

## Instructions

51-HPA9

July, 2000  
Supersedes Issue of  
August, 1999

Mushroom Push-Button/Push-Pull  
Maintained Operator  
For Type 3, 4, 7, 9 Enclosures  
Class 14, 18, 22, 40 & 51  
Cat No 51PA2, Cat No 51PA9

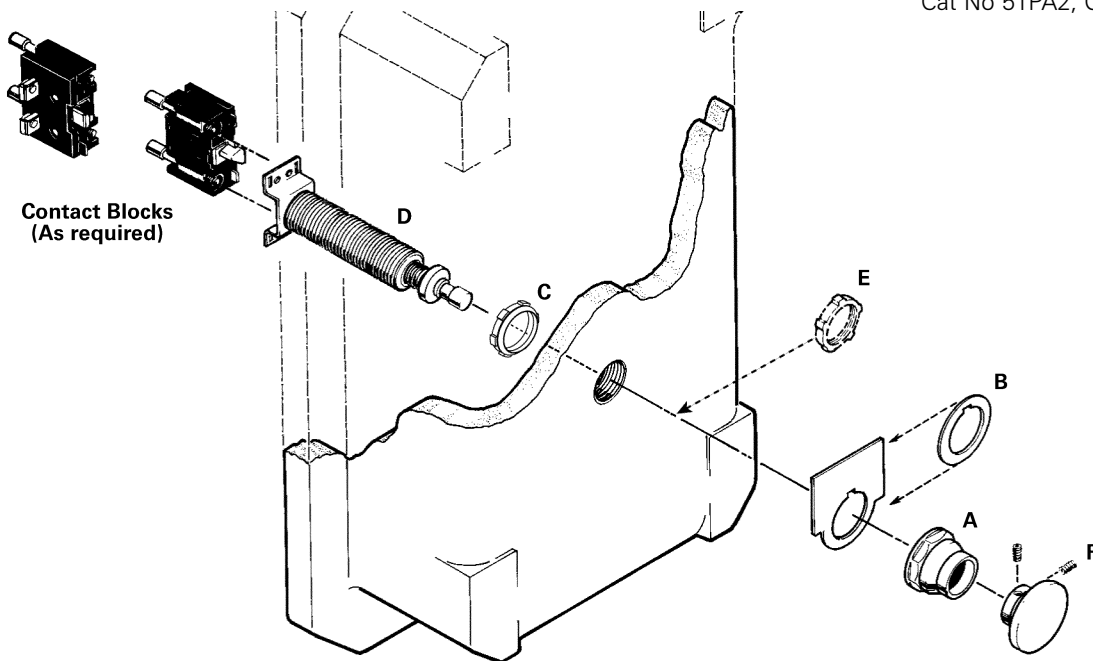


Figure 1

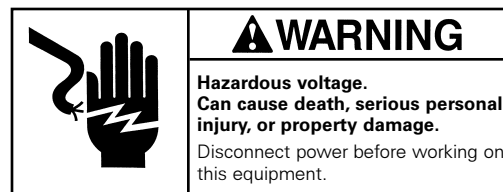
### DESCRIPTION

The Class 51 mushroom operators accommodate mounting up to eight Furnas brand Class 52 contact blocks (NEMA A600 rating.) A colored (black, red or green) mushroom operator head is available in two diameters, 1<sup>5</sup>/<sub>8</sub> or 2<sup>1</sup>/<sub>2</sub> inches. The operator is available in two bushing lengths, short or long. The short bushing is for use on an enclosure cover with maximum thickness of 7/8 inch. The long bushing can be used on a standard enclosure with additional front panel or on a very thick enclosure (2<sup>1</sup>/<sub>8</sub> inch maximum cover thickness). A sealing lock nut and an octagonal lock nut secure the bushing in position. For long bushing installation in an enclosure and panel, an additional lock nut secures the bushing behind the panel.

