

TECHNICAL NOTE

Date: 22nd November 2022

Ref: 559

Raised by: TS

Distributed to: as required



DiGiCo (UK) Ltd. Unit 10 Silverglade Business Park, Chessington, Surrey, KT9 2QL, UK
Tel: +44 1372 845600 email: support@digiconsoles.com

Replacing and Cleaning Faders on SD, Quantum, and S-Series Consoles

Symptoms:

Dirty or worn faders may jitter or jump, and randomly and inaccurately respond when moving to a position. This is easiest to see when a bank is recalled and the faders should be positioning themselves at 0dB, but instead they miss their target position and stop, or they quickly bounce until they reach their target position. These symptoms are usually found on old and worn faders, and while cleaning may help, they will ultimately need to be replaced.

Faders that are stiff or running rough are usually dirty and will require either careful cleaning or replacement. It is often quicker to replace faders rather than individually clean them.

***IMPORTANT: Fader Calibration never fixes faulty fader operation, and can often make the situation much worse, by calibrating to moving dirt!
Do not calibrate faders unless instructed to do so by DiGiCo Support***

You will need:

- 2mm Hex driver for the fader panel retaining screws
- 5mm Hex driver for SD9/10/11 end cheeks
- 1.5mm Hex driver for the fader retaining screws
- PZ1 screwdriver for M3 screws
- Compressed air
- Vacuum cleaner
- Clean paint brush
- Specialist electronics cleaner-lubricant such as Deoxit F5 or Servisol S10 with a thin nozzle applicator
- Paper towels
- Antistatic wrist or ankle strap, connected to an electrical ground/earth

Which console? Click the console type to jump to the appropriate section

[Quantum 2/3 or SD12](#)

[SD8](#)

[SD9/10/11](#)

[SD7Q/SD5Q/SD7/SD5](#)

[S-Series](#)

Quantum 2 / Quantum 3 / SD12

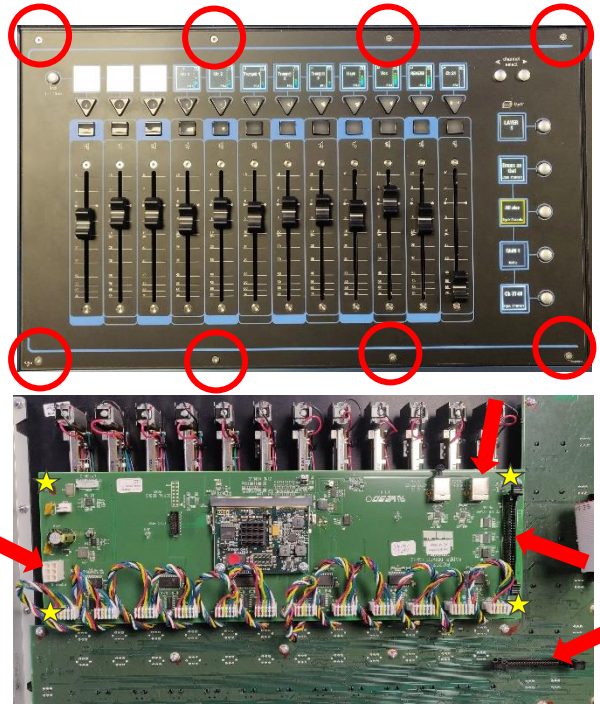
This section is for the cleaning and replacement of faders in Quantum 2, Quantum 3, and SD12 consoles only. If it feels like the faders are sticking, then either replacement or thorough cleaning is required.

