

# Spirit Magneto

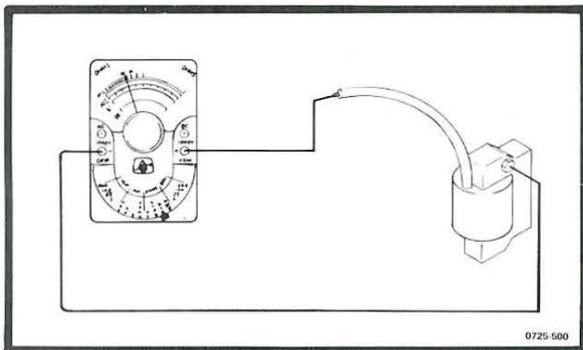
## Point Test

## Procedure

### External Coil

1. Disconnect the external coil wire plug from the ignition system.
2. Using the multimeter, move the selector to the X1K position. Touch the leads together and zero the meter.
3. Measure the secondary winding resistance by placing one lead on the high tension lead and the other to ground.

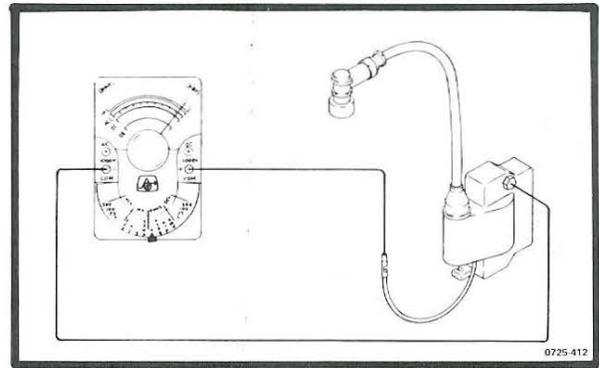
Engine	Tester	Reading	Tolerance
AB25F1	Multitester	7600 ohms	± 20%
Kitty Kat	Multitester	5100 ohms	± 20%



**NOTE:** When checking the secondary winding resistance, be sure to remove the resistor cap from the plug wire. Otherwise, an inaccurate reading will result.

4. Set the selector on the X1 setting and zero the meter.
5. Measure the primary winding resistance by connecting one lead to the black wire going to the coil and the other lead to ground.

Engine	Tester	Reading	Tolerance
AB25F1	Multitester	0.9 ohm	± 15%
Kitty Kat	Multitester	1.67 ohms	± 15%



### Excitor Coil

1. Insert a piece of paper between the breaker point contact surfaces.
2. Set the selector on the X1 setting and zero the meter.
3. Disconnect the wires running from the magneto to the external coil. Connect one lead of the multimeter to the black wire running from the magneto; then ground the remaining lead.

Engine	Tester	Reading	Tolerance
AB25F1	Multitester	3.82 ohms	± 10%
Kitty Kat	Multitester	2.65 ohms	± 10%

### Condenser - Resistance

1. Insert a piece of paper between the breaker point contact surfaces.
2. Remove the condenser and isolate it from the stator plate.
3. Set the tester at the installation resistance measuring range. (X 10 K).
4. Connect the positive lead to the black wire of the condenser; then connect the negative lead to the condenser housing. The needle will rise sharply and gradually settle back. Use the reading when the needle stabilizes. Condenser resistance should be 10,000 ohms or more. If the reading is less, the condenser must be replaced.
5. Discharge the condenser by touching the black tester lead to the condenser housing.

## Condenser - Capacity

The only test that can be made with the Arctic testers is a condenser resistance test. If the shop is equipped with a Merc-o-tronic or Graham-Lee coil and condenser tester, check the condenser capacity by setting the tester selection knob on the "condenser capacity" position. With the condenser on an insulated surface, connect one of the leads to the housing and the other lead to the condenser terminal. The capacity reading is read directly in micro-farads.

