

CRARY

WeedRoller[®] **PRO**

PRODUCT MANUAL WEEDROLLER PRO

MODEL# 54677
2013 - CURRENT

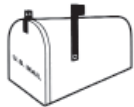


REGULATIONS FOR WEED REMOVAL VARY FROM
STATE TO STATE. CONSULT YOUR STATE AND LOCAL
WEED REMOVAL REGULATIONS.

To prevent spreading invasive aquatic species, when relocating
a WeedRoller PRO from one public body of water to another,
consult your state and local regulations.

RECORD SERIAL NUMBER HERE

HOW TO REACH US



WWW.**CRARY**.COM

ADDRESS	HOURS	TELEPHONE FAX NUMBER	E-MAIL INTERNET
WeedRoller PRO 237 12 th St. NW West Fargo, ND 58078	Monday-Friday 8 am-5pm (CST)	Parts and Service Ph: 701.282.5520 • 800.247.7335 Fax: 701.282.9522	Email: service@weedroller.com • sales@weedroller.com Online: www.weedroller.com

BEFORE YOU BEGIN

Dear WeedRoller PRO Customer,

Thank you for purchasing a Crary WeedRoller PRO. The WeedRoller PRO is designed, tested, and manufactured to give years of dependable performance. It is necessary to correctly adjust and make regular inspections to keep your WeedRoller PRO operating at peak efficiency. The following pages will assist in the installation, operation and maintenance of your machine. Please read this manual before operating the WeedRoller PRO.

If you have any questions or comments about this manual, please call us toll-free at 1-800-247-7335.

Please call or write your local factor-authorized WeedRoller PRO dealer with questions or problems with your WeedRoller PRO.

This document is based on information available at the time of its publication. WeedRoller PRO is continually making improvements and developing new equipment. In doing so, we reserve the right to make changes or add improvements to our product without obligation for equipment previously sold.

Please Send Us Your Warranty Registration Card

A warranty card is included with the WeedRoller PRO. Please take the time to fill in the information requested on the card. When you send your completed card to us, we will register your WeedRoller PRO and start your coverage under our limited warranty.

Serial Number Location

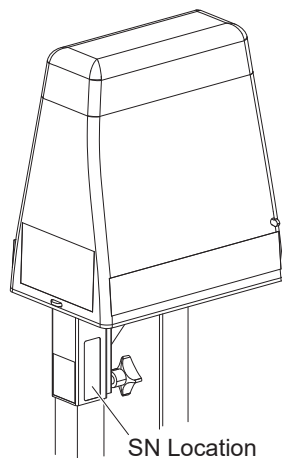
Always give your authorized WeedRoller PRO dealer the serial number of your WeedRoller PRO when ordering parts, requesting service or any other information.

The serial number is located on the head tube as shown below.

Please record the serial number in the space provided on the front cover and on the warranty and registration card.

MANUFACTURED BY CRARY INDUSTRIES
WEST FARGO, NORTH DAKOTA 58078 U.S.A.
SERIAL NUMBER XXXXXX
MANUFACTURED IN U.S.A.

Serial Number Decal



WARNING: Cancer and Reproductive Harm
ADVERTENCIA: Cáncer y Daños Reproductivos
AVERTISSEMENT: Cancer et Dommages Reproductifs
www.P65Warnings.ca.gov

LIMITED WARRANTY

Crary Industries, Inc. warrants to the original owner each new Crary Industries, Inc product to be free from defects in material and workmanship, under normal use and service. The warranty shall extend as shown below from date of delivery. The product is warranted to the original owner as evidenced by a completed warranty registration on file at Crary Industries, Inc.

WARRANTY APPLIES TO THE FOLLOWING PRODUCTS MANUFACTURED BY CRARY INDUSTRIES	
Product	Warranty Length
WeedRoller PRO	2 year Parts & Labor
Replacement Parts	90 Days Parts Only (unless superceded by system warranty)

THE PRODUCT MUST BE REGISTERED WITHIN 10 DAYS OF DELIVERY OF THE PRODUCT TO THE ORIGINAL OWNER OR THE WARRANTY WILL BE VOID.

In the event of a failure, return the product, at your cost, along with proof of purchase to the selling Crary Industries, Inc. dealer. Crary Industries, Inc. will, at its option, repair or replace any parts found to be defective in material or workmanship. Warranty on any repairs will not extend beyond the product warranty. Repair or attempted repair by anyone other than a Crary Industries, Inc. dealer as well as subsequent failure or damage that may occur as a result of that work will not be paid under this warranty. Crary Industries, Inc. does not warrant replacement components not manufactured or sold by Crary Industries, Inc. .

- This warranty applies only to parts or components that are defective in material or workmanship.
- This warranty does not cover normal maintenance, service or adjustments.
- This warranty does not cover depreciation or damage due to misuse, negligence, accident or improper maintenance.
- This warranty does not cover damage due to improper setup, installation or adjustment.
- This warranty does not cover damage due to unauthorized modifications of the product.

Crary Industries, Inc. is not liable for any property damage, personal injury or death resulting from the unauthorized modification or alteration of a Crary product or from the owner's failure to assemble, install, maintain or operate the product in accordance with the provisions of the Owner's manual.

Crary Industries, Inc. is not liable for indirect, incidental or consequential damages or injuries including but not limited to property damage, loss of profits, rental of substitute equipment or other commercial loss.

This warranty gives you specific legal rights. You may have other rights that may vary from area to area.

Crary Industries, Inc. makes no warranties, representations or promises, expressed or implied as to the performance of its products other than those set forth in this warranty. Neither the dealer nor any other person has any authority to make any representations, warranties or promises on behalf of Crary Industries, Inc. or to modify the terms or limitations of this warranty in any way. Crary Industries, Inc. , at its discretion, may periodically offer limited, written enhancements to this warranty.

Crary Industries, Inc. reserves the right to change the design and/or specifications of its products at any time without obligation to previous purchasers of its products.

IMPORTANT

THE WEEDROLLER PRO IS UNIQUE:

The patented WeedRoller PRO is the only device of its kind utilizing the concept of surface activity to free a defined area of weeds and light sediments. Because of its uniqueness, many neighbors, observers, and even natural resource officials may be unfamiliar with the product and what it does.

The legal restrictions governing the WeedRoller PRO vary from state to state. There may be restrictions because of federal regulations, county or city authorities, lake associations, or private access lakes. Please check into any new or additional concerns that may apply to your individual application.

THE WEEDROLLER PRO IS ENVIRONMENTALLY FRIENDLY:

The WeedRoller PRO is 100% chemical free. Seasonal use of the WeedRoller PRO will eliminate the need for adding toxic weed control chemicals that are harmful to lake life, water quality and even the health of people and animals.

The WeedRoller PRO has been known to provide great spawning areas for most types of fish. It also can provide the perfect “attack” zone for fish. This “weed line” is where large fish hide waiting for the smaller fish to appear in the open. The attack zone is a great area for fishing.

THE WEEDROLLER PRO IS SAFE:

The WeedRoller PRO works automatically when the waterfront is not in use. WeedRoller PRO should not be operated in areas where people are swimming or engaging in other waterfront activities.

IMPORTANT GUIDELINES FOR USING THE WEEDROLLER PRO

Tell Your Neighbors:

Neighboring property owners may be curious about your WeedRoller PRO. If you show them the product, and explain how it works, they will appreciate it and know that it will not negatively affect them. In fact, the improved swimming area has, in many instances, improved property values.

The WeedRoller PRO will stir up areas where accumulations of light sediment or “muck” exist. These sediments will move with whatever natural water currents exist. This may, in some cases, cloud the water for your neighbors. They need to know that the clouding will disappear when the light materials have been carried out of the WeedRoller PRO area. Also, tests show that most sediment does not move very far from the WeedRoller PRO operating area. The relocated sediment may be measurably deeper within 10 feet of the operating arc, but not much beyond. In most cases, it does not impact adjoining property. Typically, normal wind and wave action will quickly have the whole area looking as if nothing has changed.

GATHER UPROOTED WEEDS:

During the initial phase of WeedRoller PRO operation (usually three days or less), existing weeds and vegetation will become dislodged and float to the surface. Many weeds can float away and re-root somewhere else. During this initial operating period, it is important to gather these floating weed segments and safely dispose of them so you don't contribute to someone else's weed problem. Many natural resources departments require clean up of weeds, no matter what type of weed removal method is used.

With regular WeedRoller PRO use, weeds are prevented from regenerating in the operating area. Therefore, after the initial phase, the WeedRoller PRO is a weed preventative. Gathering and potential spreading of weeds is generally not an issue after this initial phase.

BE AWARE OF FISH SPAWNING SEASON:

Many types of fish prefer to spawn in weed free and shallow areas. The clear sandy bottom created by the WeedRoller PRO is often ideal, and many fish will be attracted to this area for spawning. The WeedRoller PRO can help increase the fish population if it is not operated during the critical spawning period. During this period, operating the WeedRoller PRO can destroy the eggs and affect the hatch in the spawning beds. Please identify these critical times by contacting your DNR or fisheries specialist, and refrain from WeedRoller PRO operation during this time.

COMPLY WITH STATE AND LOCAL REGULATIONS:

Restrictions on the WeedRoller PRO may vary from state to state. Additional restrictions may exist within municipalities, counties, or within private lake associations. A permit may be required. Please check with appropriate authorities regarding applicable requirements.

Individuals within your governing bodies may be unfamiliar with the WeedRoller PRO and issues regarding weed removal. Inviting an enforcement officer to view the WeedRoller PRO while it is in operation may help to clear up any questions he or she has.

We welcome feedback from our customers regarding information contained in this manual. Please feel free to call us at 1-800-247-7335.

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1 Section

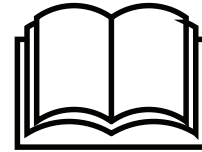
SAFETY

1.1 SAFETY ALERT SYMBOL



The Owner/Operator's manual uses this symbol to alert you of potential hazards. Whenever you see this symbol, read and obey the safety message that follows it. Failure to obey the safety message could result in personal injury, death or property damage.

1.2 BEFORE OPERATING



1. Read and understand this Owner/Operator's manual. Be completely familiar with the controls and the proper use of this equipment.
2. Familiarize yourself with all of the safety and operating decals on this equipment and on any of its attachments or accessories.
3. Keep safety decals clean and legible. Replace missing or illegible safety decals.
4. Use a 110 volt ground fault interrupter circuit.
5. Never allow people to enter the water while the WeedRoller PRO is operating.
6. Adjust the reversing switches to the proper angle.
7. Keep away from all moving parts.
8. Avoid wearing loose fitting clothing while operating this machine. Never operate this machine wearing clothing with drawstrings that could wrap around or get caught in the machine.
9. Do not allow children to operate this equipment.
10. Before inspecting or servicing any part of this machine, shut off the machine, disconnect the 110 volt power cord and make sure all moving parts have come to a complete stop before allowing people to enter the water.
11. Visually check that all screws, nuts, bolts and other fasteners are properly secured before starting the machine.
12. Check all screws, nuts, bolts and other fasteners for proper tightness once every 50 hours of operation.



CAUTION



Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury.



WARNING



Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.



DANGER



Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.

1.3 ELECTRICAL SAFETY

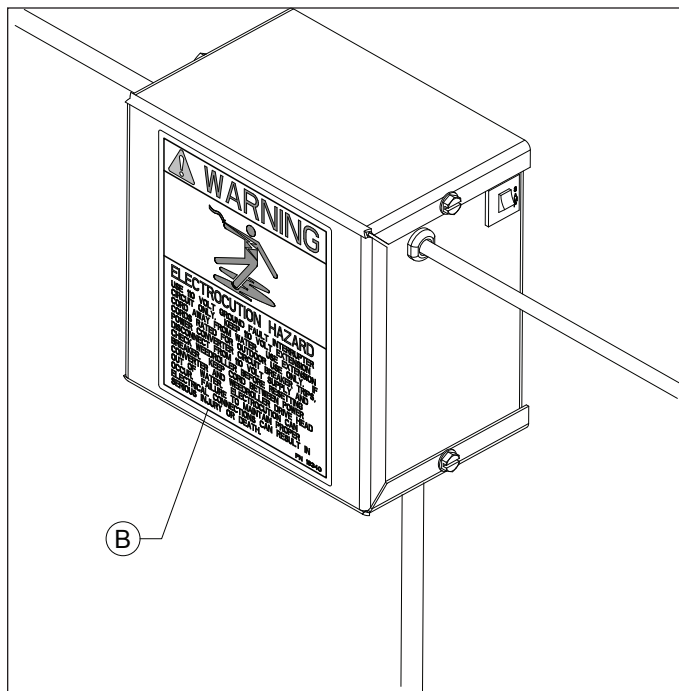
1. Use the machine only with extension cords suitable for outdoor use to prevent shock. Suitable extension cords are extremely important for the operator's personal safety. Wire size should be 14 gauge or larger, and the cord should be no longer than 100 feet.
2. Never use an indoor extension cord.
3. Ensure the power cord is in good condition. A cord with cracked or broken insulation is hazardous, particularly in the presence of moisture or combustible material. It is also important that the connectors be of rugged construction, in good condition, and securely attached to the outer jacket.
4. Remove the extension cord immediately from the wall receptacle if the power cord is damaged in any manner.
5. Use only an electric circuit having adequate capacity.
6. Determine the cause and take corrective action if a fuse is blowing or circuit breaker is tripping. Blowing a fuse or tripping a circuit breaker is a warning the machine is overloading, or too many devices are taking power from the circuit, or both. Do not install a higher capacity fuse.
7. Do not abuse the power cord. Never pull a machine by the cord to disconnect it from the receptacle. Keep the power cord away from excessive heat, oil, and sharp edges. Keep power cords out of the water.
8. Disconnect the machine when not in use, before servicing, and when changing attachments.
9. Always use a 110V ground fault circuit interrupter.

1.4 OPERATION SAFETY

1. Operate the WeedRoller PRO on a fairly smooth surface. Each flex coupler assembly allows a 10-degree flex.
2. Check the lake bottom for exposed pieces of metal, rock, bottles, cans, or other foreign objects before running the WeedRoller PRO. Remove the objects to allow the WeedRoller PRO to do a better job and to make the area safer for swimming and water use.
3. Clear visible obstructions from surface area where the WeedRoller PRO will operate.
4. Disconnect the power source and make sure all moving parts are completely stopped before inspecting or servicing any part of the machine.
5. Disconnect the power source and allow the machine to stop if the WeedRoller PRO strikes a foreign object or starts making an unusual noise or vibrating. After stopping the WeedRoller PRO:
 - A. Inspect for damage.
 - B. Replace or repair any damaged parts.
 - C. Check for and tighten any loose parts.
6. Keep the rollers clean of debris and weed accumulations.
7. Do not allow large amounts of material to build up on the rollers. This can cause the machine to stall or cause damage to the drive system.
8. Disconnect the power source if the machine stalls or becomes blocked.
9. Do not move the WeedRoller PRO while it is operating.
10. Disconnect the 110 volt power cord and be sure all moving parts have come to a complete stop before allowing people to enter the water or when adjusting or servicing the WeedRoller PRO. Park the WeedRoller PRO under or beside a dock, or behind or beside boat lifts.
11. Keep people from contacting the roller tube and accidentally injuring themselves by never allowing water activity above or beside the WeedRoller PRO.
12. Never allow people to stand on or dive from the control top or electric motor.

1.5 SAFETY DECALS

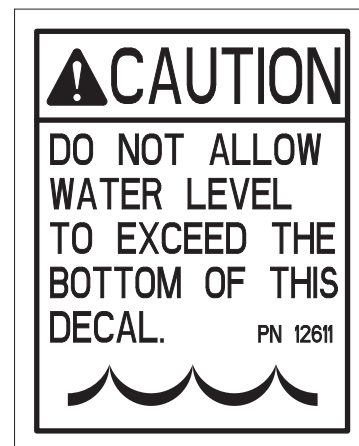
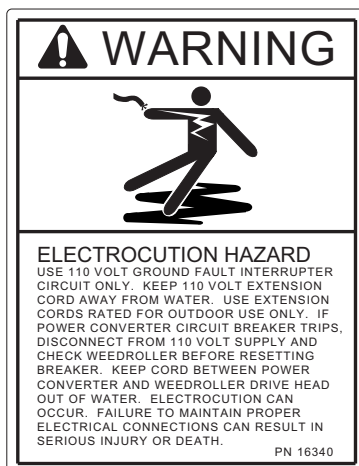
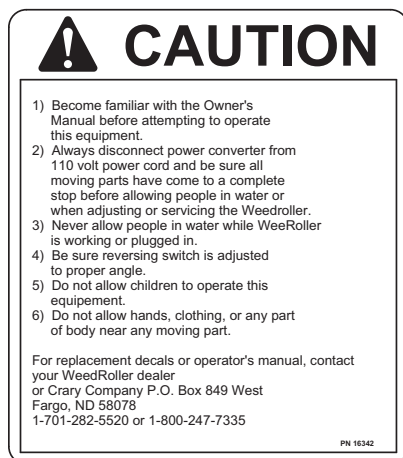
Familiarize yourself with all of the safety and operating decals on the machine and the associated hazards. Make certain that all safety and operational decals on this machine are kept clean and in good condition. The decals are shown below at reduced sizes. Apply replacement decals to their original locations.



A. PN 16342

B. PN 16340

C. PN 12611



Section 2

ASSEMBLY

2.1 BEGINNING ASSEMBLY

The WeedRoller PRO comes in three separate boxes. Inspect each box to make sure that no parts are missing.

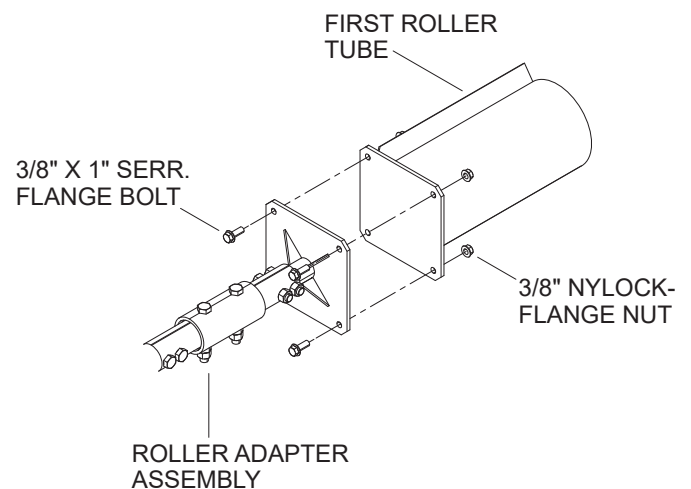
Box One contains: Drive Head Assembly, Owner's Manual, Warranty Registration Card.

Box Two contains: (2) 7' Roller Tubes

Box Three contains: (1) Flex Coupler Assembly, (1) 7' Roller Tube, (1) Roller Adapter Assembly, Dock Mount Brackets (2), 70' Extension Cord, Assorted Hardware, AC Power Supply.

2.2 CONNECTING THE ROLLER ADAPTER

1. Align the holes in the roller adapter with the bolt holes in a 7' roller tube.
2. Install the 3/8" x 1" flanged bolts and nuts provided in the hardware kit.
3. Torque to 30 ft-lbs.

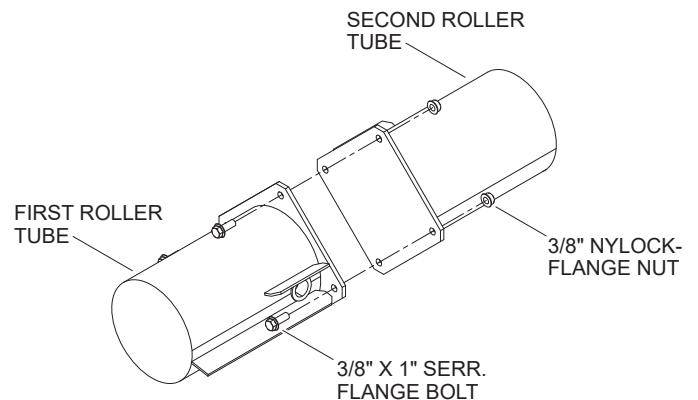


2.3 CONNECTING THE ROLLERS

1. To connect one aluminum roller to another, align the bolt ends of the two rollers.
2. Install the 3/8" x 1" flanged bolts and nuts.
3. Torque to 30 ft-lbs.

NOTE

Additional rollers can be added. Maximum number of rollers varies with conditions. WeedRoller PRO warranty is only valid up to a roller length of 42 ft. Added tubes may require a special permit for use. Please consult your state and local regulations.



2.4 INSTALLING THE FLEX COUPLER

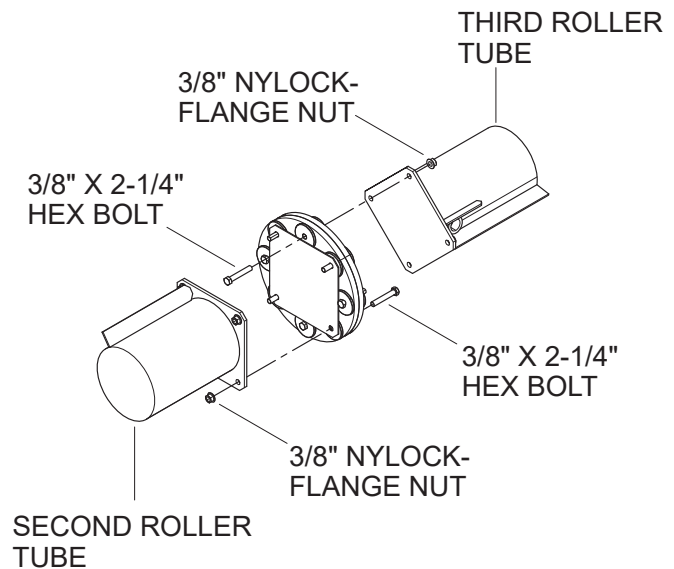
NOTE

The flex coupler can be used between any two rollers and allows the rollers to accommodate the contour of the lake bottom. If your lake bottom drops off, install the flexible coupler at the point closest to the drop-off. Don't install the flexible coupler if you have a flat lake bottom.

