



## Service Course Manual

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### Greens King IV Model: 62289



**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.



# INDEX

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SECTION 1  
Specifications

Product Infomation.....

Engine.....

Cutting Units/Tractor.....

PRODUCT IDENTIFICATION

- 62287 ..... Greens King IV, 16 hp gasoline engine, manual steering. Without battery, seat, or mowers.
- 62288 ..... Greens King IV Plus, 18 hp gasoline engine, power steering. Without battery, seat, or mowers.
- 62289 ..... Greens King IV Plus, 19 hp diesel engine, power steering. Without battery, seat, or mowers.
- Serial Number ..... An identification plate, like the one shown, listing the serial number, is attached to the frame of the tractor near the battery.

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 MS <sup>2</sup>	
			Arms	Body
62287	100.8 dba	83.0 dba	2.5	1.2
62288	<105 dba	<90 dba	3.2	0.9
62289	<105 dba	<90 dba	3.2	0.9

ENGINE

Gasoline Engine

- Make ..... Briggs & Stratton
- Model ..... Vanguard V-Twin OHV
- Horsepower (GK IV) ..... 16 hp (12 kW) @ 3600 rpm
- Horsepower (GK IV Plus) ..... 18 hp (13.5 kW) @ 3600 rpm
- Displacement (GK IV) ..... 29.3 cu. In. (480 cc)
- Displacement (GK IV Plus) .. 34.8 cu. In. (570 cc)
- Torque ..... 26 ft. lbs. (35 Nm) @ 2600 rpm
- Fuel:
  - Type ..... Unleaded Gasoline
  - Rating ..... Min. 85 Octane
  - Capacity ..... 5 U.S. Gal. (18.9 liters)
- Governor ..... Flyweight Mechanical
- Lubrication:
  - Capacity ..... 3.5 pints (1.4 liters)
  - Type ..... SAE 30W
  - API Classification ..... SF, SG, SH
- Air Filter ..... Replaceable Dual Element.
- Alternator ..... 16 amp
- Cooling System ..... Air Cooled

Diesel Engine

- Make ..... Kubota
- Model ..... D662-EB
- Horsepower ..... 19 hp (13.8 kW) @ 3600 rpm
- 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 ..... 5 U.S. Gal. (18.9 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
- Cooling System ..... Liquid Cooled
  - Capacity ..... 3qt. (2.8 l) 50/50 water ethylene glycol mix

CUTTING UNITS:

- Reel ..... 3 Reels, 22 in. (559 mm) wide.
- Reel Diameter ..... 5 in. (127 mm)
- Blade Options ..... 5, 7, 9 or 11 blades
- Cutting Width ..... 62 in. (1574 mm)

Cutting Frequency:

- 5 Blade ..... 0.117 in./mph (1.85 mm/kph)
- 7 Blade ..... 0.084 in./mph (1.33 mm/kph)
- 9 Blade ..... 0.065 in./mph (1.03 mm/kph)
- 11 Blade ..... 0.053 in./mph (0.84 mm/kph)

## TRACTOR

Tires ..... 18 x 9.5 - 8 tubeless  
Pressure:..... 8-12 psi (55-83 kPa)  
Battery:  
    Type..... 12 Volt Lead/Acid  
    Group..... 22 GMF  
Parking Brake..... Mechanical front drum brakes  
                            Hand lever actuated  
Speed:  
    Mow ..... 0 - 3.7 mph (5.9 kph)

Transport ..... 0 - 6.6 mph (10.6 kph)  
Reverse..... 0 - 3.5 mph (5.6 kph)  
Hydraulic System:  
Capacity..... 5 U.S. gal. (19 liters) System  
Fluid Type ..... GreensCare 46 Biodegradable  
Filter..... Full Flow 20 micron  
Steering ..... Hydrostatic power steering  
Mower Lift..... Hydraulic Double Acting Cylinders

## WEIGHTS AND DIMENSIONS

Dimensions:	Inches	(mm)	Weights:	Lbs.	(kg)
Length - Grass Catchers On .....	99.5	(2526)	Working Weight Less Operator		
Height - Steering Wheel Up .....	51.5	(1308)	62287 .....	1150	(522)
Wheel Base.....	52.8	(1341)	62288 .....	1150	(522)
Width - Transport Position .....	68	(1727)	62289 .....	1340	(609)
Width - Mowing Position.....	70	(1778)			
Width - Wheel .....	50.5	(1283)			
Turning Radius .....	18	(457)			

## ACCESSORIES & SUPPORT LITERATURE

Contact your area Textron Turf Care And Specialty Products Dealer for a complete listing of accessories and attachments.



### CAUTION

Use of other than Textron Turf Care And Specialty Products authorized parts and accessories may cause personal injury or damage to the equipment and will void the warranty

Accessories	Reels
Air Blow Gun ..... JAC5098	5 Blade Reel L.H. (1 Required)..... 68586
Orange Touch-up Paint (12 oz. spray)..... 554598	5 Blade Reel R.H. (2 Required) ..... 68587
Arm Rest..... 66156	7 Blade Reel L.H. (1 Required)..... 68588
Grass Catcher..... 67891	7 Blade Reel R.H. (2 Required) ..... 68589
Brush, 62" ..... 68623	9 Blade Reel L.H. (1 Required)..... 68599
Fine Bristle Brush..... 68536	9 Blade Reel R.H. (2 Required) ..... 68600
Green Sentry II Oil System Monitor ..... 68606	11 Blade Reel L.H. (1 Required)..... 68621
Light Kit..... 2811910	11 Blade Reel R.H. (2 Required) ..... 68622
Mounting Kit	Rollers
Rear Roller Cleaner ..... 68595	Grooved Front Roller ..... 68527
Quick Roller (Set of 3)..... 68662	Solid Roller ..... 68530
Spiker (Set of 3) ..... 68663	High Cut Roller 3/4 in..... 68594
Traction Tire (Set of 2)..... 62616	Grooved Front Roller (Steel) ..... 68613
Turf Groomer 1/4" Spacing R.H. (2 Required)..... 67870	Grooved Front Roller (Aluminum) ..... 68614
Turf Groomer 1/4" Spacing L.H. (1 Required) ..... 67871	Grooved Rear Roller..... 68580
Turf Groomer 1/2" Spacing R.H. (2 Required)..... 67872	Support Literature
Turf Groomer 1/2" Spacing L.H. (1 Required) ..... 67873	Safety & Operation Manual..... 2811456
Vertical Mower L.H. (1 Required) ..... 68549	Parts & Maintenance Manual..... 2811457
Vertical Mower R.H. (2 Required) ..... 68550	Diesel Engine Parts Catalog..... 3004386
	Operator Training Video ..... 5001525
	Service & Repair Manual



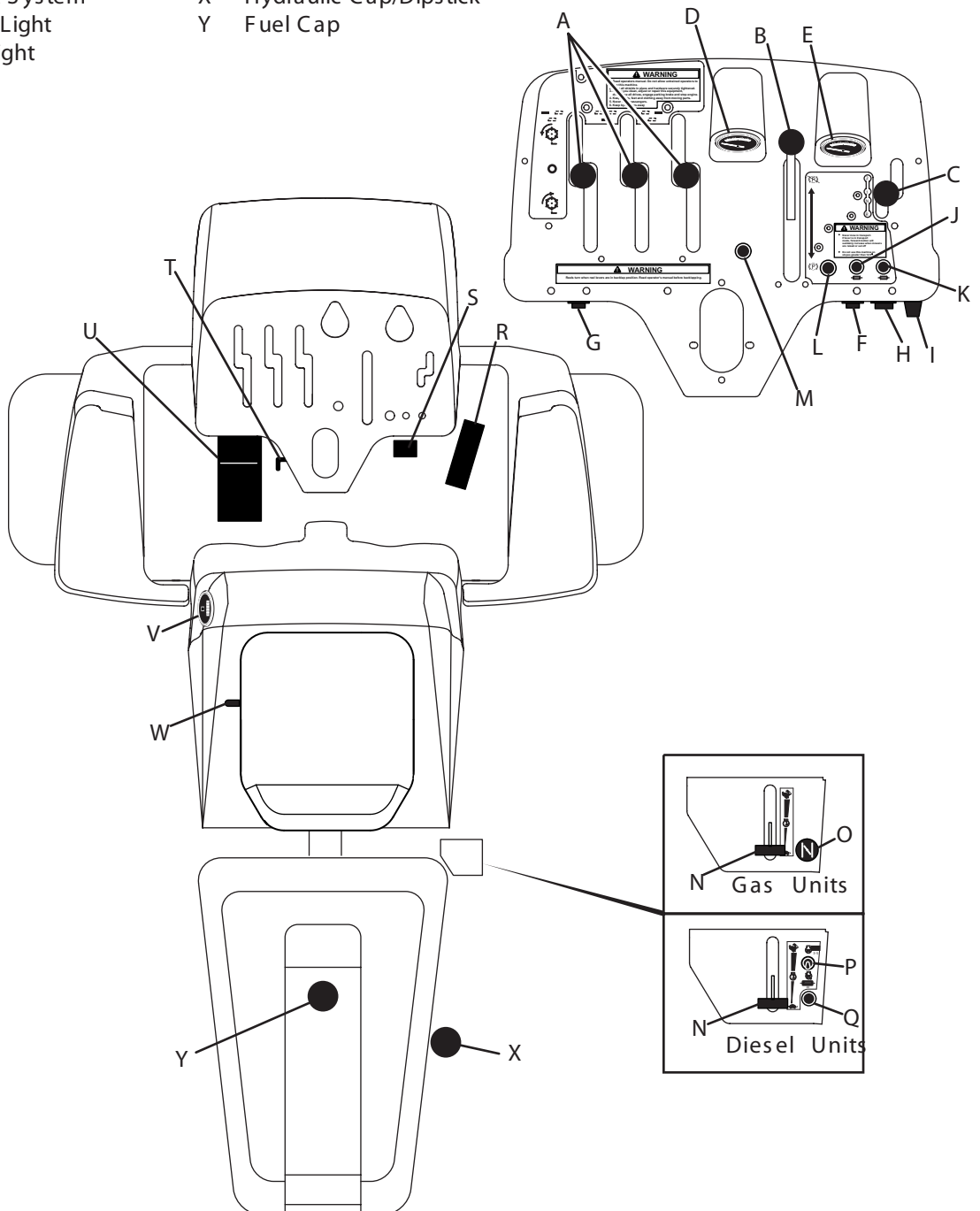


## SECTION 2

### Controls

Contols  
Control Description

- |   |                            |   |                           |
|---|----------------------------|---|---------------------------|
| A | Reel Control Lever         | N | Throttle                  |
| B | Parking Brake Lever        | O | Choke (Gasoline)          |
| C | Traction Lever             | P | Glow Plug Switch (Diesel) |
| D | Temperature Gauge (Diesel) | Q | Fuse, Glow Plug (Diesel)  |
| E | Volt Meter                 | R | Accelerator Pedal         |
| F | Ignition Switch            | S | Brake Pedal               |
| G | Mechanics (Backlap) Switch | T | Tilt Control (GK IV Plus) |
| H | Light Switch (Optional)    | U | Mow/Lift Pedal            |
| I | Fuse, Lights (Optional)    | V | Hour Meter                |
| J | Fuse, Charging Circuit     | W | Seat Control Lever        |
| K | Fuse, Interlock System     | X | Hydraulic Cap/Dipstick    |
| L | Parking Brake Light        | Y | Fuel Cap                  |
| M | Oil Pressure Light         |   |                           |



