INSTRUCTIONS

Carrier
A United Technologies Company

99TA526456 (for RCD use only)

Instruction Sheet Number: **99TA526456**

Description: Actuator Replacement Kit

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Part Number: HF680023

Instructions for Replacing Existing Belimo 50HJ540567 Actuator with HF23BL004 Siemens 35-in lb. Modulating Actuator on the following economizers:

Factory-Installed			Field-Installed	
48HG401275	48HG402953	48HG403387	CRECOMZR008B00	CRECOMZR063A00
48HG401276	48HG402954	48HG403388	CRECOMZR008B01	CRECOMZR064A00
48HG401277	48HG402955	48HG403389	CRECOMZR008C00	CRECOMZR065A00
48HG401278	48HG402956	48HG403390	CRECOMZR010B00	DNECOMZR008B01
48HG401279	48HG402957	48HG403391	CRECOMZR020A00	DNECOMZR010B00
48HG401280	48HG402958	48HG403392	CRECOMZR020A01	DNECOMZR020A00
48HG401356	48HG402959	48LC400579	CRECOMZR021A01	DNECOMZR020A01
48HG401357	48HG402960	50HJ440560	CRECOMZR021A02	DNECOMZR021A02
48HG401358	48HG402961	50HJ440561	CRECOMZR021A03	DNECOMZR022A00
48HG401359	48HG402962	50HJ440953	CRECOMZR022A00	DNECOMZR023A00
48HG401364	48HG402963	50HJ440960	CRECOMZR023A00	DNECOMZR024A02
48HG401365	48HG402964	50HJ441191	CRECOMZR024A01	DNECOMZR025A02
48HG401366	48HG402965	50HJ441192	CRECOMZR024A02	DNECOMZR026A00
48HG401367	48HG402966	50HJ441193	CRECOMZR025A01	DNECOMZR027A00
48HG401372	48HG402967	50HJ441194	CRECOMZR025A02	DNECOMZR062A00
48HG401373	48HG402968	50HJ441195	CRECOMZR026A00	DNECOMZR064A00
48HG401374	48HG402969	50HJ441196	CRECOMZR027A00	
48HG401375	48HG402970	50HJ442021	CRECOMZR038A00	
48HG402840	48HG402971	50TJ401141	CRECOMZR039A00	
48HG402850	48HG402972	50TJ401148	CRECOMZR040A00	
48HG402855	48HG402973	50TJ401352	CRECOMZR041A00	
48HG402856	48HG402974		CRECOMZR042A00	
48HG402857	48HG402975		CRECOMZR043A00	
48HG402858	48HG402976		CRECOMZR062A00	

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 50HJ540567 actuator.

Required parts: MicroMetl kit part number: KIT-SIEMENS-35-MOD

Included in this kit are the following parts:

Qty	Part Number	Description
1	9907-0203	Motor bracket
1	9901-2270	HF23BL004 Siemens 35 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 HF23BL004 35-in lb modulating actuator.

Instructions:

Note: if your existing economizer already has a Siemens HF23BL004 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 (3) wires from the existing actuator from the economizer harness. Wire colors are red, black and white. See figure 5 for typical electro-mechanical economizers and figure 6 for typical DDC economizers. These diagrams are shown for actuator wire connections 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 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. Check the required actuator rotation direction for your specific economizer. Note the actuator is capable of being turned either way (dark side out or light side out) to get damper rotation in either clockwise or counter-clockwise direction. Light actuator side pointing out away from the economizer provides a clockwise rotation (figure 1), while the dark side out provides a counter-clockwise rotation, which is the default (figure 2). Drive rod clamp can be installed on either side of the actuator. Install it on the side of the actuator pointed away from the economizer.

