Technical Service Bulletin

Attention Service Manager/Parts Department

Bulletin Level: 2* **Specific Warranty Coverage:** Standard Warranty Coverage

Subject: Circuit breakers tripping in Advolution 20" Burnishers. **Revised 01/26/2011 to include availability of new 70-amp circuit breaker and panel.**

Models Affected: Advolution 20B, 20BT

Parts List Form Number Affected: PL79986A

ECO#: 31279, A-05374

Informational Bulletin: N/A

Issue: Incorrect pad orientation or limited pad pressure adjustment can result in overworking the motor, causing the circuit breaker to trip.

Cause:
1. The pad is not set at the correct orientation.
2. The compression springs originally installed in the frame assembly did not have sufficient force.
3. The original 1.25" long pressure adjustment bolt was too short to allow sufficient pad pressure adjustment.

Corrective Action: Factory: All machines beginning with serial number prefix "GH":

1. Stronger compression springs, p/n 51143A, are installed in the burnisher frame assemblies to replace the old compression springs, p/n 54452A.
2. The pressure adjustment bolt, p/n 80375A, was lengthened from 1.25" to 1.75" (Rev B) to provide increased ability to adjust the pad pressure.
3. A more robust 70-amp circuit breaker, p/n 56393722, is installed which is less prone to tripping at peak current levels.

Field:
1. Check the pad angle and adjust as necessary.
2. Measure the pad motor current draw. If the pad motor draws more than 55 amps, install the new compression springs (p/n 51143A) and the new pressure adjustment bolt (p/n 80375A).
3. Measure the pad motor current draw with the updated parts installed. Adjust the pressure adjustment bolt as necessary to obtain the correct pad motor current draw range of 45-55 amps.
4. Install the Advolution Field Service Kit which includes the new 70-amp circuit breaker and mounting hardware (p/n 56381712) shown below.

The field corrective actions are described on the following pages.

* **Technical Service Bulletin Levels:**
Level 1: These Bulletins contain general information and are without specific warranty coverage.
Level 2: These Bulletins describe continuous quality improvements that are made to products. Specific warranty coverage may apply and if so is noted in the Bulletin.
Level 3: These Bulletins describe a quality problem that has been determined to require a mandatory update to the product. Specific warranty coverage is as noted in Bulletin.

To Check and Adjust the Pad Angle

1. See Figure 1. Check the angle of the pad relative to the floor surface.

- If the pad is tipped down toward the right-hand side of the machine at the approximate angle shown in Figure 1, skip to the **To Measure the Pad Motor Current** section.
- If the pad angle is too flat on the floor surface, adjust the pad angle as described in steps **2** through **7** below.

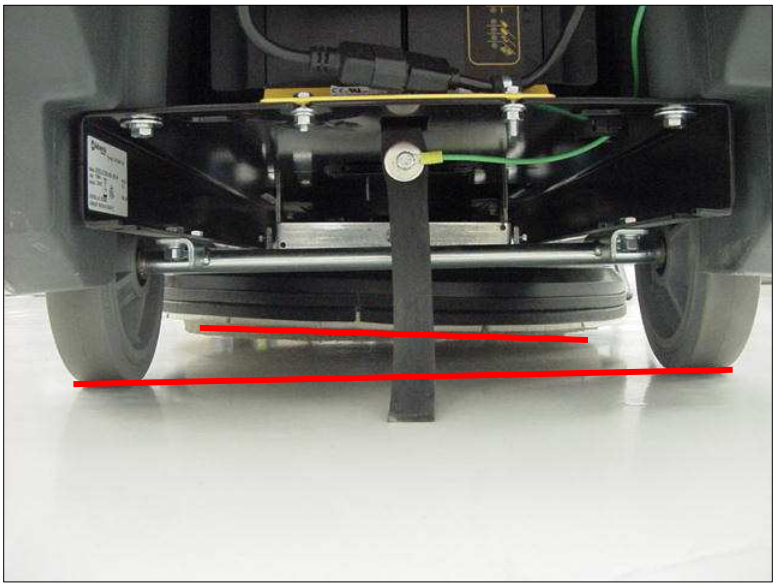


Figure 1 – Nominal Pad Tilt Angle (rear view)

2. See Figure 2 Tip the burnisher back as shown to gain access to the pad tilt adjustment hardware.

Figure 2 – Tipping Machine to Access the Pad Tilt Adjustment Hardware

3. See Figure 3. Remove the dust bag.

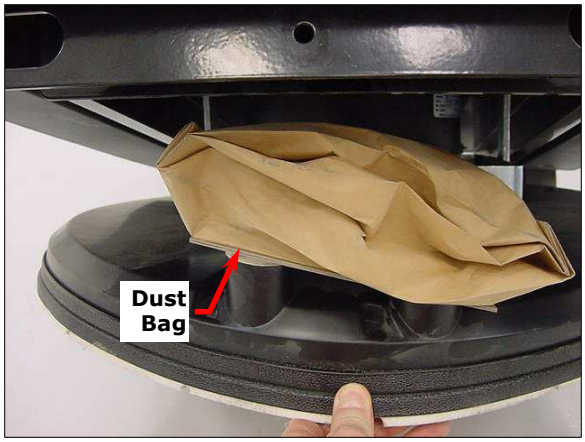


Figure 3 – Removing Dust Bag

4. See Figure 4. Pull down on the dust skirt to access the pad tilt adjustment hardware.

Figure 4 – Pad Tilt Adjustment Hardware

5. See Figures 5a and 5b. Loosen the pivot bolt and the hardware holding the motor mount to the motor frame.

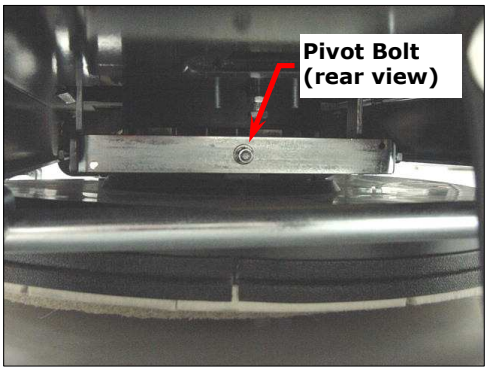


Figure 5a – Pivot Bolt (rear view)

