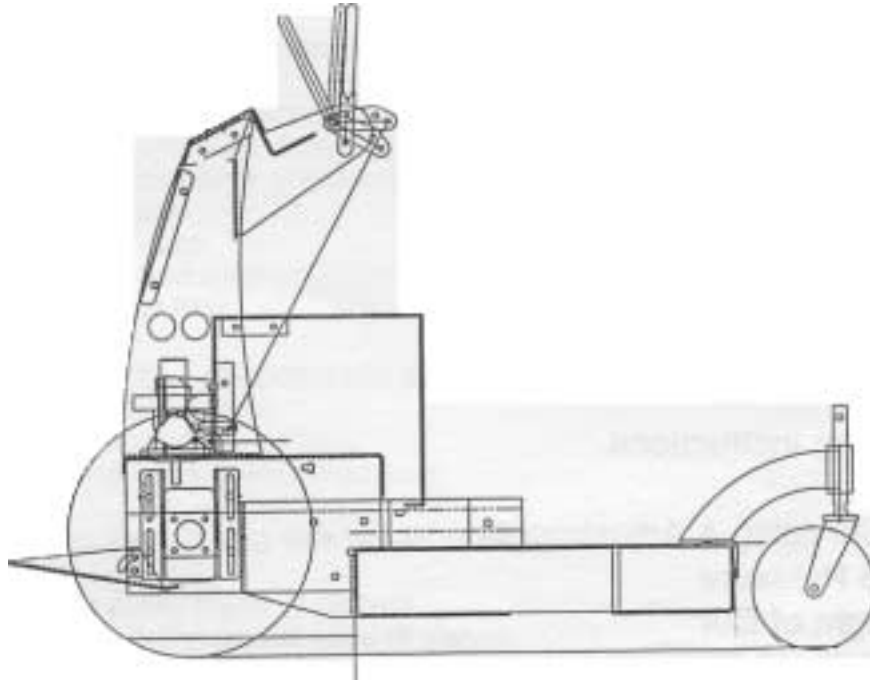


# **GREAT DANE**

## **ZERO TURN SURFER**



## **TECHNICAL MANUAL COMMERCIAL MOWERS**

**GDSZ48-14KA**

**GDSZ48-16BV**

**GDSZ52-16BV**

**GDSZ52-18BV**

**GDSZ52-22KHE**

**GDSZ61-22KHE**

**GREAT DANE** POWER EQUIPMENT, INC.  
JEFFERSONVILLE, INDIANA 47130 U.S.A.

PATENTS PENDING JAN 1997  
FORM D01002-97

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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



