

REVISIONS

REV.	DESCRIPTION	DATE	APPROVAL
1.0	REL PER ER-40573		

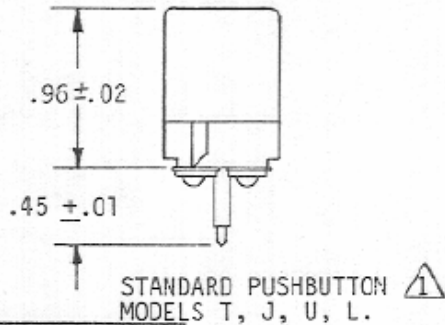
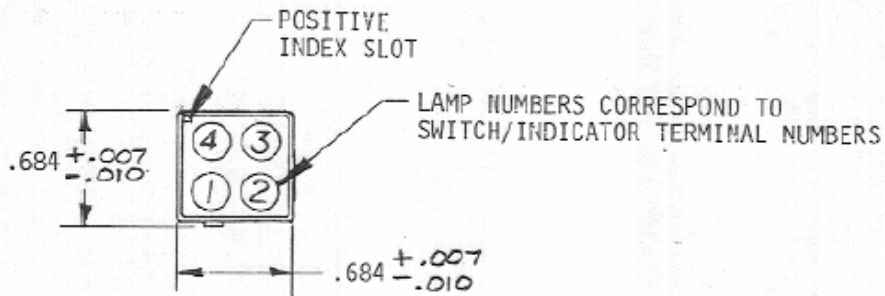
Notes: Unless otherwise specified.

- 1. Model J, L, T & U pushbuttons mate with standard indicator models 41 thru 44, switch models 45 thru 48, 49 & 491 SW./IND. Assemblies, 1M & 101M matrix systems and 40M & 401M modules, (A, B, D and I).
- 2. Model N, P, W & Y pushbuttons mate with switch models 45"E" thru 48"E" and 40M"E" & 401M"E" modules.
- 3. Model E, F, G & H hi-impact shock pushbuttons mate with hi-impact assemblies only, if hi-impact shock requirements are to be met, per MIL-901C.
- 4. Will Accept four (4) MS25237-(T-1-3/4) lamps. (Not furnished).
- 5. See catalog for ordering information.
- 6. Lamp circuitry: Pushbuttons are available in either common lamp ground (CLG) or with split lamp ground (SLG)  
Split lamp ground: Lamps 1 & 4 are common to one contact, lamps 2 & 3 are common to another contact. (See chart sheet 2).
- 7. Weight: 0.018 Lb. including lamps.
- 8. Standard configurations are listed below unless otherwise specified.
  - 8.1 Pushbutton display styles 15 thru 22 (CLG) will be assembled with the latch on the bottom while viewing the display area.
  - 8.2 Pushbutton display styles 20, 21 & 22 (SLG) will be assembled with the latch on the bottom while viewing the display area.
  - 8.3 Pushbutton display styles 15 thru 19 (SLG) will be assembled with the latch to the left while viewing the display area
  - 8.4 When pushbutton is rotated 90°, legend must be installed so that it remains right reading.

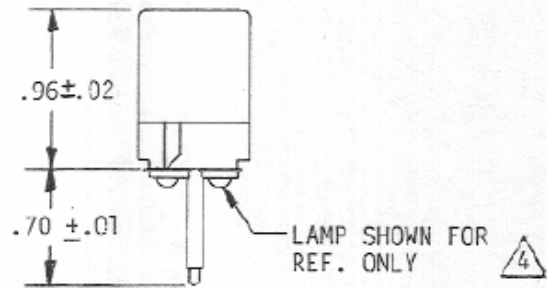
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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE: DECIMALS      ANGLES .XX ±            ± .XXX ±	APPROVALS	DATE	TITLE <b>PUSHBUTTON, ILLUMINATED, 4 LAMP SERIES 40</b>			
	DRAWN Tony Hana	4-3-08				
MATERIAL N/A	CHECKED		SIZE	CAGE CODE	DWG NO.	REV
FINISH N/A	PROJ. ENG.		A	12522	<b>SERIES 40</b>	1.0
DO NOT SCALE DRAWING	MGMT.		SCALE NONE			SHEET 1 OF 9



