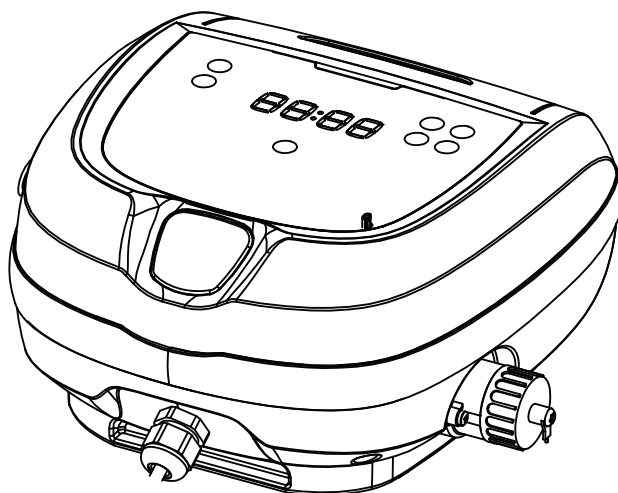




Diagnostic Test Kit for Polaris Robotic Cleaners



93 94 95 Series
P825
91 Series

⚠ WARNING

The Diagnostic Box and included test cables are to be used solely for diagnosing Polaris Robotic Cleaners. It must not be used for any other purpose. Diagnostic tests must be performed while the unit is out of the water. Failure to comply with the following warnings can result in property damage, personal injury, or death.

FOR YOUR SAFETY - This product must be serviced by a contractor who is licensed and qualified in pool equipment by the jurisdiction in which the product will be installed where such state or local requirements exist. In the event no such state or local requirement exists, the installer or maintainer must be a professional with sufficient experience in pool equipment installation and maintenance so that all of the instructions in this manual can be followed exactly. Before installing this product, read and follow all warning notices and instructions that accompany this product. Failure to follow warning notices and instructions may result in property damage, personal injury, or death. Improper installation and/or operation will void the warranty.

Improper installation and/or operation can create unwanted electrical hazard which can cause serious injury, property damage, or death.

Only connect unit to receptacle protected by a ground fault circuit interrupter (GFCI). Such a GFCI receptacle should be provided by a qualified installer and should be tested on a routine basis. To test the GFCI, push the test button. The GFCI should interrupt power. Push the reset button. Power should be restored. If the GFCI fails to operate in this manner, the GFCI is defective. If the GFCI interrupts power to the pump without the test button being pushed, a ground current is flowing, indicating the possibility of an electric shock. Do not use this product. Disconnect the cleaner and have the problem corrected by a qualified service representative before using.

KEEP OUT OF REACH OF CHILDREN

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93 94 95 SERIES

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WARNING

- Make sure the plug is easily accessible at all times.
- Only connect the Control Box to a power outlet protected by a 30 mA maximum ground fault circuit interrupter (GFCI). If in doubt contact a qualified electrician.
- To reduce the risk of electrical shock, do not use the cleaner or Control Box if the cord is worn or damaged. Contact your local Polaris® dealer immediately for a replacement cord.
- Double insulation—For continued protection against possible electric shock, use only identical replacement parts when servicing. Do not attempt repair of the cleaner, Control Box, power cord, or Floating Cable. All repairs should be made by an experienced service professional using only Polaris OEM parts.
- NEVER OPEN Control Box. NEVER OPEN THE MOTOR BLOCK.
- The Control Box must not be installed in a floodable area.
- Do not use an extension cord to connect the unit to electric supply; provide a properly located outlet. The Control Box should be placed near the outlet box.

WARNING

- To reduce the risk of injury, do not permit children to operate this product.
- Do not let anyone, especially small children, sit, step, lean, or climb on any equipment installed as part of your pool's operational system.

SAVE THESE INSTRUCTIONS

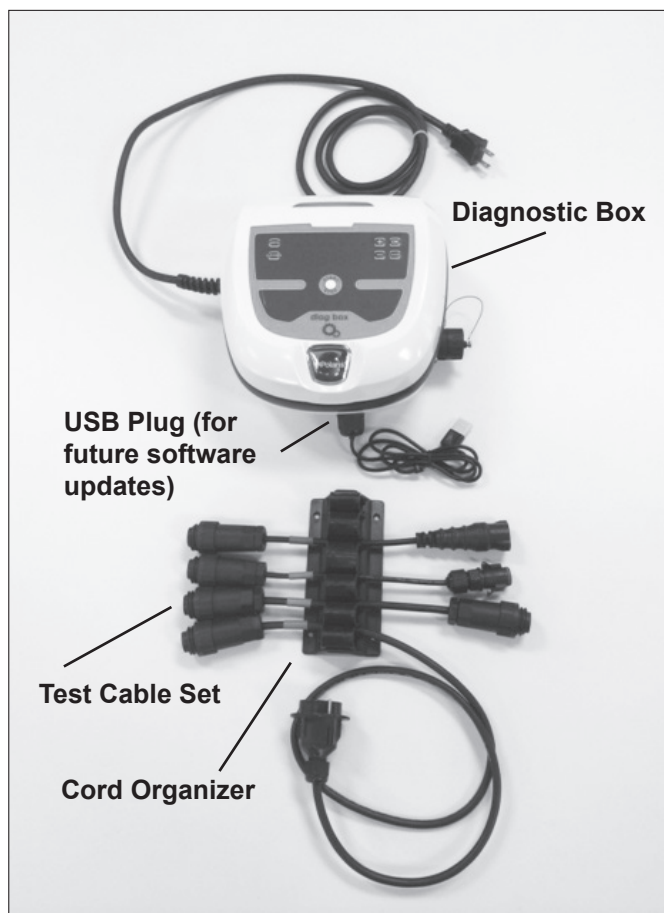
1.0 Overview

This document provides diagnostic testing instructions for the following Polaris robotic cleaners:

- 93 Series: 9300 / P93 / 9300xi / 9350 / P935
- 94 Series: 9400 / P94 / 9450 / P945
- 95 Series: 9550 / P955
- P825
- 91 Series: 9100 / P91
(test cable for 91 Series diagnostic available separately, see Section 1.2)

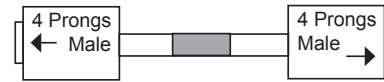
These instructions must be followed exactly. Not following the written procedure or taking shortcuts may increase the risk of personal injury. Read all instructions completely before starting the procedure.

1.1 Diagnostic Kit Components



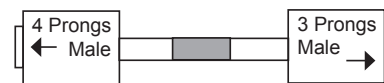
The diagnostic test kit is supplied with four (4) test cables and a cord organizer, which can be mounted:

- **GREEN**
93 94 95 SERIES. Connects Diagnostic Box to cleaner Control Box.



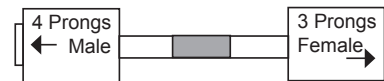
GREEN Test Cable Connectors

- **BLUE**
P825. Connects Diagnostic Box to cleaner Control Box.



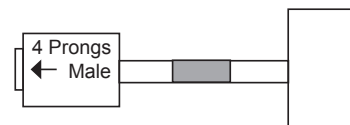
BLUE Test Cable Connectors

- **GREY**
P825. Connects Diagnostic Box to cleaner power cable.



GREY Test Cable Connectors

- **BROWN**
ALL except 91 SERIES. Connects Diagnostic Box to Motor Block.

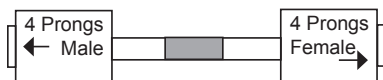


BROWN Test Cable Connectors

NOTE: All test cables are also available for order as individual replacement parts from your Polaris supplier.

1.2 Optional Test Cable for 91 Series Cleaners

Contact your dealer or www.polarispool.com for optional test cable for 91 Series cleaners. Ask for part number: R0704900.