Part Numbers – see [Appendix 1 – Fader Table](#) for full details

- Input fader: 681-00200 Input fader with plug – SD12, Q2, Q3 (and Q3 master section)
- Master fader: 681-00199 Master fader with plug – SD12, Q2

Replacing Faders

1. Power down the console, switch off the PSU's and connect your antistatic strap to an appropriate earthing point.
2. Unscrew the fader panel (Q3 panel shown opposite) with the 2mm Hex driver
3. Carefully tilt the panel and disconnect the cables to the PCB's (indicated below with arrows), and the fader connectors.
4. Carefully unscrew the fader driver PCB retaining screws (indicated above as yellow stars ★), store the fader driver card somewhere safe.
5. Flip the panel back over and remove the fader knobs and store them somewhere safe.
6. Use a Hex driver to remove the screws at the top and bottom of the first fader, store them somewhere safe.
7. Carefully remove the fader and place to one side.
8. Repeat the fader removal (steps 6 and 7) and place them to one side keeping the sequence of faders, do not mix them up – label them if necessary.
9. Using the vacuum cleaner and the paintbrush, gently clean the panel, PCBs, and the area inside of the console.
10. Install the new faders, screw down the fader driver PCB, plug the faders into the PCB, and carefully re-plug the connectors to the PCB's. Place the fader panel back into the console, switch the console on and test the functionality of the faders and buttons – the panel can now be screwed back into place.



Cleaning Faders - Follow steps 1 – 9 above

11. Use the compressed air to dislodge any dust and dirt from the inside of the fader assembly, then use the vacuum cleaner to remove the dust and dirt. Repeat as necessary.
12. Lay the fader on paper towels, place the thin nozzle of the cleaner-lubricant spray along the fader slot and with the fader at one end spray for no more than 1 second.
13. Move the fader up and down approximately 20 times and use the paper towel to wipe up any excess or dirty liquid.
14. Repeat steps 11 - 13 for the remaining faders.
15. Re-install the faders, screw down the fader driver PCB, plug the faders into the PCB, and carefully re-plug the connectors to the PCB's. Place the fader panel back into the console, switch the console on and test the functionality of the faders and buttons – the panel can now be screwed back into place.

SD7Q / SD5Q / SD7 / SD5

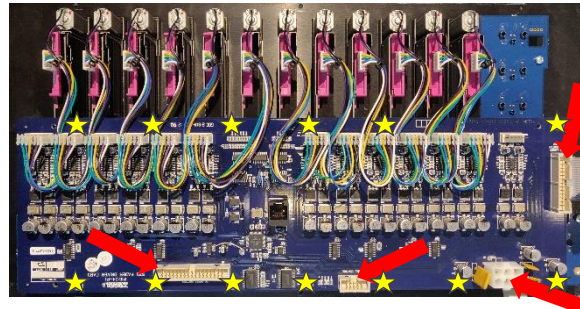
This section is for the cleaning and replacement of faders in Quantum 7, Quantum 5, SD7 and SD5 consoles only.

Part Numbers – see [Appendix 1 – Fader Table](#) for full details

- Input fader: SC-SD7-FADERI 100mm Input fader with plug – SD7Q, SD5Q, SD7, SD5
- Master fader: SC-SD7-FADERL 100mm Master fader with plug – SD7Q, SD7
- Upper fader: SC-SD7-FADERM 60mm Upper fader with plug – SD7Q, SD7
- Upper fader: SC-SD7-FADERML 60mm Upper Master fader with plug – SD7Q, SD7

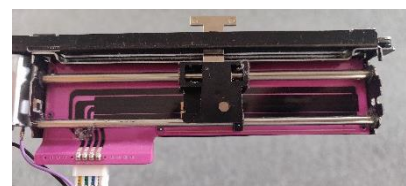
Replacing Lower (100mm) Faders

1. Power down the console, switch off the PSU's and connect your antistatic strap to an appropriate earthing point.
2. Unscrew the fader panel (SD5 panel shown opposite) with the 2mm Hex driver
3. Carefully tilt the panel and disconnect the cables to the PCB's (SD5 card below with arrows), and the fader connectors.
4. Carefully unscrew the fader driver PCB retaining screws (SD5 card opposite with screws indicated as yellow stars ★), store the fader driver card somewhere safe
5. Flip the panel back over and remove the fader knobs and store them somewhere safe.
6. Use a Hex driver to remove the screws at the top and bottom of the first fader, store them somewhere safe.
7. Carefully remove the fader and place to one side.
8. Repeat the fader removal (steps 6 and 7) and place them to one side keeping the sequence of faders, do not mix them up – label them if necessary.
9. Using the vacuum cleaner and the paintbrush, gently clean the panel, PCBs, and the area inside of the console.
10. Install the new faders, screw down the fader driver PCB, plug the faders into the PCB, and carefully re-plug the connectors to the PCB's. Place the fader panel back into the console, switch the console on and test the functionality of the faders and buttons – the panel can now be screwed back into place.