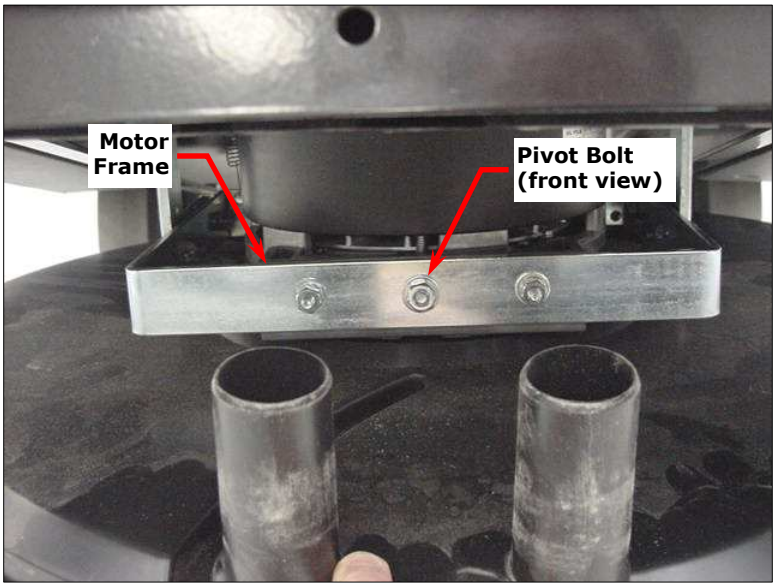


Figure 5b – Motor Frame/Pivot Bolt (front view)

See Figure 6. Note that there are slots in the motor frame to allow for adjusting the pad tilt angle.

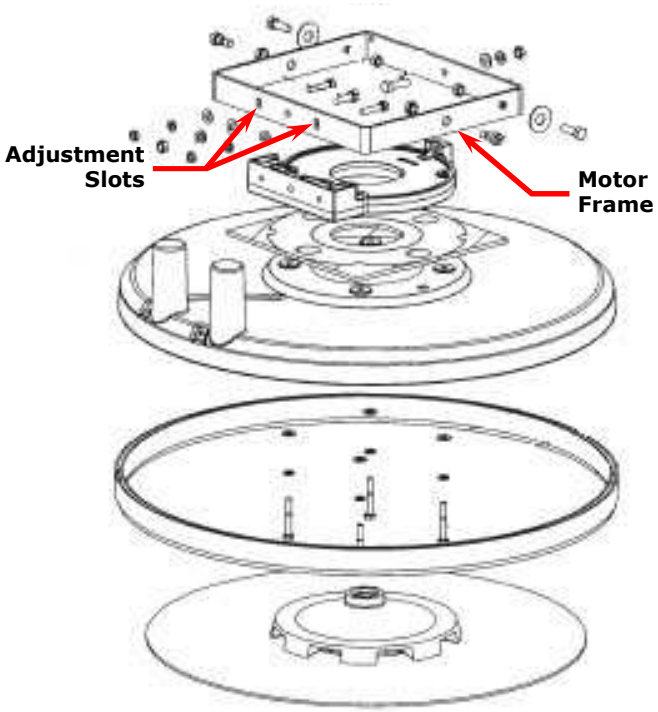


Figure 6 – Adjustment Slots in Motor Frame

6. See Figure 7. Rotate the motor mount/pad driver assembly in the motor frame so the pad is tipped down toward the right-hand side of the machine at the approximate angle shown in Figure 7.

7. See Figures 5a and 5b. Tighten the pivot bolt and the hardware holding the motor mount to the motor frame.

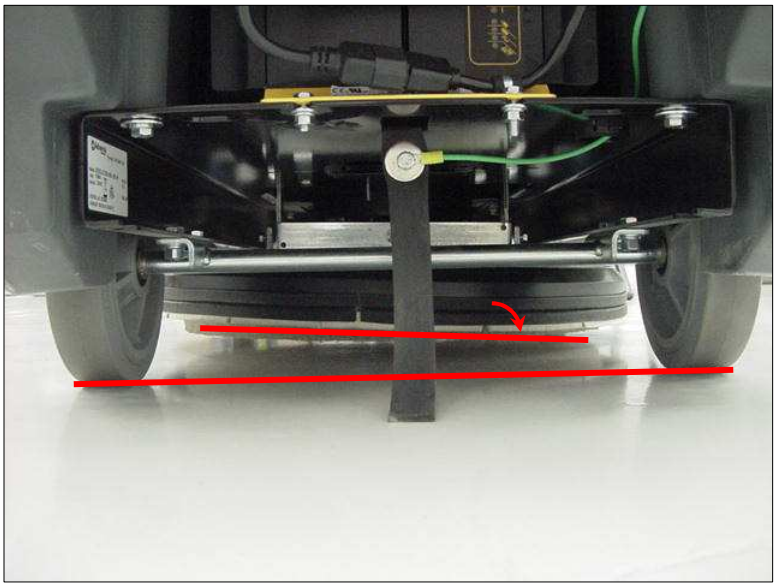


Figure 7 – Nominal Pad Tilt Angle (rear view)

