

everything starts here.

Custom Solutions

Custom Switch and 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?



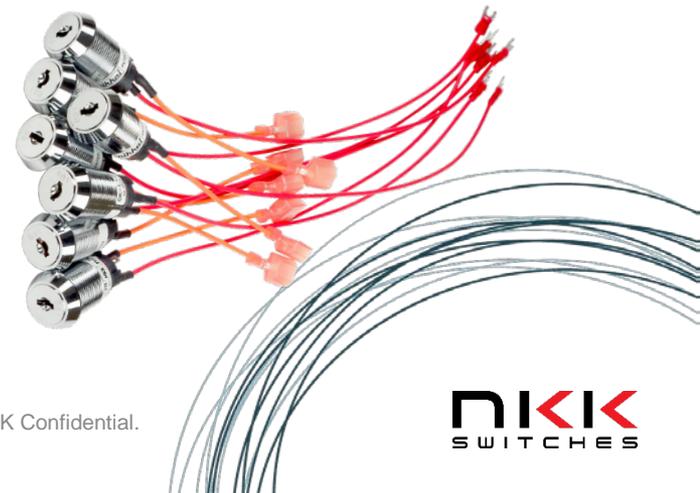
Questions to Determine Printing Needs – Continued

- Printing methods
 - Laser Etch
 - Laser Etching can be done on either the inside or outside of the cap
 - Pad or Screen
 - Film Insert
- If not text – is there a specific illustration or image?
 - Customer needs to send detailed drawing(s) or image file(s)



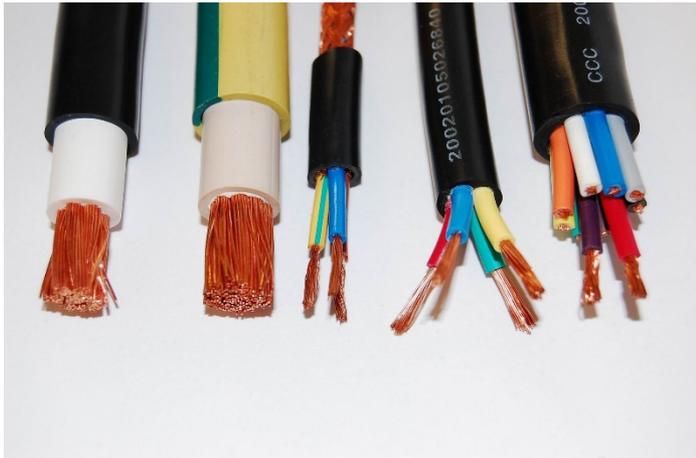
Value Added Capabilities – Assembly

- **Wire Harness:** Wire or cable harnesses generally with switches and/or connectors
- **Mechanical:** Non-electrical parts like enclosures and panels
- **Electromechanical:** Combination of mechanical and 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

- 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)?

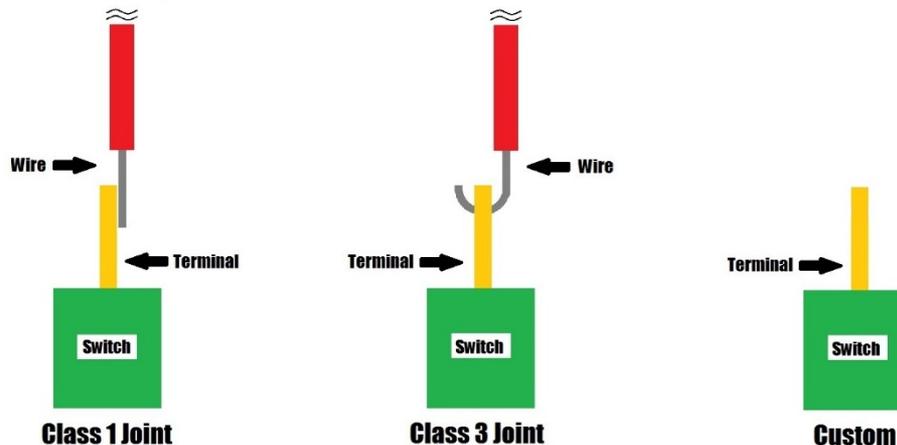


Questions to Determine Wire Assembly Needs – Continued

- 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)

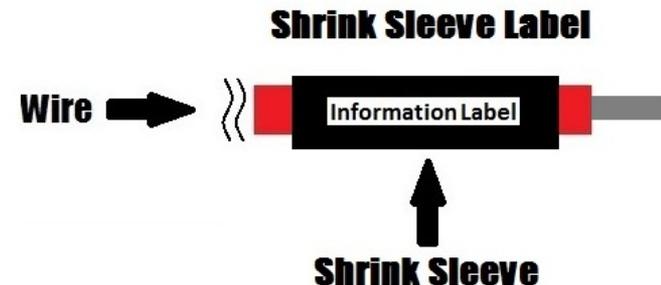
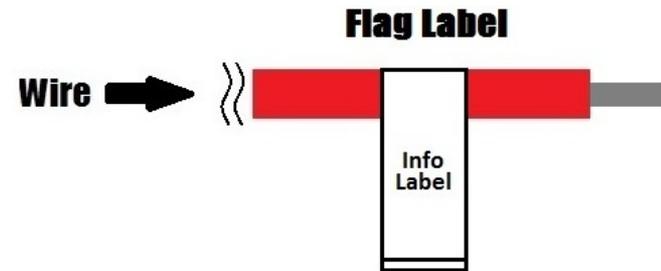
Questions to Determine Wire Assembly Needs – Continued

- 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 – Continued

- 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



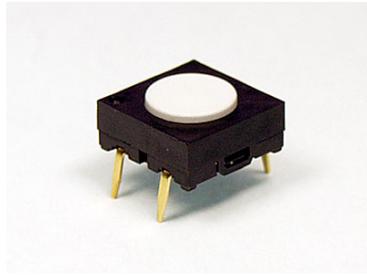
Custom Switches – We'll Create It!

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

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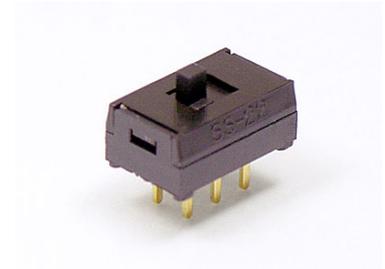
Completely new pushbutton switch designed



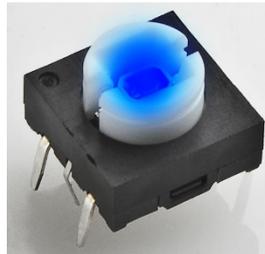
WR Series – Quick connect option added, eventually became a standard option



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



everything starts here.

Thank You!

For Questions or Feedback
NKK Customer Service
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Ph: 480.991.0942

The logo for NKK Switches features the word "NKK" in a bold, black, sans-serif font, with the second "K" highlighted in red. Below it, the word "SWITCHES" is written in a smaller, black, all-caps, sans-serif font. The logo is positioned on the right side of the slide, partially enclosed by a large, abstract graphic of multiple overlapping, light blue circular lines that form a partial circle.

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SWITCHES