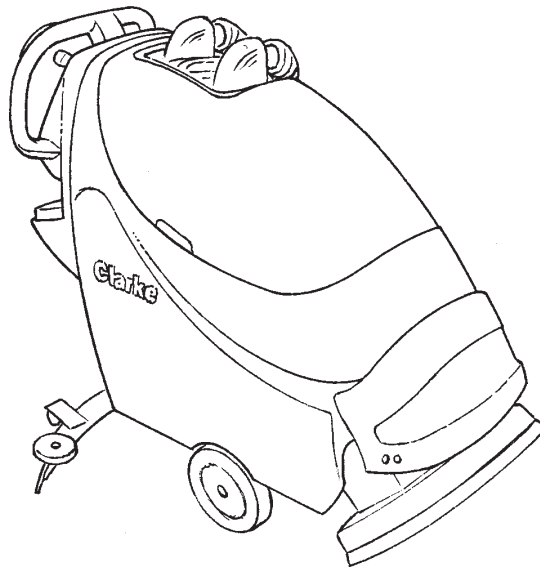


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# Clarke®

## Operator's Manual



## **FOCUS** S17/L17 Rotary L17 Cylindrical S20/L20 Rotary

U.S. Patent No. 6,105,192; No. 6,557,207; No. 6,760,947 and other Patents Pending

### READ THIS BOOK

**▲ CAUTION:** Read the Operator's Manual before using the appliance.

This book has important information for the use and safe operation of this machine. Failure to read this book prior to operating or attempting any service or maintenance procedure to your Clarke machine could result in injury to you or to other personnel; damage to the machine or to other property could occur as well. You must have training in the operation of this machine before using it. If operator(s) cannot read this manual, have it explained fully before attempting to operate this machine.

Si Ud. o sus operadores no pueden leer el Inglés, se hagan explicar este manual completamente antes de tratar el manejo o servicio de esta máquina.

All directions given in this book are as seen from the operator's position at the rear of the machine.

For new books write to: Clarke®, 2100 Highway 265, Springdale, Arkansas 72764.

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# OPERATOR SAFETY INSTRUCTIONS











 **WARNING**

 **AVERTISSEMENT**

 **ADVERTENCIA**

-  **DANGER:** Failure to read and observe all **DANGER** statements could result in severe bodily injury or death. Read and observe all **DANGER** statements found in the Operator's Manual and on the machine.
-  **WARNING:** Failure to read and observe all **WARNING** statements could result in injury to you or to other personnel; property damage could occur as well. Read and observe all **WARNING** statements found in the Operator's Manual and on the machine.
-  **CAUTION:** Failure to read and observe all **CAUTION** statements could result in damage to the machine or to other property. Read and observe all **CAUTION** statements found in the Operator's Manual and on the machine.

-  **DANGER:** Failure to read the Operator's Manual prior to operating or attempting any service or maintenance procedure to your Clarke machine could result in injury to you or to other personnel; damage to the machine or to other property could occur as well. You must have training in the operation of this machine before using it. If you or your operator(s) cannot read English, have this manual explained fully before attempting to operate this machine.
-  **DANGER:** Operating a machine that is not completely or fully assembled could result in injury or property damage. Do not operate this machine unless it is completely assembled. Inspect the machine carefully before operation.
-  **DANGER:** Machines can cause an explosion when operated near flammable materials and vapors. Do not use this machine with or near fuels, grain dust, solvents, thinners, or other flammable materials. This machine is not suitable for picking up hazardous dust. Use only commercially available floor cleaning chemicals intended for machine application.
-  **DANGER:** Lead acid batteries generate gases which can cause an explosion. Keep sparks and flames away from batteries. Do not smoke around the machine. Charge the batteries only in an area with good ventilation. Make sure that the AC charger plug is unplugged from the wall receptacle and stowed before operating the machine.
-  **DANGER:** Working with batteries can be dangerous! Always wear eye protection and protective clothing when working near batteries. Remove all jewelry. Do not put tools or other metal objects across the battery terminals, or on the tops of the batteries.
-  **DANGER:** Using a charger with a damaged power cord could result in an electrocution. Do not use the charger if the power cord is damaged.
-  **WARNING:** Operating this machine from anywhere other than the back of the machine could result in injury or damage. Operate this machine only from the rear.
-  **WARNING:** This machine is heavy. Get assistance before attempting to transport or move it. Use two able persons to move the machine on a ramp or incline. Always move slowly. Do not turn the machine on a ramp. Do not use on surfaces having a gradient exceeding that marked on the appliance. Read the "Procedures For Transporting" in this manual before transporting as machine might topple over if not secured.
-  **WARNING:** Machines can topple over and cause injury or damage if guided over the edges of stairs or loading docks. Stop and leave this machine only on a level surface. When you stop the machine, put all switches into their "OFF" position. On L17 and L20 models turn the key switch "OFF" and remove the key.

-  **WARNING:** Maintenance and repairs performed by unauthorized personnel could result in damage or injury. Maintenance and repairs must be performed by authorized personnel only.
-  **WARNING:** Any alterations or modifications to this machine could result in damage to the machine or injury to the operator or other bystanders. Alterations or modifications not authorized by the manufacturer voids any and all warranties and liabilities.
-  **WARNING:** Electrical components to this machine can "short-out" if exposed to water or moisture. Keep the electrical components of the machine dry. Wipe the machine down after each use. This appliance is for dry use only and is not to be used or stored outdoors in wet conditions.
-  **WARNING:** Operating a machine without observing all labels and instructional information could result in injury or damage. Read all machine labels before attempting to operate. Make sure all of the labels and instructional information are attached or fastened to the machine. Get replacement labels and decals from your Clarke distributor.
-  **WARNING:** Wet floor surfaces can be slippery. Water solutions or cleaning materials used with this type of machine can leave wet areas on the floor surface. These areas can cause a dangerous condition for the operator or other persons. Always put "Caution" signs around/near the area you are cleaning.
-  **WARNING:** Improper discharge of waste water may damage the environment and be illegal. The United States Environmental Protection Agency has established certain regulations regarding discharge of waste water. City, state and national regulations regarding this discharge may also be in effect in your area. Understand and follow the regulations in your area. Be aware of the environment hazards of chemicals that you dispose.
-  **WARNING:** Only use the brushes provided with the appliance or those specified in the Operator's Manual. The use of other brushes may impair safety.
-  **CAUTION:** Use of this machine to move other objects or to climb on could result in injury or damage. Do not use this machine as a step or furniture. Do not ride on this machine.
-  **CAUTION:** Your machine warranty will be voided if anything other than genuine Clarke parts are used on your machine. Always use Clarke parts for replacement.
-  **CAUTION:** This machine contains lead acid batteries. The batteries must be disposed of in an environmentally acceptable manner.

## Machine Introduction

### Introduction & Machine Specifications

Clarke's FOCUS S17/S20 and L17/L20 automatic scrubbers are efficient and superior floor cleaning machines. The FOCUS uses one brush (rotary) to scrub a path 17" or 20" wide or 2 brushes (cylindrical) to scrub a path 17" wide. A squeegee wipes the floor while the vacuum motor removes the dirty solution from the floor - all in one pass.

The FOCUS S17/S20 and L17/L20 rotary comes complete with two - 12 volt batteries, one battery charger, either one brush or one pad driver, and one operator's manual.

The FOCUS L17 cylindrical comes complete with two - 12 volt batteries, one battery charger, two brushes, and one operator's manual.

## Machine Specifications (S17 Rotary and L17 Rotary)

Model	FOCUS S17 Rotary	FOCUS L17 Rotary
Machine Power Supply	24 Volt D.C., (2) 12V 130AH Wet or (2) 12V 100AH Gel Deep Cycle Batteries	24 Volt D.C., (2) 12V 130AH Wet or (2) 12V 100AH Gel Deep Cycle Batteries
Pad or Brush	3-Lug Driver Style	3-Lug Driver Style
Traverse	Brush Assist	1/3 HP (0.25 kW)
Traverse Forward Speed	Not Applicable	Variable to 200 ft./min (61 m/min)
Traverse Reverse Speed	Not Applicable	Variable to 140 ft./min. (43 m/min)
Battery Protection	Low Voltage Cut-Off of Brush and Solution	
Motor Vacuum	3/4 HP (.569 kW) Acoustical High Efficient Tangential 3 stg	
Solution Tank	11 Gallons (42 liters)	
Solution Level	Calibrated Level Indicator	
Recovery Tank	11 Gallons (42 liters)	
Recovery Full Indicator	Electric Shut-Off	
Parabolic Squeegee	Swing type with breakaway feature, No tool operation feature, 32" (81cm) hard width with 34" (86cm) flex blade width	
Squeegee Operation	Reverse direction on floor and 3 - position manual lever style operation	
Cleaning Swath	17" (43.2 cm)	
Motor, Brush	3/4 HP (0,56 kW) 5.2:1 High Torque Gear Box	
Brush / Pad Size	17" (43.2 cm)	
Brush Speed	200 RPM	
Brush Pressure	0-90 lbs. (0-40.8 kg)	
Brush Solution Retention	Fiber Bristles	
Drive Wheels	(2) 8" x 2" (20 cm x 5 cm) Neoprene tread	
Caster	3½" X 1¼" (8.9 cm x 3.2 cm)	
On-Board Charger	24 V D.C., 10 Amp, 115/60 or 24 V D.C., 10 Amp, 230/50	
Grade Cleaning	2%	
Length	48 ¾" (123.8 cm)	
Width	19" (48.3 cm)	
Height	42" (106.7 cm)	
Weight w/batteries (130AH)	327 lbs. (148.3 kg)	345 lbs. (156.5 kg)
Shipping Weight w/Batteries (130AH)	454 lbs. (206 kg)	472 lbs. (214 kg)
Line of Sight (Operator Height = 5'8")	7.5 feet (2.3 m)	
Warranty	Machine 3 Years, Polydur tanks 8 Years, Batteries 18 Months Pro-rated	

## Machine Specifications (L17 Cylindrical)

Model	FOCUS L17 Cylindrical
Machine Power Supply	24 Volt D.C., (2) 12V 130AH Wet or (2) 12V 100AH Gel Deep Cycle Batteries
Traverse	1/3 HP (0.25 kW)
Traverse Forward Speed	Variable to 200 ft./min (61 m/min)
Traverse Reverse Speed	Variable to 140 ft./min. (43 m/min)
Battery Protection	Low Voltage Cut-Off of Brushes and Solution
Motor Vacuum	3/4 HP (.569 kW) Acoustical High Efficient Tangential 3 stg.
Solution Tank	11 Gallons (42 liters)
Solution Level	Calibrated Level Indicator
Recovery Tank	11 Gallons (42 liters)
Recovery Full Indicator	Electric Shut-Off
Parabolic Squeegee	Swing type with breakaway feature, No tool operation feature, 32" (81cm) hard width with 34" (86cm) flex blade width
Squeegee Operation	Reverse direction on floor and 3 - position manual lever style operation
Cleaning Swath	17" (43.2 cm)
Motor, Brush	(2) 3/4 HP (0,56 kW)
Brush 2 per Machine	(2) 4" (10 cm)
Brush Speed	1000RPM
Brush Pressure	70 lbs. (31.8 kg)
Drive Wheels	(2) 8" x 2" (20 cm x 5 cm) Neoprene tread
Caster	3½" X 1¼" (8.9 cm x 3.2 cm)
On-Board Charger	24 V D.C., 10 Amp, 115/60 or 24 V D.C., 10 Amp, 230/50
Grade Cleaning	2%
Length	48 ¼" (122.6 cm)
Width	20" (50.8 cm)
Height	42" (106.7 cm)
Weight w/batteries (130 AH)	360 lbs. (163.3 kg)
Shipping Weight w/Batteries (130AH)	487 lbs. (221 kg)
Line of Sight -Operator Height = 5'8"	7.5 feet (2.3 m)
Warranty	Machine 3 Years, Polydur tanks 8 Years, Batteries 18 Months Pro-rated

## Machine Specifications (S20 Rotary and L20 Rotary)

Model	FOCUS S20 Rotary	FOCUS L20 Rotary
Machine Power Supply	24 Volt D.C., (2) 12V 130AH Wet or (2) 12V 100AH Gel Deep Cycle Batteries	24 Volt D.C., (2) 12V 130AH Wet or (2) 12V 100AH Gel Deep Cycle Batteries
Pad or Brush	3-Lug Driver Style	3-Lug Driver Style
Traverse	Brush Assist	1/3 HP (0.25 kW)
Traverse Forward Speed	Not Applicable	Variable to 200 ft./min (61 m/min)
Traverse Reverse Speed	Not Applicable	Variable to 140 ft./min. (43 m/min)
Battery Protection	Low Voltage Cut-Off of Brush and Solution	
Motor Vacuum	3/4 HP (.569 kW) Acoustical High Efficient Tangential 3 stg	
Solution Tank	11 Gallons (42 liters)	
Solution Level	Calibrated Level Indicator	
Recovery Tank	11 Gallons (42 liters)	
Recovery Full Indicator	Electric Shut-Off	
Parabolic Squeegee	Swing type with breakaway feature, No tool operation feature, 32" (81cm) hard width with 34" (86cm) flex blade width	
Squeegee Operation	Reverse direction on floor and 3 - position manual lever style operation	
Cleaning Swath	20" (50.8 cm)	
Motor, Brush	3/4 HP (0,56 kW) 5.2:1 High Torque Gear Box	
Brush / Pad Size	20" (50.8 cm)	
Brush Speed	200 RPM	
Brush Pressure	0-90 lbs. (0-40.8 kg)	
Brush Solution Retention	Fiber Bristles	
Drive Wheels	(2) 8" x 2" (20 cm x 5 cm) Neoprene tread	
Caster	3½" X 1¼" (8.9 cm x 3.2 cm)	
On-Board Charger	24 V D.C., 10 Amp, 115/60 or 24 V D.C., 10 Amp, 230/50	
Grade Cleaning	2%	
Length	48 ¾" (123.8 cm)	
Width	19" (48.3 cm)	
Height	42" (106.7 cm)	
Weight w/batteries (130AH)	327 lbs. (148.3 kg)	345 lbs. (156.5 kg)
Shipping Weight w/Batteries (130AH)	454 lbs. (206 kg)	472 lbs. (214 kg)
Line of Sight (Operator Height = 5'8")	7.5 feet (2.3 m)	
Warranty	Machine 3 Years, Polydur tanks 8 Years, Batteries 18 Months Pro-rated	

## Procedures For Transporting

### How to Put the Machine Into a Van or Truck

**⚠ WARNING:** This machine is heavy. Get assistance before attempting to transport or move it. Use two able persons to move the machine on a ramp or incline. Always move slowly. Do not turn the machine on a ramp. Do not stop and leave the machine on a ramp or incline. The loading ramp must be a minimum of 32" wide.

**⚠ WARNING:** Machines can topple over if guided over the edges of stairs or loading docks and cause injury or damage. Stop and leave this machine only on a level surface. When you stop the machine, put all switches into their "OFF" position.

1. Make sure the loading ramp is at least eight (8) feet (2.5m) long and a minimum of 32" (0.8m) wide, and strong enough to support the machine.
2. Make sure the ramp is clean and dry.
3. Put the ramp in position.
4. Remove squeegee assembly, brush housing and brush or pad driver before loading. Clarke recommends that both the solution tank and recovery tank are empty before loading.
5. On the L17/L20 models only, turn the key switch "ON" and press the green "ON" button.
6. Align the machine on a level surface five (5) feet (2 m) in front of the ramp.
7. Put the traverse knob at full speed (on L17/L20 models only).
8. For the L17/L20 machines, push in either one of the forward/reverse switches while pushing in the white reverse switch. Back the machine up the ramp. See figure 1.
9. For the S17/S20 machines, push the machine backwards to the top of the ramp.
10. Switch machine "OFF", and on the L17/L20 models, turn key switch "OFF".

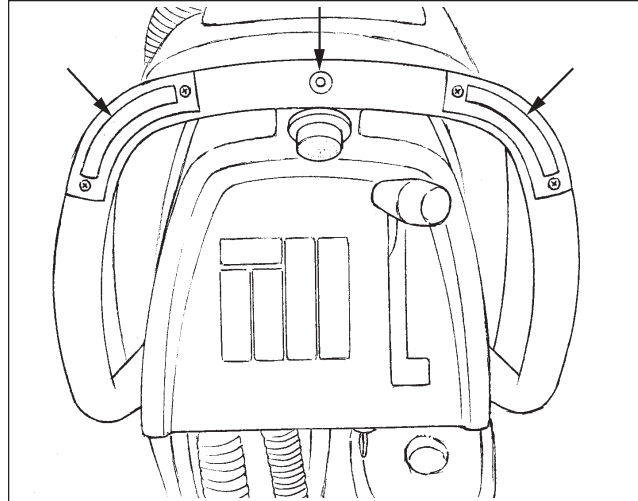


Figure #1



## Procedures For Transporting (cont.)

11. **Fasten the machine to the vehicle.** Clarke recommends a strap over the top of the machine and a strap to keep the machine from rolling forward or backwards. If this is not done, there is a possibility of the machine toppling over. Three tie down points are provided on the steel frame of the machine, for securing machine (see figure 2a).

### How to Remove the Machine From a Van or Truck

1. Make sure there are no obstructions in the area.
2. Make sure the unloading ramp is at least eight (8) feet (2.5m) long and a minimum of 32" (0.8m) wide, and strong enough to support the machine.
3. Make sure the ramp is clean and dry.
4. Put the ramp in position.
5. Unfasten the machine.

**⚠ WARNING:** The machine is heavy. Make sure you use two able persons to assist in moving the machine down the ramp.

6. On S17/S20 models, get two people to pull machine off ramp. It is recommended that the "S" model be unloaded in the forward position.
7. On the L17/L20 models only, turn the key switch "ON" and press the green "ON" button.
8. Set the traverse center knob to the slowest forward speed setting. Carefully and slowly, drive the machine to the top of the ramp and start down (L17/L20 models only).
9. While pushing in the right or left forward switch the machine will go forward (L17/L20 models only). See figure 2.
10. As the machine begins to travel down the ramp, push in the forward switch to maintain a slow downward speed (L17/L20 models only).
11. Replace squeegee assembly, brush housing, and brush or pad driver after machine is unloaded and ready to use.

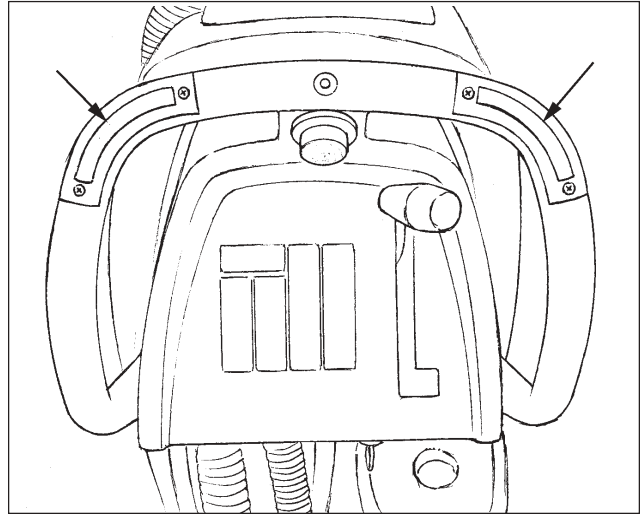


Figure #2

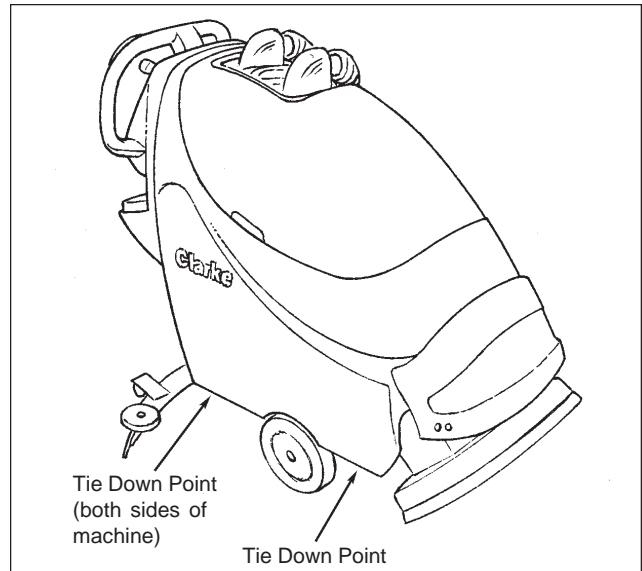
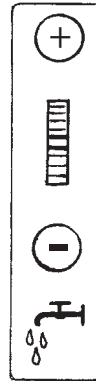


Figure #2a

**SYMBOLS USED ON FOCUS S17/S20 & L17/L20**



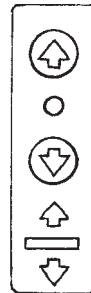
**Warning**



**Solution Control**



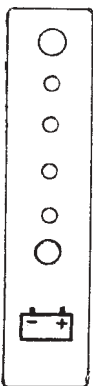
**Power**



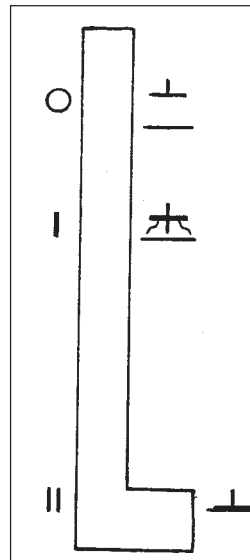
**Brush Up/Down**



**Traverse Speed Control  
("L Class" only)**



**Battery Meter**



**Vacuum/Squeegee Control**

## SYMBOLS USED ON FOCUS S17/S20 & L17/L20



AC Power Indicator



Warning Label  
with parking brake



Warning Label  
without parking brake

## Machine Control Panel

### Electrical Power Indicator (See Figure 3, Item "A")

A yellow light will be illuminated when the charger is plugged into an AC electrical outlet. The electrical cord must be unplugged and stowed before operating the machine.

