User Manual

SKF ATF 5000

Bar-to-bar DC Armature Test Accessory

Part No. PUB CM/P4 72-EN Rev.

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1. Setup of the ATF 5000 for surge tests

Each day before using the ATF 5000 perform the periodic inspection listed in Section 2.

The ATF 5000 probe is designed to connect directly to the Baker ZTX or the Baker PP85 power pack. If the probe is connected to an older Baker D65R or the Baker DX 15A with integrated Baker ZTX technology, one or more adapters will be required to connect the ATF 5000 harness.

The ATF 5000 is designed to be used ONLY with SKF static motor analyzer equipment, and only in armature test mode.

The ATF 5000 must be inspected daily, or after any event that may have damaged the device. Never use a damaged ATF 5000; a damaged unit should be disposed of or returned to an authorized SKF service center for possible repair or replacement. There are no serviceable parts internal to the unit (it is not possible to properly service or repair a damaged unit in the field).

Caution:

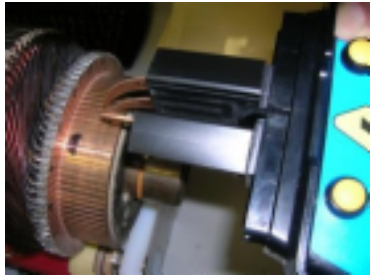
- Do not connect the smaller round connector to any other tester connectors.
- Never use the ATF 5000 in conjunction with a foot switch.
- Never grip, hold, or touch any portion of the ATF 5000 beyond (in front of) the finger guard.
- Disconnect the ATF 5000 whenever inspecting the device for damage.
- Never connect this device to any equipment that is not functioning properly.
- Never place the ATF 5000 upside down on an uneven surface.
- Disconnect the ATF 5000 from any tester prior to cleaning, or when not in use.
- Never assume the probes (contacts) on the ATF 5000 are not energized.

Attach the three connectors on the ATF 5000 to the Baker ZTX or power pack as illustrated on the next page.

Round surge and vent connectors

Foot switch connector on the Base ATX

Adjust the probe width so the probes are centered on two adjoining bars as illustrated in the following photos. Rotate the thumbwheel in the center to adjust the probe width.



ATF 5000 probes on armature commutator bars with spring in the middle contact adjuster to the upper with the contact at the bar

Thumb wheel shown between the probes on the front of the ATF 5000

Set up the SKF test equipment as described in the user manual of the respective analyzer being used. Prior to performing a test, set the SKF analyzer in armature test mode. Select voltage, and then set the zero point.

2. Performing a surge test with the ATF 5000

Upon proper setup, the ATF 5000 can be used to perform surge tests on one or more commutator bar pairs. Mark the first commutator bar pair to be tested. Place the ATF 5000 probes on the commutator at the first marked pair and initiate a test by depressing one of the two yellow buttons on the top face of the ATF 5000. These yellow buttons operate identically to one another; they are designed to facilitate either left or right handed use of the accessory, and work in parallel to the "push to test" (or "PTT") buttons on the front of the SKF static motor analyzer. After the analyzer surges a few cycles, release the yellow button(s) on the ATF 5000 and the tester will stop the test.

a) Inspect the ATF5000 for physical damage.
b) Connect the ATF to the test equipment. Hold the ATF5000 with the probes in the air and away from any person or any object. Push the PTT, ramp the voltage up to 50 volts. Verify wave form

NOTE: To prevent arcing between the probes and the commutator bars, make sure to release the yellow PTT buttons <u>before</u> raising the probes off the commutator bars.

Continue testing successive pairs of commutator bars either clockwise or counter clockwise until all bar pairs have been tested on the commutator.

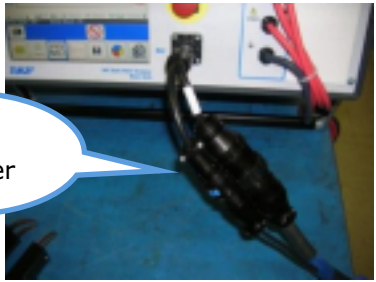
Although the ATF 5000 was designed to compensate for angular misalignment of the commutator bars, it's necessary for all four probes to be in contact with commutator bars being tested. If any of the four probes do not have good contact with the commutator bars, this will result in an abnormal waveform displayed on the static motor analyzer. If no waveform is displayed, verify that all ATF 5000 connectors are properly connected.

Detail of the ATF 5000 push-to-test (PTT) button

3. Setup of the ATF 5000 for RLC testing

The ATF 5000 is designed to connect directly to the SKF static motor test equipment's RLC connector with an adapter. The adapter to be used is specifically designed for use with SKF static motor analyzers (Baker DX or Baker AWA IV models) and is provided with each new accessory in its original packaging.

The foot switch connector must be connected to the foot switch plug on the Baker ZTX and the RLC adapter must be connected to the analyzer. Refer to illustrations below for equipment setup.



RLC adapter connected to the analyzer

Foot switch connector on the Baker ZTX

Set up the SKF static motor analyzer to be used for armature R_C measurements as described in the respective analyzer's user manual. Adjust the probe spacing to match the armature bar spacing as described above.

4. Performing RLC tests with the ATF 5000

Place the ATF 5000 probes on two adjacent commutator bars and activate the RLC test with either one of the two yellow PTT buttons on the ATF 5000. It is not necessary to press and hold the buttons during the test because the test is started with an initial push of the button, and it continues until the test is complete. It is necessary, however, to hold very still while the tester records the measurements in order to minimize the time required for the measurement.

After the tester indicates that the test is complete, move the ATF 5000 probes to the next set of commutator bars and initiate the next test.

