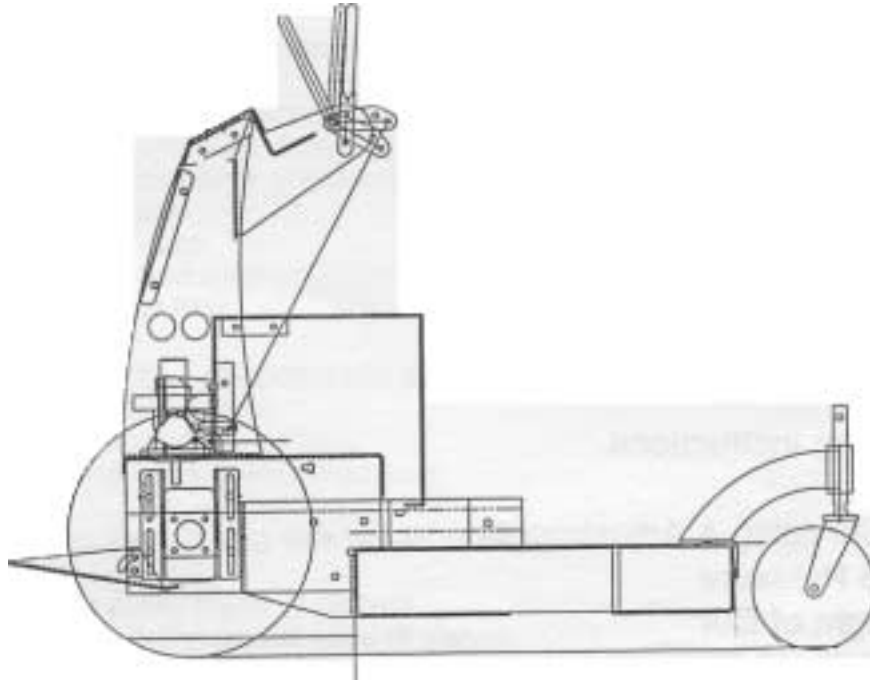


# **GREAT DANE**

## **ZERO TURN SURFER**



## **TECHNICAL MANUAL COMMERCIAL MOWERS**

**GDSZ48-14KA**

**GDSZ48-16BV**

**GDSZ52-16BV**

**GDSZ52-18BV**

**GDSZ52-22KHE**

**GDSZ61-22KHE**

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## SAFETY GUIDELINES

### COMMON ACCIDENTS YOU MUST AVOID

- .CONTACT WITH ROTATING BLADES .THROWN OBJECTS
- .OPERATING WITHOUT GUARDS IN PLACE
- .RUNNING OVER SOMEBODY
- .OVERTURNING ON STEEP SLOPES

Memorize the above and do yourself a favor; read, remember and follow these safety instructions.

### Before Operating

- .Do not let children or youngsters operate this machine.
- .Do not let others run the machine before they carefully read these instructions.
- .Do not carry excess baggage including passengers.
- .Police the work area and pick up and remove debris such as wires, sticks, glass, rocks and scrap materials.
- .Wear safety goggles, sturdy work shoes, and close fitting clothes. Never operate machine in  
r'bare feet, sandals or sneakers.
- Keep all safety devices, guards and shields in good condition and in place.
- .The discharge chute must be installed and spring loaded down, except when grass catcher is in place.
- .Do not touch engine muffler. It may be extremely hot and cause severe burns. .Although the Great Dane Surfer has a built-in safety system, it is recommended to disengage power to the cutter blades and engage the parking brake before leaving the platform for a brief time.
- .When leaving the machine out of sight, disengage power to cutter blades, shut off engine, apply parking brakes and take the starting key with you.
- .Watch out for traffic when crossing or near roadways.
- .Never direct discharge chute toward bystanders, windows, buildings or cars.

### Precautions when Handling Gasoline

- .Use an approved gasoline container
- Never remove fuel cap or add gasoline to a running or hot engine. Allow engine to cool for several minutes before refueling tank.
- .Never refuel indoors.
- .Avoid spilling gasoline anywhere.
- .Wipe up any spilled gasoline
- .Do not smoke while handling gasoline

### During Operation

.Using the machine demands attention.

To prevent loss of control:

- \* Mow only in daylight or when there is good lighting
- \* Watch for pot holes, rocks, and any hidden hazard
- \* Keep away from drop-offs, ditches, creeks, ponds and other hazards.
- \* Reduce speed when making sharp turns and especially on hillsides.
- \* Always be sure of your footing. Keep a firm hold on the stationary handle at all times.
- \* Do not operate in slippery conditions.
- \* Lean forward when mowing uphill.

.Before crossing gravel drives, sidewalks or

roads, disengage the cutter blades and wait for them to stop.

.Do not run engine indoors.

.Keep engine free of accumulated grass, leaves and excessive lubricants to avoid fires.

.Don't smoke around the mower at any time. This has caused serious injury-

.Keep all nuts and bolts tight to be sure of safe working conditions.

.Machine should be stopped and inspected for damage after striking a foreign object. Repair any damage before restarting-

.Before leaving the operator's position or leaving mower unattended, disengage cutter blades, stop engine and remove starting key.

.Always park the machine on level surface and apply parking brake. Block the wheels when parking on sloping surface-

.Before any servicing, disengage cutter blades, stop engine, remove starting key and spark plug wires.

.This machine is not meant for highway or street use. It is not a recreational vehicle. Don't try to show off.

.In other words, always be careful.

## SAFETY INTERLOCK SYSTEM

The Great Dane Surfer has been designed to be inherently safe. In addition, there are these safety systems:

- .Before starting engine, you must turn "OFF" the cutter blade clutch switch.
- .An operator must be standing on the platform to engage the cutter blades (machines with pull start, you must cycle blade clutch switch "OFF" then "ON").
- .Completely letting go of control levers will brake machine to instant stop.

## HYDRAULIC SAFETY

- .All hydraulic system servicing should be done by a qualified technician.
  - .Relieve all pressure in the system before disconnecting any hoses.
  - .Keep body and hands away from pin holes that may eject hydraulic fluid under high pressure.
  - .Make sure all hydraulic connections are tight and hoses in good condition.
- High pressure hydraulic fluid may have sufficient force to penetrate skin and cause serious injury. Seek medical attention immediately. Treatment must be done a doctor.

## ASSEMBLY OF MACHINE

- Please note the Great Dane Surfer is shipped completely assembled and has been tested at the factory. After you have removed all crating and packaging materials, carefully follow these steps:
- .Remove battery from machine, if one is installed and service observing precautions in Section on Battery Servicing.
  - .Check hydraulic fluid level. Should be about 5 inches below the top of the oil filler pipe. Use 10W-30 engine oil during initial operating period.
  - .Check engine oil for proper level.
  - .Check rear wheel tire pressure. Use high pressures up to 24 psi for mowing on rough ground, and down to 14 psi for fairly smooth terrain. Note, front caster wheel tires must be foam filled and thus never require air servicing.
  - .Remove belt cover and check all belt tension. .Lubricate all moving parts (see Maintenance Check List).
  - .Locate rear drive wheel mounting bracket for general height of cut in your region.
  - .Fill fuel tank with regular, 80 octane gasoline. .Open shut-off valve under gas tank.
- You are now ready for initial running of the machine.

## INITIAL ADJUSTMENTS

- .Set the rear of the machine on jack stands or blocks to raise rear wheels off of ground and block caster wheels.
- .Start engine. Let run for several minutes to warm hydraulic fluid.
- .Observe that wheels rotate in the correct direction when control levers are moved back and forth.

