

Excell

Installation Manual

Door Mechanism

Model Number 7189-001

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The variety of makes and models of motor busses precludes the possibility of presenting detailed, step-by-step instructions for possible applications. However, the EXCELL Door Operating Mechanism can be installed readily by any good mechanic with a working knowledge of bus-door operation.

The information to follow should prove helpful. In addition to the notations given here, a number of drawings and photos have been included showing examples of a considerable variety of installations. From all of this, we suggest that a mechanic can work out the particular details of any installation requested of him.

The EXCELL Bus-Door Operating Mechanism can be mounted over the doors in most cases. Where space over the doors proves to be too confining, the unit can be mounted over the windshield. In either case, it must be securely fastened to the bus frame and positioned so that the travel on the mechanism drive bell crank will give full open and close motion to the doors.

When replacing a manual door control, a drive shaft and a bell crank may need to be provided to serve as the connection between the EXCELL mechanism and the door. See figure 1.

If replacing an air-operated unit, the existing linkage may be utilized, often with little or no modification. See figure 8.

Figure 7 shows an example of the EXCELL mechanism mounted over the windshield using a cam follower and track to operate a set of bi-fold doors.

Other examples of bi-fold doors being operated with the cam follower and track, as well as with a bell crank and linkage, are to be seen in figure 1, figure 3, and figure 4.

LIMIT-SWITCH ADJUSTMENT

Limit switches are located at the rear of the EXCELL mechanism unit behind the drive shaft. The top switch stops clockwise rotation; the bottom switch stops counter-clockwise rotation. Adjust the cams on the drive shaft so that the switches just make contact when the door is fully open, and when it is fully closed. **IMPORTANT: check to see that the motor does not remain hot in a stalled condition!**

CONNECTING POWER TO THE EXCELL UNIT

Connect the yellow wire to +12 VDC. Ground the frame of the EXCELL mechanism to the bus frame. The black wire serves as the signal connection wired through the control switch. When the switch completes the circuit to ground, the unit runs in one direction; when the circuit is interrupted, the unit runs in the opposite direction. The control switch can be located anywhere that is convenient to the driver of the bus.

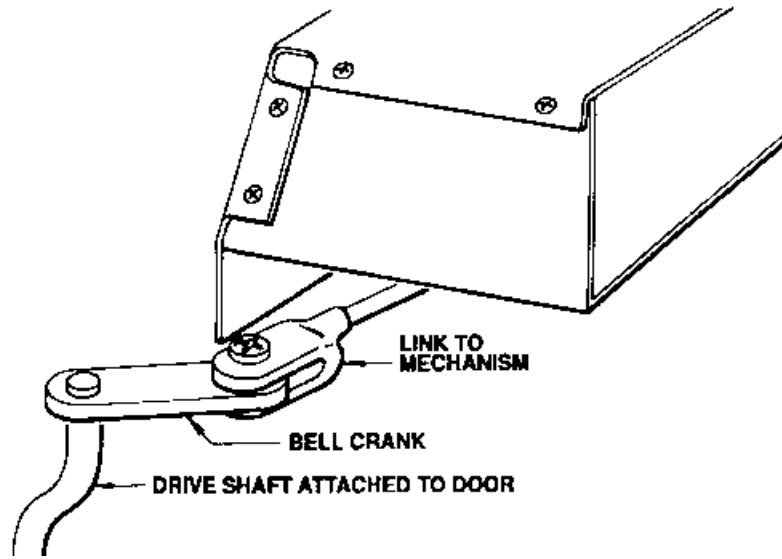


Figure 1 – With some bi-fold door installations, it may be necessary to make an offset in the door's drive shaft in order to clear the door framing.

