

## **Technical Bulletin**

### **No: 118 – Penny & Giles Fader Cleaning Procedure**

SHORT-FORM CLEANING INSTRUCTIONS FOR PENNY & GILES FADERS

HOW OFTEN DO I CLEAN MY FADERS?

THE ANSWER TO THIS QUESTION DEPENDS ON SEVERAL FACTORS: HOW OFTEN THE CONSOLE IS USED, WHETHER THE CONSOLE IS USED IN A HOSTILE AND/OR DIRTY ENVIRONMENT (SUCH AS OUTDOOR CONCERT VENUES WHERE DUST IS A PROBLEM, STUDIOS WHERE SMOKING IS ALLOWED OR FOOD AND DRINKS CAN SPILL ONTO CONSOLE SURFACES, OPERATORS THAT HANDLE THE EQUIPMENT ROUGHLY, ETC.). AFTER YOUR INITIAL INSPECTION AND CLEANING, YOU SHOULD BE ABLE TO MAKE A ROUGH ESTIMATE OF HOW OFTEN YOU NEED TO CLEAN THE FADERS. SOME ENGINEERS CLEAN THEIR FADERS VERY OFTEN (AFTER EACH TOUR) IF USED OUTDOORS, OTHERS MAY NOT NEED TO DO ANY CLEANING BUT EVERY 1 -2 YEARS, AGAIN DEPENDING ON THE CONSOLE USAGE ENVIRONMENT.

WHAT DO I USE TO CLEAN THE FADER?:

PENNY & GILES FADERS ARE MADE WITH CONDUCTIVE PLASTIC ELEMENTS. THEREFORE, WHEN CLEANING A FADER, YOU WANT TO AVOID ANY SUBSTANCE THAT MAY HAVE A DELETERIOUS EFFECT ON THE USEFUL LIFE THIS ELEMENT. FOR THAT REASON, WE DO NOT RECOMMEND USING ISOPROPYL ALCOHOL, FREON, AMMONIA BASED CLEANERS SUCH AS WINDEX, OR THE CRAMOLIN PRODUCTS. WITH THAT IN MIND, WE ONLY RECOMMEND USING LUKE WARM WATER AS THE CLEANING SOLVENT OF CHOICE. IF THE WATER IN YOUR AREA HAS A HIGH MINERAL CONTENT (aka HARD WATER), THEN DISTILLED WATER MAY BE PREFERABLE FOR THE CLEANING PROCESS.

SHOULD YOU FIND THAT SOMETHING HAS GOTTEN INTO THE FADER THAT IS DIFFICULT TO REMOVE WITH WATER ALONE (COFFEE, FOOD, COCA-COLACIGARETTE TAR BUILD-UP, ETC.), THEN A VERY DILUTE SOLUTION OF NONDETERGENT SOAP CAN BE USED. A MILD HAND SOAP (eg IVORY) MAY BE BEST.

HOW DO I CLEAN THE FADER?:

TAKE THE FADER OUT OF SERVICE (UNPLUG IT!) SO THAT YOU WILL NOT RISK ELECTROCUTION WHEN CLEANING IT. IF YOU HAVE AMPLE TIME, YOU CAN HOLD THE FADER UNDER RUNNING WATER, OR LET IT SOAK IN THE SINK, OR EVEN USE AN ULTRASOUND MACHINE (IF WATER IS THE SOLVENT). BY DOING THIS, YOU WILL REQUIRE A FAIRLY LONG TIME TO LET THE FADER SIT TO AIR DRY. SEE BELOW IF THE FADER INCLUDES MICROSWITCHES OR MOTORS, THESE PARTS SHOULD NOT GET WET.

