



**Kasper Aero**

ACCEPTANCE TEST PROCEDURE		
Report Number:	KR_ATP#XXXXXX	Rev: A
Original Issue Date:	MM-DD-YYYY	Page: 1 of 8
Prepared By/Date:	A.B.C.	MM-DD-YYYY
Check By/Date:	A.B.C.	MM-DD-YYYY
Engineering Approval/Date:	A.B.C.	MM-DD-YYYY

## **SAMPLE ACCEPTANCE TEST PROCEDURE**

**FOR THE**

**\*PART NUMER\*  
SENSOR, FERROUS DEBRIS**

REVISION HISTORY		
Rev.	ECO #:	Date:
A	Initial Release	MM-DD-YYYY

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## 1.0 Purpose

This document establishes the procedure and inspection requirements for the Development Acceptance Testing of a Ferrous Debris Sensor, KasperAero Drawing \*PART NUMBER\*.

## 2.0 Sample Rate

### Inspection:

100% Sample Rate

### Weight:

A minimum sample size equal to 10% of the production lot, or 10 units, whichever is greater, shall be subjected to weighing.

### Test:

100% of units shall be tested.

## 3.0 Test Fluid(s):

- Water

## 4.0 Instrumentation

All equipment that shall be used during ATP requiring calibration will be calibrated per Kasper Quality Standards (KQS).

## 5.0 Documentation

The result of each test shall be recorded on a physical or digital data card. All data cards shall be marked with the testers stamp affirming the recorded results before parts leave ATP.

## 6.0 Test Conditions

### 6.1 CLEANING:

Prior to testing the unit, all parts normally in contact with the fluid used in service shall be thoroughly cleaned to remove all foreign matter.

### 6.2 TEMPERATURE:

Room Ambient Temperature: 70°F ± 10°F

Fluid Temperature: 70°F ± 10°F

Ambient Humidity: 60% ± 30% RH

## 7.0 Test Facilities

Testing location that are valid for the required in this Acceptance Test Procedure shall be governed per Kasper Quality Document KQD0001.



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## 8.0 Equipment Required

**Note:** Equivalent substitutes may be used.

- 8.1 0-8.8 Lb. Scale, Accuracy  $> \pm .005$  Lbs.
- 8.2 Hydrostatic Hand Pump
- 8.3 Drip Tray
- 8.4 0-250 PSI Pressure Gage, 2.0% Accuracy of Scale
- 8.5 Misc. Shut off valves and plumbing equipment
- 8.6  $\varnothing 1.00" \pm 0.0005"$  High Carbon Steel Ball Bearing
- 8.6  $\varnothing 0.375"$  High Carbon Steel Ball Bearing or Larger
- 8.7  $\varnothing 0.0625" \pm 0.0005"$  High Carbon Steel Ball Bearing
- 8.8  $\varnothing 0.03125" \pm 0.0005"$  High Carbon Steel Ball Bearing
- 8.9 Dielectric Withstand Tester and Insulation Resistance Tester
- 8.10 F-00010 or F-00011, Pressure Test Fixture
- 8.11 F-00012, Wiring Harness Adapter
- 8.12 F-00013 or F-00014, Fixture, Conductive Housing
- 8.13 F-00015, Wiring Harness Adapter
- 8.14 F-00021, Sensitivity Alignment Guide (.0625)
- 8.15 F-00022, Sensitivity Alignment Guide (.03125)

## 9.0 Tests

### 9.1 EXAMINATION OF PRODUCT

- 9.1.1 100% of products shall be examined regardless of testing sample rate.
- 9.1.2 Remove Caplugs from test units. Inspect the face of Ferrous Debris Sensor for signs of FOD. Remove any FOD.
- 9.1.3 Examine each unit to determine conformance with KasperAero Drawing with respect to design, dimensions, materials finishes, marking, workmanship and any other requirements for which there are no specific functional tests.
- 9.1.4 Inspect each unit for any visible defects, such as cracks, dents, dings, or nicks.
- 9.1.5 Ensure that the unit's markings, labels, and serial numbers are clear and legible.
- 9.1.6 Confirm that there are no irregularities, corrosion, contamination, or foreign debris on the surface that would affect functionality. (Yes = Pass, No = Fail).