STANDARD PUSHBUTTON  
MODELS T, J, U, L. 1

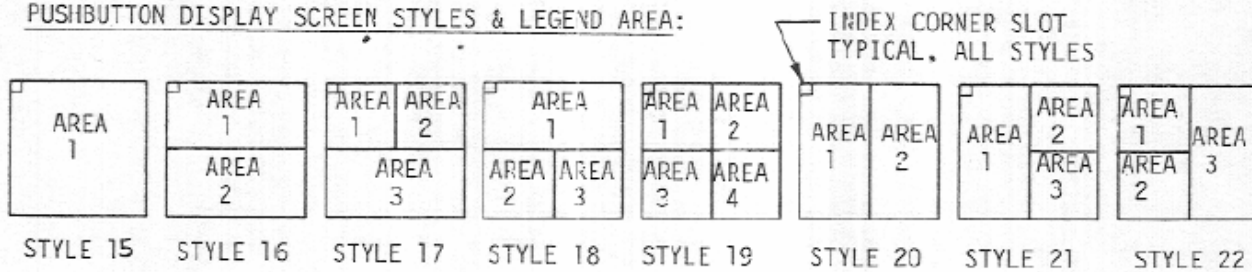


LATCHDOWN PUSHBUTTON  
MODELS W, N, Y, P. 2

	MODEL		
	STANDARD NON HI-IMPACT SHOCK	HI-IMPACT SHOCK TYPE	
MATRIX AND INDIVIDUAL MOUNT	T	E	COMMON LAMP GROUND
	J	F	SPLIT LAMP GROUND
MATRIX INDIVIDUAL MOUNT RFI	U	G	COMMON LAMP GROUND
	L	H	SPLIT LAMP GROUND

	MODEL	DESCRIPTION
MATRIX AND INDIVIDUAL MOUNT LATCHDOWN	W	COMMON LAMP GROUND
	N	SPLIT LAMP GROUND
MATRIX AND INDIVIDUAL MOUNT RFI LATCHDOWN	Y	COMMON LAMP GROUND
	P	SPLIT LAMP GROUND

PUSHBUTTON DISPLAY SCREEN STYLES & LEGEND AREA:



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LEGEND DISPLAY OPTIONS

TYPE	NON-ILLUMINATED		ILLUMINATED	
	LEGEND	BACKGROUND	LEGEND	BACKGROUND
1.	BLACK	TRANSLUCENT COLOR	BLACK	COLOR
2.	NOT EASILY DISCERNIBLE	TRANSLUCENT WHITE	BLACK	COLOR
3.	TRANSLUCENT COLOR	BLACK	VISIBLE IN COLOR	BLACK
4.	NOT EASILY DISCERNIBLE	APPEARS TRANSLUCENT WHITE	VISIBLE IN COLOR	OPAQUE
5.	BLACK FILLED ENGRAVING ON EXTERNAL SURFACE	TRANSLUCENT WHITE FACEPLATE	BLACK	COLOR
6.	TRANSLUCENT WHITE	BLACK	VISIBLE IN COLOR	BLACK
7.	A.V.W. (ALWAYS VISIBLE WHITE)	MATTE BLACK FACEPLATE	VISIBLE IN COLOR	BLACK
8.	BLACK	TRANSLUCENT WHITE	BLACK	COLOR

NOMINAL LUMINANCE VALUES FOR STANDARD COLOR FILTERS ARE SHOWN IN THE TABLE BELOW WHEN ILLUMINATED BY MS25237-327 LAMPS OF 0.34 ±.02 MEAN SPHERICAL CANDLEPOWER AT 28 VDC. THIS TABLE FOR REFERENCE ONLY.

COLOR	CODE	NOMINAL BRIGHTNESS IN FOOT LAMBERTS FOR LEGEND DISPLAY TYPES				
		1 AND 3	2 AND 4	5	6 AND 8	7
BLUE	B	25	35	20	35	3
GREEN	G	160	190	90	190	20
RED	R	160	190	90	190	20
WHITE	W	300	400	150	250	30
AMBER	A	190	220	90	220	20
YELLOW	Y	300	375	150	375	40

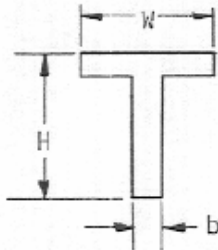
1. DISPLAY BRIGHTNESS WITH RFI SCREEN, APPROXIMATELY 60 PERCENT OF ABOVE.
2. COLORS ARE IN ACCORDANCE WITH MIL-S-22885/56; RED AND YELLOW ARE ALSO IN ACCORDANCE WITH MIL-C-25050.