PROBABLY THE SIMPLEST AND FASTEST WAY TO CLEAN A FADER AND RETURN IT TO SERVICE, ALSO ALLOWS YOU THE OPPORTUNITY TO INSPECT THE WEARING PARTS OF THE FADER. AGAIN, ONCE THE FADER IS REMOVED FROM SERVICE, YOU WILL NEED TO OPEN THE FADER TO EXPOSE THE INNER PARTS. BE PARTICULARLY CAREFUL NOT TO BEND, TWIST, OR CROSS THE WIPER BRUSH WIRE BRISTLES. DEPENDING ON THE MODEL OF FADER, YOU EITHER UNSCREW THE SIDE PLATE (1100/1500 SERIES), OR OPEN AN END CAP (3000/4000 SERIES). ONCE AGAIN, ALWAYS BE CAREFUL OF THE WIPER BRUSH'S WIRE BRISTLES ESPECIALLY WHEN IT IS NEAR THE END OF THE BLUE CONDUCTIVE PLASTIC ELEMENT.

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TO INSPECT FOR WEAR, YOU WILL PRIMARILY BE LOOKING AT THE BUSHINGS (IN THE SLIDER BLOCK OR SLIDER ASSEMBLY, DEPENDING ON FADER MODEL), THE WIPERS (ATTACHED TO THE SLIDER BLOCK OR PART OF THE SLIDER ASSEMBLY), AND THE CONDUCTIVE PLASTIC ELEMENT(S).

A BRIEF EXPLANATION OF THE WEARING PARTS:

**THE BUSHINGS:** THESE SMALL, WHITE, TEFLON-BASED TUBES ARE LOCATED BETWEEN THE SLIDER BLOCK/ASSEMBLY AND THE GUIDE ROD (TWO BUSHINGS PER FADER). IF THEY HAVE BECOME WORN, THEY WILL HAVE A SLIGHTLY GREATER INSIDE DIAMETER, WHICH WILL MAKE THE SMOOTH SLIDING "FEEL" LOOSER THAN DESIRED. THIS IS WHERE YOU MAY NOTE THE EARLIEST SIGNS OF "HEAVYHANDED" FADER USAGE, WHICH DIRECTLY CAUSES THE LOSS OF THE SMOOTH FEEL".

THIS IS MOST ACUTE WHEN THE CONSOLE OPERATOR PUSHES DOWN ON THE FADER KNOBS AS HE/SHE MOVES THEM, INSTEAD OF JUST PUSHING THE KNOB IN THE DESIRED DIRECTION. IN THE 1100 OR 1500 SERIES FADERS, THESE BUSHINGS ARE AVAILABLE AS SEPARATE PARTS (P15229). ON THE 3000 AND 4000 SERIES FADERS, THE BUSHINGS ARE A FIXED COMPONENT OF THE SLIDER ASSEMBLY, AND THUS CANNOT BE SUPPLIED AS A SEPARATE PART.

**THE 'WIPERS':** THESE ARE THE METAL BRUSHES THAT TRAVEL UP AND DOWN ON THE CARBON TRACK OF THE CONDUCTIVE PLASTIC ELEMENT. ON 1100 AND 1500 SERIES FADERS, THE WIPERS ARE PROVIDED ATTACHED TO A SMALL INSULATING "CONTACT BOARD" WHICH CAN BE PURCHASED AS A SEPARATE PART. THE CONTACT BOARD IS HELD ONTO THE SLIDER BLOCK BY TWO SMALL SCREWS. ON THE 3000 AND 4000 SERIES FADERS, THE WIPERS ARE A FIXED PART OF THE SLIDER ASSEMBLY, THEREFORE A NEW SLIDER ASSEMBLY PROVIDES BOTH NEW BUSHINGS AND WIPERS.

**THE CONDUCTIVE PLASTIC ELEMENT, OR "TRACK":**

THIS IS THE MOST IMPORTANT COMPONENT OF THE FADER; ALSO IT'S MOST EXPENSIVE. THEREFORE, CAREFUL MAINTENANCE OF THE BUSHINGS AND WIPERS WILL HELP TO PROLONG THE USEFUL LIFE OF THE TRACK.

