PINE Instrument
Construction Testing Equipment Group

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Service Instruction

1 Component: AFG2- Front Angle Sensor Maintenance

Gyratory Model: AFG2 (all variants)

2 Scope

Cleaning or repairing the AFG2 front angle sensor.

3 Tools Required

3/32" Hex Wrench (s/n 8001-8028)
3/16" Hex Wrench (s/n 8029+)
5/16" Nut Driver
5/16" open end wrench
WD-40
Rags
Long handle cotton swabs
Polishing Pad (Scotch-Brite™ or equal)

4 Hazards/Precautions

	**This procedure requires power to be applied to the compactor while servicing. Take extra car to keep hands and arms away from moving parts and pinch points.**
	**Always wear eye protection and steel toe shoes while servicing a gyratory compactor.** **Use proper lifting technique. Do not wear loose-fitting clothing items (*i.e.*, jewelry, ties, etc.) which may be caught in the moving parts of the compactor. Long hair should be tied back.**
	**Electronic components may be damaged by static electricity. Be sure to be properly grounded when handling static sensitive components.**

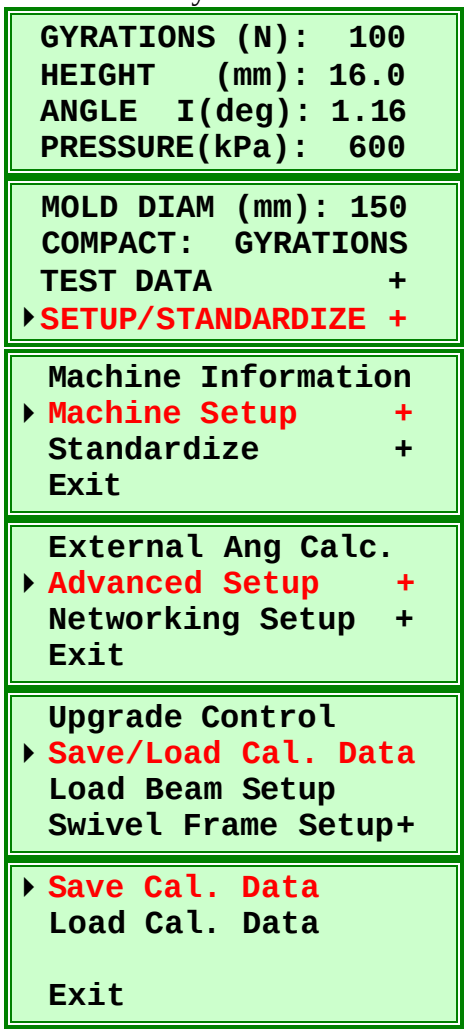
This document does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this document to establish and follow appropriate safety practices associated with the described tasks. If unsure about the required qualifications for performing this procedure contact Pine Instrument Company or seek qualified assistance.

5 Instructions

5.1 Save Calibration Data

Save a copy of the current configuration/calibration data to a USB memory stick.

- Navigate to the Save/Load Cal Data menu using the ▶ and ↵ buttons.
- Most sub-menus have two screens. Use the ▶ button to advance within each menu until the desired selection is available.
- Follow the instruction to place a copy of the calibration data onto the USB memory device.



- The following files will be placed on the device:

  Hours.cfg
  G2000.cfg
  G2setup.cfg
  G2network.cfg (v09.06b+)
  G2cal.cfg
  G2_xxxx.txt

The g2cal.cfg is the calibration data file.

5.2 Update software to v09.07a or newer

The maintenance procedure requires control software version 09.07a or a later release. If the AFG2 is operating on software released before June 2009, it must be updated prior to performing this procedure. Follow the upgrade instructions provided separately with the new control software.