Note: *The pad tilt angle will affect the pad drive-assist, the burnishing characteristics of the machine and the pad motor current draw as follows:*

- *Increasing the pad tilt angle will increase the forward pad-drive assist and will decrease the pad motor current draw. However, if the pad is angled too much, it can result in the pad burning the floor surface on the right-hand side of the machine.*
- *Decreasing the pad angle will decrease the forward pad-drive assist and will increase the pad motor current draw.*

Also note that how the pad angle will affect the pad-drive assist and pad motor current draw will vary depending on the floor surface and finish, and the aggressiveness of the pad.

To Measure the Pad Motor Current

1. See Figure 8. Remove the electrical console cover.

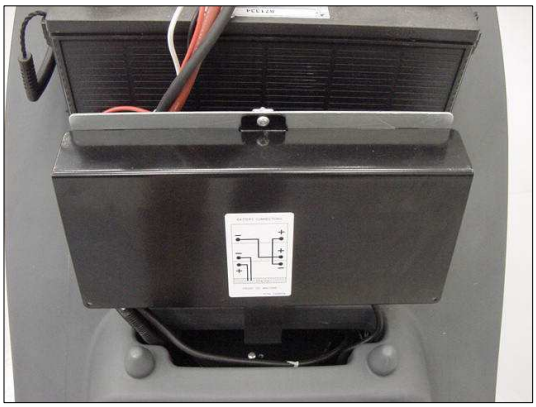


Figure 8 – Electrical Console Cover

2. See Figure 9. Run the machine and measure the pad motor current draw using an amp clamp around the wire running from the pad motor to the circuit breaker.

Note: *The pad motor current will vary depending on the application and is affected by the floor surface, floor finish and pad type.*

- If the pad motor current draw while burnishing is between 45 and 55 amps, the pad pressure is correct. No additional work or adjustments are necessary. Reinstall the electrical console cover (Figure 8).
- If the pad motor current draw while burnishing is over 55 amps, the pad pressure needs to be reduced. Install the updated compression springs and pressure adjustment bolt as described in the **To Install the New Compression Springs and Adjustment Bolt** section below.

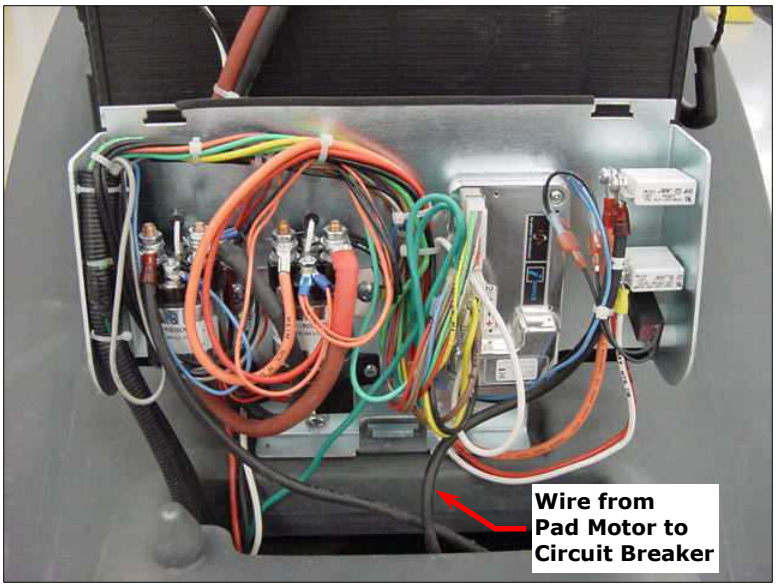


Figure 9 – Wire from Pad Motor to Circuit Breaker

To Install the New Compression Springs and Adjustment Bolt

1. See Figures 10 and 11. Tip the machine back to gain access to the front housing mounting bolts and loosen the bolts. **Do not remove the bolts.**

Figure 10 – Tipping Machine to Access the Front Housing Mounting Bolts

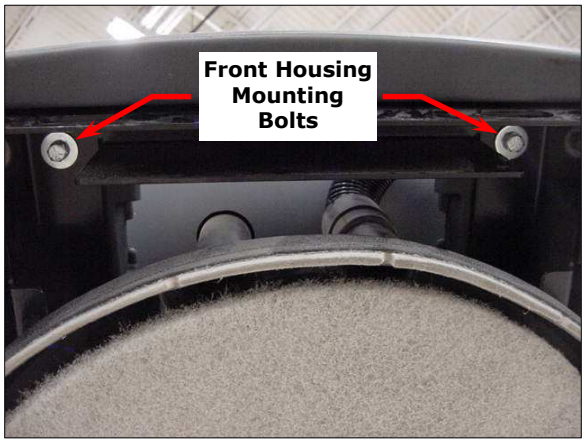


Figure 11 – Front Housing Mounting Bolts

2. See Figure 12. Remove the battery cover.
3. Disconnect the battery cables from the batteries.
4. Remove the batteries from the machine.