## CONTROL DESCRIPTIONS

- A. Reel Control Lever - Used to operate the cutting units. Push lever(s) forward for forward rotation. Pull lever(s) back for Reverse rotation. All three levers must be in OFF position to start engine
- B. Parking Brake Lever - Pull back to engage and push forward to disengage parking brake. Always disengage parking brake slowly. Parking brake must be engaged to start engine.
- C. Traction Lever - Four Positions: TRANSPORT (2), MOW (1), NEUTRAL (N) and REVERSE (R). Traction lever must be in NEUTRAL position to start engine
- D. Temperature Gauge (Diesel Units) - Indicates engine coolant temperature. Normal operating temperatures should be 185° - 195° F (85° - 91° C).
- E. Volt Meter - Used to monitor battery condition. During normal operation, volt meter needle should never be in the red area.
- F. Ignition Switch - Used to start the engine. To prevent unauthorized operation, remove the ignition key when tractor is not in use
- G. Mechanic's (Backlap) Switch - Used to hone the reels and bedknife.
- H. Light Switch (Optional) - Used to control operation of optional light kit.
- I. Fuse, Lights - 20 Amp fuse, protecting light circuit.
- J. Fuse, Charging Circuit (Gas Units) - 20 Amp fuse, protecting charging circuit.
- J. Fuse, Charging Circuit (Diesel Units) - 30 Amp fuse, Protecting charging circuit.
- K. Fuse, Interlock System - 6 Amp fuse, protecting Interlock System.
- L. Parking Brake Light - Light is always on when parking brake is engaged. Do not move traction lever out of neutral, or press accelerator pedal when light is on.
- M. Engine Oil Pressure Light - Indicator will light if engine oil pressure drops below a safe level. Stop engine immediately, determine the cause and correct problem before restarting engine.
- N. Throttle - Regulates Engine Speed. Push Lever forward to increase or pull lever back to decrease engine speed.
- O. Choke (Gas Units) - Pull the choke control knob upwards to close the choke plate when starting a cold engine. A warm engine may not require "Choking" to start.
- P. Glow Plug Switch (Diesel Units) - Used to energize the glow plugs. Push toggle switch forward and hold for 3 - 5 seconds, then release the switch. Do not depress the switch for more than 5 seconds.
- Q. Fuse, Glow Plug (Diesel Units) - 40 Amp fuse, protecting glow plug circuit.
- R. Accelerator Pedal - Used to control speed of the tractor. Do not depress pedal if parking brake light (L) is on.  
  
Remove foot from pedal, the accelerator pedal will return to neutral, and the machine will stop. The self braking action is in forward direction only.
- S. Brake Pedal - Used to stop tractor when traveling in REVERSE. Remove foot from accelerator and depress brake pedal
- T. Tilt Control (Greens King IV Plus Units) - Turn to unlock tilt control lever and adjust steering wheel to desired angle then lock steering column in position.
- U. Mow/Lift Pedal - Used to lift or lower the cutting units. Depress and hold front of pedal to lower cutting units, or depress and hold rear of pedal to raise cutting units  
  
Note: When operating the mow/lift pedal, keep the pedal depressed until the cutting units have been fully lowered or raised, then release the pedal
- V. Hour Meter - Used to time maintenance intervals or mowing operations. The meter operates only when ignition key is in RUN position
- W. Seat Control Lever - Used to adjust position of seat. Pull lever forward and adjust seat to comfortable position. Then release lever
- X. Hydraulic Cap/Dipstick - Used to check level of hydraulic fluid in tank. Level should always be at full mark on dipstick
- Y. Fuel Cap - Remove cap to add fuel, or check fuel level in tank. Always replace cap tightly.



## **SECTION 3**

### **Engine**

**Engine specifications**

**Engine oil**

**Air filter**

## **Engine Specifications**

Model: **D662 EB**

Type: **Vertical water cooled, 4 cycle diesel engine**

Number of cylinders: **3**

Bore & Stroke : **64 X 68mm (2.52 X 2.68inches)**

Total Displacement: **0.656 Litre (40.03 cu.in)**

Combustion Chamber: **Spherical type (New TVCS)**

Order of firing: **1 - 2 - 3**

Direction of rotation: **Counter-clockwise (viewed from flywheel side)**

Injection pump: **Bosch MD type mini pump**

Injection pressure: **1991 psi**

Injection timing (before T.D.C): **21 Deg**

Compression ratio: **23 - 1**

Fuel: **Diesel fuel No 2 D**

Lubrication (API classification): **above CC grade**

Dimensions: **426 X 389 X 520**

Dry weight: **63.7 Kg (140.4 Lbs)**

Starting system: **cell starter (with glow plug)**

Starting motor: **12V, 0.8 Kw**

Charging generator: **12V, 150W**

Recommended battery capacity: **12V, 45 AH or equivalent.**

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.

Diesel Engine:

Perform initial oil change after first 50 hours of operation and every 75 hours thereafter. See Engine Manual.

Use only engine oils with API classification CD/CE.

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

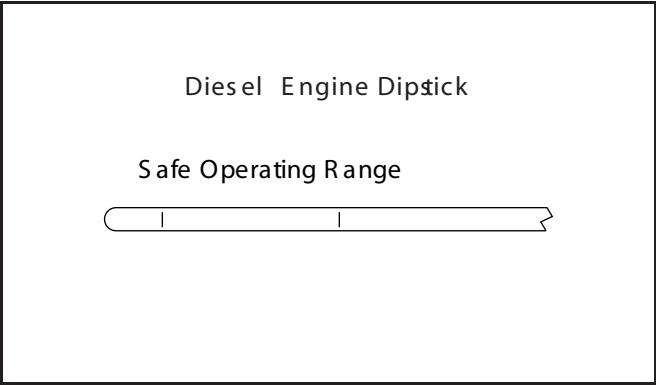


Figure 4A

DIESEL 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 leaning. 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 must be facing down.
5. Check all hoses and air ducts. Tighten hose clamps.