### Key Switch (See Figure 3, Item "B")

The key switch is standard on the "L" models. It is used primarily for preventing unauthorized use by removing the key. To turn the control panel "ON", the key switch must be turned clockwise and then the green "ON" button must be pressed (see item "C"). To turn the control panel "OFF", turn the key switch counterclockwise.

### ON/OFF Buttons (See Figure 3, Item "C")

Pressing the green button turns "ON" the power to the control panel (if the machine is equipped with a key switch, first turn the key clockwise). Pressing the red button turns "OFF" power to the control panel (if the machine is equipped with a key switch, the power can also be turned "OFF" by turning the key counterclockwise.)

NOTE: The "L model" machine is equipped with self diagnostics and will sometimes fail to operate if a fault is detected. Once the fault is corrected the machine can be reset by turning the power "OFF" and turning it back "ON". If this fails to correct the problem, contact your authorized service personnel immediately.

NOTE: This machine is equipped with a battery power saving device. If the machine is unattended for more than 16 minutes, it will automatically shut itself off.

### Battery Meter (See Figure 3, Item "D")

The battery meter indicates the relative charge of the battery pack. The meter has two green, one yellow and one red light. When the light switches to "red" the brush(es) and solution flow will stop. All other functions will continue to operate. The batteries must then be immediately recharged to prevent shortening the life of the battery pack.

### Control Handles (See Figure 3, Item "E")

The control handles are located at the rear of the machine. They are used to guide the machine.

### Traverse Speed Knob (See Figure 3, Item "F")

To increase speed, turn knob clockwise. The machine will not traverse when the knob is turned fully counterclockwise.

### Forward/Reverse Switch (See Figure 3, Item "G")

**On Traverse "L" Models Only** - The forward/reverse switch starts the traverse motor forward and when the brush head is in the down or scrub position it also activates the brush motor(s) and solution flow. There is a two second delay for the brush motor(s) to stop after releasing the switch. Either the right or the left switch can be used. Use either switch in conjunction with the white reverse switch to reverse the traverse motor.

**"S" Model** - On the non-traverse models these switches activate the brush motor(s) and solution flow when the brush head is in the down or scrub position.

### Reverse Switch (See Figure 3, Item "H")

**On Traverse "L" Models Only** - The reverse switch, when used in conjunction with one of the forward/reverse switches, causes the machine to reverse directions. The reverse speed is 70% of the forward speed.

### Brush Motor Buttons (See Figure 3, Item "I")

To lower brush head and activate brush motor(s) and solution flow, press and hold the down button until the green light is illuminated. Continue to press and hold down button for additional brush pressure, or until brush head stops. The brush motor(s) and solution will then operate when either one or both of the forward/reverse button(s) are pressed. To deactivate the brush motor(s) and solution flow, raise the brush head by pressing and holding the up button until the green indicator light turns off.

### Solution Control Buttons (See Figure 3, Item "J")

The solution control buttons regulates the flow of chemical solution to the floor. When powering up the machine, the solution setting will automatically adjust to the mid setting (see your authorized Clarke serviceman if a different setting is preferred). To increase the flow, press and hold or press the upper button (+) multiple times. The green bar will move up the scale as the flow increases. To decrease the flow, press and hold or press the lower button (-) multiple times. The green bar will move down the scale as the flow decreases. When the bar reaches the lowest setting the solution flow is turned "OFF". **NOTE: The solution will only flow when the brush head is down and in the operating position.**

### Vacuum Motor Switch (See Figure 3, Item "K")

To activate the vacuum motor, lower the squeegee handle. The handle has three positions. Lowest position is the operating water pickup position. The center position is used during transport to clear vacuum hose. The upper position is the vacuum motor "OFF" position.

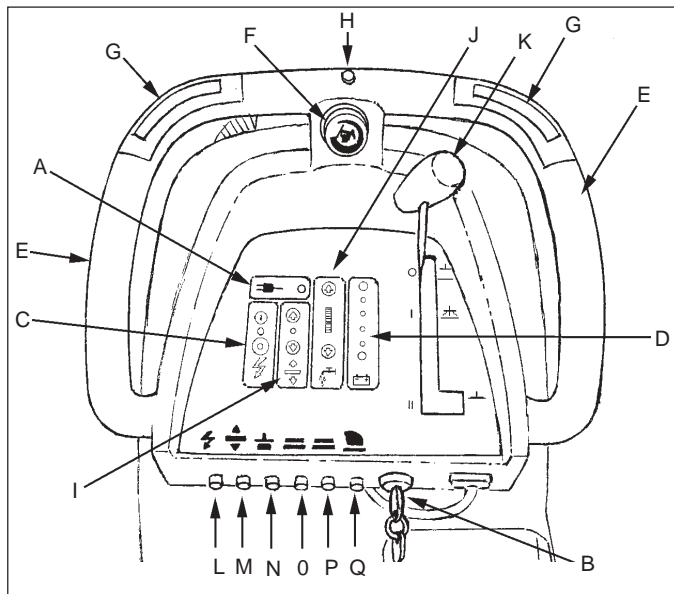


Figure 3

## Machine Control Panel

### Circuit Breakers (Figure 3, Items "L", "M", "N", "O", "P" & "Q")

The circuit breaker reset buttons are located on the lower control handle. The breakers are located as follows:

- Item "L" - Control Circuits (5 amps)
- Item "M" - Control Module and Head Actuator (5 amps)
- Item "N" - Vacuum Motor (25 amps)
- Item "O" - Rotary Brush Motor (40 amps) or  
Cylindrical Brush Motor (25 amps)
- Item "P" - Cylindrical Brush Motor (25 amps)
- Item "Q" - Traverse Motor (25 amps) (L17/L20 Only)

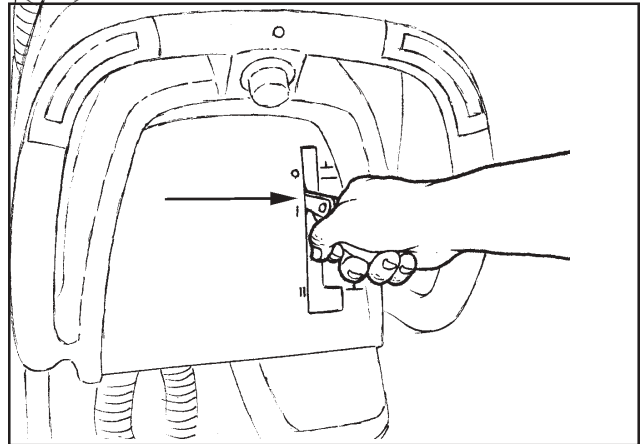


Figure 4

## Machine Controls and Features

### Squeegee Lift Handle, See Figures 4 and 5

The squeegee lift handle is located in the control handle. It is used to raise or lower the squeegee. The vacuum motor is turned on when the handle is lowered to either the center or lowest position.

### Float Shut Off, See Figure 6

The shut-off switch for the vacuum motor is located in the recovery tank. It automatically turns off the vacuum motor when the recovery tank is full. **NOTE: If excessive foaming occurs in recovery tank, defoamer must be added. Damage to vacuum motor could result from foam entering into the vacuum motor.**

### Parking Brake (Optional)

**NOTE: Parking Brake must be used if operating machine on surfaces with greater than 2% gradient.**

The parking brake prevents movement of the machine.

**⚠ CAUTION: Do not activate the parking brake while the machine is moving.**

The brake is located to the right hand rear of the machine. Press pedal to activate brake and lift pedal to disengage brake.

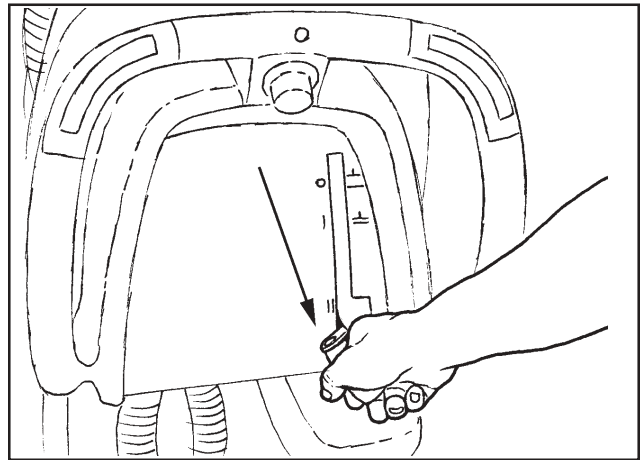


Figure 5

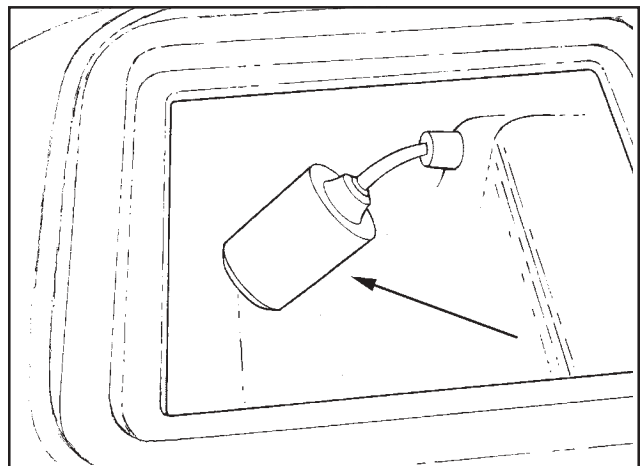


Figure 6

## How To Prepare the Machine For Operation

The FOCUS 17/20 machines use two 12-volt batteries. The batteries are located in the battery compartment under the recovery tank. It is recommended to remove the recovery tank when installing the batteries.

### How To Install The Batteries

To install the batteries, follow this procedure:

1. Turn the machine off. Set brake (if equipped).
2. Make sure the recovery tank is empty. NOTE: The recovery tank on the FOCUS 17/20 is designed for easy removal and cleaning.
3. Disconnect the hoses from the recovery lid (See Figure 7.)
4. Unhook the recovery tank drain hose valve from its hanger bracket and lay the loose end on the floor (See figure 8.)

**⚠ WARNING:** Before raising or removing the recovery tank, be sure tank is empty. Do not operate or perform maintenance on the machine while the recovery tank is in the open position. The tank can be accidentally bumped and it may slam shut.

5. Disconnect the blue electrical float connector (See Figure 9).
6. Unhook the tether clip from the recovery tank (See Figure 10).
7. Unlatch and stow prop rod back in solution tank and close recovery tank.
8. While pushing the tank to the rear, carefully lift and remove recovery tank from the machine. Leave the recovery drain hose attached to the recovery tank.

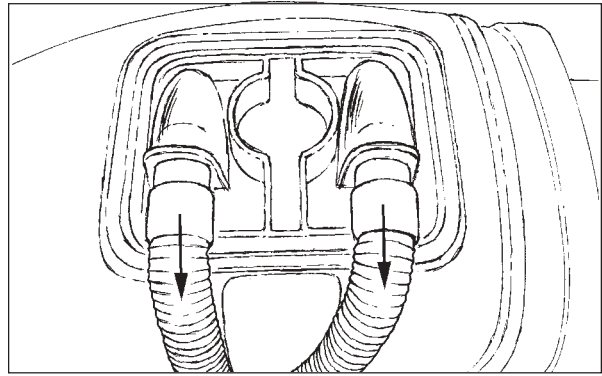


Figure 7

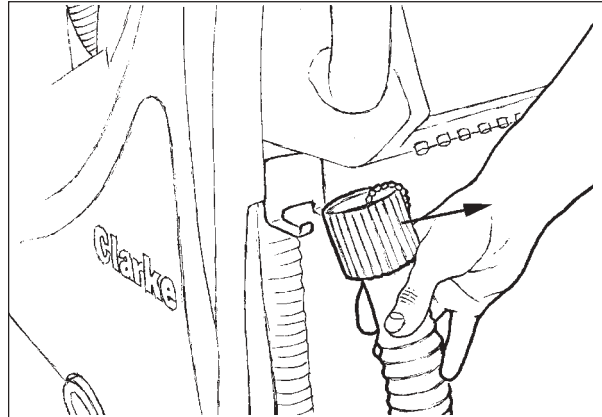


Figure 8

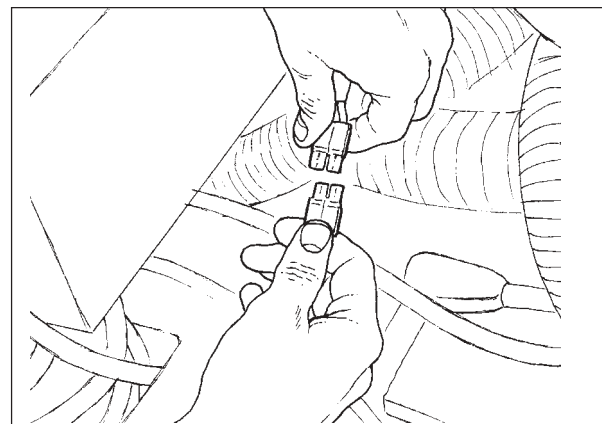


Figure 9

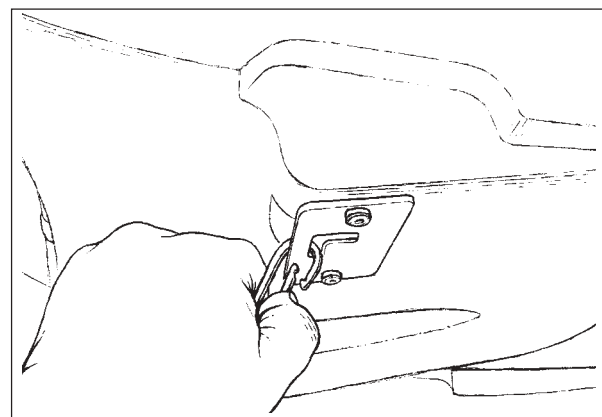


Figure 10

## How To Prepare the Machine For Operation

- Place the batteries in the compartment shown in Figure 11.

**⚠ WARNING:** The batteries are heavy. Lifting batteries without help could result in an injury. Get help to lift the batteries.

**⚠ WARNING:** Working with batteries can be dangerous. Always wear eye protection and protective clothing when working near batteries. **NO SMOKING!**

- Connect the cable between the batteries and install the long machine cables as indicated (See Figure 11).
- Secure the batteries in place with the battery straps (See Figure 12).
- Reinstall the recovery tank making sure the pivot pin in the recovery tank is installed under the metal plate on the solution tank (See figure 13A.)
- Reattach the tether to the recovery tank (See figure 10).

**⚠ WARNING:** The recovery tank can fall off of the machine when opening the tank or operating the machine, if the recovery tank is not properly installed. Make sure that the recovery tank pivot pin is under the metal plate on the solution tank and the tether is attached to the recovery tank.

- Reconnect the vacuum and squeegee hoses to the recovery lid. Make sure the hose to the vacuum motor and the rear squeegee hose are installed over the top of the drain hose (See figure 13B).
- Reconnect the blue float connector (See figure 9, page 12).
- Charge the batteries before using the machine.

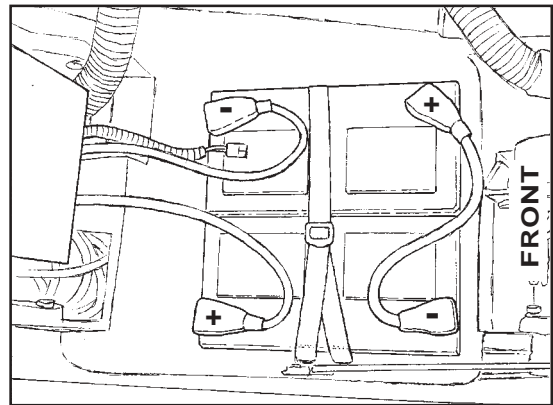


Figure 11

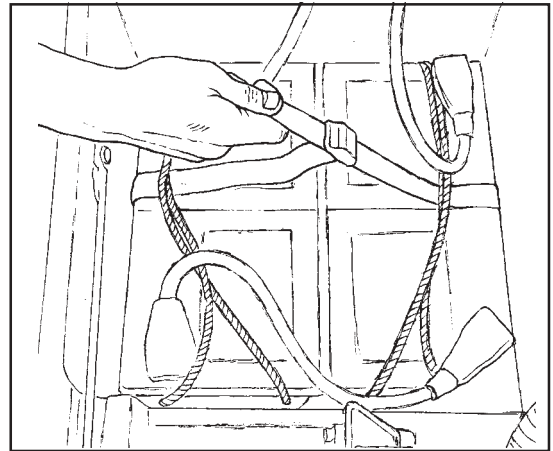


Figure 12

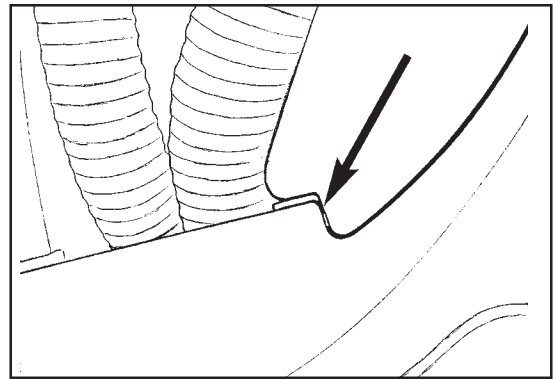


Figure 13A

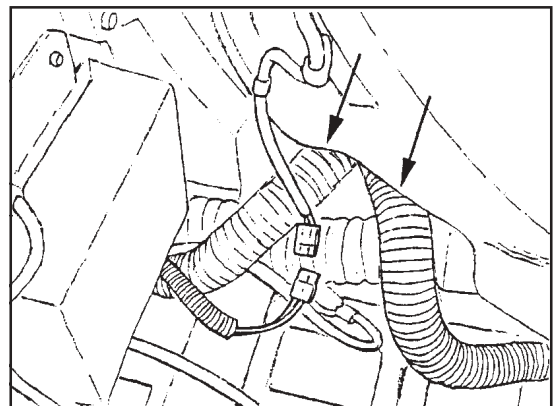


Figure 13B



## How To Prepare the Machine For Operation

### Battery Maintenance

The electrical power to operate the machine comes from the storage batteries. Storage batteries need preventative maintenance.

To maintain the batteries in good condition, follow these instructions.

1. Keep the electrolyte at the correct level. The correct level is between 1/4" (1/2 cm) below the bottom of the tube in each cell and above the tops of the plates. Check the level of the electrolyte each time you charge the batteries. See figure 14.

**NOTE:** Check the level of electrolyte prior to charging the batteries. Be sure the plates in each cell are covered with electrolyte before charging. Do not top off the cells prior to charging the battery. Electrolyte expands during charging. As a result, the electrolyte could overflow from the cells. Always top off the cells with distilled water after charging.

**CAUTION:** Irreversible damage will occur to the batteries if electrolyte does not cover the plates. Keep the electrolyte at the correct level.

**CAUTION:** Machine damage and discharge across the tops of the batteries can occur if the batteries are over filled. Do not fill the batteries up to the bottom of the tube in each cell. Wipe any acid from the machine or the tops of the batteries. Never add acid to a battery after installation.

**CAUTION:** Batteries must be refilled with distilled water only. Do not use tap water as it may contain contaminants that will damage batteries.

2. Keep the tops of the batteries clean and dry. Keep the terminals and connectors clean. To clean the top of the batteries, use a damp cloth with a weak solution of ammonia or bicarbonate of soda solution. To clean the terminals and connectors, use a terminal and connector cleaning tool. Do not allow ammonia or bicarbonate of soda to get into batteries.
3. Keep the batteries charged.
4. To drain the battery compartment: See Figure 15.
  - a. Always wear eye protection and protective clothing.
  - b. Add a weak solution of ammonia or bicarbonate of soda solution to the battery compartment to neutralize any spilled acid.
  - c. Pull drain hose out from under the transaxle.
  - d. Place your hand behind flange and open the valve.
  - e. When empty, close valve.
  - f. Replace valve and drain hose on top of transaxle.
  - g. Neutralize any acid spills with ammonia or bicarbonate of soda.

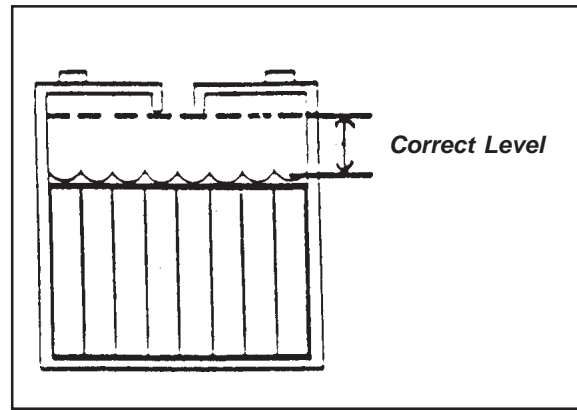


Figure 14

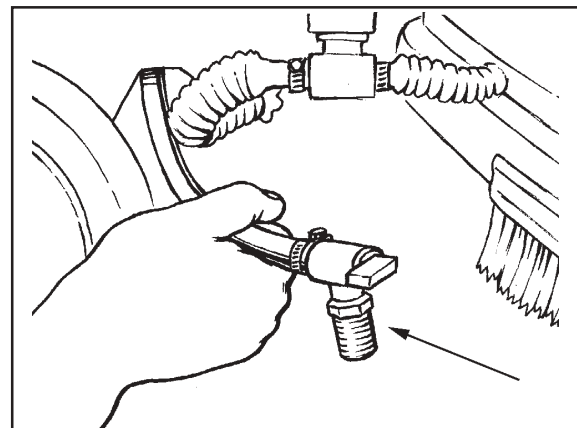


Figure 15



## How To Prepare the Machine For Operation

### How To Charge The Batteries

**⚠ WARNING:** Charging the batteries in an area without adequate ventilation could result in an explosion. To prevent an explosion, charge the batteries only in an area with good ventilation.

**⚠ WARNING:** Lead acid batteries generate gases which could explode. Keep sparks and flames away from batteries. **NO SMOKING!**

To charge the batteries, follow this procedure:

1. Place the machine on a flat-level surface with adequate ventilation.
2. Set the parking brake if one is provided.
3. Remove power to the control panel by pressing the red "OFF" button. If the machine is equipped with a key switch, turn the key counterclockwise to the "OFF" position.
4. Before charging the batteries, the battery compartment needs to be vented. To vent the compartment, the recovery tank needs to be propped open.