Cleaning Lower (100mm) Faders - Follow steps 1 – 9 above

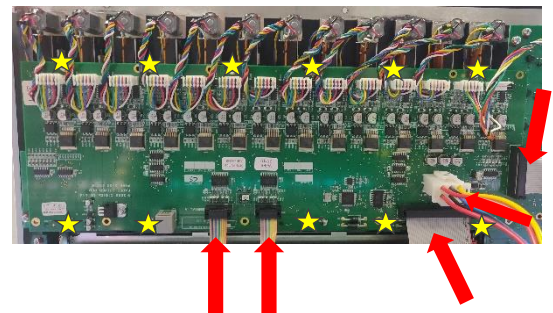
11. Using a flat bladed screwdriver, gently prise the cover off the fader
12. Use the compressed air to dislodge any dust and dirt from the inside of the fader assembly, then use the vacuum cleaner and paintbrush to remove the dust and dirt. Repeat as necessary.
13. Lay the fader on paper towels, then with the fader at one end of the track, spray the cleaner-lubricant on one of the rails for no more than 1 second, repeat for the second rail.



14. Move the fader up and down approximately 20 times and use the paper towel to wipe up any excess or dirty liquid, then gently clip the fader cover back in place.
15. Repeat steps 11 - 14 for the remaining faders.
16. Re-install the faders, screw down the fader driver PCB, plug the faders into the PCB, and carefully re-plug the connectors to the PCB's. Place the fader panel back into the console, switch the console on and test the functionality of the faders and buttons – the panel can now be screwed back into place.

Replacing Upper (60mm) Faders on Q7 / SD7 only

1. Power down the console, switch off the PSU's and connect your antistatic strap to an appropriate earthing point.
2. Unscrew the upper panel (shown opposite) with the 2mm Hex driver
3. Carefully tilt the panel and disconnect the cables to the PCB's (indicated below with arrows), and the fader connectors.
4. Carefully unscrew the fader driver PCB retaining screws (indicated above as yellow stars ★), store the fader driver card somewhere safe
5. Flip the panel back over and remove the fader knobs and store them somewhere safe.
6. Use a Hex driver to remove the screws at the top and bottom of the first fader, store them somewhere safe.
7. Carefully remove the fader and place to one side.
8. Repeat the fader removal (steps 6 and 7) and place them to one side keeping the sequence of faders, do not mix them up – label them if necessary.
9. Using the vacuum cleaner and the paintbrush, gently clean the panel, PCBs, and the area inside of the console.
10. Install the new faders, screw down the fader driver PCB, plug the faders into the PCB, and carefully re-plug the connectors to the PCB's. Place the fader panel back into the console, switch the console on and test the functionality of the faders and buttons – the panel can now be screwed back into place.



Cleaning Upper (60mm) Faders - Follow steps 1 – 9 above

11. Use the compressed air to dislodge any dust and dirt from the inside of the fader assembly, then use the vacuum cleaner to remove the dust and dirt. Repeat as necessary.
12. Lay the fader on paper towels, then with the fader at one end of the track, place the thin nozzle of the cleaner-lubricant just into the bottom of the assembly at the connector end and spray for no more than 1 second. Move the fader to the other end of the track and spray for no more than 1 second.
13. Move the fader up and down approximately 20 times and use the paper towel to wipe up any excess or dirty liquid.
14. Repeat steps 11 - 13 for the remaining faders.
15. Re-install the faders, screw down the fader driver PCB, plug the faders into the PCB, and carefully re-plug the connectors to the PCB's. Place the fader panel back into the console, switch the console on and test the functionality of the faders and buttons – the panel can now be screwed back into place.