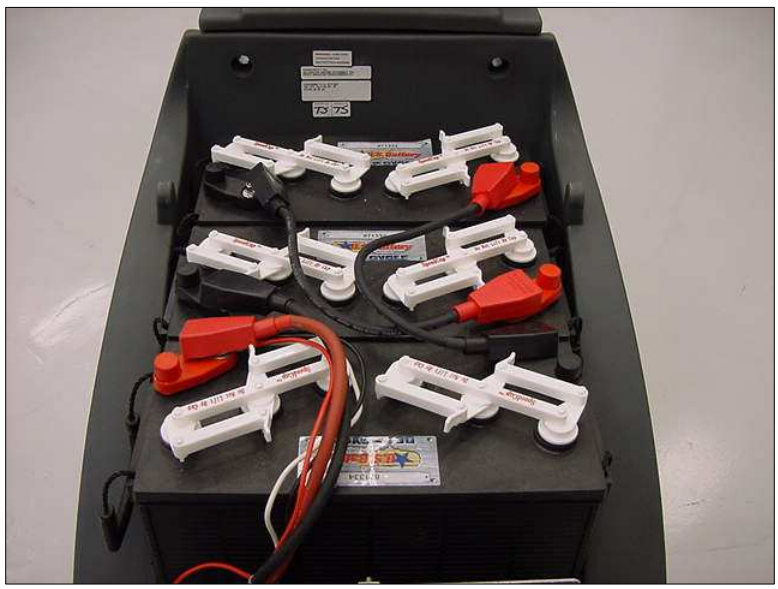


Figure 12 – Batteries/Battery Cables

5. See Figure 13. Disconnect the pad drive motor wires.

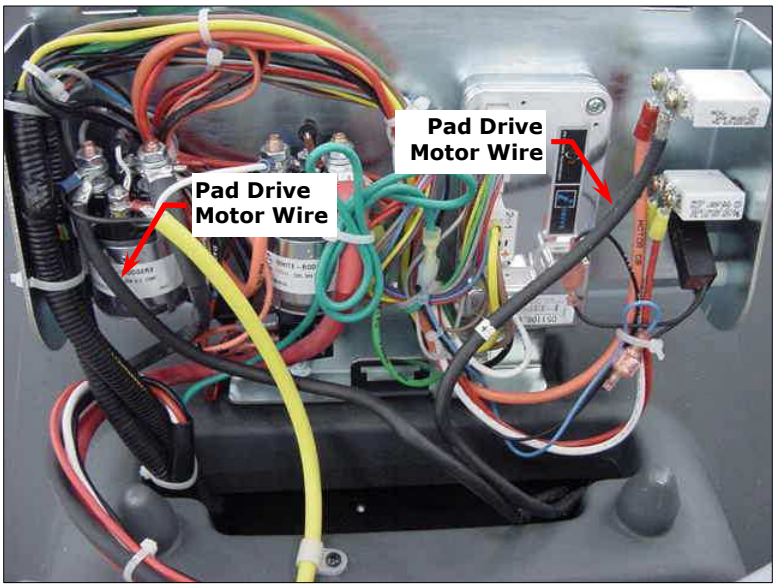


Figure 13 – Pad Drive Motor Wires

6. See Figure 14. Unwrap the charger cord.

7. Remove the ground wire.

8. Remove the charger mounting bolts.

9. Remove the housing rear connection bolts.

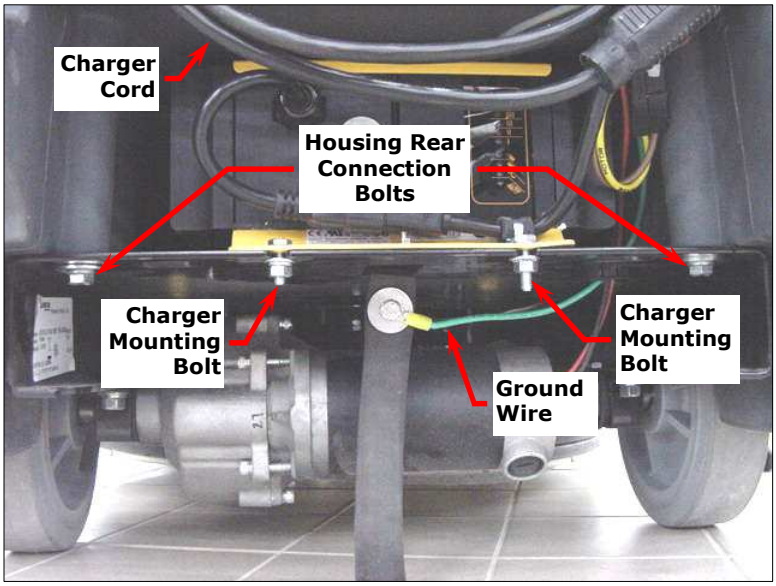


Figure 14 – Charger Connections/Housing Rear Connection Bolts

10. See Figure 15. Disconnect the traction drive motor harness (if so equipped).

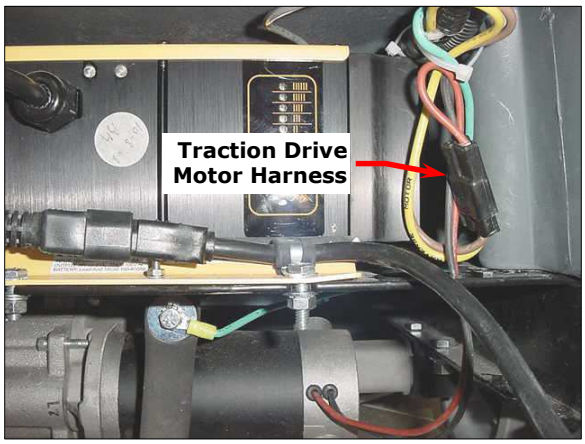


Figure 15 – Traction Drive Motor Harness

11. See Figure 16. Remove the housing and lay it on its side.

Note: *It is important to have removed the charger mounting hardware as shown in Figure 7 to allow the charger to move so the wires noted do not get damaged as the housing is removed.*