**⚠ WARNING:** Before raising or removing the recovery tank, be sure tank is empty. Do not operate or perform maintenance on the machine while the recovery tank is in the open position. The tank can be accidentally bumped and it may slam shut.

5. The FOCUS 17/20 is equipped with an on-board charger located behind the recovery tank (See Figure 17). The charger is a 3-stage charger designed to maximize battery life. The AC power cord to the on-board charger is located in its storage compartment under the control handle at the rear of the machine (See Figure 16). Pull the cord out of the storage compartment.
6. Connect the charger to a properly grounded single phase (3-wire) wall receptacle. NOTE: When the charger is plugged into the wall receptacle, the yellow light will be illuminated on the control panel next to the plug symbol and the charger will begin charging (see figure 3, item A).

#### 3-Stage Charging Sequence:

- **Bulk Stage** - In the bulk stage of charging, the red light is illuminated on the charger (See Figure 17). During this stage the charger is supplying its full amp output to the batteries. It will continue to charge the batteries at this rate until the batteries reach approximately 75% of their capacity.

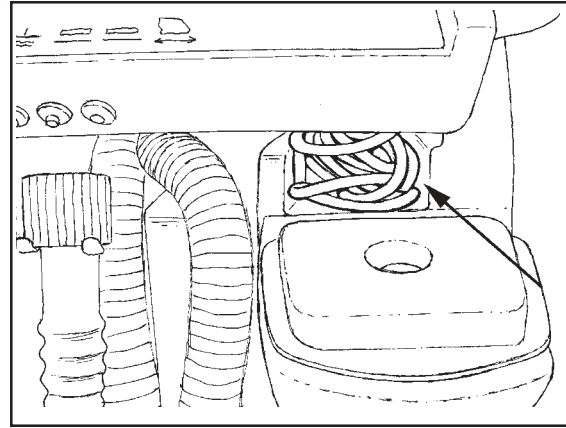


Figure 16

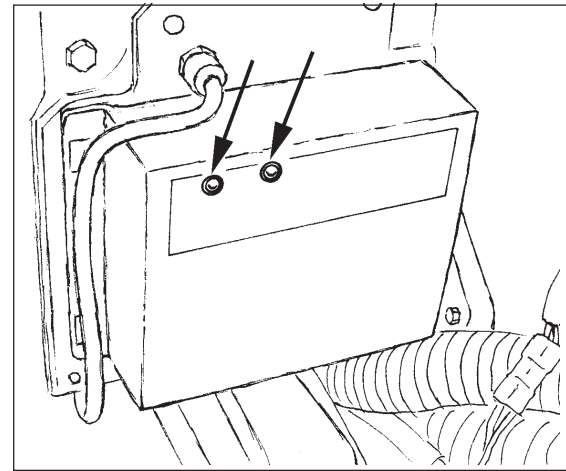


Figure 17

## How To Prepare the Machine For Operation

- **Absorption Stage** - In the absorption stage the red and green light will be illuminated on the charger (See Figure 17). During this stage the charger maintains constant voltage and lets the batteries absorb the charge at their own rate.
  - **Float and Maintenance Stage** - In the maintenance stage the red light turns off and only the green light will be illuminated on the charger (See Figure 17). During this stage the charger applies a lower, closely regulated voltage to maintain full charge and prevents discharge. Batteries can be connected indefinitely without harm.
8. Unplug charger power cord from the wall outlet before powering up control panel on machine. Store the charger power cord in the storage compartment located under the control handle (See Figure 16).
  9. Unlatch and stow prop rod back in solution tank and close recovery tank after charging has been completed.

**NOTE:** It is not necessary to remove the brush housing assembly when removing or installing the brush or pad driver. For greater access to the brush or when driving the machine up a ramp, the brush housing assembly can be removed. To remove brush housing assembly, pull outward on the spring loaded pin on the left side of the housing, then lift the brush housing assembly up and outward (See Figure 18). Reinstall the brush housing assembly in reverse order, making sure the cross bar in the brush housing is inserted into the two slots located in the motor mount and the spring loaded pin is locked into position (See Figure 19).

### **How To Install Rotary Brush or Pad Driver (if equipped)**

To install the brushes or pad drivers on the machine, follow this procedure:

1. Turn the key switch clockwise ("L" models only). Press the green "ON" button.
2. Raise the brush head by pressing and holding the brush up switch until brush head is in it's full up and rotated position (See Figure 20).
3. Press the red "OFF" button or turn the key switch counter-clockwise on machines equipped with key.
4. Put a brush or pad driver under the brush motor plate and align the lugs on the motor with the slots on the brush gimbal.
5. Push the brush up and rotate counter direction to scrub rotation, until lugs lock (See Figure 20).
6. Reinstall brush housing if removed.



**DANGER:** Operating a machine that is not completely or fully assembled could result in injury or property damage. Do not operate this machine unless it is completely assembled. Inspect the machine carefully before operation.

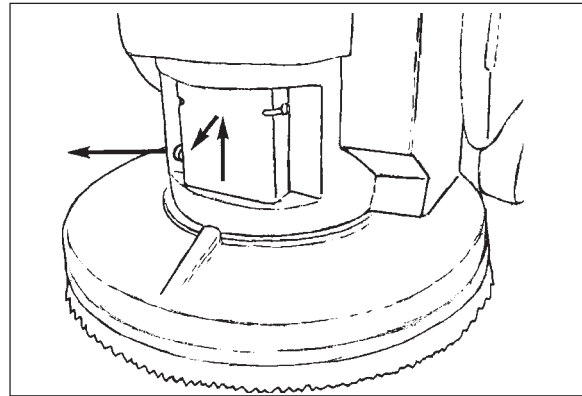


Figure 18

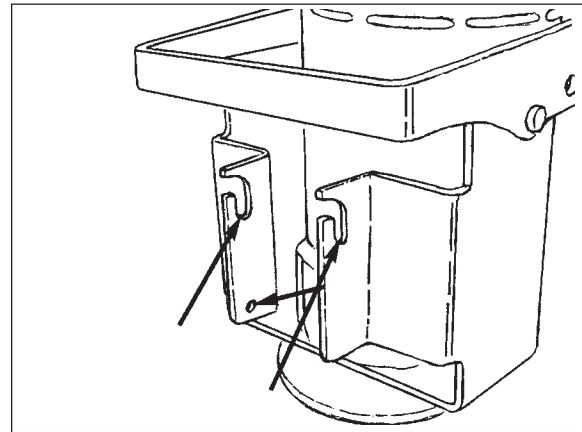


Figure 19

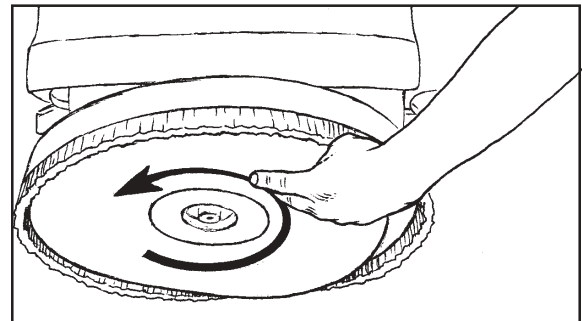


Figure 20

## How To Prepare the Machine For Operation

### How To Remove Rotary Brush or Pad Driver (if equipped)

To remove the brush or pad driver from the machine, follow this procedure:

1. Turn the key switch clockwise ("L" models only). Press the green "ON" button.
2. Raise the brush head by pressing and holding the brush up switch until brush head is in it's full up and rotated position.
3. Press the red "OFF" button or turn the key switch counterclockwise on machines equipped with key.
4. To remove brush, rotate brush in the same direction to scrub rotation with a quick snapping action until brush releases (See Figure 21).
5. Reinstall brush housing if removed.

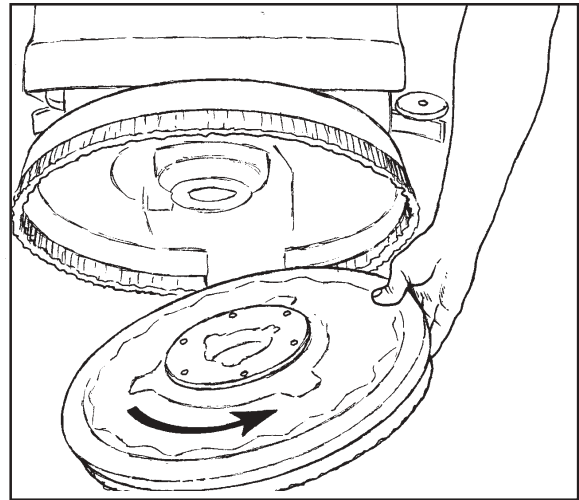


Figure 21

### How To Change Or Rotate Cylindrical Brushes (if equipped)

To install or rotate brushes on the machine, follow this procedure:

1. Turn the key switch clockwise ("L" models only). Press the green "ON" button.
2. Raise the brush head by pressing and holding the brush up switch until brush head is in it's full up and rotated position.
3. Press the red "OFF" button or turn the key switch counterclockwise on machines equipped with key.
4. Go to front of the machine and remove thumb screw from brush door (See Figure 22).
5. Lower door approximately 1/2 inch and slide door and bearing assembly off shaft (See Figure 23).
6. Remove brush spacer and brush by sliding off of brush shaft (See Figure 24).
7. Rotate brush or replace.
8. Slide brush on shaft and rotate slowly until drive pins are lined up with brush slots. Push brush all the way in.
9. Install brush spacer on shaft.
10. Slide brush door bearing assembly on shaft.
11. Raise door and install thumb screw.

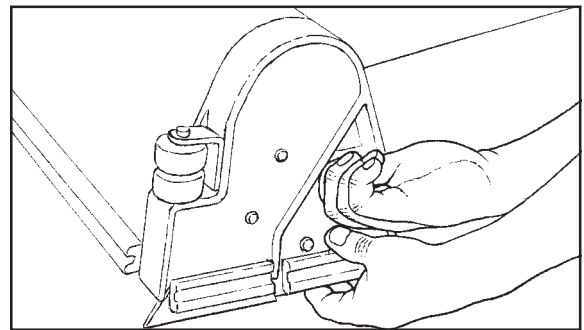


Figure 22

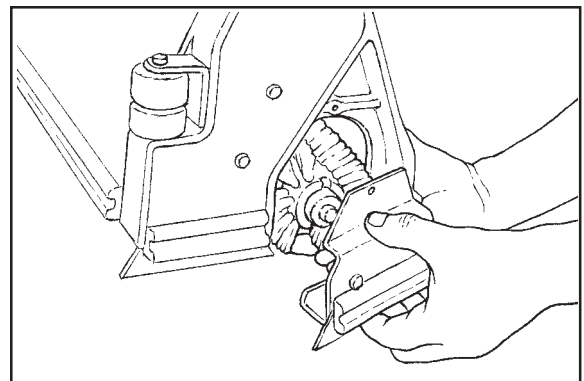


Figure 23

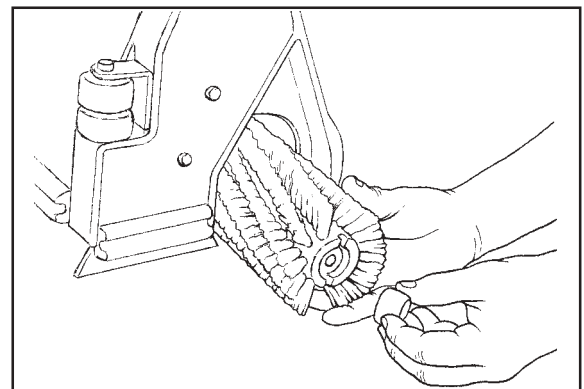


Figure 24

**⚠ DANGER:** Operating a machine that is not completely or fully assembled could result in injury or property damage. Do not operate this machine unless it is completely assembled. Inspect the machine carefully before operation.

## How To Operate The Machine

### How To Operate The Squeegee

The squeegee wipes the floor while the vacuum motor removes the dirty solution from the floor. Use your hand to lower or raise the squeegee handle. To operate the squeegee, follow this procedure:

1. To lower the squeegee and start the vacuum motor, move the squeegee lever to the right and down (See figure 25).
2. To raise the squeegee, lift the squeegee lever up (See figure 26.)

**NOTE:** The center position lets the vacuum motor continue to run with the squeegee off the floor to avoid drips and also allows you to back up the machine.

### How To Fill The Solution Tank

The solution tank is filled at the rear of the machine (See figure 27). To fill the solution tank follow this procedure:

1. Add a cleaning chemical to the solution tank. For the correct amount of chemical, follow the directions shown on the container.
2. Remove the solution lid and fill the solution tank with water.

**⚠ WARNING:** Water solutions or cleaning materials used with this type of machine can leave wet areas on the floor surface. These areas can cause a dangerous condition for the operator or other persons. Always put CAUTION signs near the area you are cleaning.

**⚠ WARNING:** Machines can ignite flammable materials and vapors. Do not use with or near flammables such as gasoline, grain dust, solvents and thinners. Use only a commercially available cleaners and concentrations intended for floor scrubbing applications.

**⚠ WARNING:** Clarke recommends a maximum water temperature of 120°F (49°C).

### Operating The Machine

**NOTE:** Put the machine in the lowest traverse speed setting. Use the machine in an area that has no furniture or objects until you can do the following:

1. Move the machine in a straight direction, forward and backward.
2. Stop the machine safely.
3. Turn the machine both left and right and return to a straight direction.

To move the machine, follow this procedure:

1. Release the parking brake (if equipped with machine).
2. Turn the key switch clockwise to the "ON" position (on "L" models only). Press the green "ON" button.
3. Raise the brush to the highest setting.
4. Raise the squeegee.

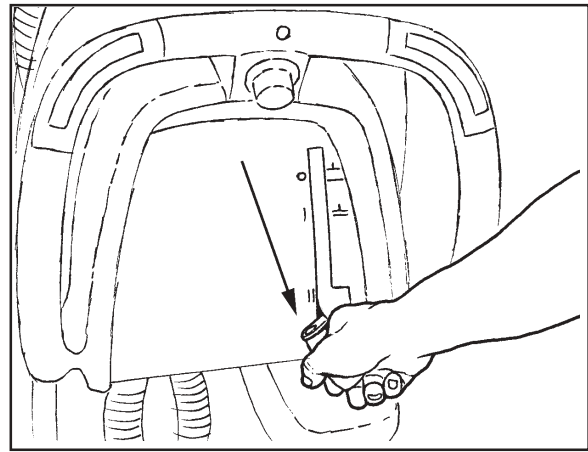


Figure 25

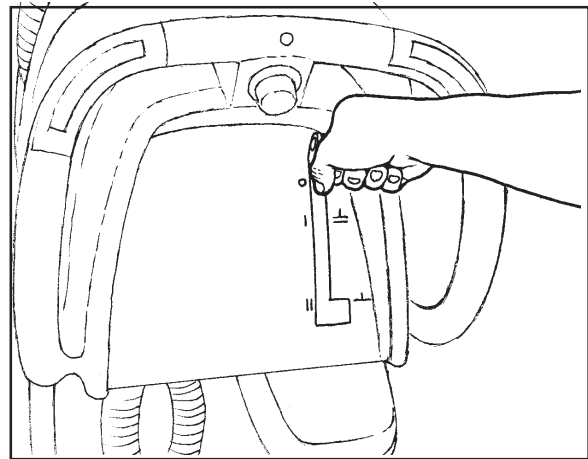


Figure 26

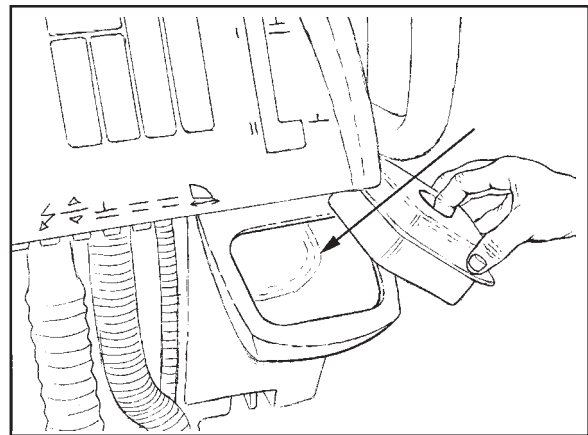


Figure 27

## How To Operate The Machine

- When either the left or right forward/reverse switches (figure 28, item A) are pushed in, the machine will go forward ("L" models only).
- Control the speed of traverse by using the traverse speed control knob ("L" models only) (figure 28, Item C).
- To stop, release the forward/reverse switch.
- To reverse the machine, push in the white reverse switch (figure 28 item B) and either the right or left forward/reverse switch (figure 28 item A) at the same time ("L" models only).
- To stop, release the forward/reverse switch.
- To turn the machine, push the rear of the machine to the side.
- When you stop the machine, press the red "OFF" button or turn the key switch counterclockwise to the "OFF" position ("L" models only). Remove the key and set the parking brake (if equipped).

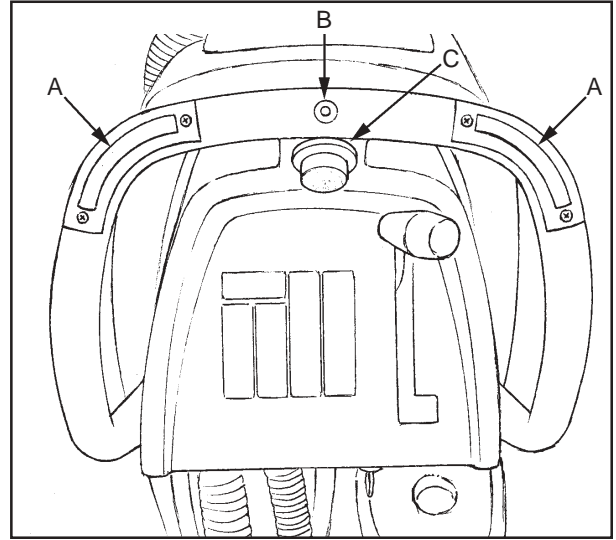


Figure 28

## How To Clean A Floor

**⚠ WARNING:** Water solutions or cleaning materials used with this type of machine can leave wet areas on the floor surfaces. These areas can cause a dangerous condition for the operator or other persons. Always put CAUTION signs near the area you are cleaning.

To clean a floor follow this procedure:

- Set the parking brake (if equipped with machine.)
- Put the water and a cleaning chemical in the clean solution tank.
- Release the parking brake (if equipped with machine.)
- Turn the key switch clockwise to the "ON" position ("L" models only). Press the green "ON" button.
- Lower the squeegee.
- Press the brush down button until yellow light is illuminated and the correct pressure is achieved.

**⚠ WARNING:** This machine is capable of maximum head pressure with worn pads or brushes. With this feature, there is the possibility of exceeding the recommended brush pressure on new pads or brushes. This will either create re-occurring circuit breaker tripping or the possibility of lost traction and control. The brush switch should be activated to accomplish only enough brush pressure for the job. This will allow longer battery life and cleaning time.

**NOTE:** Keep the machine moving when the brush is rotating on the floor. Pre-wet brush/pad or keep light pressure on brush until solution flow is adequate to keep brush/pad from scratching the floor.



## How To Operate The Machine

To pre-wet brushes you should first turn the speed knob to the lowest traverse setting on the "L" model. Then on both the "S" and "L" models, lower brushes until brushes are just touching the floor and the yellow light on the control panel is illuminated. Activate the forward/reverse switch to start motor and solution flow.

**NOTE:** On the "L" model, the machine will not move when the traverse speed knob is rotated fully counterclockwise.

7. Adjust the flow of clean solution to the flow desired.
8. Move the machine across the floor in the forward direction.
9. Make a 180° turn.

**NOTE:** When you make more passes across the floor, let the brush clean approximately 2 inches (5 cm) of the area already cleaned by the brush.

**NOTE:** During most cleaning procedures, apply and remove the solution in one operation.

### How To Clean A Very Dirty Floor

To clean a very dirty floor, follow this procedure:

1. Apply solution to the floor.
2. Do not lower the squeegee. This will keep the vacuum motor off.
3. Lower the brush or pad and scrub the floor.
4. Scrub the floor again with additional solution and lower the squeegee.
5. Pick up all the solution with the squeegee.

## Maintenance

**⚠ WARNING:** Maintenance and repairs must be done by authorized personnel only.

**⚠ WARNING:** Always empty the solution tank and recovery tank before doing any maintenance.

**⚠ WARNING:** Keep all fasteners tight.

### **These Maintenance Procedures Must Be Done Every Day**

Keep the machine clean, it will need fewer repairs and have longer life.

### Do These Procedures When You Begin Your Work Period

1. Disconnect AC power from battery charger (follow charger instructions).
2. Store AC power cord to charger in machine storage compartment (See Figure 29).
3. Make sure the screen filter is installed properly in the recovery lid and is clean (See figure 30).
4. Make sure the recovery tank lid is on correctly (See Figure 30).