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## LEGENDS

TWO DISPLAY LEGENDS ARE AVAILABLE:

1. TYPES 1 THROUGH 4, 6, AND 8 EMPLOY A POSITIVE OR NEGATIVE IMAGE ON MYLAR PHOTOGRAPHIC FILM, INSTALLED BEHIND THE PUSHBUTTON FACEPLATE (CLEAR).
2. TYPE 5 EMPLOYS ENGRAVING WITH CONTRASTING COLOR FILL INTO THE FRONT SURFACE OF THE PUSHBUTTON FACEPLATE.  
TYPE 7 EMPLOYS A PHOTOETCH PROCESS ALWAYS VISIBLE WHITE CHARACTERS AGAINST A MATT BLACK BACKGROUND.
3. THE CHARACTER FORMAT FOR LEGENDS IN ALPHA-NUMERICS IS AN ALTERNATE GOTHIC NO. 2 (SANS-SERIF) WITH THE FOLLOWING LINE RELATIONSHIPS:



LETTER HEIGHT-TO-WIDTH  
RATIO, LETTER T: 2.5:1

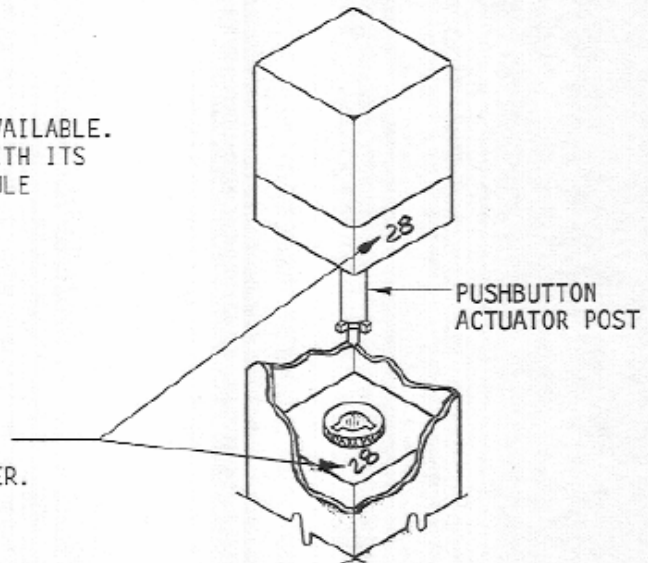
LINE WEIGHT RATIO  $\frac{H}{b} = 6:1$  FOR PHOTO LEGEND  
 $\frac{H}{b} = 8:1$  FOR ENGRAVING

4. STANDARD LEGEND HEIGHT IS .100.

## KEYED OPTION:

UP TO 60 KEYED CONFIGURATIONS ARE AVAILABLE.  
A KEYED PUSHBUTTON WILL MATE ONLY WITH ITS  
MATCHING KEYED SWITCH/INDICATOR MODULE

BOTH PUSHBUTTON AND  
SWITCH/INDICATOR ARE  
MARKED WITH KEYING NUMBER.



KEY HOLE WASHER, SWITCH MODULE (REF.)

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12522	SERIES 40	1.0	4

SPECIFICATIONS, SERIES 40 PUSHBUTTON:

THE PUSHBUTTONS DEFINED BY THIS SPECIFICATION CONTROL DRAWING MEET OR EXCEED ALL APPLICABLE REQUIREMENTS OF MIL-S-22885.

1. MECHANICAL:

- A. WEIGHT .018 POUND, INCLUDING LAMPS
- B. FACEPLATE WILL WITHSTAND 40 POUND DISTRIBUTED LOAD.
- C. RELAMPING MAY BE ACCOMPLISHED WITHOUT TOOLS.
- D. LAMP RETENTION FORCE = 4 GRAMS MINIMUM.