- .If wheels do not stop rotating when controls are ~ in neutral, adjust the NEUTRAL stop wing bolts at the rear of the power unit, between the two hydro pumps.
- .Engage cutter blade clutch. Be sure area is clear of debris. Run blades for several minutes.
- .Shut off engine and remove jack stands. Remove start key.
- .Check all belts for proper tension.
- .Test run the machine in a level area. If machine drifts to the right or left when both control levers are full forward, adjust swivel nuts at the top of control rods to change length of control rod so that machine travels in a straight line. Please remember, the neutral adjustment and straight drive adjustments will need to be repeated after several hours of operation.

## .Test function of the three safety interlock Systems.

- .Adjust safe maximum drive speed by unlocking and adjusting the stationary bar to limit amount of forward movement of the control levers. Secure the stationary bar firmly by tightening the ~ lever on the left side of bar.

## OPERATING INSTRUCTIONS

- Read and understand the Safety Guidelines before attempting to operate.
- .Check fuel tank
  - .Check engine oil level
  - .Open fuel valve
  - .Adjust stationary bar half way back and tighten left side lever for moderate mowing speed
  - .Travel control levers must be in neutral
  - .Electric blade clutch switch must be OFF
  - .Stand on platform
  - .Set throttle and choke as required
  - .Turn key switch ON and pull start or electric start .Wide open throttle
  - .Engage cutter blade switch
  - .Grasp stationary bar with both hands
  - .Push both levers forward smoothly and evenly to go straight ahead
  - .To make turns, pull same side control lever back .To stop, return both levers to neutral
  - .To reverse, pull both levers back
  - .Apply parking brake when leaving machine. Do not park on slopes
  - .To hand push the machine, open dump valve levers about one full turn.

## SERVICING & ADJUSTMENTS

### TIRE PRESSURE

- .When mowing on relatively smooth ground, keep rear wheel tire pressure low, such as 14 to 16 psi. When mowing on rough ground, increase tire pressure to 20 to 24 psi. This will produce a nicer level of cut.
- .Note that the front caster wheels are foam filled and never need air .

### HEIGHT OF CUT

- .Rear wheels may be located in three or four positions. Use midpoint position for average cut from 2 to 4 inches. Highest hole position to cut from 3 to 5 inches. Lowest hole position to cut from 1 to 3 inches.
- .Adjust caster wheel spacers to keep cutter deck tilted slightly down at the front.
- .Vary number of spacers between cutter blade and spindle for higher height of cut.

### BELT TENSION ADJUSTMENT

- The belt drive from the engine to the hydro -pumps is self adjusting, normally requiring no maintenance.
- .The belt from the engine to the cutter deck and the right hand spindle drive belt should be tightened only so that you can deflect the belt about 1/2 inch when pulling about 10 lbs. If the belt is too tight, you may damage the engine or the spindle bearings. Too loose, and the belt will wear prematurely.

### FREE WHEELING

- .To move machine without having the engine running, rotate the dump valve levers of the left hand side of the hydro pump about one turn counterclockwise. Levers must be returned to original closed position to drive the machine.

### HYDRO AIR BLEED PROCEDURE

- When any of the hydro components or hoses are disconnected or removed and when the hydro oil is changed entrapped air must be bled from the system.
- Disconnect small hose line from each pump going to the oil filter
- .When oil starts to flow in a steady stream from end of hose, plug the hose

- .When oil starts to flow in a steady stream from disconnected open port on the pump, reconnect hose to pump.
- .Secure machine in a safe area, away from bystanders and facing a wall. Raise drive wheels off the ground and block caster wheels
- Run full forward speed for about a minute and then reverse speed for another minute. Continue to cycle until cavitations sound quiets down and full power is restored.

### SPINDLE DISASSEMBLY

To replace ball bearings in the spindle assembly, there is no need to remove assembly from cutter deck

- .Carefully clean all debris around the spindle assembly
- .Remove the blade, bolt and flanged nut
- .Slide off pulley and spacer washer. If pulley is seized on spline shaft, soak with solvent. Do not use hammer or wheel puller
- .Remove wire clip ring at top of bearing around the shaft. Use sharp tool to extract
- .Lower the entire shaft from the bottom of the spindle with lower bearing and spacer sleeve
- .Discard old bearings at this time.
- .Clean entire assembly
- .Reinstall in reverse order. Place new bearing on shaft lower flange, slide on the spacer sleeve
- .Slide the shaft assembly up into the spindle housing keeping shaft carefully centered. The lower bearing can easily bind since clearance is only .002 inch. Do not hammer into position. If the bearing seizes, take apart again and carefully reposition until the assembly slides easily and smoothly into housing
- .Carefully center and install top bearing
- .Insert wire clip, any spacers and pulley

### BATTERY SERVICING

- .Carefully fill each cell to the proper level with electrolyte, observing great caution when handling acid. Severe chemical burns may result.
- .Charge battery in open, well ventilated area and use proper procedure specified with the charging system.
- .After neutralizing any acid spills, install battery and securely tighten wires.

# RECOMMENDED MAINTENANCE CHECK LIST

## **DAILY**

1. Check engine oil level
2. Remove and clean engine air filter
3. Blow clean engine blower screen and fins
4. Clean out debris under belt cover
5. Inspect all belts for damage
6. Sharpen and balance cutter blades

## **WEEKLY (or every 40 hours)**

1. Change engine oil
2. Grease caster wheel bearings (2 places)
3. Grease caster wheel pivot bearings (2 places)
4. Scrape clean underside of cutter deck
5. Check belt tension
6. Check tire pressure
7. Check battery acid level
8. Clean engine air filter

## **MONTHLY (or every 160 hours)**

1. Clean spark plugs
2. Replace engine oil filter
3. Check hydro reservoir oil level

Lubricate the following with WD 40 or LPS-2:

1. Idler pulley pivots (3 places)
2. Hydro pump control arms (6 places)
3. Platform OPC push rod
4. Platform hinges (2 places)
5. Traction control lever pivot shaft (4 places)
6. Throttle control cable
7. Choke control cable

## **ANNUALLY**

1. Remove and replace all spindle bearings
2. Remove and replace main cutter deck idler pulley
2. Remove caster wheel roller bearings, clean and relube
3. Remove and replace caster pivot bearing bushings
4. Replace three belts. Run-in and adjust tension for new belt
5. Thoroughly clean top and underside of power unit
6. Replace hydro oil filter with original Great Dane service part
7. Check all bolts and nuts for tightness
8. Remove and clean battery box
9. Replace spark plug.

## **VERY IMPORTANT NOTE: FOLLOWING ITEMS REQUIRED TO VALIDATE**

(Dealer service invoice accepted)

## **INITIAL BREAK-IN PERIOD**

1. Change engine oil and replace engine filter at 8 hours
2. Dump hydro oil and replace with synthetic Aeroshell W or Mobil 1, 15-W50 (about 4 qts) at 40 hours
3. Replace hydro oil filter at 40 hours
4. Adjust new belt tension at 4 hours, 8 hours and again at 24 hours