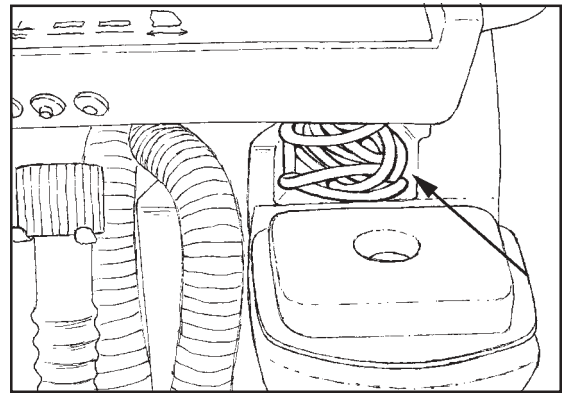


Figure 29

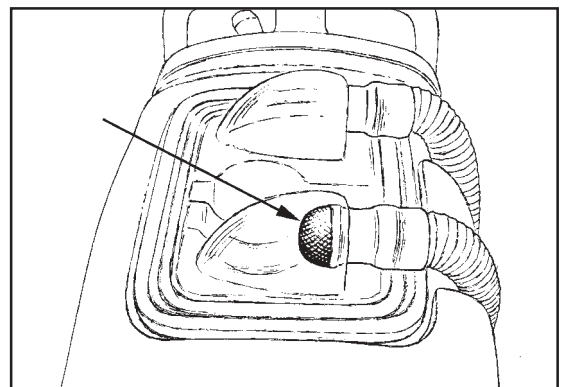


Figure 30

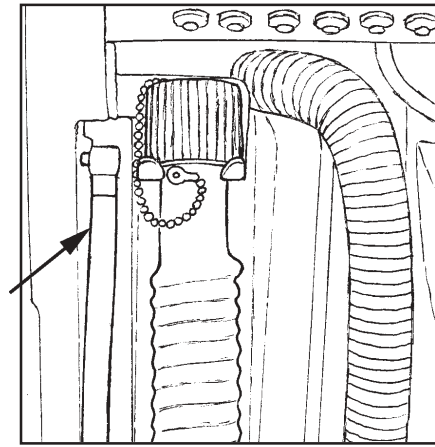
## Maintenance

5. Make sure the valve on the recovery drain hose is clean. Tightly close the valve.
6. Make sure the brush/pad is in position and installed correctly.
7. Make sure brush housing and skirts are in position on the brush head.
8. Check the installation of the squeegee and squeegee hose.
9. Make sure the solution drain / level indicator hose is secure on the storage mount on the rear of the machine.

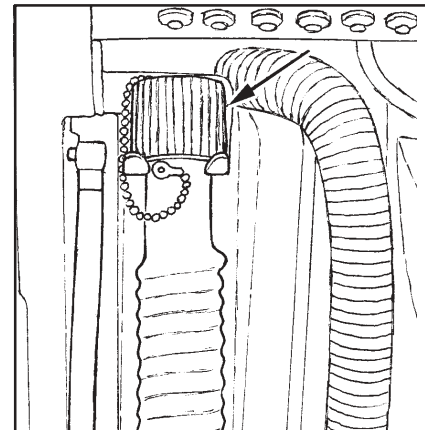
### **Do These Procedures When You End Your Work**

1. Drain the solution tank (Figure 31) and the recovery tank (Figure 32). To drain the tanks, follow this procedure:
  - a. Press the red "OFF" button or turn key switch counterclockwise to "OFF" position ("L" model only).
  - b. Remove the drain hose from the back of the machine.
  - c. Put the end of the hose over a drain or bucket.
  - d. *Recovery Tank:*
    - 1.) Turn the valve housing to the left (See Figure 33).
    - 2.) To open the valve completely, turn the housing fully to the left. Pull the housing off of the valve (Figure 34).
  - e. *Solution Tank:*

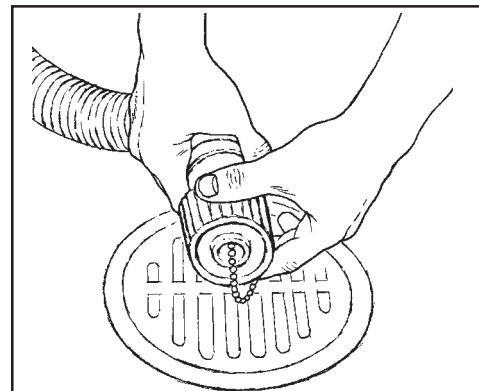
When hose is lowered below water level, water will flow.
2. Flush the tanks. To flush the tanks, put clean water in the tank through the opening on top of the tank.
3. If a tank or drain hose has an obstruction, use a pressure water hose to flush the tank or hose. Put the water hose into the drain hose.
4. Leave the tanks and the recovery drain valve open to dry in the air.
5. Check the squeegee blade. Use a cloth to clean the squeegee blade. If the squeegee blade is damaged or worn, turn or replace the blade.
6. Check and clean the recovery lid gasket. Use a mild cleaning solution and rinse the parts in clean water.



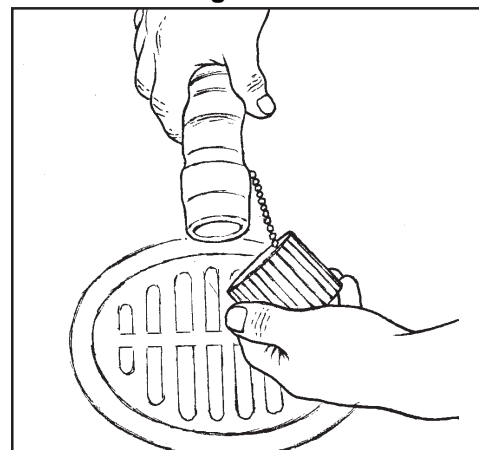
**Figure 31**



**Figure 32**



**Figure 33**



**Figure 34**

## Maintenance

7. On machines with cylindrical brush head, the debris tray needs to be emptied regularly to prevent overflow. To remove the debris tray from the machine follow this procedure (See Figure 35).
  - a. Go to the left side of the machine, to the rear of the cylindrical brush head.
  - b. Grab the end of the tray with the left hand and the center of the tray with the right hand.
  - c. Lift center of tray with right hand and slide tray out with left hand.
  - d. Empty tray and clean before sliding tray back in. Make sure upper and lower slides are engaged.

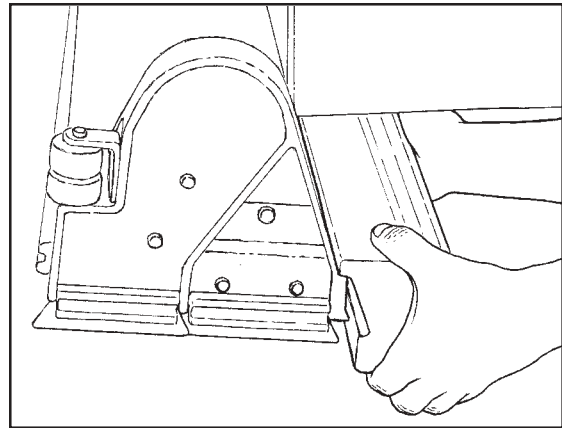


Figure 35

Check the batteries and if necessary add distilled water after charging. The correct level is within 1/4 inch (1/2 cm) of the bottom of the tube in each cell.

**CAUTION:** Tap water may contain contaminants that will damage batteries. Batteries must be refilled with **DISTILLED WATER ONLY**.

**WARNING:** Lead acid batteries generate gases which can cause an explosion. **NO SMOKING**. Always wear eye protection and protective clothing when working near batteries.

Use a clean cloth and wipe the surface of the machine.

Charge the batteries. See the instructions in the section of this book called "How To Charge The Batteries".

### Maintenance Procedures To Be Done Every Week:

**WARNING:** Maintenance and repairs must be done by authorized personnel only. Always empty the solution tank and the recovery tank before doing any maintenance. Keep all fasteners tight.

**WARNING:** Always wear eye protection and protective clothing when working near batteries. Do not put tools or other metal objects across the battery terminals or the tops of the batteries.

**CAUTION:** To prevent damage to the machine, and discharge across the tops of the batteries, do not fill the batteries above the bottom of the tube in each cell. Wipe any acid from the machine or the tops of the batteries. Do not add acid to battery after installation.

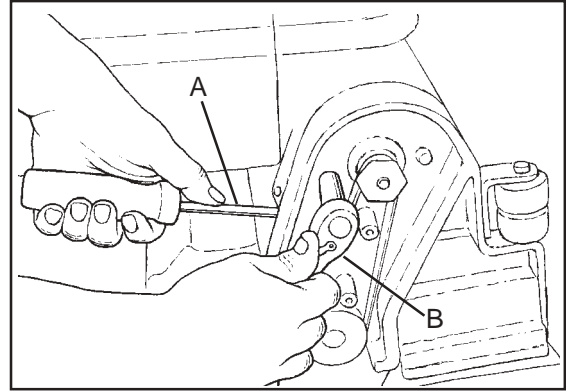


## Maintenance

**NOTE:** Always turn machine off before servicing machine.

**⚠ WARNING:** Always wear eye protection and protective clothing when working near batteries. **NO SMOKING!**

**⚠ WARNING:** Before raising or removing the recovery tank, be sure tank is empty. Do not operate or perform maintenance on the machine while the recovery tank is in the open position. The tank can be accidentally bumped and it may slam shut.



**Figure 36**

1. Disconnect the batteries. Use a cloth and a solution of ammonia or bicarbonate of soda to wipe the top of the batteries. Clean the battery terminals. Reconnect the batteries.
2. Check the hoses for leaks, obstructions and other damage.
3. On machines with cylindrical brush head, check the brush drive belts for proper tension. Belts must be tensioned properly to prevent slipping. To tighten the belts, follow this procedure:
  - a. Remove belt cover by removing screws.
  - b. Loosen the 2 screws on either side of the motor pulley.
  - c. Use a small pry bar or large screwdriver to pry the motor upward to achieve correct belt tension. Pry on the motor close to where the motor contacts the brush head casting (See Figure 36, A).
  - d. Hold tension and tighten 2 screws (See Figure 36, B).
  - e. Replace belt cover.

## Maintenance

### Maintenance For The Squeegee

To remove the squeegee, follow this procedure:

1. Remove the squeegee assembly by loosening the two knobs that attach the squeegee to the machine. Pull the squeegee assembly off (See figure 37).
2. Inspect the squeegee blade.
3. If the blade is worn, turn the blade so that a new edge is in the wiping position.
4. Reinstall squeegee assembly on the machine.

### How To Adjust The Squeegee

The following adjustments are set at the factory, however they may require slight adjustment.

#### Adjusting Squeegee Tilt:

The tilt of the squeegee causes the rear blade to raise up in the center or on the ends, depending on which direction the tilt is changed. For tilt adjustment, refer to figure 38. Loosen left and right screw "X". In order to bring the blades down in the center, tip "Y" down. To bring both ends down, tip "Y" up. Make very small adjustments and try it until a uniform flare is achieved.

#### Adjusting Squeegee Blades:

When properly installed the front blade should be approximately 0.06" (1.5mm) above the rear blade (See figure 39).

**⚠ WARNING:** Maintenance and repairs must be done by authorized personnel only .

**⚠ WARNING:** Electrical repairs must be done by authorized personnel only.

Consult your Clarke Authorized Service Person to do the service procedures.

Use only genuine Clarke parts.

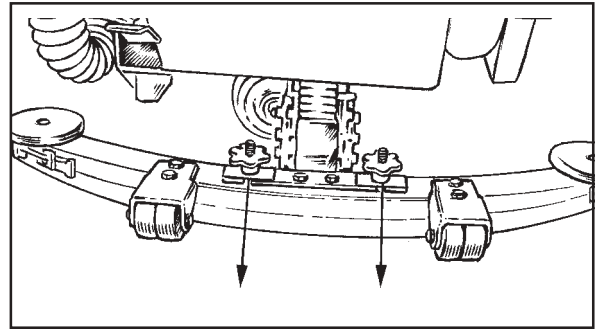


Figure 37

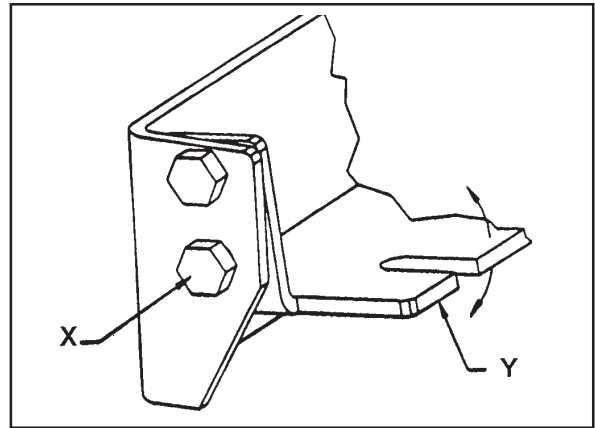


Figure 38

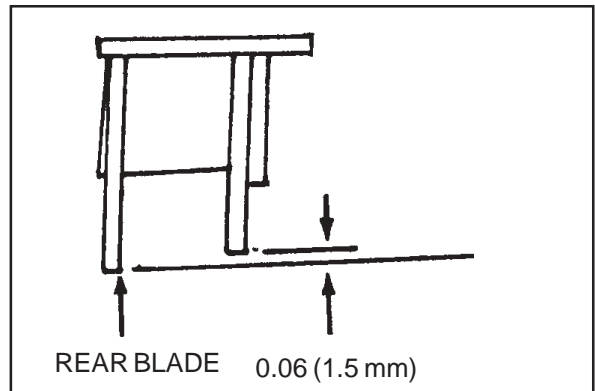


Figure 39

**Clarke  
FOCUS 17/20  
Accessories**

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**ACCESSORIES**

<u>Description</u>	<u>Part No.</u>
Clarke Care Kit	14607A
29" Squeegee Assembly	18820A
32" Squeegee Assembly	10129A
Poly Dur Protectant	50478A
Hour Meter Kit	10656A
Key Switch Kit	10490A
Parking Brake Kit	10491A
Vacuum Muffler Kit	10492A
Power Wand Kit	10489A
Urethane Caster Assembly	61290A
Dual Direct Clutch Plate	30034A
Center Lock Pad Retainer	56941A
Squeegee Hose "S" Trap	30482A

**Rotary Disk Brushes and Pad Assemblies:**

<u>Description</u>	<u>17" Part No.</u>	<u>20" Part No.</u>
Pad Driver Asm.	10405A	30629A
Polypropylene	52539A	30630A
Nylon	52540A	30631A
Lite Grit	52543A	30632A
Clean Grit	52541A	30633A

**Cylindrical Brushes**

<u>Size</u>	<u>Description</u>	<u>Part No.</u>
4"	Polypropylene	30231A
4"	Nylon	30232A
4"	Clean Grit	30233A
4"	Super Grit	30234A

**29" Squeegee Blades**

<u>Description</u>	<u>Part No.</u>
Blade, Rear - Gum Rubber	30931A
Blade, Rear - Nitrile Solid	30938A
Blade, Front - Ribbed Urethane	30951A
Blade, Front - Notched Neoprene	30930A

**32" Squeegee Blades**

<u>Description</u>	<u>Part No.</u>
Blade, Rear - Gum Rubber	30067A
Blade, Rear - Nitrile Solid	30081A
Blade, Rear - Ribbed Orange	30085A
Blade, Front - Ribbed Natural	30066A
Blade, Front - Slit Grout	30079A
Blade, Front - Ribbed Orange	30083A



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# **Clarke®**

## **FOCUS**

**S17/L17 Rotary**

**S17/L17 Cylindrical**

**S20/L20 Rotary**

**Section II**

# **Parts and Service Manual**

(70899A)

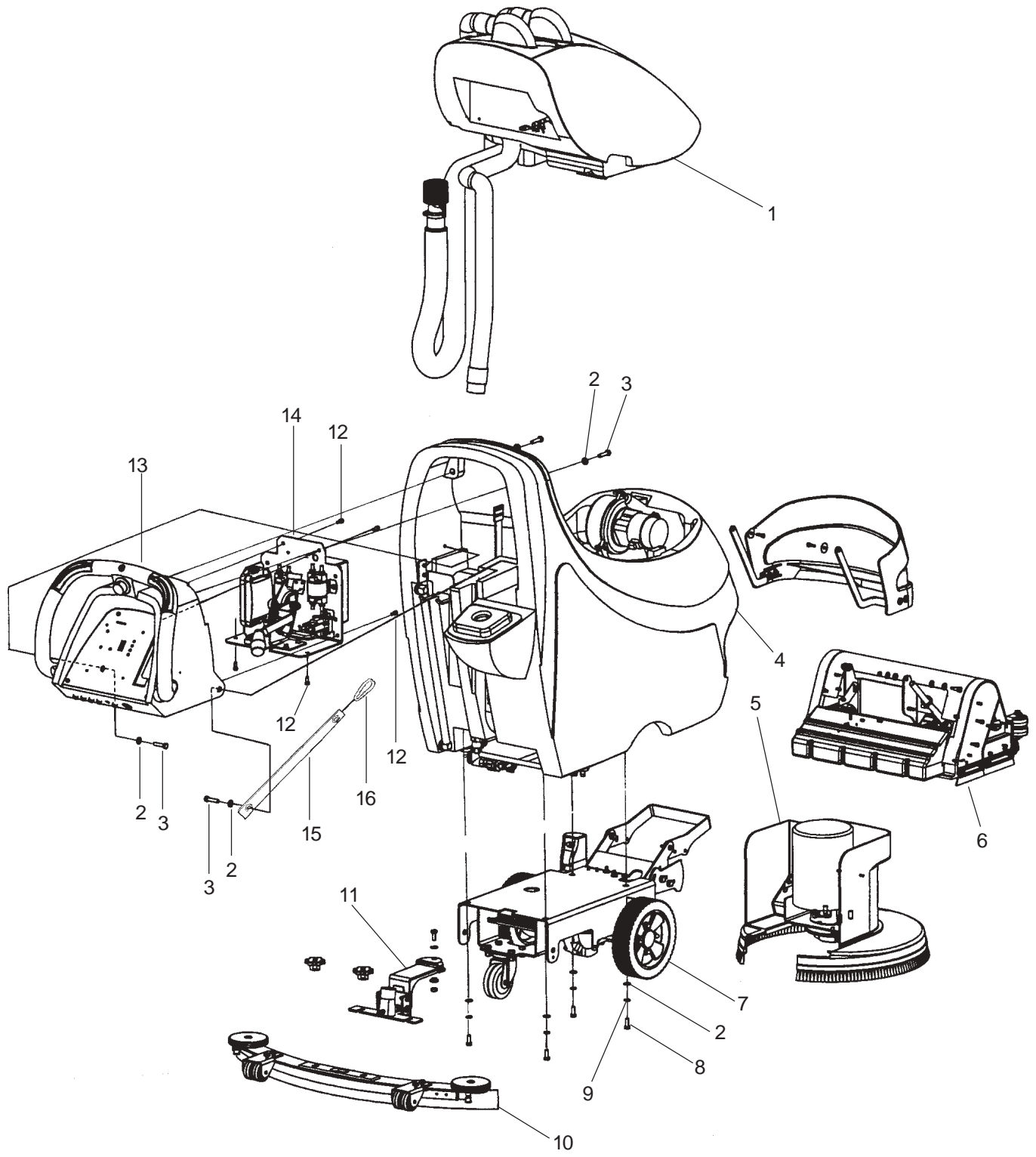
U.S. Patent No. 6,105,192; No. 6,557,207; No. 6,760,947 and other Patents Pending

## HOW TO CORRECT PROBLEMS IN THE MACHINE

PROBLEM	CAUSE	ACTION
<b>There is no solution flow.</b>	<p>The solution tank is empty.</p> <p>There is an obstruction in the solution hose or filter.</p> <p>The solution valve or electric wiring is damaged.</p> <p>The control module is defective.</p>	<p>Fill the solution tank.</p> <p>Remove the obstruction from the hose or filter.</p> <p>Repair or replace the valve or the electric wiring.</p> <p>Replace control module</p>
<b>The solution flow does not stop.</b>	<p>The solution valve is open.</p> <p>The solution valve or wiring is damaged.</p> <p>The solution valve is dirty</p> <p>There is a damaged seat and washer in the solution valve.</p> <p>The control module is defective.</p>	<p>Close or Clean the solution valve.</p> <p>Repair or replace the valve and the wiring.</p> <p>Clean the solution valve.</p> <p>Replace the seat and washer.</p> <p>Replace control module.</p>
<b>The machine does not remove all the water from the floor.</b>	<p>The squeegee is up.</p> <p>The squeegee tilt is not correct.</p> <p>The recovery tank is full.</p> <p>The screen filter is dirty.</p> <p>There is an obstruction or damage in the squeegee or squeegee hose.</p> <p>The vacuum motor is not running.</p> <p>The squeegee hose is disconnected, or damaged</p> <p>The squeegee blade is damaged, worn, or incorrectly installed.</p> <p>The gaskets on the cover of the recovery tank are damaged.</p>	<p>Lower the squeegee.</p> <p>To adjust, see the section titled "How to Adjust the Squeegee".</p> <p>Drain the recovery tank.</p> <p>Clean the screen filter.</p> <p>Remove the obstruction or repair the damage.</p> <p>Check for tripped breaker. Have an authorized service person make repairs.</p> <p>Check and connect hose.</p> <p>Turn or replace the squeegee blade. Correctly install the squeegee blade.</p> <p>Replace the gaskets.</p>
<b>The batteries do not give the normal running time.</b>	<p>The battery terminals are dirty or damaged.</p> <p>The electrolyte level is too low.</p> <p>The batteries are not fully charged.</p> <p>The charger is damaged.</p> <p>The battery is defective.</p> <p>The batteries are disconnected.</p> <p>Brush is in heavy scrub setting.</p>	<p>Clean the terminals and connectors. Replace the damaged cables. Charge the batteries.</p> <p>Add distilled water to each cell and charge the batteries.</p> <p>Charge the batteries for a full 16 hour charge.</p> <p>Have an authorized service person repair the charger.</p> <p>Check voltage of each cell while discharging.</p> <p>Connect the batteries.</p> <p>Adjust Pressure.</p>

PROBLEM	CAUSE	ACTION
<p><b>The cleaning is not even.</b></p>	<p>The scrub brush or pad is worn.</p> <p>There is damage to the brush assembly, caster or the solution valve. The brush motor is not running</p> <p>The solution level is low.</p>	<p>Replace the scrub brush or pad.</p> <p>Have an authorized service person make the needed repairs.</p> <p>Check for tripped breaker. Reset. Check for loose connections.</p> <p>Fill the solution tank.</p> <p>NOTE: If the problem continues consult an authorized service person.</p>
<p><b>The machine does not run.</b></p>	<p>The machine loses power.</p> <p>Key or switch is off.</p> <p>Batteries are disconnected. Battery terminals are dirty.</p> <p>Batteries are discharged</p>	<p>Reset the circuit breaker.</p> <p>Turn key or switch on.</p> <p>Check the battery connections.</p> <p>Check battery meter and recharge</p> <p>NOTE: If the problem continues consult an authorized service person.</p>