RED Test Cable Connectors

NOTE: To test the motor block for 91 SERIES cleaners, you will also need to use a spare power cord. 91 SERIES cleaners can only be tested for cleaner errors using the Diagnostic Box with the RED test cable.

1.3 Required for Testing

The consumer must provide the following items to perform the diagnostic testing:

- Control Box
- Cleaner Head with Floating Cable

1.4 Testing Strategy

The Diagnostic Box should be used to test for errors or malfunctions in the following cleaner components in this order:

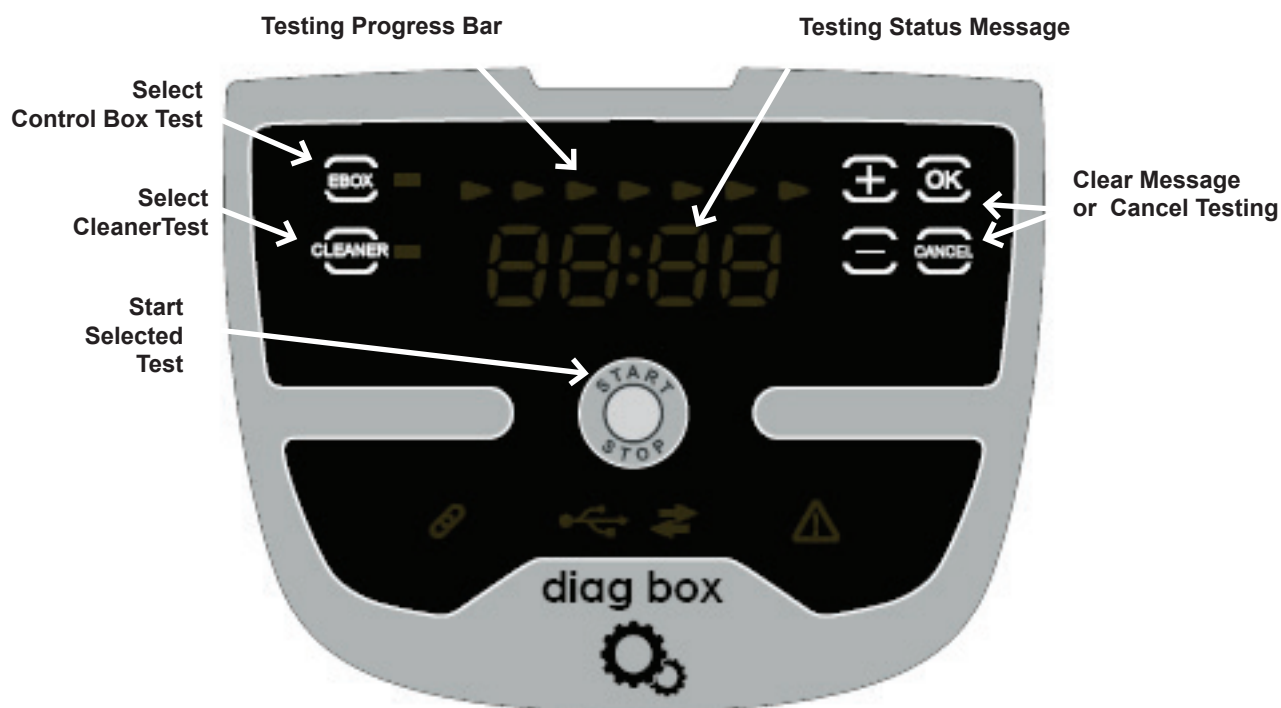
1. Control Box
2. Cleaner and Floating Cable
3. Motor Block

NOTE: Steps for connecting the cleaner and testing each component are different for each robotic cleaner series. For complete step by step procedures, refer to the specific cleaner section in this manual.

CAUTION

Do not touch the cleaner or any Diagnostic Box buttons while the test is running.

1.5 Diagnostic Box Display Panel



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OVERVIEW

1.6 Control Box Diagnostic Test Status and Diagnostic Messages

Connect the correct test cable between the Diagnostic Box and the cleaner Control Box. On the Diagnostic Box, press [EBOX] button, then press [START] button.

Control Box Quick Test	Progress Bar	Message During Test	Diagnostic Message	Action Required
auto testing	▶	test	fail-At	check connections and run test again (replace Diagnostic Box if second fail)
power supply test	▶▶	test	fail	replace Control Box
keyboard test	▶▶▶	test	fail	replace Control Box
test complete	▶▶▶▶▶▶▶▶	end	good	perform cleaner diagnostic test

1.7 Cleaner / Motor Block Diagnostic Tests Status and Diagnostic Messages

Set the cleaner on its back with wheels unobstructed. Connect the correct cable between the Diagnostic Box and the cleaner. On the Diagnostic Box, press [CLEANER] button, then press [START] button.

Control Box Quick Test	Progress Bar	Message During Test	Diagnostic Message	Action Required
system check		test	SC	check connections and run test again
auto testing	▶	test	fail-At	check connections and run test again (replace Diagnostic Box if second fail)
communication	▶▶	test	fail-Com	check connections and run test again (if second fail, disassemble cleaner and test the motor block and the Floating Cable)
traction motor	▶▶▶	tfd1 traction forward drive 1	fail-trac	replace with functioning motor block and retest
		tfd2 traction forward drive 2		
		tbd1 traction backward drive 1		
		tbd2 traction backward drive 2		
	▶▶▶▶	tck traction clockwise	fail-trac	replace with functioning motor block and retest
		tcc traction counter clock-wise		
pump motor	▶▶▶▶▶	Pon pump on		replace with functioning motor block and retest
		Poff pump off		
test complete	▶▶▶▶▶▶	end	end	

2.0 Test for 93 Series

(9300 / P93 / 9300xi / 9350 / P935)

94 Series

(9400 / P94 / 9450 / P945)

95 Series

(9550 / P955)

2.1 Perform Control Box Test

1. Plug the consumer's Control Box into a GFCI protected outlet.
2. Plug the Diagnostic Box into a GFCI protected outlet.
3. Connect one end of the GREEN test cable to the cleaner Control Box.
4. Connect the other end of the GREEN test cable to the Diagnostic Box.



5. On the Diagnostic Box, press [EBOX] button then Start/Stop button to begin the test. The Diagnostic Box displays the test status and progress message (see Section 1.6).
6. The propeller motor will turn on for approximately three to five (3-5) seconds.
7. If the test completes and the Diagnostic Box displays the message: **good**, the cleaner Control Box is fully functional. Turn off the power to the Control Box and disconnect.
8. If there is an error message on the Diagnostic Box display, see **Section 2.4 Control Box Diagnostic Test** for explanation. Replace the Control Box and repeat the test.

2.2 Perform Cleaner Test

1. Set the cleaner head on a block of wood or some object that allows the cleaner wheels to rotate freely.
2. Make sure the Diagnostic Box is plugged into a GFCI protected outlet.
3. Connect the Floating Cable from the cleaner directly into the Diagnostic Box.
4. On the Diagnostic Box, press [CLEANER] button then Start/Stop button to begin the test.
5. The drive motor starts and the Diagnostic Box displays test progress (see Section 1.7). The wheels should turn during this part of the test.
6. The pump motor will turn on and off. The Diagnostic Box displays the test status and progress message (see Section 1.7).
7. If the cycle completes and the Diagnostic Box displays the message: **End**, the floating cable and cleaner pass the test and are fully functional.
8. If there is an error message on the Diagnostic Box display, see **Section 2.5 Control Box Test** for explanation and action.