# GREAT DANE™

## ZERO TURN SURFER

TECHNICAL MANUAL  
PARTS MANUAL  
COMMERCIAL MOWERS

GDSZ48-16BV  
GDSZ52-16BV  
GDSZ52-18BV  
GDSZ52-18KHE  
GDSZ52-22KHE  
GDSZ61-22KHE



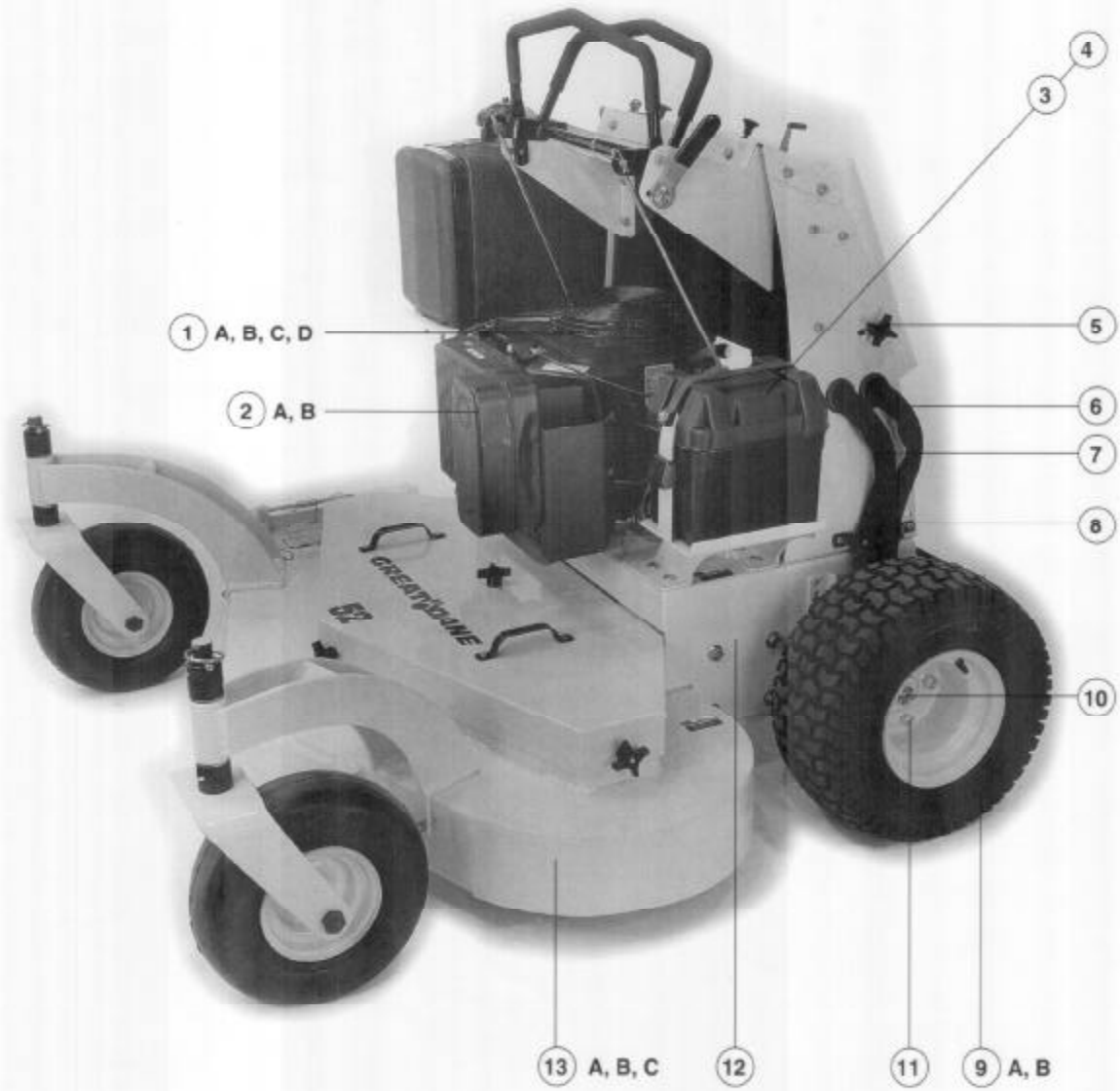
MARCH 1998

GREAT DANE POWER EQUIPMENT, INC.  
SELLERSBURG, IN 47172 U.S.A.

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For  
Illustrated Parts Lists  
***GREAT DANE SURFER***

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**Figure 1**

| ITEM NO. | PART NO. | DESCRIPTION  |
|----------|----------|--|
| 1 - 1A   | D18156   | Engine, 16 HP Briggs & Stratton Vanguard Twin Cylinder, Recoil |
| 1 - 1B   | D18157   | Engine, 18 HP Briggs & Stratton Vanguard Twin Cylinder, Recoil |
| 1 - 1C   | D18158   | Engine, 18 HP Kohler Command Twin Cylinder, Electric           |
| 1 - 1D   | D18159   | Engine, 22 HP Kohler Command Twin Cylinder, Electric           |
| 1 - 2A   | D18165   | Muffler Assembly, Briggs & Stratton                            |
| 1 - 2B   | D18166   | Muffler Assembly, Kohler                                       |
| 1 - 3    | D18169   | Battery, Exide   |
| 1 - 4    | D18135   | Battery Carrier with Lid                                       |
| 1 - 5    | D18047   | Plastic Knob - Male  |
| 1 - 6    | D18095   | Hydro Hose - High Pressure                                     |
| 1 - 7    | D18095   | Hydro Hose - High Pressure                                     |
| 1 - 8    | D18133   | Hose Retainer  |
| 1 - 9A   | D18101   | Drive Wheel Rim & Tire Assembly - 52" and 61" Surfer           |
| 1 - 9B   | D18102   | Drive Wheel Rim & Tire Assembly - 48" Surfer                   |
| 1 - 10   | D14193   | Wheel Motor Nut  |
| 1 - 11   | D14192   | Lug Nut  |
| 1 - 12   | D16010   | Engine Deck - Power Unit Assembly                              |
| 1 - 13A  | D16011   | Cutter Deck - Cutter Deck Assembly 61"                         |
| 1 - 13B  | D16012   | Cutter Deck - Cutter Deck Assembly 52"                         |
| 1 - 13C  | D16013   | Cutter Deck - Cutter Deck Assembly 48"                         |