Clarke®  
**FOCUS S17/20, L17/20 and L17 Cyl.**  
**Final Assembly 1/05**



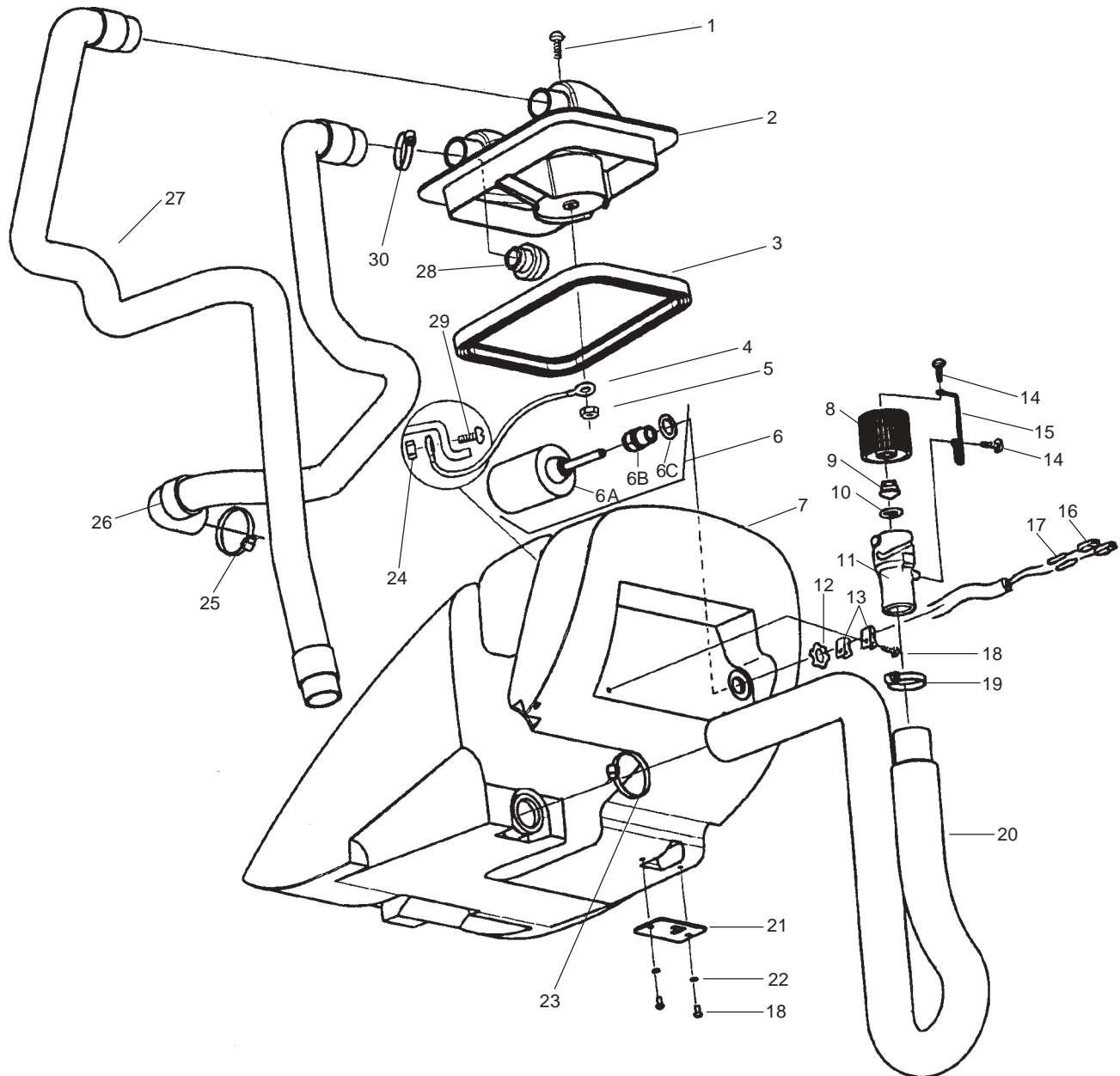


**Clarke®**  
**FOCUS S17/20, L17/20 and L17 Cyl.**  
**Final Assembly Parts List 1/05**

<b>Ref. #</b>	<b>Part No.</b>	<b>Description</b>	<b>Qty</b>
1	Page 32	Recovery Tank Assembly	1
2	980651	Washer, Flat 5/16"	8
3	80212A	Screw, M8 x 1.25 x 35mm Hex Head	4
4	Page 34	Solution Tank Assembly	1
5	Page 48	Rotary Disk Head Assembly Option	1
6	Page 46	Cyl. Head Asm. Option (L17 Cyl. model only)	1
7	Page 44	Frame Assembly	1
8	80197A	Screw, M8 x 1.25 x 20mm Hex Head	4
9	980652	Washer, Lock 5/16"	4
10	Page 42	Squeegee Assembly	1
11	Page 40	Squeegee Lift Assembly	1
12	80179A	Screw, M6 x 1 x 15mm Pan Head	6
13	Page 38	Control Housing Assembly	1
14	Page 36	Electrical Assembly	1
15	30334A	Tether	1
16	52570A	Clip, Tether	1
NI	40606A	Battery, 130AH, 12V Wet Option	2
NI	40605A	Battery, 130AH, 12V Dry Option	2
NI	40070A	Battery, 100AH, 12V Gel Option	2
NI	41206A	Battery Cable (Taper Style)	1
NI	41217A	Battery Cable (Ring Style) (use w/gel batteries)	1
NI	61337A	Battery Cable Adapter (use w/gel batteries)	2

NI = Not Illustrated

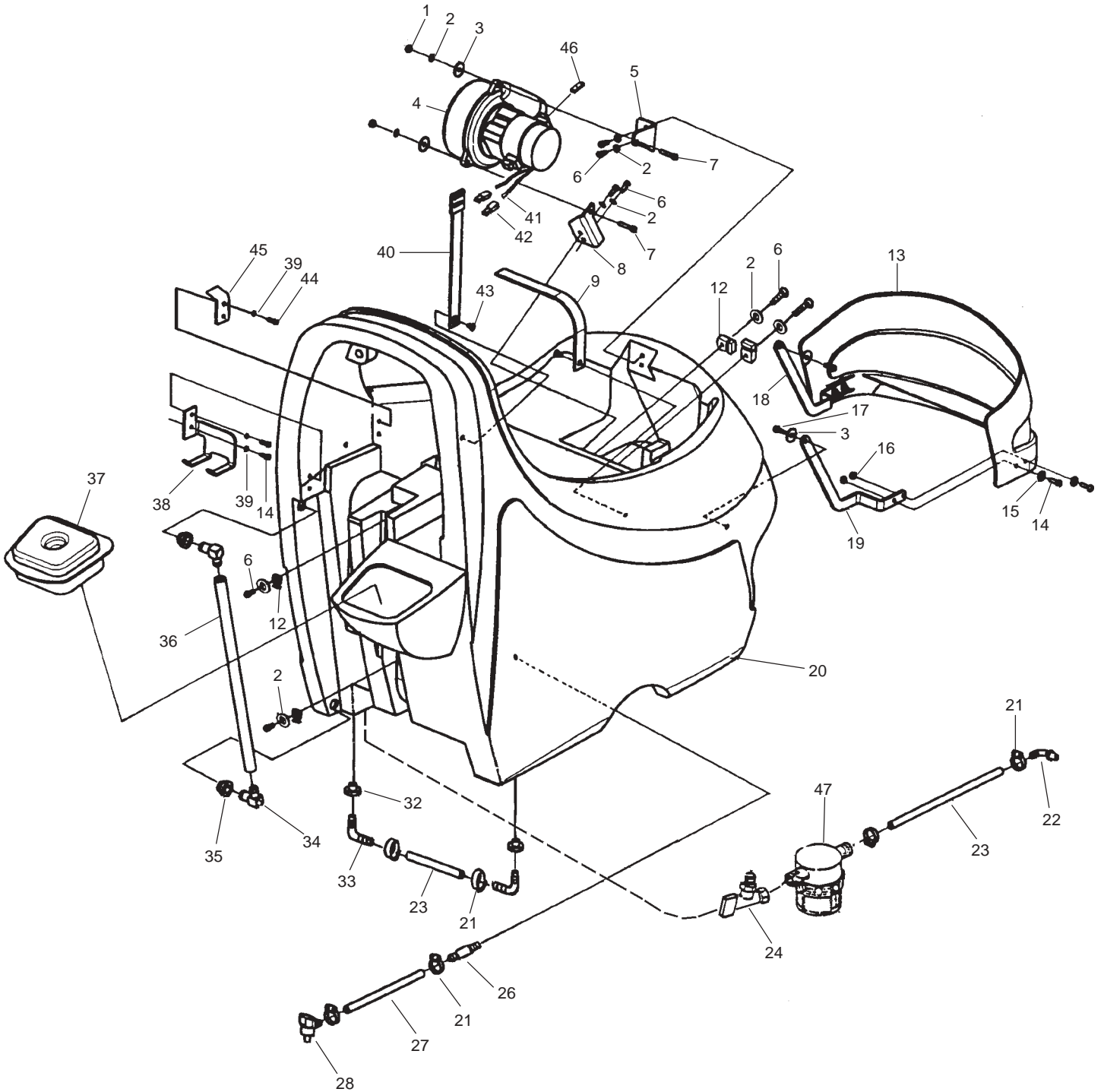
Clarke®  
FOCUS S17/20, L17/20 and L17 Cyl.  
Recovery Tank Assembly 1/05



**Clarke®**  
**FOCUS S17/20, L17/20 and L17 Cyl.**  
**Recovery Tank Parts List 1/05**

<b>Ref. #</b>	<b>Part No.</b>	<b>Description</b>	<b>Qty</b>
1	80176A	Screw, M5 x .8 x 12mm Pan Head	1
2	30207A	Recovery Lid	1
3	30065A	Lid Gasket	1
4	692409	Chain	1
5	80196A	Nut, M5 x .8 Hex	1
6	10660A	Float Switch Kit (includes 6A, 6B, 6C)	1
6A	40002A	Float Switch (included in #6)	1
6B	56459B	Strain Relief (included in #6)	1
6C	59877A	Washer, Seal (included in #6)	1
7	30218A	Recovery Tank	1
8	30227A	Drain Housing	1
9	30226A	Drain Plug	1
10	52560A	O-Ring	1
11	30225A	Drain Body	1
12	82100A	Locknut, 1/2" Conduit	1
13	872102	Nylon Clip, 5/16 OD	2
14	962957	Screw, #10-16 x 1/2	2
15	52206A	Chain	1
16	43402A	Housing, Connector (included in 6A)	2
17	41809A	Contact (included in 6A)	2
18	80193A	Screw, M5 x .8 x 10mm Pan Head	4
19	832002	Drain Valve Clamp	1
20	35102A	Drain Hose	1
21	61459A	Latch Plate	1
22	980603	Washer, LK #10 Ext Tooth	2
23	80110A	Hose Clamp	1
24	920296	Nut, 10-24	1
25	752020	Clamp	1
26	51060A	Vacuum Hose	1
27	30482A	Squeegee Hose	1
28	61451B	Vacuum Screen	1
29	962666	Screw, 10-24 x 3/4 Pan Head	1
30	53179A	Red Cable Tie	1
NI	77093A	Label, Falling Parts	1

Clarke®  
FOCUS S17/20, L17/20 and L17 Cyl.  
Solution Tank & Front Cover Assembly 1/05



**Clarke®**  
**FOCUS S17/20, L17/20 and L17 Cyl.**  
**Solution Tank & Front Cover Parts List 1/05**

Ref. #	Part No.	Description	Qty
1	80199A	Nut, M6 x 1 Hex Nylock	2
2	980614	Lock Washer, 1/4" Ext. Tooth	10
3	87026A	Flat Washer, 1/4"	4
4	40724A	Vacuum Motor	1
5	61297B	Front Motor Mount	1
6	80179A	Screw, M6 x 1 x 15mm, Pan Head	8
7	80180A	Screw, M6 x 1 x 30mm, Pan Head	2
8	61298B	Rear Motor Mount	1
9	52551A	Battery Strap	1
12	52548A	Screw Tab	4
13	30608A	Front Cover	1
14	80202A	Screw, M5 x .8 x 15mm, Pan Head	6
15	87036A	Flat Washer, #10	4
16	80196A	Nut, M5 x .8 Hex Nylock	4
17	80209A	Shoulder Bolt, M5 x 6 x 8mm	2
18	61457A	Left Front Cover Bracket	1
19	61456A	Right Front Cover Bracket	1
20	30219A	Solution Tank	1
21	50248A	Hose Clamp	6
22	53607A	Elbow, 1/4 NPT x 3/8	1
23	30172A	Hose	2
24	51204A	Valve, Solution	1
26	820207	Adapter	1
27	30453A	Hose	1
28	59614A	Battery Drain Valve	1
32	51518A	Bushing	2
33	51526A	Hosebarb, 3.8 x 90°	2
34	55189A	Hosebarb, 1/2 x 90°	2
35	31242A	Bushing	2
36	30239A	Level, Drain Hose	1
37	30222A	Solution Lid	1
38	61280A	Drain Hose Hanger	1
39	980603	Lock Washer, #10 Ext. Tooth	4
40	52552A	Battery Strap, w/Buckle	1
41	41809A	Contact, Connector	2
42	43401A	Housing, Connector	2
43	80210A	Screw, M6 x 1 x 10mm, Flat Head	2
44	80176A	Screw, M5 x .8 x 12mm, Pan Head	2
45	61345A	Hinge Bracket	1
46	40817A	Brush Mechanism	2
47	53562A	Filter Bowl	1
NI	70668A	Label, FOCUS (Front Cover)	1

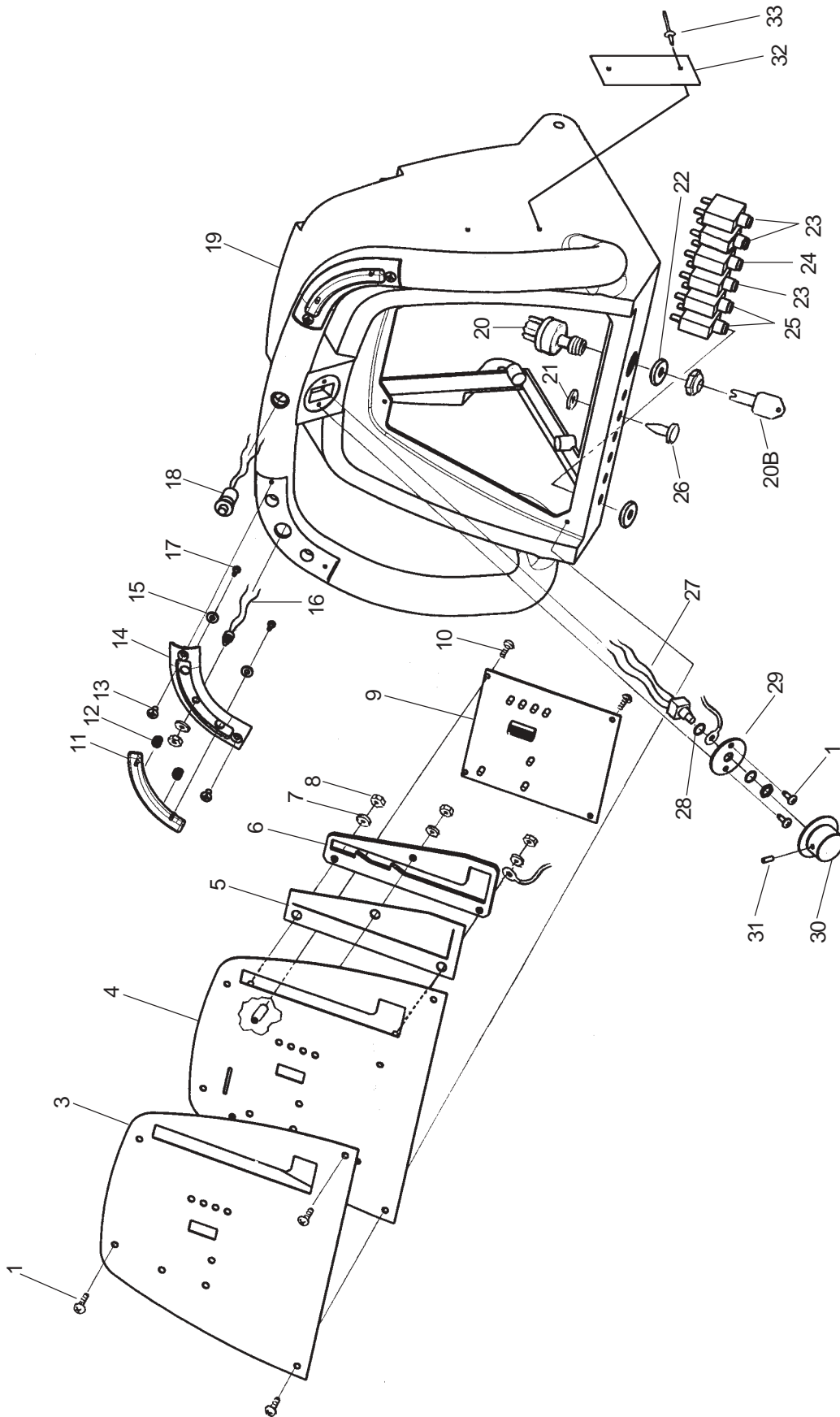
NI = Not Illustrated



**Clarke®**  
**FOCUS S17/20, L17/20 and L17 Cyl.**  
**Electrical Parts List 1/05**

Ref. #	Part No.	Description	Qty	
			S17/20	L17/20
1	80179A	Screw, M6 x 1 x 15mm, Pan Head	6	6
2	980614	Washer, Lock 1/4" Ext. Tooth	12	12
3	30097A	Insulator	1	1
4	40635A	Squeegee Switch	1	1
5	980607	Washer, Lock #6 Ext. Tooth	2	2
6	962980	Screw, 6-32 x 1, Pan Head	2	2
7	30287A	Strain Relief	1	1
8	52548A	Screw Tab	2	2
9	30175A	Squeegee Cam	1	1
10	40614A	Battery Charger, 115V, 50/60 Hz	1	1
	40615A	Battery Charger, 230V, 50/60 Hz	1	1
11	40611A	Cord, Power Supply 115V	1	1
	40609A	Cord, Power Supply 230V, European	1	1
12	980692	Washer, Flat 5/16" SS	2	2
13	438360	Squeegee Lift Spring	1	1
14	80178A	Shoulder Bolt, M6 x 8 x30mm	1	1
15	80202A	Screw, M5 x .8 x 15mm, Pan Head	1	1
16	60975A	Squeegee Cable	1	1
17	85389A	Screw, 3/8-16 x 5/8	1	1
18	980666	Washer, 3/8" Ext. Tooth	1	1
19	60976A	Squeegee Lever	1	1
20	52557A	Squeegee Knob	1	1
21	40631A	Traverse Harness	-	1
22	80186A	Eyebolt, #10-24	1	1
23	40592A	Traverse Controller	-	1
24	80221A	Screw, M4 x .7 x 20mm, Pan Head	3	3
25	40630A	Main Harness, Traverse	-	1
	40629A	Main Harness, Non-Traverse	1	-
26	193951	Grommet, 8.5"	1	1
27	80205A	Screw, M5 x .8 x 20mm, Pan Head	1	1
28	80204A	Nut, M3 x .5, Nylock	2	2
29	40169A	Solenoid, Vacuum	1	1
30	80208A	Screw, M6 x 1 x 10mm, Pan Head	6	6
31	41811A	Contactor, Main	1	1
32	40612A	Red Battery Cable	1	1
33	80222A	Screw, M4 x .7 x 10mm, Pan Head	2	2
34	40633A	Relay, DPDT, 115V	1	1
	40634A	Relay, DPDT, 230V	1	1
35	41810A	Contactor, Brush	1	1
36	40613A	Black Battery Cable	1	1
37	46106A	Rectifier	1	1
38	40626A	Terminal Block	1	1
39	80206A	Screw, M3 x .5 x 20mm, Pan Head	2	2
40	980603	Washer, Lock #10 Ext. Tooth	2	2
41	80169A	Nut, M5 x .8 Hex	2	2
42	80199A	Nut, M6 x 1, Nylock	1	1
43	60265A	Nut Plate	1	1
44	60977A	Squeegee Lift Mount	1	1
45	61084A	Electrical Panel, Traverse	-	1
	61332A	Electrical Panel, Non-Traverse	1	-
46	52562A	Strain Relief Bushing	1	1
47	80196A	Nut, M5 x .8 Nylock	1	1
48	912216	Fuse, 15A	1	1
49	43006A	Fuse Holder	1	1
50	77094A	Label, Ground	1	1
51	77092A	Label, Gases & Chemicals	1	1

Clarke®  
**FOCUS S17/20, L17/20 and L17 Cyl.**  
**Control Housing Assembly 1/05**