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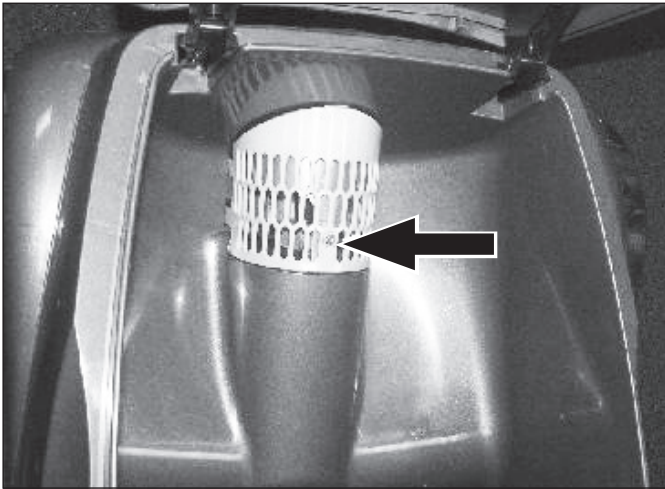
93 94 95 SERIES

2.3 Perform Test for Defective Motor Block

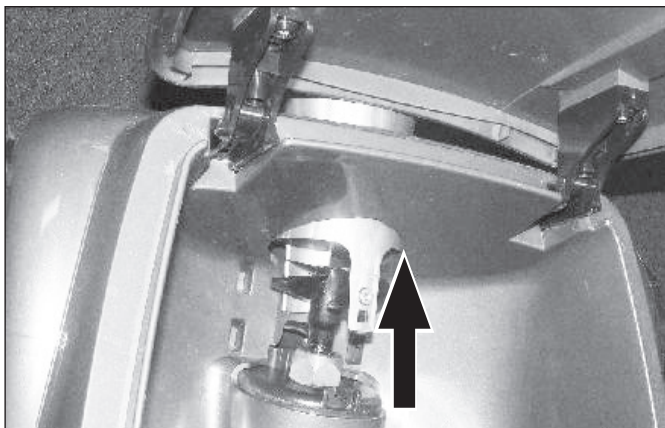
1. Unplug the cleaner.
2. Open the cleaner top and remove the filter canister. Remove the screw securing the propeller guard and remove propeller guard.
3. Remove the propeller and the flow director by pushing out toward rear of cleaner housing.

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93 94 95 SERIES



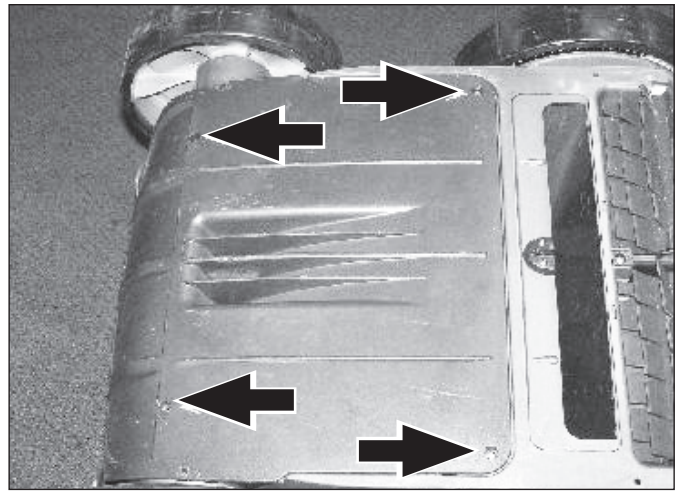
Remove the Propeller Guard



Remove the Propeller and Flow Director

4. Close the cover, turn cleaner over and place on a soft surface so that it is resting on its top.
5. Remove four (4) screws from the bottom of the cleaner. Remove the bottom plate/motor block.

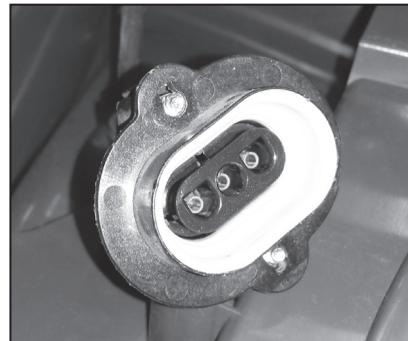
NOTE When removing the motor block, ensure the drive gears and drive pins are on the drive shafts.



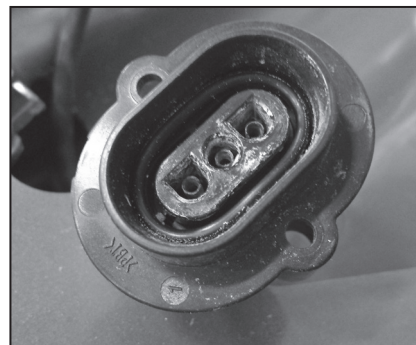
Remove the four (4) Motor Block Screws

6. Disconnect the Floating Cable from the motor block by removing two (2) screws connecting the cable to the block. Pull the plug away from the block to remove.

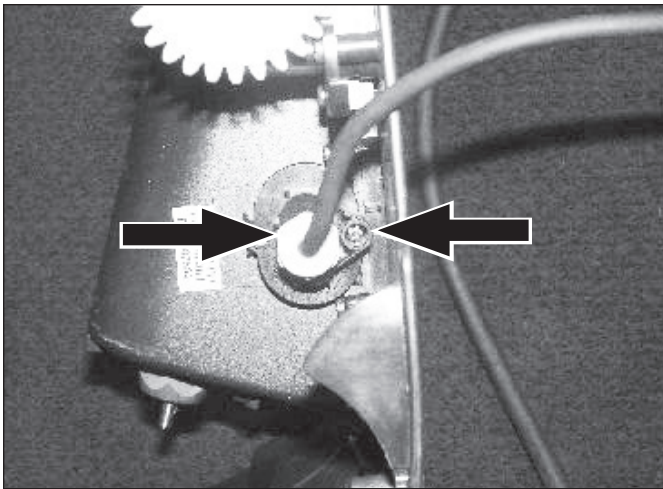
NOTE You will have one of the following motor block cable plugs:



Integral Seal Plug



O-Ring Plug
(Take care not to lose or remove the O-ring)