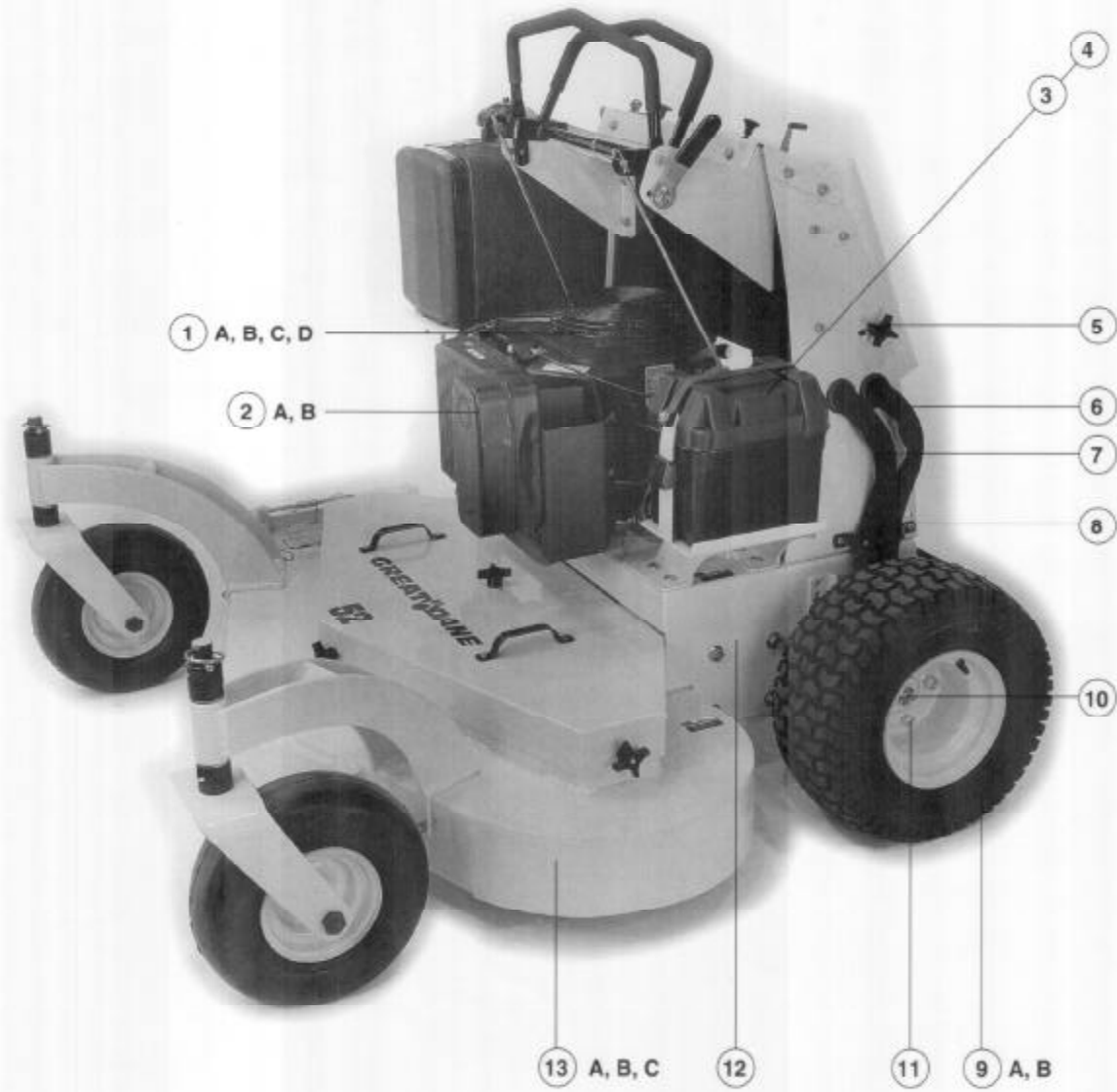
MARCH 1998

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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Drive System – Power Unit Underside	4	8
Hydraulic System	5	10
Wiring Schematics	6	12
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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"