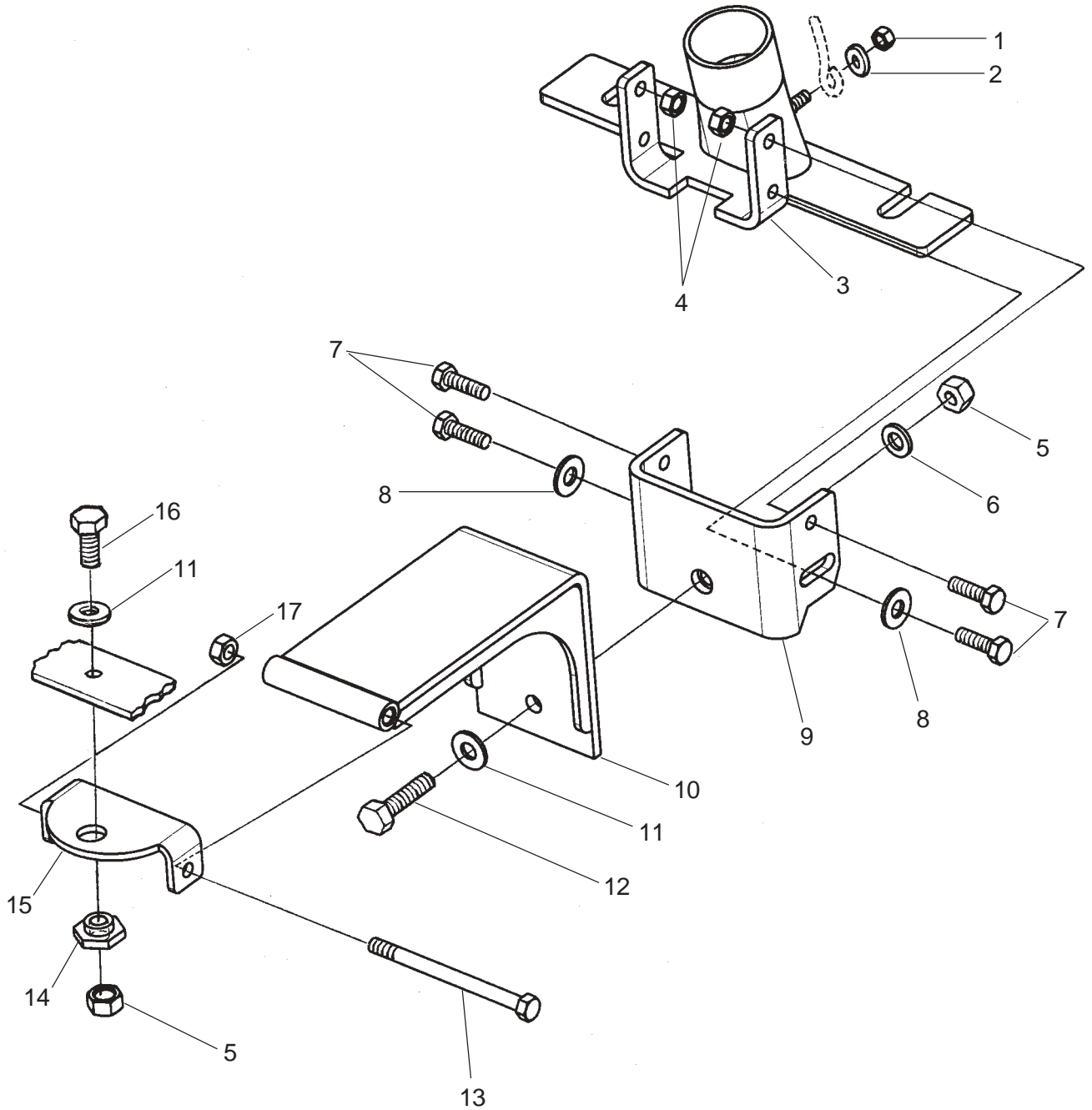




**Clarke®**  
**FOCUS S17/20, L17/20 and L17 Cyl.**  
**Control Housing Parts List 1/05**

<b>Ref. #</b>	<b>Part No.</b>	<b>Description</b>	<b>Qty S17/20</b>	<b>Qty L17/20</b>	<b>Qty L17 Cyl</b>
1	962957	Screw, 10-16 x 1/2"	6	6	6
3	70352A	Membrane Switch	1	1	1
4	60979A	Control Panel	1	1	1
5	52555A	Lever Gasket	1	1	1
6	60978A	Wear Plate	1	1	1
7	87036A	Washer, Flat #10	3	3	3
8	80196A	Nut, M5 x .8, Nylock	3	3	3
9	40597A	Panel Circuit Board	1	1	1
10	962330	Screw, 6-32 x 3/8" Pan Head	4	4	4
11	30214A	Switch Lever	2	2	2
12	50961A	Spring, Switch	4	4	4
13	80192A	Screw, M5 x .8 x 16mm, Oval Head	4	4	4
14	30213A	Switch Housing	2	2	2
15	980608	Washer, Flat #6	4	4	4
16	40126A	Switch Assembly	2	2	2
17	80191A	Screw, M3.5 x 6 x 10mm, Pan Head	4	4	4
18	52556A	Reverse Switch	-	1	1
19	30220A	Control Handle, Traverse	-	1	1
	30228A	Control Handle, Non-Traverse	1	-	-
20	47380A	Key Switch	-	1	1
20B	55413A	Key, Spare	-	1	1
21	80230A	Washer, Nylon	1	1	-
22	87052A	Washer, Key Switch	-	-	1
23	41422A	Circuit Breaker, 25A	1	2	3
24	41433A	Circuit Breaker, 40A	1	1	-
	41422A	Circuit Breaker, 25A	-	-	1
25	41423A	Circuit Breaker, 5A	2	2	2
26	80229A	Arrow Clip, Nylon	1	1	-
27	40135A	Potentiometer Harness	-	1	1
28	980666	Washer, Lock 3/8"	-	1	1
29	60259A	Potentiometer Retainer	-	1	1
30	50962A	Control Knob	-	1	1
31	962262	Screw, Set 8-32 x 1/2" (included in #30)	-	1	1
32	70080A	Plate, Warning	1	1	1
33	83010A	Rivet, Pop	2	2	2

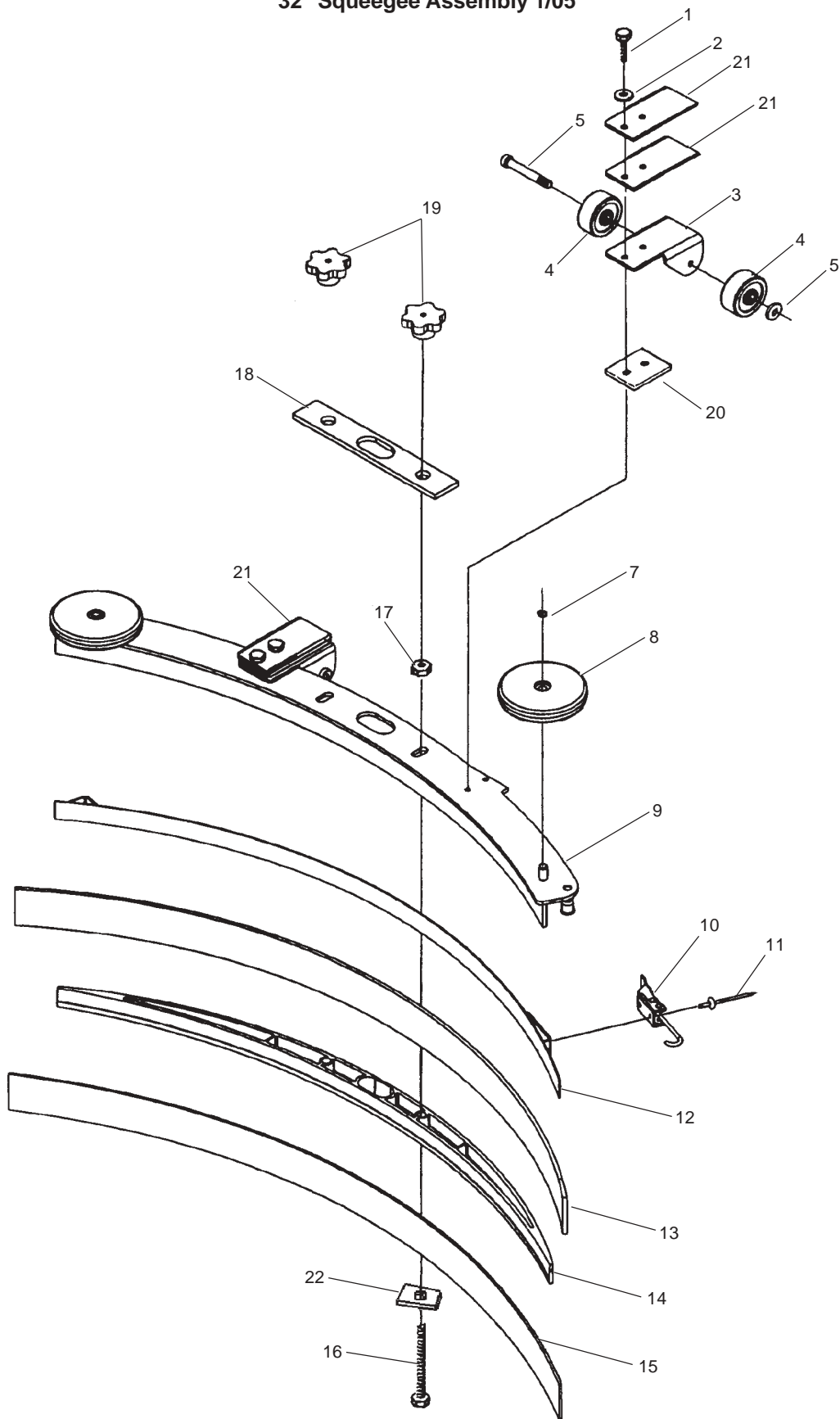
Clarke®  
FOCUS S17/20, L17/20 and L17 Cyl.  
Squeegee Lift Assembly 1/05



**Clarke®**  
**FOCUS S17/20, L17/20 and L17 Cyl.**  
**Squeegee Lift Parts List 1/05**

<b>Ref. #</b>	<b>Part No.</b>	<b>Description</b>	<b>Qty</b>
1	80196A	Nut, M5 x .8, Nylock	1
2	87036A	Washer, Flat #10	1
3	61305A	Tube Bracket	1
4	80199A	Nut, M6 x 1, Nylock	2
5	80198A	Nut, M8 x 1.25, Nylock	2
6	980652	Washer, Lock 5/16"	1
7	80195A	Screw, M6 x 1 x 20mm, Hex Head	4
8	87026A	Washer, Flat 1/4"	2
9	61292A	Pin Bracket	1
10	61296A	Squeegee Arm	1
11	980651	Washer, Flat 5/16"	2
12	80194A	Screw, M8 x 1.25 x 30mm, Hex Head	1
13	80101A	Screw, 1/4-20 x 3 1/4"	1
14	61461A	Squeegee Swivel Spacer	1
15	60256A	Pivot Bracket	1
16	80197A	Screw, M8 x 1.25 x 20mm, Hex Head	1
17	81104A	Nut, 1/4-20 Nylock	1

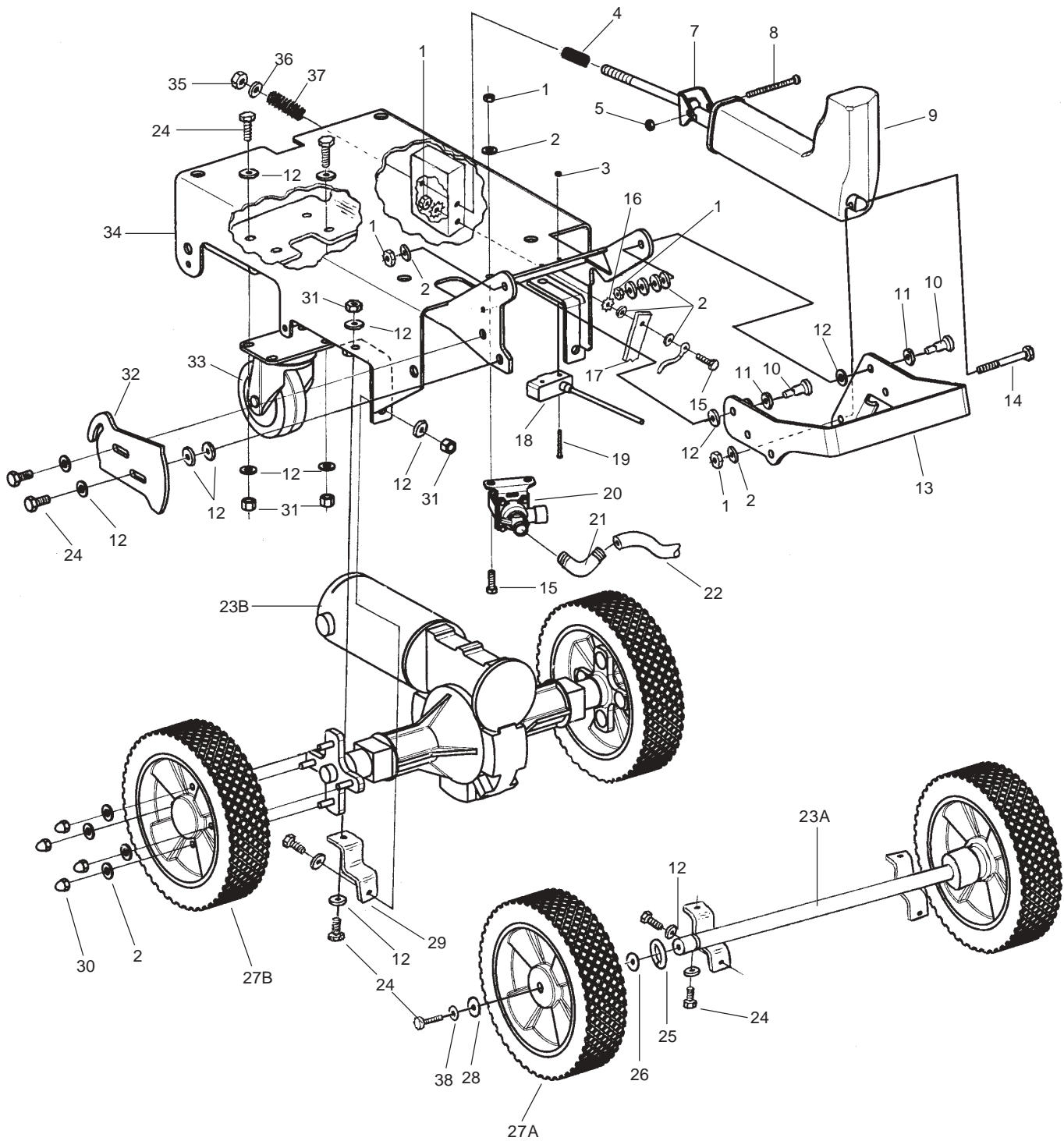
Clarke®  
FOCUS S17/20, L17/20 and L17 Cyl.  
32" Squeegee Assembly 1/05



**Clarke®**  
**FOCUS S17/20, L17/20 and L17 Cyl.**  
**32" Squeegee Parts List 1/05**

<b>Ref. #</b>	<b>Part No.</b>	<b>Description</b>	<b>Qty</b>
1	80252A	Screw, 1/4-20 x 1 Hex SS	4
2	980657	Washer, 1/4 Lock	4
3	60243A	Bracket, Squeegee Wheel	2
4	30049B	Wheel, Squeegee	4
5	81104A	Nut, 1/4-20	2
6	60254A	Bolt, Shoulder 5/16x 2 1/4	2
7	50958A	Ring, 3/8 ID Snap	2
8	30048A	Wheel, Guide, 4 Inch Diameter	2
9	60234A	Channel, Squeegee Weldment 32"	1
10	50835A	Latch, Squeegee Clamp	1
11	930086	Rivet, 3/16 x .450 Aluminum	2
12	60232A	Strap, Clamp, Squeegee Retainer 32	1
13	30067A	Blade, Rear, Gum Rubber, 32"	1
14	30047A	Spacer, Squeegee 32	1
15	30066A	Blade, Front Ribbed 32"	1
16	80011A	Screw, 3/8-16 x 3	2
17	81301A	Nut, 3/8-16 Jam SS	2
18	34260B	Gasket	1
19	25201A	Knob	2
20	60358A	Shim, Squeegee Wheel	2
21	61370A	Weight, Squeegee	4
22	80280A	Nut, Squeegee Backup	2

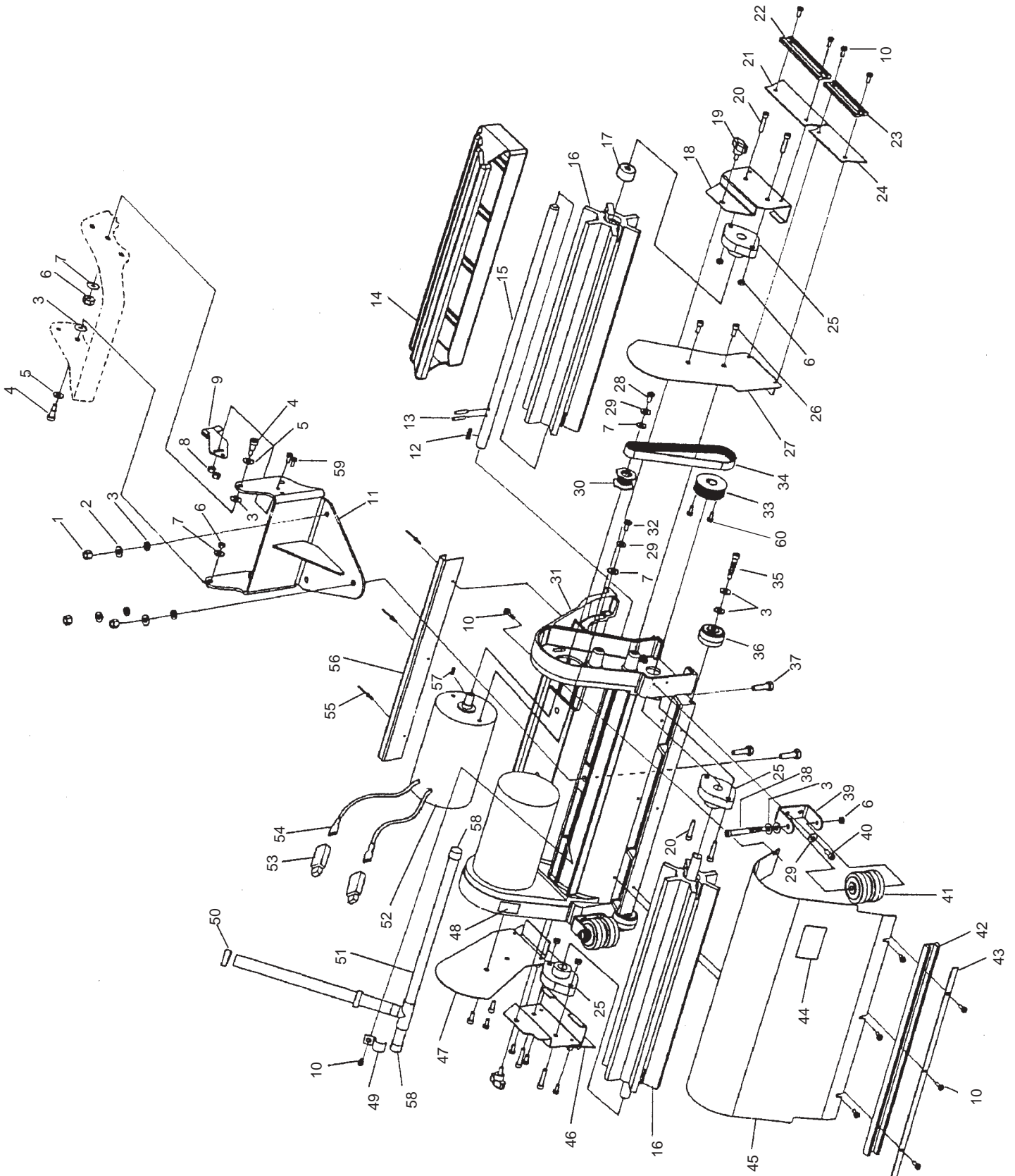
Clarke®  
**FOCUS S17/20, L17/20 and L17 Cyl.**  
**Frame Assembly 1/05**



**Clarke®**  
**FOCUS S17/20, L17/20 and L17 Cyl.**  
**Frame Parts List 1/05**

Ref. #	Part No.	Description	Qty S17	Qty L17	Qty L17 Cyl	Qty S20	Qty L20
1	80199A	Nut, M6 x 1, Nylock	5	6	6	5	6
2	87026A	Washer, Flat 1/4" SS	7	17	17	7	17
3	80204A	Nut, M3 x .5 Nylock	2	2	2	2	2
4	80225A	Spring, Front (1.25" long)	-	-	1	-	-
	54179A	Spring, Front (2.25" long)	1	1	-	1	1
5	80196A	Nut, M5 x .8 Nylock	1	1	1	1	1
7	61077A	Rear Actuator Bracket	1	1	1	1	1
8	80164A	Shoulder Bolt, M5 x 6 x 20mm	1	1	1	1	1
9	61075A	Actuator	1	1	1	1	1
10	80165A	Shoulder Bolt, M6 x 8 x 12mm	2	2	2	2	2
11	980651	Washer, Flat 5/16"	2	2	2	2	2
12	980692	Washer, Flat 5/16" SS	18	18	18	18	18
13	61592A	Lift Bracket	1	1	1	1	1
14	80173A	Bolt, M6 x 1 x 65mm Hex Head	1	1	1	1	1
15	80195A	Screw, M6 x 1 x 20mm Hex Head	2	3	3	2	3
16	980614	Washer, Lock 1/4" Ext Tooth	-	2	2	-	2
17	61302A	Static Strap	-	1	1	-	1
18	47422B	Switch, Wisker	1	1	1	1	1
19	80203A	Screw, M3- x 5 x 30mm Pan Head	2	2	2	2	2
20	59610A	Solution Valve	1	1	1	1	1
21	51526A	Hosebarb, 90°, 3/8 x 3/8	1	1	-	-	-
	52635A	Hosebarb, 90°, 3/8 x 1/2	-	-	1	-	-
22	30311A	Hose	1	1	-	1	1
23A	61455A	Axle, Non-Transpose	1	-	-	1	-
23B	61076A	Transaxle	-	1	1	-	1
24	80197A	Screw, M8 x 1.25 x 20mm Hex Head	12	10	10	12	10
25	57423A	Snap Ring	2	-	-	2	-
26	87616A	Washer, Nylon	4	-	-	4	-
27A	61436A	Wheel, Non-Transpose	2	-	-	2	-
27B	61437A	Wheel, Transverse	-	2	2	-	2
28	980205	Washer, 5/16" Fender	2	-	-	2	-
29	60289A	Transaxle Clamp	-	2	2	-	2
30	81104A	Nut, 1/4-20 ESNA SS	-	8	8	8	8
31	80198A	Nut, M8 x 1.25 Nylock	8	8	8	8	8
32	61079A	Head Bracket	1	1	1	1	1
33	61460A	Caster Assembly	1	1	1	1	1
34	61073A	Main Frame	1	1	1	1	1
35	80223A	Nut, M10 x 1.5 Nylock	1	1	1	1	1
36	980645	Washer, Flat 3/8"	1	1	1	1	1
37	80226A	Spring, Rear (2" long)	1	1	1	1	1
38	980652	Washer, Lock 5/16"	2	-	-	2	-