### 9.2 WEIGHT

- 9.2.1 Sample in accordance with Section 2.0. Weights must be recorded using a calibrated scale. Compare the weight with the acceptable weight range specified on the data card
- 9.2.2 Record if the units weight is acceptable on the data card. (Yes = Pass, No = Fail).

### 9.3 LOW PRESSURE EXTERNAL LEAKAGE TESTING

- 9.3.1 The external leakage test fluid shall be water.
- 9.3.2 Create the Test Setup as shown in Figure 1.
- 9.3.3 Place test unit(s) in the F-00010 or F-00011 test fixtures.
- 9.3.4 Raise the pressure to 5 psi (-0/+5psi). Maintain pressure for 60 seconds.
- 9.3.5 By visual observation there shall be zero leakage. (Yes = Pass, No = Fail).



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#### **9.4 PROOF PRESSURE TESTING**

- 9.4.1 The Proof Pressure test fluid shall be water.
- 9.4.2 Create the Test Setup as shown in Figure 1.
- 9.4.3 Place test unit(s) in the F-00010 or F-00011 test fixtures.
- 9.4.4 Raise the pressure to 120 psi (-0/+20psi). Maintain pressure for 60 seconds.
- 9.4.5 By visual observation there shall be zero leakage. (Yes = Pass, No = Fail).

#### **9.5 MAGNET STRENGTH**

- 9.5.1 Using the test unit, lift a Ø1.00" diameter carbon steel ball. (Yes = Pass, No = Fail).

#### **9.6 FERROUS MATERIAL SENSITIVITY**

- 9.6.1 Wire the test unit to as shown in Figure 2.
- 9.6.2 With no debris on the sensor, the sensor's analog output shall read  $2.10 \pm 0.10$  VDC. (Yes = Pass, No = Fail)
- 9.6.3 Using a Ø 0.375" diameter or larger high carbon steel ball, fully saturate the sensor. The sensor's analog output voltage shall be  $4.3 \pm 0.10$  VDC. (Yes = Pass, No = Fail)
- 9.6.4 Using the F-00022 sensitivity alignment guide, place a Ø.0625" diameter high carbon steel ball on the exact center of the sensor face. Measure and record the sensor's analog output.
- 9.6.5 Using the F-00023 sensitivity alignment guide, place a Ø.03125" diameter high carbon steel ball on the exact center of the sensor face. Measure and record the sensor's analog output.