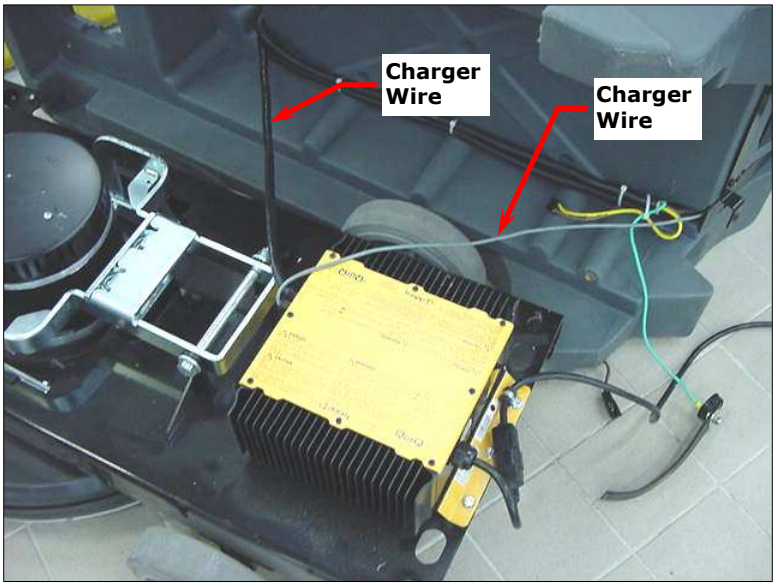


Figure 16 – Removing Housing/Charger Wires

12. See Figure 17. Remove the pivot bolt to allow you to remove the compression springs.

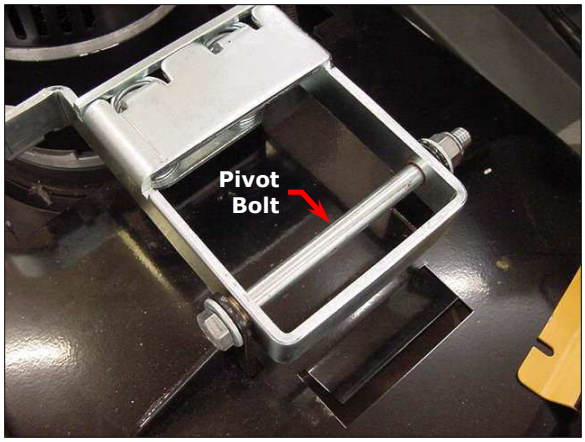


Figure 17 – Pivot Bolt

13. See Figure 18. Replace the existing compression springs with the new compression springs, p/n 51143A.

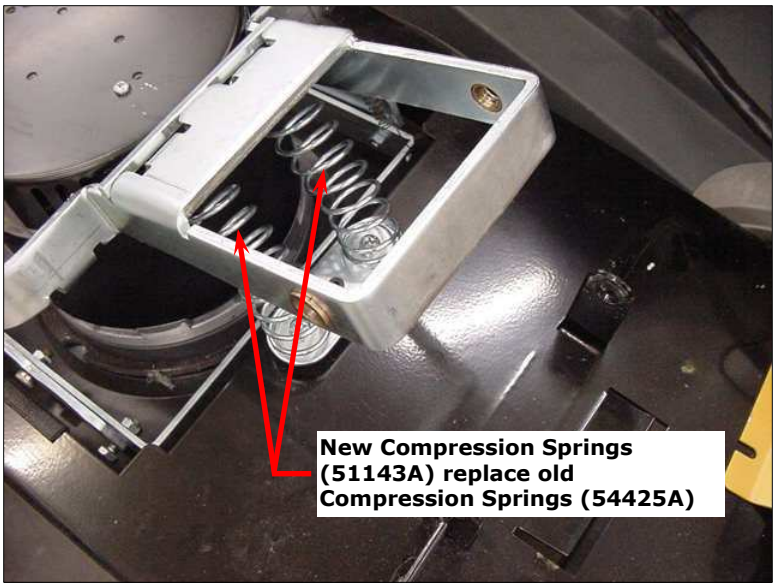


Figure 18 – Compression Springs

14. See Figure 19. Replace the existing pressure adjustment bolt with the new, 1.75”-long pressure adjustment bolt.

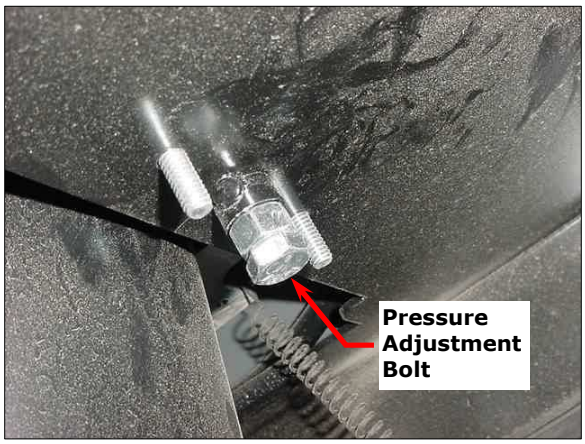


Figure 19 – Pressure Adjustment Bolt

Note: *See Figures 20 and 21. You cannot use a standard bolt in this application, as the pressure adjustment bolt has tapped threads in its end into which the shoulder screw is installed.*