Clarke®  
FOCUS L17 Cylindrical  
Cylindrical Head Assembly 1/05

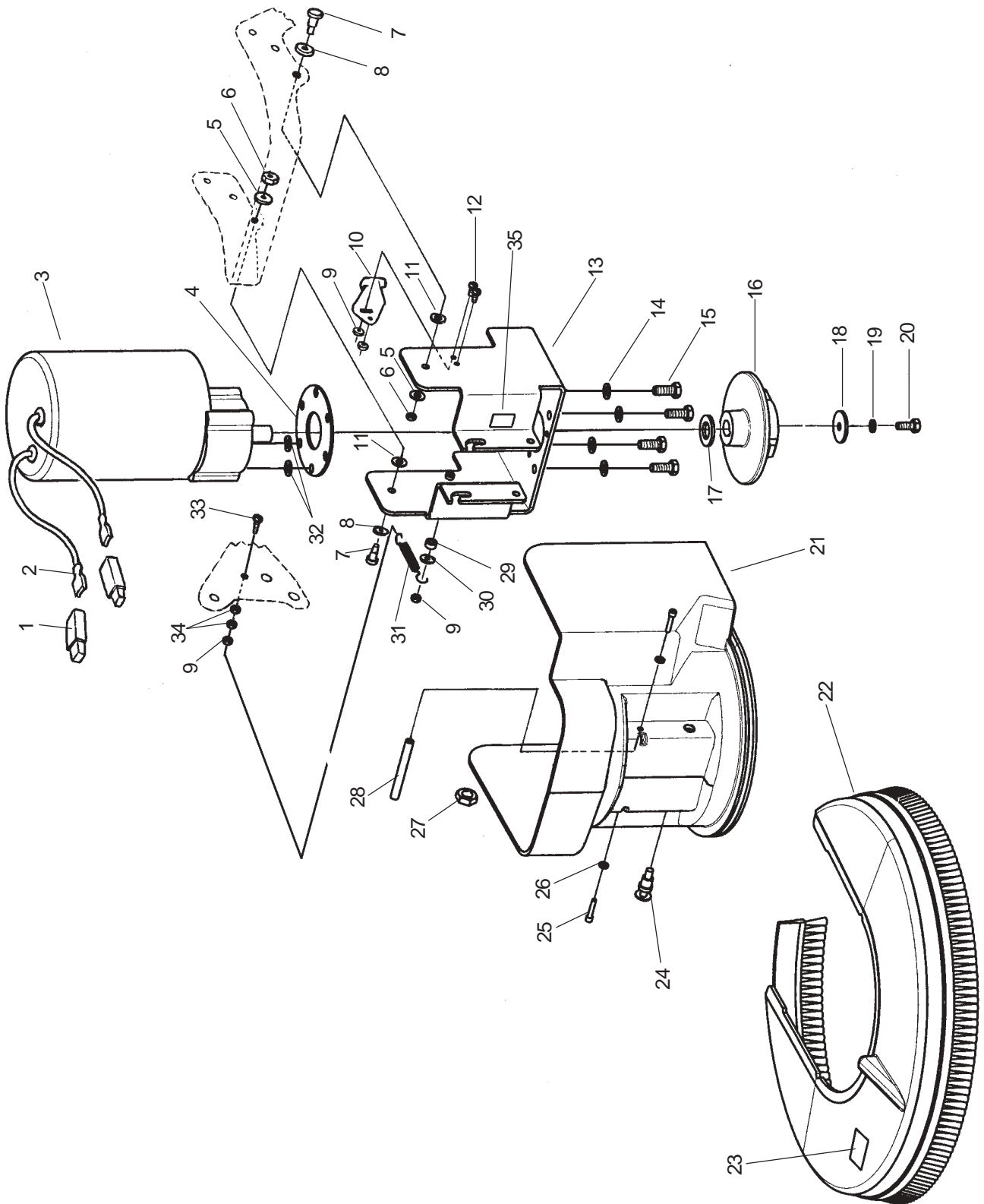




**Clarke®**  
**FOCUS L17 Cylindrical**  
**Cylindrical Head Parts List 1/05**

Ref. #	Part No.	Description	Qty
1	80198A	Nut, M8 x 1.25 Nylock	3
2	980652	Washer, 5/16" Lock	3
3	980692	Washer, 5/16" Flat SS	13
4	80165A	Shoulder Bolt, M6 x 8 x 12mm	2
5	980651	Washer, 5/16" Flat	2
6	80199A	Nut, M6 x 1 Nylock	8
7	87026A	Washer, 1/4" Flat SS	8
8	80196A	Nut, M5 x .8 Nylock	2
9	61306A	Switch Bracket	1
10	80176A	Screw, M5 x .8 x 12mm Pan Hd	17
11	61080A	Head Bracket	1
12	915082	Key, 3/16" Sq. X 3/4"	2
13	50436A	Drive Pin	4
14	30230A	Debris Tray	1
15	61286A	Brush Shaft	2
16	ref.	See accessories page, cyl. brush	2
17	61398A	Brush Spacer	2
18	61449A	Door, L.H. Brush	1
19	52477A	Clamping Knob	2
20	80180A	Screw, M6 x 1 x 30mm Pan Hd	8
21	30545A	Skirt, Brush Door	2
22	30209A	Bumper, Brush Door	2
23	30208A	Bumper, Belt Cover	2
24	30544A	Skirt, Belt Cover	2
25	53399A	Flange Bearing	4
26	80179A	Screw, M6 x 1 x 15mm Pan Hd	4
27	61282A	Cover L.H. Belt	1
28	80214A	Screw, M6 x 1 x 12 Hex Head	2
29	980657	Washer, 1/4" Lock	10
30	61396A	Motor Pulley	2
31	21058A	Brush Housing	1
32	57994A	Screw, M6 x 20mm, Hex Head	4
33	61397A	Brush Pulley	2
34	52818A	Drive Belt	2
35	80178A	Shoulder Bolt, M6 x 8 x 30mm	2
36	59932A	Front Wheel	2
37	80187A	Bolt, M8 x 1.25 x 30mm Hex Hd.	3
38	80177A	Shoulder Bolt, M6 x 8 x 60mm	2
39	61448A	Roller Bracket	2
40	80208A	Screw, M6 x 1 x 10mm Pan Hd	4
41	30049B	Wheel, 1 x 2 x 5/16	4
42	30235A	Bumper, Housing	1
43	61287A	Bumper Retainer	1
44	70465A	Label, 17	1
45	61285A	Motor Cover	1
46	61283A	Door, R.H. Brush	1
47	61450A	Cover, R.H. Belt	1
48	77091A	Label, Moving Parts	2
49	782002	Clamp, Solution Tube	1
50	50248A	Clamp, 3/8 Hose	2
51	10387A	Solution Tube Assembly	1
52	61430A	Motor	2
53	41602A	Housing, Connector	4
54	41601A	Contact, Connector	4
55	930113	Rivet, 1/8"	3
56	61288A	Tray Rail	1
57	80158A	Key, 1/8" Sq. x 1/2"	2
58	53182A	Cap, Tube	2
59	80249A	Screw, M5-.8 x 12 mm HH	2
60	962262	Screw, Set 8-32 x 1/4	2

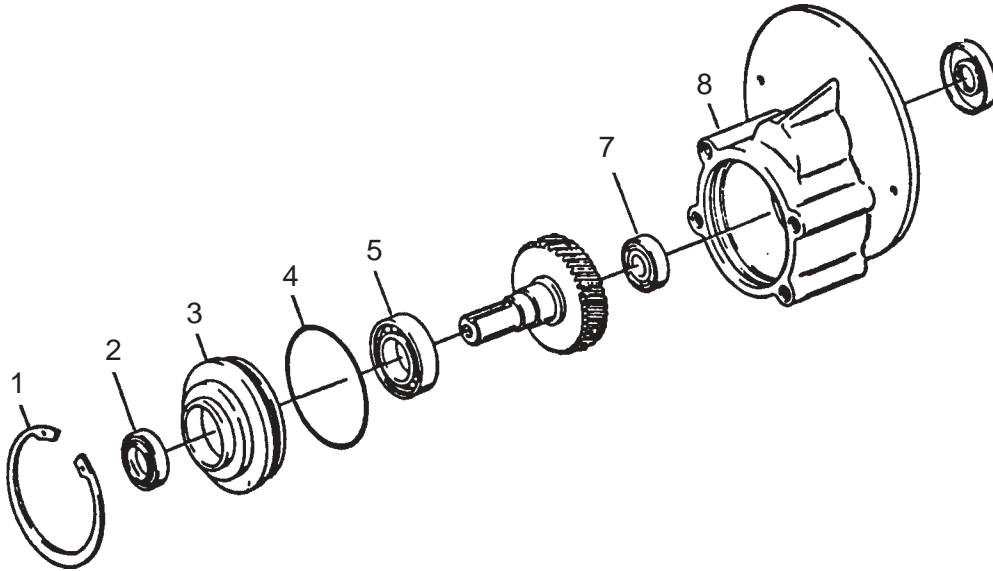
Clarke®  
FOCUS S17/20 & L17/20 Rotary  
Rotary Disk Head Assembly 1/05



**Clarke®**  
**FOCUS S17/20 & L17/20 Rotary**  
**Rotary Disk Head Parts List 1/05**

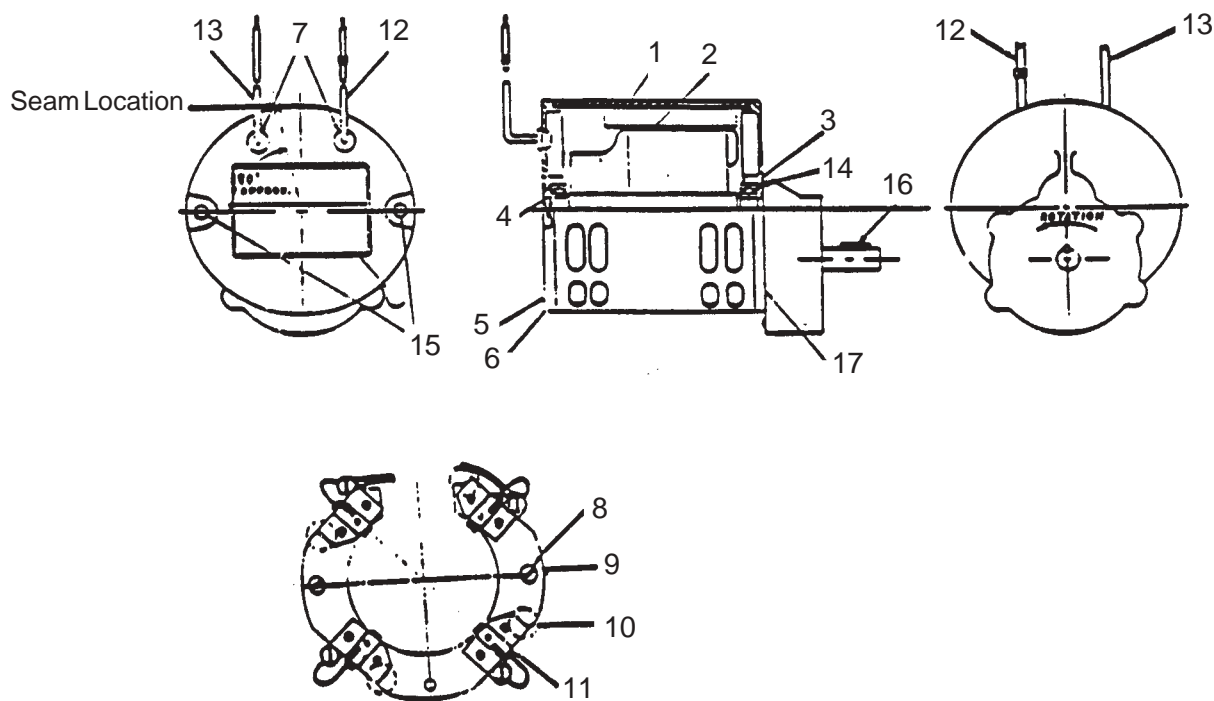
Ref. #	Part No.	Description	Qty S17	Qty L17	Qty S20	Qty L20
1	41602A	Housing, Connector	1	1	1	1
2	41601A	Contact, Connector	1	1	1	1
3	40591A	Brush Motor	1	1	1	1
4	20014A	Motor Shim	1	1	1	1
5	87026A	Washer, Flat 1/4"	2	2	2	2
6	80199A	Nut, M6 x 1 Nylock	2	2	2	2
7	80165A	Shoulder Bolt, M6 x 8 x 12mm	2	2	2	2
8	980651	Washer, Flat 5/16"	2	2	2	2
9	80196A	Nut, M5 x .8 Nylock	3	3	3	3
10	61306A	Switch Bracket	1	1	1	1
11	980692	Washer, Flat 5/16"	2	2	2	2
12	80249A	Screw, M5 x .8 x 12mm Hex Head	2	2	2	2
13	61078A	Motor Mount Bracket	1	1	1	1
	61593A	Motor Mount Bracket	-	-	1	1
14	98451A	Washer, Lock 7/16"	4	4	4	4
15	80184A	Bolt, M10 x 1.5 x 25mm Hex Head	4	4	4	4
16	20308A	Motor Adaptor	1	1	1	1
17	980679	Washer, Flat 3/4"	1	1	1	1
18	980210	Washer, Impeller	1	1	1	1
19	980652	Washer, Lock 5/16"	1	1	1	1
20	80197A	Screw, M8 x 1.25 x 20mm Hex Head	1	1	1	1
21	30216A	Upper Brush Housing	1	1	1	1
	30607A	Upper Brush Housing	-	-	1	1
22	30217A	Lower Brush Housing	1	1	1	1
	30599A	Lower Brush Housing	-	-	1	1
23	70667A	Label, 17	1	1	1	1
	70897A	Label, 20	-	-	1	1
24	66550A	Pin Assembly	1	1	1	1
25	80224A	Shoulder Bolt, M5 x 6 x 16mm	2	2	2	2
26	980643	Washer, Flat	2	2	2	2
27	920278	Nut, 1/2-20 SS Hex	1	1	1	1
28	61289A	Motor Cover Rod	1	1	1	1
29	52515A	Bearing Sleeve	1	1	1	1
30	87036A	Washer, Flat #10	1	1	1	1
31	80227A	Extension Spring	1	1	1	1
32	980645	Washer, Flat 3/8"	2	-	-	-
33	80202A	Screw, M5 x .8 x 15mm, Pan Head	1	1	1	1
34	80169A	Nut, M5 x .8 Hex	2	2	2	2
35	77091A	Label, Moving Parts	1	1	1	1

**Clarke®**  
**FOCUS S17/20 & L17/20 Rotary**  
**Gearbox Assembly and Parts List 1/05**



Ref #	Part No.	Description	Qty
1	57846A	Ring, Snap	1
2	507641	Seal, Oil, Small	1
3	52050A	Cap End	1
4	56668A	O-Ring	1
5	51176A	Bearing, Large	1
7	902605	Bearing, Small	1
9	58144A	Seal, Oil Large	1
10	NI	Darina EP2 Grease	4 oz.
11	52855A	Complete Gearbox Asm.	1

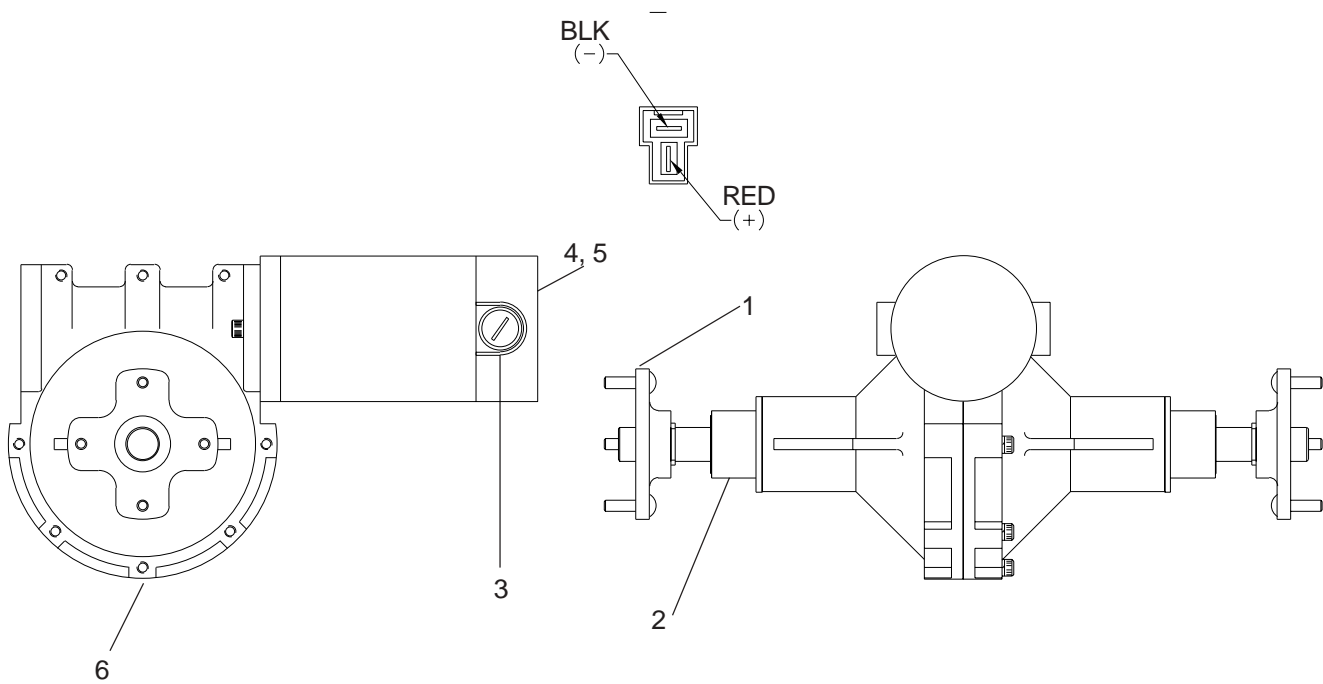
**Clarke®**  
**FOCUS S17/20 & L17/20 Rotary**  
**Brush Motor Assembly and Parts List 1/05**



Item	Part No.	Description	Qty
1	56478A	Stator Frame Assembly (w/Magnets & Clips)	1
2	50142A	Armature Assembly (w. B.E. & F.E. Bearings)	1
3	902654	Bearings B.E.	1
4	902550	Bearing F.E.	1
* 5		Commutator Bracket Assembly (w/Brush BRD Assembly Leads)	1
6	50520A	Commutator Bracket	1
7	56480A	Strain Relief	2
8	962546	Brush Board Screw	2
9	50517A	Brush Board Assembly (w/ Springs & Brushes)	1
10	448396	Brush Spring	4
11	40826A	Brush Assembly	4
12	55657A	Lead Assembly	1
13	55656A	Lead Assembly	1
* 14		Helical Washer	1
15	50515A	Thru Bolt	2
16	80501A	Shaft Key	1
17	54238A	B.E. Bracket Assembly (Gear Box)	1

\* NOTE: Parts not available at this time.