2. ELECTRICAL:

- A. DIELECTRIC STRENGTH
  - SEA LEVEL 1,056 VRMS
  - 70,000 FEET 450 VRMS
- B. INSULATION RESISTANCE 1,000 MEGOHMS @ 500 VDC

3. ENVIRONMENTAL: (TO BE MET INSTALLED IN MATING SERIES 40 SWITCH/INDICATOR)

- A. TEMPERATURE - OPERATING -65°C TO +55°C
- B. THERMAL SHOCK -55°C TO +85°C, PER MIL-STD-202, METHOD 107, TEST CONDITION A.
- C. ALTITUDE SEA LEVEL TO 70,000 FEET
- D. VIBRATION .06 D.A. OR 15 G'S, 10 TO 2,000 HZ PER MIL-STD-202, METHOD 204, TEST CONDITION B
- E. SHOCK 50 G'S, 11 +1 MILLISECOND; PER MIL-STD-202, METHOD 202.
- F. SAND AND DUST PER MIL-STD-202, METHOD 110, TEST CONDITION B
- G. HUMIDITY 10 DAYS, WITH 10 CYCLES AT 90-98 PERCENT RELATIVE HUMIDITY AT +65°C PER MIL-STD-202, METHOD 106

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H. SALT SPRAY

48 HR., PER MIL-STD-202C, METHOD 101 TEST CONDITION B, WITH PUSHBUTTON INSTALLED IN A MATING SWITCH/INDICATOR ASSEMBLY.

I. FUNGUS

NONE OF THE MATERIALS OR FINISHES USED IN THE CONSTRUCTION OF THIS ASSEMBLY WILL SUPPORT ANY FUNGUS ENCOUNTERED IN TROPICAL CLIMATES.