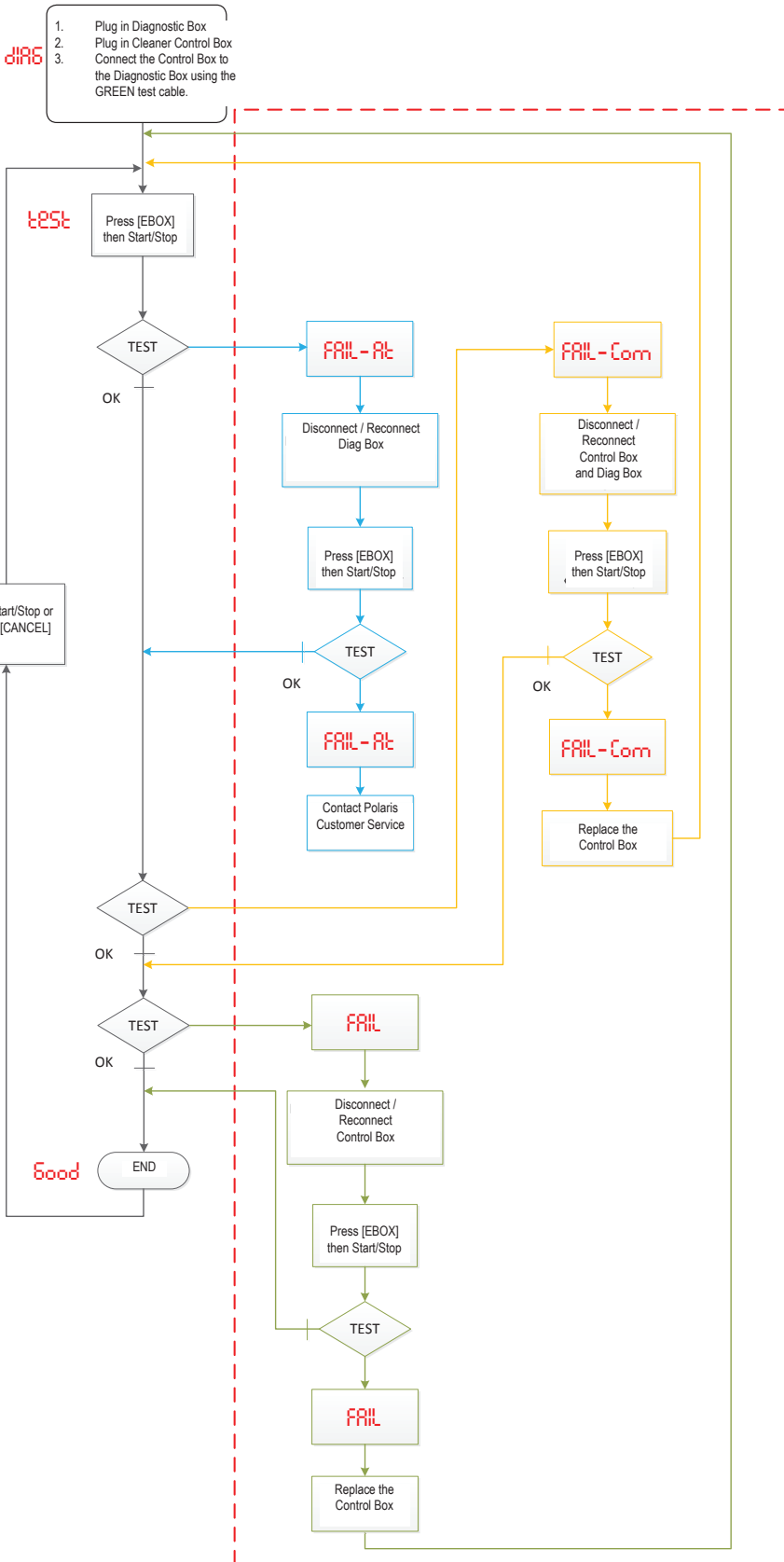


Remove the Floating Cable

7. Connect one end of the BROWN test cable into the motor block.
8. Connect the other end of the BROWN test cable into the Diagnostic Box.
9. On the Diagnostic Box, press [CLEANER] button then Start/Stop button to begin the test. The drive gears will rotate on the drive shaft for approximately ten (10) seconds then stop. The Diagnostic Box displays the test status and progress message (see Section 1.7).
10. If the cycle completes and the Diagnostic Box displays the message: **End**, the Motor Block is functional and the Floating Cable should be replaced.
11. If there is an error message on the Diagnostic Box display, see **Section 2.6 Motor Block Test** for explanation and action.
12. If the test results in a Fail error message, replace with a new motor block.

NOTE Return all defective component(s) to Polaris. (For more information, go to www.Polarispool.com.)

