INSTRUCTIONS

Carrier
A United Technologies Company

99TA526454 (for RCD use only)

Instruction Sheet Number: **99TA526454**

Description: Actuator Replacement Kit

Author: J.L.

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Part Number: HF680021

Instructions for Replacing an Existing Belimo HF23BJ054 or 054A Actuator with a HF23BL003 Siemens 20-in lb. Modulating Actuator on the following economizers:

Factory Installed Econos	Field Installed Accessories
50HJ442020	CRECOMZR020A02
50HJ442092	CRECOMZR022A00
50HJ442093	DNECOMZR020A01
50HJ442094	DNECOMZR022A01
50HJ442095	CPECOMZR007A00
	CPECOMZR008A00
	CPECOMZR009A00
	CPECOMZR010A00
	CPECOMZR011A00
	CPECOMZR012A00

Note: This list of economizers is a sample listing and may not include all economizer models. Use this kit for any other economizers with an existing HF23BJ054A actuator.

Required parts: MicroMetl kit part number: KIT-SIEMENS-20-MOD

Included in this kit are the following parts:

Qty	Part Number	Description
1	9907-0203	Motor bracket
1	9901-2269	HF23BL003 Siemens 20-in lb modulating actuator
4	9910-0110	Self-drilling screws

General: This kit includes all the parts to replace the Belimo modulating actuator on the listed economizers with a new Siemens HF23BL003 20-in lb modulating actuator.

Instructions:

Note: if your existing economizer already has a Siemens HF23BL003 actuator, the motor bracket provided in this kit will not be used, and the existing actuator can simply be removed and discarded, and the new actuator in this kit installed**.**

1. Disconnect all power to economizer and HVAC unit. Follow all local and other applicable codes.
2. Remove the filter access door from the unit.
3. In some applications it may be necessary or desirable to remove the hood and economizer from the unit to access the economizer actuator.
4. Disconnect the existing actuator from the economizer harness by unplugging the (3) ¼" terminals. Wire colors are red, black and white. See figure 4 for typical electro-mechanical economizer diagram and figure 5 for typical DDC economizer diagram. These are shown for wire color connections to the actuator only, and other details may vary.
5. Loosen the (2) nuts on the Belimo actuator's drive rod clamp. The drive rod is now loose from the actuator.
6. Remove the (2) bolts holding the existing Belimo motor to the economizer, and remove and discard the Belimo actuator.
7. Some motor mounts may have tinnerman-type nuts in the motor mount which were used for the Belimo bolts. These nuts can be removed and discarded.
8. Make sure the drive rod clamp is installed on the dark side of the actuator (one half is dark and the other light). Re-position if necessary.
9. Insert the new Siemens HF23BL003 actuator into the 9907-0203 bracket as shown below. Note: the actuator must be turned with the dark side of the actuator out away from the economizer. This will allow for proper counter-clockwise rotation.