9. Insert the new Siemens HF23BL004 actuator into the 9907-0203 bracket with correct rotation determined. See figure 1 and 2 below. Note: the actuator clamp may have to be relocated so that it is on the side of the actuator facing away from the economizer

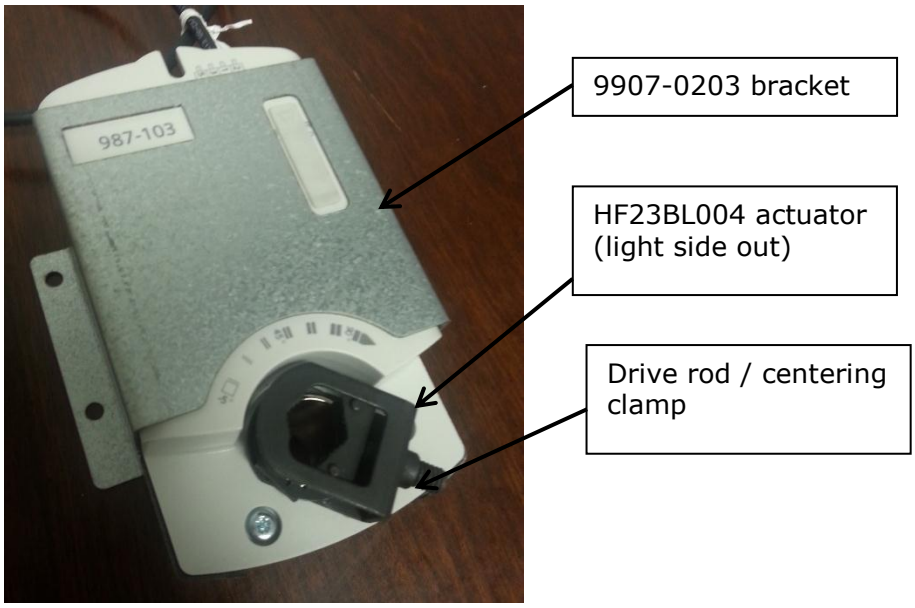


FIGURE 1: shown with a clockwise rotation

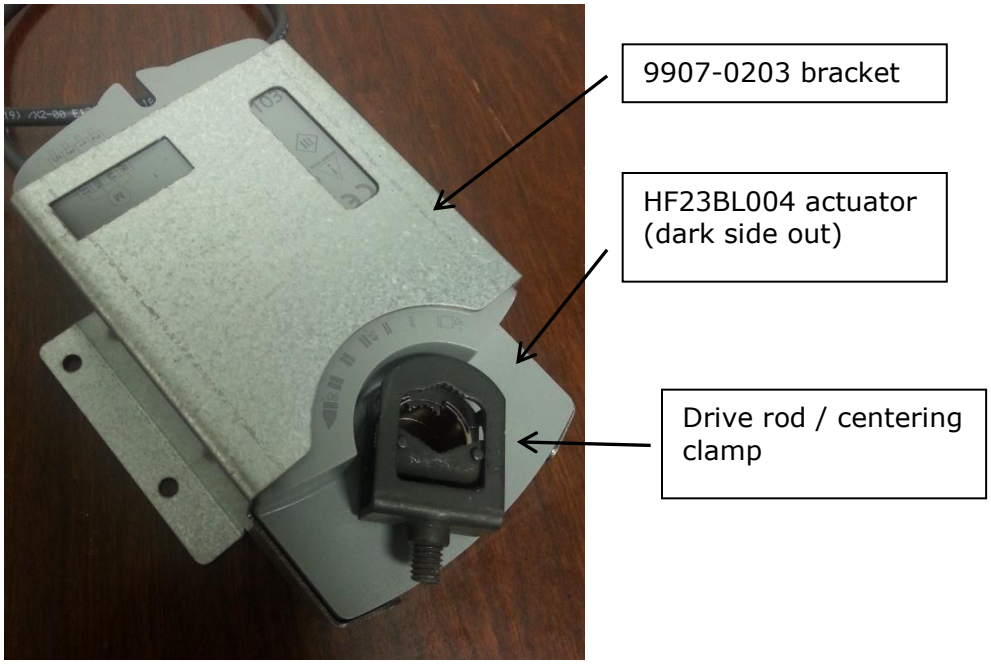
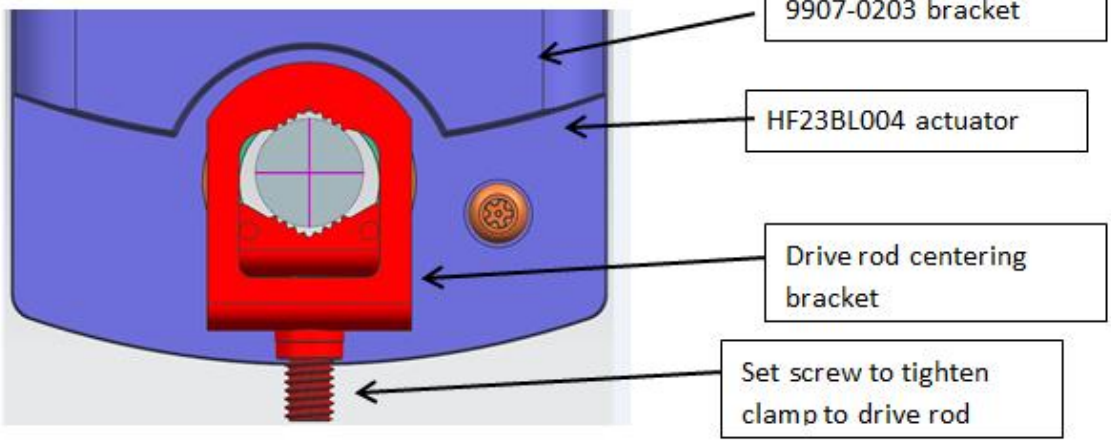