2.4 93 94 95 Series Control Box Test



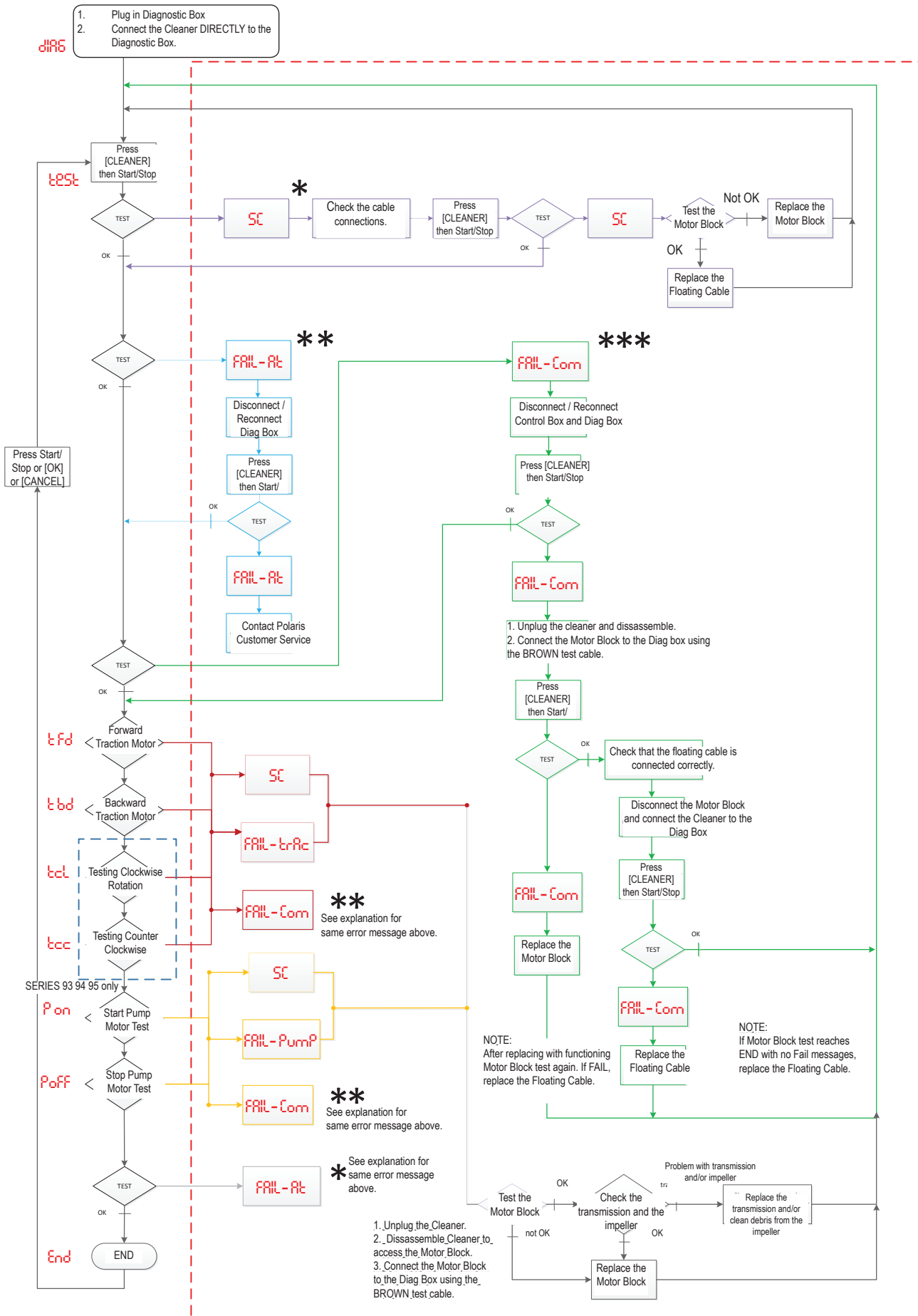
ENG

93 94 95 SERIES

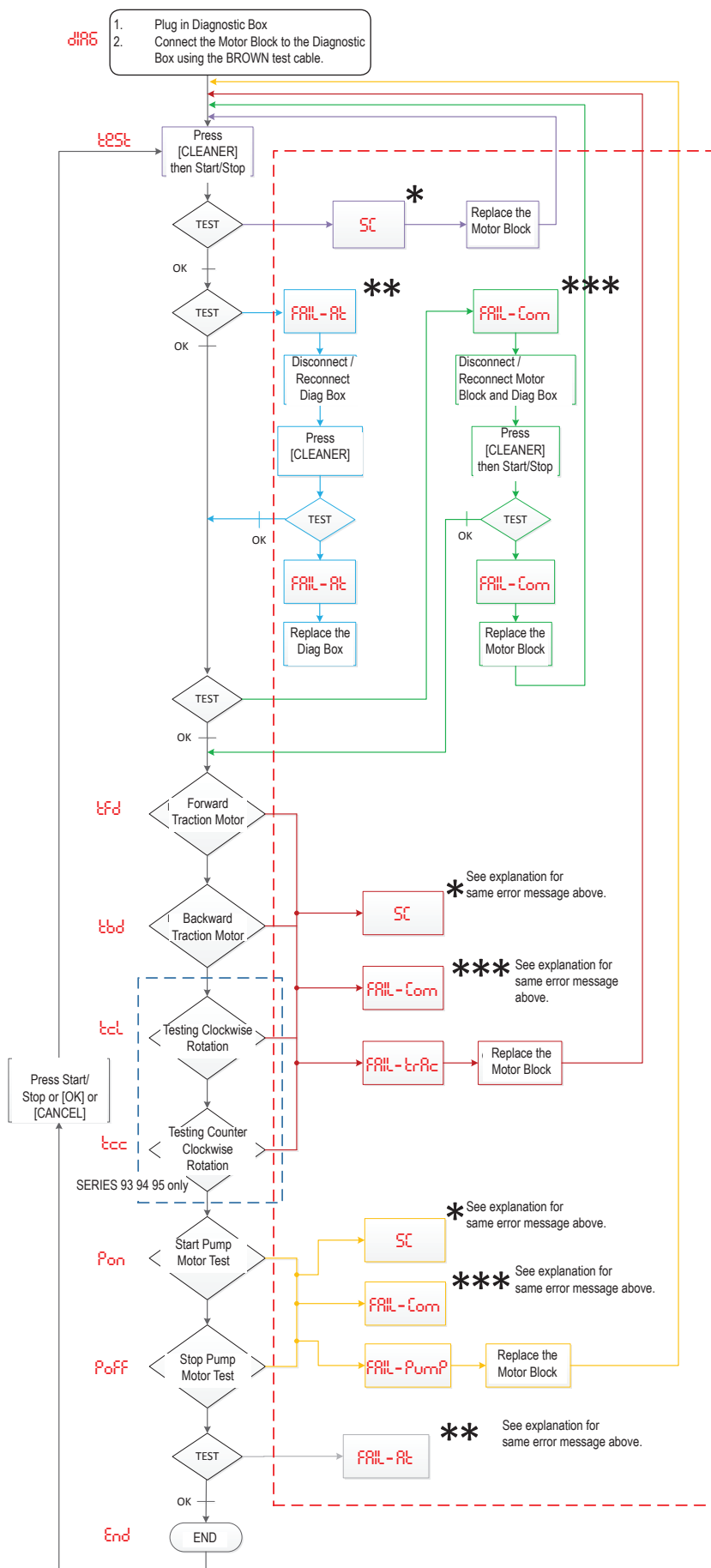
2.5 93 94 95 Series Cleaner Test

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93 94 95 SERIES



93 94 95 SERIES



3.0 Test for P825 Cleaner

3.1 Perform Control Box Test

1. Plug the consumer's Control Box into a GFCI protected outlet.
2. Plug the Diagnostic Box into a GFCI protected outlet.
3. Connect the colored end of the BLUE test cable to the Diagnostic Box.
4. Connect the other end of the BLUE test cable to the cleaner Control Box.



5. On the Diagnostic Box, press [EBOX] button then Start/Stop button to begin the test.
6. If the cycle completes and the Diagnostic Box displays the message: **good**, the cleaner Control Box is fully functional. Turn off the power to the Control Box and disconnect.
7. If there is an error message on the Diagnostic Box display, see **Section 3.4 Control Box Test** for explanation. Replace the Control Box and repeat the test.

3.2 Perform Cleaner Test

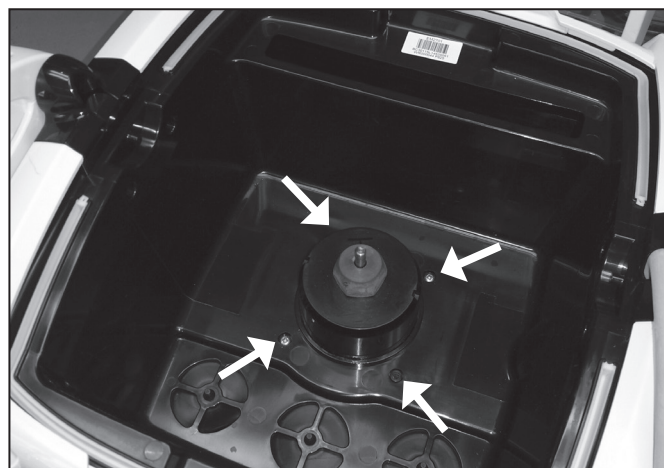
1. Set the cleaner head on a block of wood or some object that allows the cleaner tracks to rotate freely.
2. Make sure the Diagnostic Box is plugged into a GFCI protected outlet.
3. Connect the colored end of the GREY test cable to the Diagnostic Box.
4. Connect the other end of the GREY test cable to the Floating Cable from the cleaner.



5. On the Diagnostic Box, press [CLEANER] button then Start/Stop button to begin the test.
6. The drive motor will start and the Diagnostic Box displays the test progress. The tracks should be moving during this part of the test.
7. The pump motor will turn on and off and the Diagnostic Box displays the test progress.
8. If the cycle completes and the Diagnostic Box displays the message: **End**, the floating cable and cleaner pass the test and are fully functional.
9. If there is an error message on the Diagnostic Box display, see **Section 3.5 Cleaner Test** for explanation and action.

3.3 Perform Test for Defective Motor Block

1. Unplug the cleaner.
2. Remove the filter canister. Unscrew the impeller housing and remove impeller.



5. Pry wheel keys from each side of the brush and remove the brush.



6. Remove two (2) screws on each side of the cleaner body and remove body housings.



3. Remove four (4) screws inside the canister at the handle brackets.



4. Remove four (4) screws from the bottom of the canister bowl.

7. Turn the cleaner over, remove two (2) screws and take off the bottom plate.



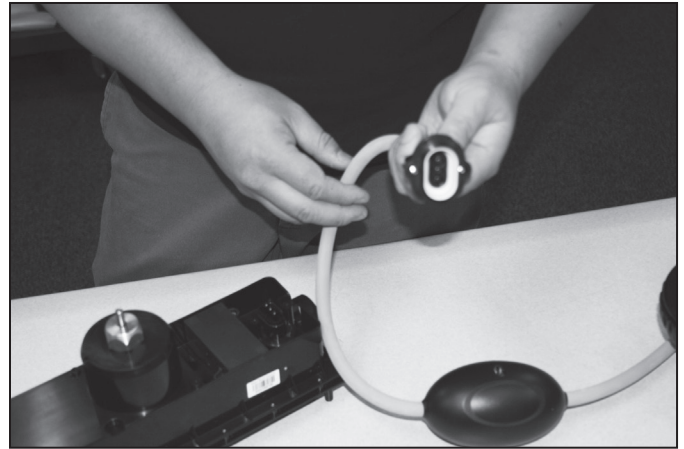
8. Turn the cleaner back over and gently pull the gear box off the handle mount. Repeat both sides and remove the gear box and the handle together.