5.3 Park the swivel frame

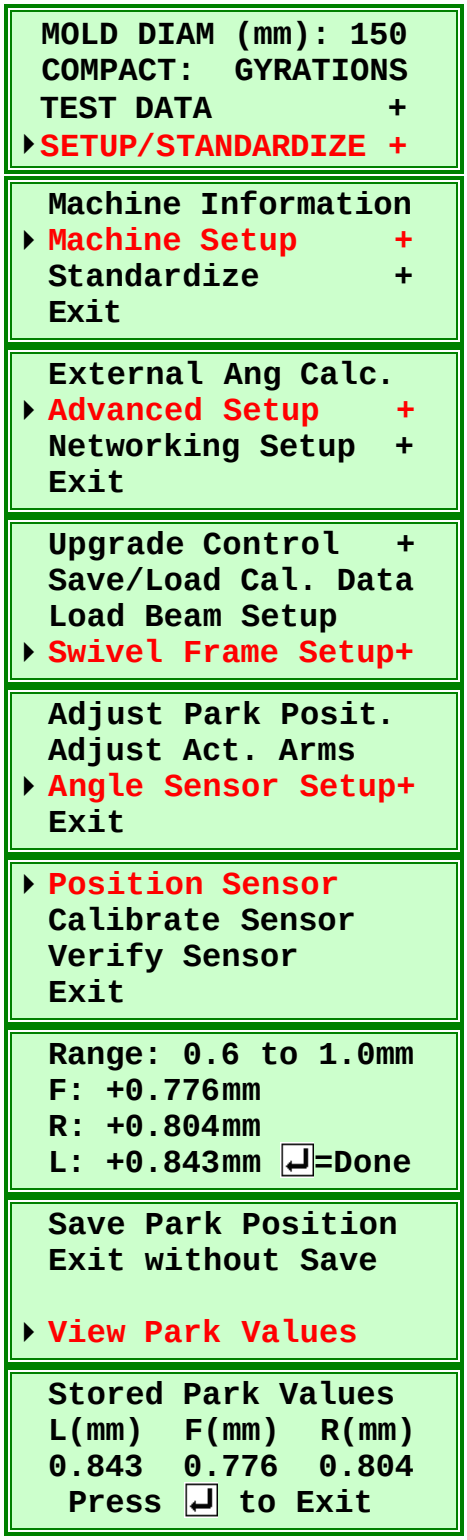
It is critical that the swivel frame be at the correct park position.

Press the RAM DOWN button to park both the ram and swivel frame. A 443 error code (front angle sensor error) may or may not occur. Press the ↵ button to clear the 443 error and continue with this procedure. Do not continue this procedure if a 444 error has occurred; contact Pine Instrument for different instructions.

Once the park position is achieved, the swivel frame must not be moved until this procedure is complete.

5.3.1 Determine Sensor Park Values

- Navigate to the Position Sensor menu using the ▶ and ↵ buttons.
- Most sub-menus have two screens. Use the ▶ button to advance within each menu until the desired selection is available.



Note: Each compactor will have unique sensor values different from those shown at right.

- Record the Stored Park Values for the Left (L), Front (F) and Right (R) angle sensors:

Left: _____(mm)
Front:_____(mm)
Right:_____(mm)

These values should be +0.800 ±0.200mm.

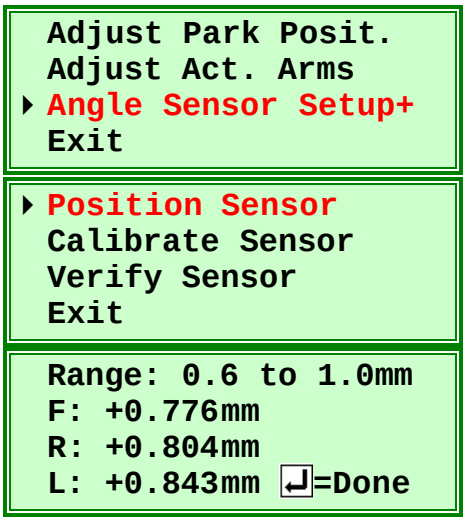
- Press ↵ to exit.

5.4 Select "Position Sensor" Menu

- Navigate back to the Position Sensor menu using the ▶ and ↵ buttons.

- Press the ↵ button.

- The sensor readings are viewed directly on the display.



5.5 Front Angle Sensor

- Remove the front work surface and front access cover as shown below.

Photo 5.1: Front Angle Sensor Access

5.5.1 Remove the front angle sensor.

There are two different mount block configurations utilized on the AFG2. A pair of 3/32" hex head set screws secure the angle sensors on s/n 8028 and below. A clamp collar with 3/16" hex head cap screws secures the sensors on s/n 8029 and above.