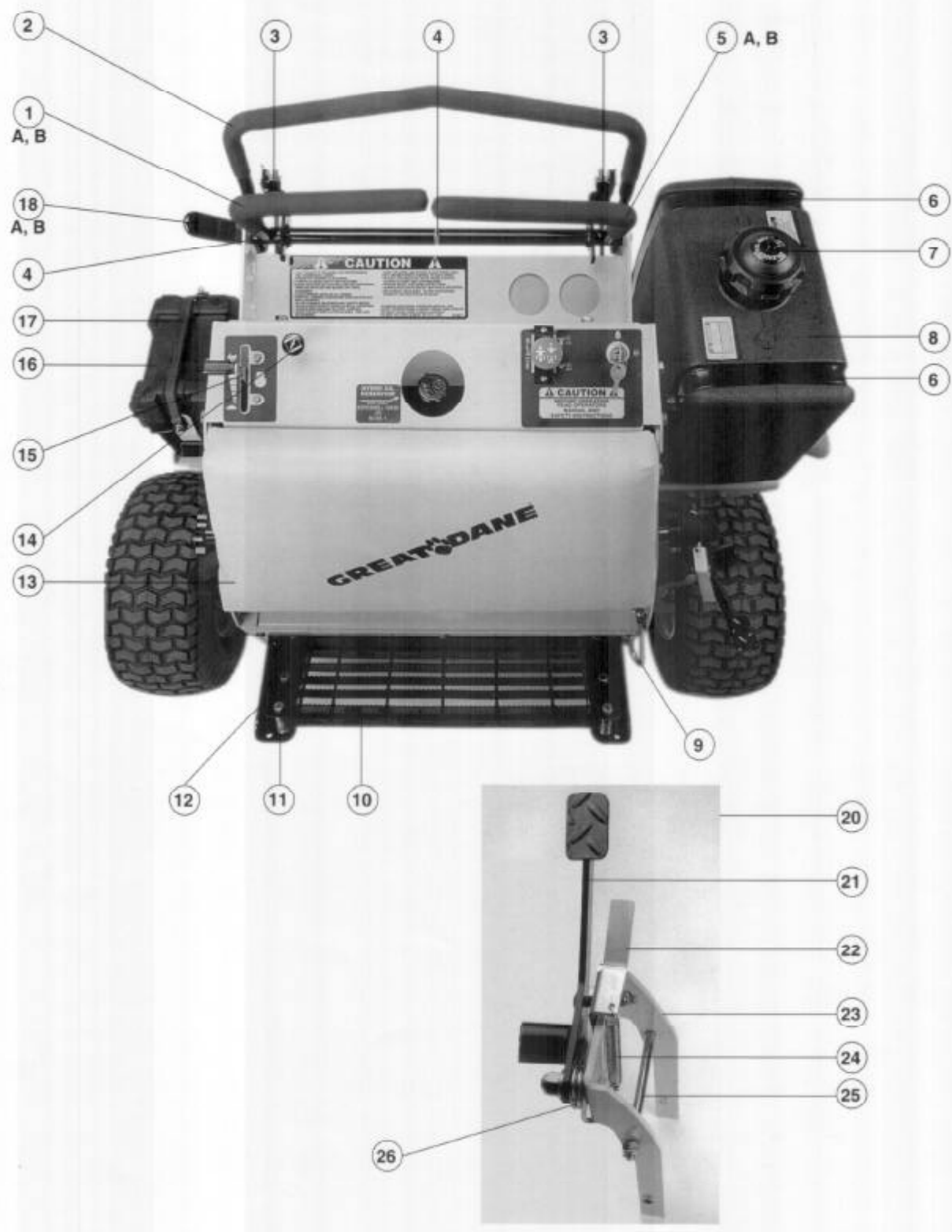
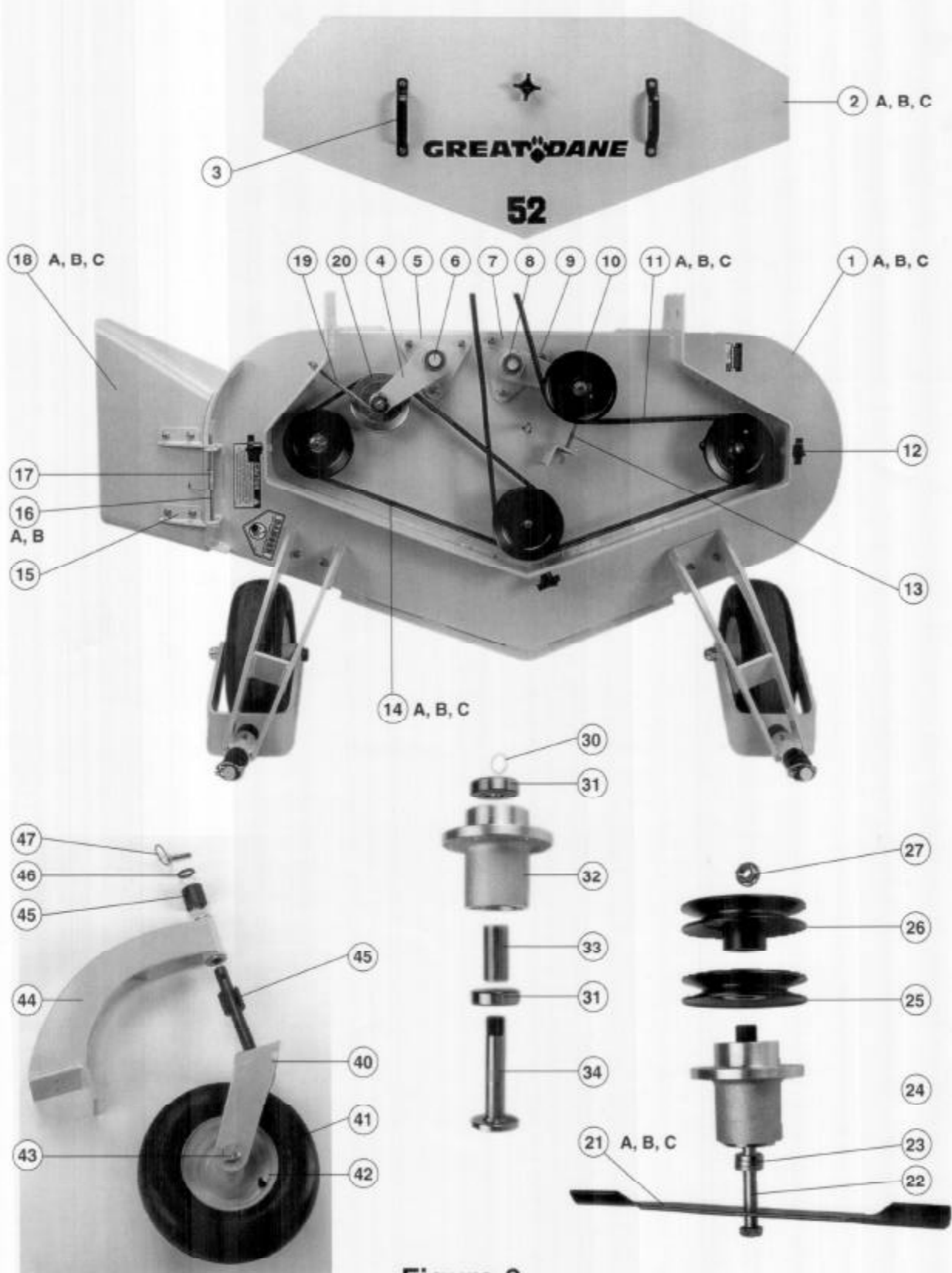