1. Remove the 3/8" nuts from one side of the flex coupler.
2. Align the bolt holes of one roller tube with the bolts in the flex coupler.

Replace the 3/8" nuts to secure the flex coupler to the connected roller tube.

3. Torque to 30 ft-lbs.
4. Repeat steps 1-4 to connect a roller to the opposite side of the flex coupler.



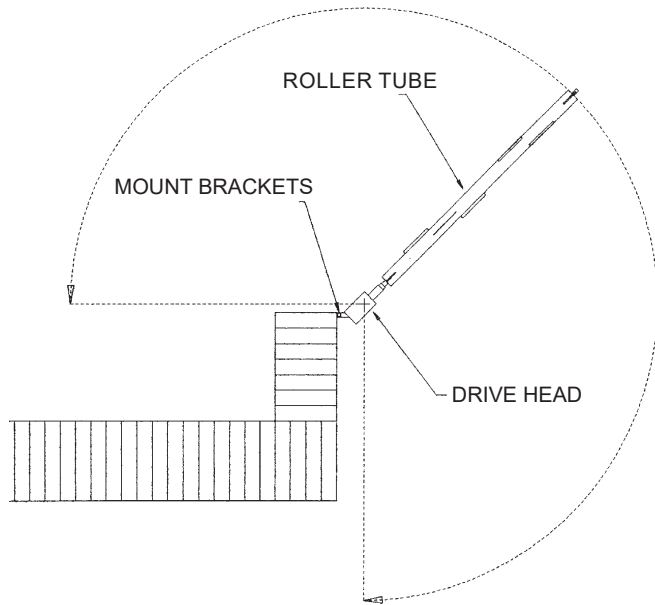
2.5 CHOOSE CORRECT DOCK MOUNT

The WeedRoller PRO can be adjusted to operate with many different mountings and roller arc degrees, depending on:

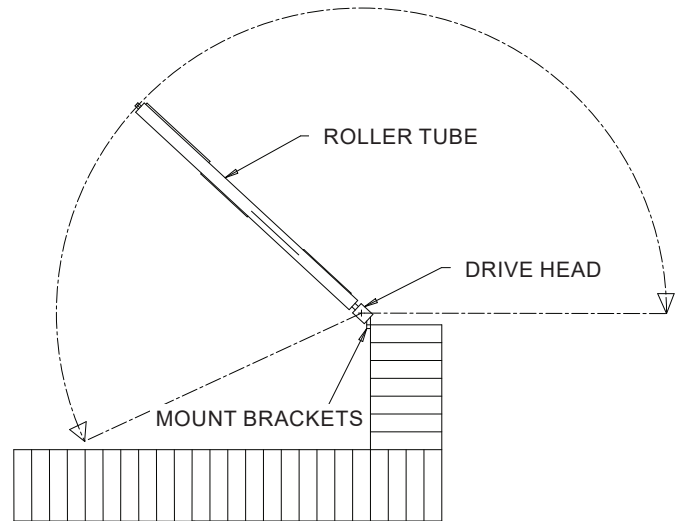
1. The mount bracket position on your dock.
2. The switch arm adjustments. The switch arms easily adjust to set the direction and arc of the rollers.

Choose the dock mounting location and roller arc that best suit your site from the four following examples.

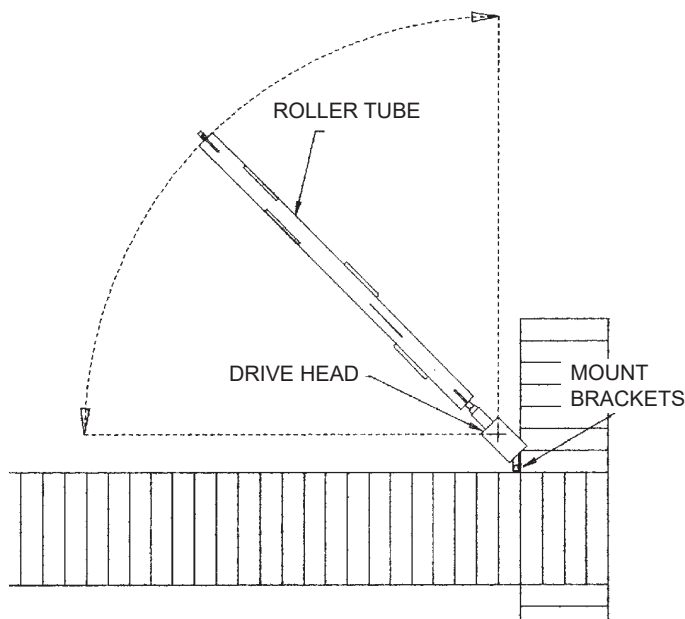
2.6.1 MOUNTING ON THE OUTSIDE CORNER OF A DOCK WITH A 270 DEGREE ROLLER ARC



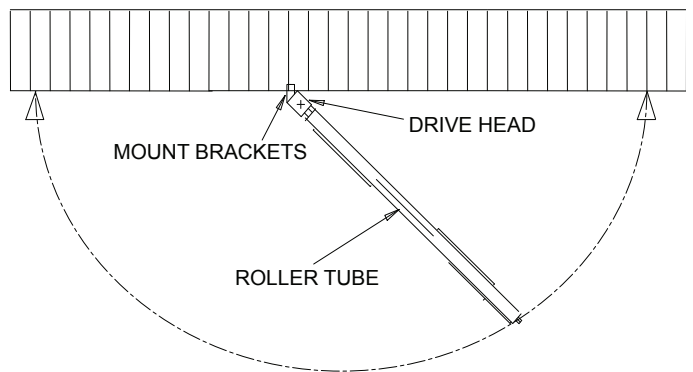
2.6.3 MOUNTING ON AN OUTSIDE CORNER DOCK WITH A ROLLER ARC UP TO 270 DEGREES



2.6.2 MOUNTING ON AN INSIDE CORNER DOCK WITH A 90 DEGREE ROLLER ARC



2.6.4 MOUNTING ON THE SIDE OF A DOCK WITH A 180 DEGREE ROLLER ARC

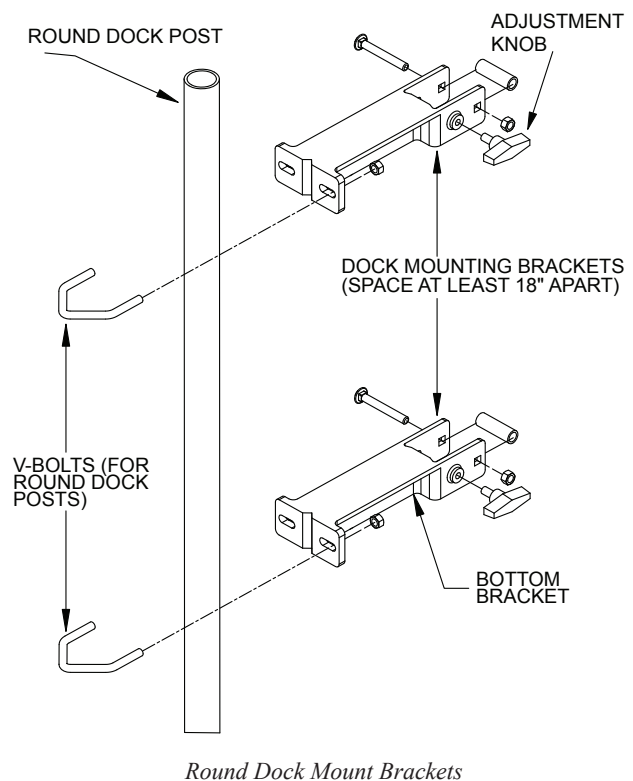
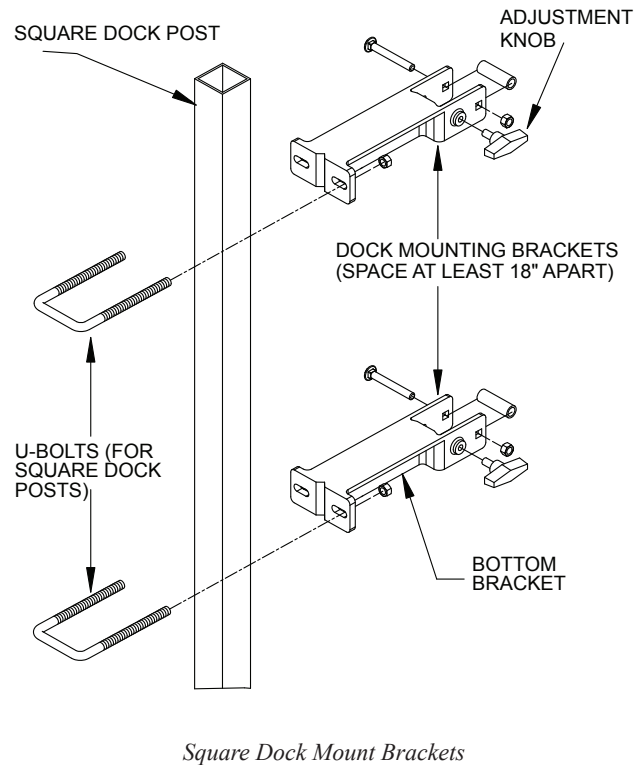
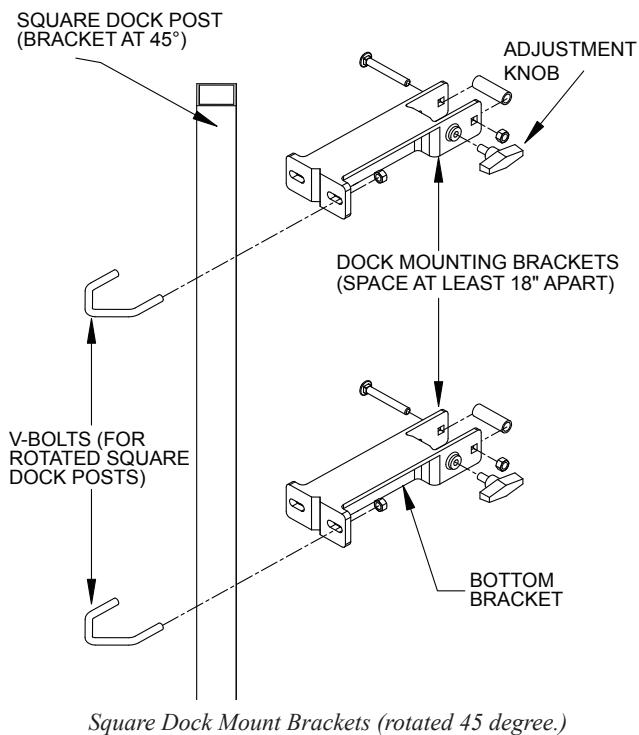


2.6 ATTACH DOCK MOUNT BRACKETS

1. Attach a dock mount bracket to the dock post with either a V-bolt or U-bolt. Use U-bolts when mounting straight off a square dock post. Use V-bolts for docks with round posts or to achieve a 45 degree mount angle off a square post. Secure the bolt with flange nuts (see the following examples).
2. Position the remaining bracket at least 18" above the bottom bracket, insert the V- or U-bolt, and secure with flange nuts. Torque hardware to 30 ft-lbs.

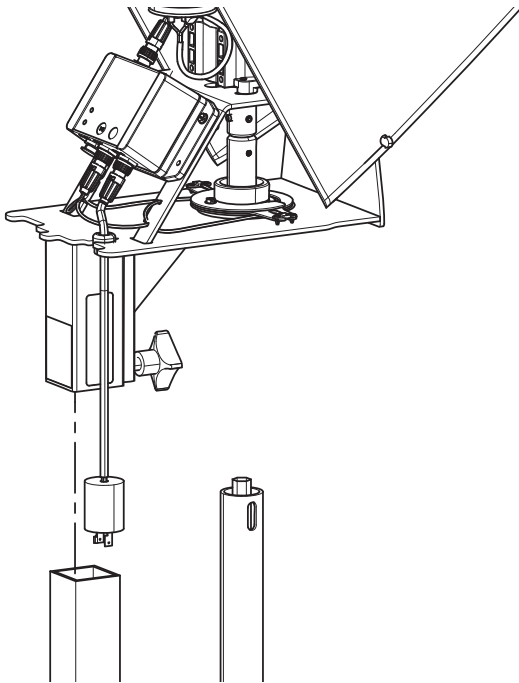
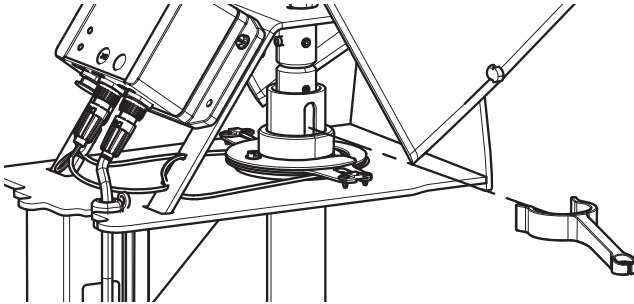
NOTE

Position the two dock mount brackets at least 18" apart. For increased stability, place the brackets even farther apart.



2.7 REMOVING THE DRIVEHEAD

1. Remove the magnet arm mount by pulling it off the pivot tube.
2. Loosen the knob located below the head unit.
3. Lift the WeedRoller PRO head unit off of the base unit.

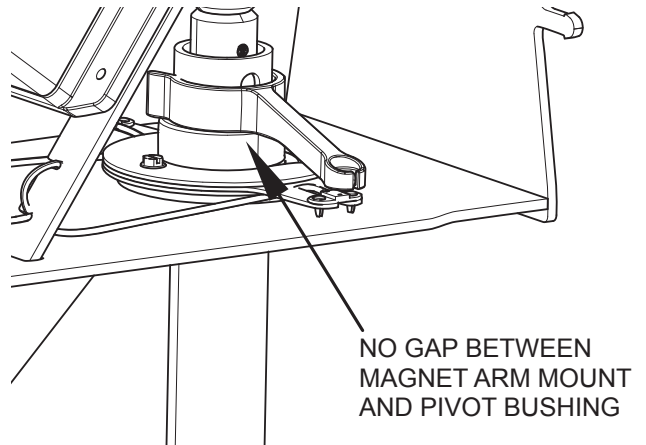
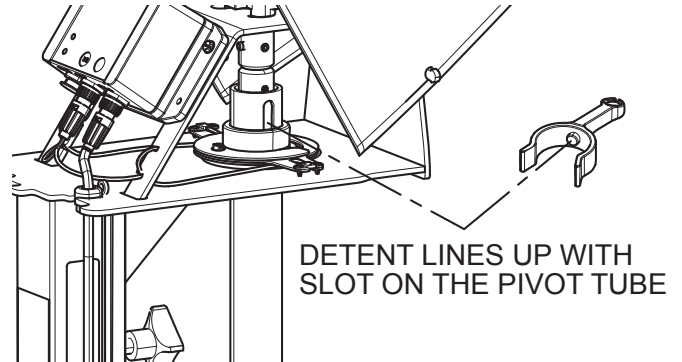


2.8 REINSTALLING THE DRIVEHEAD

1. Slide the head unit mount sleeve back on to the base unit. Turning of the lower gearbox output shaft may be necessary to rotate and realign the hex shaft into the motor coupler.
2. Tighten the knob below the head unit.
3. Snap the magnet arm mount back on to the pivot tube. Make sure the alignment detent positions itself within the slot on the pivot tube.

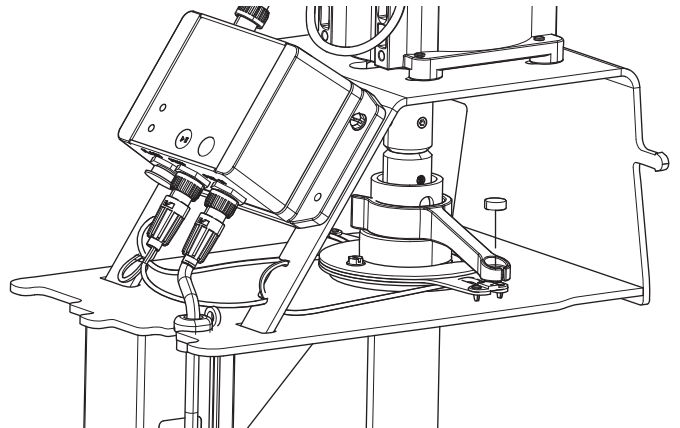
2.8 REINSTALLING THE DRIVEHEAD (CONT.)

4. Slide the magnet arm mount down so it is in contact with the pivot bushing. This will set the magnet at the proper gap distance from the sensors.



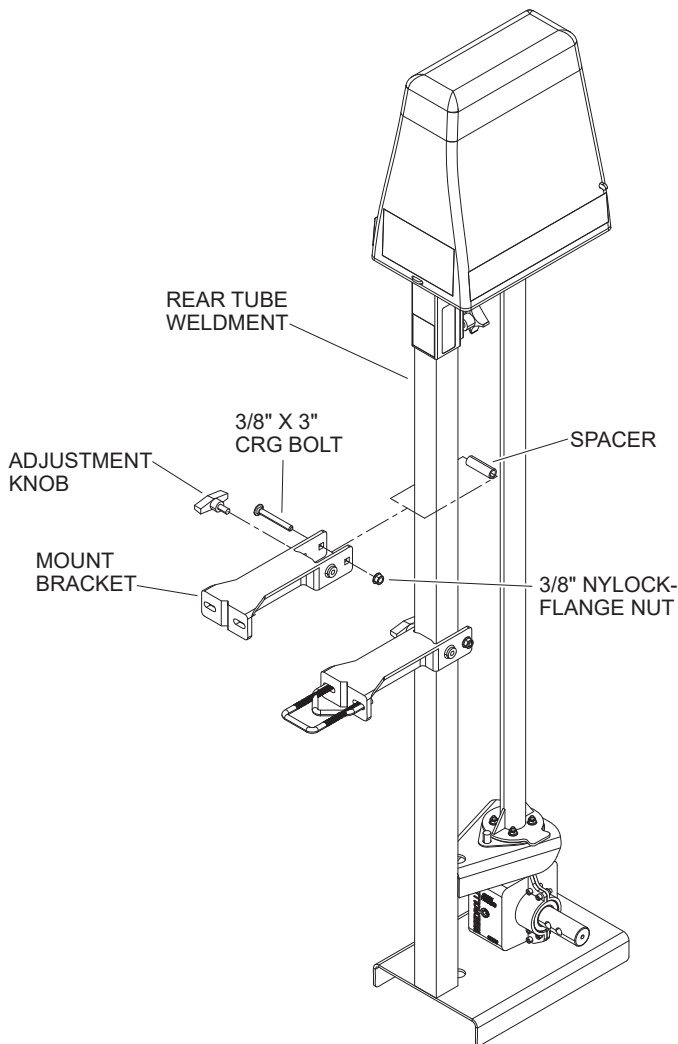
2.9 MAGNET REPLACEMENT

The WeedRoller PRO Pro uses a Rare-Earth type magnet and should never weaken. If for some reason the magnet needs replacement be sure to install it with the south pole facing down. The south pole will be the side that has an indication mark.



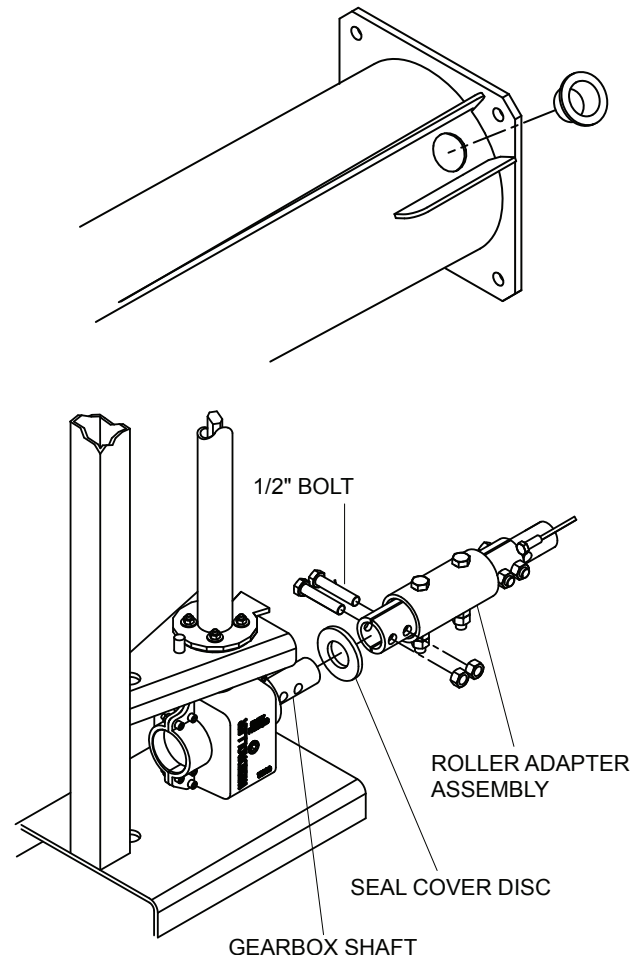
2.10 ATTACH DRIVE HEAD TO THE DOCK

1. Place the rear tube weldment of the drive head into the dock mounting brackets.
2. Place a spacer between the spacer holes in one of the brackets.
3. Insert a 3/8 x 3" carriage bolt through the bolt holes and spacer. Add washer and nut to secure bolt.
4. Repeat this step for the remaining bracket.
5. Slide the drive head up to bring the gearbox close to the surface and lock it in place with the adjustment knobs.