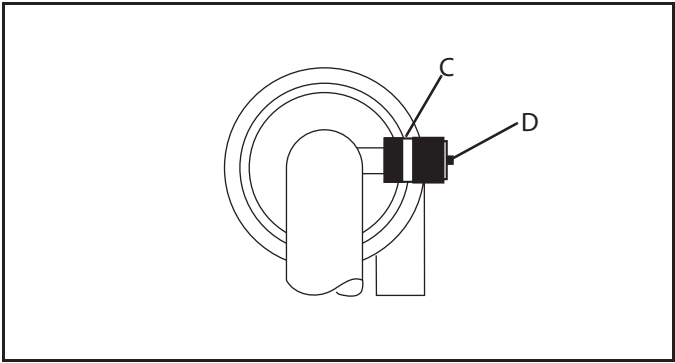


Figure 4D

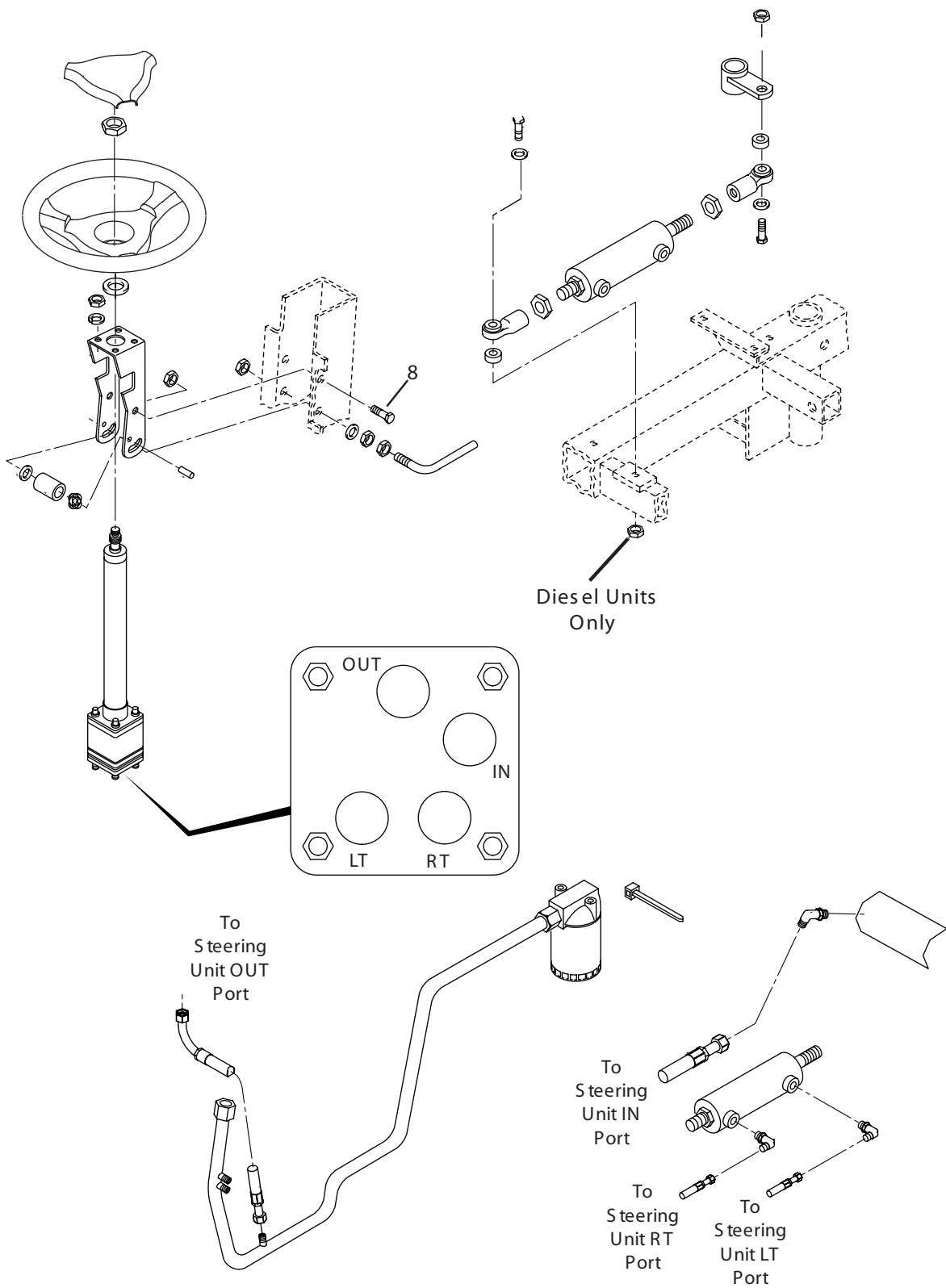


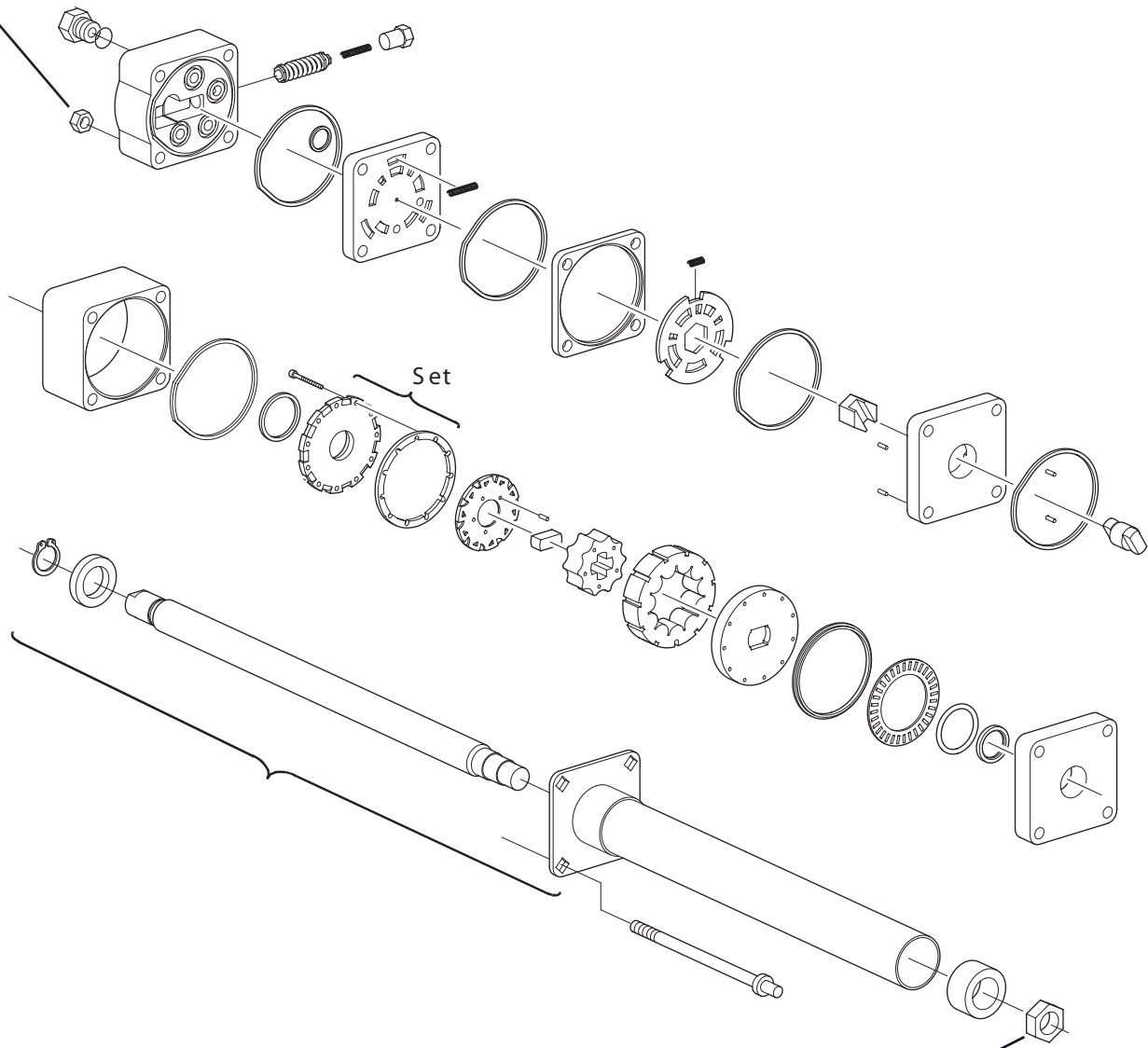


## **SECTION 4**

### **STEERING**

**Steering assembly**  
**Steering valve assembly**





Torque Steering Nut To 34-41Nm (25-30 Ft/Lbs)



## **SECTION 5**

# **WHEELS AND TYRES**

**Tyre pressures**

**Wheel and axle assembly**

## TYRES

1. Keep tyres properly inflated to prolong tyre life. Check inflation pressure while the tyres are cool. Inspect tread wear.
9. Check the pressure with an accurate, low pressure tyre gauge.
10. Keep tyres 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 tyre on a rim. Improper mounting can produce an explosion which may result in serious injury.

## WHEEL MOUNTING PROCEDURE



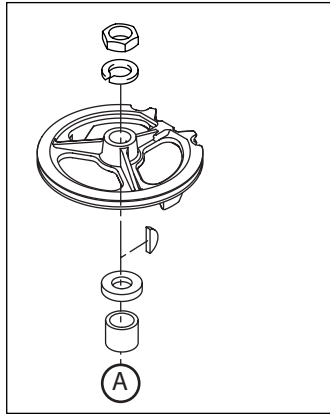
### WARNING

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

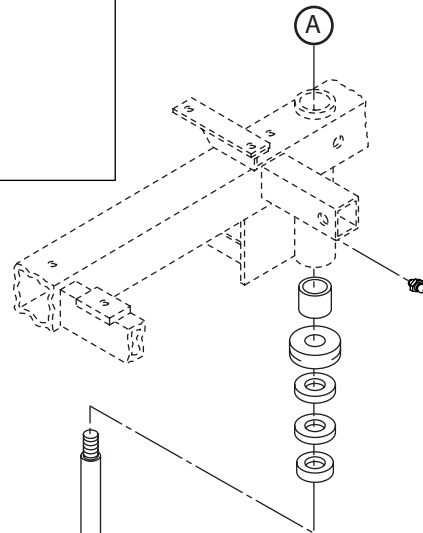
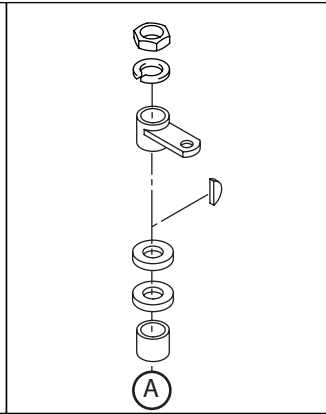
If only the front or rear of the tractor is raised, place chocks in front of and behind the wheels that are not raised.

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)

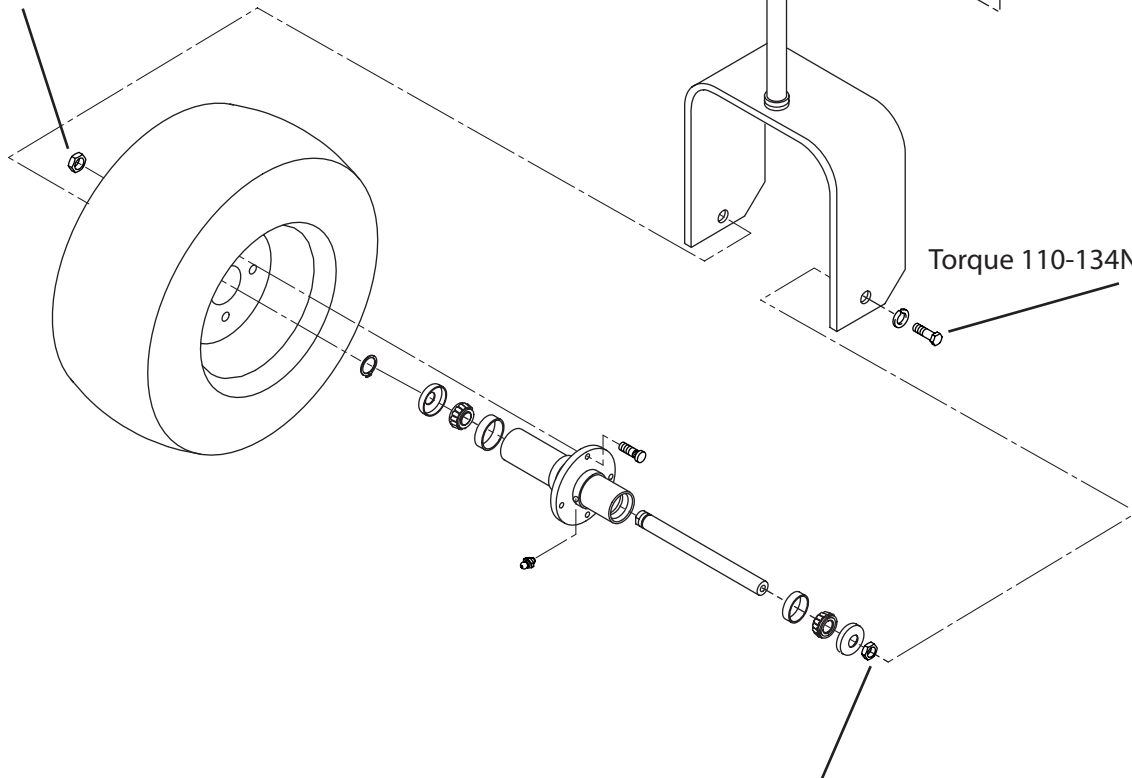
Greens King IV



Greens King IV Plus



Torque 88-115Nm (65-85 Ft Lbs)



Torque 110-134Nm (81-99 Ft Lbs)

Tighten axle nut then back off 1/2 to 1 turn.  
Wheel should rotate freely with very little side play.





## SECTION 6 HYDRAULICS

### Hydraulic Components

### Hydraulic Schematics

- 1 - Traction, transport speed
- 2 - Traction, mow speed
- 3 - Lowering, reels on
- 4 - Reels down and on
- 5 - Lifting cutting units
- 6 - Backlap

**Tools required:** Standard automotive hand tools, including torque wrench, seal drivers, circlip pliers and bearing driver.

### **Tachometer** (Photo/Mechanical)

Obtain from local supplier or,  
Graham and White Instruments  
135 Hatfield Road  
St. Albans  
Herts.  
AL1 4LZ  
United Kingdom  
Tel: 01727 841692

<u>Part number</u>	<u>Description</u>
A810957	<b>Hydraulic Flow meter</b> equipped with loading valve.
A808947	<b>Fittings kit</b> (7/8" JIC to assorted ORFS sizes)
A810938	<b>Pressure Gauge test kit.</b> 1 x 0-6000psi gauge, 1 x 0-600psi gauge, 2 x rubber covers for gauges and 1 x micro-bore connector hose.
A810954	<b>0-600psi pressure gauge</b>
A810955	<b>0-6000psi pressure gauge</b>
A810939	<b>Micro-bore connector hose</b> for pressure gauges
2695493	<b>Flushing Filter.</b> Flow capacity 230 ltrs/min, pressure capacity 6085psi (414 Bar), filtration 10 micron and condition indicator gauge.
2695483	<b>Replacement element</b> for flushing filter
A810953	<b>Belt tension tester</b>

**Cleaning Materials:** Stoddard or equivalent solvent  
Detergent and water  
Loctite "Locquic" Primer "T"

**Lubricants:** See section 11

**Other service items:** Seal and repair kits (available from Textron distributors)  
Liquid gasket  
Loctite 242 Blue

# Hydraulics Components

## Gear Pump Stack

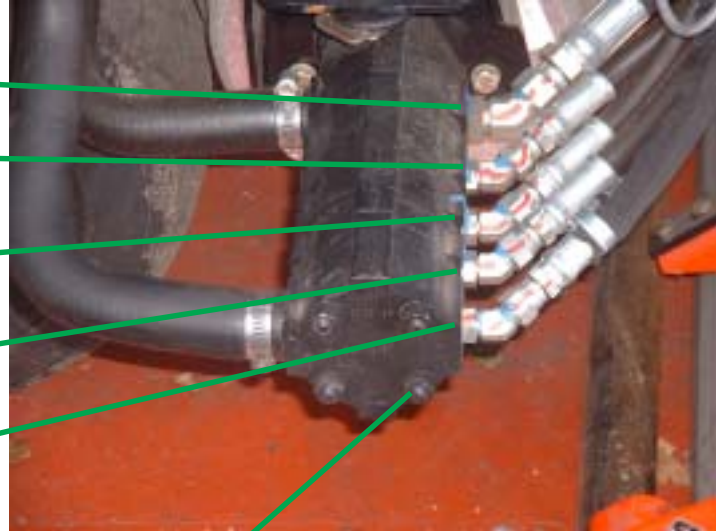
Traction Section -  
0.59 ci (9.7CC)

Lift/Lower Section &  
Right Hand Unit - 0.38 ci (6.23CC)

Centre Unit Drive -  
0.38ci (6.23CC)

Left Hand Unit Drive -  
0.38ci (6.23CC)

Steering - 0.38ci (6.23CC)



Torque nuts in sequence to 22-24Nm (16-18 Ft Lbs)