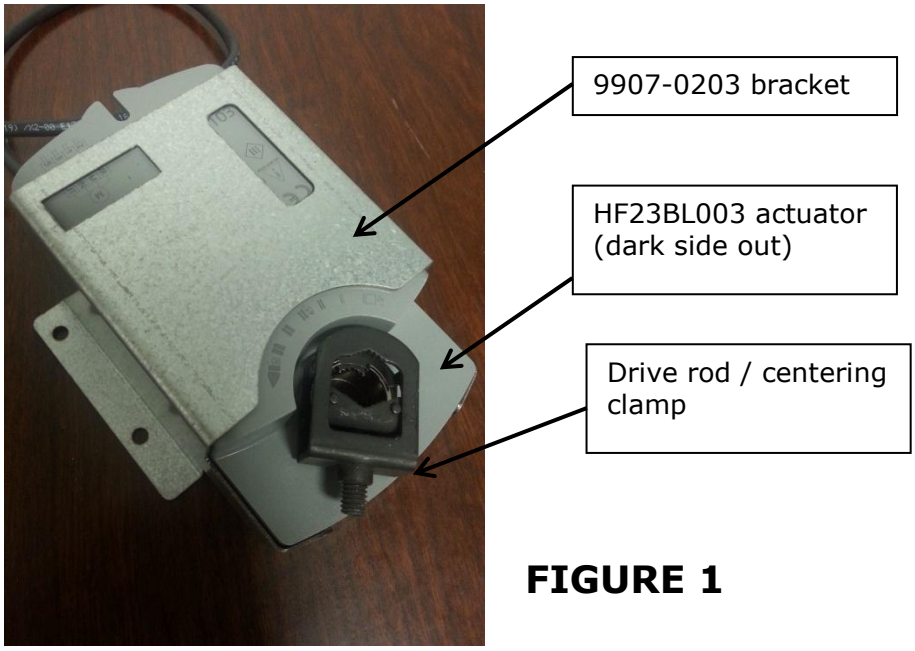
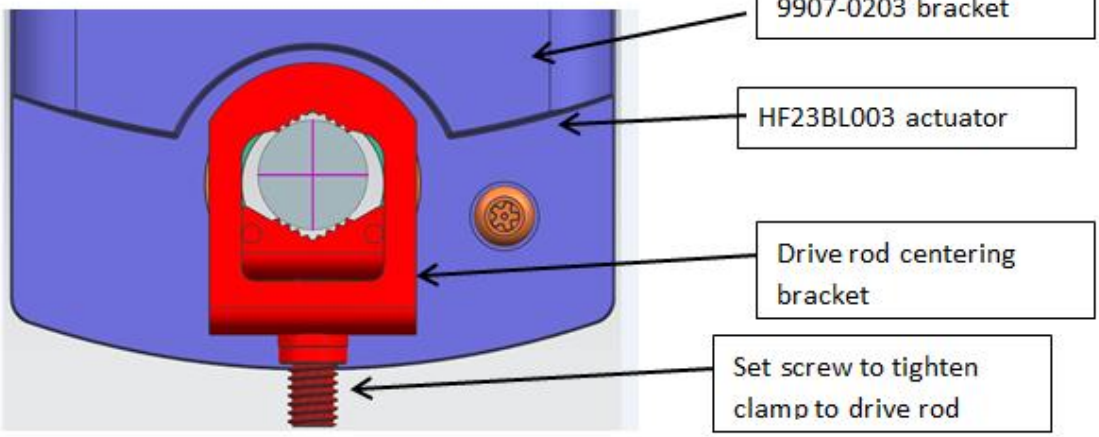


FIGURE 1

10. For long economizer actuator lifespan it is important that the drive rod is installed directly in the center of the clamp after it is tightened. The illustration below shows the correct position of the drive rod after tightening

FIGURE 2 – Drive Rod Alignment



11. Follow these instructions to get a perfectly positioned actuator:
    a. With drive rod installed in damper, open outside air damper completely.
    b. Apply power to actuator and drive completely open.
    c. Place powered actuator and bracket over drive rod and tighten the 3mm clamp screw with approximately 50 in-lb torque.
    d. Use a small level or positioning jig to insure that the damper shaft is level and plumb.
    e. Mark the desired holes through the 9907-0203 bracket on to the existing motor mount.
    f. Install the self-drilling screws though the 9907-0203 bracket and into the motor mount.

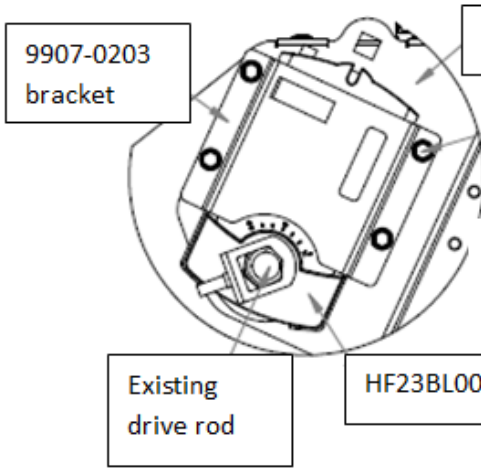


FIGURE 3- Actual mounting will vary depending on economizer model

12. Connect the wires from the new HF23BL003 actuator to the existing economizer harness, using the same wire color connections as on the old Belimo actuator. See figures 4 and 5. Note the Siemens actuator will have a green wire that is not used for these applications.