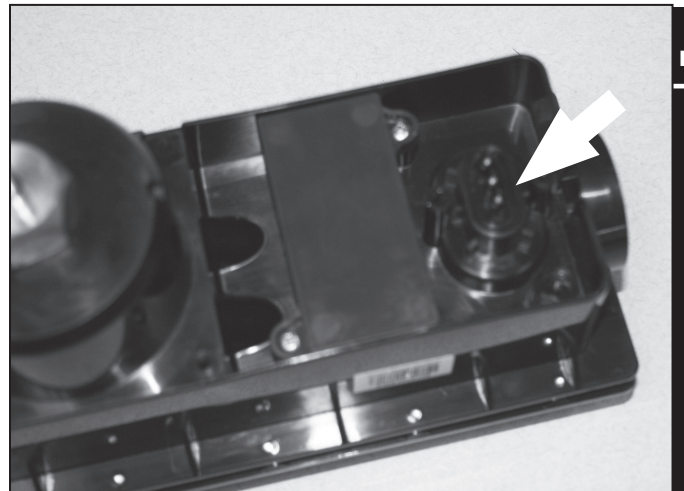
9. Remove the canister bowl to free the motor block.



10. Remove screws and detach the Floating Cable.



11. Connect one end of the BROWN test cable into the motor block.



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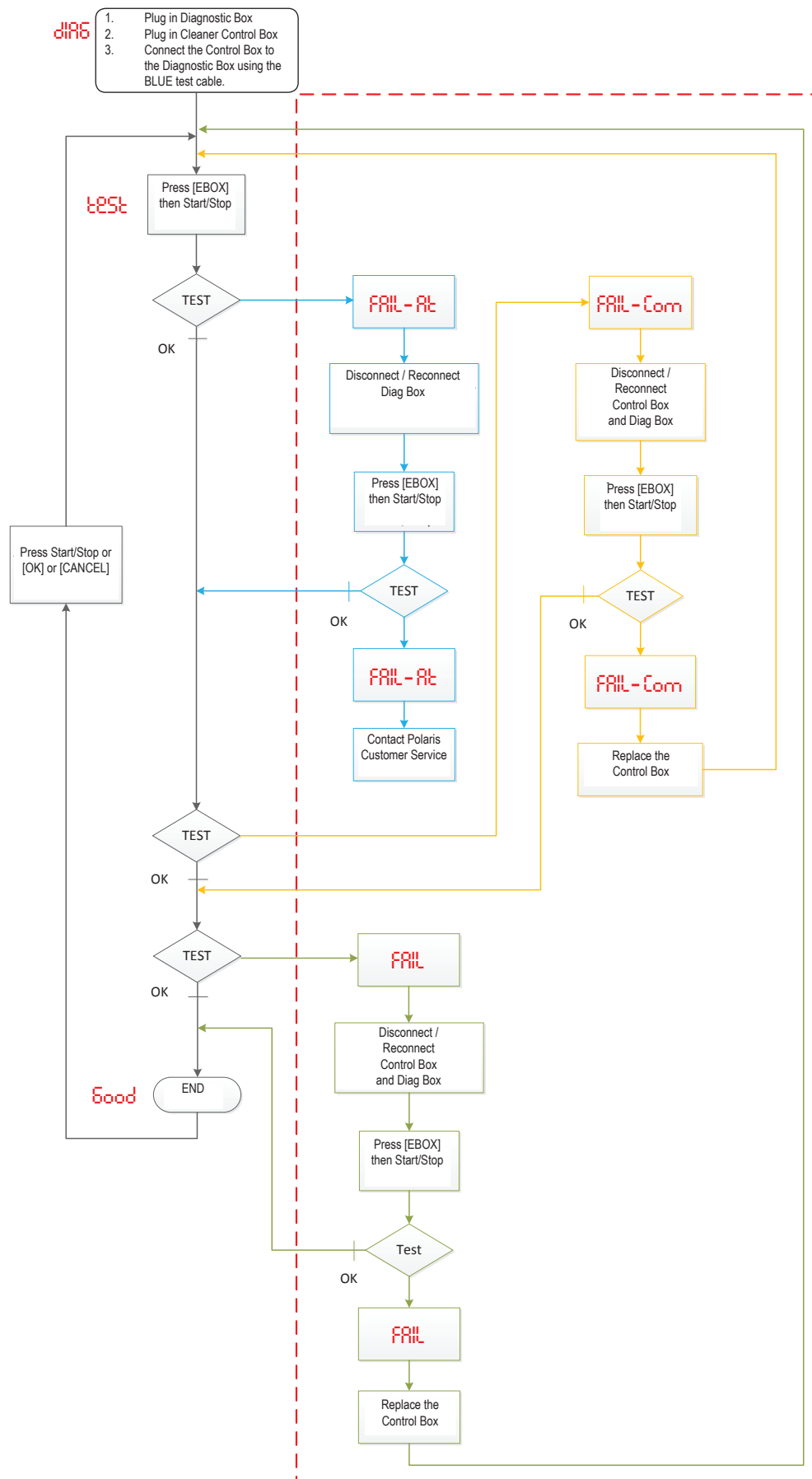
P825

12. Connect one end of the BROWN test cable into the motor block.
13. Connect the other end of the BROWN test cable into the Diagnostic Box.
14. On the Diagnostic Box, press [CLEANER] button then Start/Stop button to begin the test. The drive gears will rotate on the drive shaft for approximately ten (10) seconds then stop. The Diagnostic Box displays the test status and progress message (see Section 1.7).
15. If the cycle completes and the Diagnostic Box displays the message: **End**, the Motor Block is functional and the Floating Cable should be replaced.

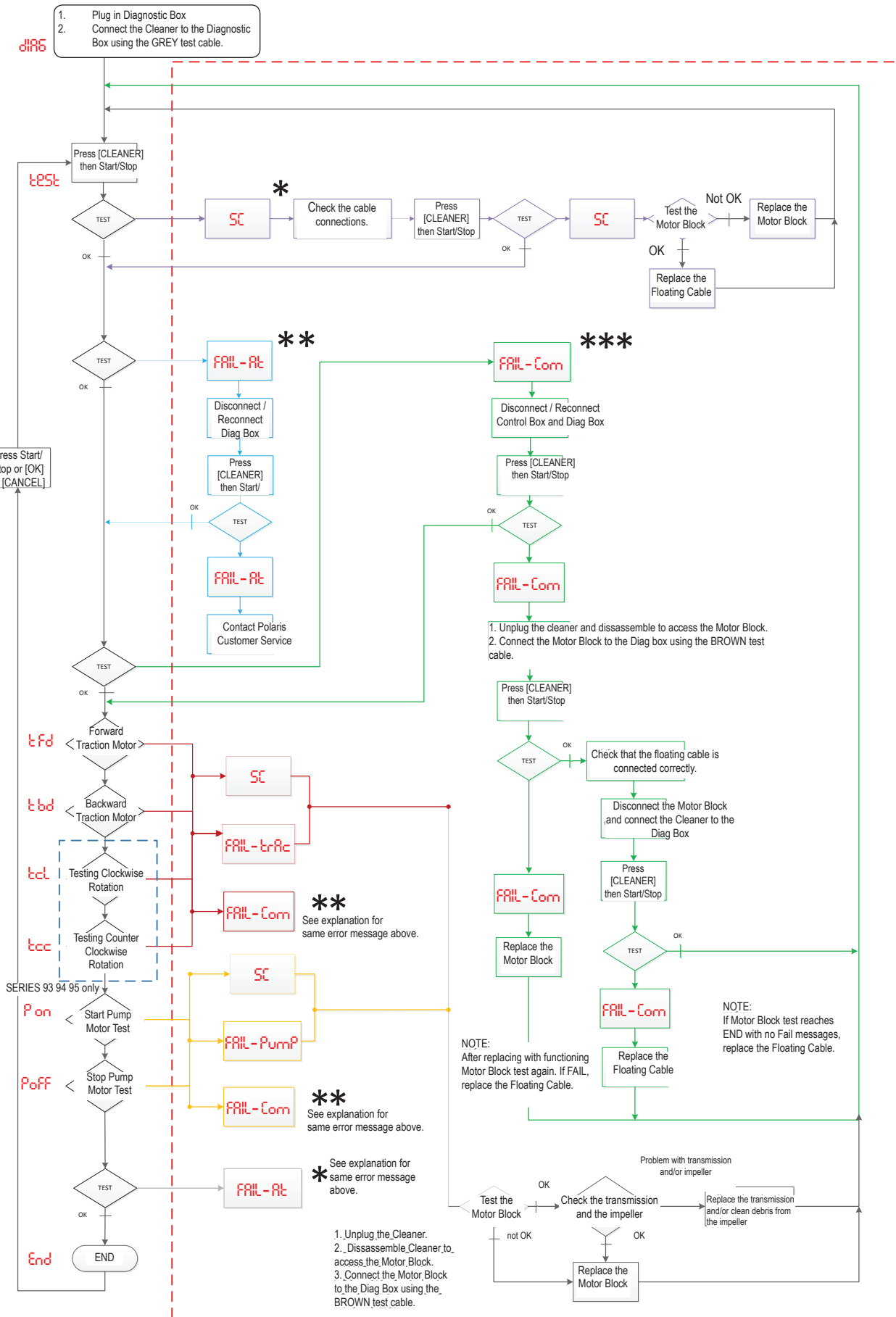
11. If there is an error message on the Diagnostic Box display, see **Section 3.6 Motor Block Test** for explanation and action.
12. If the test results in a Fail error message, replace with a new motor block.