FIGURE 2: shown with a counter-clockwise rotation

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 3 – 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 using approximately 50 in-lb of 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.

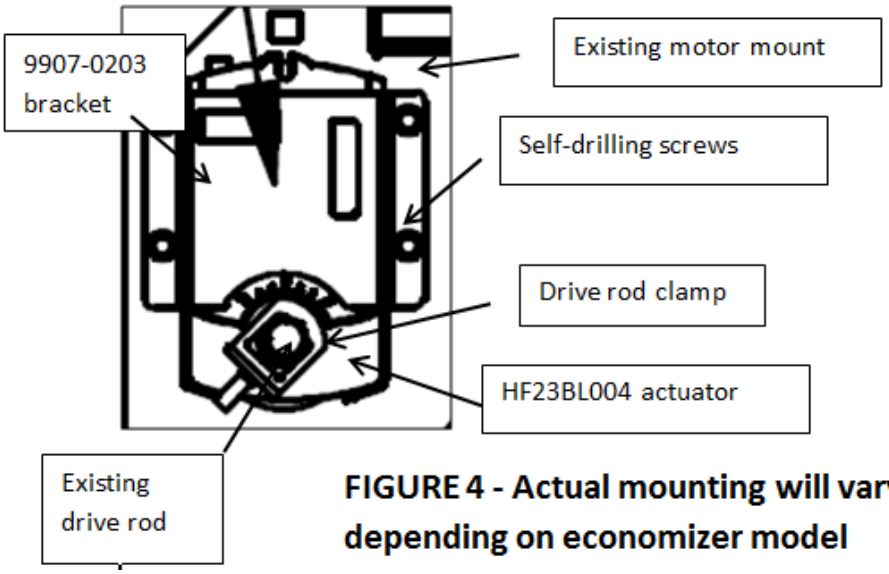


FIGURE 4 - Actual mounting will vary depending on economizer model

12. Connect the wires from the new HF23BL004 actuator to the existing economizer harness, using the same wire color connections as on the old Belimo actuator. Note the Siemens actuator will have a green wire that is not used for these applications.