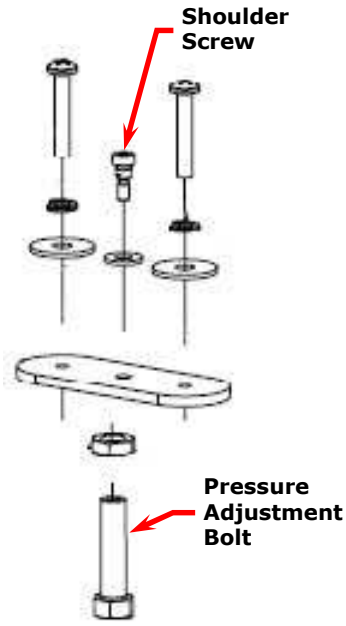


Figure 20 – Pressure Adjustment Bolt/ Shoulder Screw

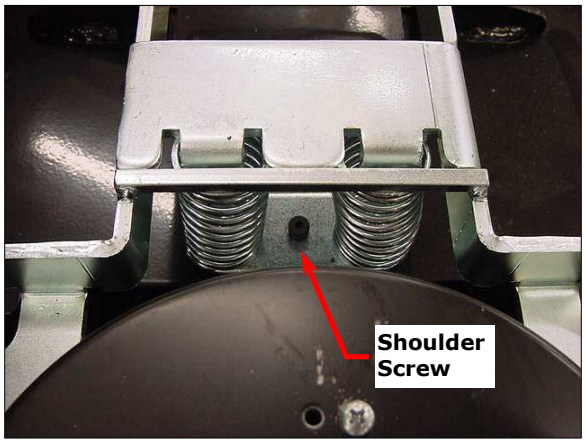


Figure 21 – Shoulder Screw

15. Reassemble the machine, but do not reinstall the electrical console cover (Figure 8).

16. See Figure 22. Run the machine and measure the pad motor current draw using an amp clamp around the wire running from the pad motor to the circuit breaker.

- If the pad motor current draw while burnishing is between 45 and 55 amps, the pad pressure is adjusted correctly. Reinstall the electrical console cover (Figure 8).
- If the pad motor current draw while burnishing is over 55 amps, the pad pressure needs to be reduced. Adjust the pressure adjustment bolt to reduce the pad pressure as outlined in Step 17D below.

Note: *The pad motor current will vary depending on the application and is affected by the floor surface, floor finish and pad type.*

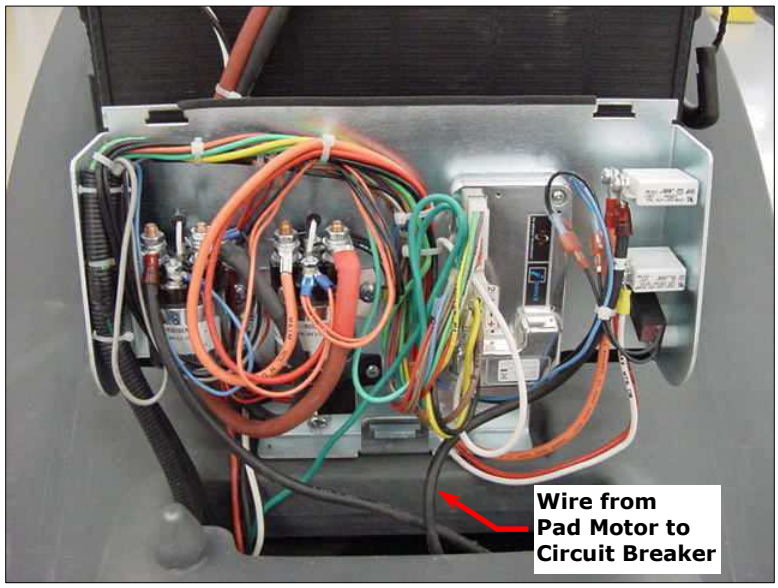


Figure 22 – Wire from Pad Motor to Circuit Breaker

17. Adjust the pad pressure as follows:

a. Make sure the key switch is off (**0**).

b. See Figures 23 and 24. Tip the burnisher back as shown in Figure 23 and push down on the rear of the dust shroud to access the pressure adjustment bolt.

Figure 23 – Tilting Burnisher

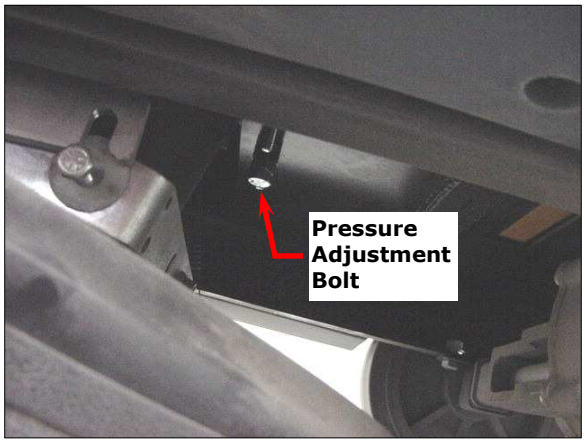


Figure 24 – Pressure Adjustment Bolt

c. See Figure 25. Loosen the jam nut (**A**) from underneath the burnisher.
d. Adjust the pressure adjustment bolt (**B**) as follows:
   - To add preload to the compression springs and **decrease** the pad pressure, turn the bolt (B) **clockwise**.
   - To reduce the preload on the compression springs and **increase** the pad pressure, turn the bolt (B) **counterclockwise**.
e. Tighten the jam nut (**A**).
f. Recheck the pad motor current draw and readjust the pressure adjustment bolt as necessary.
g. When the pad motor current draw while burnishing is between 45 and 55 amps, reinstall the electrical console cover (Figure 8).