#### **9.7 DIELECTRIC STRENGTH (HIPOT)**

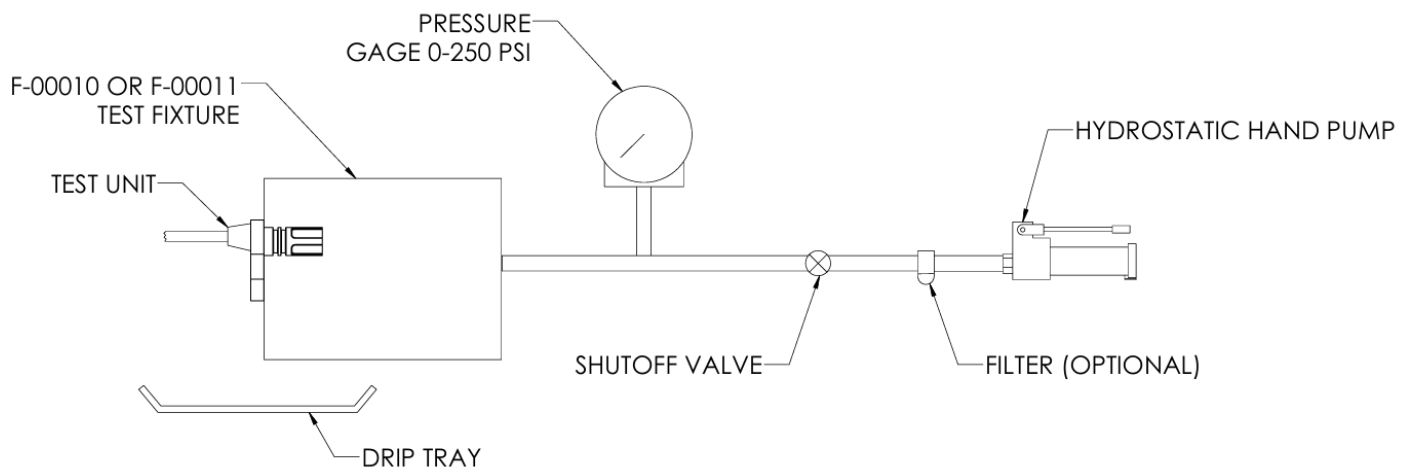
- 9.7.1 Place the F-00013 or F-00014 conductive housing test fixture on an insulated, non-conductive mat. Ensure the test area is guarded to prevent accidental contact during testing.
- 9.7.2 Place test unit(s) in the F-00013 or F-00014 fixtures. Seat the test units fully.
- 9.7.3 Connect the F-00013 or F-00014 test fixture to the Dielectric Withstand Tester's return/ground terminal using a tether.
- 9.7.4 Connect all of the wire leads of the test unit to the high-voltage lead of the Insulation Resistance Tester. Use the F-00012 wiring harness adapter (see Figure 3).
- 9.7.5 Gradually apply an AC test voltage of 450–500 VAC over a period of at least 5 seconds. Maintain the full test voltage for 60 seconds while monitoring for breakdown, flashover, or abnormal current draw. Measure the leakage current.
- 9.7.6 Reduce the voltage to zero before disconnecting the test unit.
- 9.7.7 Acceptance criteria (Yes = Pass, No = Fail):
  - No breakdown, arcing, or insulation failure shall occur.
  - The leakage current shall remain below 5 mA for the duration of the test.



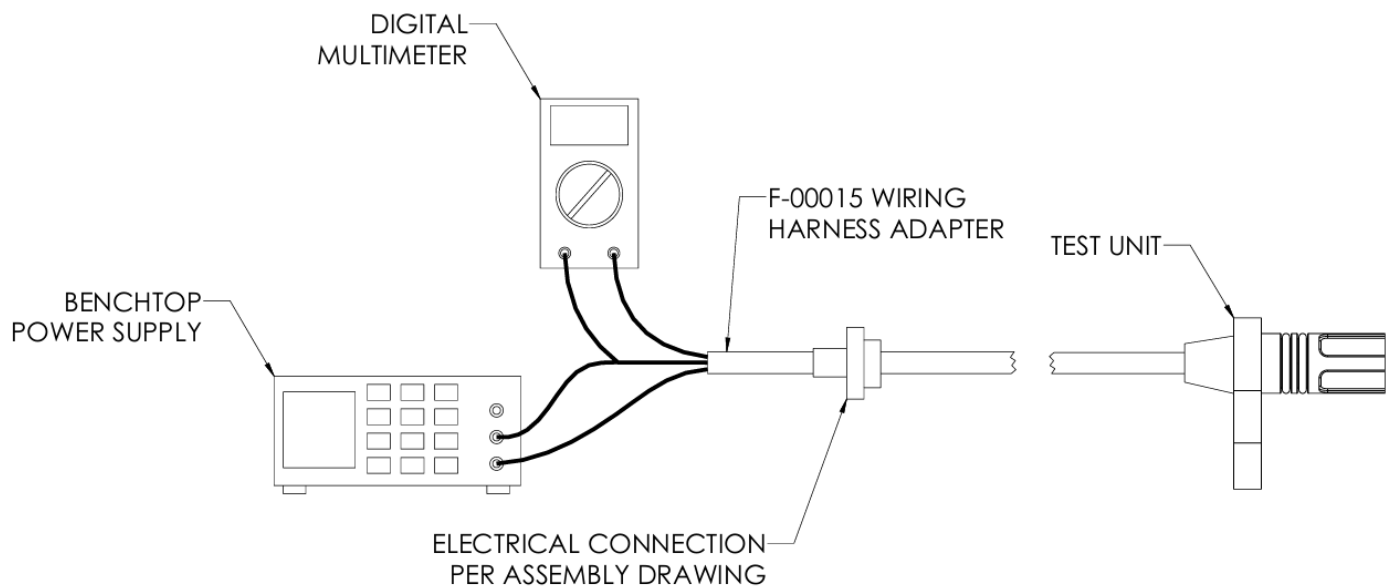
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## 9.8 INSULATION RESISTANCE

