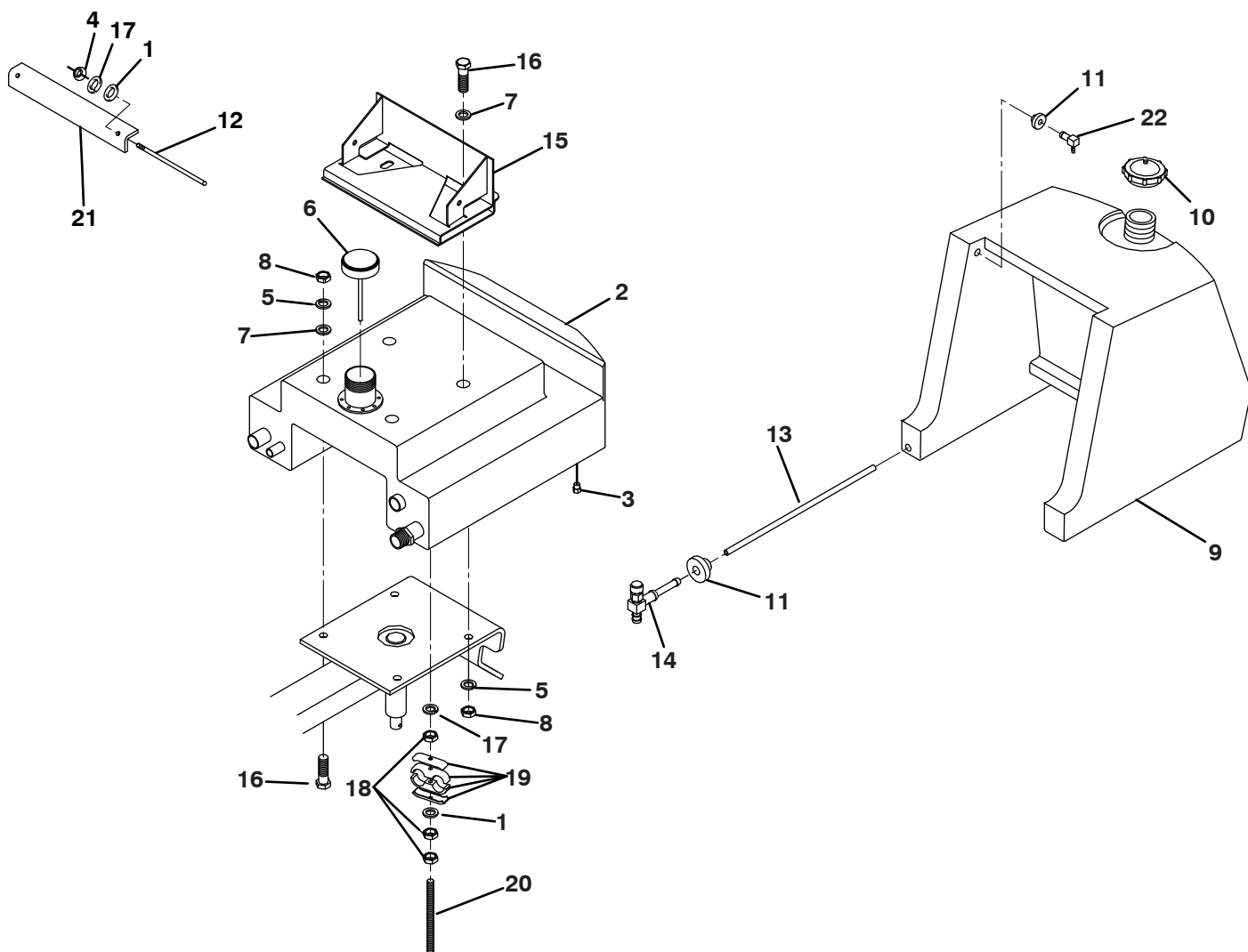
Serial No. All







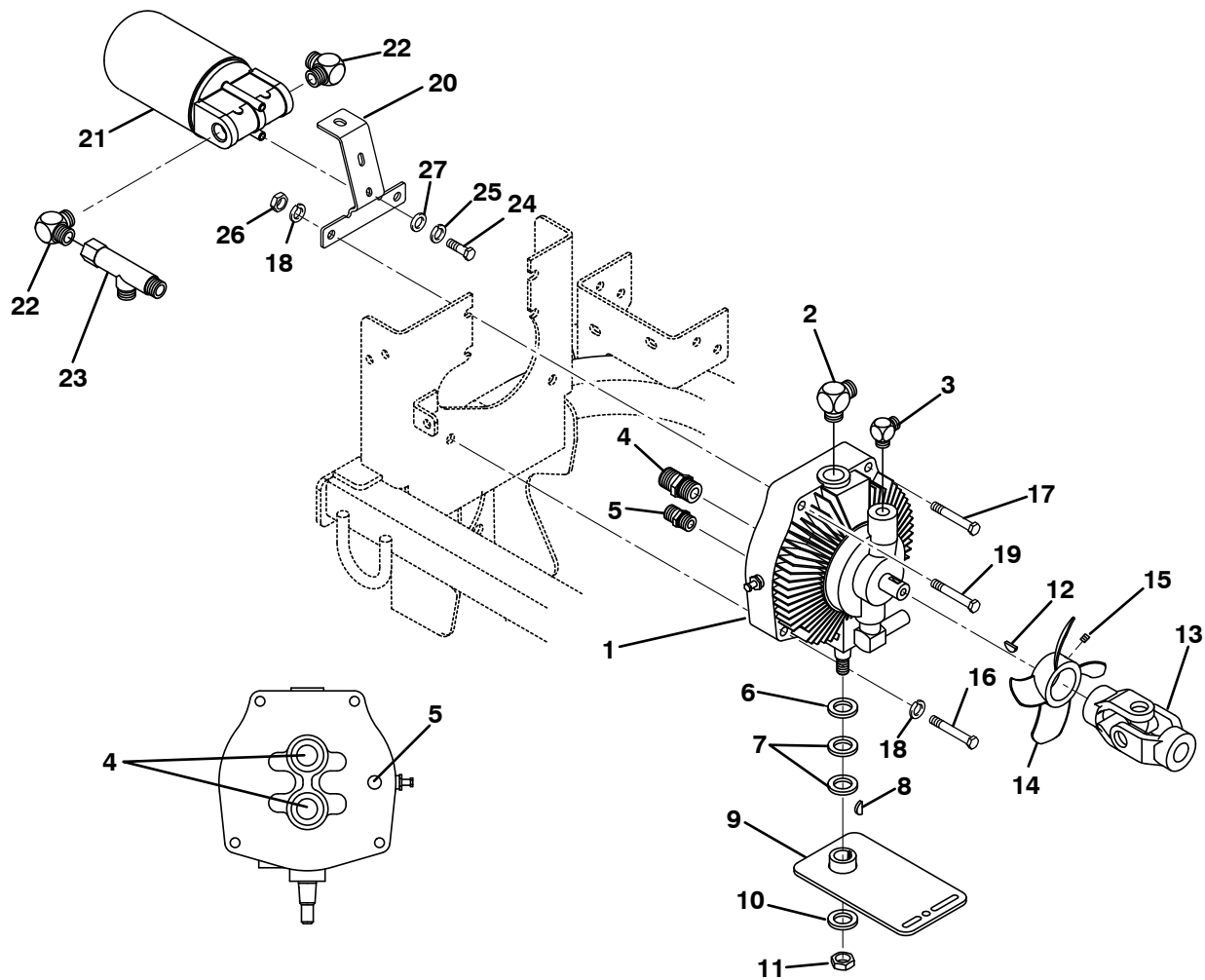
## 18.1 Tanks



Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	452004	3	Flat Washer, 1/4	
2	1002019.6	1	Hydraulic Oil Tank	
3	3002397	1	Magnetic Plug	
4	445612	2	Nut, 1/4-20 Wing	
5	446154	4	Lockwasher, 1/2 Hvy	
6	2809688	1	Fill Breather Cap	
	5003624	1	• Gasket	
7	344132	4	Flat Washer	
8	443118	4	Nut, 1/2-13 Hex	
9	1001134	1	Fuel Tank	
10	4106900	1	Fuel Cap	
11	361117	2	Fuel Tank Bushing	
12	346361	2	Battery Hold Down	
13	325822	1	Fuel Line, 14" x 1/4" I.D.	
14	1001311	1	Fuel Shut Off Valve	
15	1000973	1	Battery Bracket	
16	400424	4	Screw, 1/2-13 x 4-1/2" Hex Head	
17	446130	3	Lockwasher, 1/4 Hvy	
18	443102	3	Nut, 1/4-20 Hex	
19	3003473	1	Hose Clamp	
20	3003665	1	Stud, 1/4-20 x 2-3/4"	
21	3003444	1	Battery Retainer	
22	361748	1	Valve Overflow	

&gt; Change from previous revision

## 19.1 Hydro Pump and Charge Filter

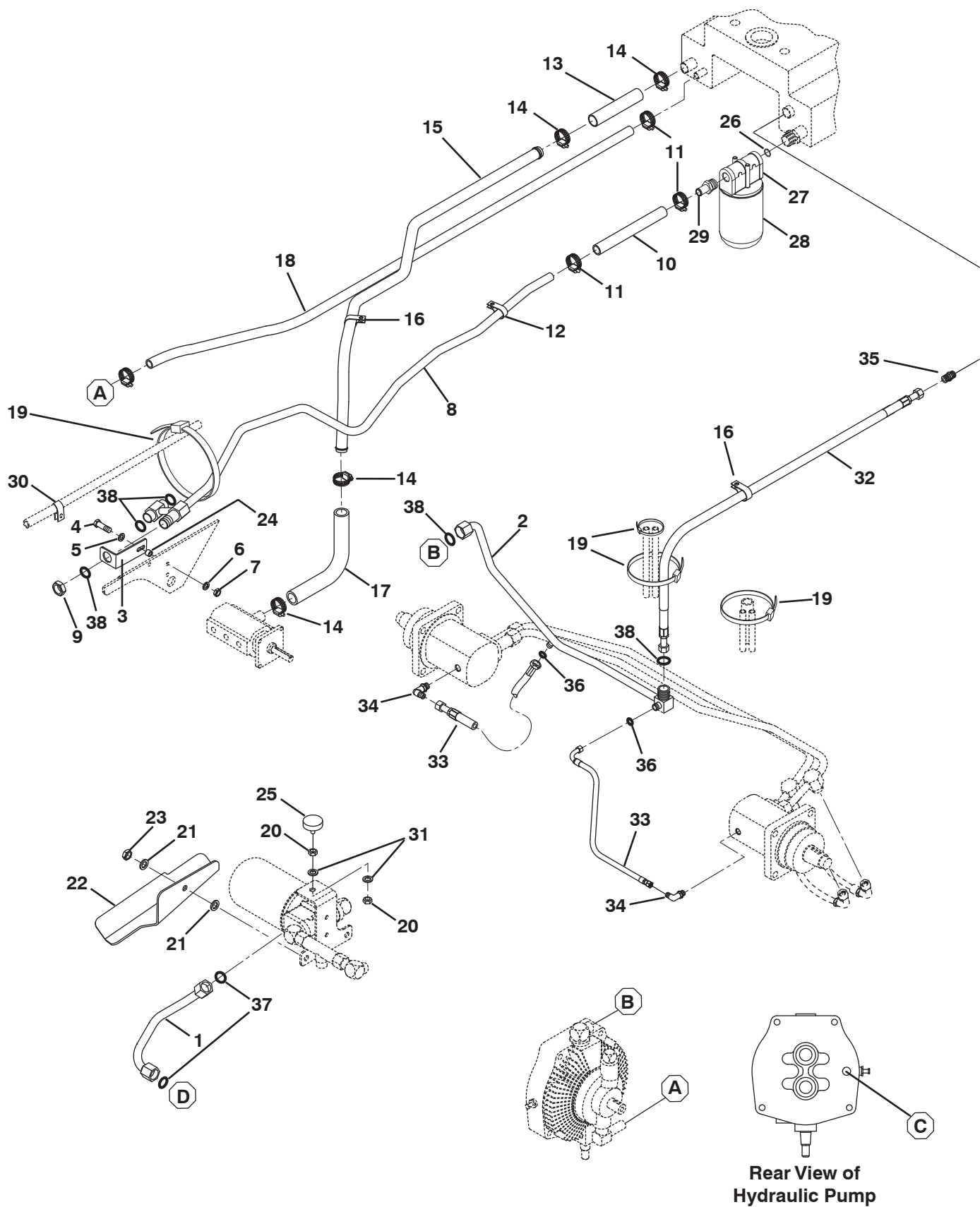


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	4120764	1	Hydraulic Pump	Serial No. 1601 ~ 4250, See 33.1
1	4129590	1	Hydraulic Pump	Serial No. 4251 and Up, See 33.1
1				
2	340070	1	Adapter, 90°	
3	340061	1	Adapter, 90°	
4	339989	2	Adapter, Straight	
5	339983	1	Adapter, Straight	
6	307374	1	Washer	
7	454001	2	Spring Washer	
8	463005	1	Key, 1/8 x 5/8" Woodruff	
9	1004900	1	Traction Arm	
10	453017	1	Flat Washer, 1/2	
11	444758	1	Locknut, 1/2-13 Center	
12	463109	1	Key, 3/16 x 5/8" Morton	Serial No. 1601 ~ 4250
12	463113	1	Key, 3/16 x 3/4" Morton	Serial No. 4251 and Up
13	1001630	1	Universal Joint	Serial No. 1601 ~ 4250
13	4129589	1	Universal Joint	Serial No. 4251 and Up
	554663	1	• Cross and Bearing Kit	
14	4129588	1	Fan	
15	412020	2	Screw, 5/16-18 x 1" Set	
16	400272	2	Screw, 3/8-16 x 2-1/4" Hex Head	
17	400274	1	Screw, 3/8-16 x 2-1/2" Hex Head	
18	446142	4	Lockwasher, 3/8 Hvy	
19	400276	1	Screw, 3/8-16 x 3" Hex Head	
20	2810439	1	Bracket	
21	1001148	1	Filter Assembly	
	549597	1	• Filter Cartridge	
22	340068	2	Adapter, 90°	
23	340120	1	Adapter, Tee	
24	400108	2	Screw, 1/4-20 x 3/4" Hex Head	
25	446130	2	Lockwasher, 1/4 Hvy	
26	443110	2	Nut, 3/8-16 Hex	
27	452004	2	Flat Washer, 1/4	

