## *Retrozone Belimo LMB24 Motor Adapter Kit for Ztech, RCS, Beutler, ZTE and other dampers with recessed mounting shown below.* Above names

Instructions for Part no. LMB24-Kit2 motor upgrade kit, also instructions for TFB24-Kit2 spring return motor kit.

Note: This kit replaces Many Ztech, RCS, Buetler, ZTE, and other dampers with mounting and motor shown below. You will need to remove the Black collar and surrounding sheet metal plate until only the damper shaft is visible. Also available in a Belimo 2 Wire spring return motor, Part no. TFB24-Kit2

1. After removing old motor assembly (Old Long pin Synchron or Cramer motor shown top left pic), also remove the black pin collar, and spring, and metal plate held with four screws, shown in lower picture. The goal is to have only the shaft of the damper remaining.

2. Attach new shaft supplied with kit onto existing damper shaft using allen head bolt.
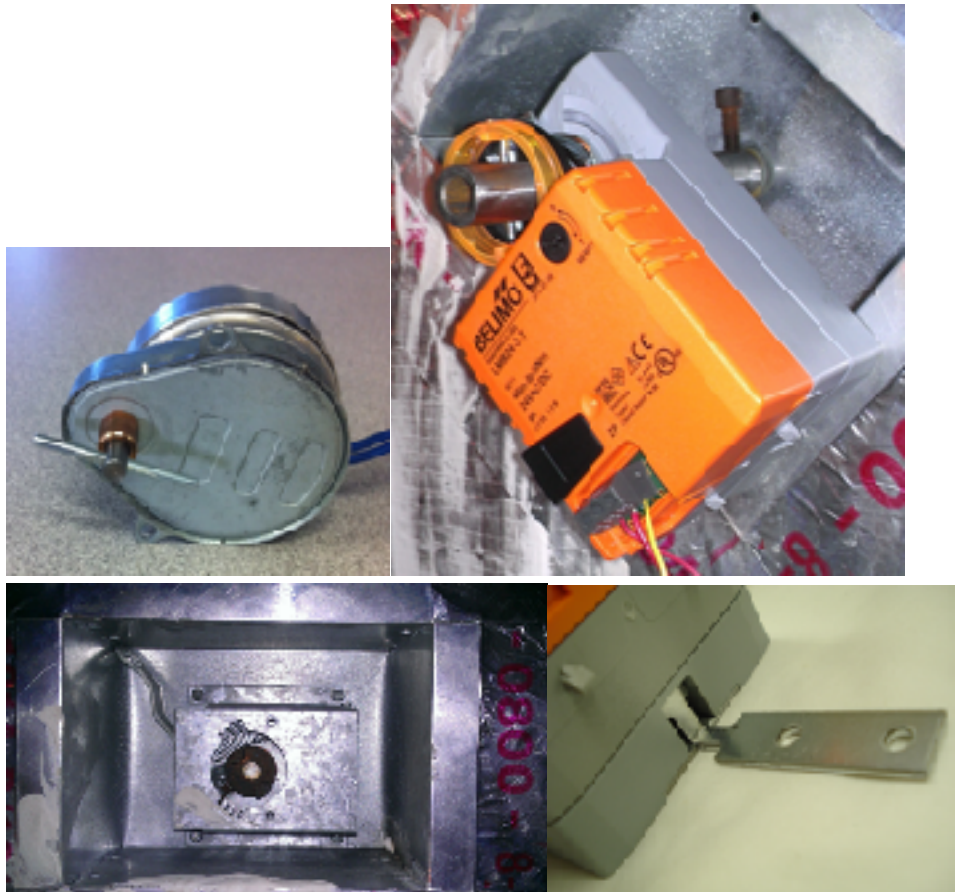
3. Make sure new shaft can be rotated easily.
4. Note the black, rectangular push button clutch on the new Belimo LMB24 motor (TFB motor is already closed position) . Push clutch in and rotate motor to its fully closed position, and mount on new damper shaft after also fully closing damper. Note where anti-rotation bracket should be placed, mark position, and mount anti-rotation bracket (part with two holes or longer strap, shown in lower right pic). NOTE:

re-bend anti-rotation bracket as needed to raise the portion that fits into motor, to insure that damper motor is generally parallel to damper body, or modify as needed for your application.

** TFB24 spring return motor only: direction of travel of this motor in controlled by putting either orange or   gray side up to reverse directions. As needed, clamping brackets can be moved from one side to the other, consult motor instructions.

5.Mount LMB motor in place, with both motor and damper is closed position. Motor should be mounted "loose" where it does not bind when traveling. Test this by depressing clutch and manually rotating damper from fully open to fully closed. If any binding is felt, remount motor and or components until damper moves through full range with no binding.

6. **VERY IMPORTANT:** Rotate damper to fully open position using manual clutch (TFB24 spring return USE POWER ONLY do not attempt manual rotation) Then, with phillips head screwdriver, move motor travel adjustment blocks to stop the motor from further travel. DAMAGE can occur to the damper if the powerful motor is allowed to exert full force beyond the travel range of the damper.

Electrical hook-up of Belimo LMB motor to your Zone control system:

6 A. Note: Following for ZTECH ZC2S/ZTE2S ZTECH electronic zone control boards:
Use these instructions if connecting a Belimo LMB 3 wire motor to the Ztech board:

Damper outputs are two wire only marked Zone 1 (or Zone 2) and 24 com
From the Board to LMB motor, wire as follows from each damper output:
Wire 24 volt common output to motor terminal 1
Wire the Zone 1 (2) output to motor terminal 3
Wire a third new wire from any 24VAC terminal (NOT 24vcom) to motor terminal 2.

7. Refer to zone control specific information on your system for electrical hook-ups, However:

A. If using the TFB24-KIT2 Belimo motor kit, simply reconnect to the two wires used on old motor; there is no polarity and wires may be attached either way.
B. If you are hooking up the three wire Belimo LMB motor to a zone control panel that provides only two damper outputs for spring return dampers, go to Retrozone.com and under " technical resources" find the document "Converting a 2 wire zone control board to operate a 3 wire damper'.
C. If your zone panel has an unused third output, simply add a third wire. Common hook-ups to the Belimo motor are:

Zone board damper outputs   Belimo LMB motor terminals

M1	1
M2	
M4	2
M6	3

OR

COM	1
NO (Normally open)	2
NC (normally closed)	3