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TECHNICAL BULLETIN – TB-167

SERIES 90/100 PUSHBUTTON REMOVAL AND INCANDESCENT LAMP REMOVAL PROCEDURE.

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2.0

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Revision Log

Rev.	E. R. No.	Revised By	Checked By	Approved By	Rel. Date
1.0	40578	S. Rahimi	/s/ James Yeh	/s/ James Yeh	4-10-08
2.0	41224	S. Rahimi			

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The following instructions are intended to aid the user in the field to properly remove pushbuttons from the switch housing or matrix housing assembly and servicing incandescent bulbs. Standard pushbuttons are best removed using a pushbutton extraction tool. This tool is StacoSystems Part Number 15193. See Figure 2.

Pushbuttons with a Watertight Seal, the /005 Series, are best removed using just the fingers. If that proves difficult, the extraction tool may be used, but caution need be taken to avoid slips and puncture of the rubber seal.

For alternate action switches, it is extremely important that the switch **not be** in the alternate or depressed position as shown in Figure 4. Otherwise, damage to the internal switch mechanism could occur.

Please observe the following instructions carefully. These instructions apply both to pushbutton switches and indicators configured as either individual mount units or matrix mount units.

FOR UNSEALED AND SPLASHPROOF PUSHBUTTONS (See Figure 1):

- 1.) For alternate action switches, assure that the switch is in the disengaged (off) position. Alternate action switches, when activated, are mechanically held depressed from the normal (at rest) height by approximately 0.080 inch (2.03 mm). To avoid internal switch damage, alternate action switches should be in the non-depressed state before attempting pushbutton removal.
- 2.) Using the Pushbutton Extraction Tool, PN: 15193, carefully position the tool's gripping tabs under the pushbutton's bezel retention tabs. This will assure that seals and bezels are not damaged in the removal process.
- 3.) Clamp/squeeze the tool gently, but firmly, and pull the pushbutton away from the switch assembly. This will require the application of up to five pounds of force.
- 4.) The pushbutton will release from its retention position and become free for service.
- 5.) To reinstall the pushbutton, align the index pin, at the rear of the pushbutton, with the index hole in the switch housing and push gently until the pushbutton is properly seated.

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Figure 1. Unsealed and Splashproof Pushbutton.

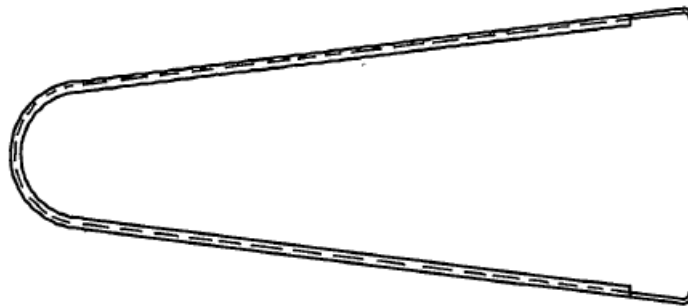


Figure 2. Pushbutton Extraction Tool.

FOR PUSHBUTTONS WITH A WATERTIGHT SEAL (see Figures 3, 4 and 5):

- 6.) Disengage the seal skirt from the retainer by turning the seal skirt upward and inside out. See Figure 3.
- 7.) As in Note 1 above, alternate action switches must be in the disengaged (off) position, as shown in Figure 3.
- 8.) Once the watertight seal is turned inside out, use your fingers to remove the pushbutton as shown in Figure 5. Use the extraction tool only if necessary and then use caution to avoid slips that could puncture the rubber seal.
- 9.) For reinstallation of pushbuttons with watertight seals, lubricate the inner ring of the rubber seal as necessary, with silicone grease, to facilitate re-engagement of the rubber inner ring into the retainer groove to maintain a good seal. Dow Corning EM-50L is recommended as the lubricant.