> Change from previous revision

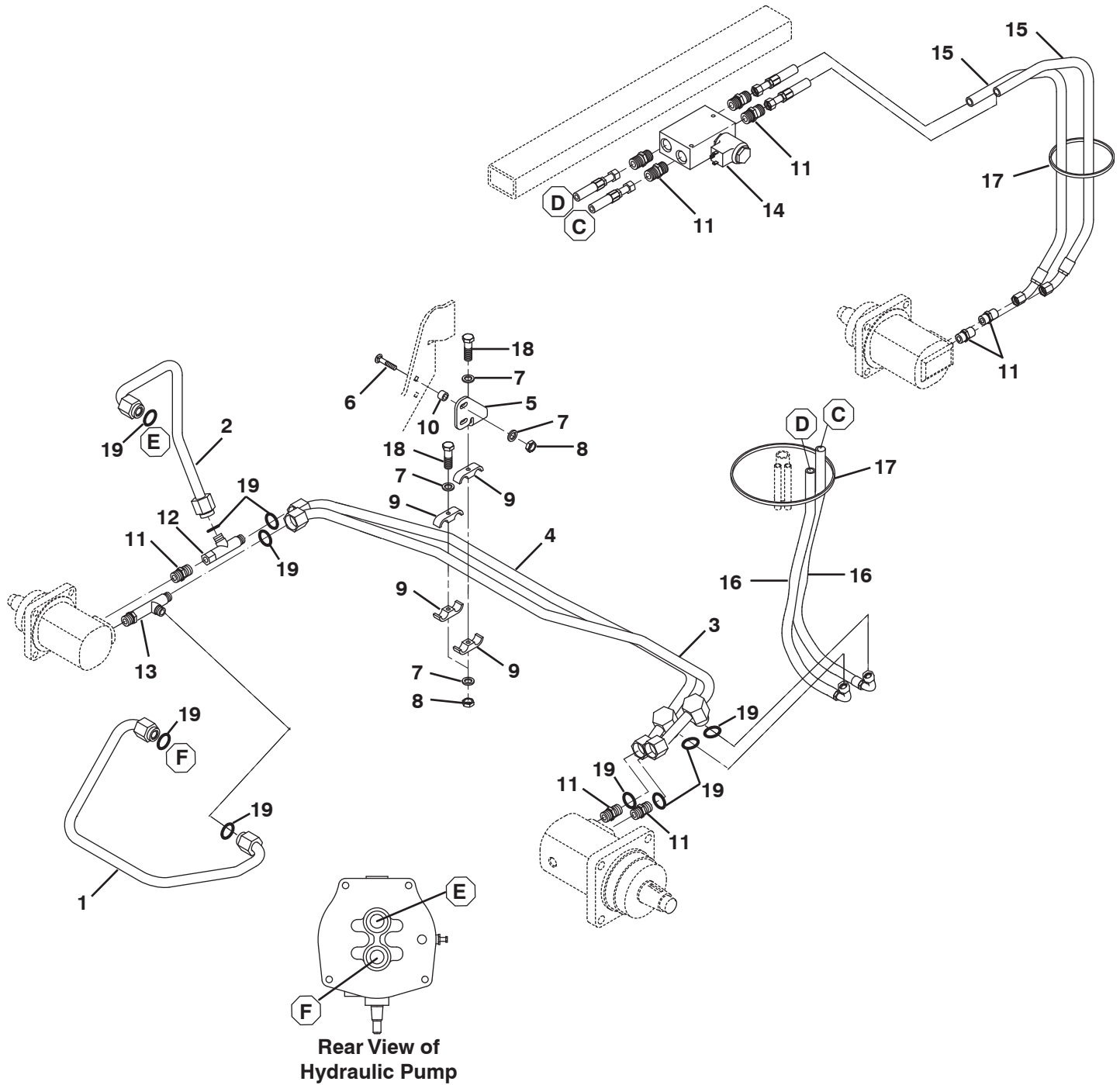
## 20.1 Pump Suction and Return Hydraulics

Serial No. All



Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	1001372	1	Tube, Filter to Pump	
2	2809725	1	Tube, Pump Return	
3	3004182	1	Angle	
4	400188	2	Screw, 5/16-18 x 1" Hex Head	
5	452006	2	Flat Washer, 5/16	
6	446136	2	Lockwasher, 5/16 Hvy	
7	443106	2	Nut, 5/16-18 Hex	
8	1001147	1	Tube, Reel Motor Return	
9	339963	1	ORS Bulkhead Locknut	
10	3003218	1	Hose	
11	108094-02	4	Clamp	
12	345671	1	Hose Clamp	
13	3003113	1	Hose	
14	367458	4	Hose Clamp	
15	3003115	1	Tube, Suction	
16	354080	3	Hose Clamp	
17	3003114	1	Formed Hose	
18	3003219	1	Hose, Suction	
19	473142	4	Nylon Tie	
20	443810	2	Nut, 3/8-16 Hex Jam	
21	452008	2	Flat Washer, 3/8	
22	3003223	1	Drain Shield	
23	444762	1	Locknut, 3/8-16 Center	
24	3004410	1	Spacer	
25	361723	1	Rubber Stop	
26	339900	1	O-Ring	
27	1001148	1	Filter	
28	549597	1	• Filter Element	
29	3003256	1	Adapter, Beaded Tube	
30	361064	1	Clamp Hose	
31	453011	2	Washer, 3/8 Flat	
32	1001503	1	Hydro Return Hose	
33	1001488	2	Traction Motor Drain Hose	
34	340055	4	Adaptor, 90°	
35	339989	1	Adaptor, Straight	
36	339908	2	O-Ring, #4 ORFS	
37	339910	2	O-Ring, #8 ORFS	
38	339912	5	O-Ring, #10 ORFS	

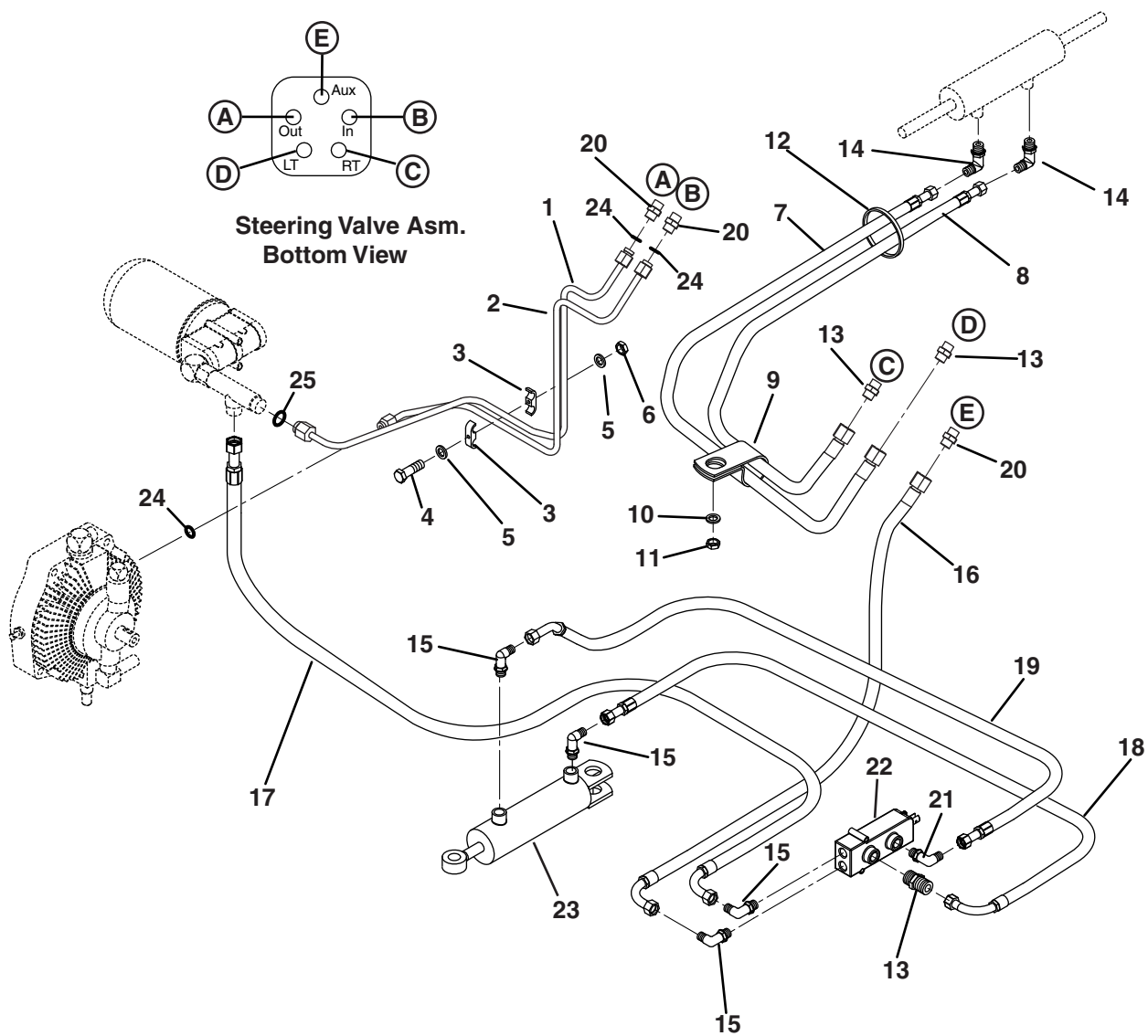
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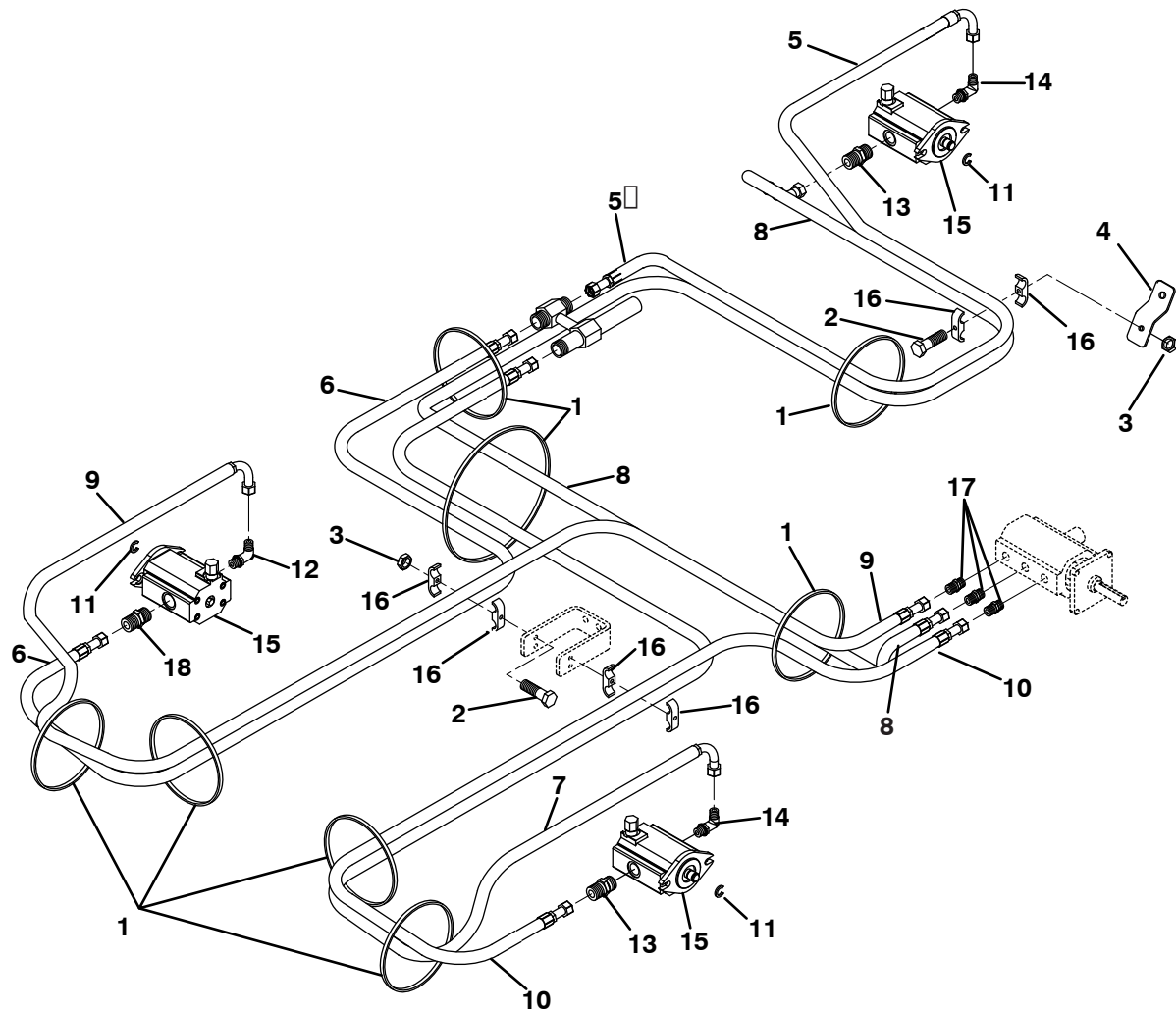
Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	2810603	1	Tube, Pump to Motor	See 34.1 for Service Parts
2	2810604	1	Tube, Pump to Motor	
3	2810602	1	Tube, R. Motor to L. Motor	
4	2810601	1	Tube, R. Motor to L. Motor	
5	3003242.7	1	Bracket	
6	441668	2	Carriage Bolt, 1/4-20 x 1-1/4"	
7	452004	6	Flat Washer, 1/4	
8	444708	4	Locknut, 1/4-20 Center	
9	3003110	2	Clamp	
10	3004410	1	Spacer	
11	339989	11	Adapter, Straight	
12	340121	1	Fitting Tee	
13	340265	1	Adapter, Tee	
14	4111942	1	3WD Valve	
15	1001496	2	Rear Motor Hose	
16	1001495	2	Traction Hose	
17	473142	4	Nylon Tie	
18	400116	2	Screw, 1/4-20 x 1-1/2" Hex Head	
19	339911	10	O-Ring, #10 ORFS	