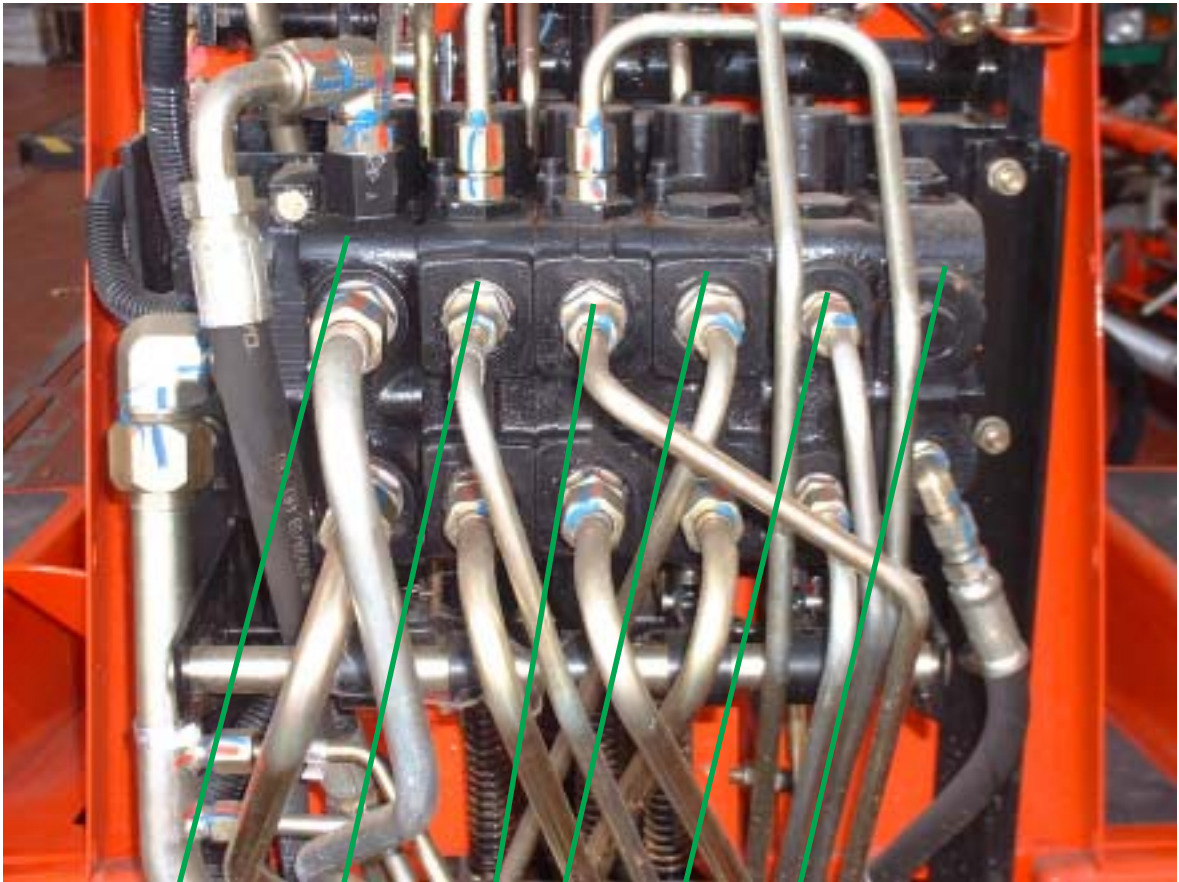
Lift/lower sequence valve - New type,  
as fitted from machines serial number  
62289 2990 and above.



Cylinder speed valves,  
used to reduce cylinder  
speed in backlap.