2.11 ATTACH ROLLERS

1. Temporarily remove the two yellow plugs from each roller and re-install them when the roller has filled with the desired water level. The water level within the roller will determine the buoyancy of the rollers. Extreme lake bottom conditions may require some air in the rollers to keep the rollers from getting stuck.
2. Slide seal cover disk onto gearbox shaft.
3. Align the gearbox shaft bolt holes with the bolt holes in the roller adapter.
4. Install 1/2" bolts, washers, and nuts provided in the hardware kit.
5. Torque to 75 ft-lbs.
6. Press down on the rollers to submerge them in water.
7. After the rollers become filled with water, push the plugs back into their holes.
8. Loosen the adjustment knobs and let the WeedRoller PRO slide down in the brackets to touch the lake bottom.



2.12 CONNECT DRIVE HEAD TO POWER



WARNING



Use extreme caution when working around water and electricity. Be sure to read and understand all warning decals and instructions.

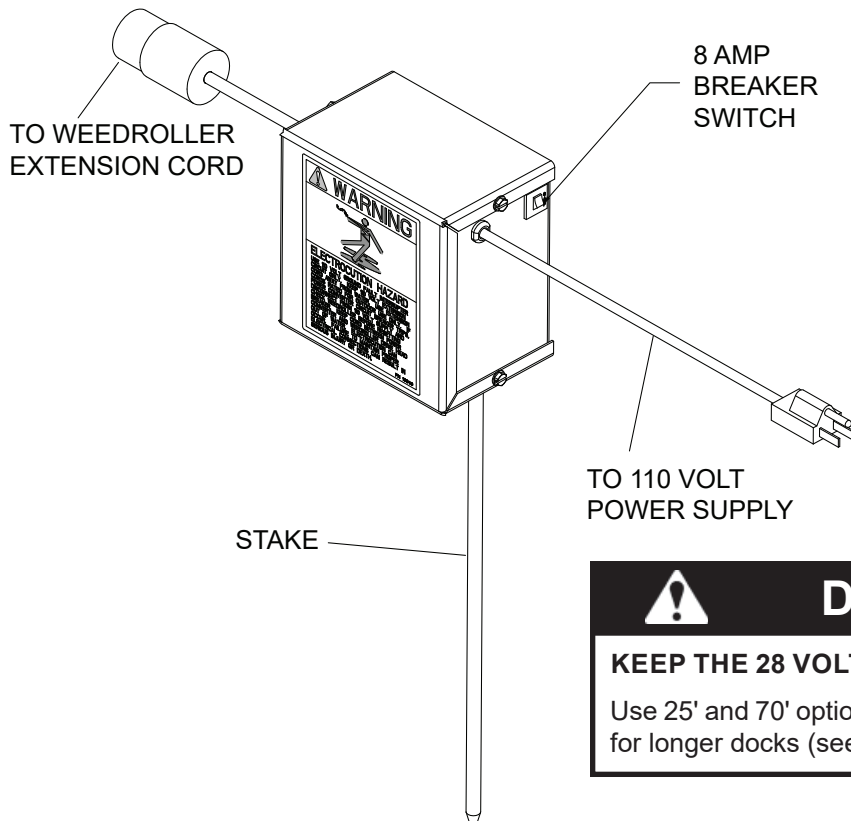


CAUTION



Use a 110 volt ground fault interrupter circuit only. Keep the 110 volt extension cord away from water. Use extension cords rated for outdoor use only. Disconnect WeedRoller PRO from 110 volt supply and check it before resetting the breaker if the circuit breaker trips. Keep the 28 volt power cord out of the water.

1. Insert the power supply stake into dry land (either your beach or yard).
2. Attach the 70 foot power supply cord to the connector on the power supply. It is recommended cord not be longer than 100 foot. Please contact your dealer if there are any concerns with cord length.
3. Route the power supply cord along your dock frame or fasten it underneath (so it doesn't get stepped on or fall into the water).
4. Connect the female end of the power supply cord to the male connector on the control top box. No other wiring is needed for the control top assembly.
5. Check your 110 volt outlet with a GFI receptacle tester.
6. The Weedroller controller is a sensitive electronic device and is susceptible to power surges the same as any other piece of electronic equipment in your home. It is recommended that a UL approved surge suppressor be used to protect the Weedroller from damage in the event of a power surge.
7. It is recommended that the Weedroller be placed on a dedicated circuit. The use of shared circuits with other high Amp draw devices such as pumps or motors can damage the controller.
8. Connect a 110 volt outdoor extension cord (at least 14 gauge) to the power supply. Make sure to keep all 110 volt cords away from the water. Check the chart below for cord length and gage allowed for high/low voltage side of box.
9. Make sure the rollers are clear from obstructions so they can turn freely.



DANGER



KEEP THE 28 VOLT CORD OUT OF THE WATER!

Use 25' and 70' optional power supply extension cords for longer docks (see parts section for part numbers).

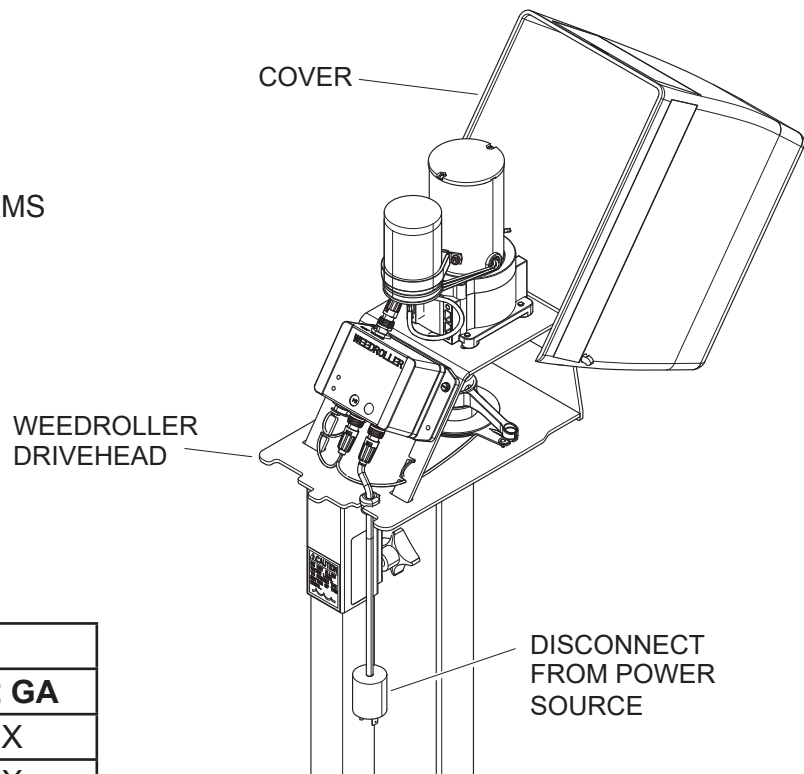
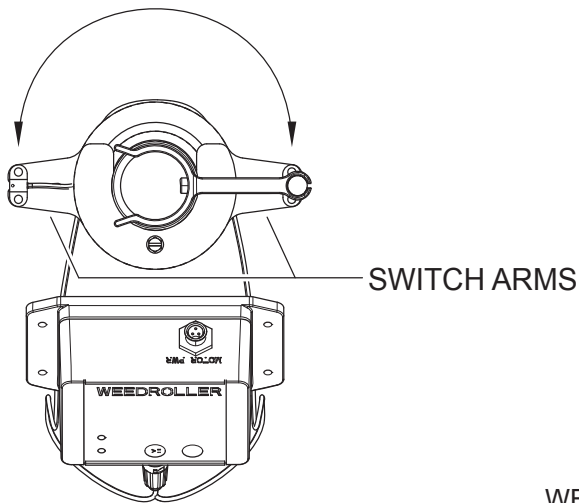
2.13 ADJUST THE SWITCH ARMS

The WeedRoller PRO motor rotates the magnet mount on the pivot tube between the two switch arms. The degrees of roller tube arc is determined by the arc between the adjustable switch arms. The maximum travel arc of the roller tubes is 270 degrees. The magnet should be adjusted right or left to achieve the desired arc. See Sec. 2.2 for more information on roller tube arcs.

1. Disconnect the extension cord from the plug on the drivehead.
2. Lift the cover on top of the drive head.
3. Adjust the switch arms to the desired WeedRoller PRO arc.
4. Make sure sensor wires are clear of any moving parts after adjusting.
5. Position the magnet mount bracket between the switch arms.

6. The magnet mount bracket should be positioned so it is in contact with the pivot tube bushing. This will set the gap between the magnet and proximity sensors at 1/4". This gap should not exceed 3/8".
7. Close cover
8. Connect the extension cord to the plug on the drive-head.
9. Watch the roller tubes. If the rollers do not rotate within the desired arc, re-adjust the switch arms to the desired WeedRoller PRO arc.
10. Rollers should not operate within 12" of fixed objects.
11. The WeedRoller PRO is now ready to operate.

WEEDROLLER ARC



CORD LENGTH/GA ALLOWED

LENGTH	16 GA	14 GA	12 GA
25 FT.	X	X	X
70 FT.	X	X	X
100 FT.	X	X	X
125 FT.		X	X
150 FT.			X
175 FT.			X
200 FT.			X

3 Section

OPERATION

3.1 INITIAL OPERATION

Check the WeedRoller PRO frequently to make sure it is not blocked by debris (branches, rocks, or stumps) when using it for the first time, or anytime it is moved to a new location. Inspect it often until it can move freely over the lake bottom.

- Operate the WeedRoller PRO continuously (when waterfront is not otherwise in use) for initial clearing until area is cleared. Clearing can take from one day to one week.
- Run the WeedRoller PRO often enough to keep the area clear of weeds after it is initially cleared. Typically operation is 10 hours once every week. Time varies with conditions.
- Gather and dispose dislodged weeds to prevent them from floating away and spreading.
- Typical operation hours are 400-500 per season to clear and maintain the selected area.

NOTE

If the roller tubes are about to rotate into a fixed object, you can press the reverse  button to reverse them.

3.2 CONTROLLER

The controller is designed for varying conditions. It automatically reverses the motor when the amperage exceeds a set limit. The initial setting from the factory is 4.5 amp.

The controller tracks the amperage draw for 10 cycles (sweeps) and resets the maximum amperage automatically based on the conditions.

For example, when the WeedRoller PRO is first used, the initial setting is 4.5 amps. If the controller records 3.5 amps as the highest draw during the 10 cycles, it resets the maximum draw setting from 4.5 amps to 3.6 amps (.1 amp above the peak current of 3.5 amps.) The controller now will reverse the WeedRoller PRO tubes if the motor draws 3.6 amps or more.

The controller will continue to monitor the amperage draw and reset the maximum amperage draw each 10 cycles.

3.3 CONTROLLER - POWER-UP

When unit is plugged in, the controller turns the Status LED green for three seconds while it boots up. During the boot up sequence, the controller zeros the Obstacle Count, Motor Cycles counters, Overload, Recoil and Locked Rotor faults. The Active Limit is loaded with Overload limit's value and the Peak Current is zeroed. The controller will flash the Status LED orange once per every 100 hours of operation. During this sequence, pressing the Start  button will bypass the hour counter and start the motor.

3.4 CONTROLLER - START FUNCTION

Once the Start  button is pressed, the motor will move towards the left sensor, unless parked left at last stop, then it will start moving right. If the motor was previously run then the unit will resume the last set mode whether start  button is pressed or simply plugged in. Once the motor is running the Status LED will light solid green. If a fault is found it will be displayed as described in section 3.9. In this mode the motor will run from sensor to sensor until stopped by a fault or pressing the Start  button again.

3.5 CONTROLLER - PARK/PAUSE FUNCTION

With the motor running, pressing of the Start  button selects Left Park. The Left led will light and the motor will continue until it reaches the left sensor, at which time it will stop and the Status led will go out and the controller will switch to Pause mode. Pressing the Start  button again while the motor is still running selects Right Park. The Right led will light and the motor will continue until it reaches the right sensor, at which time it will stop and the Status led will go out and the controller enters Pause mode. Pressing the Start  button again during Right Park selects Pause. The motor stops immediately and all LEDs go out. To start the motor again press the Start  button.

3.6 CONTROLLER - AUTO CYCLE

If the Start  button is held for more than 3 seconds an Auto Cycle is selected. The controller automatically selects Left Park. Pressing the Start  button again after Auto Cycle begins will select Right Park. Pressing the Start  button again during Right Park selects Pause. The motor stops immediately and all LEDs go out. In the Auto Cycle mode the motor will run for 12 hours and then Park at the selected side when the Auto Cycle time is completed.

The Auto-Cycle mode is used for one 12-hour cycle only; it will not restart again after its cycle. A timer will need to be used at the power source for continuously timed cycles. Make sure the SmartSwitch controller is in standard Continuous mode for your timer to work correctly. Be aware that the Rollers will stop in random positions when using a timer.

3.7 CONTROLLER - REVERSE

If the Reverse  button is pressed the motor immediately stops and starts in the other direction.

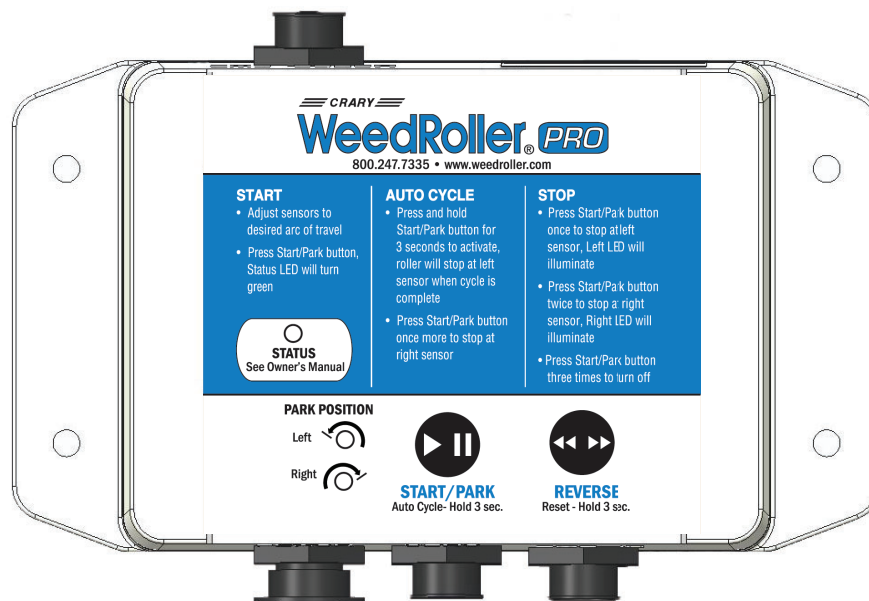
3.8 CONTROLLER - RESET

The controller needs to be reset when adjusting switch arms or after moving the WeedRoller PRO.

See Sec. 3.10 for more information on operating the WeedRoller PRO under abnormal conditions. Check for stuck rollers tubes or obstructions before resetting the controller.

To reset the controller:

- Press and hold the Reverse  button until the Status led flashes green. This will make the Smart Switch clear all faults, zero the counters and variable protection perimeters are reset to their initial values. Motor operation is not affected.



3.9 CONTROLLER - PROTECTION CIRCUITRY INDICATOR

The controller monitors the WeedRoller PRO operation and will reverse it or turn it off automatically if the tubes are obstructed or if the motor malfunctions. Information is communicated to the owner through the indicator light. Refer to chart below for the controller's LED meanings.

DISPLAY	MEANING	REMEDY
Status LED Continuous GREEN	Power On	N/A
Status LED Flashing GREEN (1/Sec)	Overload	Check for / remove obstruction and reset controller.
Status LED Flashing GREEN (4/Sec)	Motor Circuit Open	Check connections or Repair/replace motor.
Status LED Flashing RED (1/Sec)	Motor Stall	Check for / remove obstruction, check for motor locked up and reset controller.
Status LED Flashing RED (4/Sec)	Motor Circuit Shorted	Repair or replace motor.
Status LED Continuous ORANGE	Motor Overheat	Motor should restart within 1 hr. Possibly insufficient cord size or cord too long.
Status LED Continuous RED	Motor Overheat	3 overheat faults have occurred within 24 hours. Possibly insufficient cord size or cord too long. Contact Cray Service Dept.
Status LED Flashing ORANGE	Hours of operation, One flash 100 hours of operation.	N/A
Status LED Alternating GREEN & RED (1/Sec)	Left sensor error	Replace Sensor Assembly.
Status LED Alternating GREEN & RED (1 every 3 Sec)	Right sensor error	Replace Sensor Assembly.
Status LED Flashing GREEN (1/3 Sec)	Power Supply Under Voltage	Insufficient cord size, cord too long or repair/replace transformer.
Status LED Flashing RED (1/3 Sec)	Power Supply Over Voltage	Repair or replace transformer.
L & R Flash GREEN (1/Sec) simultaneously	Cycle Timeout	Check for / remove obstruction, or refer to troubleshooting chart for more information.

NOTE

ORANGE is a combination of RED & GREEN LED's illuminated at the same time.

NOTE

Refer to troubleshooting chart for more details.

3.10 OPERATING IN MUDDY CONDITIONS

The WeedRoller PRO can get stuck in extremely muddy or weedy conditions. Try one or more of the following procedures until the WeedRoller PRO completes an arc without getting stuck.

- Start with only one roller attached to the unit and add rollers as the lake bottom conditions improve.
- Decrease roller arc to 50 degrees. Extend the arc in 50 degree increments when the roller begins to move freely.
- Remove roller tube caps. Drain water as necessary from roller tubes to increase flotation. Replace caps.
- Install a Crary Mud kit. Order the Mud Kit (PN 51320) for moderately muddy conditions. Order Plastic Pipe Kit (PN 51134) for extremely muddy conditions.

3.11 ADJUSTING BRACKETS TO CONDITIONS

The WeedRoller PRO dock mounting brackets can be adjusted in a variety of different ways to help deal with muddy or uneven lake bottoms.

- For very weedy or mucky conditions, raise the drive head assembly so its base is a few inches above the lake bottom, then tighten the adjustment knobs. This raises the roller tubes slightly to make it easier for the tubes to clear weeds and muck.
- Leave the adjustment knobs off if the lake bottom is uneven, or covered with small rocks or branches. This allows the drive head assembly to slide up and down freely on the rear post weldment and enables the roller tubes to conform to slight variances in the lake bottom. Clear as many rocks and branches as possible from the lake bottom before using WeedRoller PRO.

NOTE

Replace hood over head unit when operating to avoid damage to controller and components within from rain and weather conditions.

4 Section

SERVICE & MAINTENANCE

4.1 TRIPPED CIRCUIT BREAKER

The power converter has an 8 amp circuit breaker on the 28 volt AC side.

1. Disconnect the power converter from the 110 volt supply and inspect before resetting the breaker.
2. Clear weeds and/or obstructions from the rollers or arc before restarting.

NOTE

Blowing a fuse or tripping the circuit breaker is a warning that you have overloaded the circuit. Determine the cause and correct it.

4.2 OFF-SEASON STORAGE

- The WeedRoller PRO can be left in the lake year round if the lake does not freeze over. Remove the WeedRoller PRO and store it over the winter if the lake freezes over.
- If you have a roll-away dock, the complete Weed Roller unit can be stored with it. Raise the dock to lift the drive head assembly off the ground and fasten each roller assembly to the dock for easy storage. Cover the control top with a plastic bag or cover to protect it from outdoor conditions. Be sure to completely drain water from rollers before storage.
- The unit can be disassembled into four separate sections: the drive head assembly and three individual rollers. Be sure to drain water from rollers before storing.

NOTE

Be sure to drain the water from the rollers before storage if freezing is possible.

4.3 GEARBOX MAINTENANCE

Crary Industries recommends that the grease in the lower gear case should be changed annually prior to storage. This will ensure that if water has entered the gearbox, it will be removed prior to storage, preventing damage to the gear case by freezing.

The use of LUBRIPLATE Pure Flush prior to each change will help to thin the grease and remove sludge within the gear case that may have built up over time. When changing the gearbox grease, use the following steps:

1. With the rollers removed and the power of the unit disconnected, lay the WeedRoller unit on its side with the gearbox positioned over a drain pan. Remove the plugs on each side of the gear case and allow as much of the old grease as possible to drain out.
2. Reinstall the plug on the bottom side of the gear case and fill the gearbox with LUBRIPLATE Pure Flush (PN 30338-00). Then reinstall the plug on the top side of the gear case and stand the unit up in operating position.
3. Reconnect the power and start the WeedRoller unit. Allow it to run until it has a Cycle Timeout Fault which is indicated by both the Left & Right Park Position lights flashing green simultaneously. This will shut the unit down after approximately 2 hrs 15 mins. Press and hold the Reverse/Reset button for 3 seconds to clear the fault.

