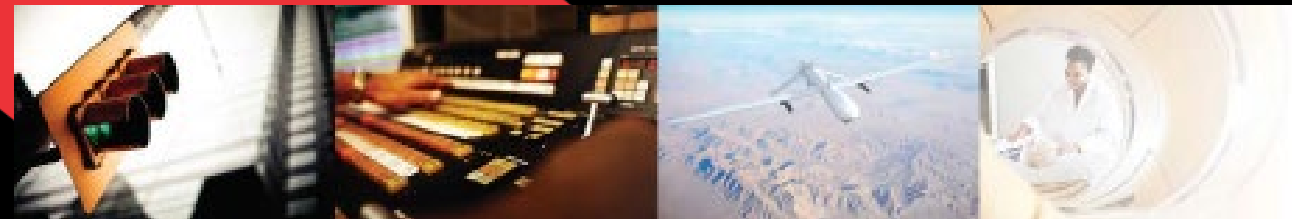


Custom Solutions

Custom Switch & Value Added Capabilities

NKK
SWITCHES



Introduction

Purpose

- Learn about NKK's custom switch and value added capabilities and how to navigate through the customer's needs when receiving a request.

Objective

- What are Value Added Capabilities?
- Value Added Capabilities –Printing
- Questions to Determine Printing Needs
- Value Added Capabilities –Assembly
- Questions to Determine Assembly Needs
- Custom Switches
- Certifications and Training
- Frequently Asked Questions

What are NKK's Value Added Capabilities?

NKK provides specialized value added services to a variety of industries. With a focus on precision and service, our trained and certified team utilizes the latest technologies.

- Laser Etching
- Screen or Pad Printing
- Custom Cable and Wire Assembly

And if we don't have it, we'll create it!

- Complete or Modified Switch Designs



Value Added Capabilities –Printing

Laser Engraving

- Fast and economical process for very fine printing and design applications, volume runs and recessed areas. This process may not be suitable for all materials and color is determined by the material being engraved

Screen Printing

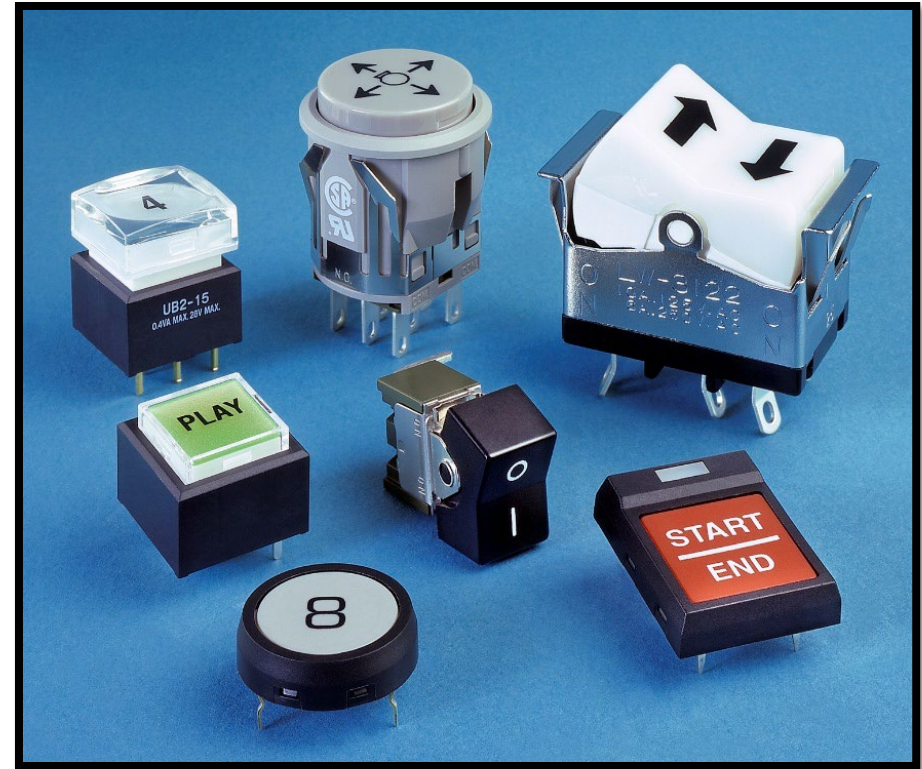
- Economical method recommended for flat surfaces using any color