**Use with Type 3, 4, 7, 9 enclosures. When used in Type 3 or 4 enclosure, mount on a flat surface.**

**Contents of kits** with catalog number beginning with 51PA2 and 51PA9:

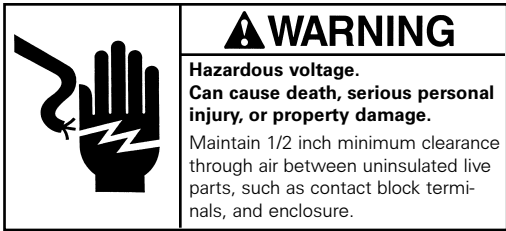
- 1 **A** octagonal lock nut
- 1 **B** trim washer
- 1 **C** sealing lock nut
- 1 **D** operator assembly
- 1 **E** plain lock nut for long bushing kits only
- 1 **F** mushroom head, if applicable, with two set screws and 1/14 inch Allen wrench.



### CONTACT INSTALLATION

The contact blocks can be attached to the operator bracket before or after installing the push button operator. Mounting the contact blocks first avoids the problem of limited access in an enclosure. From 1 to 8 Furnas brand Class 52 contact blocks can be used with each operator; arrange blocks not to exceed four levels. Check enclosure detent for adequate space and the 1/2 inch air clearance note in the warning.

(For Engineering Reference Only - Rev. D)



**BUSHING INSTALLATION**

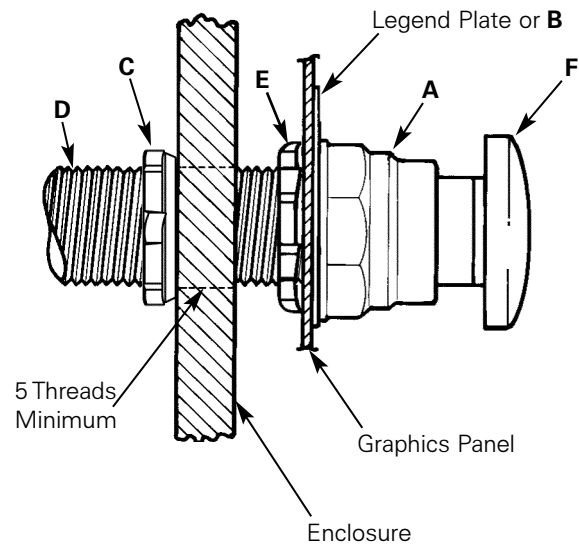
1. If operator is equipped with mushroom head, loosen two set screws to remove head **F** from the actuator shaft.
2. Mount operators on 2<sup>1</sup>/<sub>4</sub> inch minimum centers.
3. On the enclosure panel or cover, drill and tap a <sup>3</sup>/<sub>4</sub> 14NPSM-2A hole for each operator. The thickness of the enclosure panel must allow a 5-thread minimum engagement with the bushing.
4. For operators mounted near the edge of the enclosure panel, be sure to maintain <sup>1</sup>/<sub>2</sub> inch minimum air clearance between contact block terminals and enclosure wall.
5. Remove octagonal lock nut **A** and trim washer **B** from the assembly **D**.
6. Move sealing lock nut **C** to the rear of the bushing.
7. From inside the enclosure, install assembly **D** through a <sup>3</sup>/<sub>4</sub> inch 14NPSM tapped hole until the front of the bushing projects 5 or 6 threads from the front surface of the enclosure. Position the bushing with the contact block bracket as shown in Figure 1 if vertical alignment of the contact block terminals is desired.
8. Place trim washer **B**, or the legend plate (optional), and lock nut **A** on the projecting bushing. Align the legend plate as desired. Tighten the lock nut securely.  
**Note:** When the legend plate is used, discard trim washer **B**.
9. With the two set screws in the mushroom operator head **F** loosened, install the head on the actuator shaft and tighten set screws securely with Allen wrench.
10. To secure the operator in position, tighten the sealing lock nut **C** securely against the enclosure.

Using wrench catalog number 52MAWA or 52MAWB facilitates assembly and prevents scoring of the octagonal lock nut **A**; however, neither tool is required for installation.

When the long bushing operator is used on a very thick enclosure, follow the instructions for short bushing installation, discarding plain lock nut **E**.

For an enclosure with panel mounting, observe the following mounting dimensions:

1. On the graphics panel, drill a 1<sup>1</sup>/<sub>32</sub> inch diameter minimum clearance hole in line with the tapped hole for each operator.
2. When installing assembly **D**, include lock nut **E** and front panel as shown in Figure 2.



**Figure 2**