## Control Valve Block



Traction Control Spool

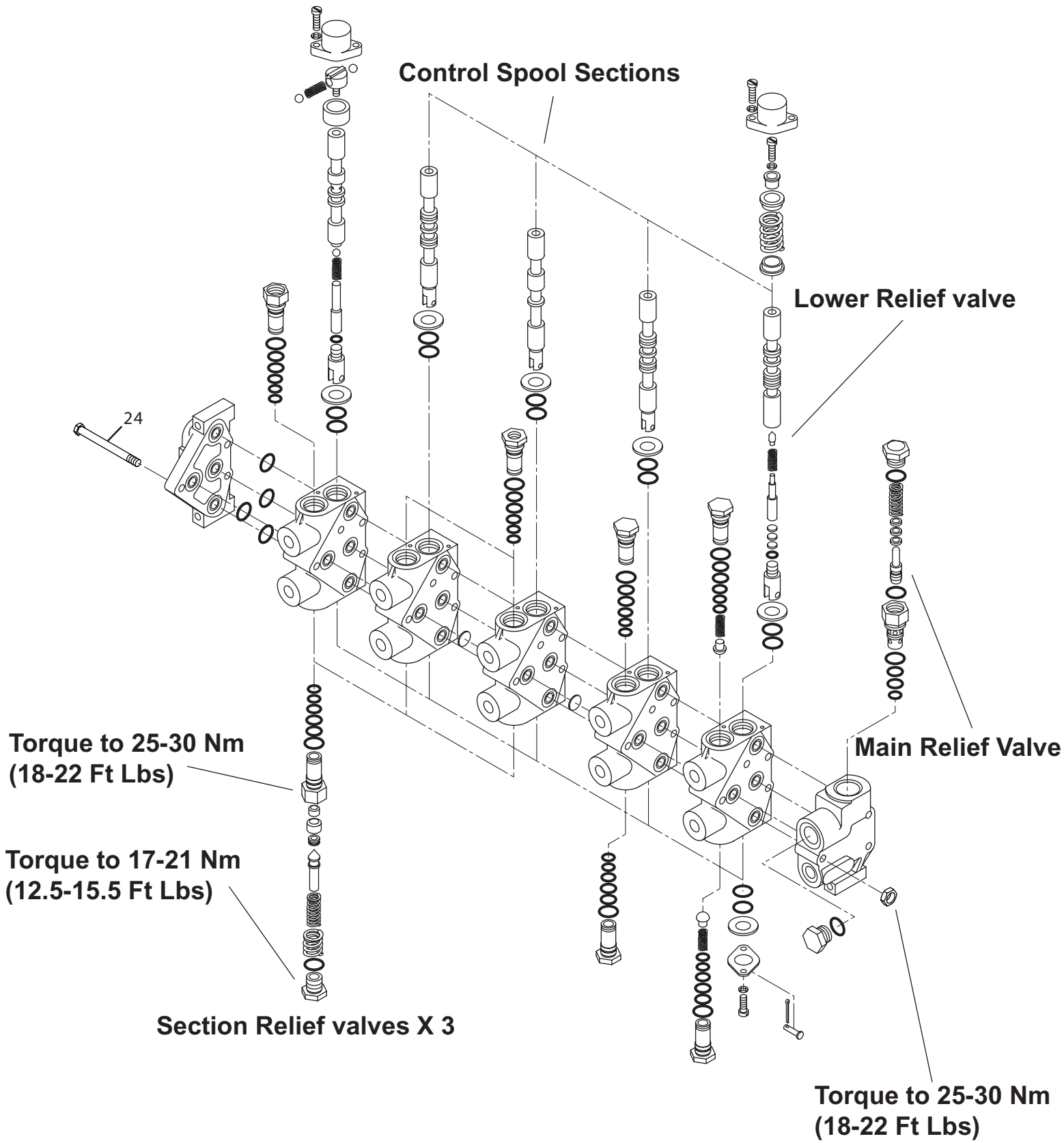
Left Hand Cutting Unit Control Spool

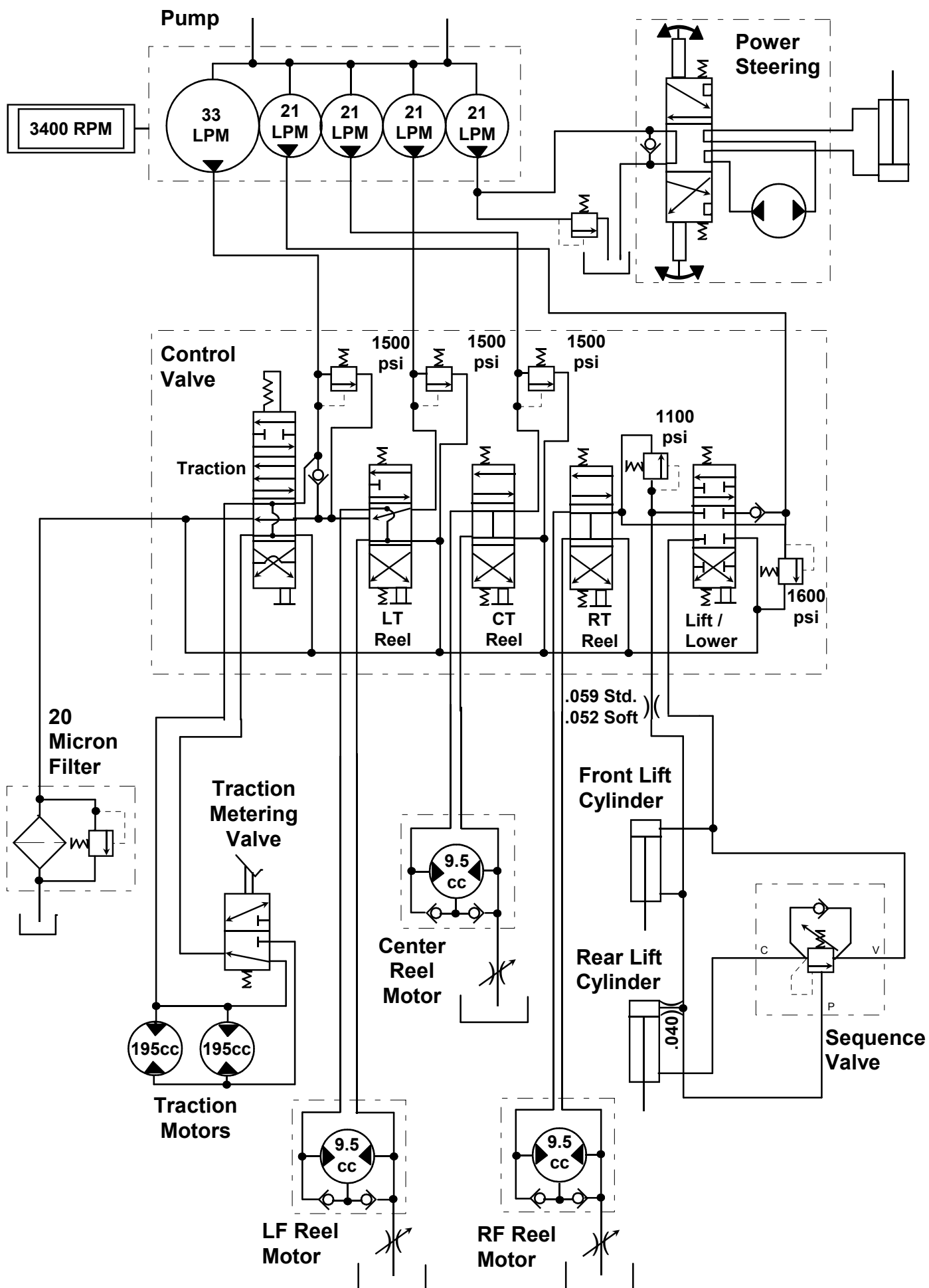
Centre Cutting Unit Control Spool

Right Hand Cutting Unit/Lift- lower Control Spool

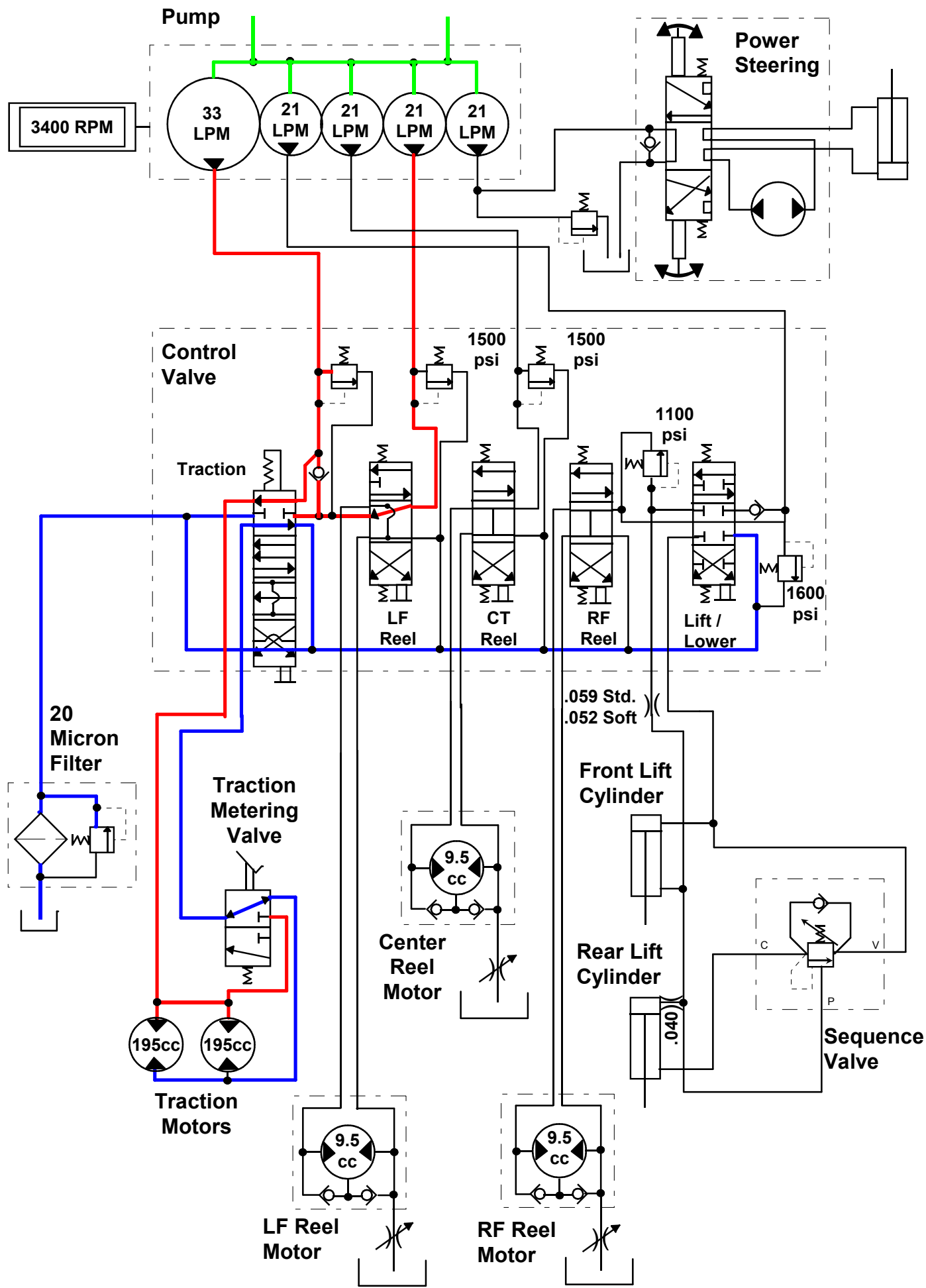
Main Relief Cartridge

**Control Valve Block**

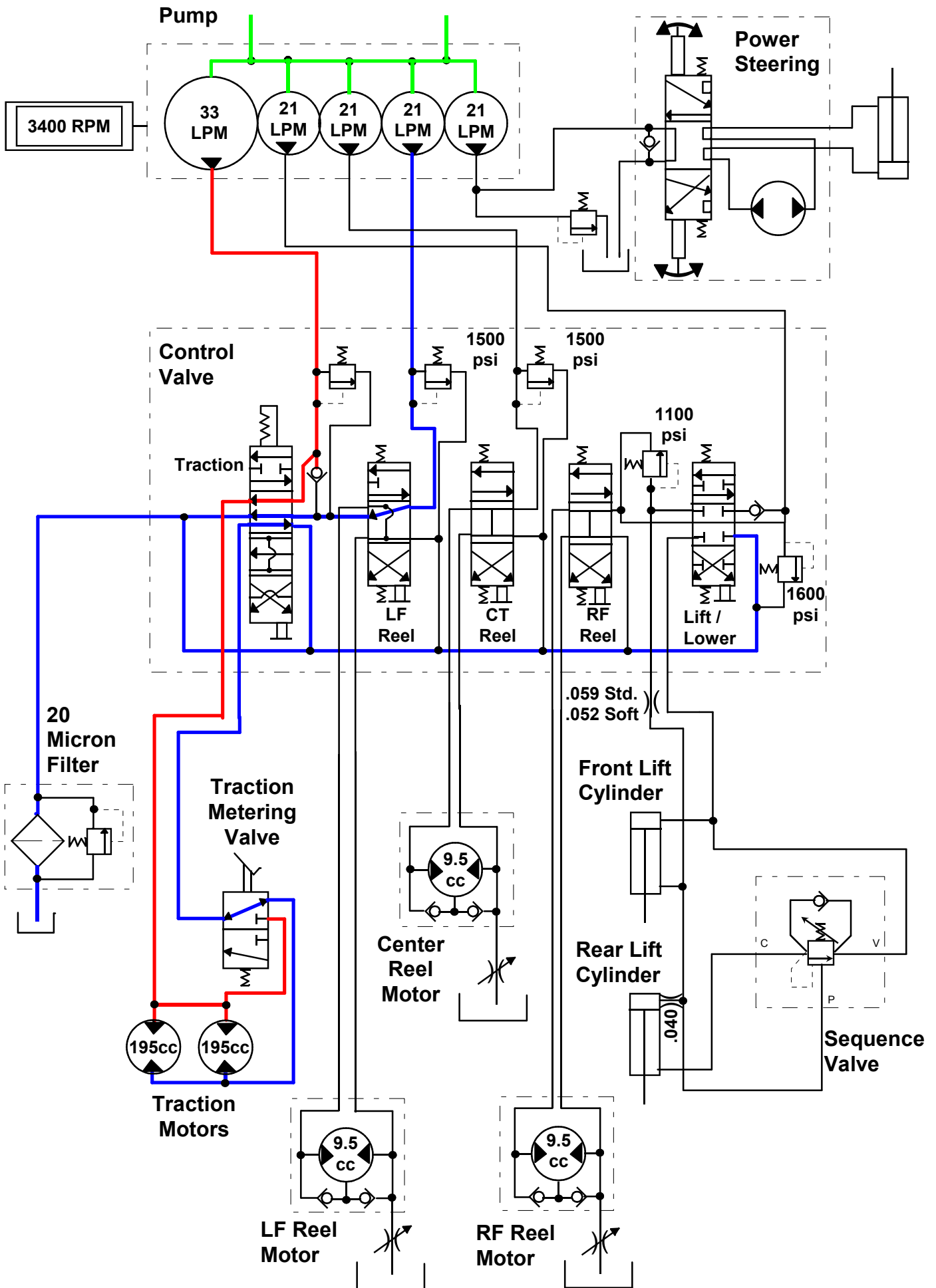




# TRACTION -- TRANSPORT SPEED

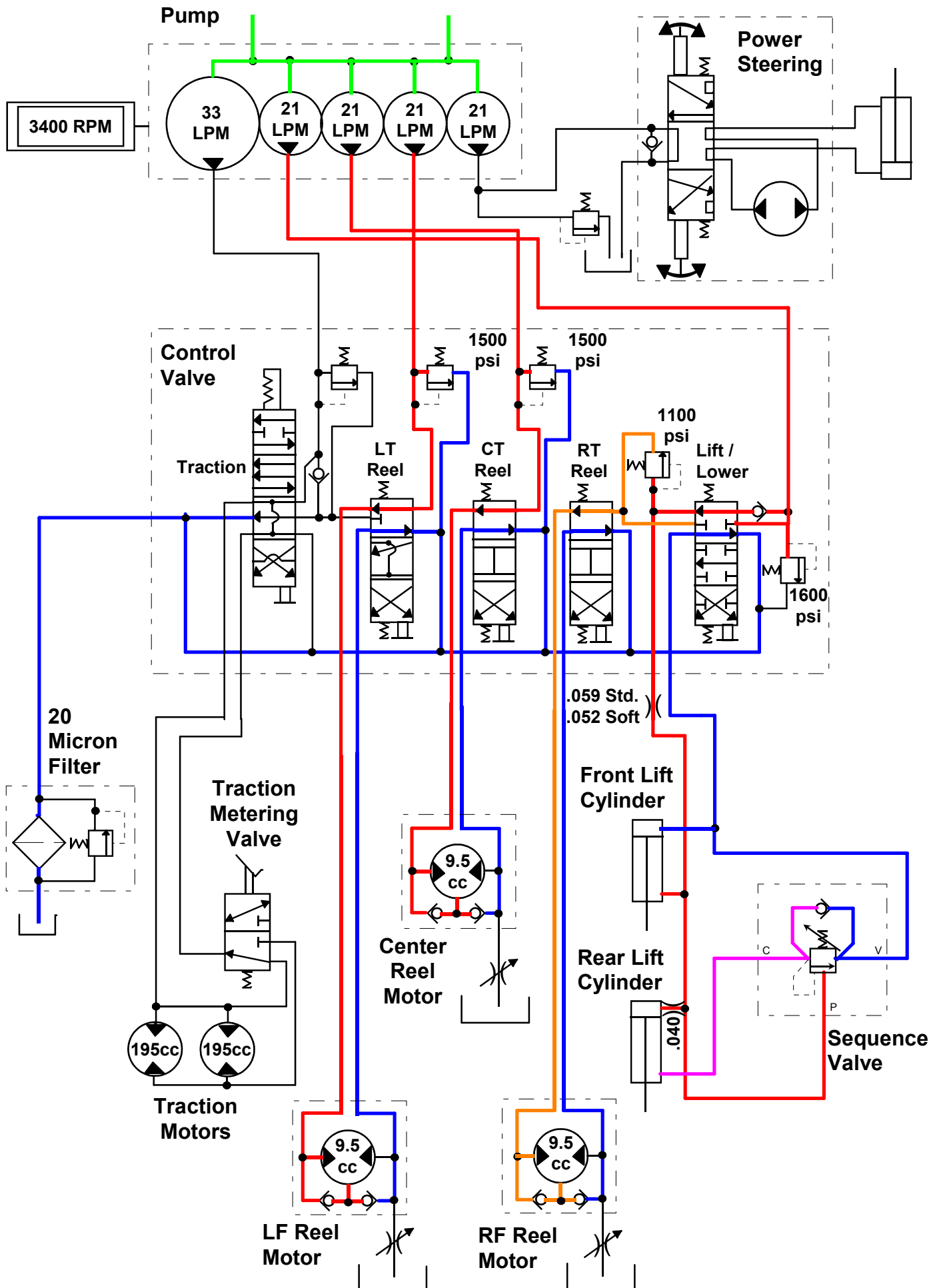


# TRACTION-- MOW SPEED



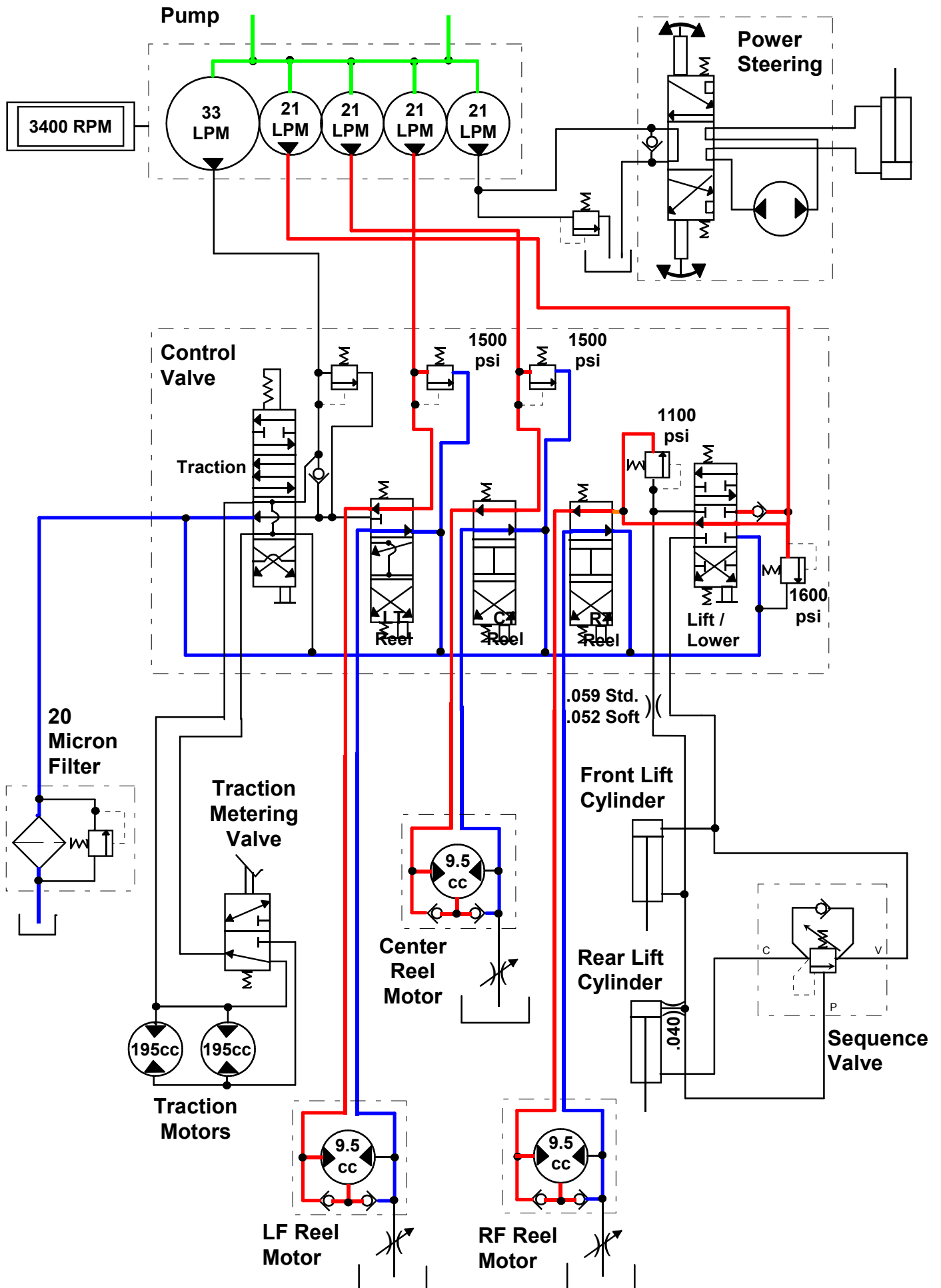


# LOWERING - REELS ON

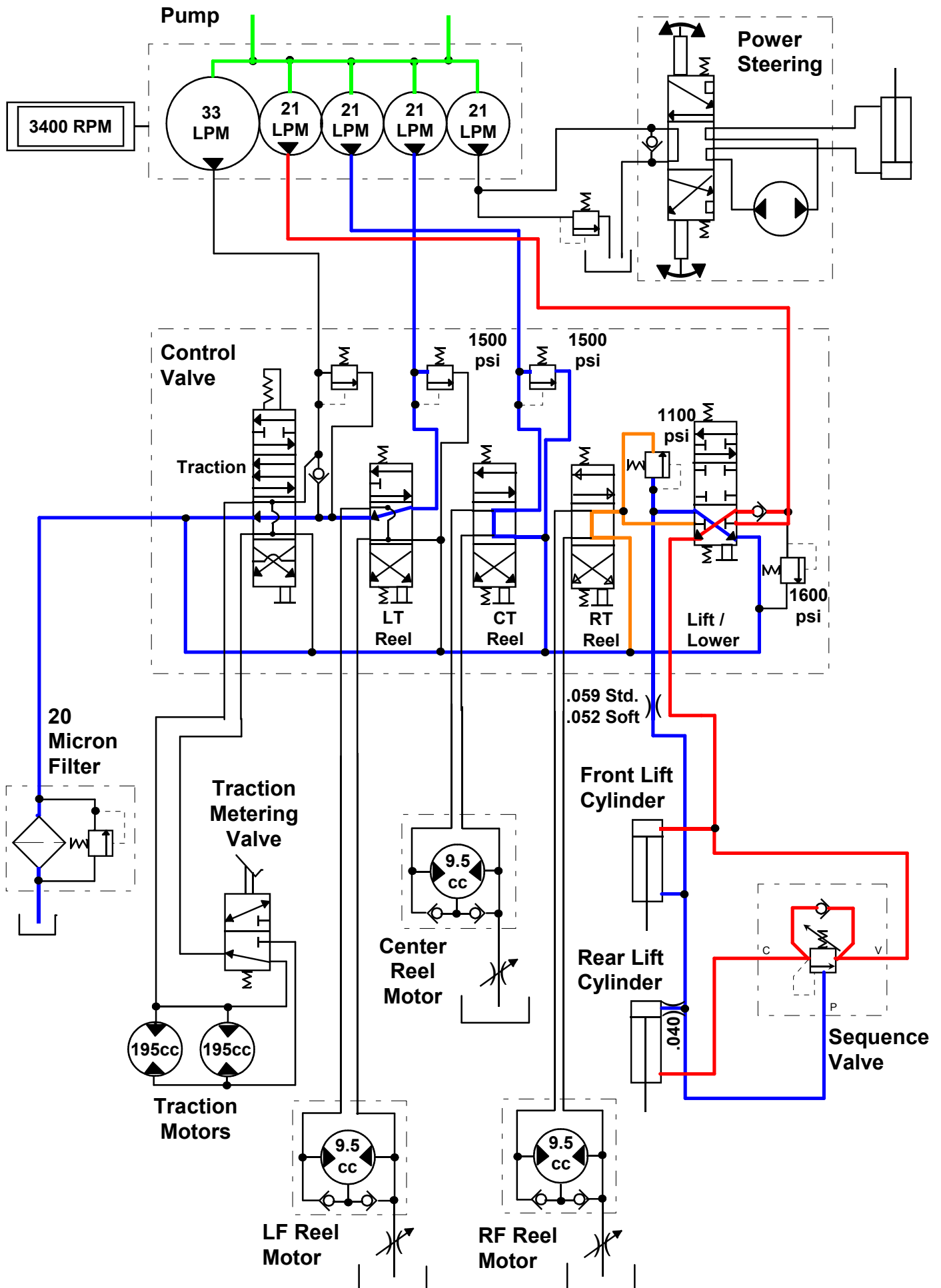




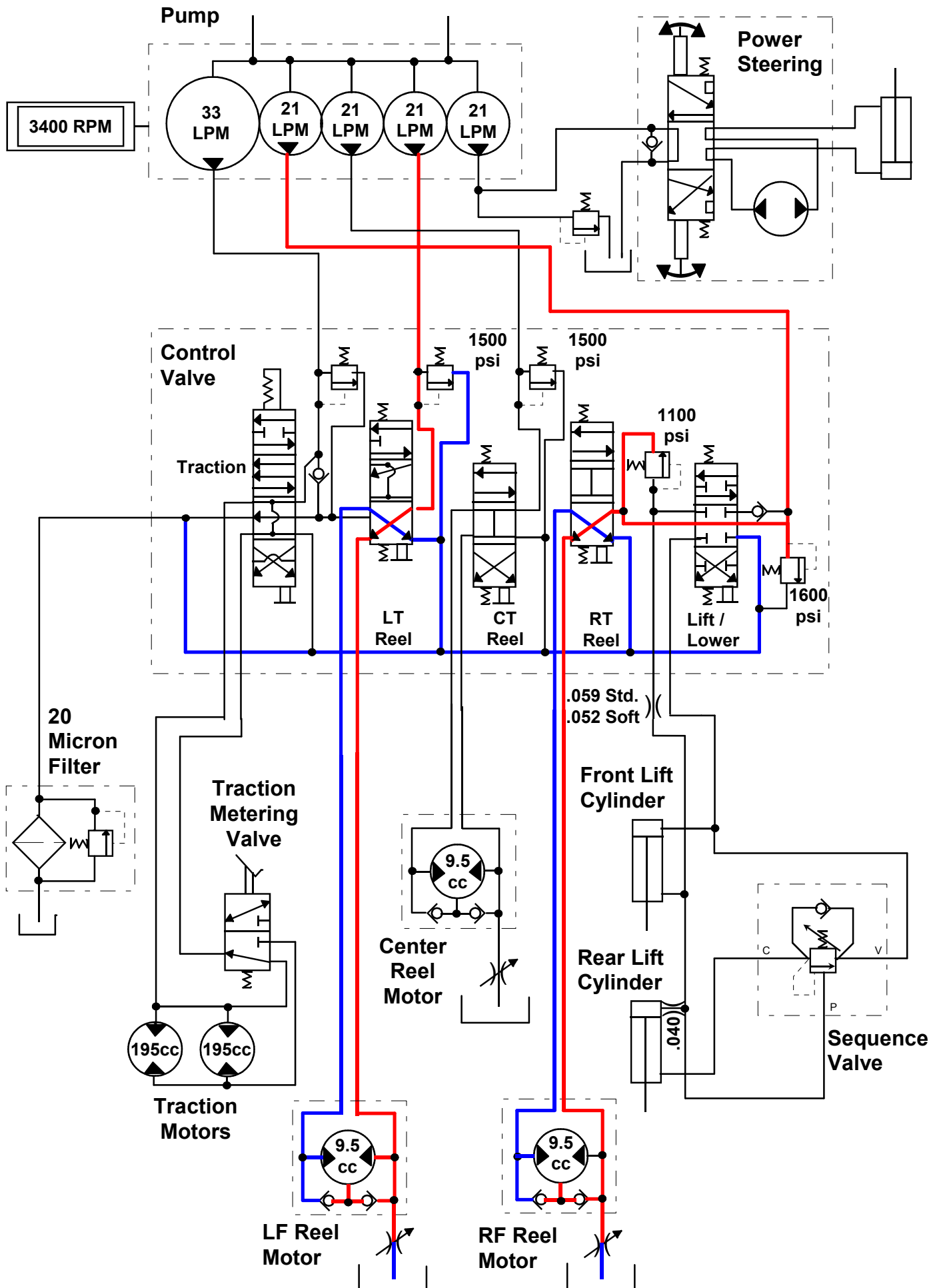
# REELS DOWN AND ON



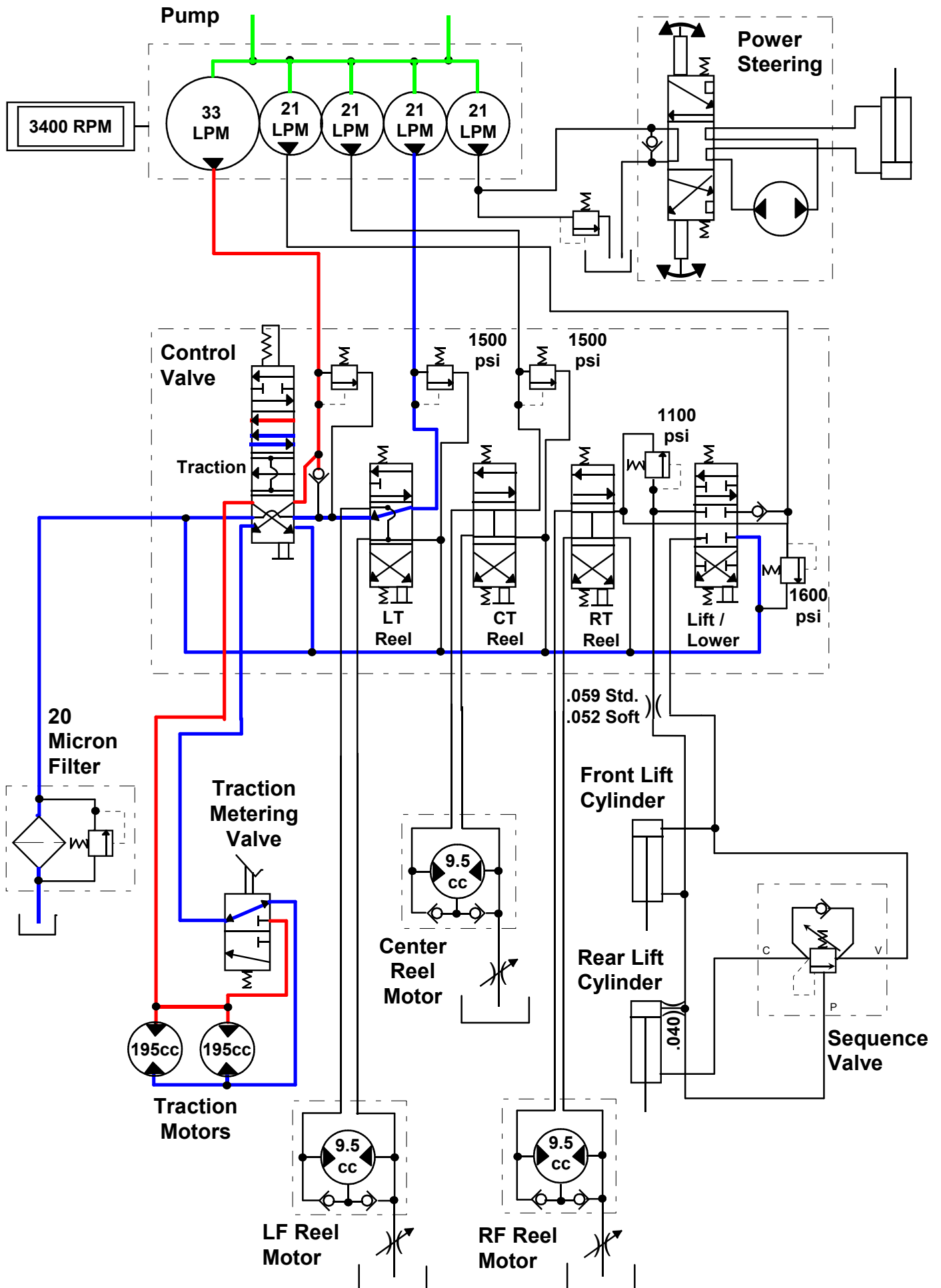
# LIFTING CUTTING UNITS



# BACKLAP



# TRACTION-- MOW SPEED



## **SECTION 7**

# **ELECTRICAL SYSTEM**

**Electric components**

**Electrical schematics**

**1 - Hot**

**2 - Start**

**3 - Run**

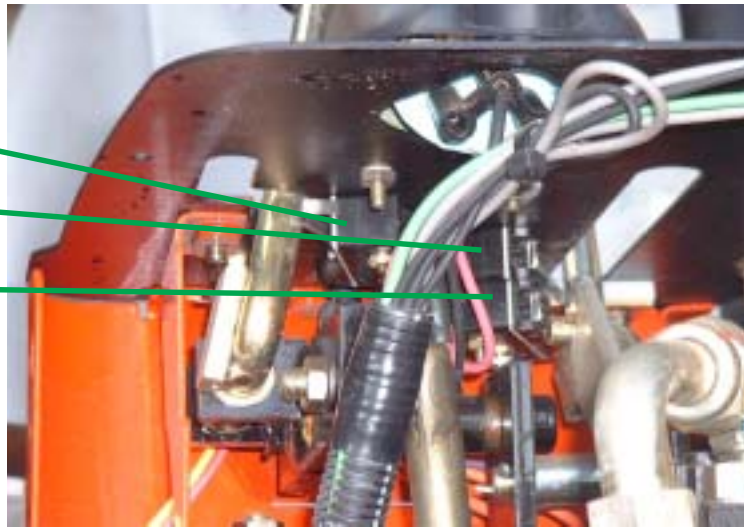
**4 - Backlap**

## Electrical Components

Neutral switch

Parking brake switch

Brake switch



Mow cut out switch