**Clarke®**  
**FOCUS L17/L20 & L17 Cylindrical**  
**Transaxle Drawing 1/05**

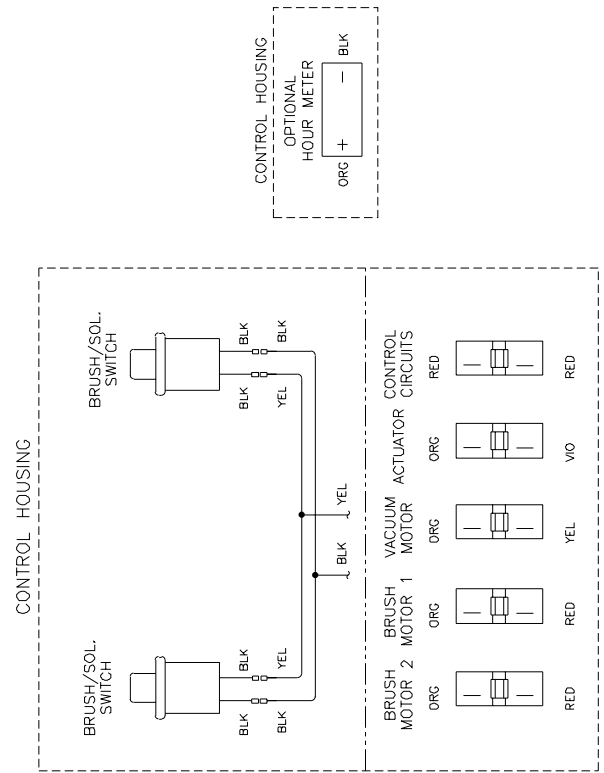
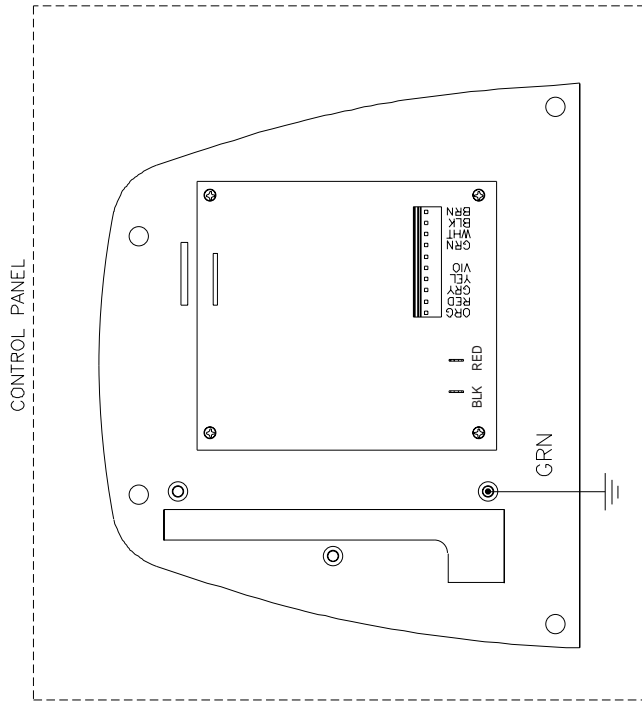
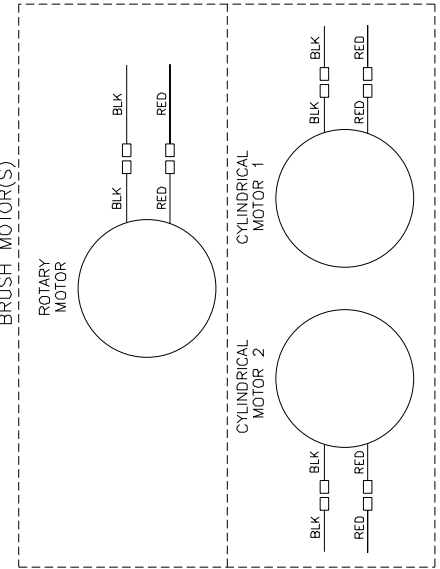
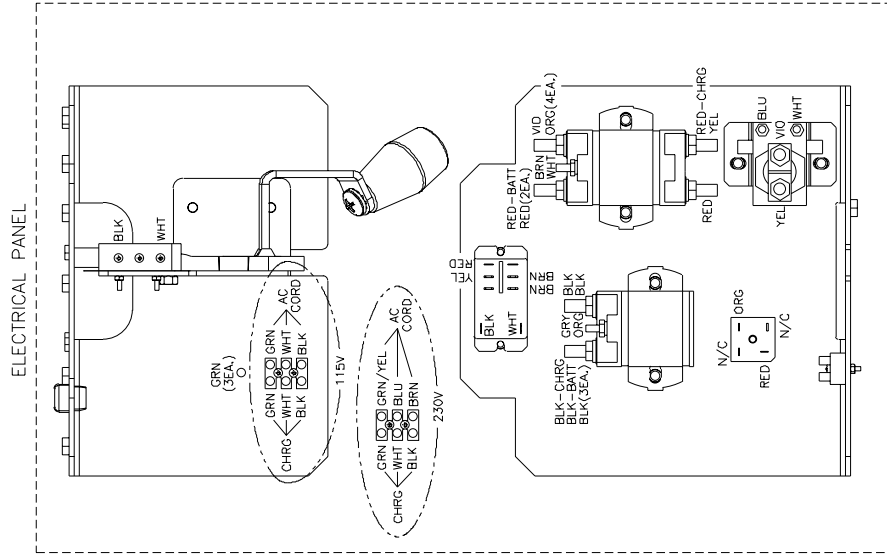
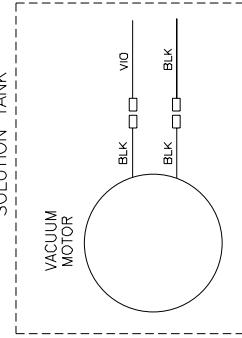
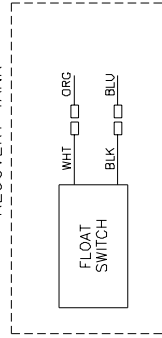
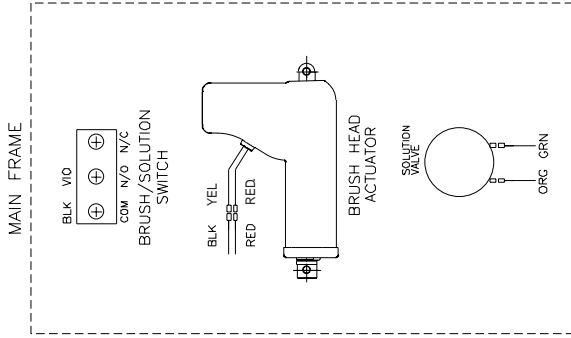


Item	Part No.	Description	Qty
1	10135A	Wheel Flange Kit	2
2	51056A	Transaxle Mounting Sleeve	2
3	40593A	Motor Brush	2
4	40594A	Motor Urethane Sleeve	1
5	40595A	Motor	1
6	40596A	Transaxle Only	1

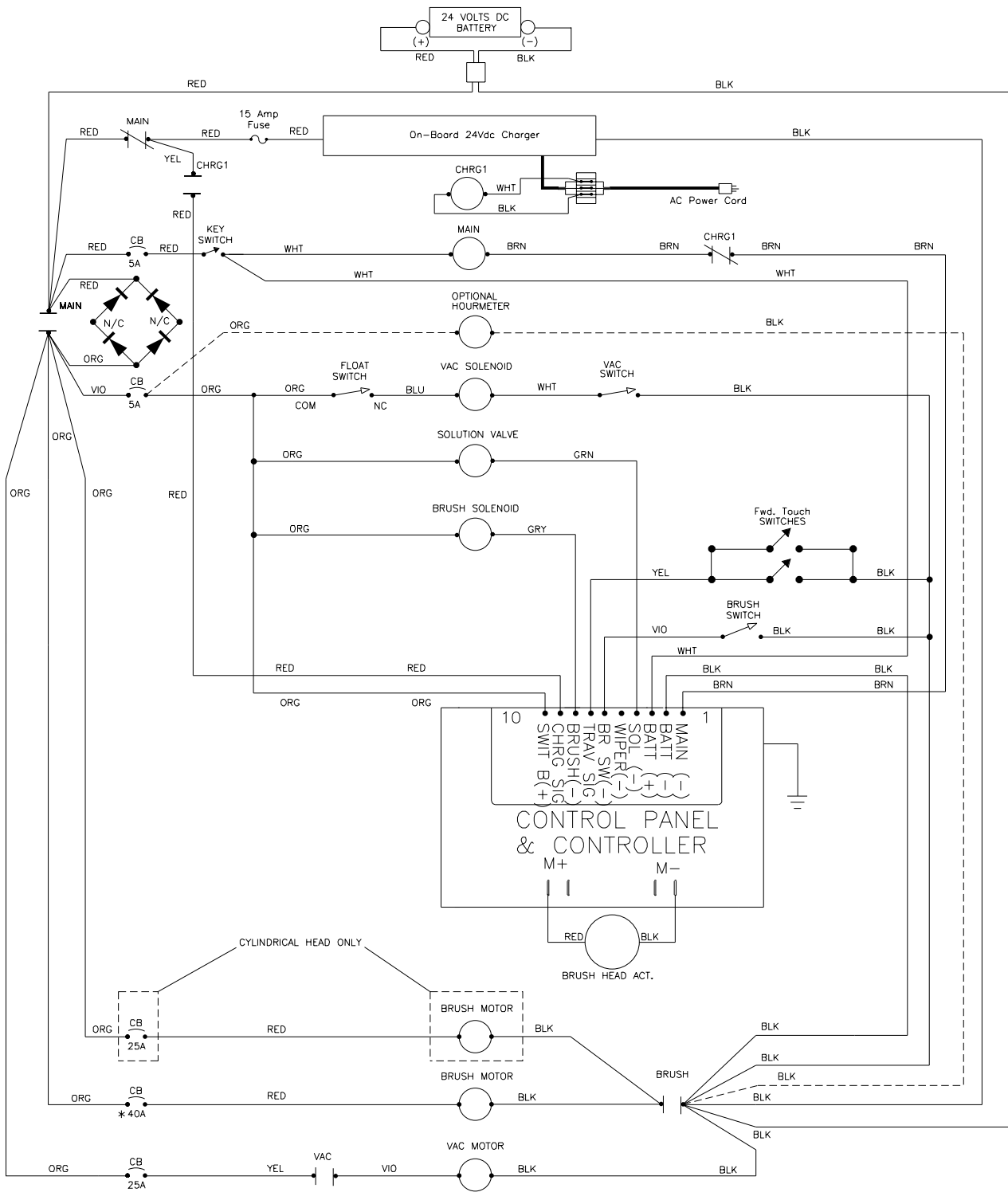
Specifications:

- Motor: 24VDC, Permanent Magnet, Tenv
- Transaxle: 30:1 Ratio
- Gear Oil: Mobile SHC634 12 oz.

**Clarke®**  
**FOCUS S17/20**  
**Connection Diagram 1/05**



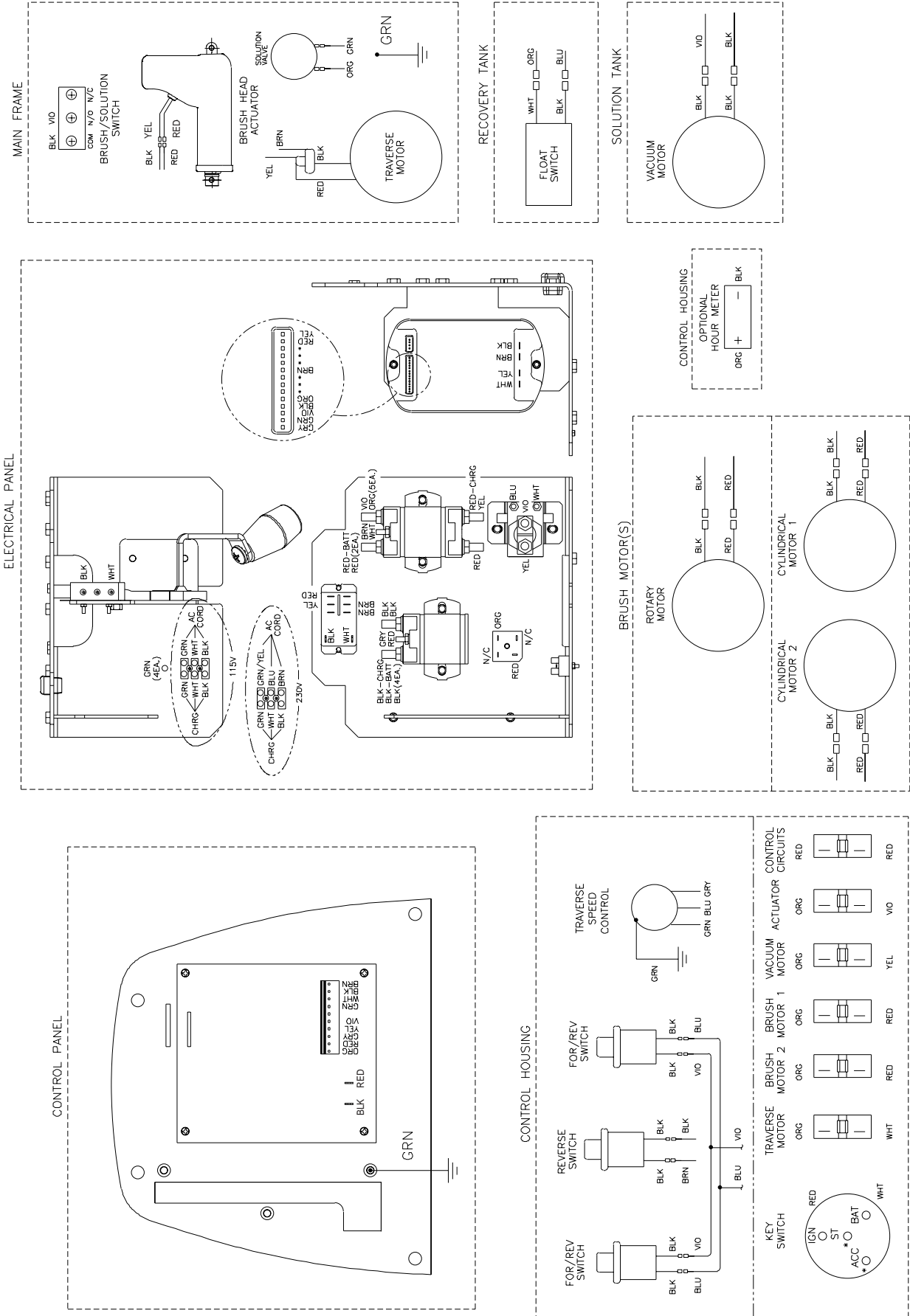
**Clarke®**  
**FOCUS S17/20**  
**Electrical Schematic 1/05**



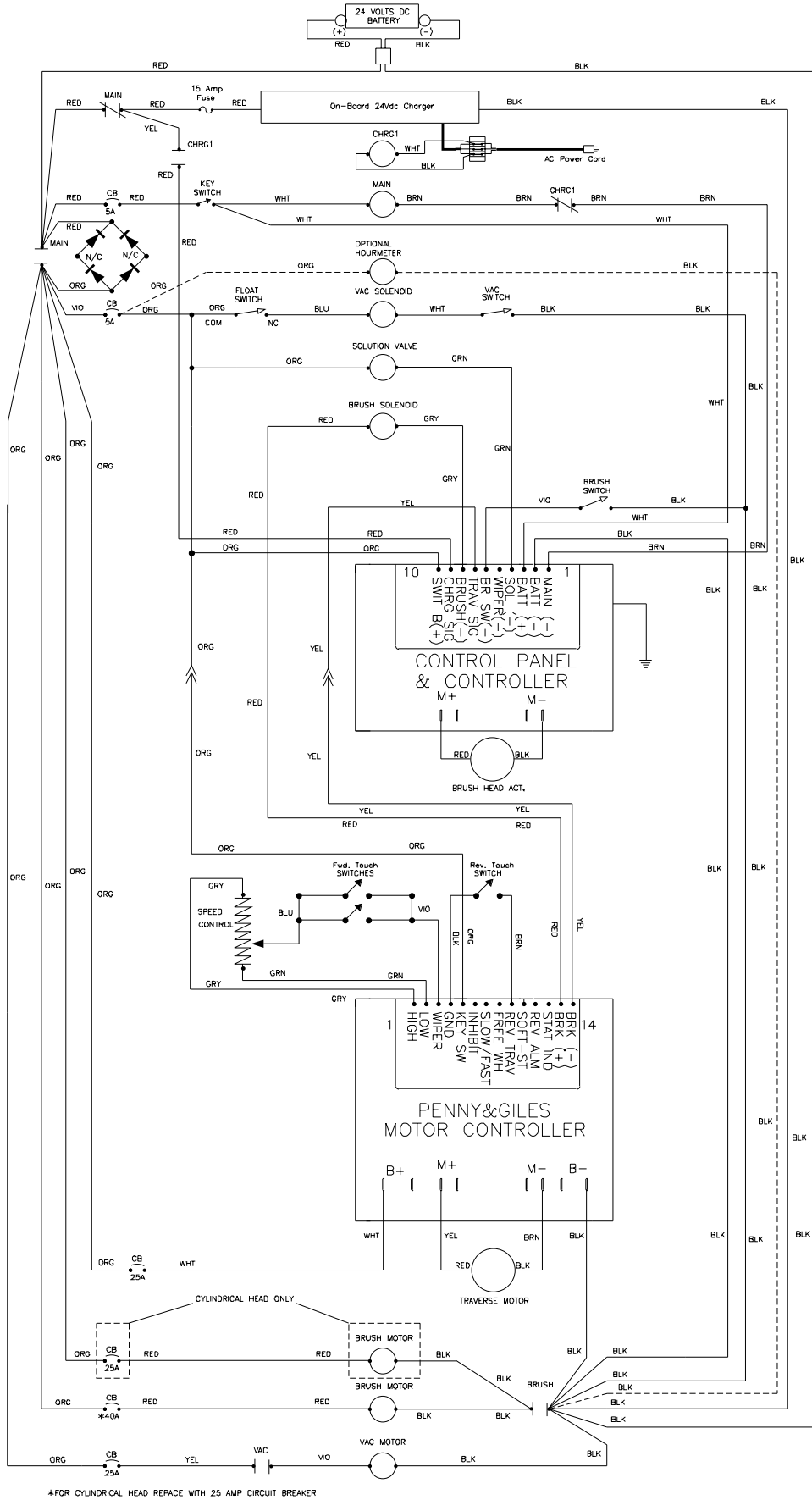
\* FOR CYLINDRICAL HEAD REPLACE WITH 25 AMP CIRCUIT BREAKER



**Clarke®**  
**FOCUS L17/20**  
**Connection Diagram 1/05**



# Clarke® FOCUSL17/20 Electrical Schematic 1/05



# CLARKE PRODUCT SUPPORT BRANCHES

## U. S. A. Locations

### PRODUCTION FACILITIES

**Clarke®**, Springdale, Arkansas  
2100 Highway 265  
Springdale, Arkansas 72764  
(479) 750-1000  
**Customer Service - 1-800-253-0367**  
**Technical Service - 1-800-356-7274**

**American Lincoln®**, Bowling Green, Ohio 43402  
1100 Haskins Road

### SERVICE FACILITIES

**Clarke®**, Elk Grove, Illinois 60007  
2280 Elmhurst Road  
(847) 956-7900

**Clarke®**, Denver, Colorado 80204  
1955 West 13th Ave.  
(303) 623-4367

**Clarke®**, Houston, Texas 77040  
7215 North Gessner Road  
713-937-7717

### SERVICE AND SALES FACILITY

**American Lincoln® / Clarke**, Madison Heights,  
Michigan 48071-0158  
29815 John R.  
(810) 544-6300

**American Lincoln® / Clarke**, Marietta, Georgia 30066  
1455 Canton Road  
(770) 973-5225

### SALES AND DISTRIBUTION CENTER

**Clarke®**, Secaucus, NJ 07094  
74 Henry Street  
(201) 864-5503

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**Clarke®**  
**Clarke American Sanders**  
**A.L. Cook**  
**Customer Service Headquarters and Factory**  
2100 Highway 265  
Springdale, Arkansas 72764  
(479) 750-1000  
**Technical Service**  
1-800-356-7274

## European Locations

### PRODUCTION FACILITIES

ALTO Danmark A/S, Aalborg  
Blytaekervej 2  
DK-9000 Aalborg  
+45 72 18 21 00

ALTO Danmark A/S, Hadsund  
Industrikvarteret  
DK-9560 Hadsund  
+45 72 18 21 00

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**Clarke®** Canada Ltd., Rexdale Ontario  
24 Constellation Ct.  
(416) 675-5830

ALTO Overseas Inc., Sydney (Australia)  
1B/8 Resolution Drive  
Caringbah NSW 2229  
+61 2 9524 6122

ALTO Cleaning Systems Asia Pte Ltd., Singapore  
No. 17 Link Road  
Singapore 619034  
+65 268 1006

ALTO Deutschland GmbH, Bellenberg (Germany)  
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89287 Bellenberg  
+49 0180 5 37 37 37

ALTO Cleaning Systems (UK) Ltd., Penrith  
Gilwilly Industrial Estate  
Penrith  
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+46 31 706 73 00

ALTO Norge A/S, Oslo (Norway)  
Bjornerudveien 24  
N-1266  
+47 2275 1770

## **Clarke® LIMITED U.S. WARRANTY**

This Clarke Industrial/Commercial Product is warranted to be free from defects in materials and workmanship under normal use and service, when operated and maintained in accordance with Clarke's Maintenance and Operations instructions. The warranty period is subject to the conditions stated below.

### **3 YEARS FOR PARTS AND 1 YEAR FOR SERVICE LABOR (See exceptions below)**

Motors must be inspected for carbon motor brush wear at six-month intervals by an authorized Clarke repair station. Failure to comply with the six-month inspection requirement or failure to replace worn motor brushes identified during the inspection will void the warranty on the motors. Cost of the six-month inspection and replacement of carbon motor brushes is the responsibility of the purchaser. In the event of a warranty claim on the motors, proof of inspection and any required motor brush replacement must be provided. This warranty is extended only to the original purchaser for use of the product. It does not cover normal wear parts such as electrical cable, rubber parts, hoses and motor brushes.

### **BATTERY WARRANTY**

In addition to the items above, any original equipment Clarke Battery which becomes unserviceable under normal use within a period of ninety (90) days from date of sale to the original user will be repaired or replaced with one of equal specification at our option, F.O.B. any authorized Clarke Sales or Service Branch, with no charge to the user, except transportation costs. After expiration of the above ninety (90) day period, any battery which fails under normal use will be adjusted to the original user with a new battery of equal specification on an eighteen (18) months pro rate basis from the date of purchase. Adjustment will be determined using the then current list price, plus transportation costs.

Warranty is rendered null and void if battery is not kept filled to the proper level with DISTILLED WATER.

### **Clarke: POLYDUR® AUTOMATIC SCRUBBER SOLUTION AND RECOVERY TANK EIGHT-YEAR U.S. GUARANTEE**

Your new Clarke FOCUS 17 has polydur Solution and Recovery Tanks. Polydur is a rotationally molded, low-density linear polyethylene that won't crack or dent, and withstands most corrosives and temperature extremes. Clarke backs up your Polydur tanks with an eight-year guarantee. If a tank breaks or leaks under normal use within eight years of the date of purchase, it will be replaced free.

### **Clarke UNIBODY FRAME EIGHT-YEAR U.S. WARRANTY**

Clarke warrants the frame of the FOCUS 17 for a period of eight years against defects in materials and workmanship under normal use and service.

### **STATED WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED**

Clarke's liability under this warranty is limited to repair of the product and/or replacement of parts and is given to purchaser in lieu of all other remedies, including INCIDENTAL AND CONSEQUENTIAL DAMAGES.

THERE ARE NO EXPRESS WARRANTIES OTHER THAN THOSE SPECIFIED HEREIN. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION OF THE FACE HEREOF. NO WARRANTIES, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY, SHALL BE IMPLIED. A warranty registration card is provided with your Clarke product. Return the card to assist Clarke in providing the performance you expect from your new floor machine.

If a difficulty develops with the product, you should: a) Contact the nearest authorized Clarke repair location or contact the Clarke Service Operations Department, 2100 Highway 265, Springdale, Arkansas 72764, for the nearest authorized Clarke repair location. Only these locations are authorized to make repairs to the product under this warranty. (b) Return the product to the nearest Clarke repair location. Transportation charges to and from the repair location must be prepaid by the purchaser. Clarke will repair the product and/or replace any defective parts with out charge within a reasonable time after receipt of the product.

Clarke, 2100 Highway 265, Springdale, Arkansas 72764.

**Clarke reserves the right to make changes or improvements to its machine without notice.  
Always use genuine Clarke Parts for repair.**

# **Clarke®**

**2100 Highway 265  
Springdale, Arkansas, 72764**