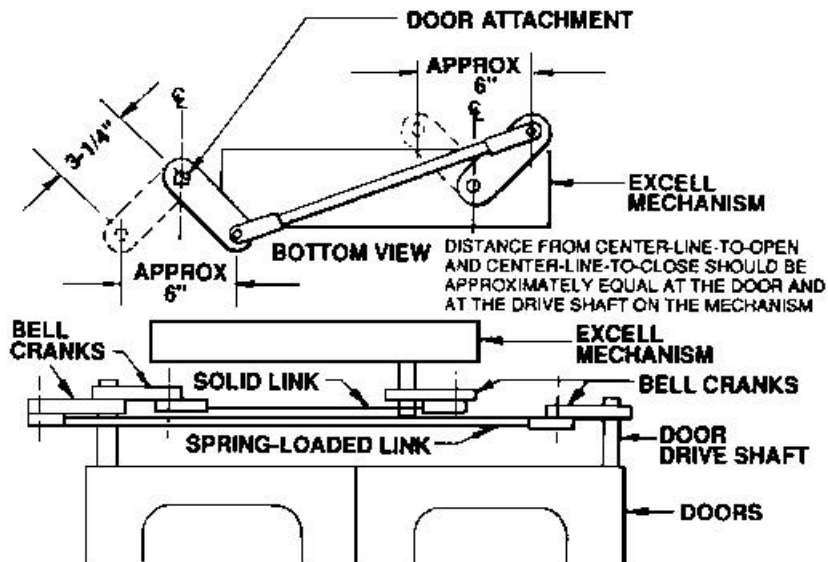


Figure 2 – Schematics showing one method of rigging linkage for double-out and 1-in, 1-out doors.

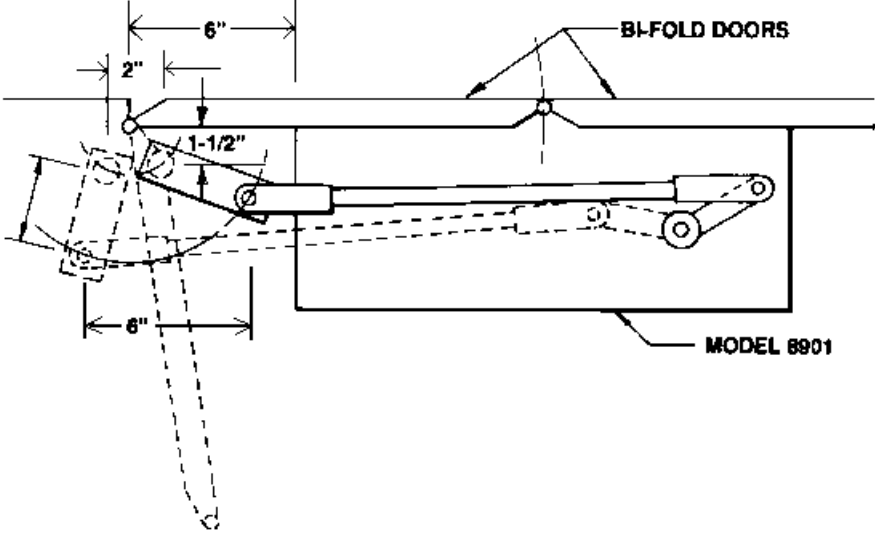


Figure 3 – EXCELL Model 8901 Door Control Mechanism operating a set of bi-fold doors. Broken lines indicate open position with trailing leaf and upper track omitted.

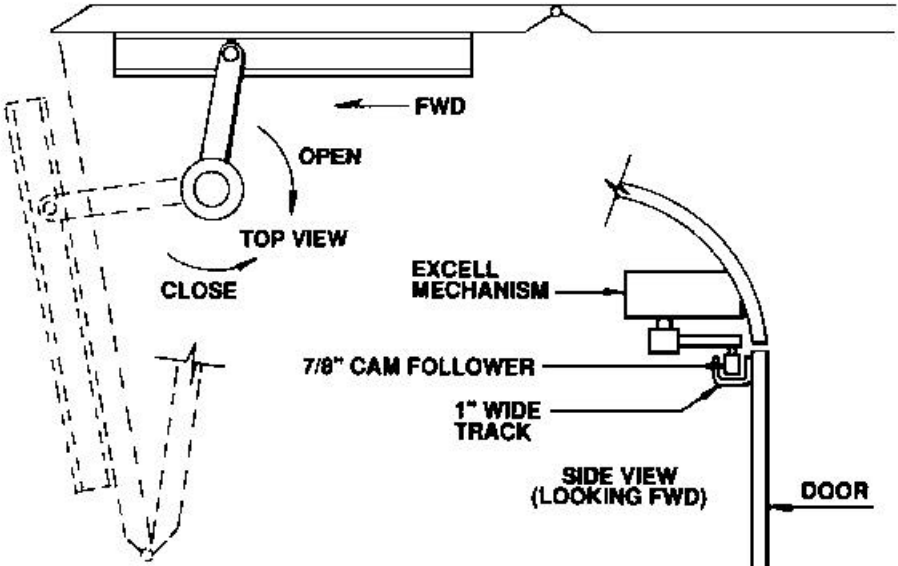


Figure 4 – A bi-fold door installation using a cam

follower and track, with the follower mounted in the crank arm at 5 1/2" center-to-center.