4. Disconnect the power and lay the unit on its side with the gearbox positioned over a drain pan. Remove the plugs on each side of the gear case and allow as much of the fluid as possible to drain out.
5. Steps 2-4 may be repeated as needed.
6. Apply a new layer of Teflon tape to the threads of both plugs to prevent seizing. Reinstall the plug on the bottom side of the gear case and fill the gearbox with LUBRIPLATE 5555 grease (PN 12487). Then reinstall the plug on the top side of the gear case. Repeat on bottom side if necessary to get as much grease into the case as possible and to help push out any excess air.

NOTE

It may be necessary to fill from both sides (while opposite side is plugged) to get most of the air pockets filled.

4.4 LOAD REVERSE

The controller tracks the amp draw for 10 cycles (sweeps) and resets the maximum amp draw (used to reverse the motor caused by an overload condition) automatically based on the conditions.

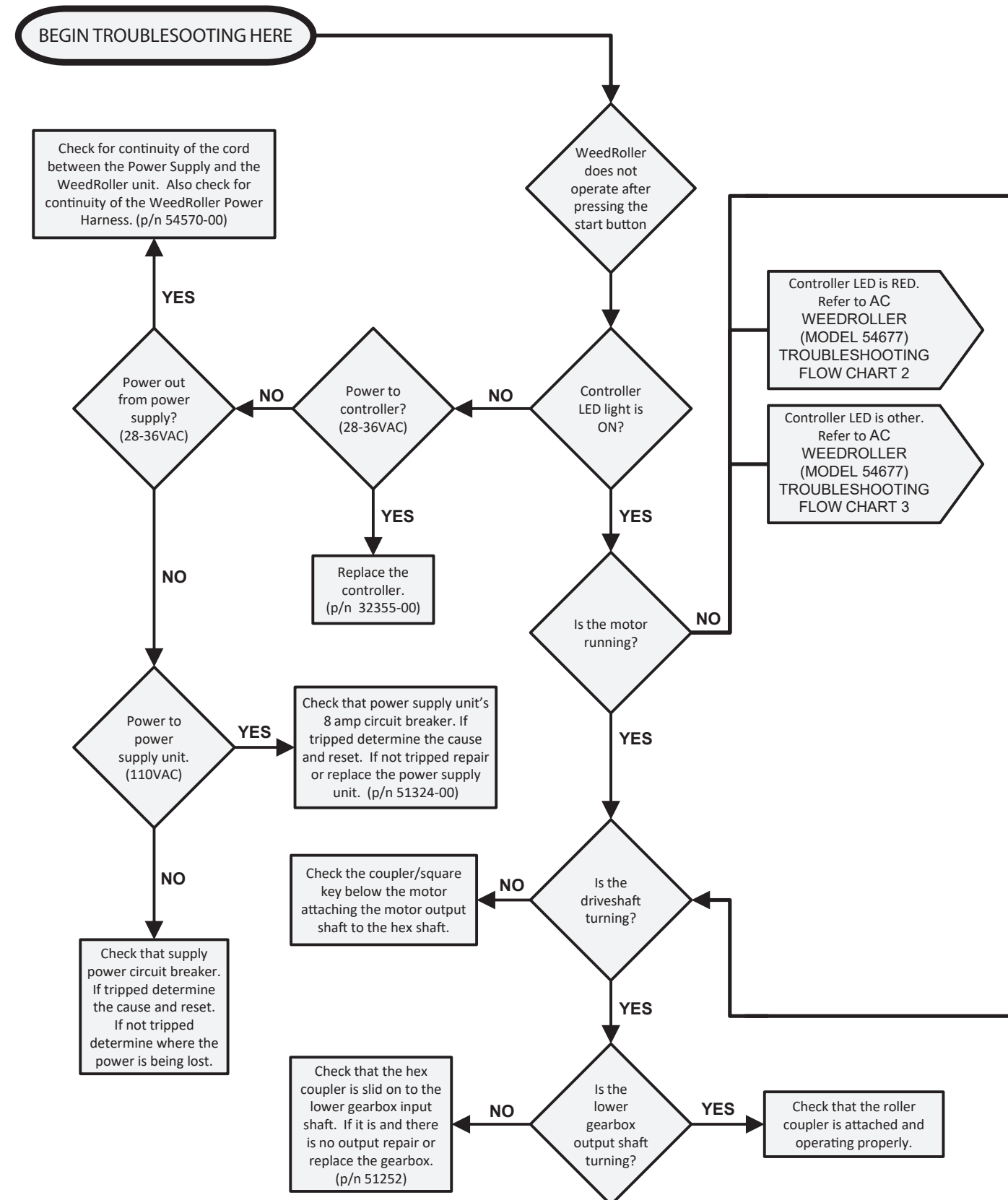
For example: the initial setting is 4.5 (maximum) amp draw when the WeedRoller PRO is first used. The controller records a 3.5 amp draw (highest amp draw during 10 cycles) and resets the maximum amp draw setting from 4.5 amp draw to 3.6 amps. The controller now reverses the WeedRoller PRO tubes if the motor draws 3.6 amps or more.

4.5 AC WEEDROLLER PRO SERVICE RECORDS

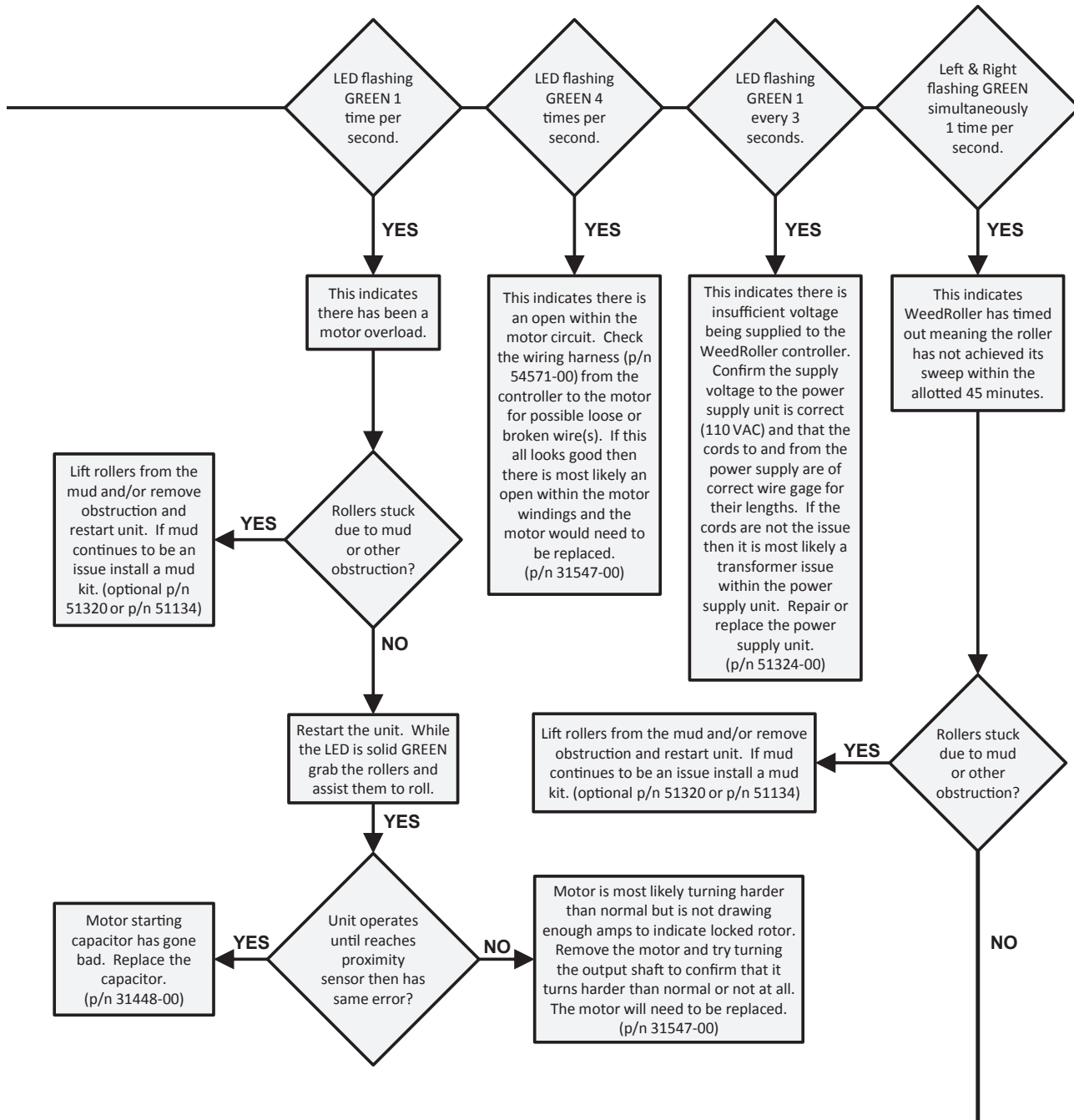
DATE MAINTENANCE SERVICED BY						
BEFORE RE-INSTALLATION (SHAFT DRIVE)						
REPLACE LOWER GEARBOX GREASE (ANNUALLY)						
CHECK LOWER GEARBOX FOR LEAKS AROUND SHAFTS AND FROST PLUG						
CHECK PLASTIC SANDWICH PACK FOR EXCESSIVE WEAR						
CHECK ELECTRIC MOTOR GEARBOX FOR OIL LEAKS AROUND SHAFT						
CHECK WIRE HARNESSSES FOR ABRASIONS						
CHECK CONTROLLER FOR OPERATION						
RUN UNIT IN BOTH DIRECTIONS TO CHECK SENSOR OPERATION						
CHECK ROLLER TUBES FOR EXCESSIVE WEAR OR HOLES						
CHECK ROLLER TUBE COUPLERS FOR SECUREMENT AND EXCESSIVE WEAR.						

See parts section for part numbers pertaining to maintenance items.

