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CLEANING OR REPLACING A PULSED DISCHARGE DETECTOR GROUND PIN

Technical Note 620

Loss of sensitivity on a PDHID can be caused by contamination of the ground pin. Sensitivity can often be restored by removing and cleaning the ground pin; however, in some cases the ground pin must be replaced.

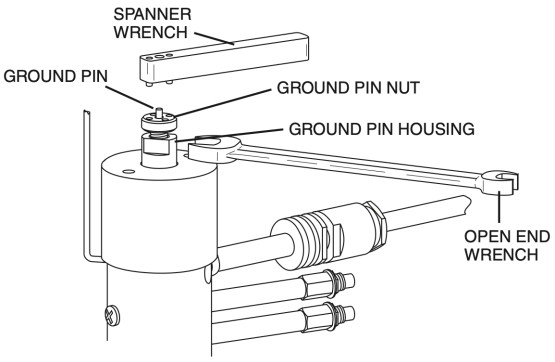
Items required:

- Ground pin cleaning kit, Prod No PD-KIT-GPIN

Kit includes:

DESCRIPTION	PRODUCT NUMBER
1/4" open end wrench	OEW
Spanner wrench	I-23535
Ground pin nut	I-23534
Ground pin	I-23638
1/16" plug	ZP1GF
Polishing paper	PD-KIT-PAPERS

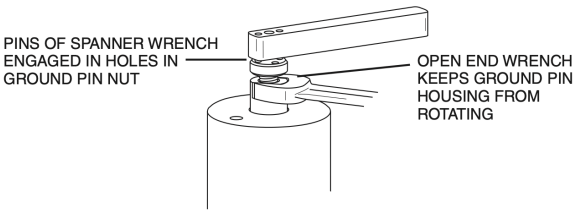
FIGURE 1: Parts identification



REMOVING THE GROUND PIN

Caution: The detector will be damaged if the ground pin housing rotates when the ground pin nut is loosened or tightened, so always use the open end wrench to stabilize the ground pin housing when applying force to tighten or remove the ground pin. Never use any sort of extension on the spanner wrench to increase torque.

FIGURE 2: Loosening the ground pin nut

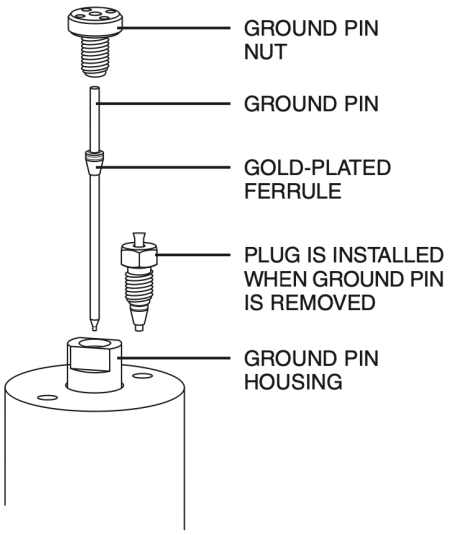


1. Turn the detector discharge off.
2. Set the detector temperature to room temp and allow time for cooling.
3. Place the open end wrench on the ground pin housing to make sure that it cannot rotate during the pin removal process.
4. Engage the pins of the spanner wrench in two of the holes in the ground pin nut, and gently unscrew the ground pin nut while supporting the housing (**Figure 2**).

Caution: It is a good idea to wear clean latex or vinyl gloves through the remainder of the procedure to ensure that no oil from your fingers contaminates the ground pin.

5. Completely unscrew the ground pin nut and remove it from the from the detector.
6. Remove the ground pin from the housing by lifting it straight up (**Figure 3**).
7. Install the 1/16" plug in the ground pin housing; finger tight is OK. This will shorten the equilibration following this procedure.

FIGURE 3: Removing the ground pin and installing the plug



CLEANING AND INSPECTING THE GROUND PIN

Caution: Do not use any oils, solvents, or compressed air to clean the ground pin.

1. Five different grades of cleaning paper are provided, identified from coarsest to finest below. Polish the contaminated area of the ground pin with the green paper (the coarsest, at 30 µm) until the deposits are removed, being careful not to bend the pin.

Green	30 µm
Gray	15 µm
Blue	4 µm
Pink	3 µm
Aqua	2 µm

Caution: When cleaning the ground pin with the cleaning paper, take care to avoid abrading the gold-plated ferrule. Leaks may occur if the plating is damaged with the cleaning paper.

2. Proceed through the other four grades of cleaning paper, gradually removing any scratches left from the coarsest paper.
3. Wipe the pin with a tissue to remove any residual abrasive. We recommend an optical quality lint-free wiper such as a Kimwipe.
4. Inspect the pin with a magnifying glass or microscope. If there is pitting, erosion, or significant discoloration, the pin should be discarded and replaced with the new pin provided in the kit.

REINSTALLING THE GROUND PIN

1. Remove the plug and install the new or cleaned ground pin in the ground pin housing.
2. Slide the ground pin nut over the end of the ground pin.
3. Screw in the ground pin finger tight.
4. Use the open end wrench and the spanner wrench to tighten the ground pin nut.
5. Follow the instructions for initial startup in the detector manual.

CALIBRATION

After the ground pin is cleaned or replaced, the calibration must be checked to determine if a calibration update or replacement is needed. In most cases, the sensitivity difference will mean that a new calibration is required.