SD9 / SD10 / SD11

This section is for the cleaning and replacement of faders in SD9, SD10 and SD11 consoles only.

Part Numbers – see [Appendix 1 – Fader Table](#) for full details

- Input fader: 686-00030 Input fader with plug – SD9, SD10, SD11
- Master fader: 686-00031 Master fader with plug – SD10 only

Replacing Faders

1. Power down the console, switch off the PSU's and connect your antistatic strap to an appropriate earthing point.
2. Use a 5mm Hex driver to remove the side cheeks, then unscrew the lower panel with the 2mm Hex driver and store these screws somewhere safe.
3. Carefully lift and tilt the panel slightly and disconnect the cables going to the front panel. If you are working on an SD9 or SD10, you may want to ask a friend to help you remove it from the console.
4. Once disconnected, remove all the fader knobs and store them somewhere safe.
5. Flip the panel over and carefully unscrew the fader driver PCB retaining screws and store the screws and the fader driver cards somewhere safe, then flip the panel over again. If working on an SD9 or SD10, remember the location of the PCB's so they can be returned to the console in the correct position.
6. Use a Hex driver to remove the screws at the top and bottom of the first fader, store them somewhere safe.
7. Carefully remove the fader and place to one side.
8. Repeat the fader removal (steps 6 and 7) and place them to one side keeping the sequence of faders, do not mix them up – label them if necessary.
9. Using the vacuum cleaner and the paintbrush, gently clean the panel, PCBs, and the area inside of the console.
10. Install the new faders, screw down the fader driver PCB, plug the faders into the PCB, and carefully re-plug the connectors to the PCB's. Place the fader panel back into the console, switch the console on and test the functionality of the faders and buttons – the panel can now be screwed back into place.

Cleaning Faders - Follow steps 1 – 9 above

11. Use the compressed air to dislodge any dust and dirt from the inside of the fader assembly, then use the vacuum cleaner to remove the dust and dirt. Repeat as necessary.
12. Lay the fader on paper towels, place the thin nozzle of the cleaner-lubricant spray along the fader slot and with the fader at one end spray for no more than 1 second.
13. Move the fader up and down approximately 20 times and use the paper towel to wipe up any excess or dirty liquid.
14. Repeat steps 11 - 13 for the remaining faders.
15. Re-install the faders, screw down the fader driver PCB, plug the faders into the PCB, and carefully re-plug the connectors to the PCB's. Place the fader panel back into the console, switch the console on and test the functionality of the faders and buttons – the panel can now be screwed back into place.

SD8

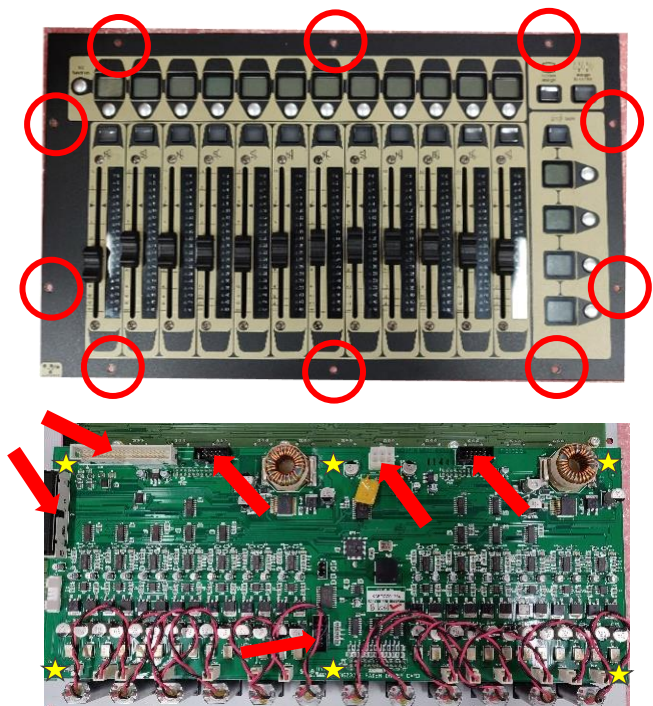
This section is for the cleaning and replacement of faders in the SD8 only. You will also need a good quality soldering iron, solder, and solder sucker if you are replacing single faders. If you are cleaning faders, then you will also need a good quality de-greaser such as 3-In-One Professional Super Degreaser spray to perform an initial clean of the fader tracks.