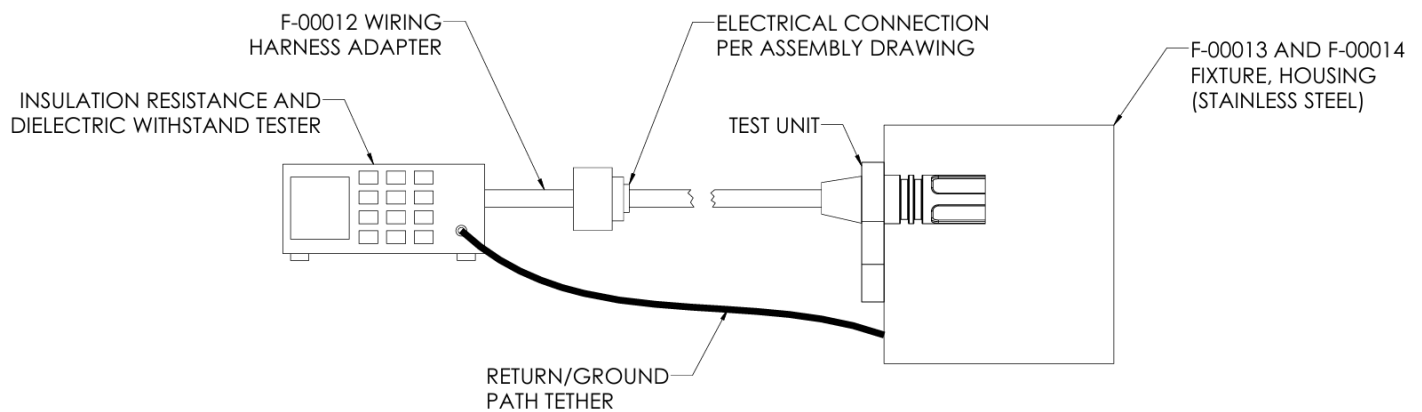
- 9.8.1 Place the F-00013 or F-00014 conductive housing test fixture on an insulated, non-conductive mat. Ensure the test area is guarded to prevent accidental contact during testing.
- 9.8.2 Place test unit(s) in the F-00013 or F-00014 fixtures. Seat the test units fully.
- 9.8.3 Connect the F-00013 or F-00014 test fixture to the Insulation Resistance Tester's return/ground terminal using a tether.
- 9.8.4 Connect all of the wire leads of the test unit to the high-voltage lead of the Insulation Resistance Tester. Use the F-00012 wiring harness adapter (see Figure 3).
- 9.8.5 Apply a DC test voltage of 500 VDC (per IEC 60079 insulation resistance requirements). Allow the voltage to stabilize and maintain the test for at least 60 seconds. Record the measured insulation resistance.
- 9.8.6 Acceptance criteria (Yes = Pass, No = Fail):
  - No breakdown, arcing, or insulation failure shall occur.
  - The measured insulation resistance shall be  $\geq 1 \text{ M}\Omega$ , unless otherwise specified by the product design standard or certification file.



**FIGURE 1: EXTERNAL LEAKAGE AND PROOF PRESSURE TEST SETUP**



**FIGURE 2: FERROUS SENSITIVITY TEST SETUP**



**FIGURE 3: DIELECTRIC STRENGTH AND INSULATION RESISTANCE TEST SETUP**





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ATP REVISION: A  
DRAWING REVISION:

BEGINNING TEST DATE:	
END TEST DATE:	
TEST OPERATOR(S):	

[illegible][illegible]☐ DATA TRANSCRIBED TO DIGITAL FORMAT

DATE: (MM/DD/YYYY)

[illegible]

REVISION HISTORY				
REVISION	ADCN / ECO	DATE: (mm/dd/yyyy)	PREPARED BY:	REVIEWED BY:
A	INITIAL RELEASE	MM/DD/YYYY	A.B.C.	A.B.C.
B				
C				
D				
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F				

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