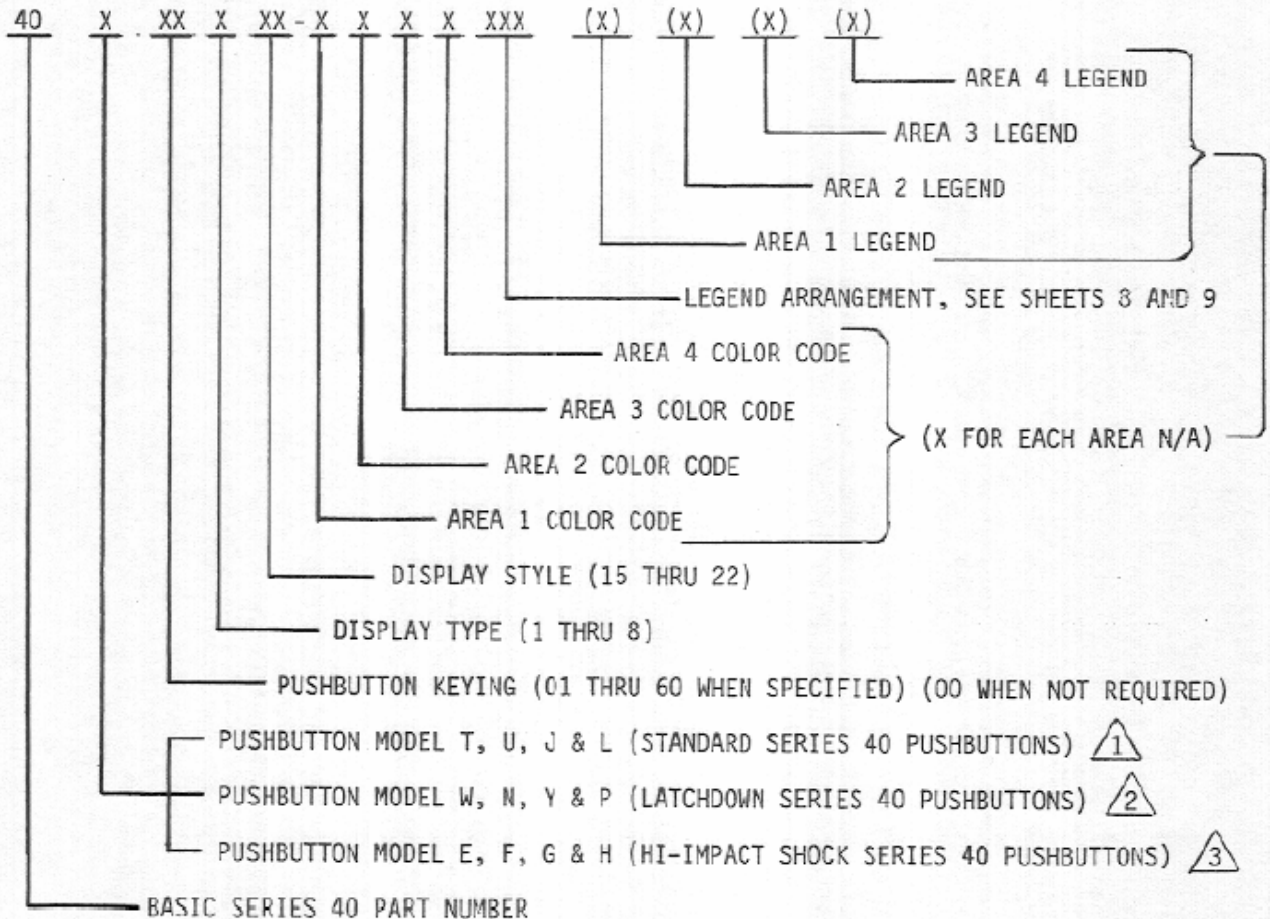
J. EXPLOSION

SWITCH OR INDICATOR ASSEMBLIES COMPLETE WITH THESE PUSHBUTTONS CAN BE SAFELY OPERATED UNDER LOAD IN AN EXPLOSIVE ATMOSPHERE WITHOUT DANGER OF EXPLOSION PER MIL-STD-202C, METHOD 109.

K. HI-IMPACT SHOCK







































































PER MIL-S-901C.

PART NUMBER CODE:



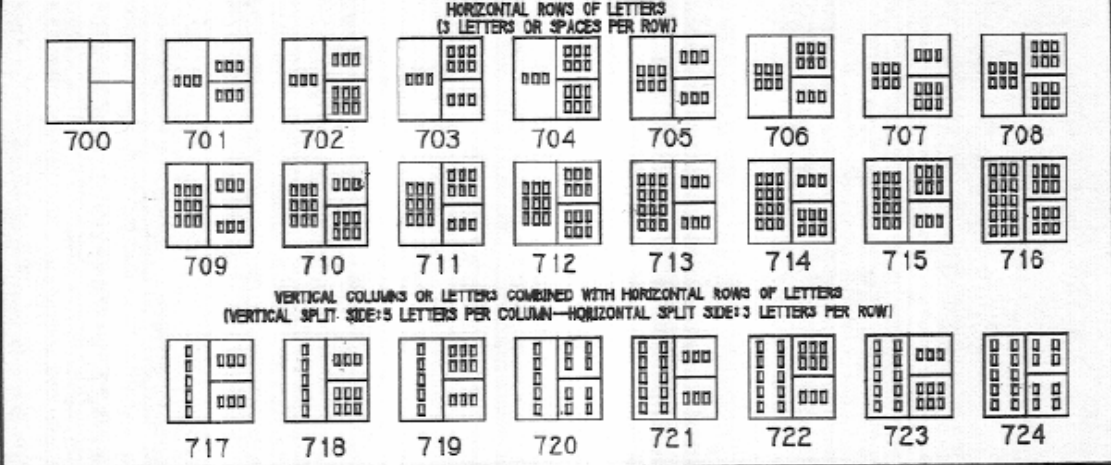
CODE IDENT NO <b>12522</b>	DRAWING NO. SERIES 40	REV. 1.0	SHT. 6
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**SPECIFICATION CONTROL DRAWING** RLV