NOTE Return all defective component(s) to Polaris. (For more information, go to www.Polarispool.com.)

3.4 P825 Control Box Test

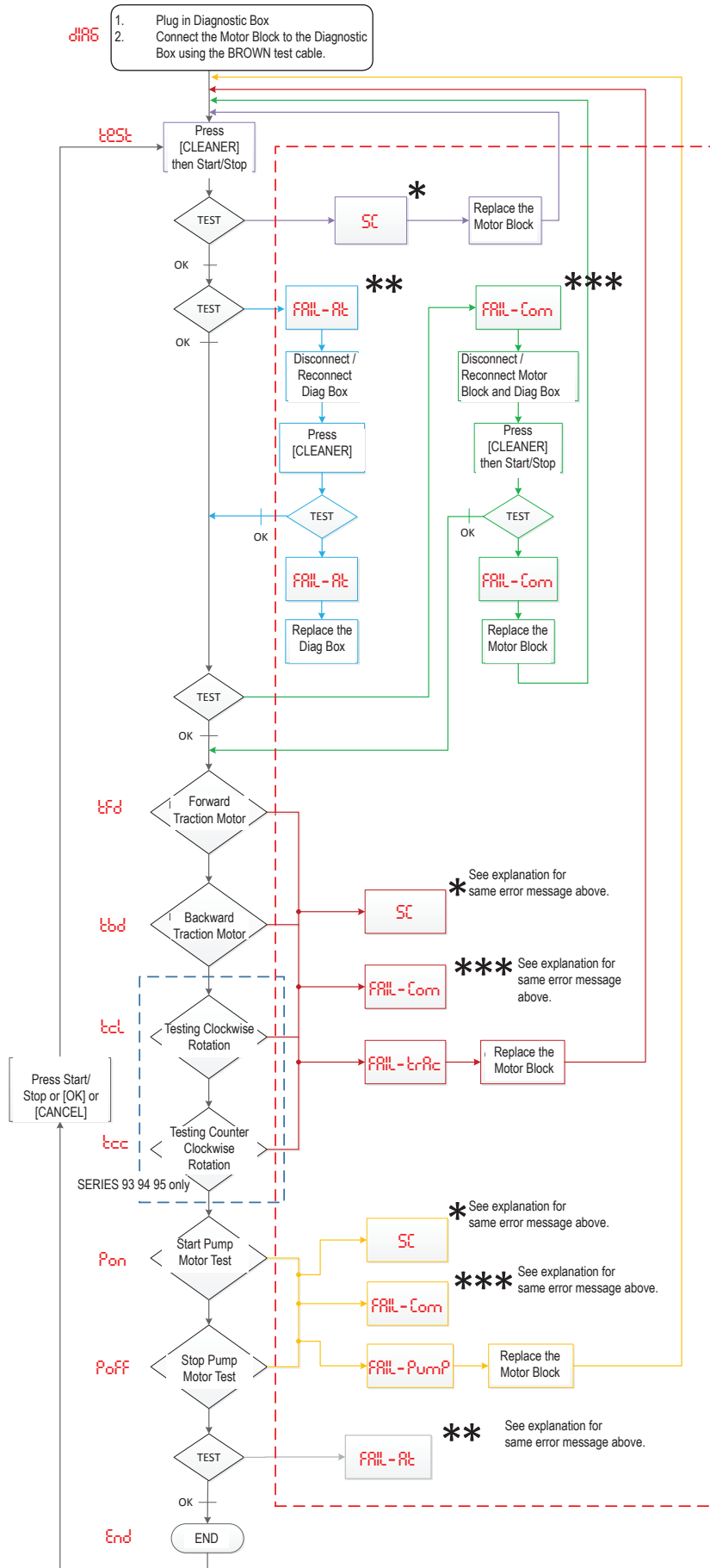


3.5 P825 Cleaner Test



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P825



NOTES

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P825

4.0 Test for 9100 / P91 Cleaner

4.1 Perform Cleaner Test

NOTE: You can only test the cleaner function on the 9100 and P91 with the Diagnostic Box. You cannot test the Control Box functionality.

1. Set the cleaner head on a block of wood or another solid object that allows the cleaner wheels to rotate freely.
2. Plug the Diagnostic Box into a GFCI protected outlet.
3. Connect the colored end of the RED test cable into the Diagnostic Box.

NOTE: The RED cable does not come standard with the Diagnostic Box but is available for separate order (part number: R0704900).

4. Connect the other end of the RED test cable to the Floating Cable from the cleaner.
5. On the Diagnostic Box, press [CLEANER] button then Start/Stop button to begin the test.
6. Drive motors should start within a few seconds. Cleaner wheels will rotate for several seconds and stop automatically when the test is completed.
7. While wheels are moving, check for air flowing from the exhaust on the back of the cleaner.

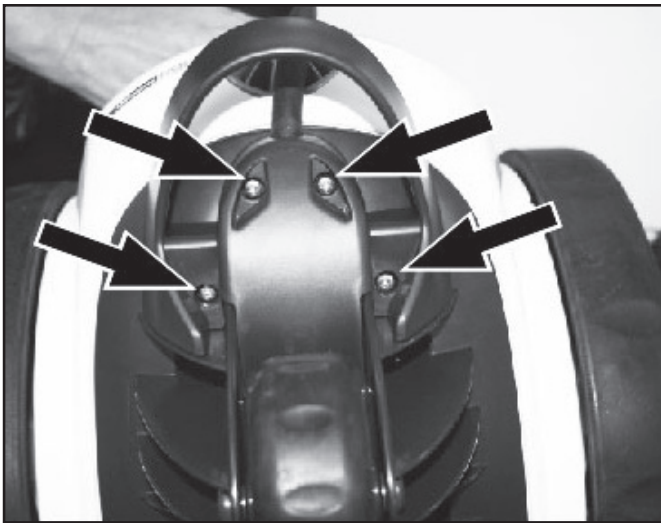


8. If the cycle completes and the Diagnostic Box displays the message: **End**, the cleaner is fully functional.
9. If the wheels do not rotate or there is an error message on the Diagnostic Box display, see **Section 4.3 Cleaner Test** for explanation and action.