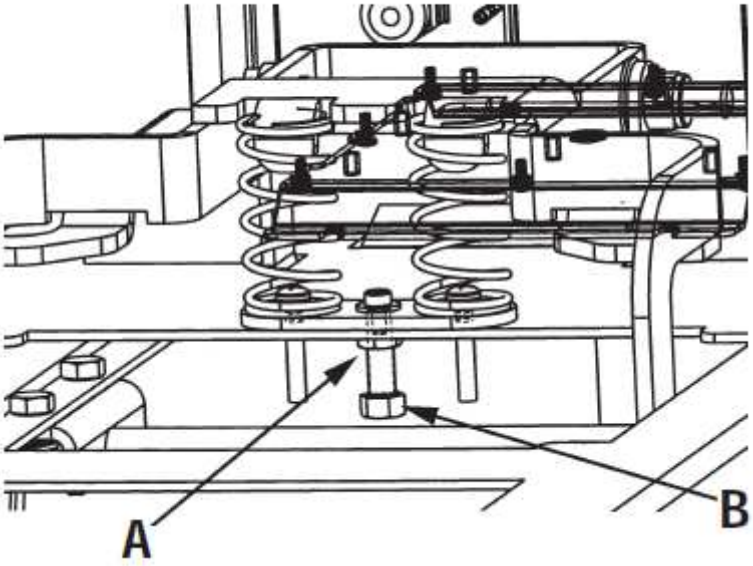
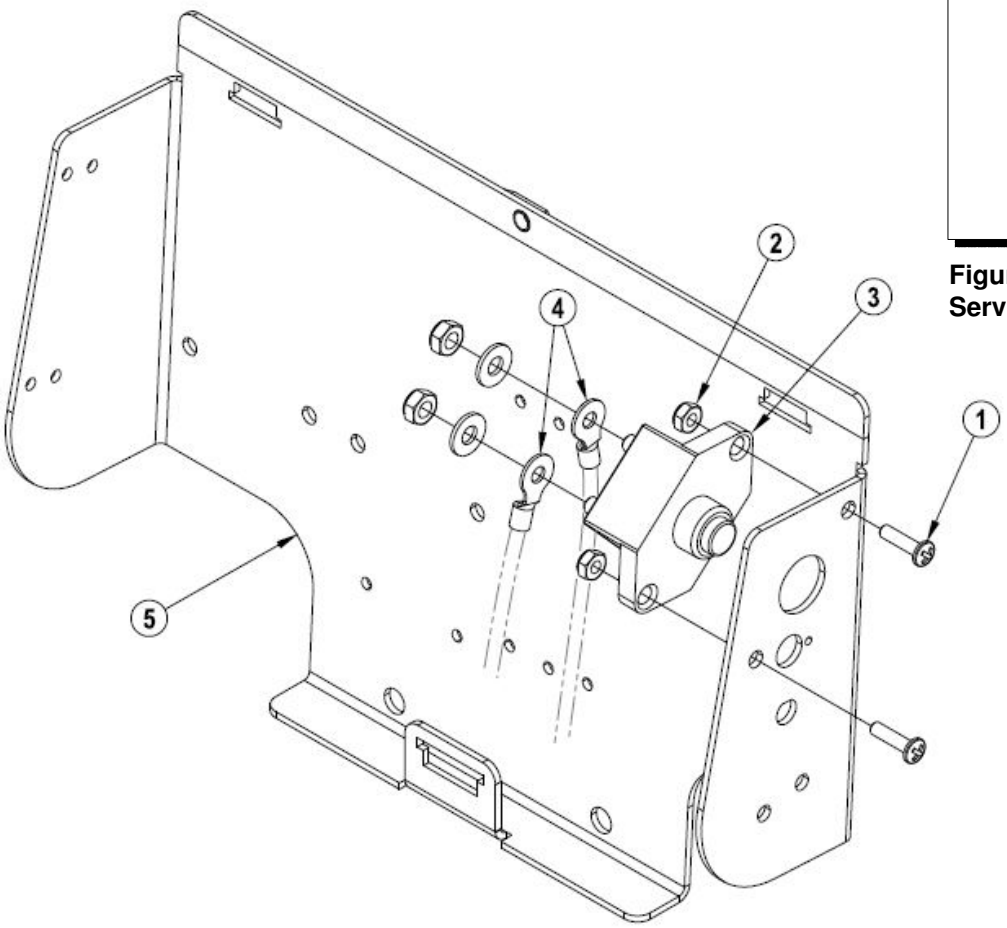


Figure 25 – Adjusting the Pad Pressure

To Install the Advolution Field Service Kit (PN 56381712):

ITEM	PART NO.	QTY	DESCRIPTION
[ ]	56090085	1	Instruction Sheet
1	56002192	2	Scr-Pan Phil 10-24 X .75
2	56002832	2	Nut, Hex Nyl Loc-Thin 10-24
3	56393722	1	Circuit Breaker 70A
4	56393784	2	Terminal Ring .250
5	56381710	1	Plate Electrical Wldmt