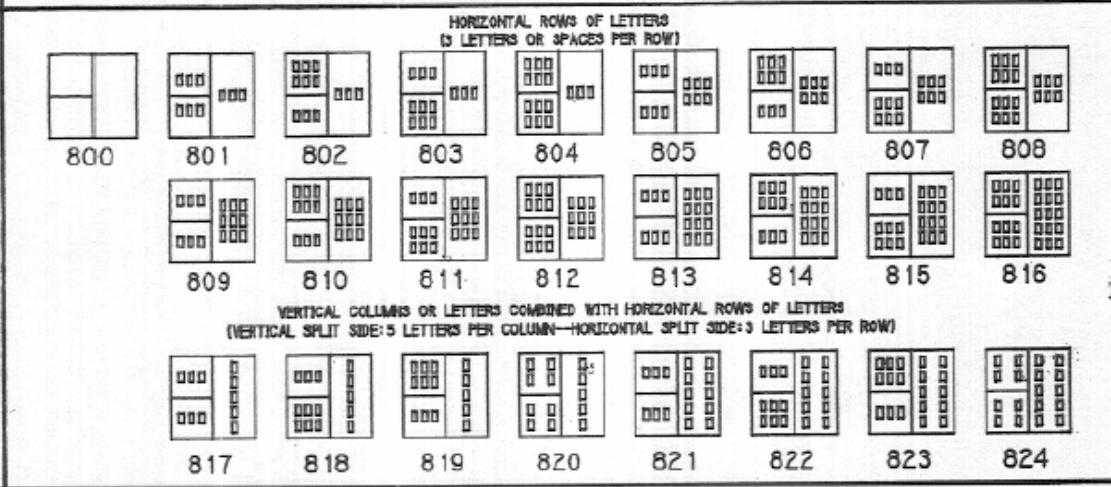
<p><b>FULL DISPLAY</b> SEE STYLE 15</p>	<p>HORIZONTAL ROWS OF LETTERS (8 LETTERS OR SPACES PER ROW)</p>      <p>HORIZONTAL ROWS OF LETTERS (6 LETTERS OR SPACES PER COLUMN)</p>     <p>100 101 102 103 104 105 106 107 108</p>
<p><b>HORIZONTAL SPLIT</b> SEE STYLE 16</p>	<p>HORIZONTAL ROWS OF LETTERS (8 LETTERS OR SPACES PER ROW)</p>      <p>200 201 202 203 204</p>
<p><b>3-WAY SPLIT</b> SEE STYLE 17</p>	<p>HORIZONTAL ROWS OF LETTERS (3 AND 8 LETTERS OR SPACES PER ROW)</p>          <p>300 301 302 303 304 305 306 307 308</p>
<p><b>3-WAY SPLIT</b> SEE STYLE 18</p>	<p>HORIZONTAL ROWS OF LETTERS (3 AND 8 LETTERS OR SPACES PER ROW)</p>          <p>400 401 402 403 404 405 406 407 408</p>
<p><b>4-WAY SPLIT</b> SEE STYLE 19</p>	<p>HORIZONTAL ROWS OF LETTERS (3 LETTERS OR SPACES PER ROW)</p>                  <p>500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516</p>
<p><b>VERTICAL SPLIT</b> SEE STYLE 20</p>	<p>HORIZONTAL ROWS OF LETTERS (3 LETTERS OR SPACES PER ROW)</p>                  <p>HORIZONTAL ROWS OF LETTERS (3 LETTERS OR SPACES PER ROW)</p>     <p>VERTICAL COLUMNS OF LETTERS (5 LETTERS OR SPACES PER COLUMN)</p> <p>600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620</p>

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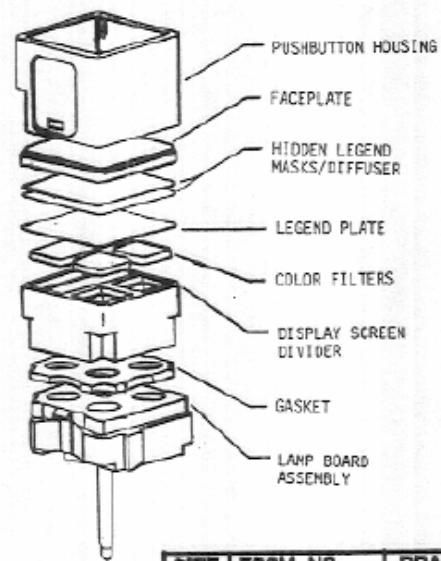
3-WAY SPLIT  
SEE STYLE 21



3-WAY SPLIT  
SEE STYLE 22



TYPICAL PUSHBUTTON ASSEMBLY



REV SHT  
1.0 8



**Appendix A RoHS (Restriction of certain Hazardous Substance) Compliance requirement per EU Directive 2002/95/EC.**

No Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent Chromium (Cr<sup>+6</sup>), PBB or PBDE is intentionally added to these devices. Any traces impurities of these substances contained in the parts are below RoHS specified threshold levels:

Substance	RoHS (Max allowed)
Cd (Cadmium)	100ppm or 0.01% by weight
Pb (Lead)	1000ppm or 0.1% by weight
Hg (Mercury)	1000ppm or 0.1% by weight
Cr6+ (Hexavalent Chromium)	1000ppm or 0.1% by weight
PBBs (Polybrominated Biphenyls)	1000ppm or 0.1% by weight
PBDEs (Polybrominated Diphenyl Ethers)	1000ppm or 0.1% by weight

Exemptions to the RoHS Directive:

Lead as an alloying element in steel containing up to 0.35 % lead by weight, aluminum containing up to 0.4 % lead by weight and as a copper alloy containing up to 4 % lead by weight.

**Note1: Lamps are not included.**

**Note2: The product does not contain printed circuit board (PCB).**

CAGE CODE 12522	DRAWING NO <b>SERIES 40</b>	REV. 1.0	SHEET 9
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