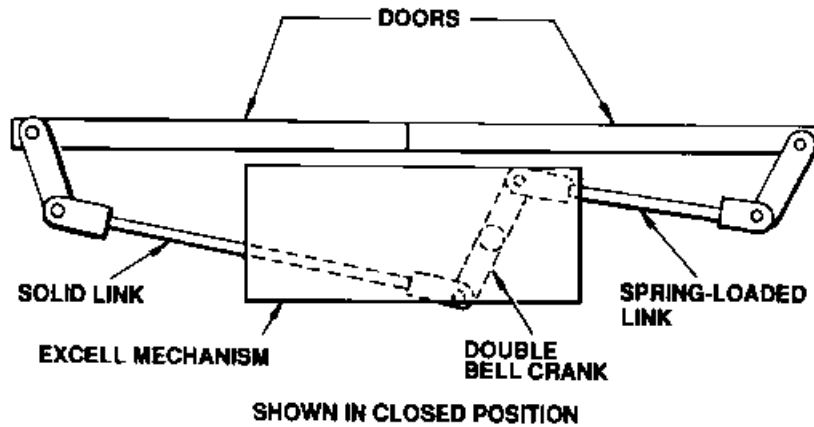


Figure 5 – An example of a double-out set of doors using a double bell crank on the mechanism drive shaft. May also be used for 1-in, 1-out doors by repositioning the linkage.

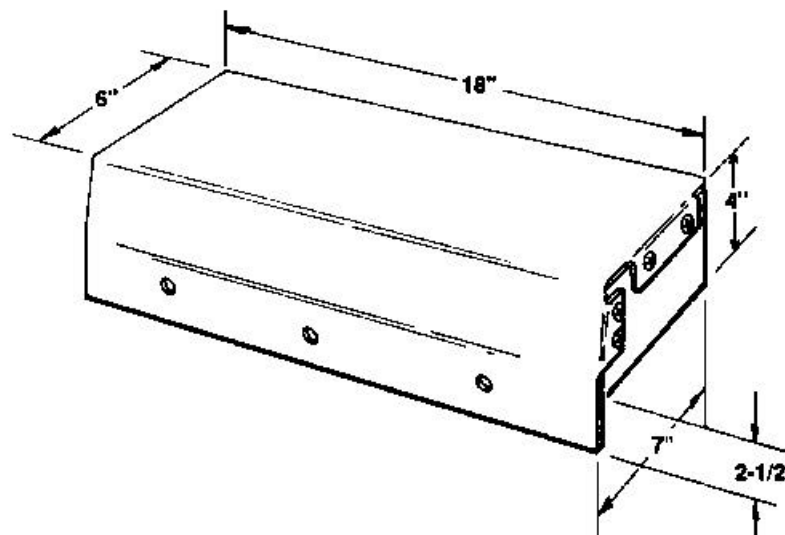


Figure 6 – Overall dimensions of the Excell Bus-Door Operating Mechanism.

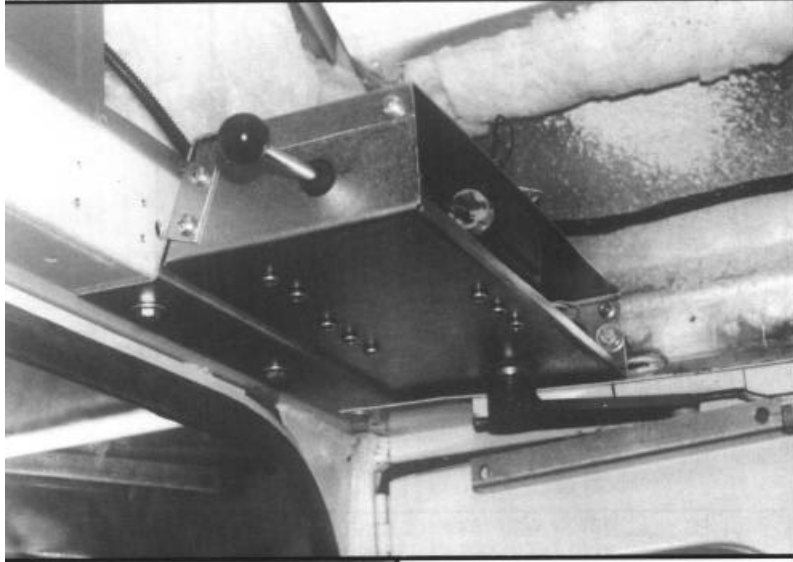


Figure 7 – a set of bi-fold doors using the Excell mechanism mounted over the windshield in a Carpenter bus.



Figure 8 – Showing the Excell mechanism set to operate bi-fold doors on a Ward Patriot Bus. A standard retrofit mechanism was used to convert the door operation from air to electric, utilizing the existing drive brackets. Shown with cover on mechanism removed and doors closed, and with mechanism cover in place and doors open.