Figure 2

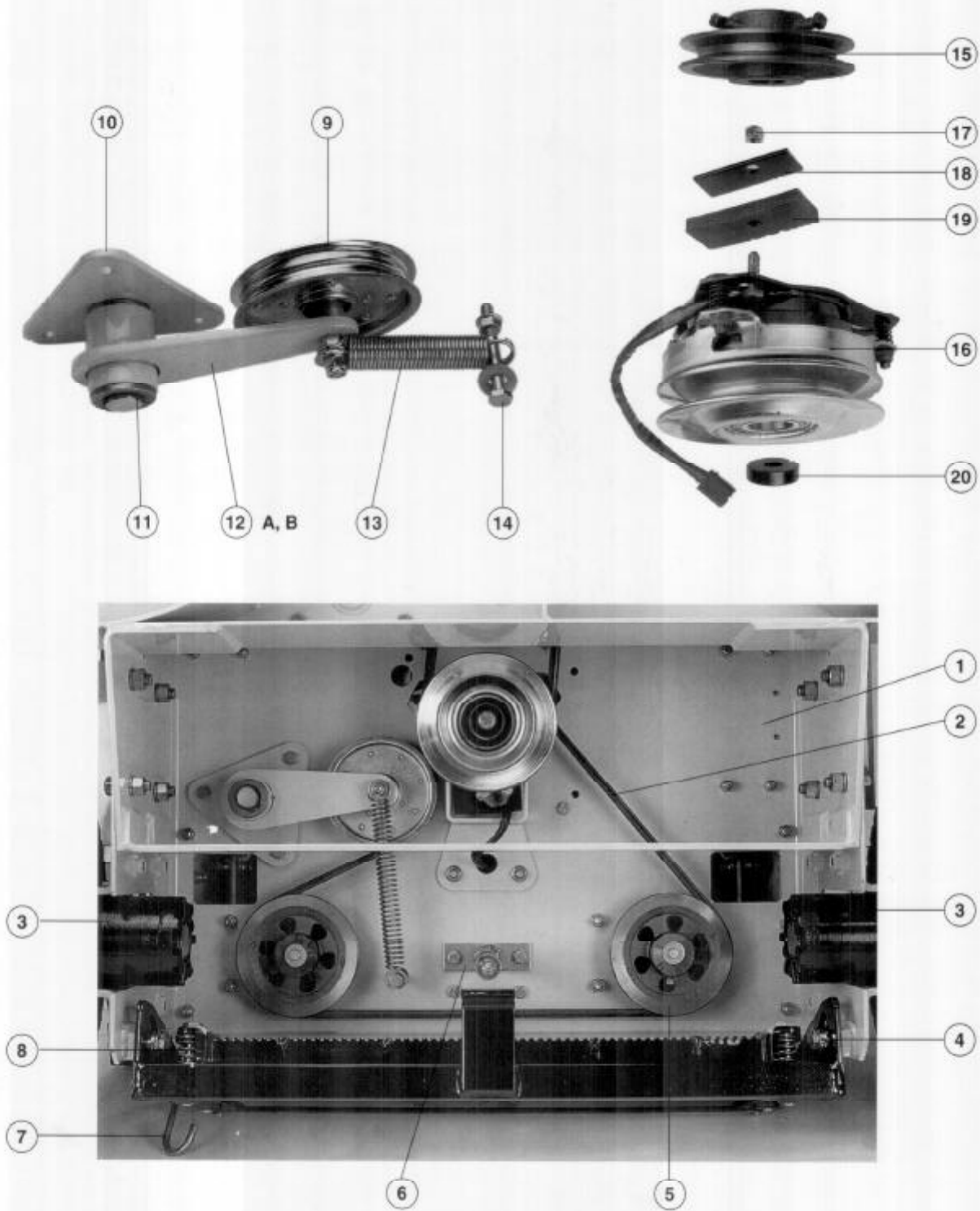
| ITEM NO. | PART NO. | DESCRIPTION                           |
|----------|----------|---------------------------------------|
| 2 - 1A   | D15015   | Drive Lever Weldment - LH             |
| 2 - 1B   | D18093   | Drive Lever Grip                      |
| 2 - 2    | D18069   | Stationary Bar with Grip              |
| 2 - 3    | D13024   | Swivel, Tracking Adjustment 5/16-24   |
| 2 - 4    | D18013   | Bushing, Press Small                  |
| 2 - 5A   | D15016   | Drive Lever Weldment - RH             |
| 2 - 5B   | D18093   | Drive Lever Grip                      |
| 2 - 6    | D12042   | Fuel Tank Strap - 6 Gallon            |
| 2 - 7    | D18097   | Fuel Tank Cap                         |
| 2 - 8    | D18096   | Fuel Tank - 6 Gallon                  |
| 2 - 9    | D13005   | J-Hook                                |
| 2 - 10   | D15038   | Footplate Grating Weldment            |
| 2 - 11   | D18111   | Spring, Footplate Assembly            |
| 2 - 12   | D15037   | Footplate Frame Weldment              |
| 2 - 13   | D18100   | Cushion - Thigh Support               |
| 2 - 14   | D18050   | Choke Cable                           |
| 2 - 15   | D18049   | Throttle Cable                        |
| 2 - 16   | D18135   | Battery Carrier with Lid              |
| 2 - 17   | D18136   | Battery Carrier Strap                 |
| 2 - 18A  | D15028   | Speed Control Adjustment Lever        |
| 2 - 18B  | D18079   | Grip - Speed Control Adjustment Lever |
| 2 - 19   |          |                                       |
| 2 - 20   | D16002   | Brake Subassembly Attachment - RH     |
| 2 - 21   | D15048   | Brake Pedal Weldment                  |
| 2 - 22   | D12094   | Brake Release Lever                   |
| 2 - 23   | D35034   | Brake Mounting Bracket                |
| 2 - 24   | D18140   | Spring, Brake Release                 |
| 2 - 25   | D14031   | Bolt, Hex Head 3/8 x 5 1/2" Grade 5   |
| 2 - 26   | D18138   | Spring, Brake Torsion                 |