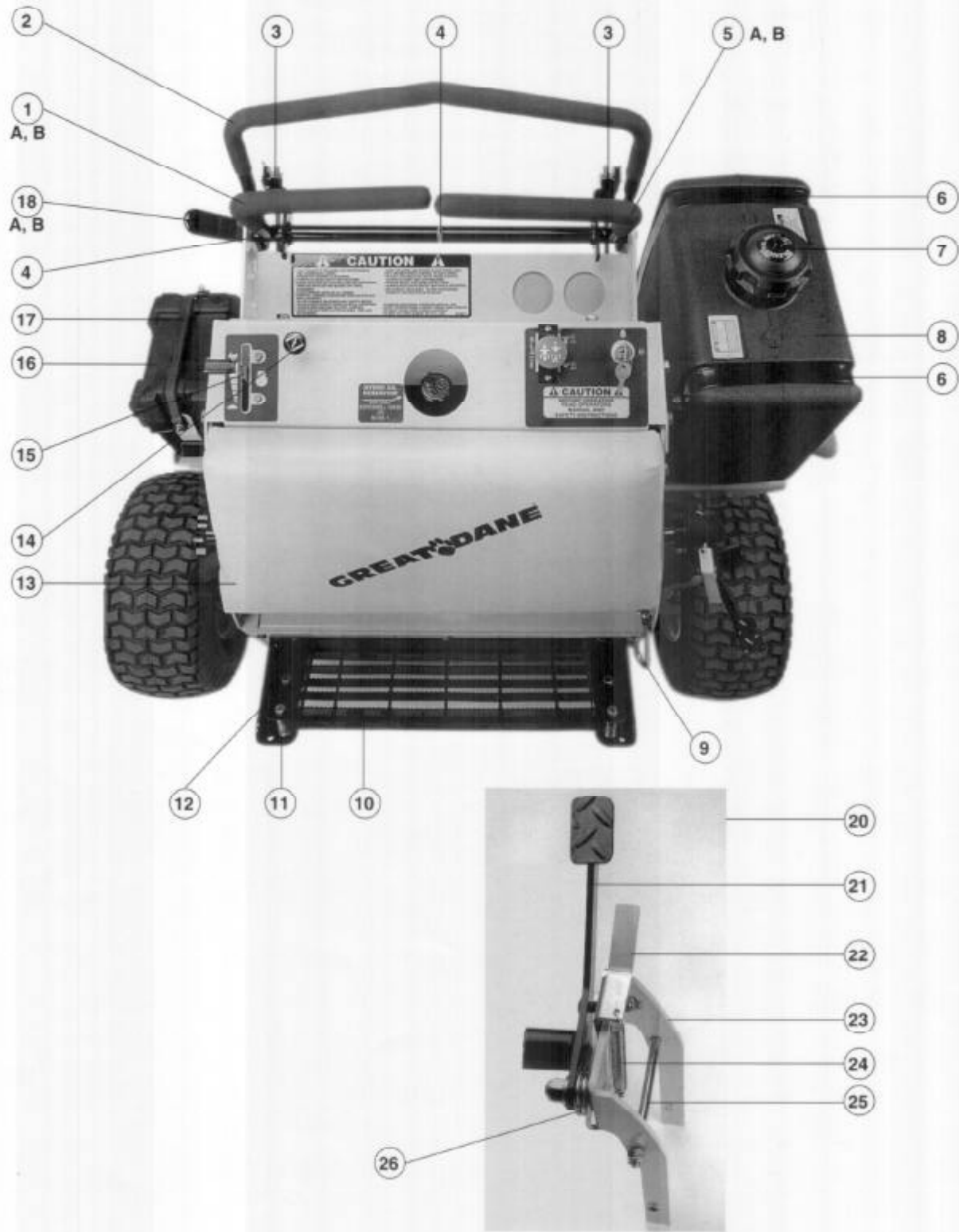


Figure 2

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