&gt; Change from previous revision



Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	1002944	1	Tube, Steering Valve to Filter	
2	2811063	1	Tube, Steering Valve to Pump	
3	364221	1	Clamp	
4	400114	1	Screw, 1/4-20 x 1-1/4" Hex Head	
5	452004	2	Flat Washer, 1/4	
6	444708	1	Locknut, 1/4-20 Center	
7	1002942	1	Left Steering Hose	
8	1002941	1	Right Steering Hose	
9	354080	2	Hose Clamp	
10	446136	1	Lockwasher, 5/16 Hvy	
11	443106	1	Nut, 5/16-18 Hex	
12	473142	4	Nylon Tie	
13	339974	3	Adapter Straight	
14	340057	2	Adapter, 90°	
15	340061	4	Adapter, 90°	
16	1002940	1	Lift Cylinder Hose	
17	1001500	1	Lift Cylinder Hose	
18	1001502	1	Lift Valve Hose	
19	1001501	1	Lift Valve Hose	
20	339979	3	Adapter Straight	
21	340088	1	Adapter, 90°	
22	1001356	1	Lift Valve	
	5001419	1	• Seal Kit	
23	122759	1	Hydraulic Cylinder	
	554331	1	• Seal Kit	
24	339909	3	O-Ring, #6 ORFS	
25	339910	1	O-Ring, #10 ORFS	

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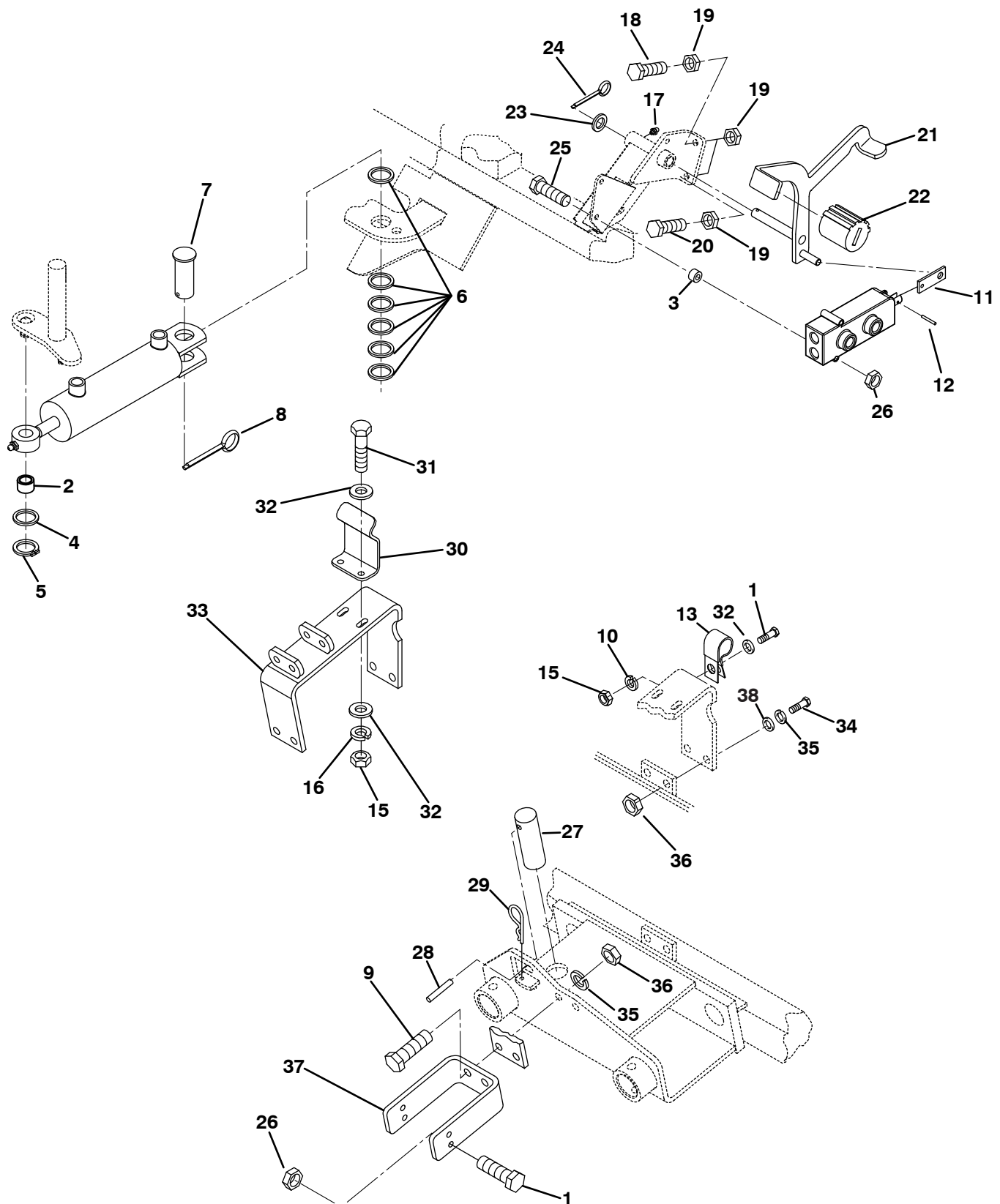


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	473142	8	Nylon Tie	See 32.1 for Service Parts
2	400120	3	Screw, 1/4-20 x 2" Hex Hd	
3	444708	3	Locknut, 1/4-20 Center	
4	3003323.7	1	Bracket	
5	1001491	1	Center Reel Motor Return Hose	
6	1001490	1	Right Reel Motor Return Hose	
7	1001489	1	Left Reel Motor Return Hose	
8	1001493	1	Center Reel Motor Pressure Hose	
9	1001494	1	Right Reel Motor Pressure Hose	
10	1001492	1	Left Reel Motor Pressure Hose	
11	2810171	3	Snap Ring	
12	340062	1	Adapter, 90°	
13	339980	2	Adapter, Straight	
14	340070	2	Adapter, 90°	
15	1002603	3	Reel Motor	
16	3003473	3	Clamp	
17	339979	3	Adapter Straight	
18	339989	1	Adapter, Straight	

&gt; Change from previous revision

## 23.1 Reel Lift

Serial No. All

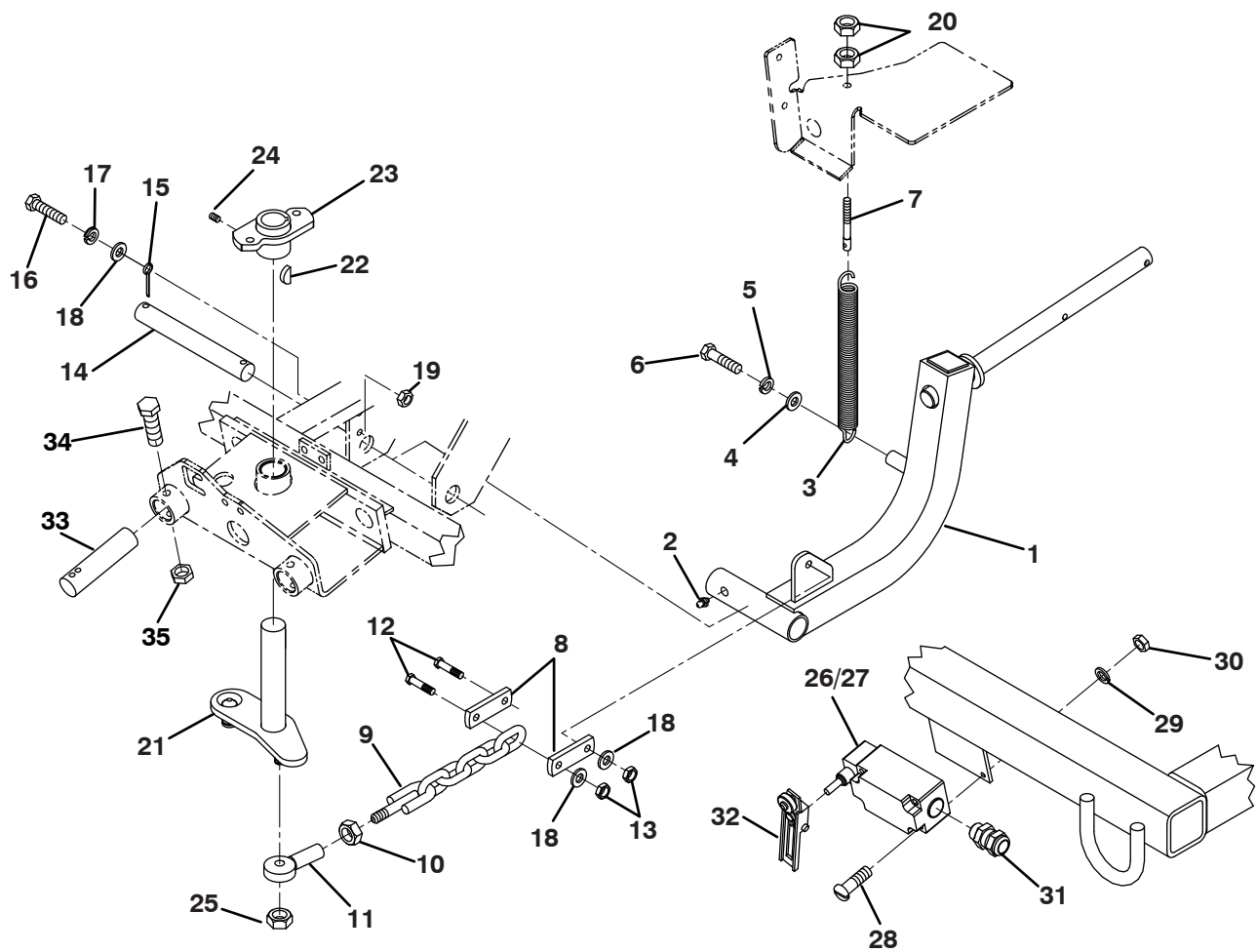


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	400108	3	Screw, 1/4-20 x 3/4" Hex Head	Included with cylinder
2	554330	1	Bronze Bushing	
3	452006	2	Flat Washer, 3/8	
4	307374	1	Washer	
5	458038	1	Retaining Ring	
6	345700	6	Washer	
7	364238	1	Cylinder Pin	
8	460052	1	Cotter Pin, 3/16 x 1-1/2"	
9	400264	2	Screw, 3/8-16 x 1-1/4" Hex Head	
10	446128	1	Lockwasher, 1/4	
11	3002234.7	1	Plate	
12	461379	1	Roll Pin, 3/16 x 1/2"	Not Shown
13	345671	1	Hose Clamp	
14	473142	11	Nylon Tie	
15	443102	5	Nut, 1/4-20 Hex	
16	446130	2	Lockwasher, 1/4 Hvy	
17	471214	2	Grease Fitting	
18	400192	1	Screw, 5/16-18 x 1-1/2" Hex Head	
19	443106	4	Nut, 5/16-18 Hex	
20	400190	1	Screw, 5/16-18 x 1-1/4" Hex Head	
21	1002606.7	1	Lift Pedal	
22	3003474	1	Pedal Grip	
23	453017	1	Flat Washer, 1/2	
24	460028	1	Cotter Pin, 1/8 x 1"	
25	400118	2	Screw, 1/4-20 x 1-3/4" Hex Head	
26	444708	4	Locknut, 1/4-20 Center	
27	3003035	1	Pin	
28	461418	1	Roll Pin, 1/4-20 x 3-1/2"	
29	460335	1	Spring Clip Pin, 1/8	
30	3004679	2	Hood Centering Bracket	
31	400112	2	Screw, 1/4-20 x 1" Hex Head	
32	452004	5	Flat Washer, 1/4	
33	1001176.7	1	Tab Spring Mount	
34	400264	2	Screw, 3/8-16 x 1-1/4" Hex Head	
35	446142	4	Lockwasher, 3/8 Hvy	
36	443110	4	Nut, 3/8-16 Hex	
37	3002630.7	1	Hose Bracket	