**GREAT DANE**



**Figure 3**

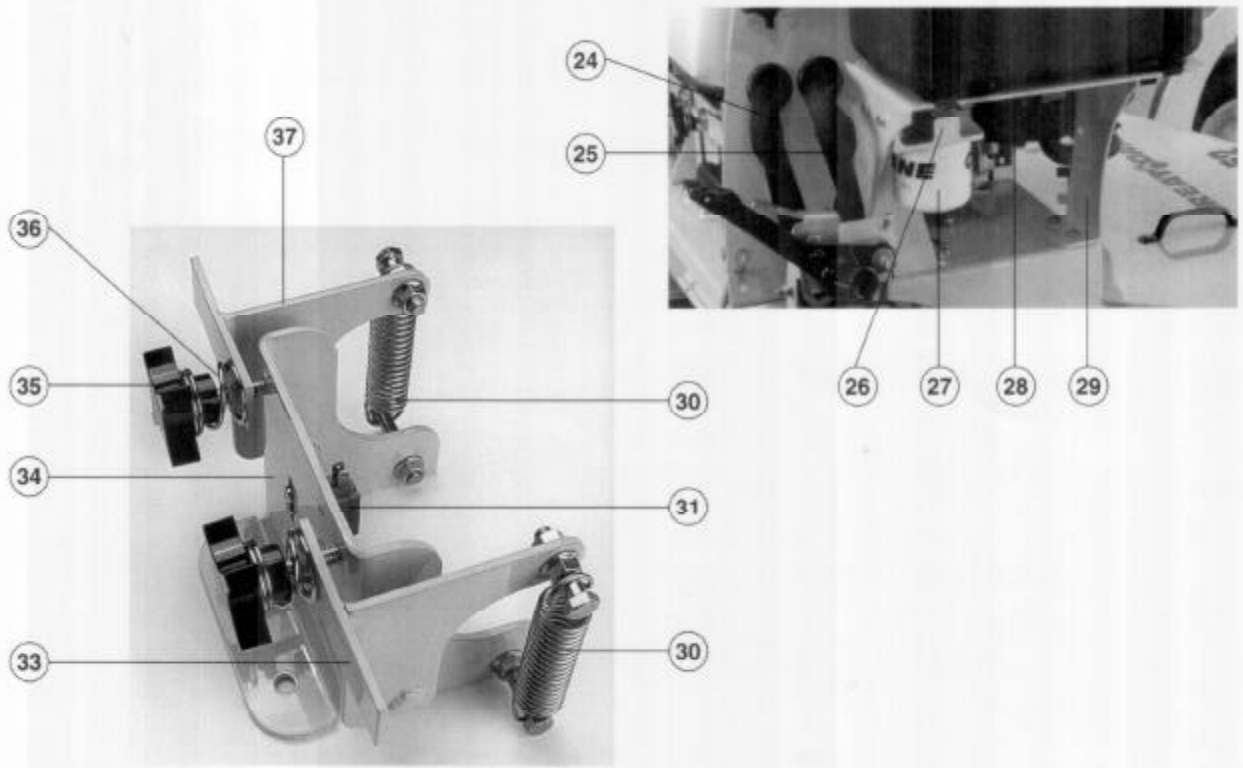
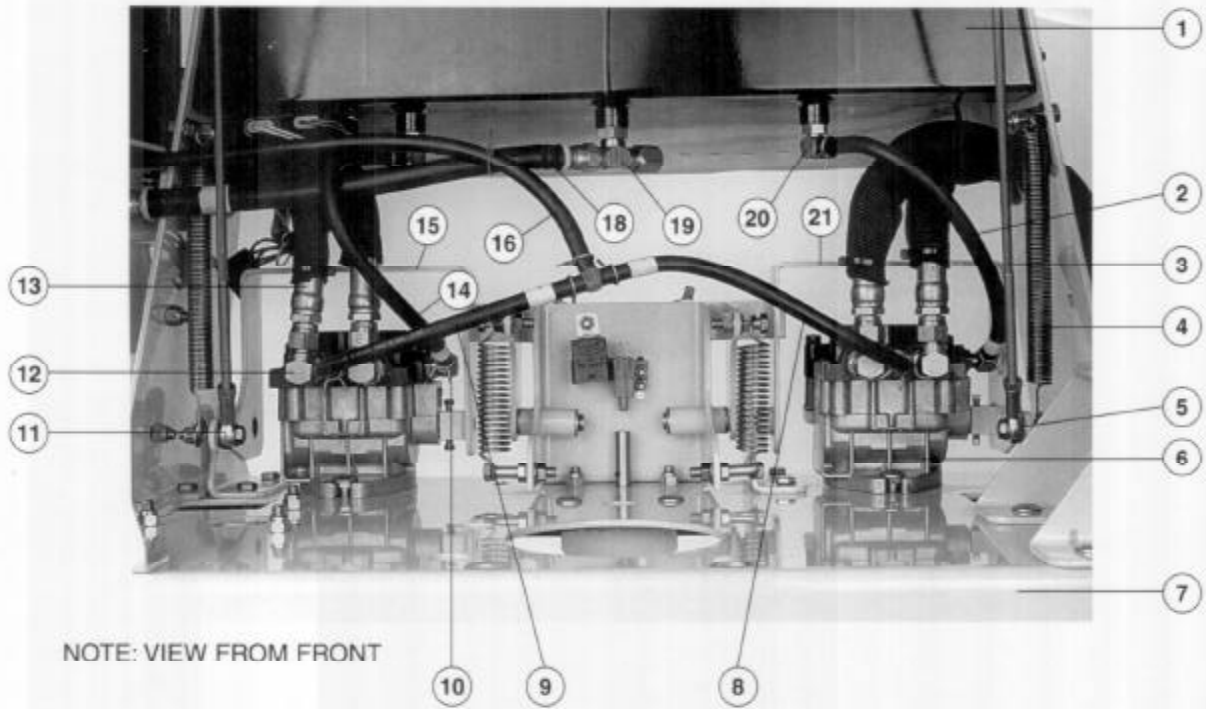
| ITEM NO. | PART NO. | DESCRIPTION                       | ITEM NO | PART NO. | DESCRIPTION                       |
|----------|----------|-----------------------------------|---------|----------|-----------------------------------|
| 3 - 1A   | D15045   | Cutter Deck, Surfer 48"           | 3 - 30  | D18034   | Spindle - Wire Clip               |
| 3 - 1B   | D15024   | Cutter Deck, Surfer 52"           | 3 - 31  | D18045   | Spindle - Bearings 6305           |
| 3 - 1C   | D15014   | Cutter Deck, Surfer 61"           | 3 - 32  | D11000   | Spindle - House Casting           |
| 3 - 2A   | D15046   | Hood, Surfer 48"                  | 3 - 33  | D18033   | Spindle - Bearing Spacer          |
| 3 - 2B   | D15034   | Hood, Surfer 52"                  | 3 - 34  | D18048   | Spindle- Shaft                    |
| 3 - 2C   | D15035   | Hood, Surfer 61"                  | 3 - 35  |          |                                   |
| 3 - 3    | D18133   | Handle, Hood                      | 3 - 36  |          |                                   |
| 3 - 4    | D15032   | Idler Arm Weld, Blade to Blade    | 3 - 37  |          |                                   |
| 3 - 5    | D15027   | Idler Mount Weldment              | 3 - 38  |          |                                   |
| 3 - 6    | D18003   | Bushing, Large Press              | 3 - 39  |          |                                   |
| 3 - 7    | D15027   | Idler Mount Weldment              | 3 - 40  | D35018   | Caster Yoke Wldmt - for 13"       |
| 3 - 8    | D14104   | Snap-ring, 1"                     | 3 - 41  | D38009   | Caster Wheel, Tire & Bearing Assy |
| 3 - 9    | D15032   | Idler Arm Weldment, Primary       | 3 - 42  | D18171   | Rim - Caster 13"                  |
| 3 - 10   | D18032   | Pulley - Idler - Engine to Deck   | 3 - 43  | D28097   | Caster Bolt 3/4-16 x 8" for 13"   |
| 3 - 11A  | D18087   | Belt - Engine to 48" Deck         | 3 - 44  | D35017   | Caster Support with Bushings      |
| 3 - 11B  | D18005   | Belt - Engine to 52" Deck         | 3 - 45  | D18002   | Caster Spacer - 1/2" slotted      |
| 3 - 11C  | D18007   | Belt - Engine to 61" Deck         | 3 - 46  | D13008   | Bushing, .20                      |
| 3 - 12   | D18046   | Plastic Knob - Female             | 3 - 47  | D18057   | Caster Quick Pin                  |
| 3 - 13   | D13005   | J-Hook                            |         |          |                                   |
| 3 - 14A  | D18088   | Belt - Center to RH Blade 48"     |         |          |                                   |
| 3 - 14B  | D18006   | Belt - Center to RH Blade 52"     |         |          |                                   |
| 3 - 14C  | D18008   | Belt - Center to RH Blade 61"     |         |          |                                   |
| 3 - 15   | D12006   | Chute Hinge Bracket               |         |          |                                   |
| 3 - 16A  | D15151   | Chute Pivot Rod - 48"             |         |          |                                   |
| 3 - 16B  | D18060   | Chute Pivot Rod - 52" and 61"     |         |          |                                   |
| 3 - 17   | D18077   | Spring, Chute Torsion             |         |          |                                   |
| 3 - 18A  | D12086   | Discharge Chute, 48" Deck         |         |          |                                   |
| 3 - 18B  | D12007   | Discharge Chute, 52" Deck         |         |          |                                   |
| 3 - 18C  | D12008   | Discharge Chute, 61" Deck         |         |          |                                   |
| 3 - 19   | D13045   | J-Hook                            |         |          |                                   |
| 3 - 20   | D18031   | Pulley - Idler - V - Center to RH |         |          |                                   |
| 3 - 21A  | D18086   | Cutter Blades - 16"               |         |          |                                   |
| 3 - 21B  | D18037   | Cutter Blades - 18"               |         |          |                                   |
| 3 - 21C  | D18036   | Cutter Blades - 21"               |         |          |                                   |
| 3 - 22   | D14101   | Spindle - 5/8" Bolt               |         |          |                                   |
| 3 - 23   | D18055   | Spindle - Blade Spacer 1/4"       |         |          |                                   |
| 3 - 24   | D18030   | Spindle - Complete Assembly       |         |          |                                   |
| 3 - 25   | D18083   | Pulley - Spindle Narrow Hub       |         |          |                                   |
| 3 - 26   | D18084   | Pulley - Spindle Tall Hub         |         |          |                                   |
| 3 - 27   | D14102   | Spindle - 5/8" Nut                |         |          |                                   |



**Figure 4**

| ITEM NO. | PART NO. | DESCRIPTION                      |
|----------|----------|----------------------------------|
| 4 - 1    | D15031   | Engine Deck                      |
| 4 - 2    | D18004   | Belt - Engine to Hydro Pumps     |
| 4 - 3    | D18066   | Wheel Motor - Parker Ross        |
| 4 - 4    | D13021   | Bushing - Footplate Pivot        |
| 4 - 5    | D18043   | Pulley - Hydro Pump              |
| 4 - 6    | D16006   | OPC Pin Assembly                 |
| 4 - 7    | D13005   | J-Hook                           |
| 4 - 8    | D18111   | Spring, Footplate Assembly       |
| 4 - 9    | D18044   | Pulley - Idler - Engine to Pumps |
| 4 - 10   | D15027   | Idler Mount Weldment             |
| 4 - 11   | D14104   | Snap ring, 1"                    |
| 4 - 12A  | D15032   | Idler Arm Weldment - Pumps       |
| 4 - 12B  | D18003   | Press Bushing - Large            |
| 4 - 13   | D18071   | Spring - Engine to Pump Idler    |
| 4 - 14   | D14021   | Bolt, Hex Head 3/8 x 3" Gr 5     |
| 4 - 15   | D18085   | Pulley - Engine to Hydro Pumps   |
| 4 - 16   | D18000   | Blade Clutch - Warner Electric   |
| 4 - 17   | D14081   | Nut - Hex Head 5/16-18           |
| 4 - 18   | D12043   | Clutch Bumper Support            |
| 4 - 19   | D18068   | Clutch Bumper                    |
| 4 - 20   | D18056   | Bushing, Heavy Clutch            |