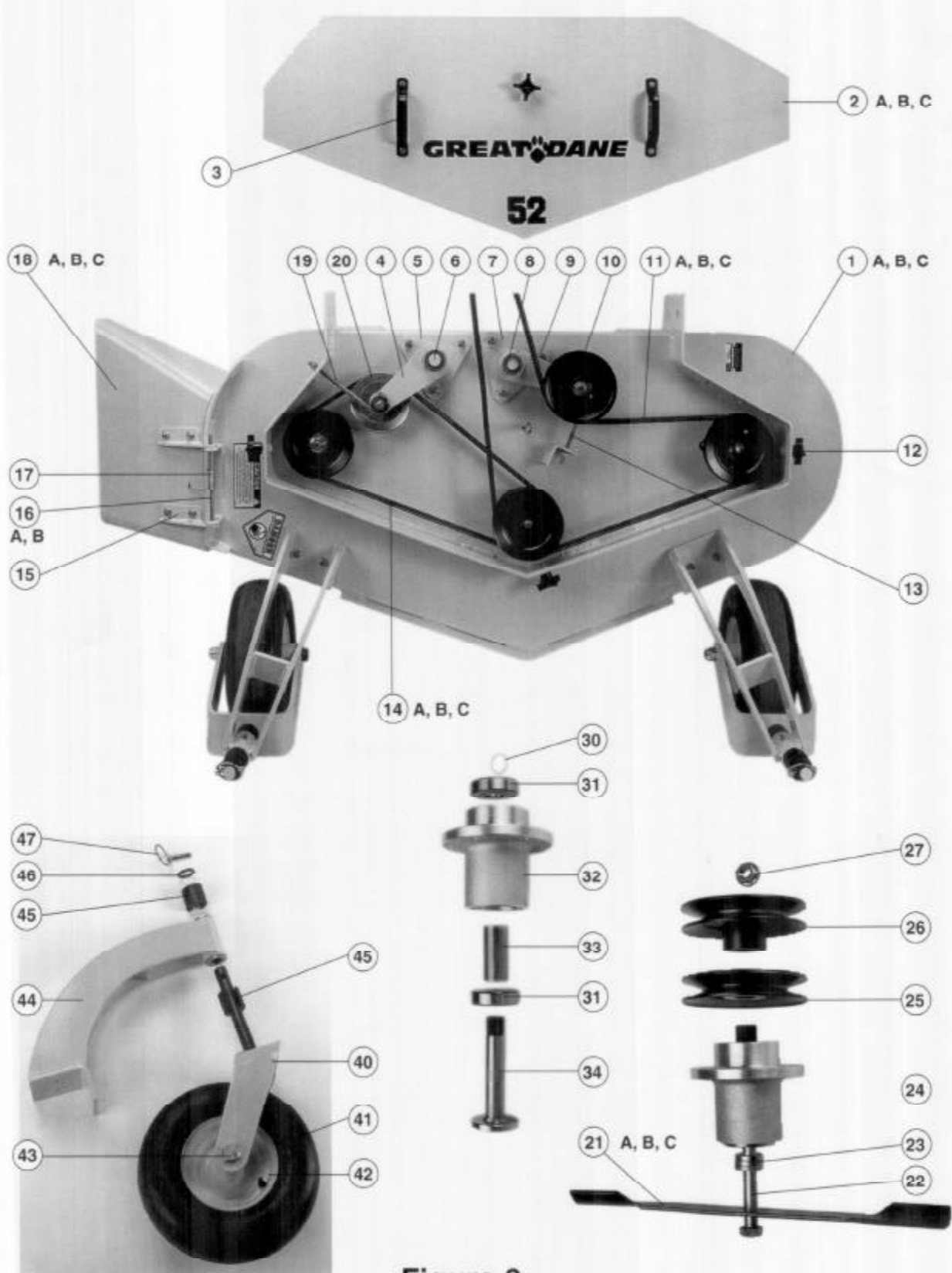
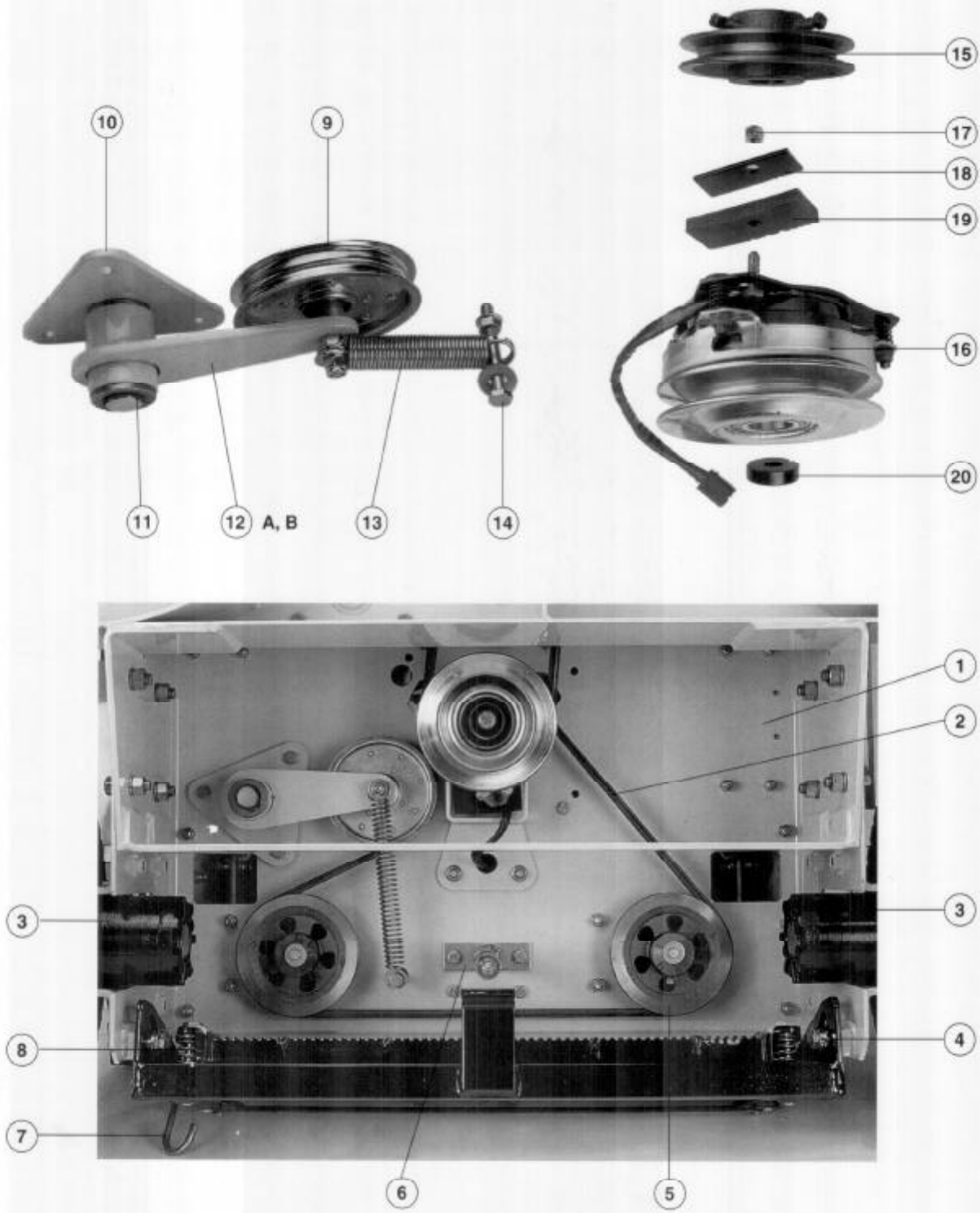