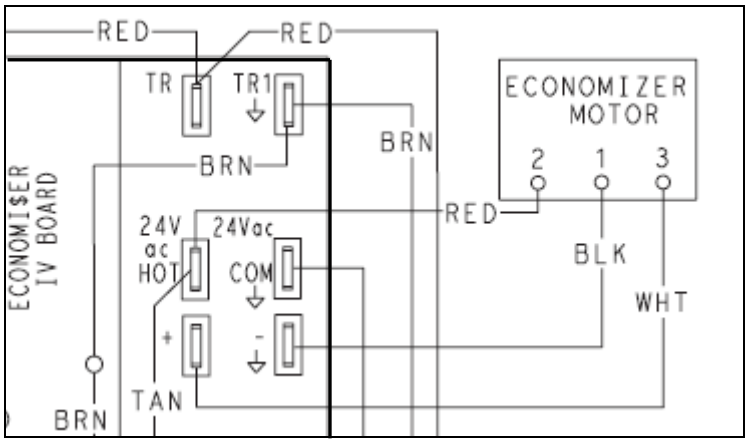


FIGURE 5 – WIRING TO ACTUATOR ON TYPICAL ELECTRO-MECHANICAL ECONOMIZERS

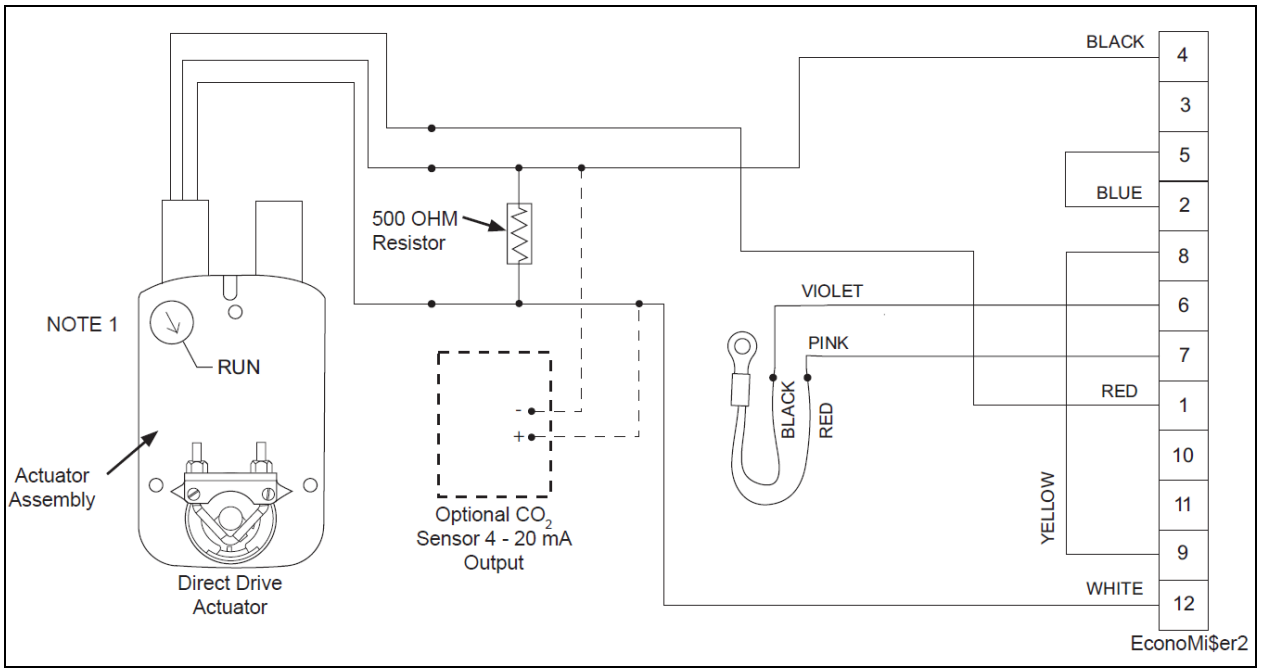


FIG 6 – WIRING TO ACTUATOR ON TYPICAL DIRECT DIGITAL CONTROL ECONOMIZERS

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.