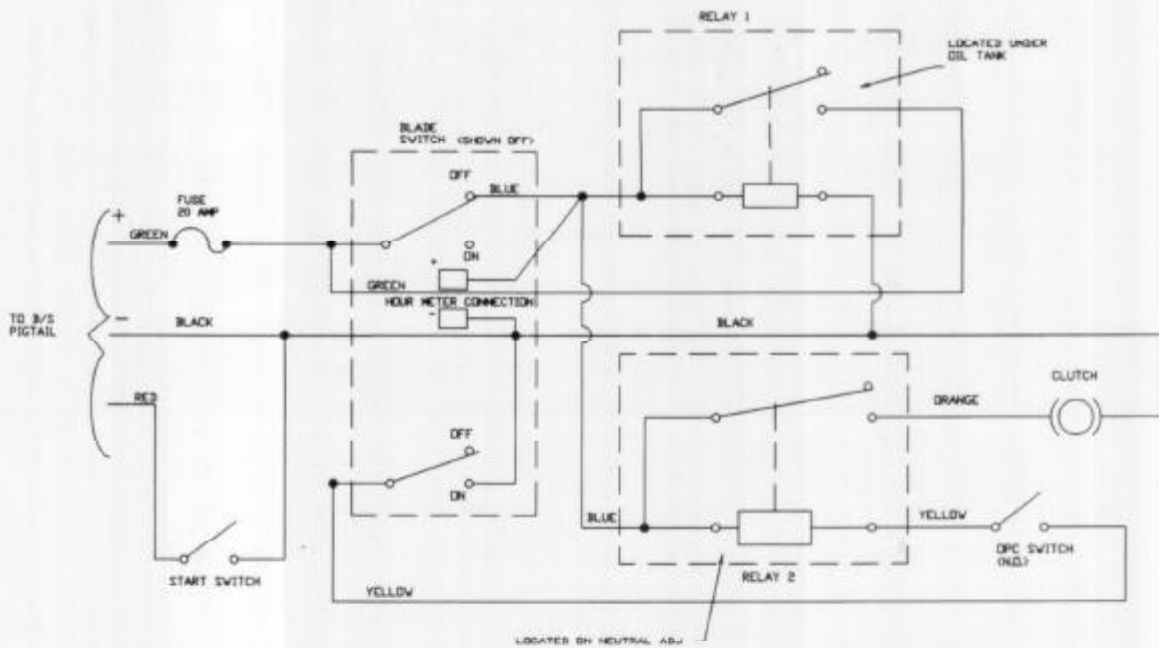




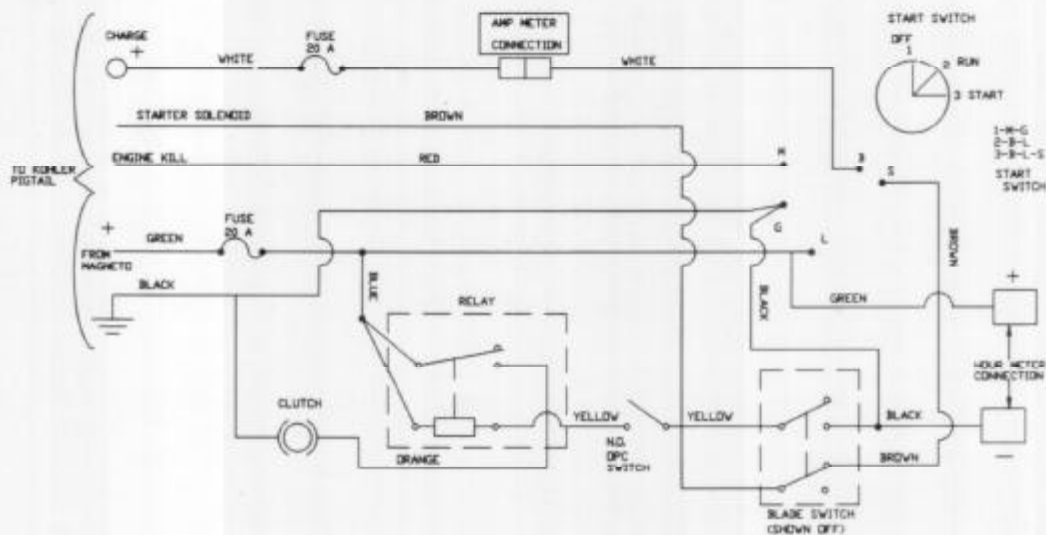
**Figure 5**

| ITEM NO. | PART NO. | DESCRIPTION                         |
|----------|----------|-------------------------------------|
| 5 - 1A   | D15052   | Oil Reservoir                       |
| 5 - 1B   | D18081   | Cap - Oil Reservoir (not shown)     |
| 5 - 2    | D18010   | Hose - LP Oil Return                |
| 5 - 3    | D13029   | Drive Control Rod                   |
| 5 - 4    | D18072   | Spring - Hydro Pump - Forward       |
| 5 - 5    | D18106   | Ball Rod End - 5/16-24 Female       |
| 5 - 6    | D18051   | Hydro Pump - Hydro Gear             |
| 5 - 7    | D15031   | Engine Deck                         |
| 5 - 8    | D18010   | Hose - LP Oil Fill                  |
| 5 - 9    | D18010   | Hose - LP Oil Fill                  |
| 5 - 10   | D14195   | Fitting - Oil Return                |
| 5 - 11   | D18106   | Ball Rod End - 5/16-24 Female       |
| 5 - 12   | D14196   | Fitting - HP Pump to Motor          |
| 5 - 13   | D18095   | Hydro Hose - High Pressure          |
| 5 - 14   | D18010   | Hose - LP Oil Return                |
| 5 - 15   | D15018   | Pump Control Arm Weldment RH        |
| 5 - 16   | D18118   | Hose - LP Oil Fill from Filter      |
| 5 - 17   |          |                                     |
| 5 - 18   | D18011   | Hose - LP Oil Fill from Reservoir   |
| 5 - 19   | D14199   | Fitting - Oil Drain Tee             |
| 5 - 20   | D14195   | Fitting - Oil Return                |
| 5 - 21   | D15017   | Pump Control Arm Weldment LH        |
| 5 - 22   |          |                                     |
| 5 - 23   |          |                                     |
| 5 - 24   | D18095   | Hydro Hose - High Pressure          |
| 5 - 25   | D18095   | Hydro Hose - High Pressure          |
| 5 - 26   | D18167   | Mount Only - Oil Filter             |
| 5 - 27   | D18094   | Oil Filter - Great Dane - 25 Micron |
| 5 - 28   | D12044   | Fuel Tank Support Bracket - Large   |
| 5 - 29   | D12047   | Fuel Tank Support Bracket - Small   |
| 5 - 30   | D18073   | Spring - Hydro Pump - Reverse       |
| 5 - 31   | D18038   | Switch, OPC Cutter Blades"          |
| 5 - 32   |          |                                     |
| 5 - 33   | D15012   | Neutral Adjust Weld - RH            |
| 5 - 34   | D15020   | Neutral Mounting Bracket            |
| 5 - 35   | D18047   | Plastic Knob - Male                 |
| 5 - 36   | D18074   | Spring - Neutral Knob               |
| 5 - 37   | D15013   | Neutral Adjust Weld - LH            |