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## 24.1 Rear Lift Arm

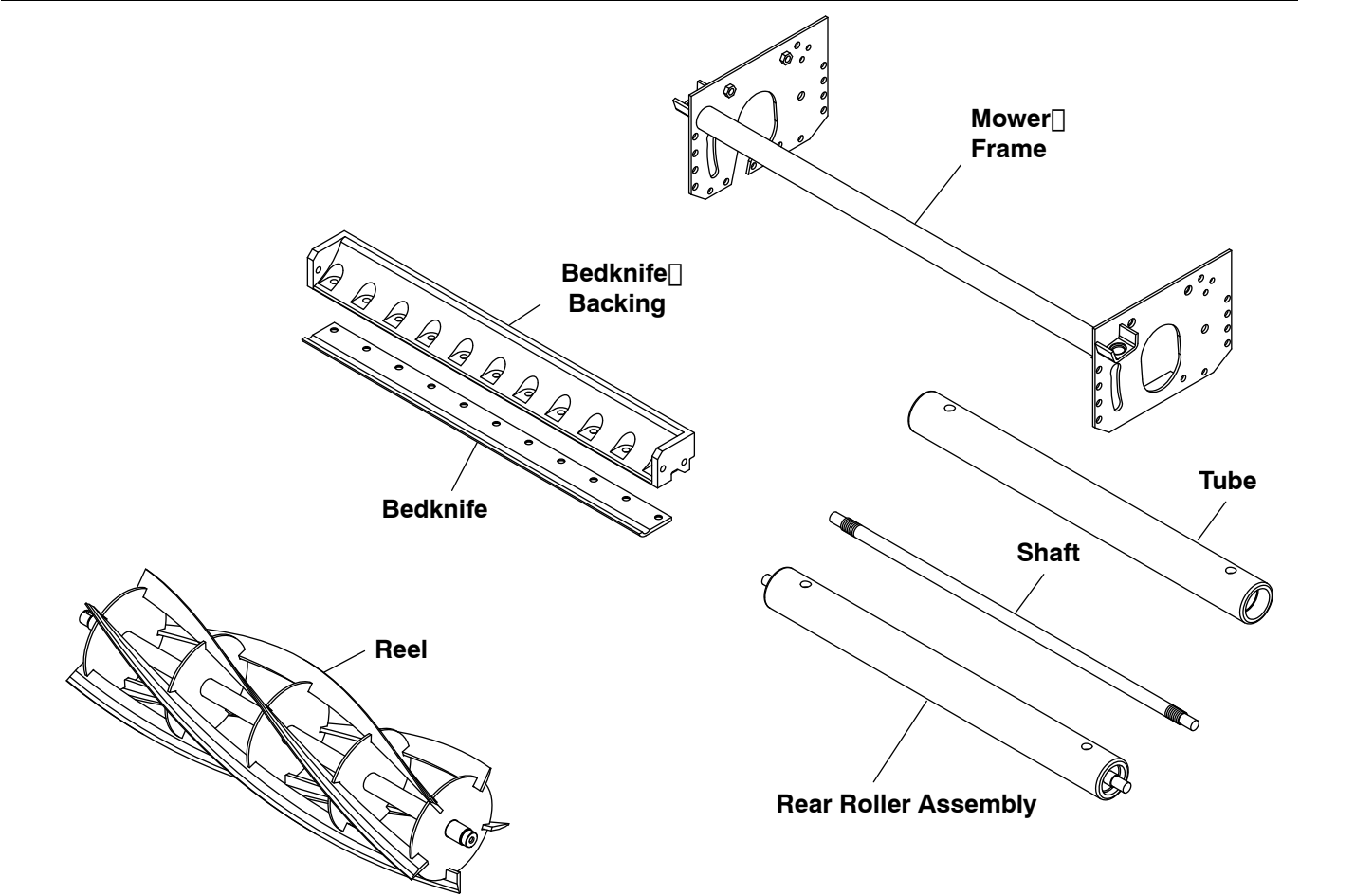
Serial No. All





Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	1001271.7	1	Rear Lift Arm	Reference <b>SW4</b>
2	471216	1	Grease Fitting	
3	364149.7	1	Extension Spring	
4	452008	1	Flat Washer, 3/8	
5	446142	1	Lockwasher, 3/8 Hvy	
6	400262	1	Screw, 3/8-16 x 1" Hex Head	
7	3003754	1	J Bolt	
8	3001905.7	2	Plate	
9	1000956.7	1	Chain	
10	443820	1	Nut, 1/2-20 Jam	
11	364234	1	Rod End	
12	3006409	2	Bolt, 3/8-16 x 1-1/2" Grade 8	
13	445799	2	Locknut, 3/8-16 Center	
14	2809741	1	Pivot Pin	
15	460096	1	Cotter Pin, 5/16 x 1-3/4"	
16	400188	1	Screw, 5/16-18 x 1" Hex Head	
17	446136	1	Lockwasher, 5/16 Hvy	
18	452006	3	Flat Washer, 5/16	
19	443106	1	Nut, 5/16-18 Hex	
20	443110	2	Nut, 3/8-16 Hex	
21	1001258.7	1	Crank Bottom	
22	463040	1	Key, 1/4 x 1-1/4" Woodruff	
23	1001259.7	1	Lift Top Crank	
24	415519	1	Screw, 5/16-18 x 3/8" Set	
25	444780	1	Locknut, 1/2-20	
26	5000183	1	Limit Switch	
27	5000184	1	Operator Head	
28	402132	2	Screw, #10-24 x 1-3/4" Round Head	
29	446118	2	Lockwasher, #10 Hvy	
30	444310	2	Nut, #10-24 Hex	
31	364694	1	Cable Connector	
32	3001078	1	Actuator Head	
33	3002430	2	Pin	
34	400272	2	Screw, 3/8-16 x 2-1/4" Hex Head	
35	444762	2	Locknut, 3/8-16 Center	

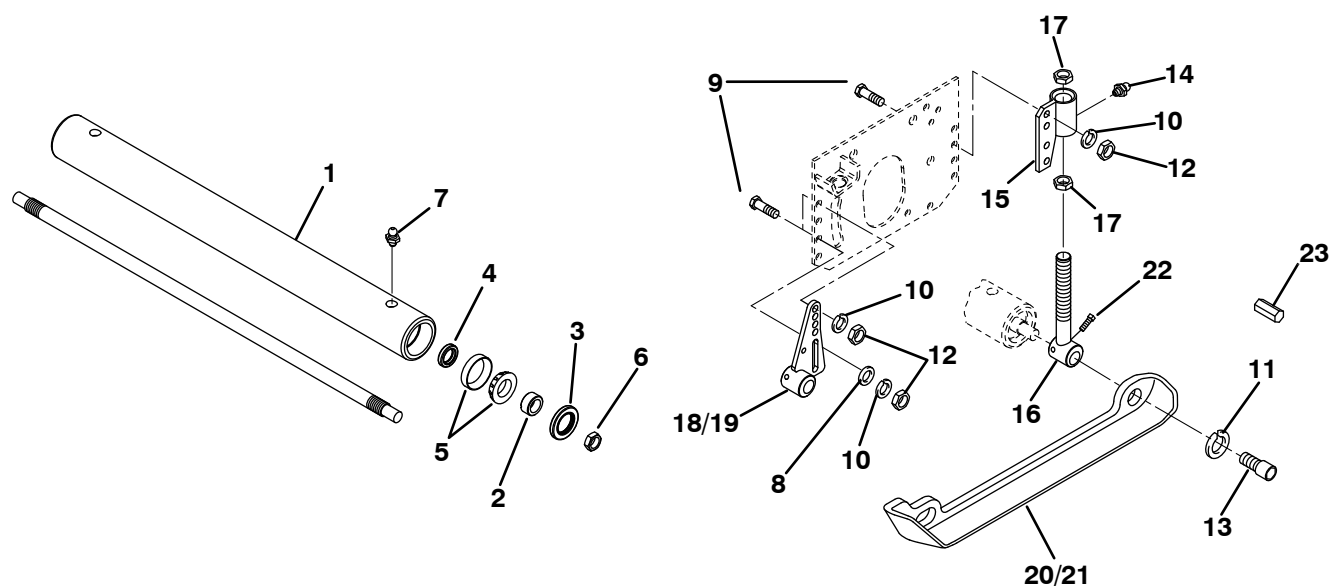
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Product Number	Size In Inches	No. of Blades	Bedknife	Bedknife Backing	Rear Roller			Location			Reel Part No.	Mower Frame
					Complete	Tube	Shaft	Left	Center	Right		
67114	26"	7	554284	5000616	132639	5002831	3003415	✓			5002087	1001643
67115										✓	5002088	1001643
67116									✓		5002087	1001643
67123	30"	7	503550	5000617	132640	5002832	3003414	✓			5002089	1001642
67124										✓	5002090	1001642
67125									✓		5002089	1001642

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## 26.1 Roller Brackets and Skids

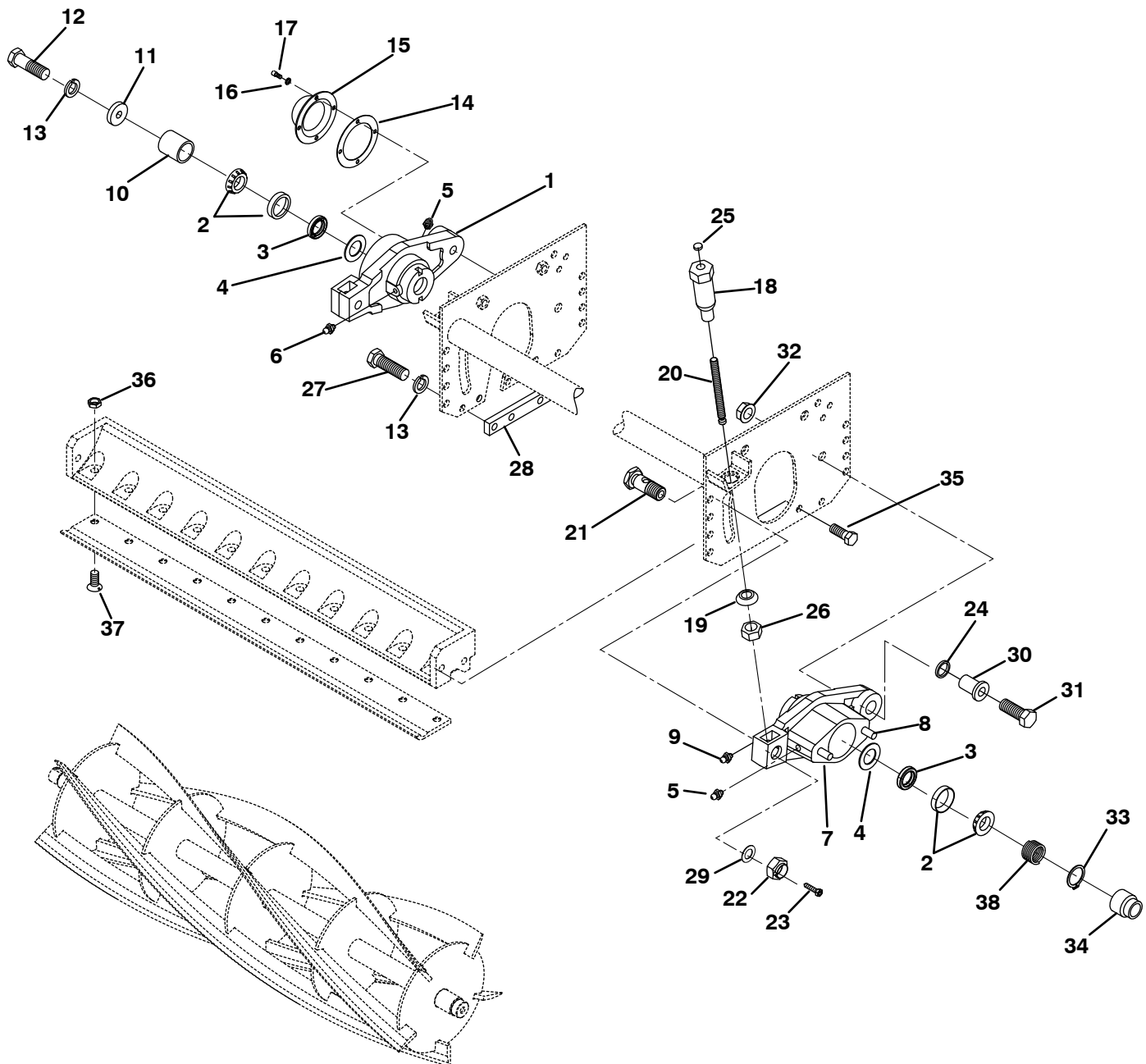


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	REF	1	Rear Roller	
2	3005156	2	• Wear Sleeve	
3	3004882	2	• Oil Seal	
4	338647	2	• Oil Seal	
5	500534	2	• Bearing, Cup and Cone	
6	367029	2	• Nut	
7	471214	2	• Grease Fitting	
8	366653	2	Washer	
9	400264	8	Screw, 3/8-16 x 1-1/4" Hex Head	
10	446142	8	Lockwasher, 3/8 Hvy	
11	446174	4	Lockwasher, 3/4 Light	
12	443110	8	Nut, 3/8-16 Hex	
13	434002	4	Screw, 3/4-16 x 1-1/4" Socket Head	
14	471214	2	Grease Fitting	
15	3007673	2	Housing	
16	132680	2	Rear Roller Adjuster	
17	3000313	4	Adjusting Nut	
18	3008359	1	L.H. Front Roller Bracket	
19	3008360	1	R.H. Front Roller Bracket	
20	207473	1	R.H. Skid	
21	207474	1	L.H. Skid	
22	412015	2	Set Screw, 5/16-18 x 5/8"	
23	554723	1	Skid Shoe Wrench	