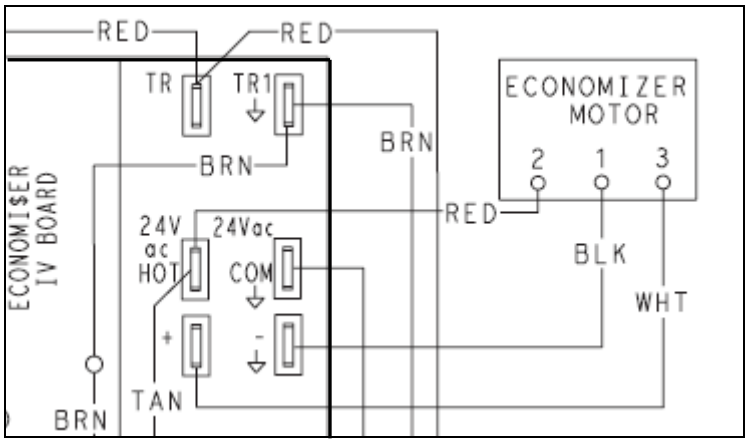


FIGURE 4 – WIRING TO ACTUATOR ON ELECTRO-MECHANICAL ECONOMIZERS

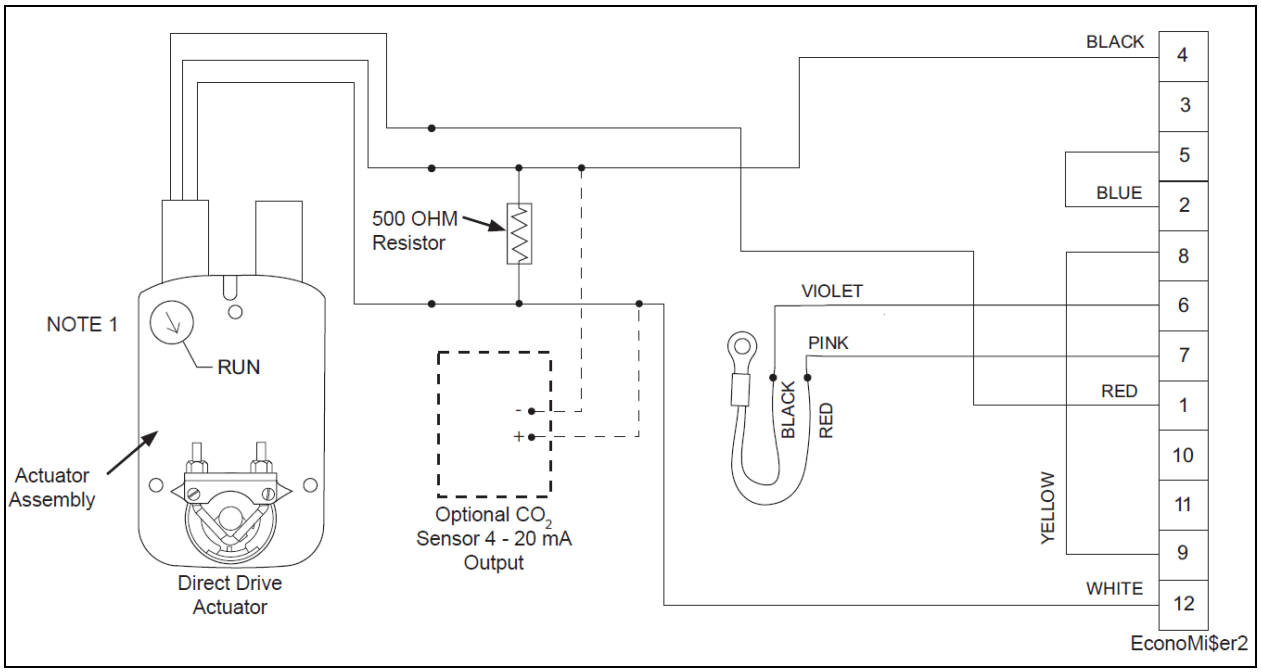


FIGURE 5 – WIRING TO ACTUATOR ON DIRECT DIGITAL CONTROL ECONOMIZERS

13. Re-install economizer in unit if applicable, and connect power to unit.
14. Test cycle actuator ensuring a full and complete cycle.
15. Re-install economizer hood and filter door.