Figure 3

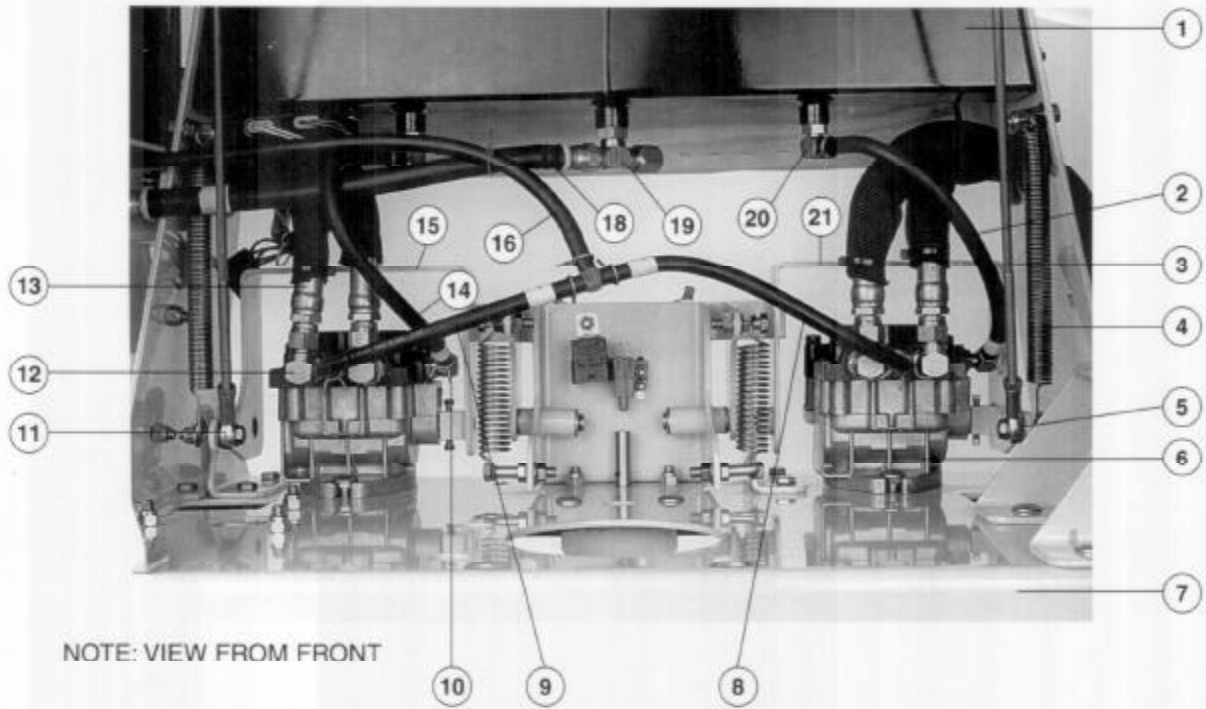
ITEM NO.	PART NO.	DESCRIPTION	ITEM NO	PART NO.	DESCRIPTION
3 - 1A	D15045	Cutter Deck, Surfer 48"	3 - 30	D18034	Spindle - Wire Clip
3 - 1B	D15024	Cutter Deck, Surfer 52"	3 - 31	D18045	Spindle - Bearings 6305
3 - 1C	D15014	Cutter Deck, Surfer 61"	3 - 32	D11000	Spindle - House Casting
3 - 2A	D15046	Hood, 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