## ELECTRIC WIRE SCHEMATIC



## BRIGGS/STRATTON DIAGRAM



## KOHLER DIAGRAM

Figure 6



Figure 7

| ITEM NO. | PART NO. | DESCRIPTION                       | ITEM NO. | PART NO. | DESCRIPTION              |
|----------|----------|-----------------------------------|----------|----------|--------------------------|
| 6 - 1    |          | Briggs & Stratton Wiring - Recoil | 7 - 1    | D18027   | Decal - Great Dane Logo  |
|          | D18019   | Main Wiring Harness               | 7 - 2    | D18023   | Decal - Oil Reservoir    |
|          | D18018   | Brigge Wiring Pigtail             | 7 - 3    | D18021   | Decal - Throttle Control |
|          | D18014   | Clutch Pigtail Harness            | 7 - 4    | D18080   | Decal - Neutral Adjust   |
|          | D18090   | Keyswitch - On / Off              | 7 - 5    | D18149   | Decal - Console          |
|          | D38005   | Blade Switch - Push / Pull        | 7 - 6    | D18114   | Decal - Danger HOT       |
|          | D18052   | Relay                             | 7 - 7    | D18024   | Decal - Caution Large    |
|          | D18038   | OPC Switch - Cutter Blades        | 7 - 8    | D18025   | Decal - Caution Small    |
|          | D18109   | Hour Meter (Optional)             | 7 - 9    | D18026   | Decal - Danger           |
|          |          |                                   | 7 - 10A  | D18119   | Decal - 48 Logo          |
| 6 - 2    |          | Kohler Wiring - Electric Start    | 7 - 10B  | D18028   | Decal - 52 Logo          |
|          | D18020   | Main Wiring Harness               | 7 - 10C  | D18029   | Decal - 61 Logo          |
|          | D18014   | Clutch Pigtail Harness            |          |          |                          |
|          | D18091   | Keyswitch - On / Off / Start      |          |          |                          |
|          | D38005   | Blade Switch - Push / Pull        |          |          |                          |
|          | D18052   | Relay                             |          |          |                          |
|          | D18038   | OPC Switch - Cutter Blades        |          |          |                          |
|          | D18016   | Battery Cable - Red - Positive    |          |          |                          |
|          | D18015   | Battery Cable - Black - Negative  |          |          |                          |
|          | D18109   | Hour Meter (Optional)             |          |          |                          |
|          | D28108   | Amp Meter (Optional)              |          |          |                          |

## Illustrated Parts Book Addendum: Surfer

### Parts not shown in manual

| Part no. | Description  | Page no. | Figure # |
|----------|--|----------|----------|
| D12051   | Replaced By D22215                                 | 2        | 1        |
| D12052   | Battery Tray Support                               | 2        | 1        |
| D12066   | Bracket, Wheel Motor Mount                         | 2        | 1        |
| D14215   | Lug Stud, Drive Wheel                              | 2        | 1        |
| D15025   | Side Support LH                                    | 2        | 1        |
| D15026   | Side Support RH                                    | 2        | 1        |
| D15031   | Engine Deck Weldment                               | 2        | 1        |
| D18110   | Rear Wheel Hub (for the 18 x 8.50)                 | 2        | 1        |
| D18134   | Rubber Grommets                                    | 2        | 1        |
| D18192   | Tire, 18x8.50-8                                    | 2        | 1        |
| D18193   | Tire, 18x7.50-8                                    | 2        | 1        |
| D18195   | Rim, 18x8.50-8                                     | 2        | 1        |
| D18198   | Rim, 18x7.50-8                                     | 2        | 1        |
|          |  |          |          |
| D12002   | Console, Old style w/ toggle PTO switch            | 4        | 2        |
| D12098   | Console, Current style                             | 4        | 2        |
| D12106   | Retainer Tab, PTO Switch                           | 4        | 2        |
| D13011   | Rod, Pivot   | 4        | 2        |
| D13022   | Slip Swivel, Platform J-hook                       | 4        | 2        |
| D13036   | Brake Bushing                                      | 4        | 2        |
| D13039   | Brake Latch Bushing                                | 4        | 2        |
| D15022   | Thigh Plate Weldment                               | 4        | 2        |
| D15023   | Handle Mount Weldment                              | 4        | 2        |
| D15047   | Brake Pedal Weldment LH                            | 4        | 2        |
| D16000   | Spring Platform Update                             | 4        | 2        |
| D16001   | LH Parking brake kit                               | 4        | 2        |
| D35033   | LH Brake Bracket Weldment                          | 4        | 2        |
|          |  |          |          |
| D13003   | Caster Wheel Bearing Sleeve                        | 6        | 3        |
| D13023   | Spacer, J-Hook Flat Idler                          | 6        | 3        |
| D13024   | Spindle - Top Pulley Spacer                        | 6        | 3        |
| D15151   | Pin, 48" Chute Pin                                 | 6        | 3        |
| D18003   | Idler Arm - Bearing Bushing                        | 6        | 3        |
| D18076   | Caster Support Bushing                             | 6        | 3        |
| D33007   | Spacer, 13" Caster Wheel                           | 6        | 3        |
| D38035   | Tapered Roller Bearings w/ race - 13" Caster Wheel | 6        | 3        |
| D38065   | 13" Caster Wheel Seal                              | 6        | 3        |
| D38066   | 13" Caster Tire                                    | 6        | 3        |
| D38067   | 13" Caster Spacer Tube                             | 6        | 3        |
| D38068   | 13" Caster Stop Tube                               | 6        | 3        |
|          |  |          |          |
| D12027   | Bracket, Clutch Mount                              | 8        | 4        |
| D12064   | Rear Cover for Hydro Pulley                        | 8        | 4        |
| D13010   | Spacer - Engine Crankshaft                         | 8        | 4        |
| D14160   | Washer, 1/4" Heavy Washer                          | 8        | 4        |

|        |  |    |   |
|--------|--|----|---|
| D14204 | 3/8 Washer, 1/4" Thick - Platform Bolt           | 8  | 4 |
| D14213 | Bolt, m6x14 for Pump Pulley                      | 8  | 4 |
| D15009 | O.P.C. Weldment                                  | 8  | 4 |
| D15036 | Plunger, OPC Actuator                            | 8  | 4 |
| D18003 | Idler Arm - Bearing Bushing                      | 8  | 4 |
| D18067 | Key, M5xM28 Hydro Pump Pulley                    | 8  | 4 |
| D18145 | Key Sq. 1/4" Taper, Engine Pulley                | 8  | 4 |
|        |  |    |   |
| D14043 | Internal Flare Fitting                           | 10 | 5 |
| D14197 | Fitting, Straight                                | 10 | 5 |
| D14198 | Fitting - Tee - Oil Fill To Pumps                | 10 | 5 |
| D14212 | Lever - Pump Release                             | 10 | 5 |
| D15010 | Rotational Support                               | 10 | 5 |
| D18009 | Hose, LP Tank to Pump                            | 10 | 5 |
| D18010 | Hose, Pump to Tee                                | 10 | 5 |
| D18059 | Square Head Set Screw w/Patch 1/4-20 x 1/2       | 10 | 5 |
| D18098 | Fuel Tank - Shut Off Valve                       | 10 | 5 |
| D18144 | Grommet, Fuel Tank Valve                         | 10 | 5 |
| D18174 | Cap - Oil Drain Tee                              | 10 | 5 |
| D32070 | Capacitor Mount (Not shown, Kawasaki units only) | 10 | 5 |
| D32071 | Module Mount (Not shown, Kawasaki units only)    | 10 | 5 |
|        |  |    |   |
| D18017 | Wiring Pigtail, Kohler                           | 12 | 6 |
| D18184 | Wiring Harness, Kawasaki Manual Start            | 12 | 6 |
| D38182 | Wiring Harness, Kawasaki Electric Start          | 12 | 6 |
| D38027 | Kawasaki Wiring Pigtail                          | 12 | 6 |