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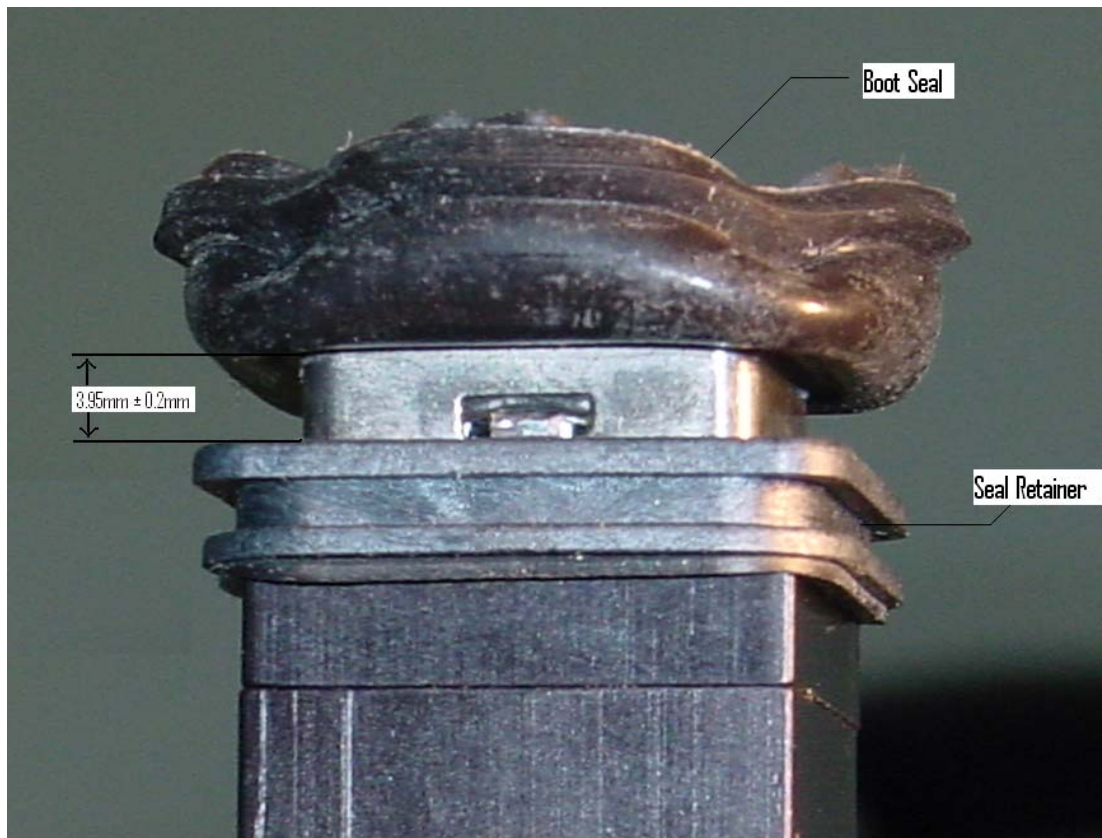


Figure 3 Watertight Seal turned inside out.



Figure 4 Pushbutton Depressed Alternate Position.