&gt; Change from previous revision

## 27.1 Reel Bearing Housing

Serial No. All

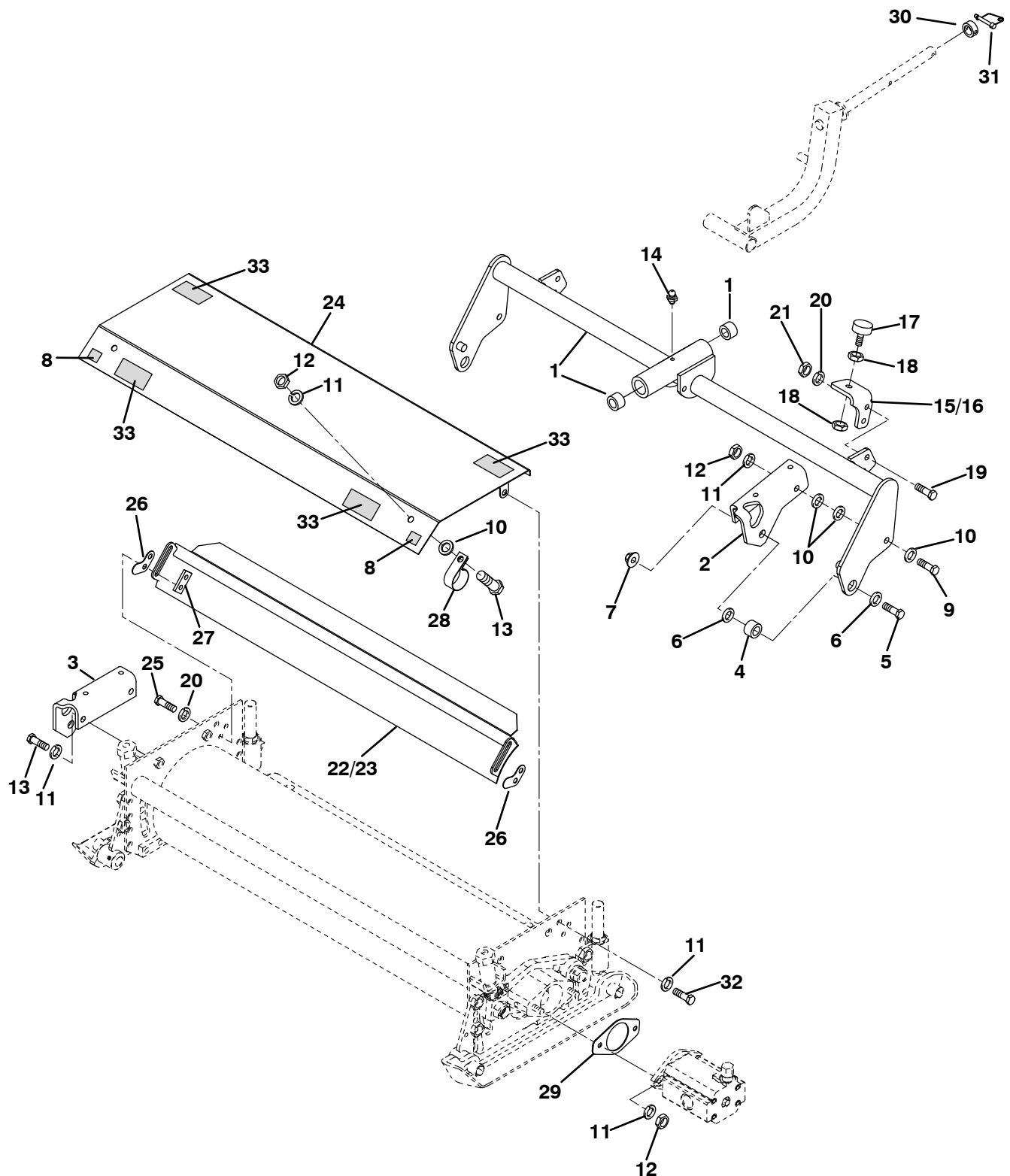


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	5001606	1	Housing	(Includes 2 ~ 5, 8 and 9)
2	500596	2	• Bearing, Cup and Cone	
3	3000983	1	• Oil Seal	
4	3001152	1	• Washer	
5	471242	1	• Relief Fitting	
6	4128725	1	• Grease Fitting	
7	5001607	1	Housing	
8	3003086	2	• Stud	
9	471214	1	• Grease Fitting	
10	364283	1	Tube, Spacer	
11	364259	1	Washer, Bearing Retainer	
12	400264	2	Screw, 3/8-16 x 1-1/4" Hex Head	
13	446142	6	Lockwasher, 3/8 Hvy	
14	364147	1	Gasket, Cover	
15	338585	1	Cover	
16	446116	4	Lockwasher, #10	
17	434038	4	Screw, #10-24 x 1/2"	
18	3003611	2	Adjusting Nut	
19	365995	2	Washer	
20	3004189	2	Adjusting Screw	
21	3003517	2	Shoulder Bolt	
22	3004370	2	Locknut, 3/4-16 Thin Security	
23	434031	2	Screw, 1/4-20 x 3/4" Socket Head	
24	364151	2	Wave Washer	
25	472519	2	Plug	
26	445718	2	Nut, 5/8-18 Hex Stover Lock	
27	400258	4	Screw, 3/8-16 x 3/4" Hex Head	
28	364282	1	Support Plate	
29	306828	2	Washer	
30	3003389	2	Housing, Pivot Bushing	
31	400446	2	Screw, 1/2-20 x 2" Hex Head	
32	445789	2	Nut, 1/2-20 Spiralock	
33	458039	1	External Snap Ring	
34	503684	1	Motor Coupler	
35	3005890	4	Wheel Bolt	
36	445684	AR	Locknut	
37	3007308	AR	Screw	
38	364148	1	Compression Spring	

&gt; Change from previous revision

## 28.1 Shields and Center Pivot Arm

Serial No. All

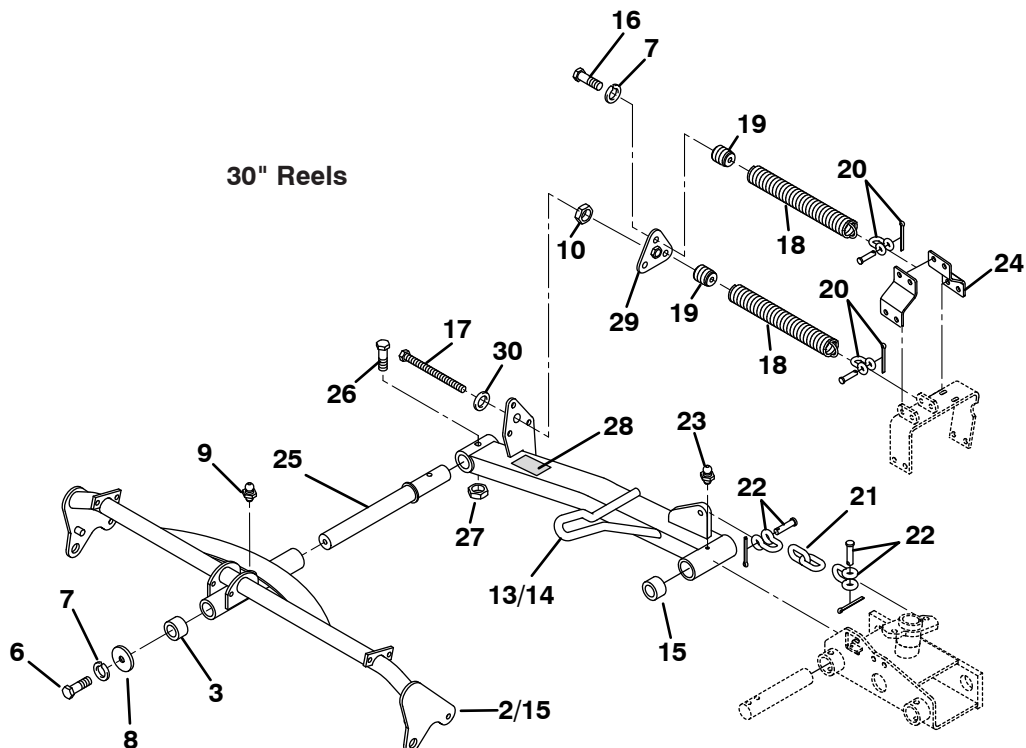
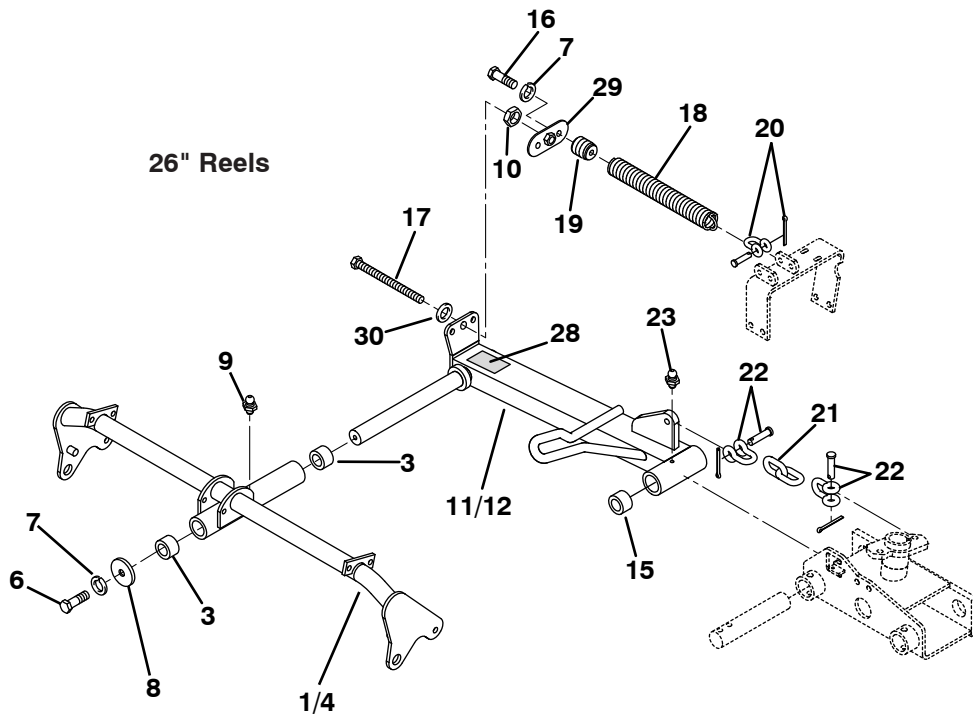


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	4113759	1	Center Pivot Arm	67116 Only
1	4113756	1	Center Pivot Arm	67125 Only
	364140	2	• Bushing	
2	338561	1	Reel Pivot Bracket	
3	338562	1	Reel Pivot Bracket	
4	366827	2	Pivot Spacer	
5	400442	2	Screw, 1/2-20 x 1-1/2" Hex Head	
6	452012	4	Flat Washer, 1/2	
7	445789	2	Nut, 1/2-20 Spiralock Flange	
8	3002379	2	Decal, Tight	
9	400264	2	Screw, 3/8-16 x 1-1/4" Hex Head	
10	453011	AR	Washer, 3/8	
11	446142	12	Lockwasher, Hvy	
12	443110	6	Nut, 3/8-16 Hex	
13	400260	6	Screw, 3/8-16 x 7/8" Hex Head	
14	471214	1	Grease Fitting	
15	3002813	1	Reel Bumper Bracket	67116 & 67125 Only
16	3002814	1	Reel Bumper Bracket	67116 & 67125 Only
17	361723	2	Rubber Bumper	67116 & 67125 Only
18	443810	4	Nut, 3/8-16 Jam	67116 & 67125 Only
19	400190	4	Screw, 5/16-18 x 1-1/4" Hex Head	67116 & 67125 Only
20	446136	AR	Lockwasher, 5/16 Hvy	
21	443106	4	Nut, 5/16-18 Hex	67116 & 67125 Only
22	122875.6	1	Rear Shield	67114 & 67115 Only
22	122769.6	1	Rear Shield	67123 & 67124 Only
23	1003056.6	1	Rear Shield	67116 Only
23	1003057.6	1	Rear Shield	67125 Only
24	5003650	1	Shield	26 Inch Reels (Includes Decals)
24	5003648	1	Shield	30 Inch Reels (Includes Decals)
25	400186	4	Screw, 5/16-18 x 7/8" Hex Head	
26	3000718	2	Shield Shim	
27	364281	2	Backup Nut	
28	364150	2	Clamp	
29	364777	1	Gasket	
30	3002718	1	Collar	67116 & 67125 Only
31	3005435	1	Spring Lock Pin	67116 & 67125 Only
32	400258	2	Screw, 3/8-16 x 3/4" Hex Head	
33	361877	1	Decal, Danger	2 Used on 67116 & 67125