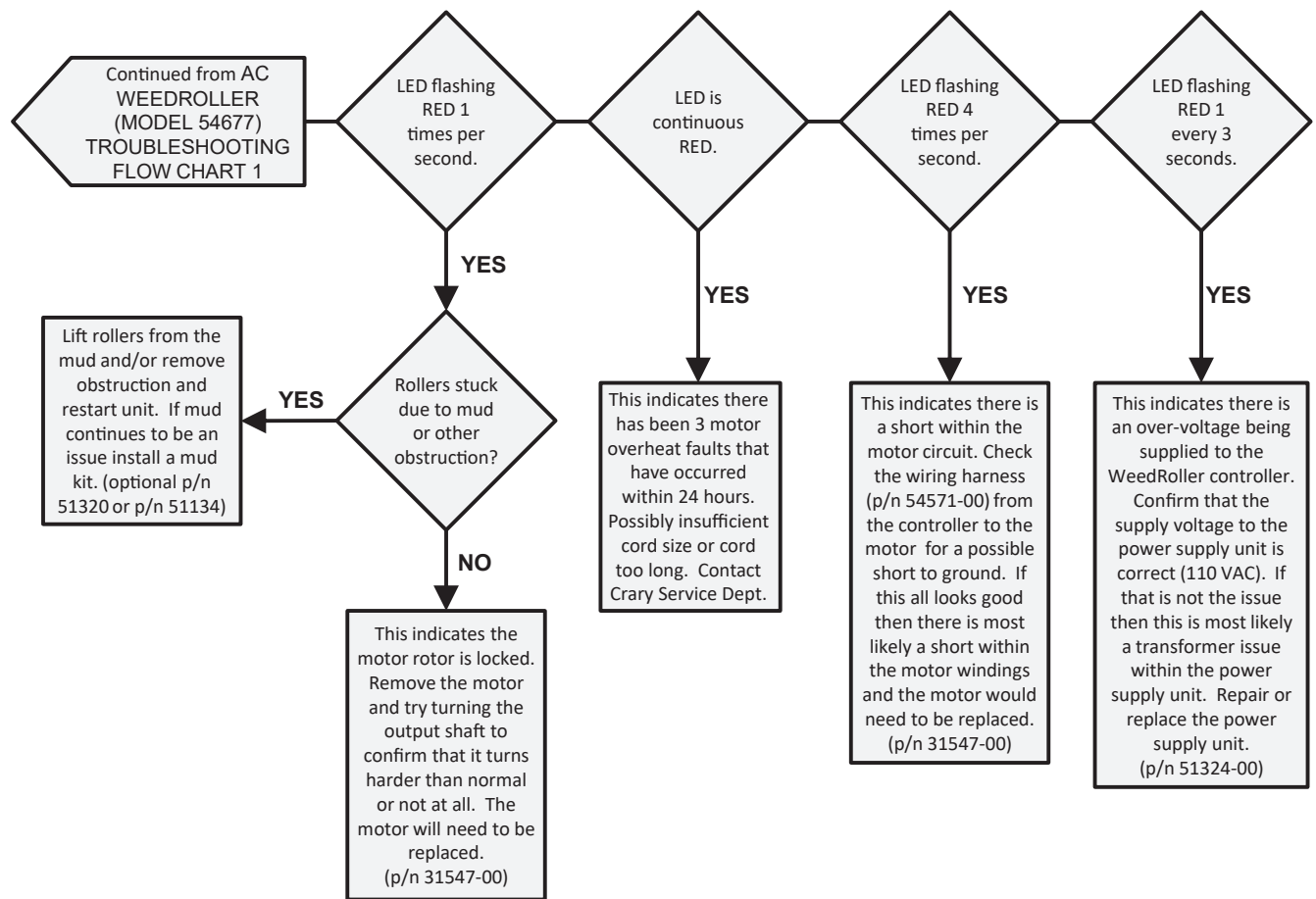
4.6 AC WEEDROLLER PRO TROUBLESHOOTING FLOW CHART 1



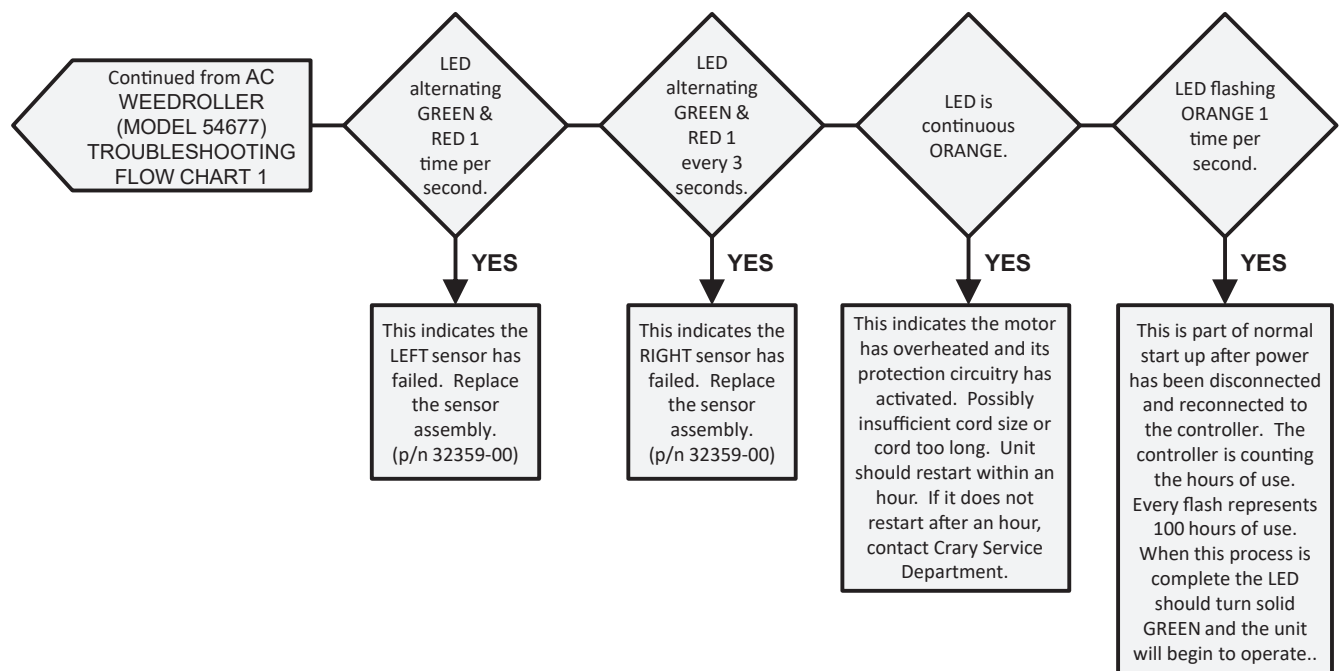
4.6 AC WEEDROLLER PRO TROUBLESHOOTING FLOW CHART 1



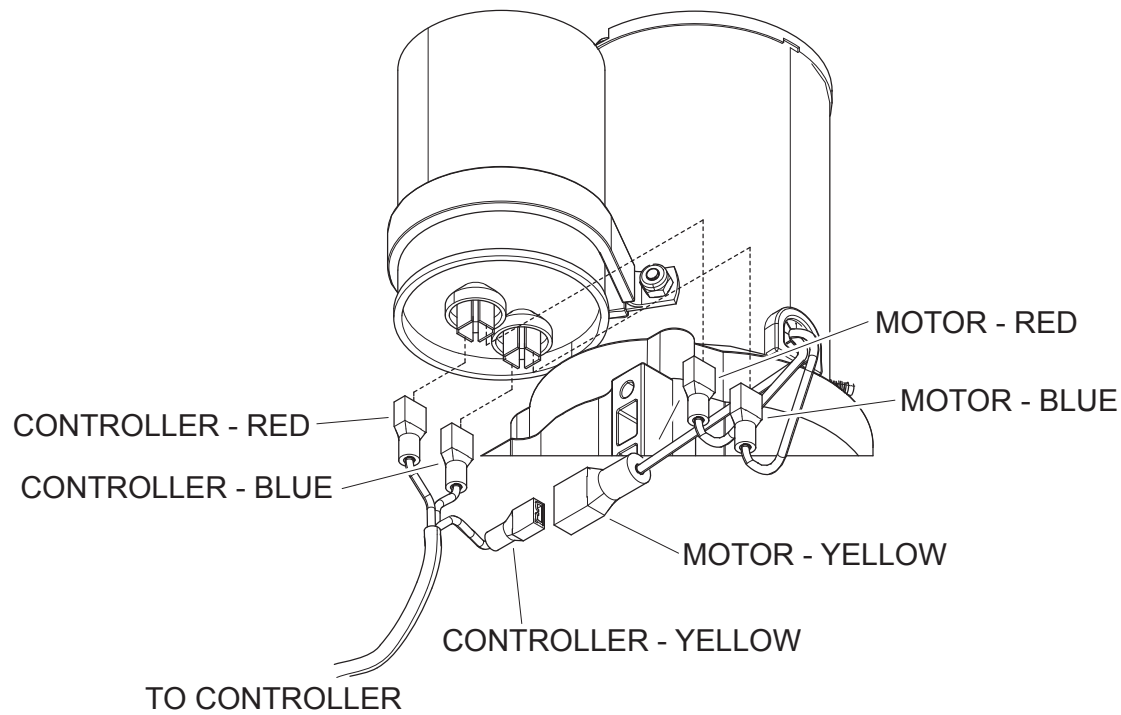
4.7 AC WEEDROLLER PRO TROUBLESHOOTING FLOW CHART 2



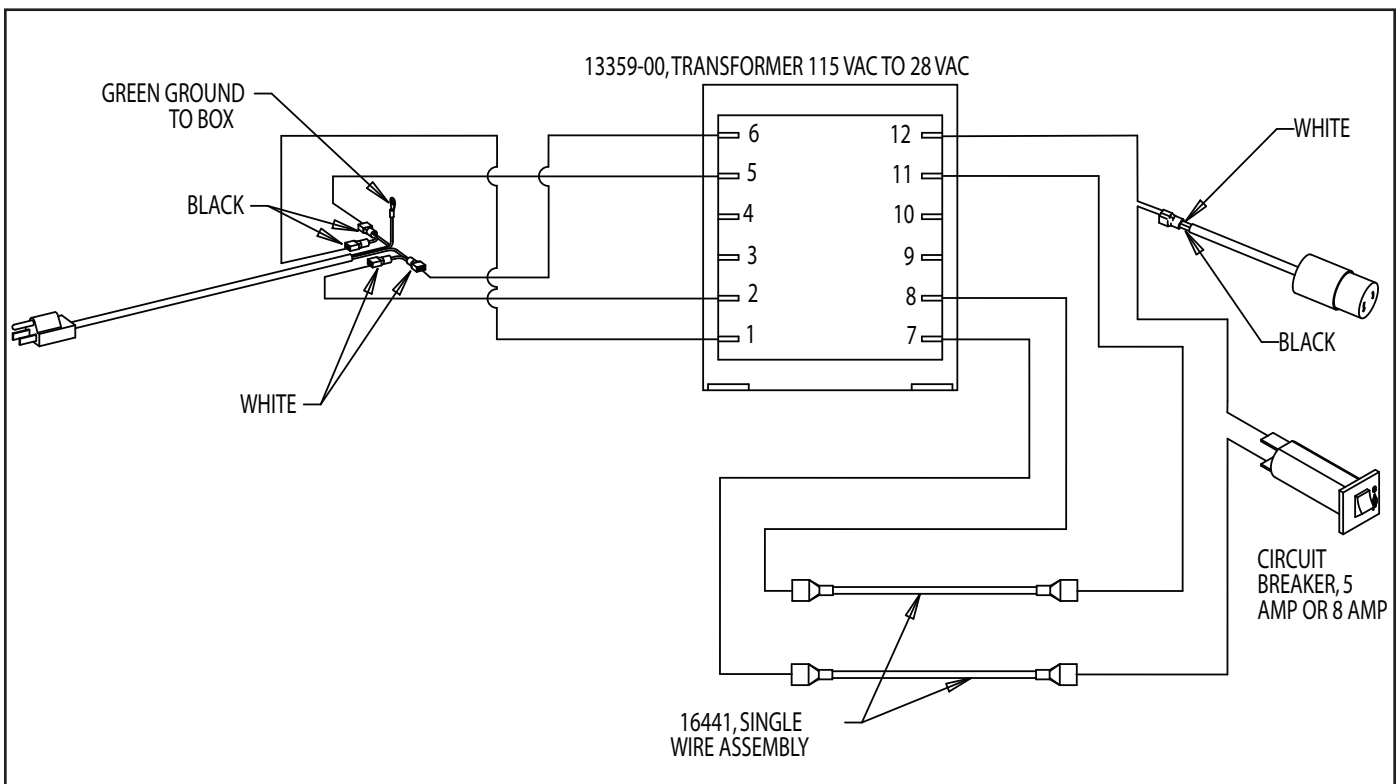
4.8 AC WEEDROLLER PRO TROUBLESHOOTING FLOW CHART 3

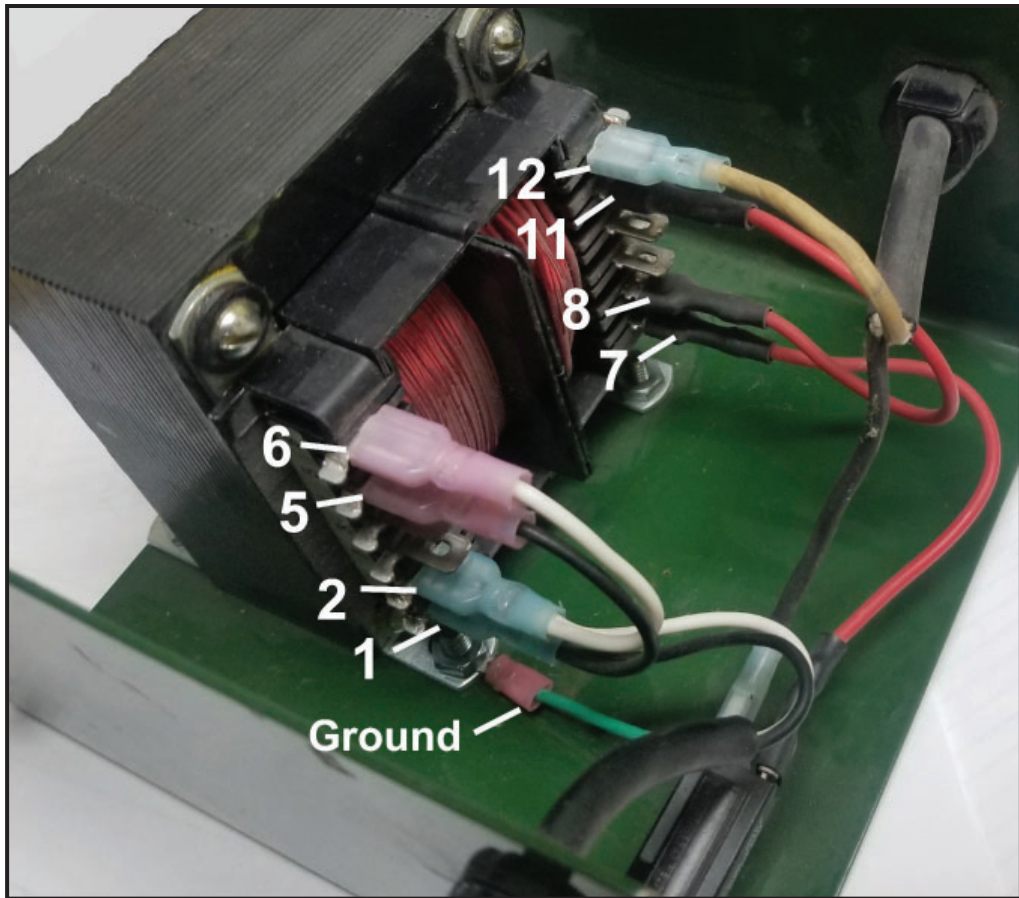


4.9 AC WEEDROLLER PRO WIRING DIAGRAM

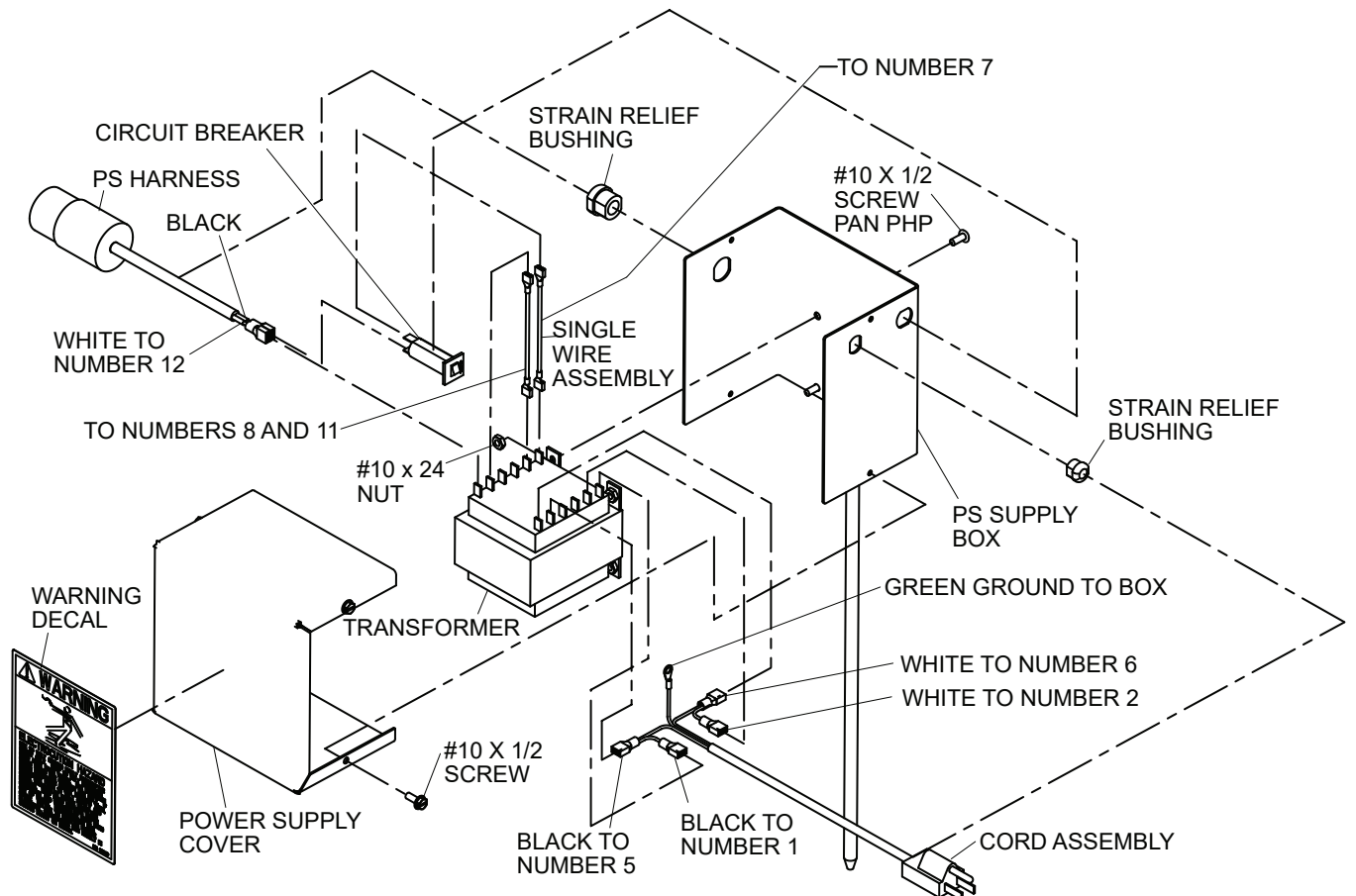


WEEDROLLER PRO 8 AMP ELECTRICAL SCHEMATIC, AC





WEEDROLLER PRO TRANSFORMER INTERIOR VIEW AND DIAGRAM

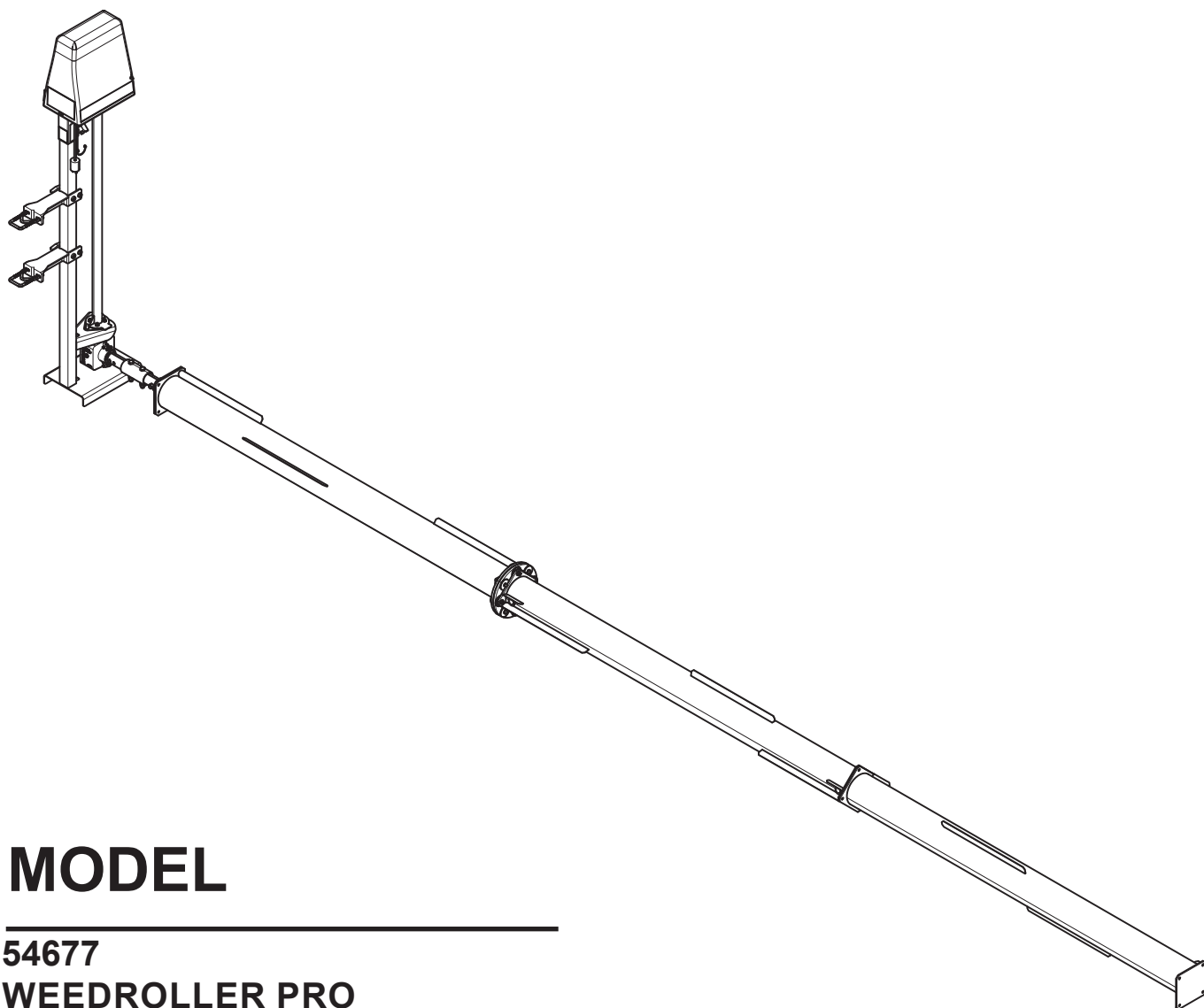


CRARY

WeedRoller[®] **PRO**

PARTS CATALOG

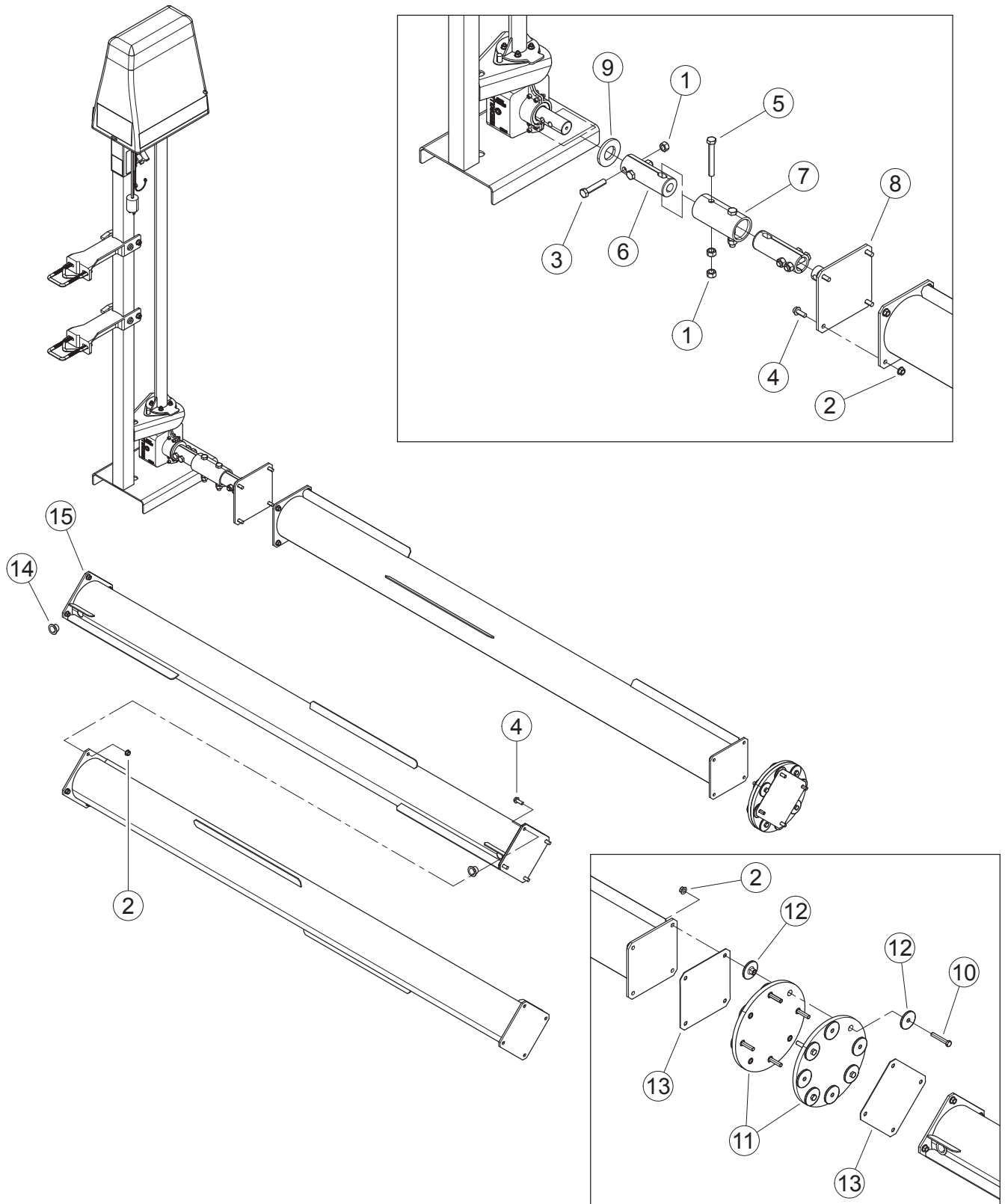
WEEDROLLER PRO



MODEL

54677
WEEDROLLER PRO

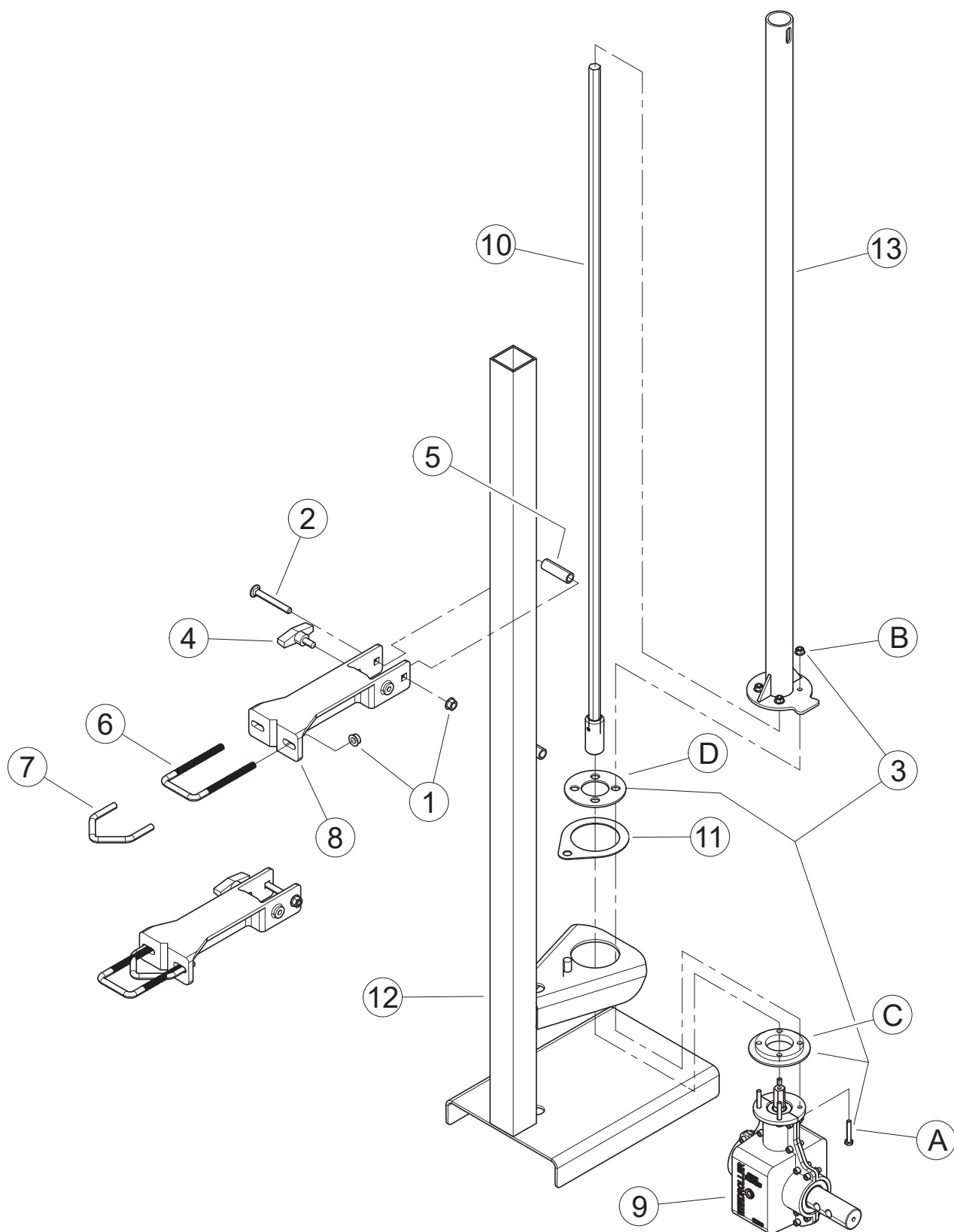
WEEDROLLER PRO



WEEDROLLER PRO

WEEDROLLER BASE (54677)			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	15043	NUT, 1/2 HEX NC ZP	8
2	15905-00	NUT, 3/8-16 NYLOCK-FLANGE	8
3	15092	BOLT, 1/2 X 2-1/2 HEX GR5 ZP	4
4	15382	BOLT, 3/8 X 1 SERR FLANGE GR5 NC ZP	8
5	15549	BOLT, 1/2 X 3-3/4 HEX GR5 NC ZP	2
6	51059	WEEDROLLER BUSHING	2
7	51060	WEEDROLLER COUPLER	1
8	51213	WELDMENT, STEEL ADAPTER	1
9	51283	DISK, SEAL COVER	1
	51288	ASSEMBLY, FLEX COUPLER (INCLUDES ITEMS 2 & 10 - 13)	1
10	0103-0711-00	BOLT, 3/8 X 2-1/4 HEX GR5 ZP	8
2	15905-00	NUT, 3/8-16 NYLOCK-FLANGE	8
11	51154	BELTING, FLEX COUPLER	2
12	51163	BUSHING, FLEX COUPLER	16
13	51164	PLATE, WEAR FLEX COUPLER	2
	51291	ASSEMBLY, 7' ROLLER (INCLUDES ITEMS 14 & 15)	3
14	16580	PLUG, 1" TUBE	2
15	51290	WELDMENT, 7' ROLLER	1