Pad Printing

- Best option for printing on non-flat surfaces with minimal or no distortion using any color

Film Inserts

- Can be used when multiple colors or color inserts are needed



Questions to Determine Printing Needs

- Do you know the NKK switch part number or series?
- Is the switch illuminated or non illuminated?
- What type of legend is going on the switch cap?
 - Is it text –if so, what is it?
 - What color do you need for the text?
 - Is it a custom or pantone color?
 - What font is required?
 - What is the font size?
- What is the orientation of the text?
 - Top, left, right or bottom?



Questions to Determine Printing Needs – Continued

- What printing method is needed?
 - Laser Etch
 - Can be done on either the inside or outside of the cap
 - Pad or Screen
 - Film Insert
- If no text, is there a specific illustration and/or image?
 - Customer will need to send detailed drawing(s) or image file(s)



Value Added Capabilities – Assembly

Wire Harness

- Wire or cable harnesses generally with switches and/or connectors

Mechanical

- Non-electrical parts like enclosures & panels

Electromechanical

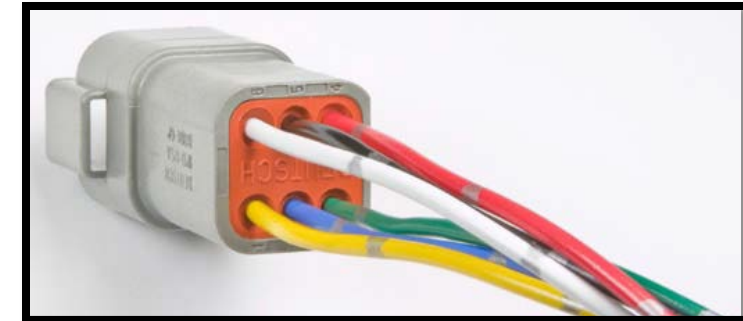
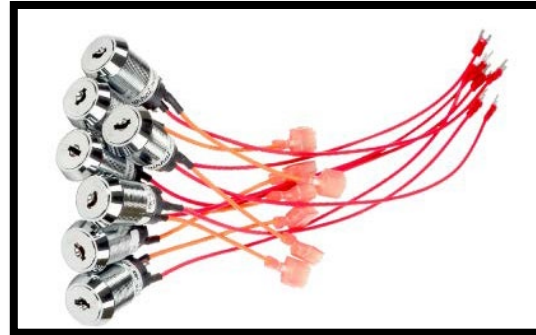
- Combination of mechanical & electrical assemblies