NOTE: VIEW FROM FRONT

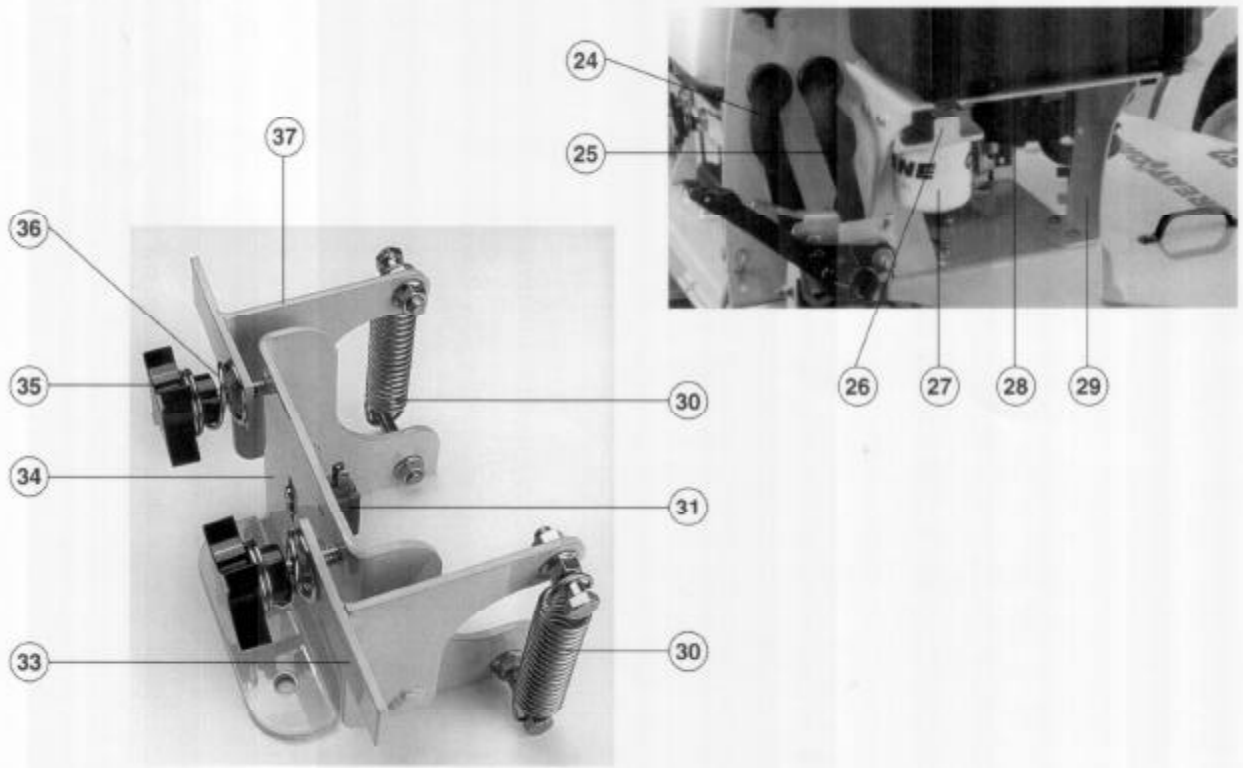
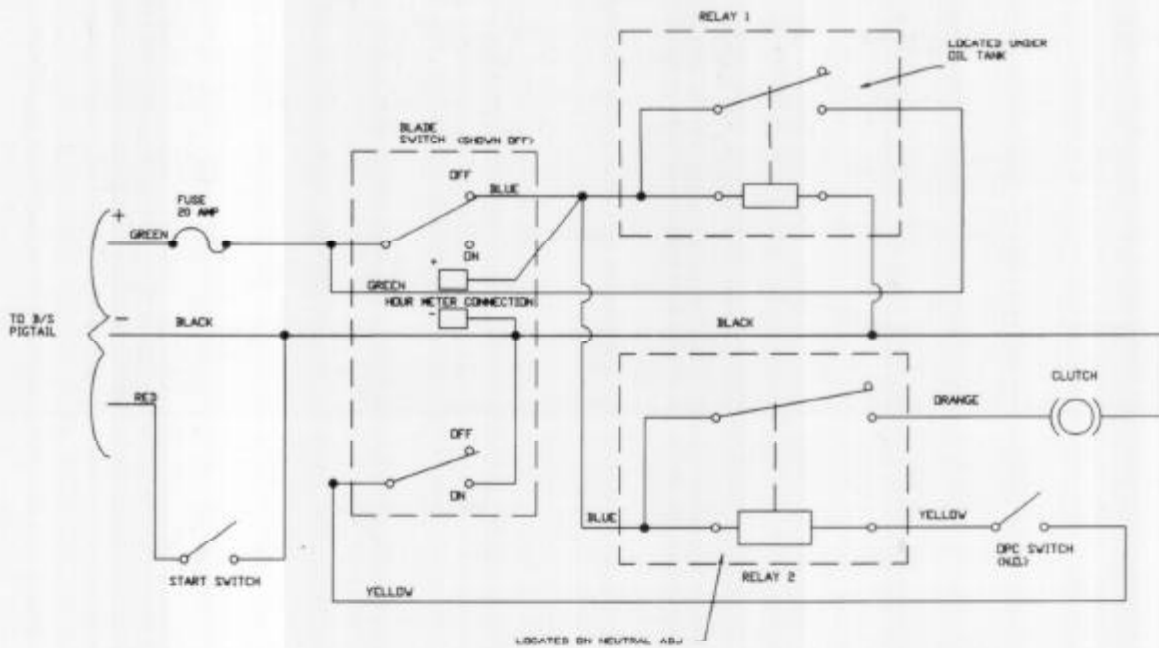