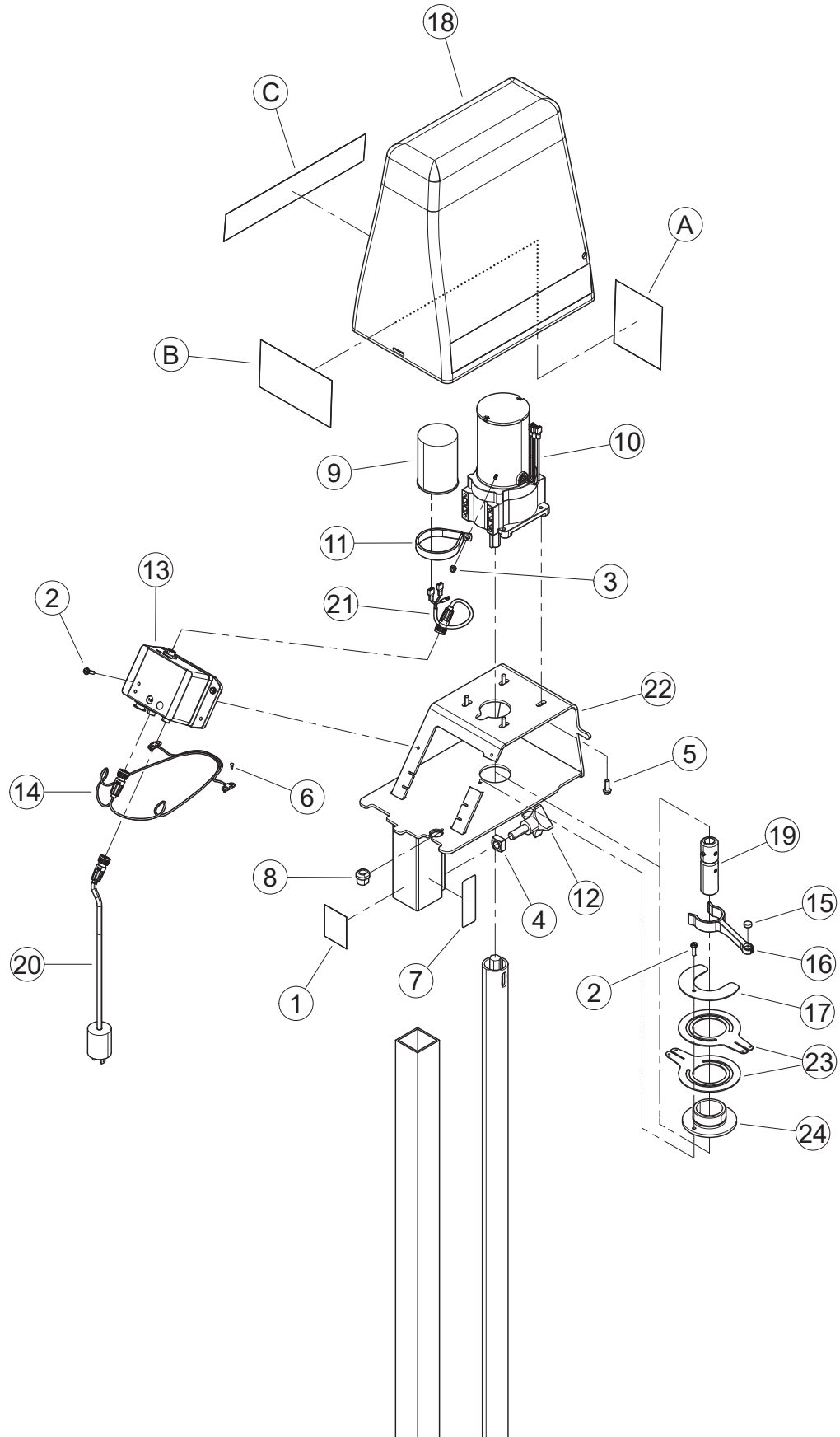
WEEDROLLER PRO BASE



WEEDROLLER PRO BASE

WEEDROLLER BASE (54575-00)			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	15905-00	NUT, 3/8-16 NYLOCK-FLANGE	6
2	15486	BOLT, 3/8 X 3-1/2" GR5 CRG	2
3	50823	KIT, PRO SANDWICH PACK (INCLUDES ITEMS A-D)	1
A	15342	BOLT, 1/4 X 1-1/2 HEX GR5 ZP	4
B	15900-00	NUT, 1/4-20 NYLOCK-FLANGE	4
C		DISK, PRO SANDWICH PACK CENTER	1
D		DISK, SANDWICH PACK OUTER	1
4	15524	KNOB, 3/8 X 3/4 STUD	2
5	51174	SPACER, DOCK MOUNT	2
6	51175	U-BOLT, 2-3/8 X 5 RECT ZP	2
7	51180	V-BOLT, DOCK MOUNT ZP	2
8	51191	BRACKET, DOCK MOUNT	2
9	51252	GEARBOX, RIGHT ANGLE 2.3:1 (PAGE 31)	1
10	51274	WELDMENT, 5/8 HEX SHAFT	1
11	51344-00	PLATE, DRIVEHEAD WEAR	1
12	54579-00	WELDMENT, BASE	1
13	54591-00	WELDMENT, TUBE-PIVOT	1

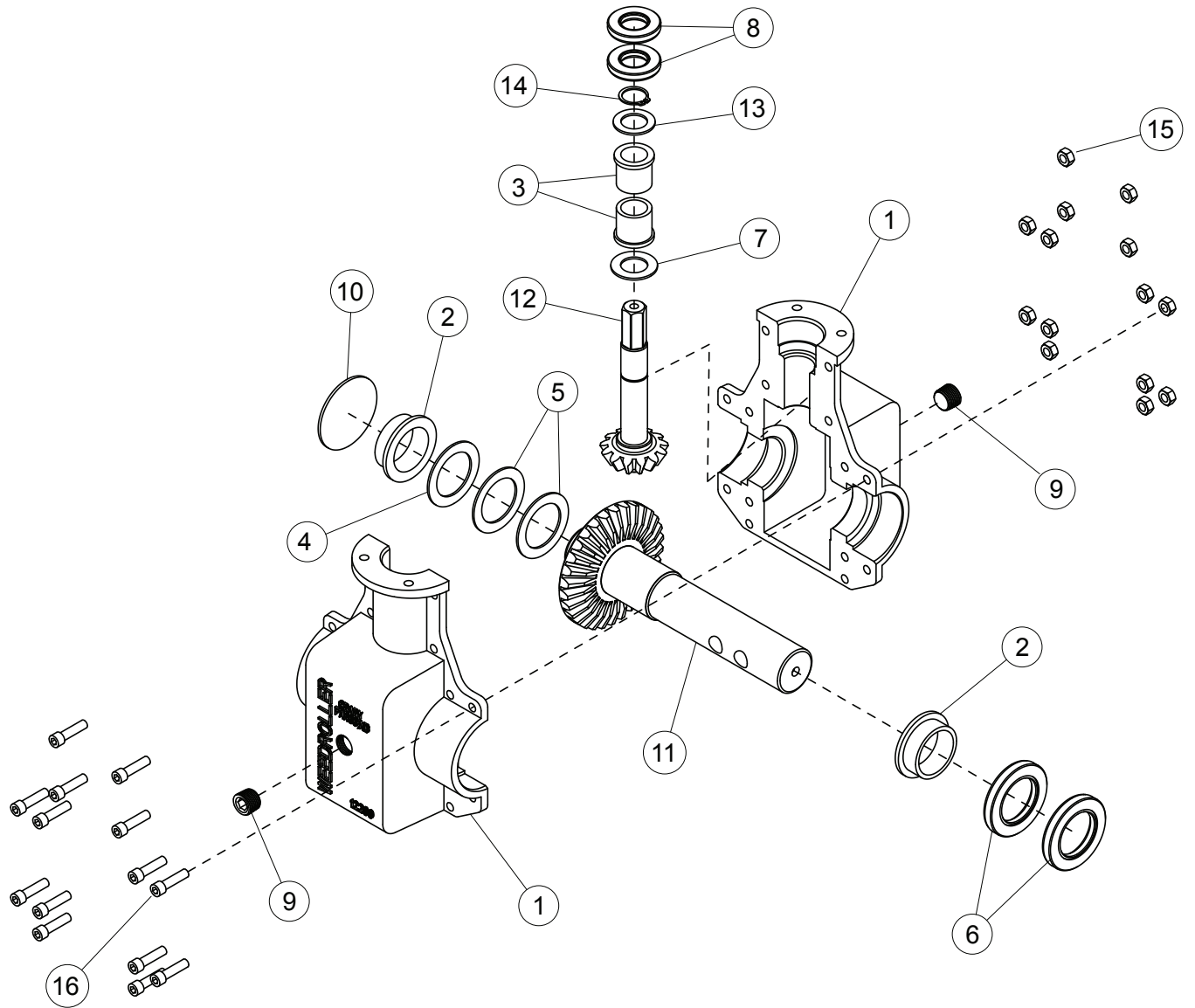
WEEDROLLER PRO CONTROL TOP



WEEDROLLER PRO CONTROL TOP

WEEDROLLER CONTROL TOP (54574-00)			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	12611	DECAL, CAUTION WATER LEVEL	1
2	15225	SCREW, #10 X 3/4 HEX TAP SC	3
3	15255	NUT, 8-32 NYLOCK	1
4	15898-00	NUT, 1/2-13 SQR ZP	1
5	15901-00	SCREW, 1/4-28 X .75 HF ZP	4
6	15906-00	RIVET, PLASTIC PUSH	4
7	16155	DECAL, SERIAL NUMBER	1
8	16380	BUSHING, 16-3 STRAIN RELIEF	1
9	31448-00	CAPACITOR, 175 MFD	1
10	31547-00	MOTOR, 28 VAC BISON GEAR	1
10A	36771-00	SEAL, SHAFT (FOR BISON 31547-00 ONLY)	1
11	32261-00	CLAMP, 2 1/2 X 1/2 COATED	1
12	32348-00	KNOB, 1/2-13 X 1.38 4-PRONG	1
13	32355-00	ASSEMBLY, SMARTSWITCH 28VAC	1
14	32359-00	ASSEMBLY, HARNESS SENSOR	1
15	32455-00	MAGNET, 0.5 X 0.19 NEODYMIUM (NOT INCLUDED IN KIT 54574-00)	1
16	32457-00	MOUNT, MAGNET ARM (NOT INCLUDED IN KIT 54574-00)	1
17	54628-00	PLATE, MOON	1
18	54895-00	ASSEMBLY, WR COVER PRO	1
A	16342	DECAL, INSTRUCTIONS WEEDROLLER	1
B	32720-00	DECAL, WEEDROLLER - FRONT	1
C	32721-00	DECAL, WEEDROLLER - SIDE	2
19	51340-12	ASSEMBLY, 5/8 COUPLER WELDMENT	1
20	54570-00	ASSEMBLY, HARNESS WR-POWER	1
21	54571-00	ASSEMBLY, HARNESS WR-MOTOR	1
22	54584-00	WELDMENT, HEAD	1
23	54585-00	PLATE, DISC-SENSOR	2
24	54588-00	BUSHING, PIVOT	1
	12530	LANYARD, NYLON (NOT SHOWN)	1
	32917-00	THREADLOCKER, MEDIUM STRENGTH, 50ML (NOT SHOWN)	1

GEARBOX, RIGHT ANGLE 2.3:1

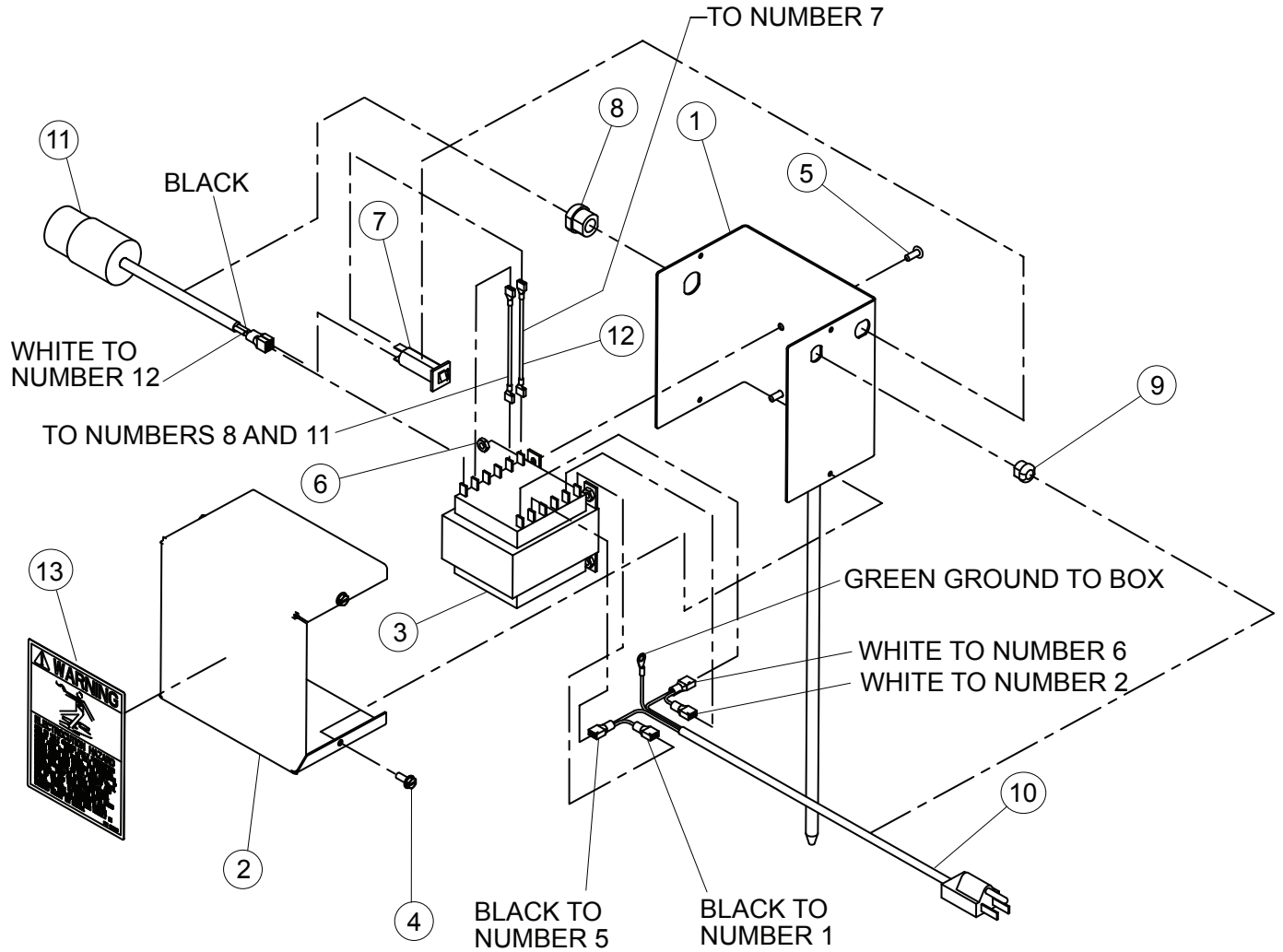


GEARBOX, RIGHT ANGLE 2.3:1

GEARBOX RIGHT ANGLE 2.3:1 (51252)			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	12269	CASTING WR GEARBOX	2
2	12376	BEARING, 1-3/8 BRONZE BUSHING	2
3	12377	BEARING, 3/4 BRONZE BUSHING	2
4	15585	SHIM, WASHER 1-3/8 X 2 X .02	1
5	15586	SHIM, WASHER 1-3/8 X 2 X .005	2
6	12378	SEAL, 1-3/8 DBL LIP W/GARTER	2
7	15587	THRUST WASHER, 3/4 X 1-5/16 X .062	1
8	12379	SEAL, 3/4 DBL LIP W/GARTER	2
9	12384	PIPE PLUG, 3/8 AMER NATL	2
10	12383	FROST PLUG, 2-1/4 OD	1
11	51253	SHAFT WELDMENT, 1-3/8	1
12	51254	SHAFT WELDMENT, 3/4 INCH	1
13	15593	SHIM, WASHER 3/4 X 1-3/16 X .02	1
14	12381	SNAP-RING, 3/4 EXTERNAL	1
15	15105	NUT, 1/4 HEX	14
16	15242	SOC HD CAP SCREW, 1/4 X 1	14
	12487	**GREASE, LUBRIPLATE 5555 1 QUART (NOT SHOWN)	1
	11304	CLEAR SILICON, RUBBER SEALANT 10 OZ. (NOT SHOWN)	AR
	11303	PERMA. LOK, 1.69 OZ. VIAL (NOT SHOWN)	AR
	30338-00	**LUBRIPLATE PURE FLUSH (NOT SHOWN)	1

**Before off season storage, it is recommended to clean and flush your equipment. Refer to Section 4.3 for Gearbox Maintenance and LUBRIPLATE Pure Flush Instructions.

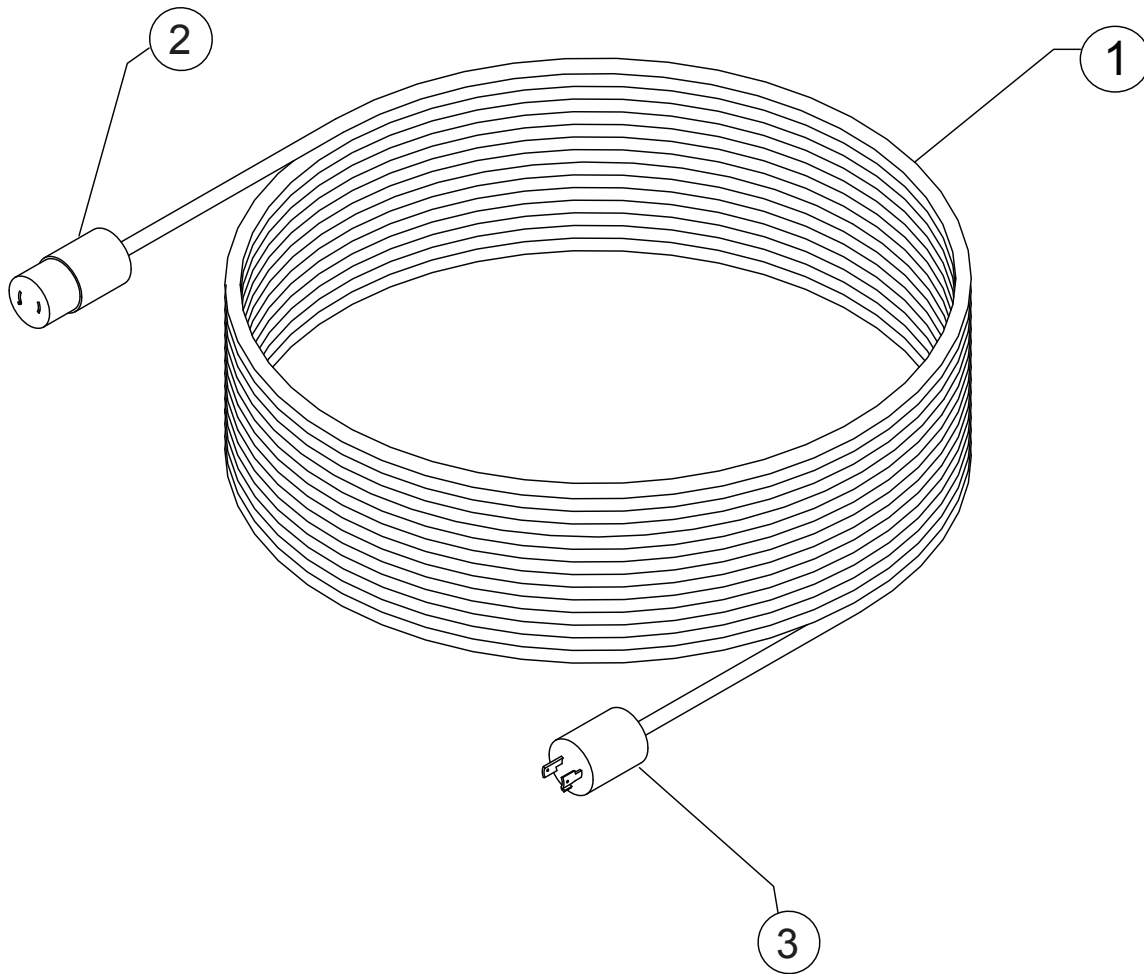
WEEDROLLER PRO POWER SUPPLY



ASSEMBLY, AC WEEDROLLER POWER SUPPLY (51324-00)