Part Numbers – see [Appendix 1 – Fader Table](#) for full details

- Fader: POT000181 Fader with solder tabs
- PA16033 Meters/faders PCB of 12 pre-soldered faders for Left, Centre, Right banks.
 No pre-soldered PCB available for Master fader

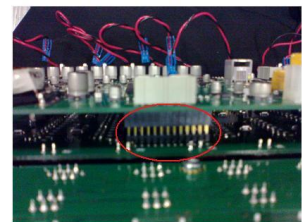
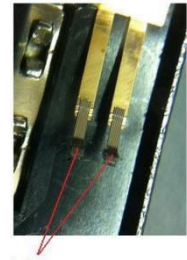
Replacing Faders

1. Power down the console, switch off the PSU's and connect your antistatic strap to an appropriate earthing point.
2. Unscrew the fader panel (SD8 panel shown opposite) with a screwdriver.
3. Carefully tilt the panel and disconnect the cables to the PCB's (indicated opposite with arrows), and the connectors to the fader motors.
4. Flip the panel back over and remove the fader knobs and store them somewhere safe.
5. Carefully unscrew the fader driver PCB retaining screws (indicated above as yellow stars ★), store the screws somewhere safe.
6. Flip the panel back over again and gently lift the fader driver card away from the meters card, being extra carefully as there are three multipin connectors between the two PCB's. Put this card to the side for now.
7. Unscrew the screws at the top and bottom of each fader and keep them safe, then flip the panel over and remove the hex bolts and keep them safe.
8. Using the vacuum cleaner and the paintbrush, gently clean the panel, meters and the fader driver PCBs, and the area inside of the console. Put the fader driver card somewhere safe.
9. If you are replacing the whole bank of faders (PA16033) then read section 9.1. If you are only replacing single faders, skip to 9.2.
- 9.1. Remove the old meters and faders PCB and replace with the new PCB.
- 9.2. Using soldering tools, de-solder the faulty fader and discard it. Use the solder sucker to remove any excess solder on the PCB solder pads. Carefully solder in the new fader.
10. Screw in the faders on the front of the panel, re-fit the fader driver PCB with the Hex bolts, re-plug all connectors.
11. Place the fader panel back into the console, switch the console on and test the functionality of the faders and buttons – the panel can now be screwed back into place.



Cleaning Faders - Follow steps 1 – 8 above

12. Use a clean paint brush and the vacuum cleaner to remove any loose dust and dirt from the fader board, then use compressed air to dislodge any dust and dirt from the inside of the fader assembly, then use the vacuum cleaner to remove the dust and dirt. Repeat as necessary.
13. Lay the fader board on paper towels, place the thin nozzle applicator of the degreaser along the fader track, give a quick spray and then move the fader up and down.
14. Use the paper towel to clean up any excess mess, and use the compressed air to dry the fader tracks.
15. Then spray some of the cleaner-lubricant spray (DeoxIT F5) along the fader slot and with the fader at one end spray for no more than 1 second.
16. Move the fader up and down approximately 20 times and use the paper towel to wipe up any excess or dirty liquid.
17. Repeat steps 11 - 13 for the remaining faders.
18. Re-install the faders, screw down the fader driver PCB, plug the faders into the PCB, and carefully re-plug the connectors to the PCB's. Place the fader panel back into the console, switch the console on and test the functionality of the faders and buttons – the panel can now be screwed back into place.