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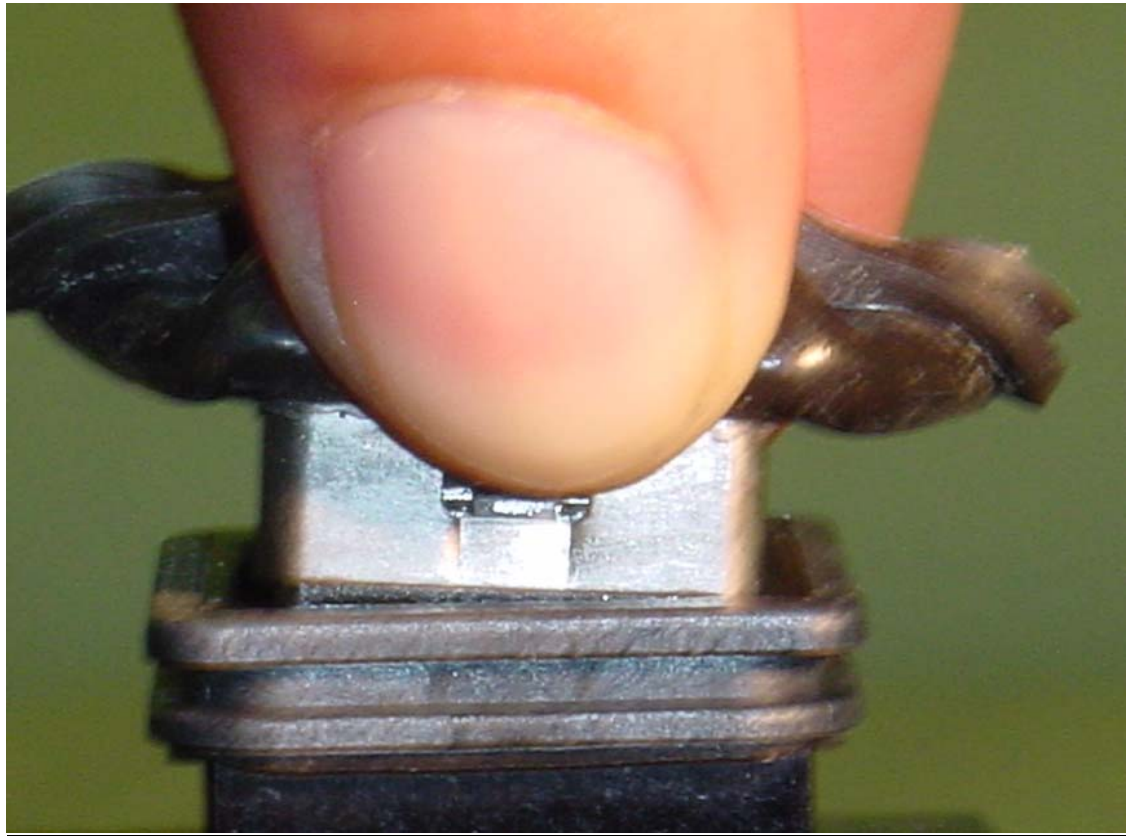


Figure 5 removal of Pushbutton.

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BULB REPLACEMENT:

Once pushbutton assembly is removed from the switch housing, the user has access to the replaceable incandescent T1 size MFB (Midget Flange Bulbs) (See Figure 6)

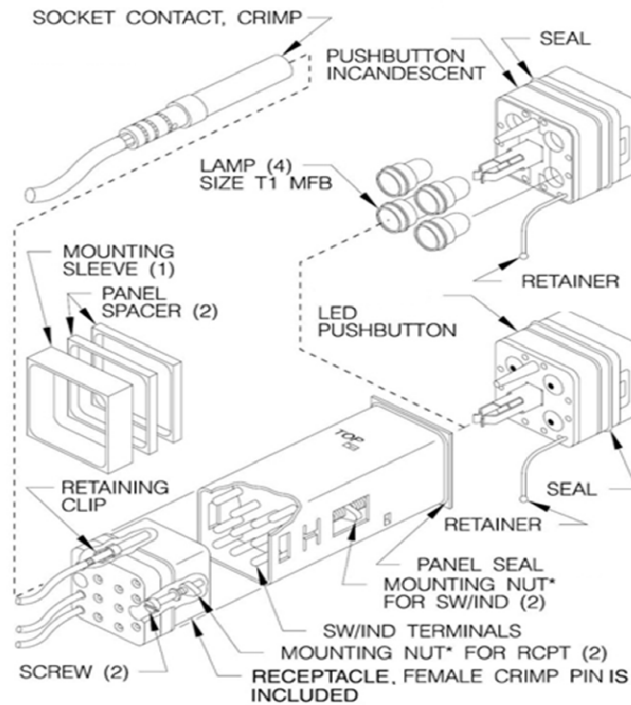


Figure 6 Typical exploded view with pushbutton removed

The bulbs shall be removed by grasping the flange portion of the bulb with clean and degreased fingernails to initiate removal. No tools should be required for bulb removal. Use of tools can cause permanent damage to the assemblies circuit. During the removal process ensure that no contaminants or foreign objects enter the light chamber which could effect the original lighting performance of the device.

To install the bulbs, grasp the flange portion the bulb and insert into the open while avoiding contact with the glass on the bulb. Press bulb firmly into bulbs socket until seated. No tools should be required for this operation and could result in premature bulb life or permanent circuit damage.

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