&gt; Change from previous revision

## 29.1 Side Pivot and Lift Arms

Serial No. All





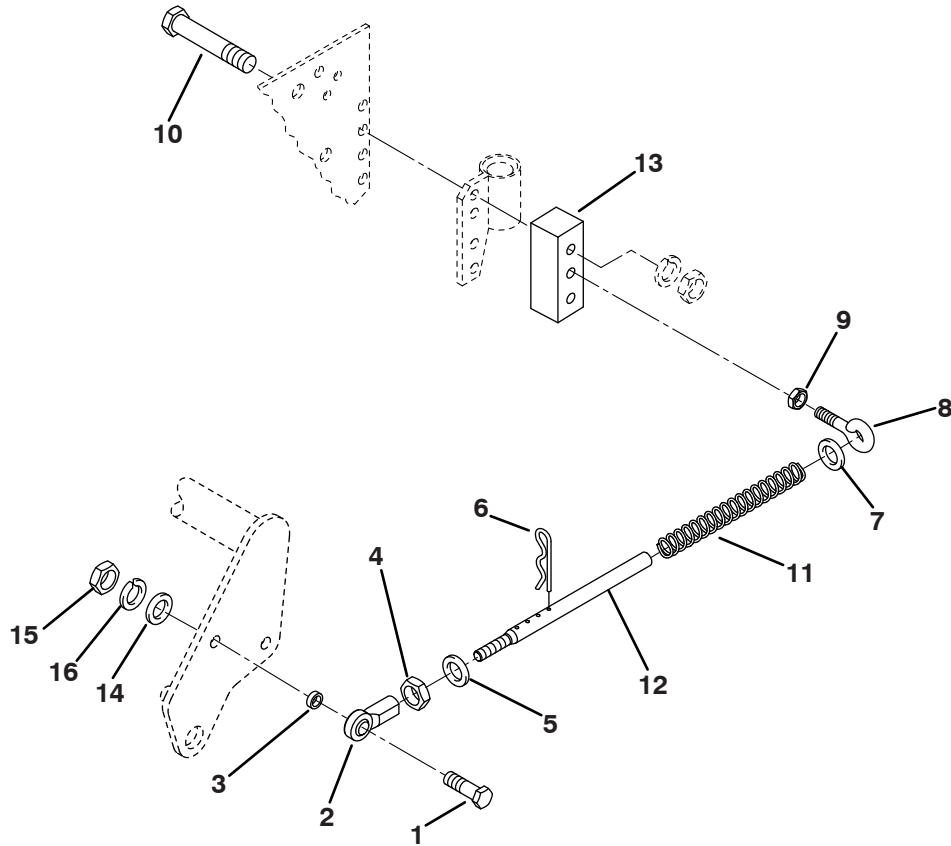
Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	4113757	1	Right Pivot Arm	67115 Only
2	4113754	1	Right Pivot Arm	67124 Only
3	364156	2	• Bushing	
4	4113758	1	Left Pivot Arm	67114 Only
5	4113755	1	Left Pivot Arm	67123 Only
6	400260	2	Screw, 3/8-16 x 7/8" Hex Head	
7	446142	AR	Lockwasher, 3/8 Hvy	
8	364781	2	Retainer Washer	
9	471214	2	Grease Fitting	
10	443118	AR	Nut, 1/2-13 Hex	
11	2811280	1	R.H. Lift Arm	(Includes 15 & 28) - 67115
12	2811281	1	L.H. Lift Arm	(Includes 15 & 28) - 67114
13	2811278	1	R.H. Lift Arm	(Includes 15 & 25 ~ 28) - 67124
14	2811279	1	L.H. Lift Arm	(Includes 15 & 25 ~ 28) - 67123
15	3007694	2	• Bushing	
16	400262	AR	Screw, 3/8-16 x 1" Hex Head	
17	441904	2	Screw, 1/2-13 x 10" Full Thread Hex	
18	364157	AR	Spring	
19	3007908	AR	Plug	
20	364160	AR	Shackle	
21	3004065	2	Lift Chain	
22	1001854	4	Shackle	
23	471214	2	Grease Fitting	
24	3005219	2	Bracket	67123, 67124 & 67125 Only
25	3003041	2	Shaft	67123, 67124 & 67125 Only
26	400272	2	Screw, 3/6-16 x 2-1/4" Hex Hd	67123, 67124 & 67125 Only
27	444762	2	Locknut, 3/8-16	67123, 67124 & 67125 Only
28	361947	2	Decal, Mower Removal	
29	2811128	1	Plate, Spring Mounting	67114, 67115 & 67116 Only
29	2811127	1	Plate, Spring Mounting	67123, 67124 & 67125 Only
30	452012	2	Washer, 1/2	

&gt; Change from previous revision

## 30.1 Down Pressure Kit

Serial No. All

### Optional Kit

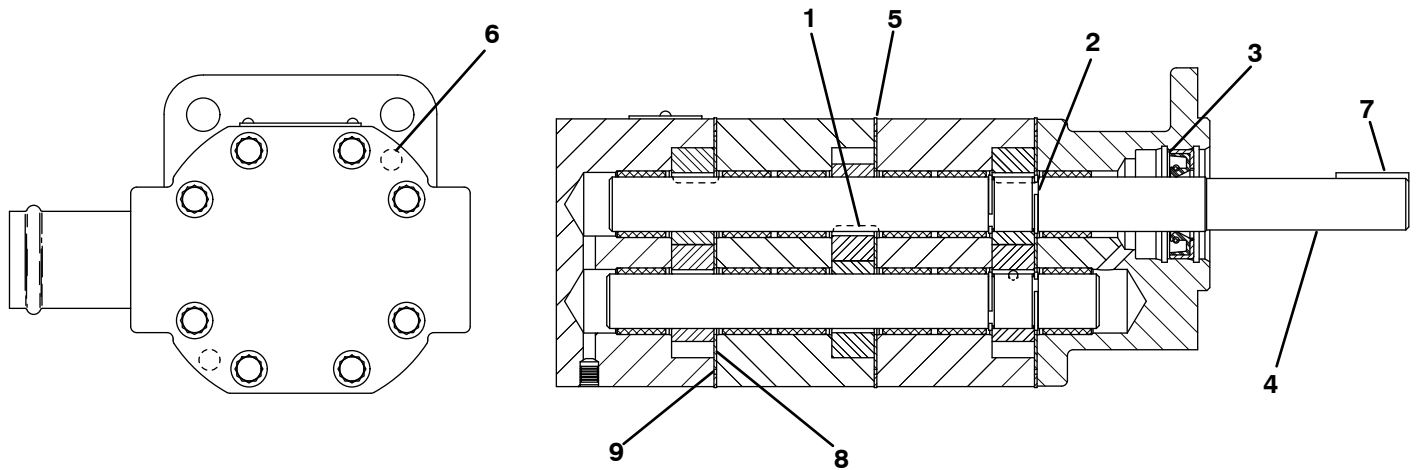


Item	Part No.	Qty.	Description	Serial Numbers/Notes
	1002588	1	Down Pressure Kit	
1	400268	2	• Screw, 3/8-16 x 1-3/4"	
2	366974	2	• Rod End	
3	364328	2	• Spacer	
4	443812	2	• Nut, 3/8-24	
5	347935	2	• Washer - Special	
6	460312	2	• Hairpin	
7	453017	2	• Washer	
8	366978	2	• Eye Bolt	
9	443810	2	• Nut, 3/8-16 Jam	
10	400272	4	• Screw, 3/8-16 x 2-1/4	
11	366976	2	• Spring	
12	366975	2	• Tube-Down Pressure	
13	3005136	2	• Block	
14	453011	2	• Washer, 3/8	
15	443110	2	• Nut, 3/8-16	
16	446142	2	• Lockwasher, 3/8	

> Change from previous revision

## 31.1 Reel Pump

Part No. 1000970



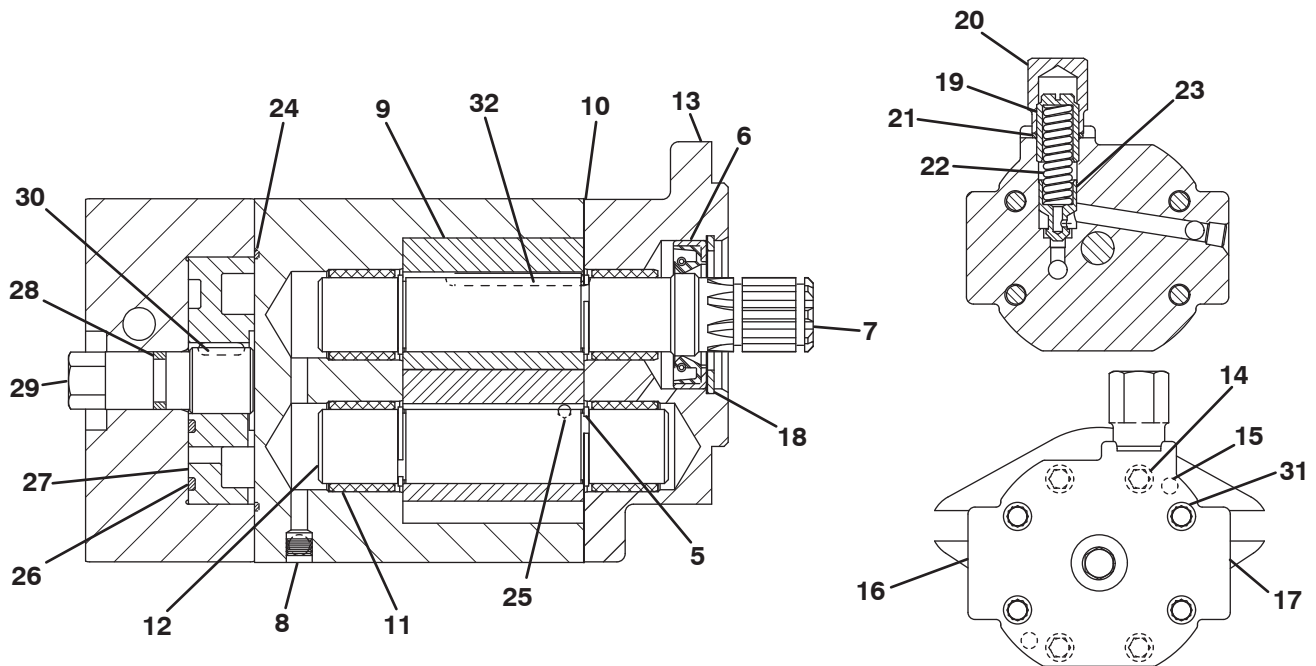
Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	N/S	3	Shear Pin	(Included in A)
2	N/S	4	Snap Ring	(Included in A)
3	N/S	1	Oil Seal	(Included in A)
4	5001435	1	Driveshaft	
5	N/S	3	Seal Plate	(Included in A)
6	590286	6	Alignment Pin	
7	5001437	1	Drive Key	
8	N/S	3	Wear Plate	(Included in A)
9	N/S	3	Diamond O-Ring	(Included in A)
A	5001436	1	Repair Kit	Includes 1~3, 5, 8 & 9

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## 32.1 Reel Motor

Part No. 1002603

Serial No. All



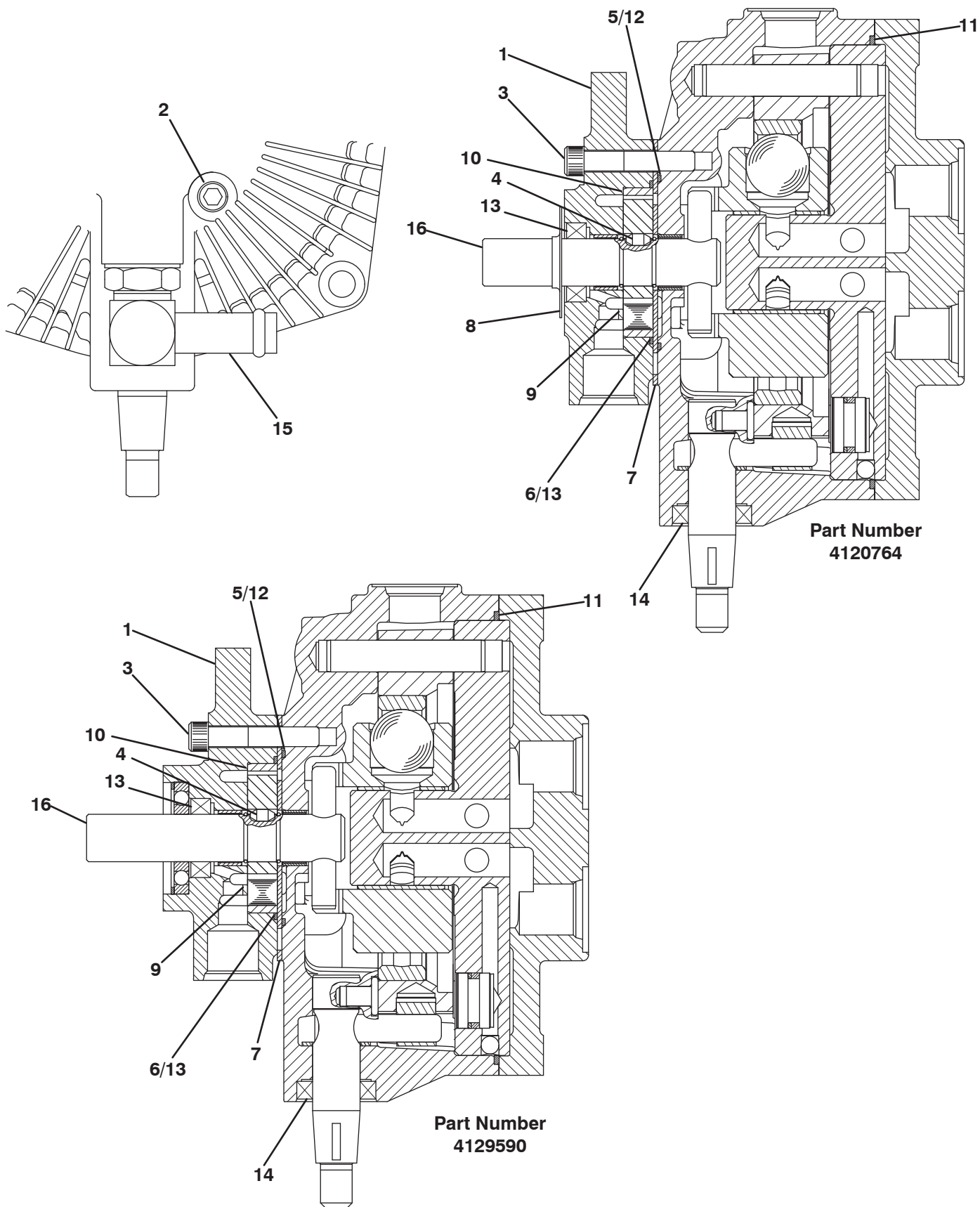
Item	Part No.	Qty.	Description	Serial Numbers/Notes
A	5002657	1	Seal Kit	Includes 6, 10, 18, 21, 24, 26 & 28
B	503502	1	Relief Cap Kit	Includes 20 & 21
C	503503	1	Relief Valve Kit	Includes 19 ~ 23
D	503504	1	Valve Stem Kit	Includes 28 ~ 30
5	5001442	4	Snap Ring	
6	555822	1	O-Ring	(Included in A)
7	5001443	1	Driveshaft	
8	5001444	1	Lee Plug	
9	5001445	2	Gear, 1-3/8" Wide	
10	N/S	1	.00050 (Silver) Gasket	(Included in A)
10	N/S	1	.00100 (Amber) Gasket	(Included in A)
10	N/S	1	.00075 (Gold) Gasket	(Included in A)
11	5001446	4	Sleeve Bearing	
12	5001447	1	Idle Shaft	
13	5001448	1	Stator	
14	555828	4	Screw, 1/4-20	
15	5001449	2	Alignment Pin	
16	5001450	1	Shipping Plug	
17	5001451	1	Shipping Plug	
18	555830	1	Snap Ring	(Included in A)
19	N/S	1	Adjustment Screw	(Included in C)
20	N/S	1	Cap	(Included in B and C)
21	N/S	1	Copper Gasket	(Included in A, B and C)
22	N/S	1	Spring	(Included in C)
23	N/S	2	Poppet	(Included in C)
24	5002141	1	O-Ring	(Included in A)
25	N/S	1	Steel Ball	
26	555836	1	O-Ring	(Included in A)
27	2501165	1	Valve Plate	
28	555833	2	O-Ring	(Included in A and D)
29	N/S	1	Valve Stem	(Included in D)
30	N/S	1	Shear Pin	(Included in D)
31	N/S	4	Screw, 1/4-20	
32	5001441	1	Shear Pin	