ONCE THE FADER IS OPENED, YOU WILL WANT TO HAVE ACCESS TO THE WIPERS, BUSHINGS AND TRACK. USING A "Q-TIP" COTTON SWAB OR A PIECE OF SOFT COTTON CLOTH (NO PAPER TOWELS OR KLEENEX-TYPE TISSUES), DAMPENED WITH LUKE WARM WATER, GENTLY WIPE DOWN THE WIPERS, TRACK AND THE GUIDE ROD(S). USE THE DILUTE SOAP SOLUTION, IF REQUIRED, IN THIS SAME MANNER. IF YOU HAVE USED SOAP, MAKE SURE TO REMOVE IT WITH CLEAN WATER AFTERWARDS.

ONCE THE FADER HAS BEEN CLEANED, THE UNIT CAN BE LEFT TO AIR DRY, OR YOU CAN USE A HAND-HELD HAIR DRYER (MOSTLY FOR THE AIR FLOW, NOT FOR THE HEAT) TO DRY IT QUICKER. AFTER THE FADER HAS BEEN DRIED, YOU WILL NEED TO RELUBRICATE THE GUIDE ROD(S)

ANY RE-LUBRICATION IS DONE VERY SPARINGLY. PUT ONLY A SINGLE DROP PER GUIDE ROD, THEN MOVE THE SLIDER BACK AND FORTH TO EVENLY COAT

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THE ROD(S). RECENT FACTORY TESTS SUGGEST LEAVING THE TRACKS ON THE CONDUCTIVE PLASTIC ELEMENT COMPLETELY UNLUBRICATED. WE HAVE FOUND THAT OVER TIME, LUBRICANT BUILD-UP ("PUDDLES OF OIL") ON THE TRACKS WILL CAUSE A DEGRADATION OF THE FADER'S SMOOTH OPERATING FEEL. IT IS NOW FELT THAT YOU WILL BE MOST SATISFIED WITH THE FADER OVER THE COURSE OF ITS USEFUL LIFE IF THE TRACK IS LEFT UNLUBRICATED.

WHAT TO LOOK FOR WHEN INSPECTING THE WEARING PARTS:

BUSHINGS: CHECK THE BUSHINGS TO SEE IF THE INNER DIAMETER IS NO LONGER SNUG FITTING AROUND THE GUIDE ROD. IF THE BUSHINGS ARE WORN, THE FEEL OF THE FADER TRAVEL WILL BE SLIGHTLY UNEVEN. WIPER CONTACT MAY BECOME INTERMITTENT IF THE BUSHING WEAR IS SUBSTANTIAL.

WIPERS: AT THE POINT THAT THE WIPERS CONTACT THE TRACK, THEY WILL START TO WEAR A FLAT SPOT ONTO THE WIRES. THIS IS NORMAL. HOWEVER, IF YOU NOTICE THAT THE WIRE IS 50% OR LESS THAN IT'S ORIGINAL DIAMETER, THEN IT MIGHT BE A GOOD TIME TO CONSIDER CHANGING THE WIPERS. OTHERWISE, THE WIRE MAY BREAK OFF AT THE BEND, AND ACT AS A SHARP GOUGE DIGGING A RUT INTO THE TRACK. THE DECISION TO REPLACE THE WIPERS ALSO DEPENDS ON HOW MUCH USE THE PARTICULAR FADER GETS.

TRACKS: OUT OF THE THREE WEARING PARTS, THE TRACK USUALLY LASTS THE LONGEST, UNLESS IT HAS BEEN DAMAGED BY A BROKEN WIPER WIRE. (SOME 1970'S VINTAGE FADERS ARE STILL IN USE WITH THE ORIGINAL TRACKS.) AFTER THE CLEANING, CHECK THE CARBON SURFACE FOR EXCESS WEAR. IF CLEANING ALONE HAS NOT BEEN ABLE TO CORRECT A "SCRATCHY" SOUND COMING FROM THE FADER, THEN IT IS POSSIBLE THAT THE TRACK HAS BECOME TOO WORN TO CORRECT, AND MAY NEED TO BE REPLACED.

WITH PROPER CARE, CLEANING, AND LUBRICATING, YOUR PENNY & GILES FADERS WILL PROVIDE YOU WITH MANY YEARS OF SMOOTH OPERATION AND CLEAR SOUND QUALITY.