Backlap Switch

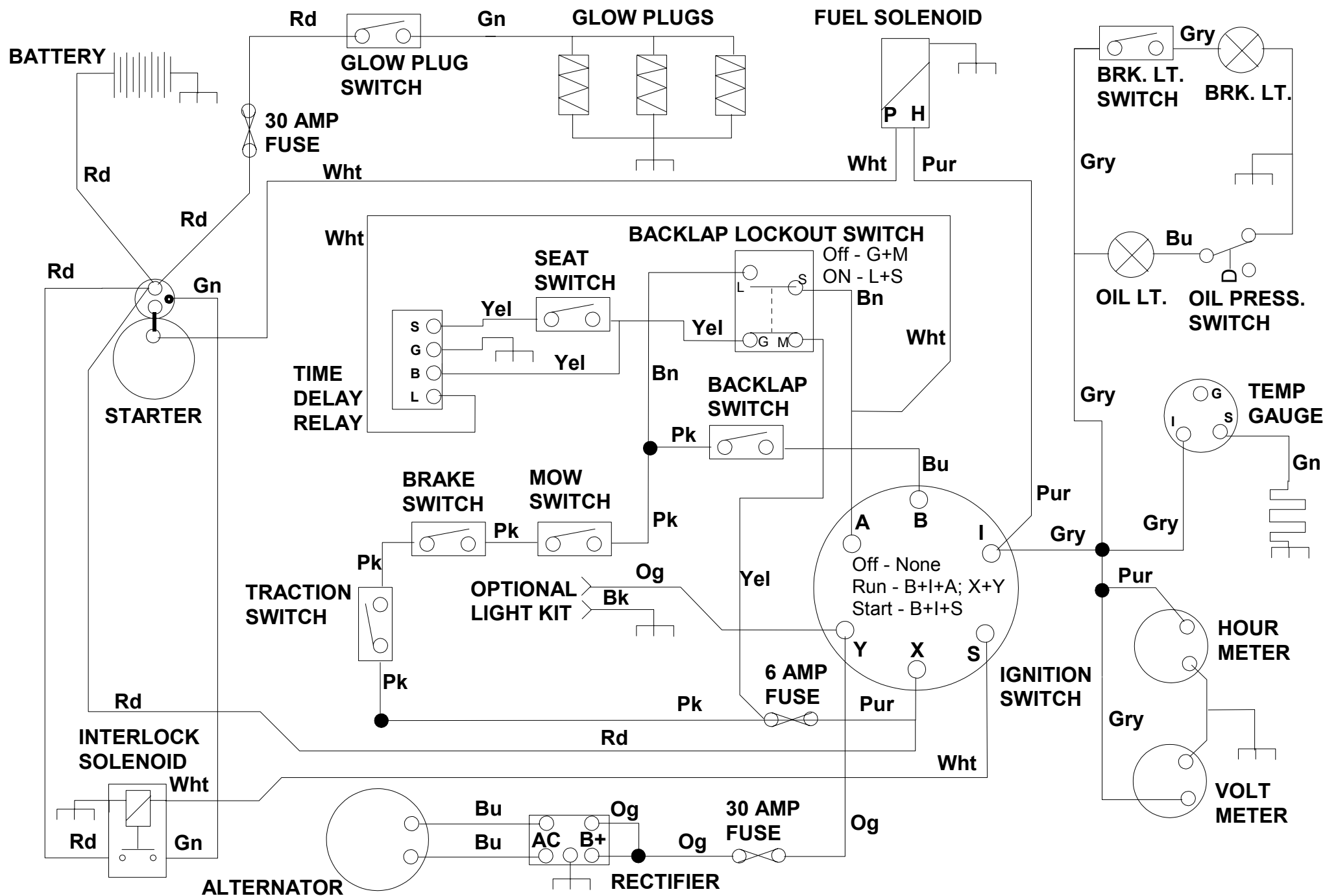


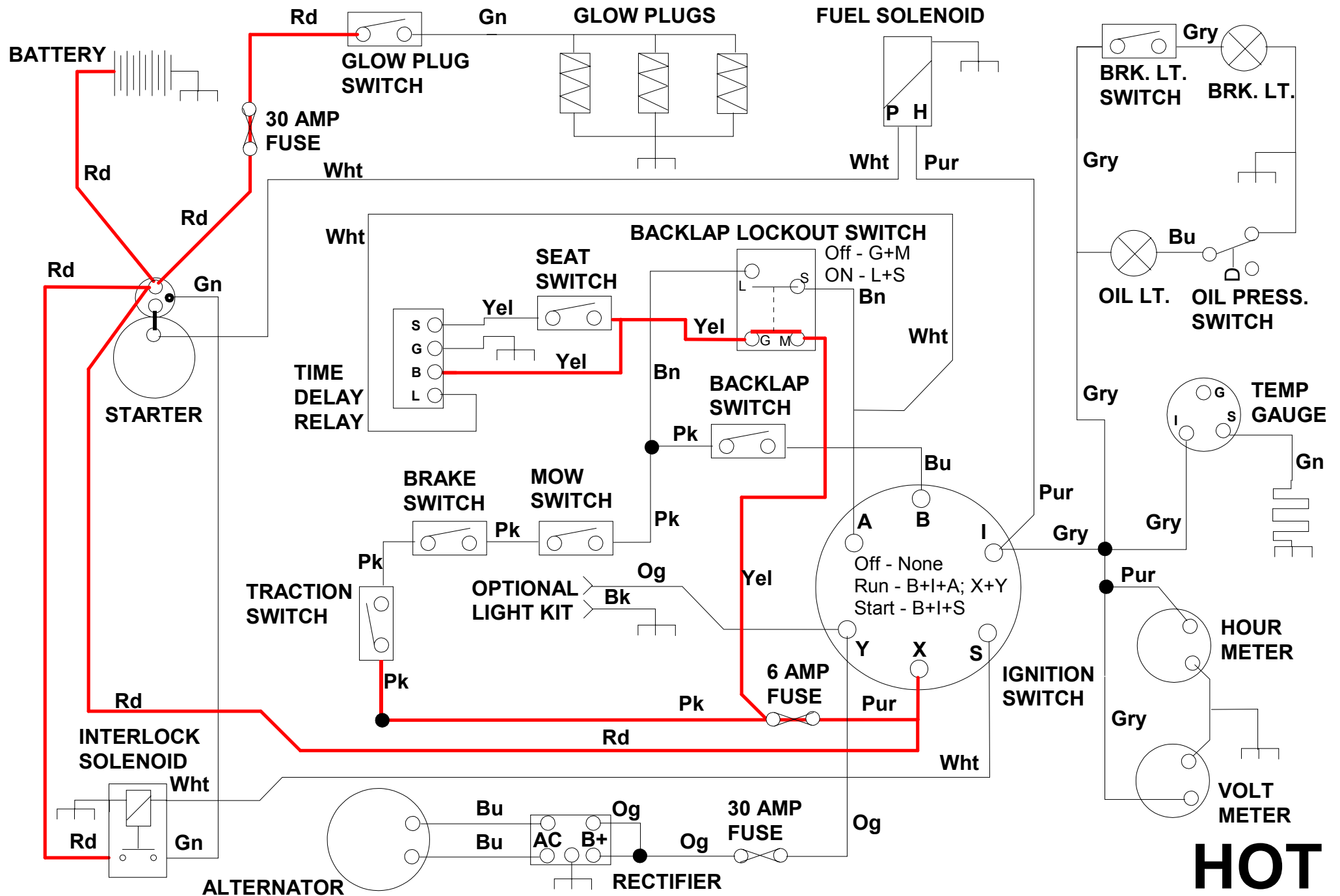
Rectifier



Seat time delay relay

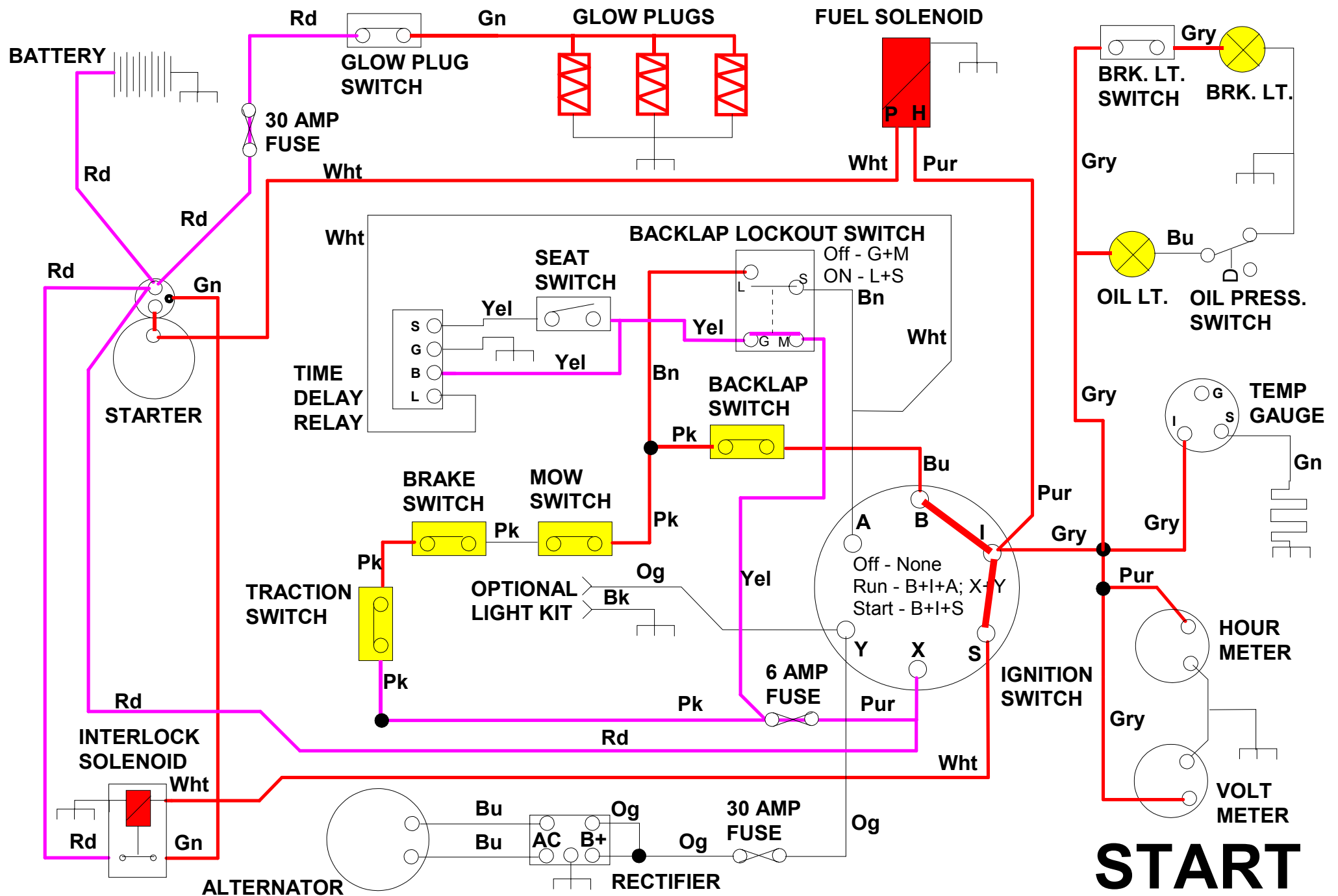




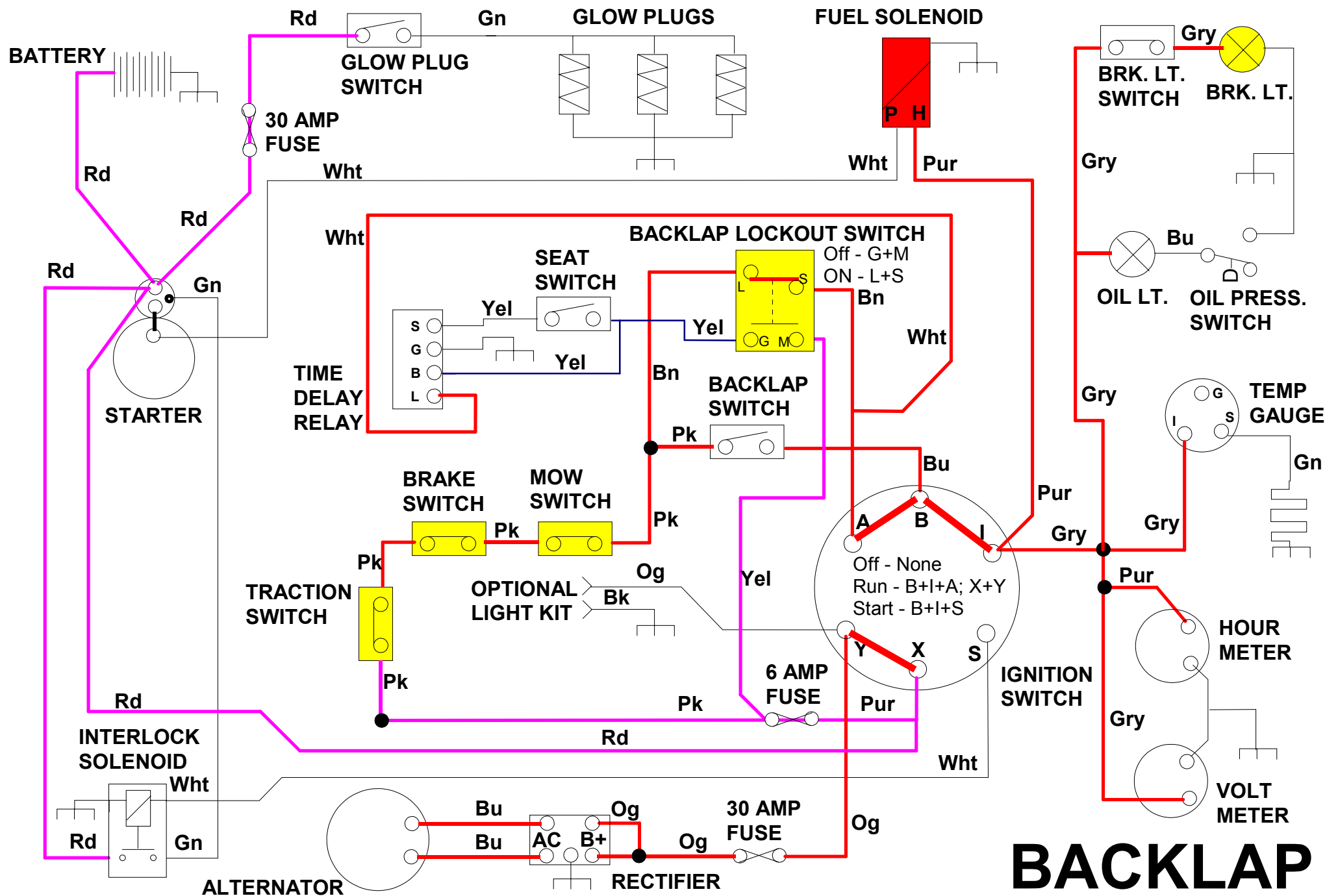


**HOT**









**BACKLAP**



## **SECTION 8**

# **PREVENTATIVE MAINTENANCE**

**Lubrication chart**  
**Maintenance chart**

## GENERAL

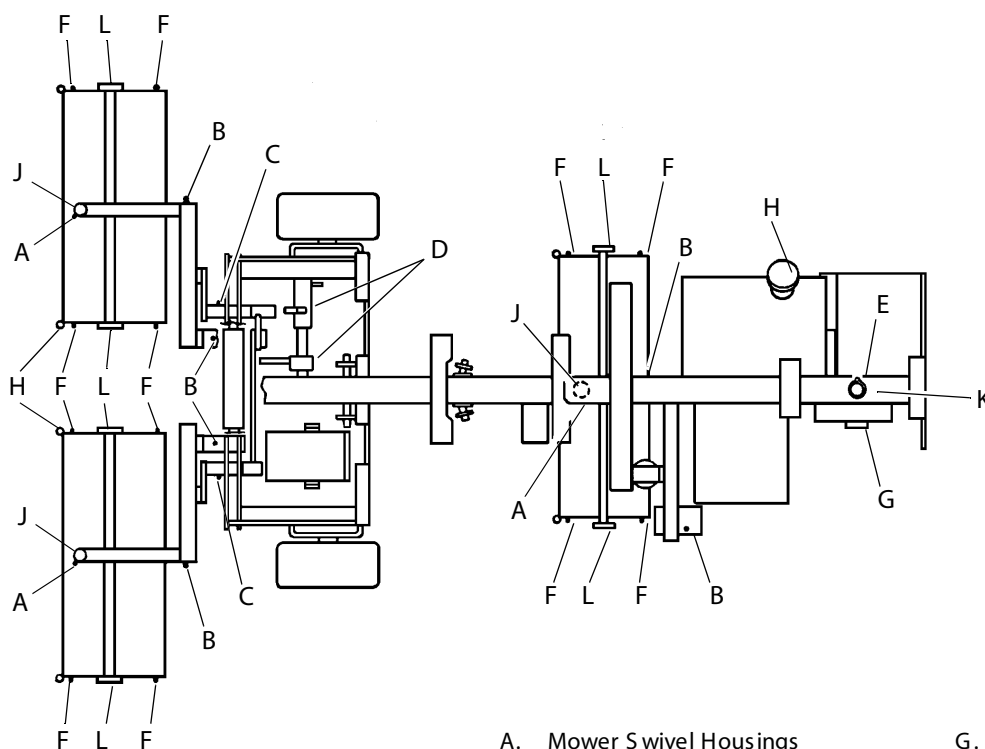
### WARNING

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 roller fittings (F) every 100 hours and coat cam surfaces and pins of swivel housing (J) every 50 hours.

## LUBRICATION CHART



- |                          |                                    |
|--------------------------|------------------------------------|
| A. Mower Swivel Housings | G. Rear Wheel Bearings (See Chart) |
| B. Lift Arms             | H. Hydraulic Oil Tank (See Chart)  |
| C. Cam Lift Shafts       | J. Swivel Arm Assembly             |
| D. Treadle               | K. Rear Wheel Bearing              |
| E. Steering Shaft        | L. Reel Bearing Cavities           |