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## 33.1 Traction Pump

Part No. 4120764 and 4129590

Serial No. All

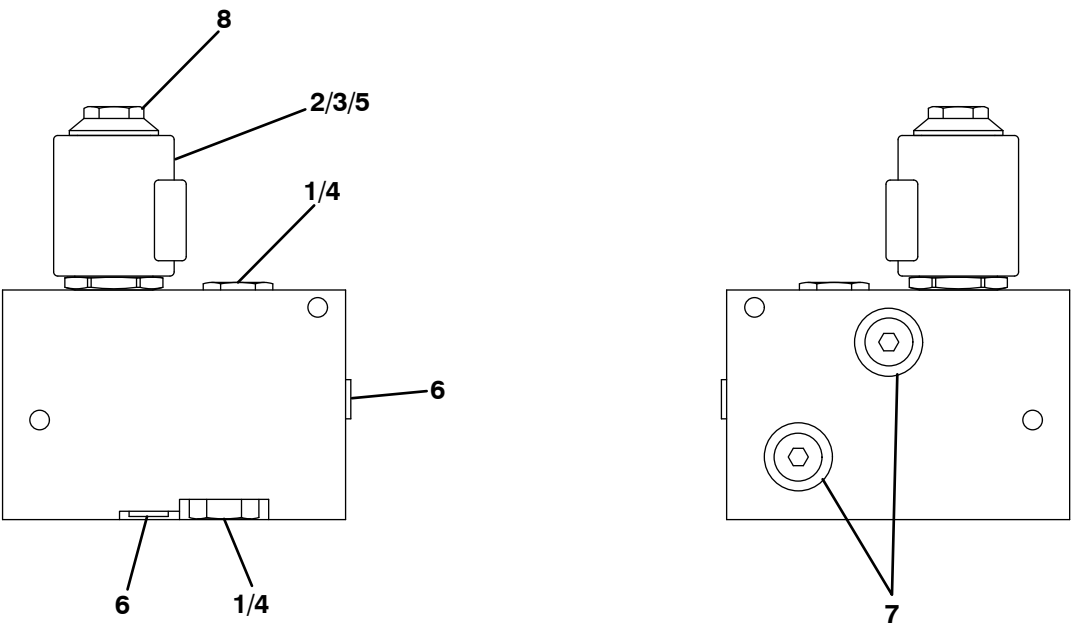


Item	Part No.	Qty.	Description	Serial Numbers/Notes
A	502664	1	Charge Pump Kit	Part Number 4120764
A	4132078	1	Charge Pump Kit	Part Number 4129590
1	N/S	1	• Charge Pump	
2	N/S	4	• Screw, Socket Head	
3	N/S	1	• Screw, Socket Head	
4	4120217	1	• Drive Pin	
5	N/S	1	• Square Cut Seal	Also included in B
6	N/S	1	• Square Cut Seal	Also included in B
7	N/S	1	• Pump Plate	
8	546416	1	• Grass Shield	Part Number 4120764 Only
9	N/S	2	• Snap Ring	
10	4120216	1	• Carrier	
B	2500620	1	Oil Seal Kit	(Included in B)
11	N/S	1	• Square Cut Seal	(Included in B)
12	N/S	1	• Square Cut Seal	(Included in B)
13	N/S	1	• Square Cut Seal	(Included in B)
14	N/S	2	• Oil Seal	Includes 11 ~ 14
15	361631	1	Fitting, 90° Barb	
16	4112141	1	Input Shaft	Part Number 4120764
16	N/S	1	Input Shaft	Part Number 4129590

> Change from previous revision

34.1 3WD Valve  
Part No. 4111942

Serial No. All



Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	4113025	2	Check Valve	Reference <b>K6</b>
2	4113026	1	Spool Valve	
3	4113027	1	Solenoid Coil	
4	5003578	2	Seal Kit, Check Valve	
5	5003579	1	Seal Kit, Spool Valve	
6	5002157	2	Port Plug	
7	5001065	2	Port Plug	
8	4113028	1	Nut, Coil	

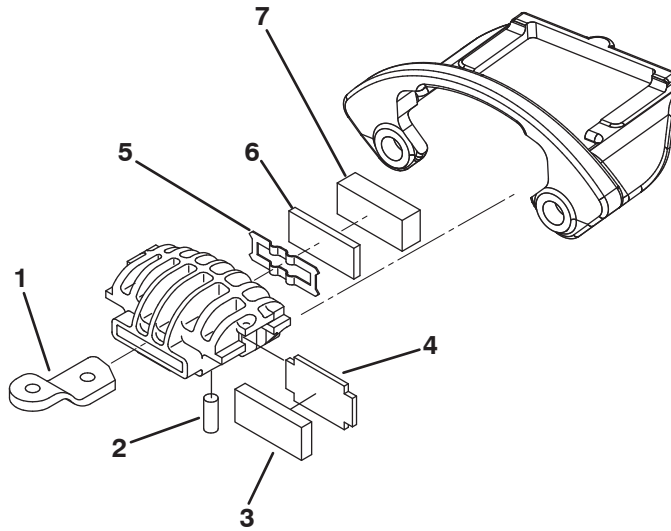
> Change from previous revision



## 35.1 Brake Calipers

Part No. 1001634 L.H.

Part No. 1001635 R.H.

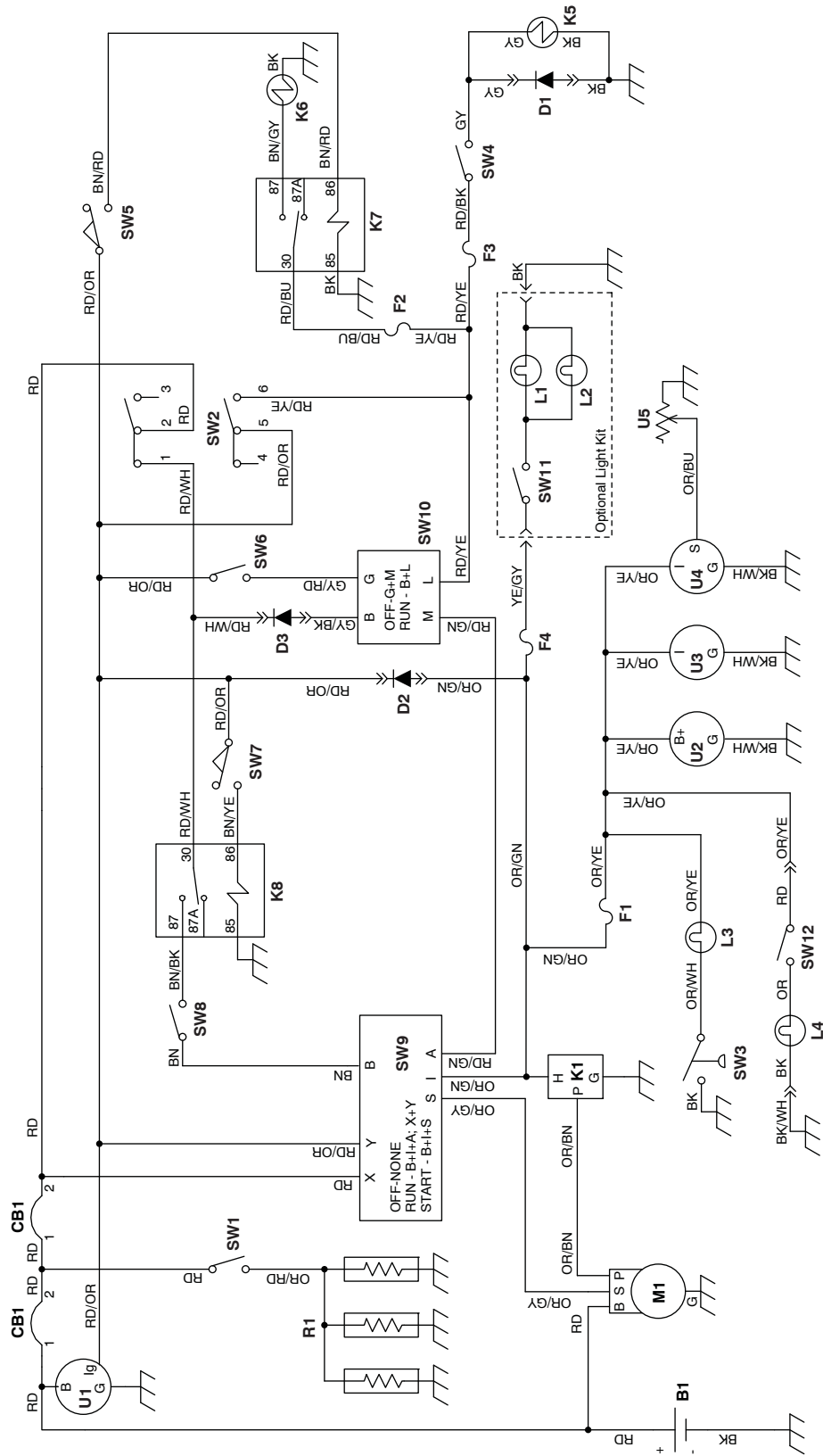


Item	Part No.	Qty.	Description	Serial Numbers/Notes
1	N/S	1	Cam	R.H.
1	N/S	1	Cam	L.H.
2	557823	1	Pivot Pin	
3	503660	1	Carrier Side Pad	
4	557824	1	Pad Support	
5	557825	1	Lever Retainer Spring	
6	557826	1	Pad Support	
7	503660	1	Cam Side Pad	

> Change from previous revision

# 36.1 Electrical Schematics

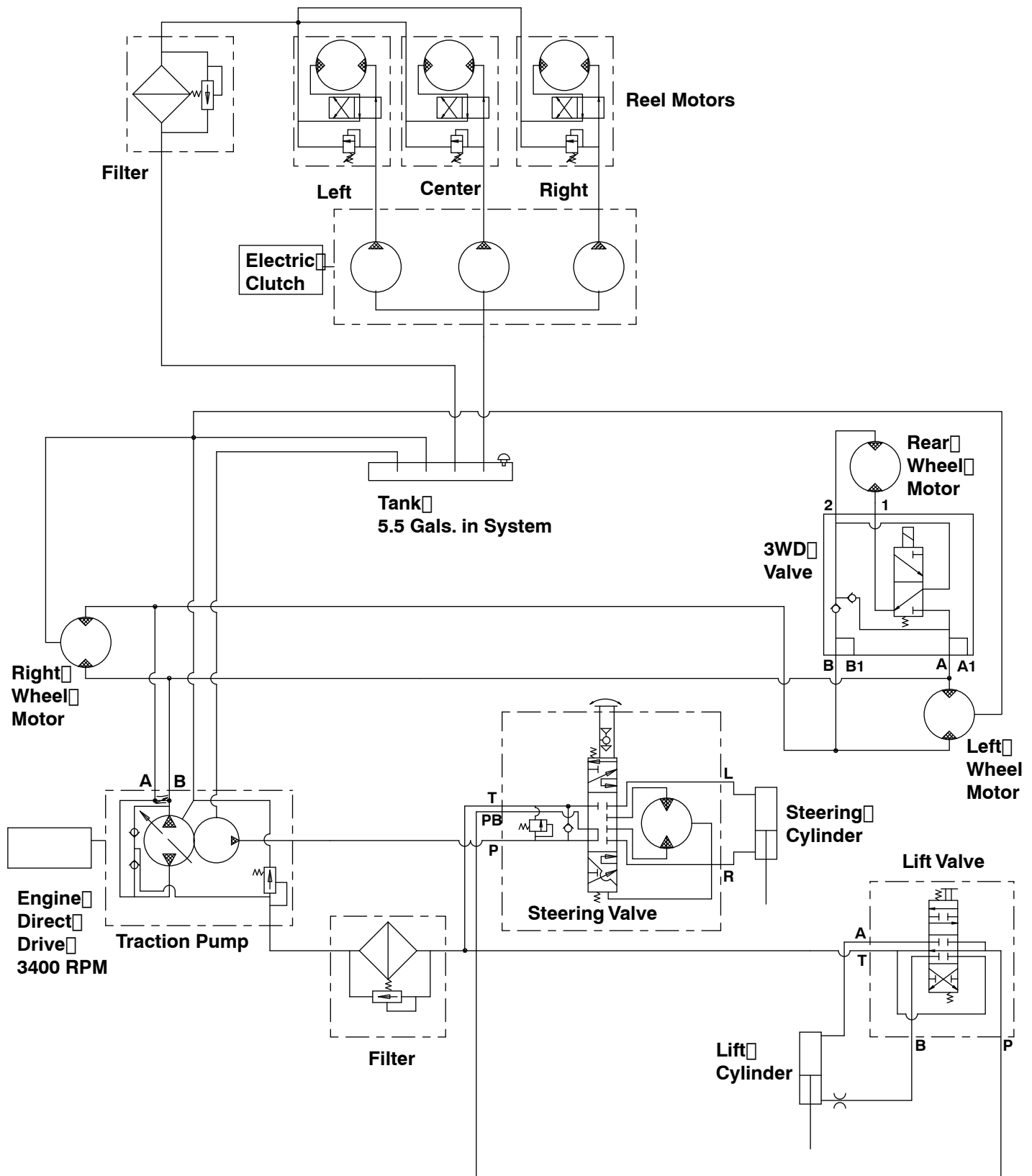
Serial No. All





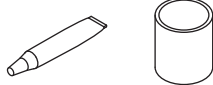
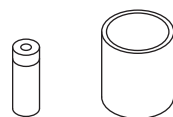
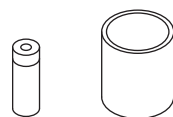