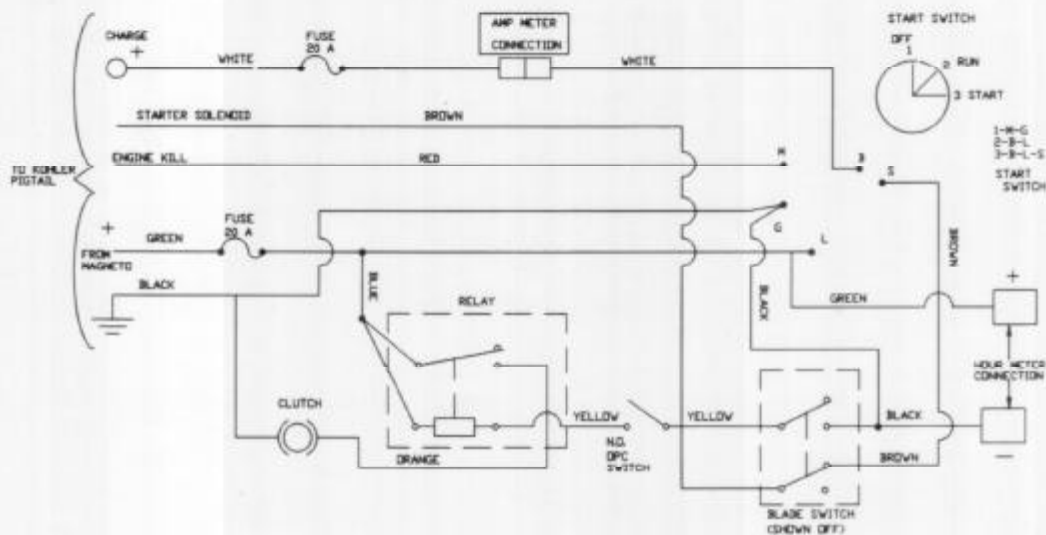
Figure 5

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 #
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