5. Troubleshooting problems with the ATF 5000

Disconnect all three ATF 5000 connectors from the test unit before performing any tests or inspections of the ATF 5000. Never perform any electrical tests other than continuity tests.

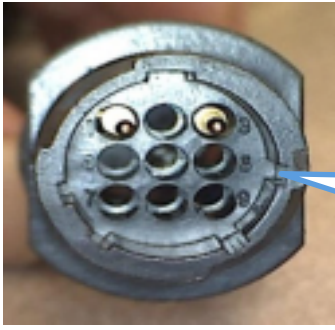
Purpose:

The purpose of this section is to provide a guide to troubleshooting the ATF 5000. This procedure is not intended for use when the ATF 5000 in connected to the SKF static motor analyzer. See the operational procedures for the SKF static motor analyzer and the ATF 5000.

Background:

The functionality of the ATF 5000 is very basic. It has two switches to activate the test unit and four contacts/probes for connection to the armature.

ATF 5000 components:



Small
Circular
Connector

PTT
buttons

Procedures:

Please note that the electrical wiring of the AT5000 may slide off the work bench and pull the ATF 5200 to the floor, which can cause damage to the accessory. Take precautions to secure both the ATF 5000 body and the connectors so they are not prone to falling off of or away from your bench or testing equipment.

Problem: analyzer does not activate when the push-to-test buttons are depressed

Background:

The ATF 5000 push to test (PTT) buttons work in parallel with the PTT button on the host analyzer. If the analyzer does not activate when the ATF 5000 PTT buttons are depressed, follow the procedures for the analyzer and attempt to activate the analyzer with the analyzer's PTT button.

The ATF 5200 PTT buttons work in parallel to accommodate either right or left handed use; only one of the two yellow buttons needs to be depressed to perform a test. Verify that all three ATF 5200 connectors are disconnected from the test unit. Connect a multimeter between terminals 3 and 4 of the connector as shown in the following photo.

PTT connector (plugs into FOOT SWITCH jack) with multimeter probes attached to terminals 3 and 4

Activate the ATF 5000 PTT buttons one at a time. Verify that there is no continuity when the buttons are not depressed and that there is continuity when each or both of the buttons are depressed.

If the buttons do not operate as described, return the ATF 5000 to an SKF service center for repair.

Problem: tester displays an unexpected waveform when activated

The ATF 5000 incorporates internal electronics that will cause the tester to display an unusual wave form if the ATF 5000 is connected to the tester and activated with fewer than all four of the ATF 5000 probes touching the armature commutator bars.

If the tester is displaying an unusual wave form, verify that all four of the ATF 5000 probes are in contact with the armature commutator bars when performing tests as described in the tester procedures.

If all four of the ATF 5000 probes are in contact with the armature commutator bars, disconnect all three ATF 5000 connectors from the tester and perform the following continuity tests:

Upper two ATF 5000 probes

Connect the DMM between the upper right contact probe and contacts 1 & 2 of the large circular connector. Both contacts 1 & 2 will connect to the upper right contact probe. Repeat for the upper left contact probe and contacts 6 & 7 of the large connector.

Upper right contact probe

Upper left contact probe

Lower left contact probe

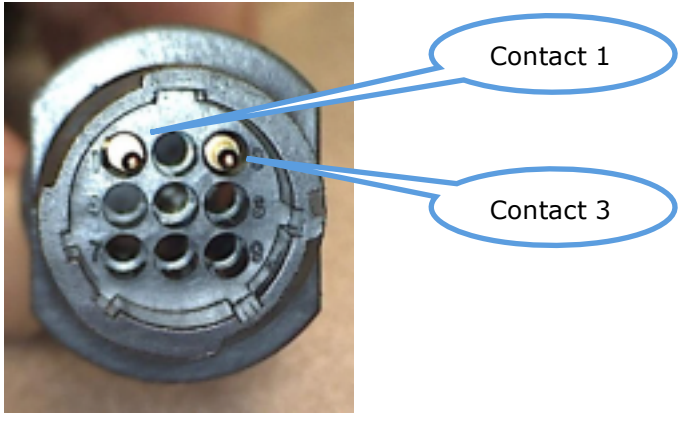
Contacts 1 & 2

Contacts 6 & 7

If the continuity tests do not indicate that the four contacts are connected to the two probes as described, return the ATF 5000 to an SKF service center for repair.

Bottom two ATF 5000 probes

Connect the DMM between the lower right contact probe and contact 1 of the small circular connector. Repeat for the lower left contact probe and contact 3 of the small circular connector.



If the continuity tests do not indicate that the two contacts are connected to the two probes, as described, return the ATF 5000 to an SKF service center for repair.

Adapter Selection Chart

Analyzer Model	Resistance Adapter	Surge Adapter
D6R **D12R** **D15R**	81-ATF-003 Foot switch must plug into the Baker ZTX (or AT101 D)	Requires Baker ZTX (or AT101 D) (no adapter needed)
D65R	81-ATF-003	81-ATF-004 or 81-ATF-006 and 81-ATF-005 (foot switch adapter)
AWAIV12 **AWAIV12HO**	81-ATF-002 Requires Baker ZTX (or AT101 D) for foot switch	Requires Baker ZTX (or AT101 D) (no adapter needed)
DX6 **DX12** **DX15**	81-ATF-002 Foot switch must plug into the Baker ZTX (or AT101 D), or use 81-ATF-005 (foot switch adapter)	Requires Baker ZTX (or AT101 D) (no adapter needed)
DX15A	81-ATF-002 81-ATF-005 (foot switch adapter)	81-ATF-004 and 81-ATF-005 on pre-2014 (foot switch adapter)
PP85	RLC dependent on Host See previous line in table.	81-ATF-005 on pre-2014 (foot switch adapter)