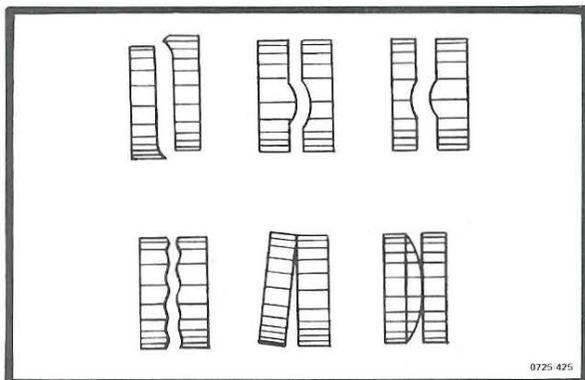
Engine	Tester	Reading	Tol.
AB25F1	Merc-o-tronic or	0.3 micro-farad	---
Kitty Kat	Graham-Lee	0.18 micro-farad	---

Using the same connections as above, rotate the selector knob to the "series resistance" position. A normal condenser will have a meter reading of less than one ohm. A reading over one ohm indicates high series resistance and requires condenser replacement.

Using the same connections as above, rotate the selector knob to the "condenser leakage" position. A good condenser at room temperature will have a reading of between 20 megohms and infinity. A shorted condenser will cause the needle on the meter to point to the extreme right. If the condenser fails any of the above tests, the condenser should be replaced.

## Contact Points

1. Remove the contact points.
2. File the burned or burred point surfaces; then clean contacts with benzine or other suitable solvent.
3. Make sure contact points mate well with each other; apply grease on shaft; then install points.



4. When adjusting the points, set the point gap at 0.3 - 0.4 mm (0.012 - 0.016 in.).

## Lighting Coil

1. Set the selector of the multimeter on the X1 setting and zero the meter.
2. Connect one lead to the yellow wire from the magneto and the remaining lead to the other yellow wire from the magneto. The standard value is 0.45 ohm.

## Ignition Timing - AB25F1 - Lynx Single Cylinder

1. Adjust the point gap to 0.3 - 0.4 mm (0.012 - 0.016 in.), using a small screwdriver and feeler gauge.

**NOTE:** Be sure point contact surfaces are in good condition and free of contamination.

2. Since the spark plug hole has been tapped at an angle on this model, the head will have to be removed to use a dial indicator. The marks on the flywheel can be used when timing the engine. The long single mark corresponds to the top dead center (TDC) position when aligned with the magneto case timing mark. The center mark of the three remaining marks is to be used for timing purposes. This mark corresponds with 22° before top dead center (BTDC).
3. Insert a dial indicator into the spark plug hole.
4. Connect a point tester to the ignition lead from the points and the other lead to a good ground. Rotate the PTO end of the crankshaft 22° or 3.00 mm (0.118 in.) before top dead center (BTDC), or until the center timing mark aligns with the timing mark on the magneto case. At this position, the points should just begin to break. A change in sound of the timing buzzer or a change of light intensity of a timing light will be noted.
5. If the timing is not correct, rotate the stator plate to obtain correct timing; then tighten stator plate screws.
6. Re-check timing after stator plate screws have been tightened.

### Ignition Timing - Kitty Kat

The engine used on the 1977 Kitty Kat uses the same basic ignition system as the Lynx single cylinder, however, the engine rotates counter-clockwise when viewed from the MAG side. Because the engine rotates in the opposite direction of the other Spirit engines, special care must be used when timing the engine.

1. Adjust the point gap to 0.012 - 0.016 of an inch or 0.3 - 0.4 mm, using a small screwdriver and a feeler gauge.

■ **NOTE:** Be sure point contact surfaces are in good condition and free of contamination.

2. Insert a dial indicator into the spark plug hole.
  3. Connect a point tester to the ignition lead from the points; then connect the remaining lead to a good ground. Rotate the MAG end of the crankshaft clockwise  $22^{\circ}$  (1.73 mm or 0.068 of an inch on the dial indicator). At this time, the points should just begin to break. A change in sound of the timing buzzer or a change of light intensity in the timing light will be noted.
  4. If the timing is not correct, loosen the stator plate screws and rotate the stator plate to obtain the correct timing. Tighten the stator plate screws.
  5. Re-check timing after the screws have been tightened.
-