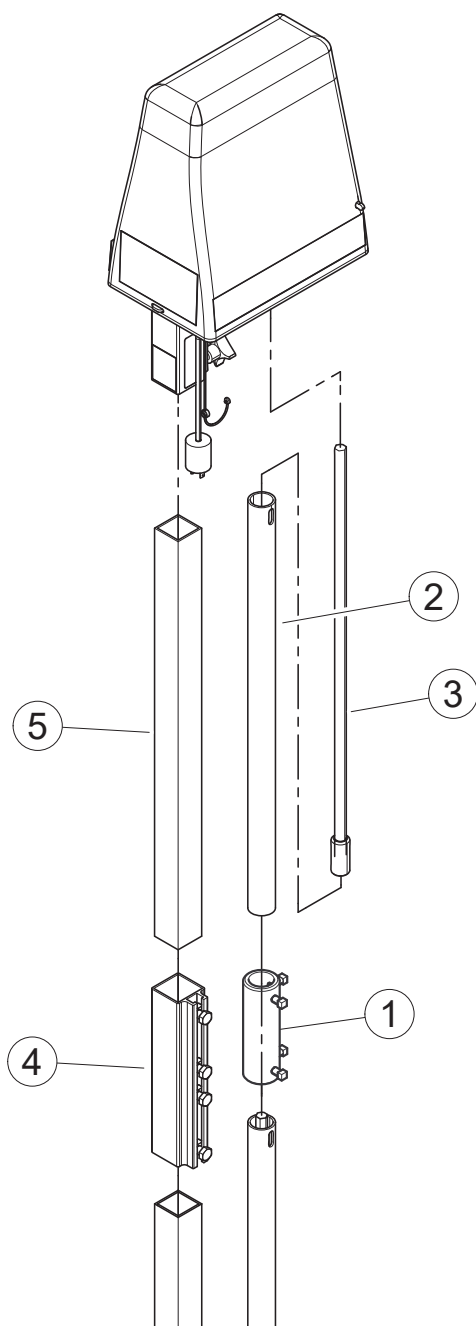
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	51323-17	WELDMENT, POWER SUPPLY BOX	1
2	51086-17	COVER, POWER SUPPLY BOX	1
3	13359-00	TRANSFORMER, 115 VAC TO 28 VAC	1
4	15187	SCREW, NO. 10 X 1/2 HEX	4
5	15423	SCREW, #10X24X1/2" PAN PHP ZP	4
6	15134	NUT, #10X24 HEX	4
7	16762	CIRCUIT BREAKER, 8 AMP	1
8	16380	STRAIN RELIEF BUSHING 16-3	1
9	16367	STRAIN RELIEF BUSHING 18-3	1
10	16439	CORD ASSEMBLY, WEEDROLLER	1
11	51326-00	ASSEMBLY, WR PS HARNESS	1
12	16441	SINGLE WIRE ASSEMBLY	2
13	16340	DECAL, WARNING WEEDROLLER	1

70' EXTENSION CORD



70' EXTENSION CORD (AC WR) (51327-00)			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	51327-00	70' EXTENSION CORD (AC WR) WITH ENDS	1
2	13374-00	CONNECTOR, 2 POLE FEMALE QUICK	1
3	13373-00	CONNECTOR, 2 POLE MALE	1

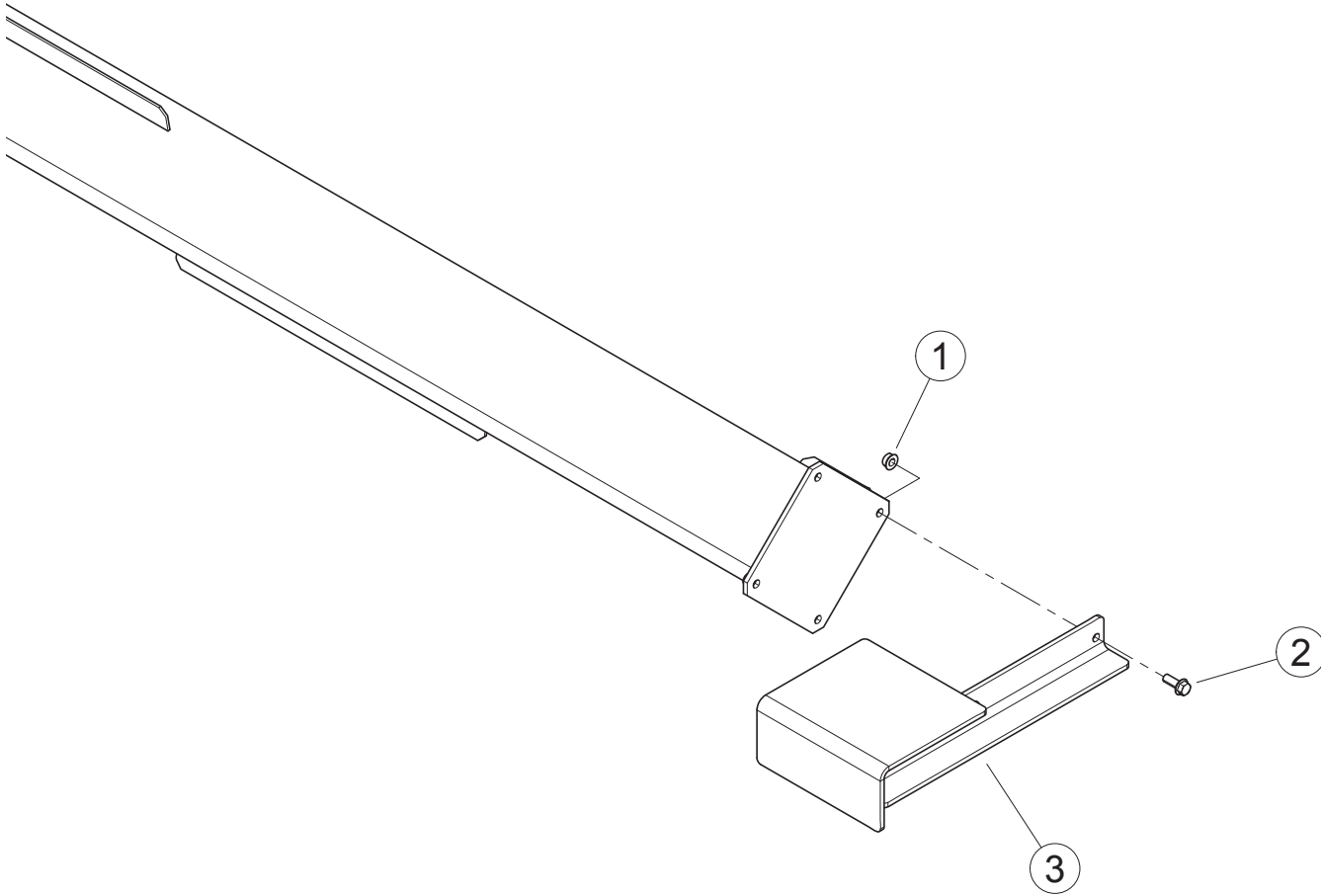
TALL EXTENSION KIT (DEEP WATER EXTENSION) (OPTION)



The 30" extension kit increases the maximum water depth of the standard unit from 4-1/2 feet to 7 feet. Up to two extensions can be added per WeedRoller PRO.

KIT, WR TALL EXTENSION (DEEP WATER) (51409)			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	55478-00	COUPLER, PIVOT TUBE EXTENSION	1
2	51279	TUBE, WR PIVOT EXTENSION	1
3	51284	WELDMENT, 5/8 HEX SHAFT	1
4	51407-00	COUPLER, DEEP WATER	1
5	51408-00	TUBE, REAR EXTENSION	1

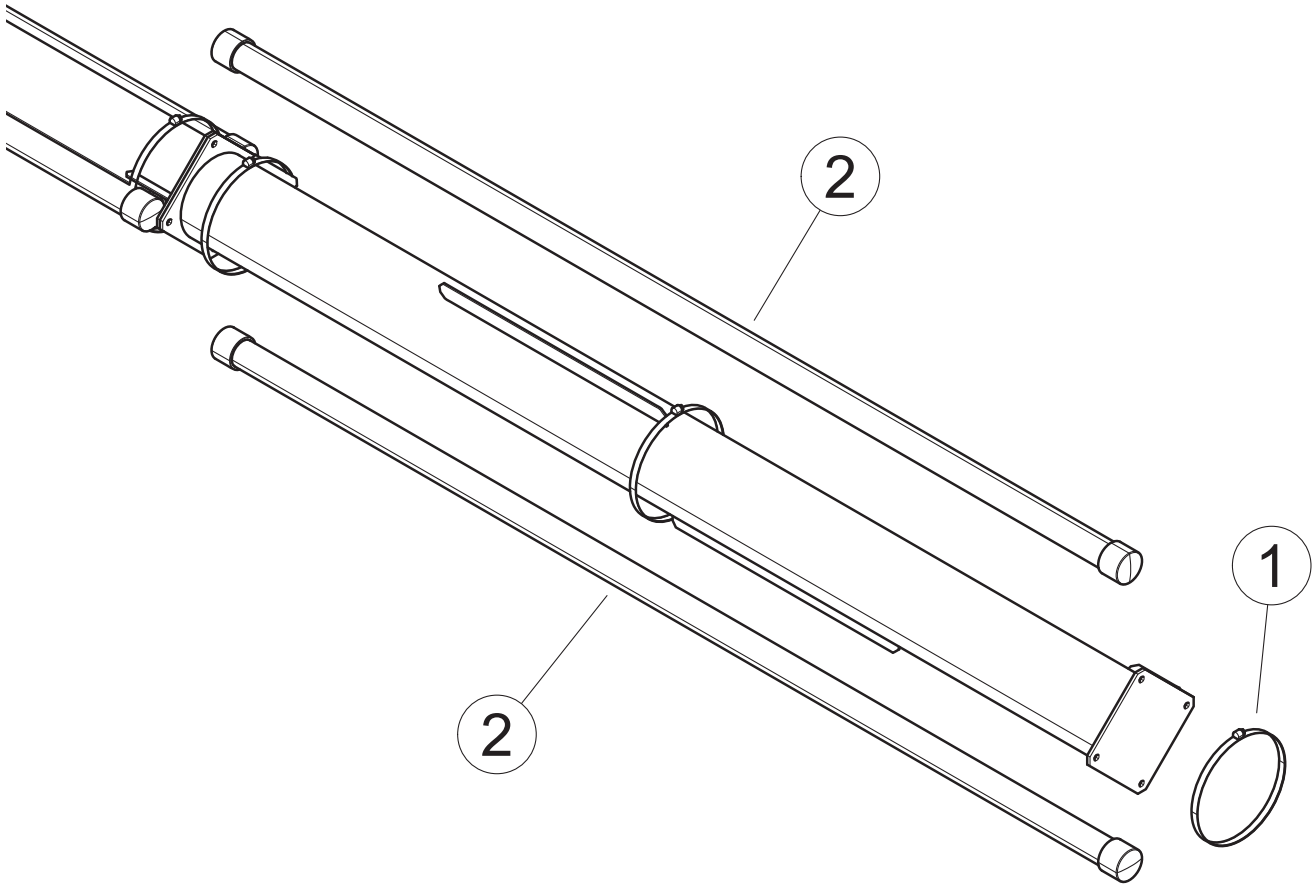
MUD KIT (OPTION)



For moderate mud and muck conditions. Acts as a large paddle on the end roller, providing traction in mud. Remove mud kit after the WeedRoller PRO has worked down to firmer lake bottom.

KIT, MUD (51320)			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	15905-00	NUT, 3/8-16 NYLOCK-FLANGE	2
2	15382	BOLT, 3/8 X 1 SERR FLANGE GR5 NC ZP	2
3	51319	WELDMENT, MUD KIT	1

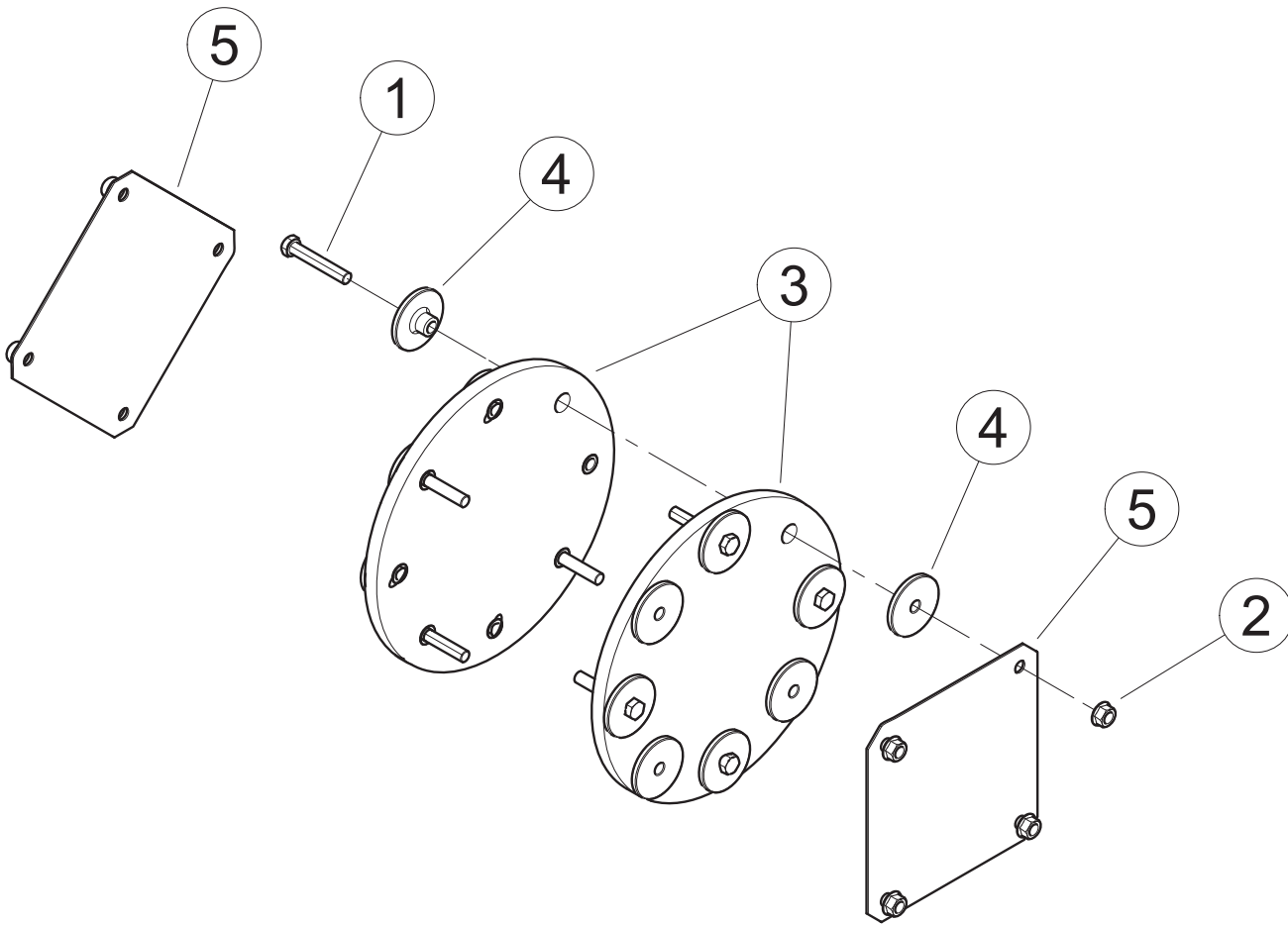
PLASTIC PIPE MUD KIT (OPTION)



For extreme mud and muck conditions. Increases flotation of tubes. Remove mud kit after the WeedRoller PRO has worked down to firmer lake bottom.

KIT, PLASTIC PIPE MUD (51134)			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	16626	CLAMP, 7-3/4 DIA. SNAPLOCK HOSE	6
2	51147	ASSEMBLY, PLASTIC PIPE	4

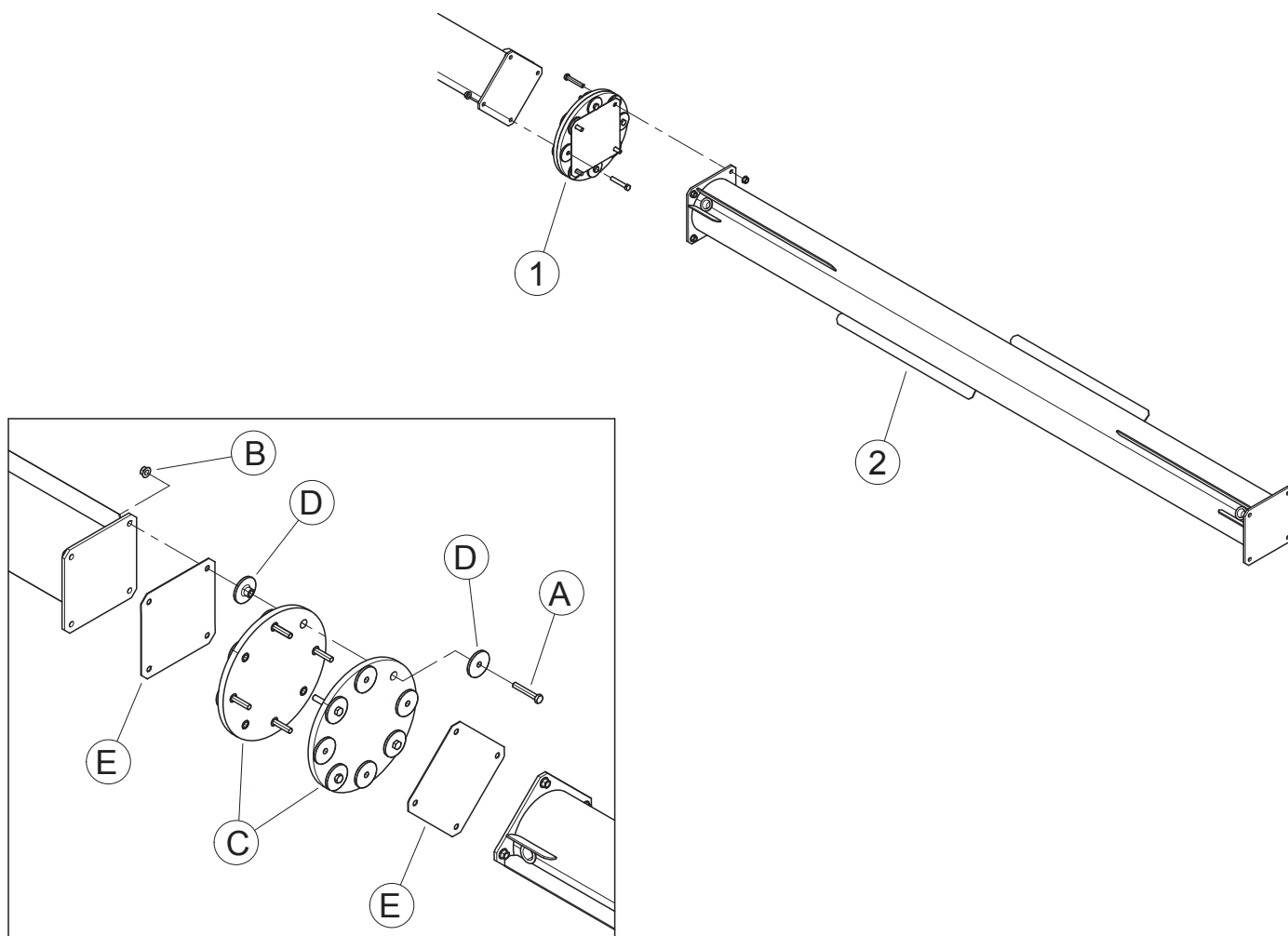
ADDITIONAL FLEX COUPLER (OPTION)



For replacing one damaged or worn coupler between roller tubes. The kit contains replacement flex coupler belting, wear plates, bushings and hardware.

KIT, COUPLER - FLEX (51192)			
ITEM	PART NUMBER	DESCRIPTION	QTY.
	51288	ASSEMBLY, FLEX COUPLER (INCLUDES ITEMS 1 - 5)	1
1	0103-0711-00	BOLT, 3/8 X 2-1/4 HEX GR5 ZP	8
2	15905-00	NUT, 3/8-16 NYLOCK-FLANGE	8
3	51154	BELTING, FLEX COUPLER	2
4	51163	BUSHING, FLEX COUPLER	16
5	51164	PLATE, WEAR FLEX COUPLER	2

ADDITIONAL 7 FOOT ROLLER WITH FLEX COUPLER (OPTION)



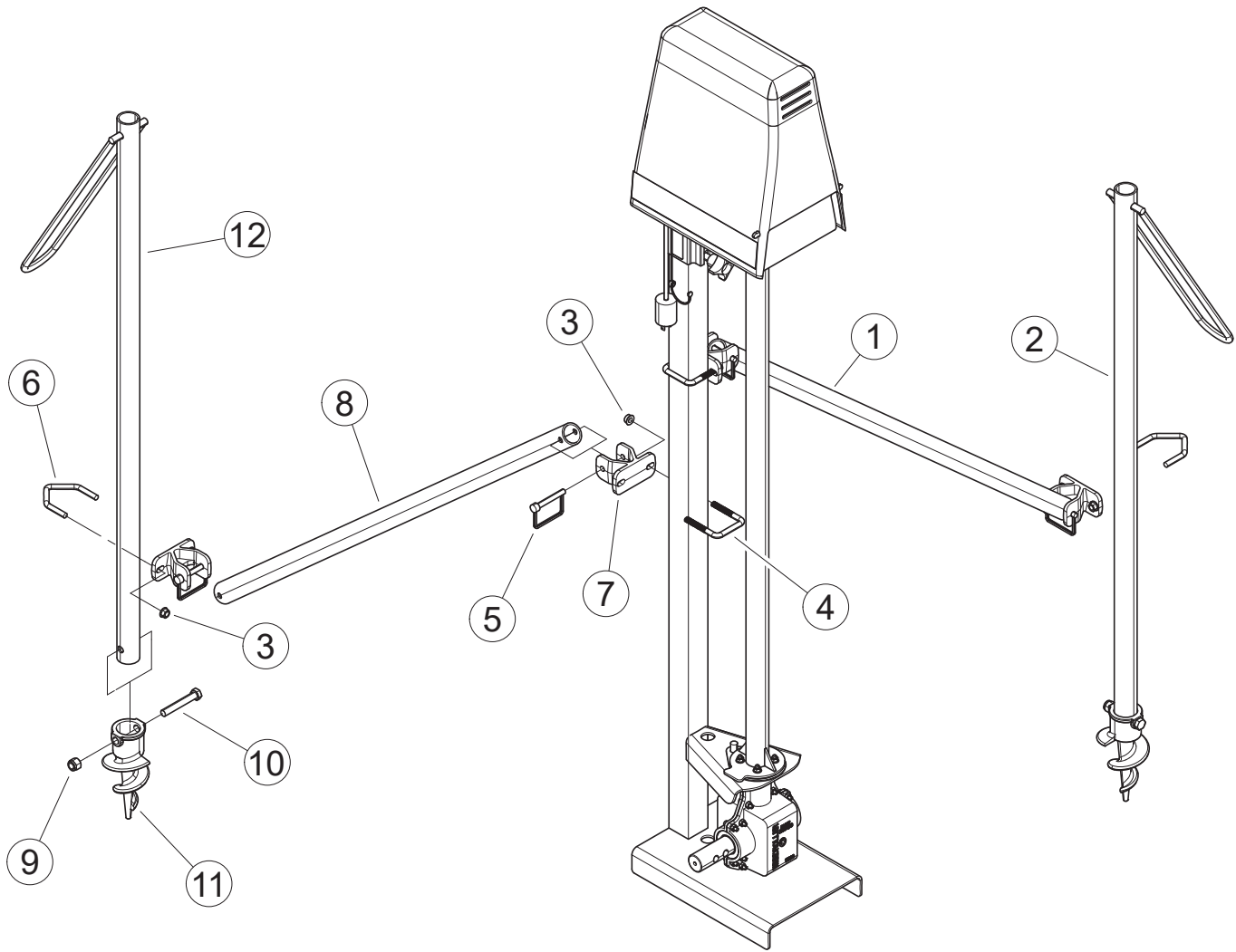
NOTE

Added tubes may require a special permit. Please consult your state and local regulations.