PCB Electronic

- Through hole and surface mount electrical assemblies

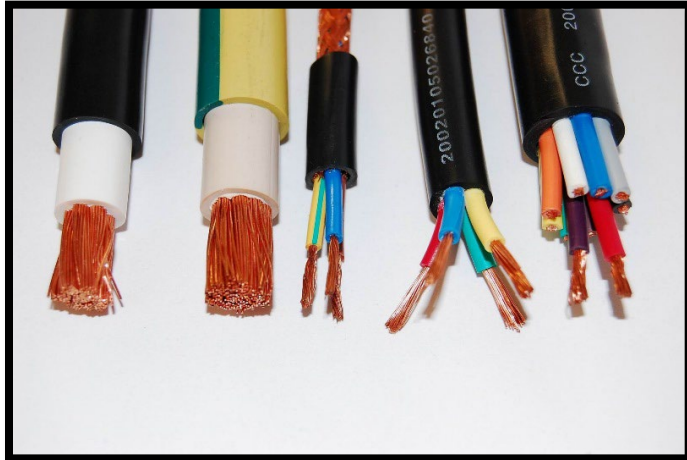
Epoxy

- Add epoxy to assemblies to seal areas



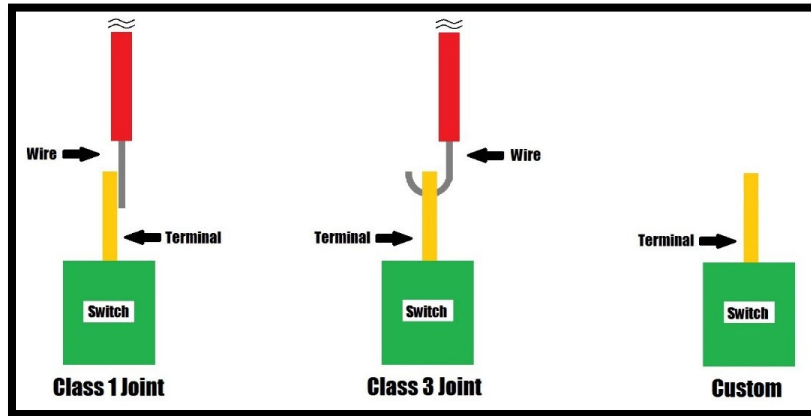
Questions to Determine Wire Assembly Needs

- What printing method is needed? Wire characteristics
 - What is the wire gauge (AWG)?
 - Is the wire solid or stranded?
 - What is the wire voltage and temperature rating and/or UL or Mil spec type?
 - What is the wire length?
 - What is the wire color(s)?



Questions to Determine Wire Assembly Needs – Ctd.

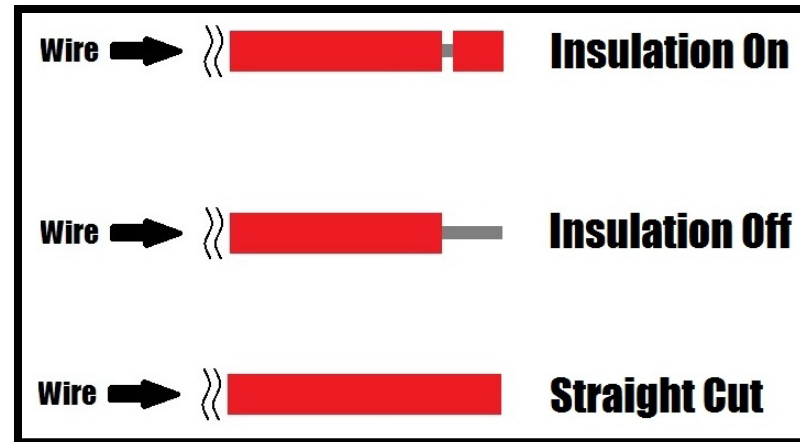
- Switch characteristics
 - What is the terminal IPC class solder joint being used?
 - Class 1 joint – Straight solder
 - Class 3 joint – J-hooked through terminal (only applies to solder lug or thru-hole)
 - Custom – please provide illustration/description



- What color wire goes to which switch terminal?
- What value wattage resistor is required for the LED (illuminated)?