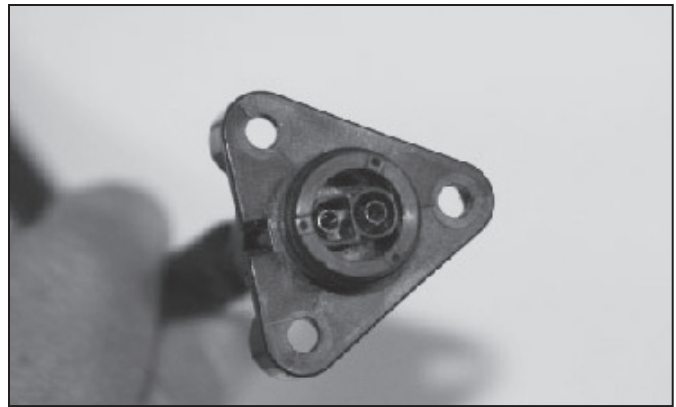
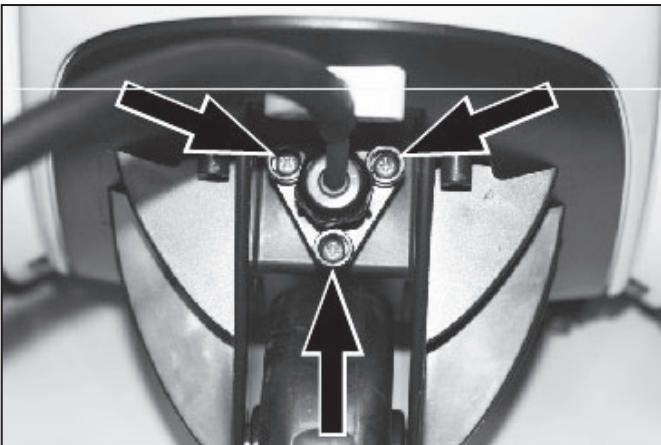
4.2 Perform Test for Defective Motor Block or Floating Cable

NOTE: To test the motor block for 91 SERIES cleaners, you will also need a spare Floating Cable.

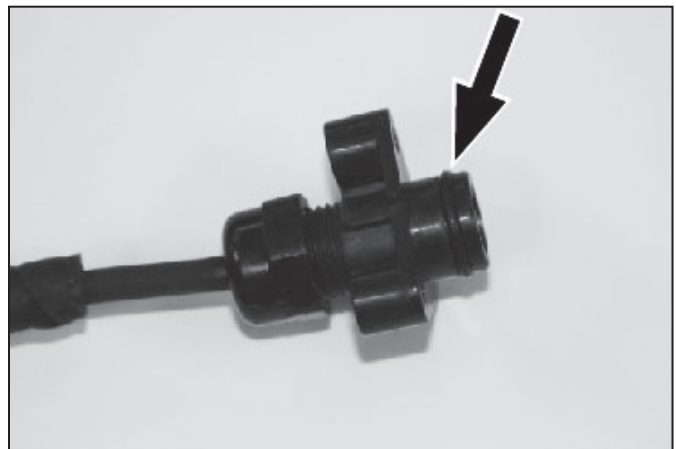
1. Determine if there is water damage to the O-ring or the cable receptacle. Remove four (4) screws from the handle on the cleaner. Remove the handle piece.



2. Remove three (3) screws from cable receptacle (see Figure 6). Remove the Floating Cable and receptacle.



6. Check the O-ring for damage.

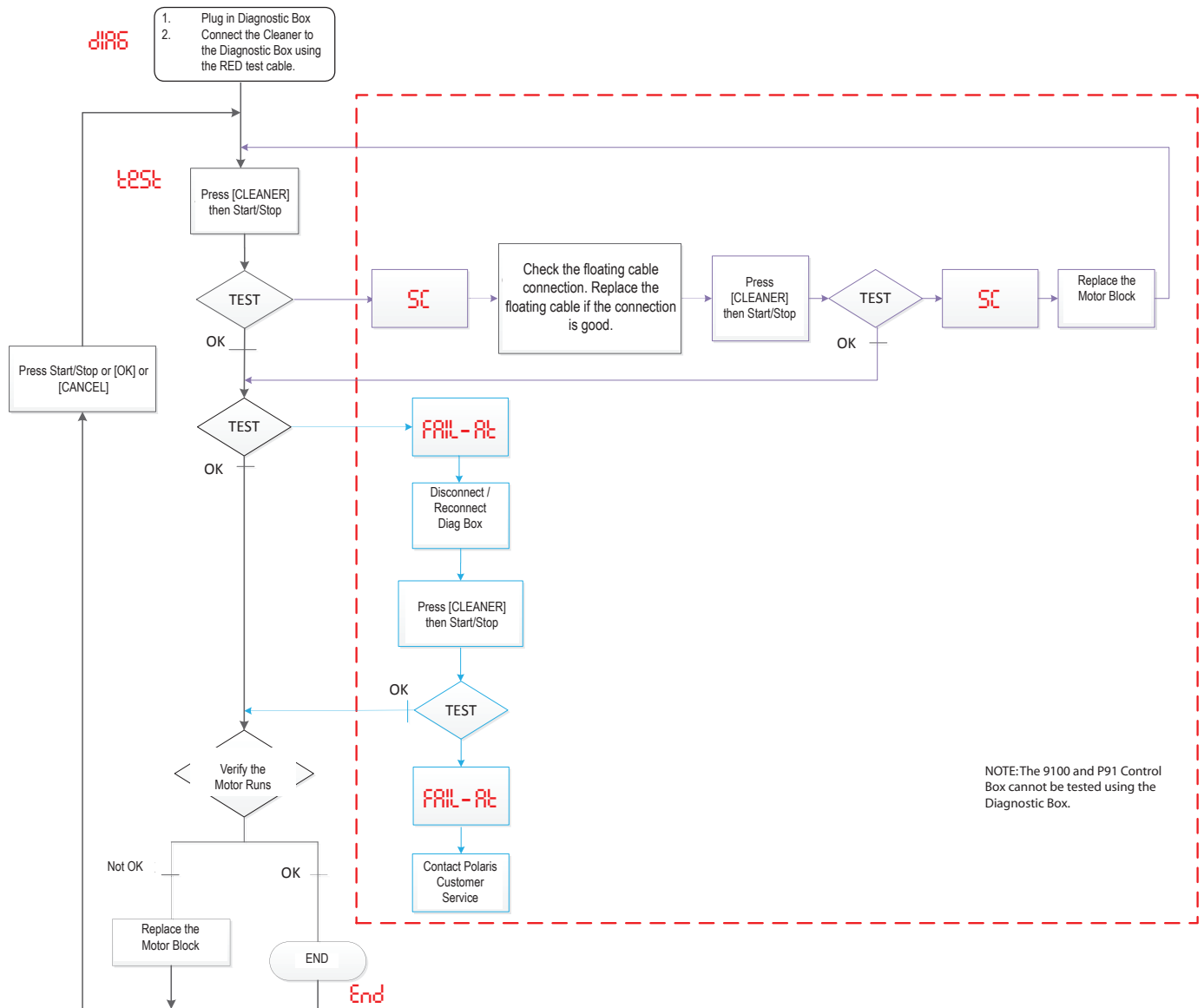


7. If there is no evidence of water damage to the O-ring, the cable receptacle, or the Floating Cable and power plug, the motor block is defective. Replace with a new motor block and repeat the test.

NOTE Return defective component(s) to Polaris.
(For more information, go to www.Polarispool.com.)

3. Check inside the receptacle for water damage.
4. Perform a complete visual inspection of the length of the entire Floating Cable for wear.
5. Check the power plug for any visible wear or water damage.

4.3 91 Series Cleaner Test



Zodiac Pool Systems, Inc.

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1.800.822.7933 | www.ZodiacPoolSystems.com

Zodiac Pool Systems Canada, Inc.

2115 South Service Road West, Unit 3
Oakville, ON L6L 5W2 Canada
1.888.647.4004 | www.ZodiacPoolSystems.ca

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