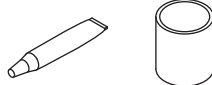
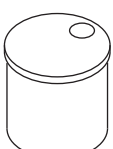
Item	Reference Illustration	Part Number	Description	Serial Numbers/Notes
<b>B1</b>		NS	Battery	
<b>CB1</b>	See 17.1	3000359	50 Amp Circuit Breaker	Diesel Units Only
<b>CB2</b>	See 5.1	338601	10 Amp Circuit Breaker	
<b>D1</b>	Not Shown	555846	Clutch Diode	Included in Wire Harness
<b>D2</b>	Not Shown	555846	Seat Switch Diode	Included in Wire Harness
<b>D3</b>	Not Shown	555846	Backlap Diode	Included in Wire Harness
<b>F1</b>	See 4.1	5003276	Gauge Circuit, 3 Amp Fuse	Installed in Fuse Block
<b>F2</b>	See 4.1	5003276	3WD Circuit, 3 Amp Fuse	Installed in Fuse Block
<b>F3</b>	See 4.1	5003279	Clutch Circuit, 7.5 Amp Fuse	Installed in Fuse Block
<b>F4</b>	See 4.1	5003279	Light Circuit, 7.5 Amp Fuse	Optional, Installed in Fuse Block
<b>K1</b>	See 9.1	338289	Fuel Solenoid	
<b>K2</b>	Not Used			
<b>K3</b>	Not Used			
<b>K4</b>	Not Used			
<b>K5</b>	Not Shown	NS	Clutch Solenoid	Included in Part No. 2809727
<b>K6</b>	See 34.1	5001354	3WD Solenoid	
<b>K7</b>	See 9.1, 9.1	3001307	3WD Relay	
<b>K8</b>	See 9.1, 9.1	3001307	Neutral Relay	
<b>L1</b>	Not Shown	NS	Optional Light	Included in Product 69149
<b>L2</b>	Not Shown	NS	Optional Light	Included in Product 69149
<b>L3</b>	See 5.1	164194	Oil Pressure Warning Light	
<b>L4</b>	See 5.1	366751	Parking Brake Light	
<b>M1</b>	Not Shown	NS	Starter Motor	Included in Engine
<b>R1</b>	Not Shown	NS	Glow Plugs	Included in Engine
<b>SW1</b>	See 5.1	363961	Glow Plug Switch	
<b>SW2</b>	See 5.1	3001780	Reel Control/3WD Switch	
<b>SW3</b>	Not Shown	554018	Engine Oil Pressure Switch	Included in Engine
<b>SW4</b>	See 24.1	5000183	Reel Limit Switch	
<b>SW5</b>	See 8.1	3007392	3WD Proximity Switch	
<b>SW6</b>	See 3.1	554390	Seat Switch	Serial No. 1601~4743
<b>SW6</b>	See 3.2	4139450	Seat Switch	Serial No. 4744 & Up
<b>SW7</b>	See 8.1	3007392	Neutral Proximity Switch	
<b>SW8</b>	See 8.1	3002056	Parking Brake Switch	
<b>SW9</b>	See 5.1	1001958	Ignition Switch	
<b>SW10</b>	See 5.1	1001010	Backlap Switch	
<b>SW11</b>	Not Shown	NS	Optional Light Switch	Included in Product 69149
<b>SW12</b>	See 8.1	3002056	Parking Brake Light Switch	
<b>U1</b>	Not Shown	NS	Alternator	Included in Enigne
<b>U2</b>	See 5.1	162721	Volt Meter	
<b>U3</b>	See 5.1	162723	Hour Meter	
<b>U4</b>	See 5.1	162720	Temperature Gauge	
<b>U5</b>	See 13.1	364901	Termperature Sender	

&gt; Change from previous revision

## 37.1 Hydraulic Schematic




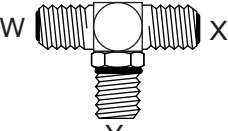
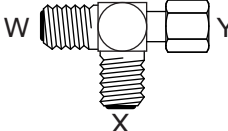
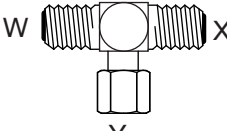
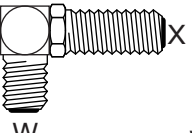
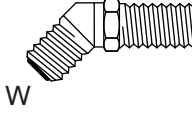
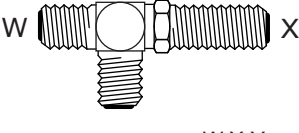
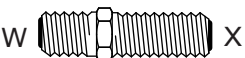
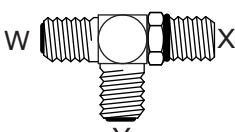

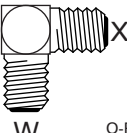
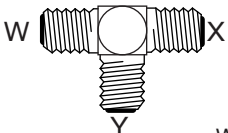
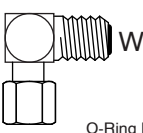
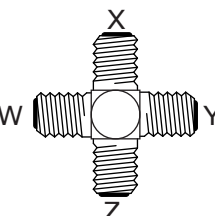



## Fluids and Compounds

<b>Hydraulic Fluid*</b>		
5001405	Two 2-1/2 Gallon Container of ISO VG68 Oil	
5001404	One 5 Gallon Pail of ISO VG68 Oil	
2500548	Two 2-1/2 Gallon Container of 10W30 Oil	
2500546	One 5 Gallon Pail of 10W30 Oil	
503409	Two 2-1/2 Gallon Container of ATF Fluid	
503407	One 5 Gallon Pail of ATF Fluid	
<b>2-Cycle Oil</b>		
554600	Twenty Four 16 Ounce Plastic Container	
554599	Twenty Four 8 Ounce Plastic Container	
<b>Grease</b>		
5000067	One 5 Gallon Pail OO-Grease	
5000068	Twenty Four 8 Ounce Tube OO-Grease	
<b>Paint</b>		
5003469	16 Ounce Gray Aerosol	
554598	Six 12 Ounce Orange Aerosol	
2500789	Twelve 1 Quart Can Orange	
546409	Two 1 Gallon Can Orange	
<b>Lapping Compound</b>		
5002488	One 10 Pound Pail of 80 Grit	
5002490	One 25 Pound Pail of 80 Grit	
5002489	One 10 Pound Pail of 120 Grit	
5002491	One 25 Pound Pail of 120 Grit	
<b>Specialty Compound</b>		
365422	5.3 Ounce Tube of Electrical Insulating Gel	
5001581	14 Ounce Can of Lubriplate Multi Lube A	
<b>Biodegradable Hydraulic Fluid*</b>		
5003102	One 55 Gallon Drum Jacobsen GreensCare 68	
5003103	One 5 Gallon Pail Jacobsen GreensCare 68	
5003105	One 55 Gallon Drum Jacobsen GreensCare 46	
5003104	One 5 Gallon Pail Jacobsen GreensCare 46	
4115976	One 55 Gallon Drum Jacobsen GreensCare 32	
4115977	One 5 Gallon Pail Jacobsen Greens Care 32	
5003106	Twenty Four 14 Ounce Tube Greens Care Grease	
<b>O-Ring Kit</b>		
5002452	SAE O-Ring Boss (3/32 ~ 2" Tube O.D.)	
5002453	Common O-Ring Kit	
5002454	O-Ring Face Seal ORFS (-4 ~ -24 ORS Tube Size)	
<b>Right Start Kit for New Machines</b>		
See your local Jacobsen Dealer		
<b>On-Time Maintenance Kit</b>		
See your local Jacobsen Dealer		

\* Refer to the Operator's manual or the Parts & Maintenance Manual for the correct hydraulic oil requirements for your machine. Jacobsen offers a High Usage Parts Catalog illustrating commonly used Parts through easy to read line Drawings. See your local Jacobsen Dealer for a copy.

38.1 O-Ring Chart

 <p>O-Ring Face <input type="checkbox"/> Seal Size      W-X      O-Ring Boss <input type="checkbox"/> Dash Size</p>	 <p>O-Ring Face <input type="checkbox"/> Seal Size      W-X      O-Ring Boss <input type="checkbox"/> Dash Size</p>	 <p>O-Ring Face <input type="checkbox"/> Seal Size      W-X      O-Ring Boss <input type="checkbox"/> Dash Size</p>
 <p>O-Ring Face <input type="checkbox"/> Seal Size      W-X-Y      O-Ring Boss <input type="checkbox"/> Dash Size</p>	 <p>O-Ring Face <input type="checkbox"/> Seal Size      W-X-Y      O-Ring Not <input type="checkbox"/> Needed Seal Size</p>	 <p>O-Ring Face <input type="checkbox"/> Seal Size      W-X-Y      O-Ring Not <input type="checkbox"/> Needed Seal Size</p>
 <p>O-Ring Face <input type="checkbox"/> Seal Size      W-X      O-Ring Face <input type="checkbox"/> Seal Size</p>	 <p>O-Ring Face <input type="checkbox"/> Seal Size      W-X      O-Ring Face <input type="checkbox"/> Seal Size</p>	 <p>O-Ring Face <input type="checkbox"/> Seal Size      W-X-Y      O-Ring Face <input type="checkbox"/> Seal Size</p>
 <p>O-Ring Face <input type="checkbox"/> Seal Size      W-X      O-Ring Face <input type="checkbox"/> Seal Size</p>	 <p>O-Ring Face <input type="checkbox"/> Seal Size      W-X-Y      O-Ring Boss <input type="checkbox"/> Dash Size</p>	 <p>O-Ring Face <input type="checkbox"/> Seal Size      W-X      O-Ring Face <input type="checkbox"/> Seal Size</p>
 <p>O-Ring Face <input type="checkbox"/> Seal Size      W-X      O-Ring Face <input type="checkbox"/> Seal Size</p>	 <p>O-Ring Face <input type="checkbox"/> Seal Size      W-X-Y      O-Ring Face <input type="checkbox"/> Seal Size</p>	 <p>O-Ring Face <input type="checkbox"/> Seal Size      W-X      O-Ring Not <input type="checkbox"/> Needed</p>
 <p>O-Ring Face <input type="checkbox"/> Seal Size      W-X-Y-Z      O-Ring Face <input type="checkbox"/> Seal Size</p>		

Adapter Part Number.	Dash Size	Adapter Type	(W) O-Ring	(X) O-Ring	(Y) O-Ring	(Z) O-Ring
339972	4-4	Straight Adapter	339908	339896	339911	
339974	4-6	Straight Adapter	339908	339897		
339979	6-6	Straight Adapter	339909	339897		
339980	6-8	Straight Adapter	339909	339898		
339983	8-6	Straight Adapter	339910	339897		
339989	10-10	Straight Adapter	339911	339899		
340055	4-4	90° Adapter	339908	339896		
340057	4-6	90° Adapter	339908	339897		
340061	6-6	90° Adapter	339909	339897		
340062	6-8	90° Adapter	339909	339898		
340068	8-12	90° Adapter	339910	339900		
340070	10-10	90° Adapter	339911	339899		
340088	4-6	90° Adapter	339908	339897		
340120	4-4-4	Swivel Run Tee	339908	339908		
340121	6-6-6	Swivel Run Tee	339909	339909		
340265	10-10-10	Straight Thread Run Tee	339911	339899		
340376	8-8	90° Swivel Adapter	339910			

SAE Boss O-Rings			ORS Face Seal O-Rings		
Dash Size	Thread Size	O-Ring	Dash Size	Thread Size	O-Ring
4	7/16-20	339896	4	9/16-18	339908
6	9/16-18	339897	6	11/16-16	339909
8	3/4-16	339898	8	13/16-16	339910
10	7/8-14	339899	10	1-14	339911
12	1 1/16-12	339900	12	1 3/16-12	339912
16	1 5/16-12	339901	16	1 7/16-12	339913
20	1 5/8-12	339902	20	1 11/16-12	339914
24	1 7/8-12	339903	24	2-12	339915
32	2 1/2-12	339904			

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