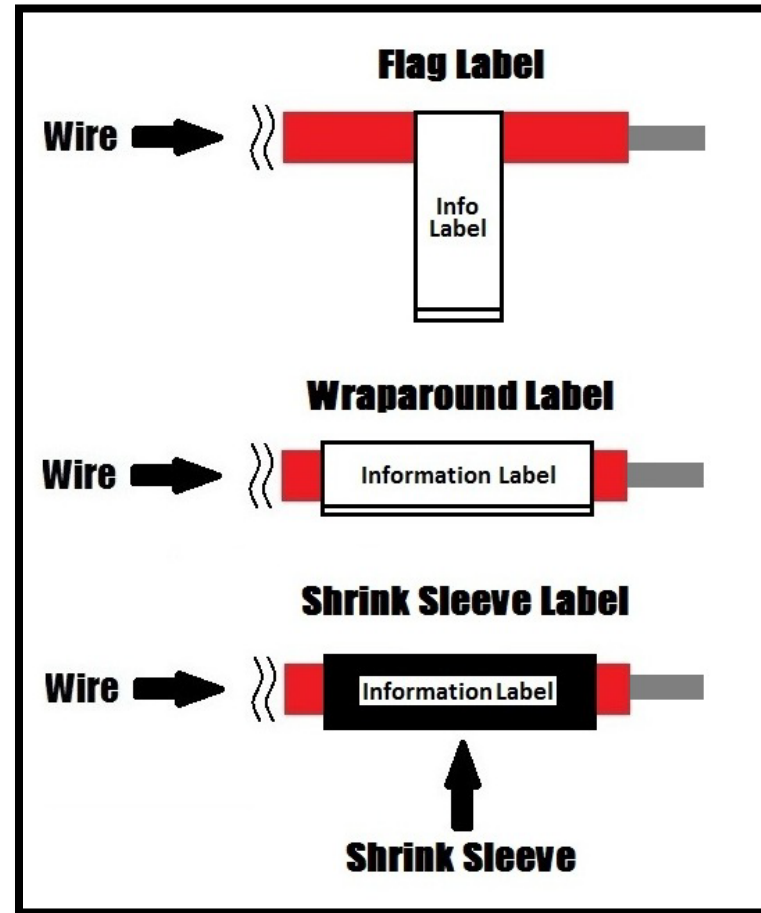
Questions to Determine Wire Assembly Needs – Ctd.

- Connector/Termination
 - What connector and/or contact(s) are being used? (manufacture & part no.)
 - What wire(s) goes to what pin # on the connector(s) and/or contact(s)?
 - What is the wire stripping length?
- For wire termination, how will the wire insulation need to be done?
 - Insulation ON
 - Insulation OFF
 - Straight Cut



Questions to Determine Wire Assembly Needs – Ctd.

- Additional Wire Assembly Options
 - What shrink sleeve(s) is required?
 - Diameter
 - Length
 - Location
- Is a label needed for identification?
 - Wraparound
 - Flag
 - Shrink sleeve label needed



Custom Switches – We'll Create It!

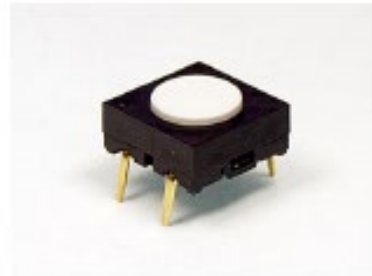
NKK elevates the standard when it comes to developing switch solutions and has partnered with customers to design custom solutions for today's most unique applications.

Examples of NKK Custom Switches



LB Series

PC terminals were added to a series normally only available as solder lug/quick connect



JB Series

Different actuator height was manufactured for customer specifications



WT Series

Actuator length on the bat toggle was designed longer than the standard 17.5mm



G Series

Custom Sleeve/Cap

Custom Switches – We'll Create It!

More Examples of NKK Custom Switches



Completely new
pushbutton switch
designed



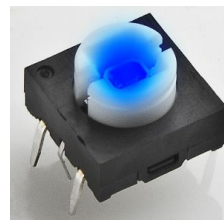
WR Series
Quick connect option
added, eventually
became a standard
option



S Series
Screw on lever for
toggle switch



SS Series
Different housing
size designed for
slide switch



JB Series
Custom blue LED
illuminated tactile switch

NKK Certifications

- ISO9001:2008 Certified
- ESD Association
- UL E256736 (Wire Harness)
- IPC Certified Employees
 - IPC-A-610
 - Inspection Criteria for PCB
 - IPC/WHMA-A-620
 - Inspection Criteria for Wire Harness
 - IPC J-STD-001
 - Soldering and Crimping Workmanship



Thank You!

For Questions or Feedback
NKK Customer Service
E: customerservice@nkkswitches.com
T: 480.991.9642

The logo for NKK Switches, featuring the letters 'NKK' in a stylized font with red and white colors, and the word 'SWITCHES' in white capital letters below it.

NKK
SWITCHES