Comes complete with the necessary hardware to attach to the existing tubes.

KIT, ROLLER 7' W/FLEX COUPLER (51302)			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	51288	ASSEMBLY, FLEX COUPLER	1
A	0103-0711-00	BOLT, 3/8 X 2-1/4 HEX GR5 ZP	8
B	15905-00	NUT, 3/8-16 NYLOCK-FLANGE	8
C	51154	BELTING, FLEX COUPLER	2
D	51163	BUSHING, FLEX COUPLER	16
E	51164	PLATE, WEAR FLEX COUPLER	2
2	51291	ASSEMBLY, 7' ROLLER	1
	16580	PLUG, 1" TUBE (NOT SHOWN)	2
	51290	WELDMENT, 7' ROLLER (NOT SHOWN)	1

TRIPOD MOUNTING KIT (OPTION)



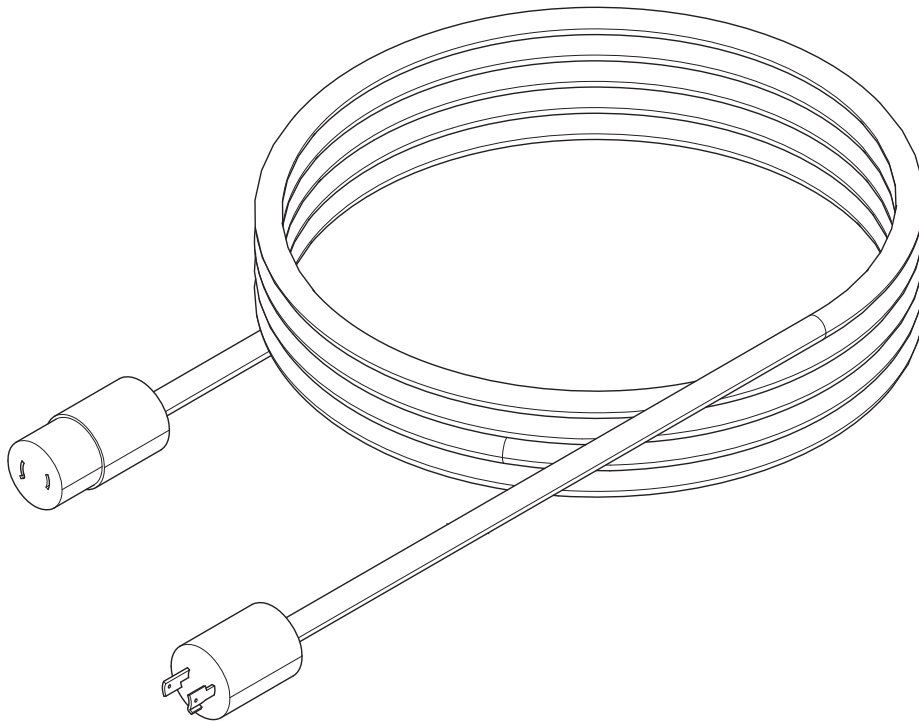
For mounting the WeedRoller PRO on shore without a dock or other structure. The drive head serves as the first anchor point. Two sand screw anchors form the remaining two points.

KIT, TRIPOD MOUNTING (51181)			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	51182	ASSEMBLY, WR TRIPOD (INCLUDES ITEMS 3 - 8)	2
3	15905-00	NUT, 3/8-16 NYLOCK-FLANGE	4
4	15813-00	U-BOLT, 3/8 X 2-3/8 X 3 RECT	1
5	16808	PIN, 3/8" X 2-3/4" SNAP	2
6	51180	V-BOLT, DOCK MOUNT ZP	1
7	51183	CASTING, TRIPOD BRACKET	2
8	51187	TUBE, TRIPOD LEG	1
2	51204	ASSEMBLY, TRIPOD POST (INCLUDES ITEMS 9 - 12)	2
9	0101-0100-00	NUT, 1/2-13 UNC NYLOCK	1
10	15173	BOLT, 1/2 X 3-1/4 HEX GR5 ZP	1
11	16746	AUGER	1
12	51142	WELDMENT, AUGER TUBE	1

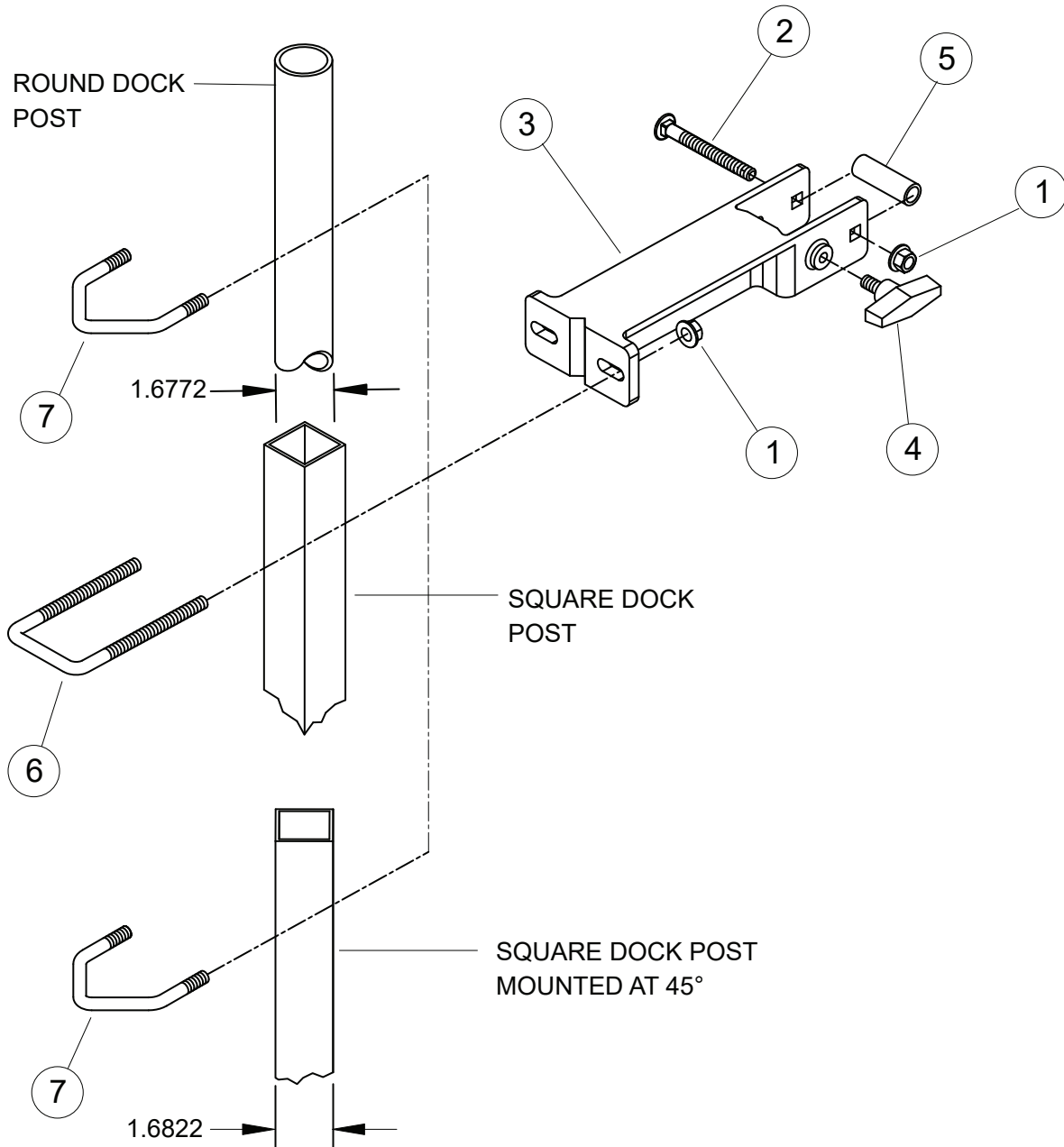
EXTENSION CORDS (OPTION)

For longer docks that require more than 70 feet of cord between the 110 volt converter on land and the AC power head in the water. Cray does not recommend exceeding 100' of cord.

51343-00 25' EXTENSION CORD (AC WR)



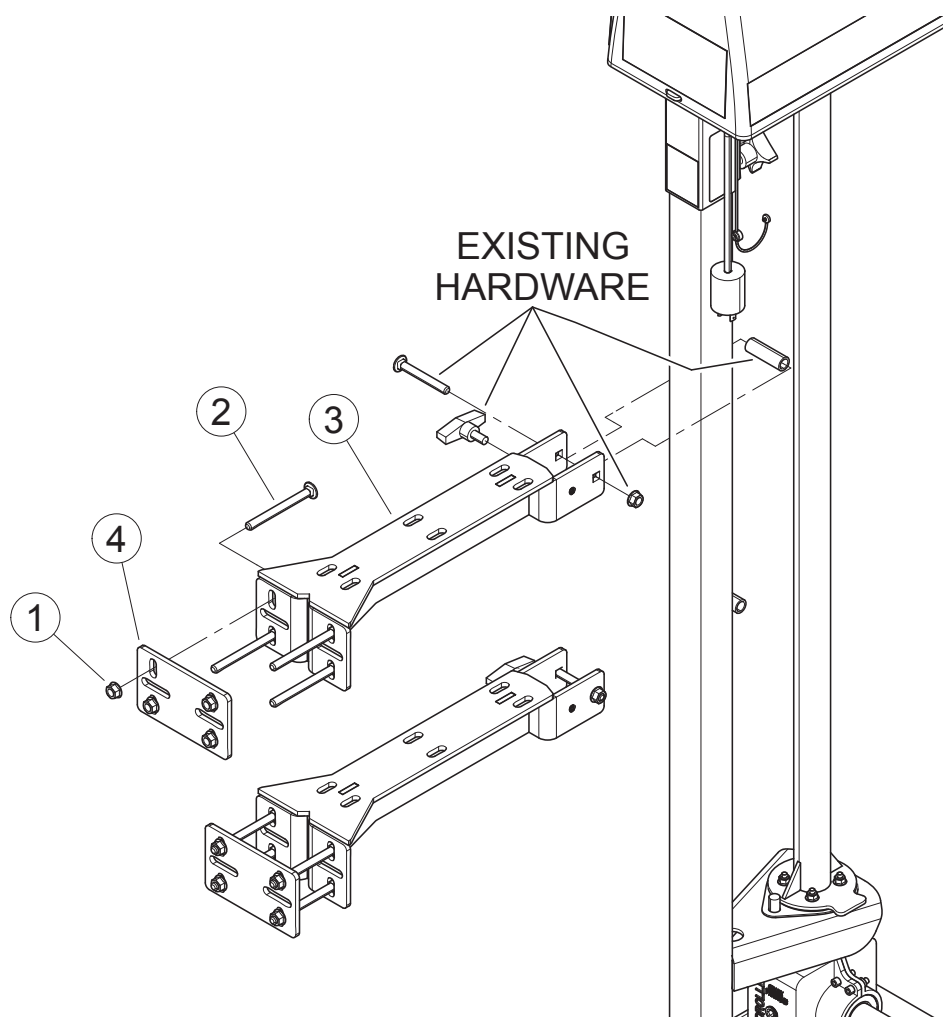
DOCK MOUNTING HARDWARE KIT (OPTION)



Use additional dock hardware to easily move the WeedRoller PRO from one location to another.

51188, DOCK MOUNTING HARDWARE KIT			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	15905-00	NUT, 3/8"-16 NYLOCK-FLANGE	6
2	15486	BOLT, 3/8 X 3-1/2" GR5 CARRIAGE	2
3	51191	BRACKET, DOCK MOUNT	2
4	15524	KNOB, 3/8" X 3/4" STUD	2
5	51174	SPACER, DOCK MOUNT	2
6	51175	U-BOLT, 2-3/8" X 5" RECT. ZP	2
7	51180	V-BOLT, DOCK MOUNT ZP	2

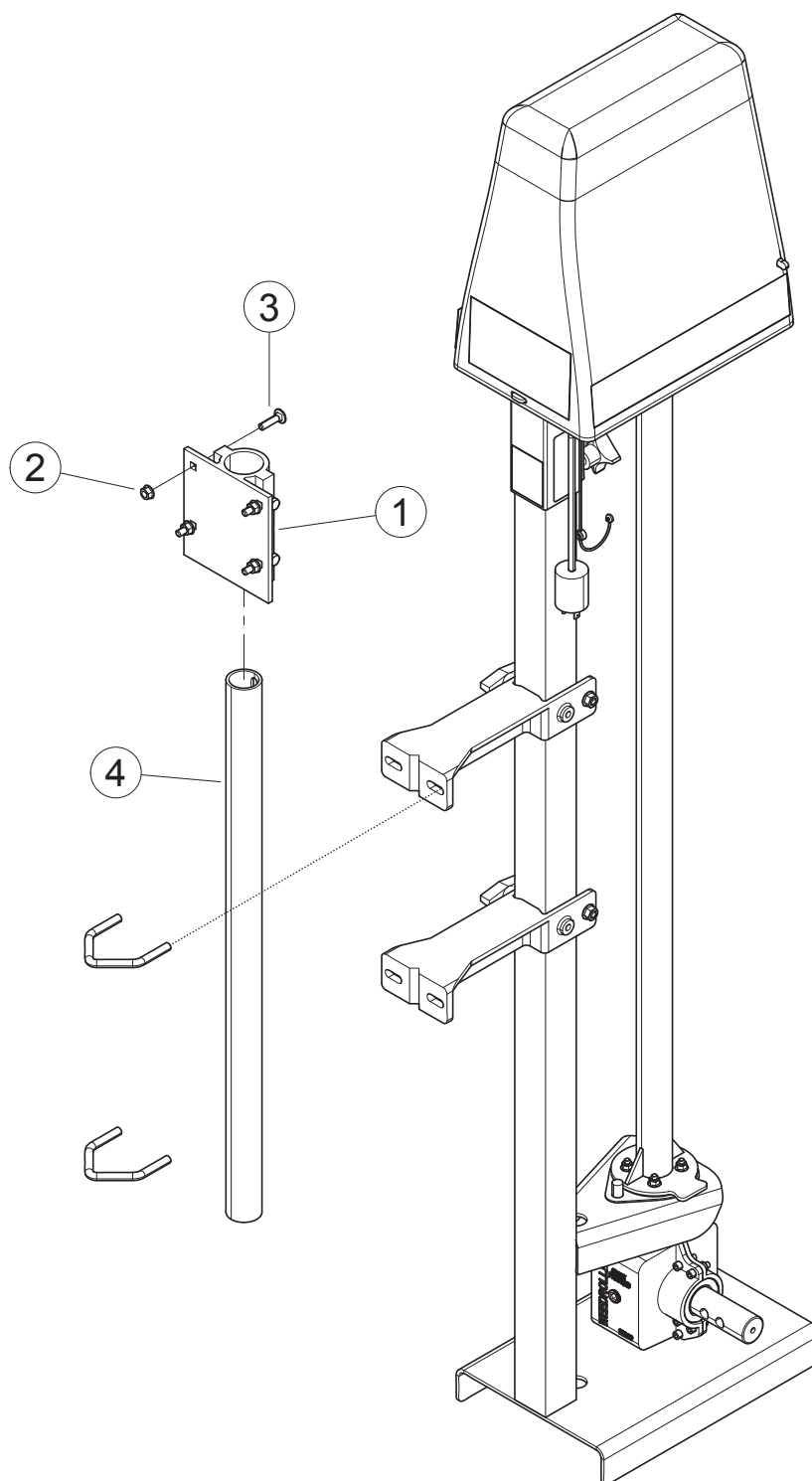
15 INCH DOCK BRACKET KIT (OPTION)



Use these dock brackets to extend WeedRoller PRO from standard position on docks with longer overhangs or larger dock posts, up to 4 inches in width.

KIT, 15" DOCK BRACKET (51406)			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	15905-00	NUT, 3/8-16 NYLOCK-FLANGE	8
2	15737-00	BOLT, 3/8 X 4 CRG GR5 FULL THD	8
3	51404-00	WELDMENT, 15" DOCK MOUNT	2
4	51405-00	PLATE, DOCK BRACKET MOUNT	2

SIDE POST MOUNTING KIT (OPTION)

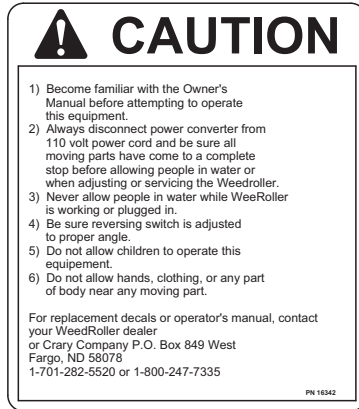


KIT, SIDE POST MOUNTING (51351)

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	34431-00	MOUNT, SIDE POST	1
2	15905-00	NUT, 3/8-16 NYLOCK-FLANGE	4
3	15378	BOLT, 3/8-16 X 1-1/4" CRG	4
4	51279	TUBE, WR PIVOT EXTENSION	1

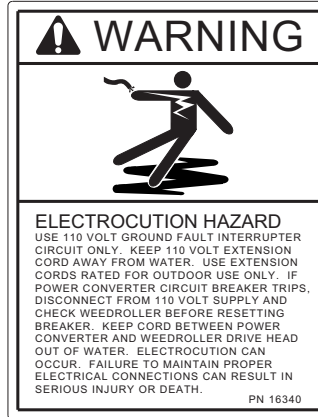
DECALS

1.



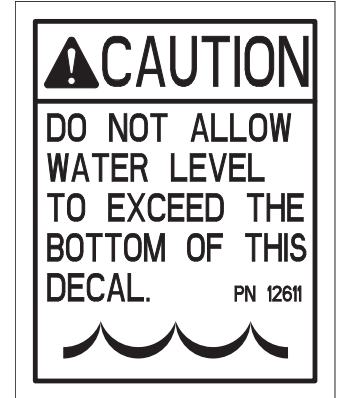
Located inside drivehead cover
Scale 3/4:1

2.



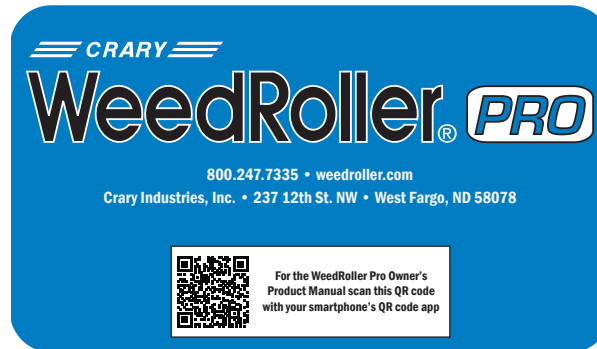
Located on front cover of power supply
Scale 1/2:1

3.



Located on front mount plate
Scale 1:1

4.



Located on front cover
Scale 1/2:1

5.



Located on both sides of WeedRoller PRO cover
Scale 1/2:1

DECALS			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	16342	DECAL, INSTRUCTIONS WEEDROLLER	1
2	16340	DECAL, WARNING WEEDROLLER	1
3	12611	DECAL, CAUTION WATER LEVEL	1
4	32720-00	DECAL, WEEDROLLER - FRONT	1
5	32721-00	DECAL, WEEDROLLER - SIDE	2
	16155	DECAL, SERIAL NUMBER	1



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Manufactured in the
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