S-Series - S21 and S31

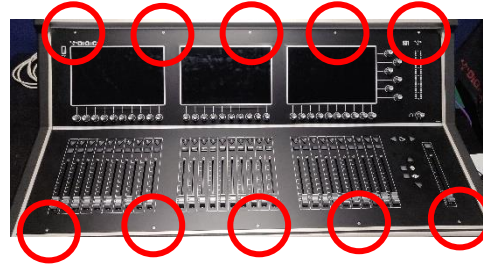
This section is for the cleaning and replacement of faders in S21 and S31 consoles only.

Part Numbers – see [Appendix 1 – Fader Table](#) for full details

- Input fader: 681-00177 Input fader with plug – S21, S31
- Master fader: 681-00178 Master fader with plug – S21, S31

Replacing Faders

1. Power down the console, switch off the PSU's and connect your antistatic strap to an appropriate earthing point.
2. Unscrew the front panel with the 2mm Hex driver and store these screws somewhere safe. There are 10 screws on the S31 and 8 screws on the S21.
3. Carefully lift the front edge of the panel and prop the panel up so that you can reach inside. (see picture →)
4. Identify which faders will be replaced and remove the fader knobs and disconnect the fader connector from the fader driver PCB.
5. Use a 2mm Hex driver to remove the screws at the top and bottom of the first fader, store them somewhere safe. Carefully remove the fader and place to one side.
6. Repeat the fader removal (steps 4 and 6) for the remaining faders to be replaced.
7. Using the vacuum cleaner and the paintbrush, gently clean the panel, PCBs, and the area inside of the console.
8. Install the new faders, plug the faders into the PCB, carefully put the console panel back in place and screw down.
9. Switch the console on and test the functionality of the faders and buttons.



Cleaning Faders - Follow steps 1 – 6 above

10. When removing faders, remember which order they were in and label them if necessary.
11. Use the compressed air to dislodge any dust and dirt from the inside of the fader assembly, then use the vacuum cleaner to remove the dust and dirt. Repeat as necessary.
12. Lay the fader on paper towels, place the thin nozzle of the cleaner-lubricant spray along the fader slot and with the fader at one end spray for no more than 1 second.
13. Move the fader up and down approximately 20 times and use the paper towel to wipe up any excess or dirty liquid.
14. Repeat steps 11 - 13 for the remaining faders.
15. Re-install the faders, screw down the fader driver PCB, plug the faders into the PCB, and carefully re-plug the connectors to the PCB's. Place the fader panel back into the console, switch the console on and test the functionality of the faders and buttons – the panel can now be screwed back into place.

Appendix 1 – Fader table

Part Number	Section	Found In	Number Required	Note
681-00200	Input	SD12, Q2, Q3	24 in SD12 and Q225 38 in Q338	
681-00199	Master	SD12, Q2	2 in SD12 1 in Q225	Longer cable version of 681-00200
686-00030	Input	SD9, SD10, SD11	24 in SD9 36 in SD10 24 in SD10-24 12 in SD11	
686-00031	Master	SD10	1	
SC-SD7-FADERI	Input & Master Lower	SD7Q, SD5Q SD7, SD5	36 in SD7/SD7Q 37 in SD5/SD5Q	100mm Fader standard cable
SC-SD7-FADERL	Master Lower	SD7	2	100mm Fader long cable
SC-SD7-FADERM	Master Upper	SD7	12	60mm Fader standard cable
SC-SD7-FADERML	Master Upper	SD7	2	60mm Fader long cable
POT000181	Input & Master	SD8	37	Solder tabs
PA16033	Input	SD8	3 sections	WHOLE CARD 12 Faders
PA16038	Master	SD8	1 section	Master fader and meter
681-00177	Input	S21, S31	20 in S21 30 in S31	
681-00176	Master	S21, S31	1	Longer cable version of 681-00177