| F. Rollers               |                                    |

## 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 (Diesel)	I		AR					R	4.5	
Air Filter (Gas)	I	C	R					R	4.4	
Battery Charge			I			4			.8	
Belts	I-A*		I-A			R			3.17	
Brake		I-A*		A						
Cooling System (Diesel)	I-C-A							R	4.19	IV
Electrical System		I*		I					4.14	
Engine Oil (Diesel)	I	R*	R****						4.3	II
Engine Oil (Gas)	I-R*	R							4.3	II
Engine Oil Filter		R*	R							
Fuel System		I			4				.7	
Fuel Filter						R			4 .7	
Grease Fittings - All	L	L	L			L			6.2	I
Hydraulic Hoses and Tubes	I***			I					4.11	
Hydraulic Oil	I-A			R**				R**	4.12	III
Hydraulic Oil Filter	I	R*		R					4.13	
Muffler and Exhaust	I			I					4.15	
Radiator Screens	I-C/AR								4.19	
Tires		I-A							4.16	

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.

\*\*\*\* Replace every 75 hours

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

II - Engine Oil - See Section 4.3

III - Use Textron Turf Care And Specialty Products  
GreensCare 46 Biodegradable fluid: Capacity: 5 gallons  
(19 Liters). Order Part No. 5003104 containing 5 gal.  
(19 liter) pail or Part No. 5003105 containing 55 gal.  
(208 liter) drum.

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





## SECTION 9 OPTIONS

### Options List:

#### Cutting unit options

7 blade Fairway/Tees reel (2 RH & 1 LH required per machine)  
9 blade Greens reel  
11 blade Greens reel  
Verticut mower with 0.75" (19mm) spacing

#### Front roller options

Grooved disc assembly front roller  
Solid tube front roller with scraper  
Grooved machined steel front roller  
Grooved machined aluminium front roller  
Grooved segmented front roller

#### Greens King IV options

Grass catcher (grey)  
22" front roller fine bristle brush  
Rear roller brush  
Turf groomer assembly (0.25" & 0.50" spacing)  
Variable mower step cut devise  
High cut roller kit (for HOC above 7/8")  
Traction tyres - 20 X 10-8  
Quick roll set  
Spiker attachments  
Magknife kit (with 22" low profile blade)



## SECTION 10

### NOTES

[illegible]



[illegible]



[illegible]





[illegible]



[illegible]