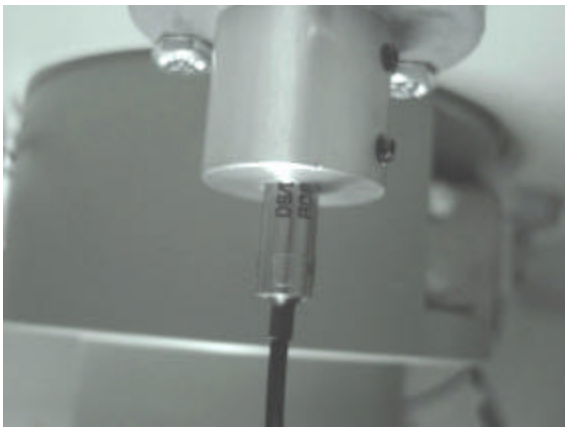


Photo 5.2: Set-Screw Style Mount

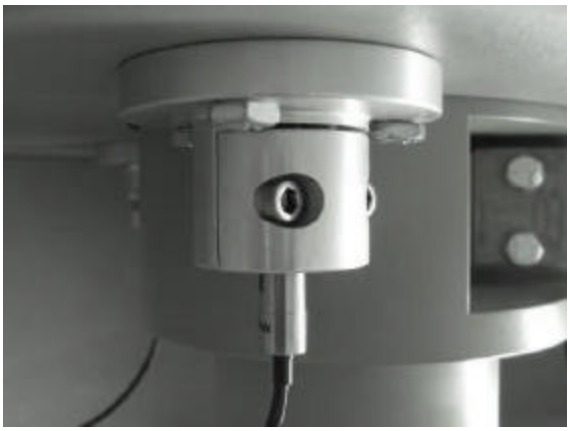


Photo 5.3: Clamp Style Mount

Photo 5.4: Angle Sensor Removed

Loosen the angle sensor mounting screws and slide the sensor downward. A slight twisting motion might be necessary. Leave the mount secured to the frame.

5.5.2 Clean the sensor shaft

Clean the spring-loaded sensor probe with WD-40 and a clean soft rag. A polishing pad may be necessary to remove any buildup on the shaft. Spray WD-40 onto the sensor generously and be sure to work the spring-loaded shaft back and forth. The sensor should operate freely.

Photo 5.7: Angle Sensor Cleaned, Ready to Reinstall

Leave a coating of WD-40 on the shaft. No damage is done by WD-40 in the sensor body.

5.5.3 Clean the sensor contact surface

Use a long handle cotton swab (Q-tip) to clean inside the angle sensor boot. Wet the tip then insert the swab through the angle sensor mounting hole until it contacts the angle sensor reference surface. Swirl the swab to clean the contact surface.

5.5.4 Reinstall the sensor

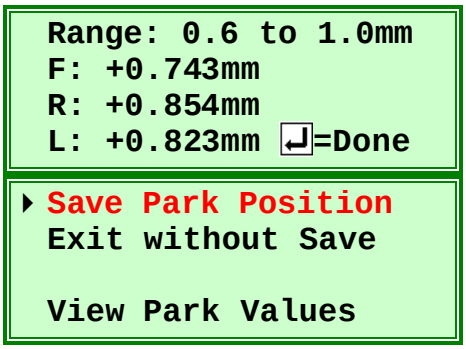
Place a small dab of anti-seize (ram foot lubricant) on the probe tip of the angle sensor. Re-install the sensor so that a reading of +0.800mm (±0.200mm) is displayed. The reading may shift slightly as the mounting screws are tightened.

If the sensor has a set screw mount, take care not to over tighten the screws as this may damage the sensor. These set screws should be snug, not overly tight. The clamp collar screws also need only be snug.

5.6 Redefine Park Position

Note: ***It is extremely important to save the new readings as the park position!***

- Press the ↵ button to exit the Position Sensor menu.
- Select Save Park Position.
- Press the ↵ button to save the current sensor values as the park position.
- Press the — button to exit to the main menu.



5.7 Verify the Angle of Gyration (Internal and/or External)

The internal and/or external angle of gyration should be checked after this service. Small shifts may occur and recalibration of the angle may be needed. Follow the procedure for verifying the external angle and/or internal angle of gyration in the AFG2 Operator Manual. Angle Sensor calibration is not required.

6 Save Configuration/Calibration Data

Once this procedure is complete, save a copy of the new configuration/calibration data to a USB memory stick and store these files on a separate computer, network, or other digital storage media as a backup copy of the AFG2 calibration.