[ ] = Not Shown



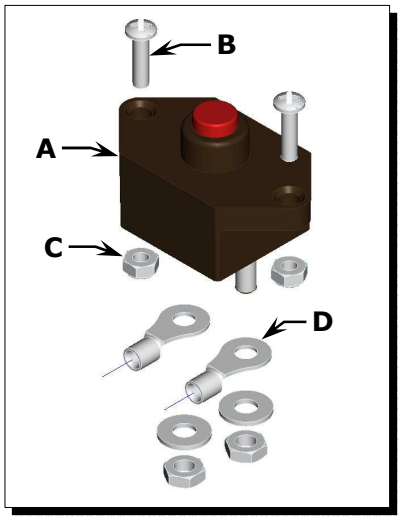


Figure 26 – Advolution Field Service Kit

To Install the Kit:

1. See Figure 12. Remove the battery cover and disconnect the batteries.

2. See Figure 27. Remove the electrical console cover.

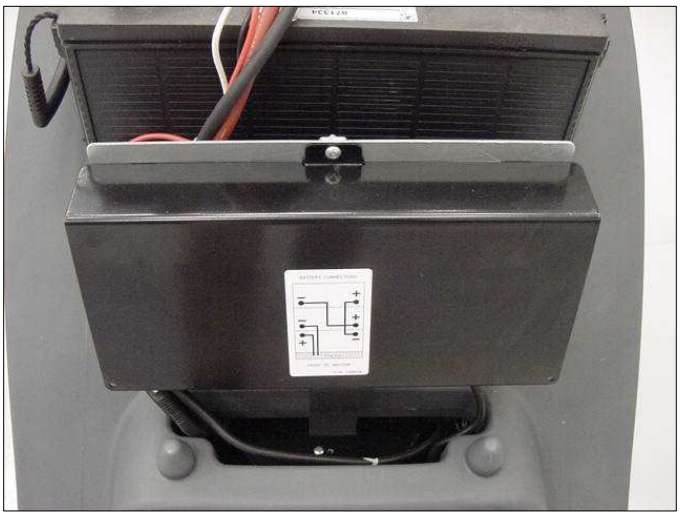


Figure 27 – Electrical Console Cover

3. See Figure 28. Disconnect the wires from the old 70-amp circuit breaker and remove the breaker from the electrical panel.

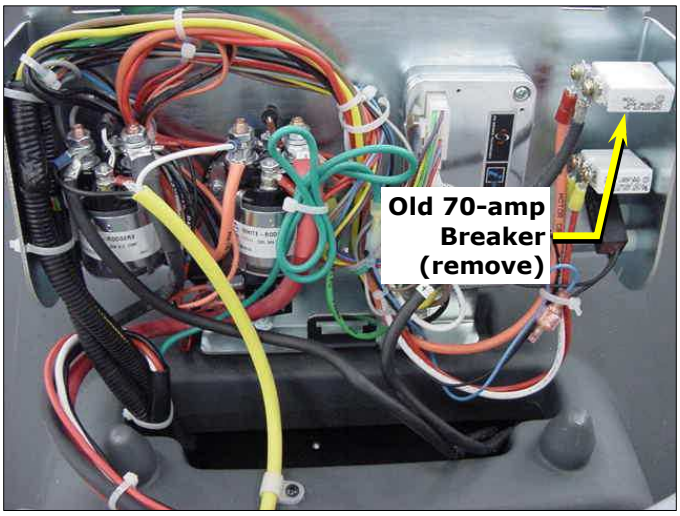


Figure 28 – Old 70-amp Breaker on Electrical Panel

4. See Figures 29 and 30 below. To reuse the panel: Lay out and drill the mounting holes as shown in Figures 29 and 30. Note that you will need to mount the new circuit breaker at the angle shown in Figure 30.

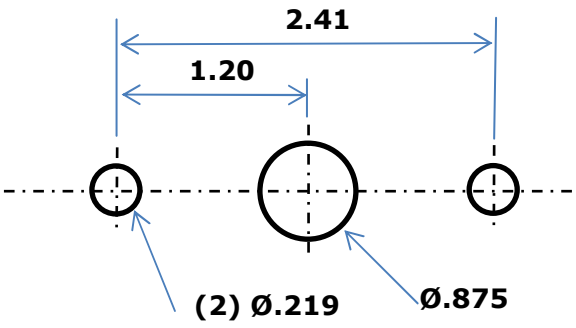


Figure 29 – Circuit Breaker Mounting Hole Layout (all dimensions in inches)

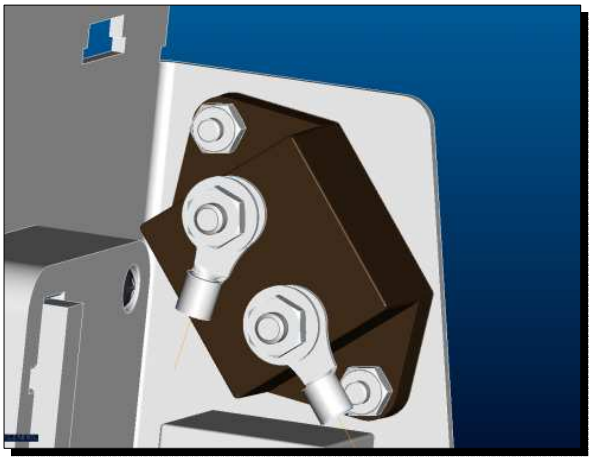


Figure 30 – New Circuit Breaker Mounting Location

5. Remove the terminal rings from the wires disconnected from the old circuit breaker.
6. Crimp the new terminal rings (included with the kit) onto the wires.
7. Connect the wires with the new terminal rings to the new circuit breaker.
8. See Figure 27. Reinstall the electrical console cover.
9. See Figure 12. Reconnect the batteries and reinstall the battery cover.