



Result: Belmed was able to cut costs and save assembly time by utilizing NKK’s engineering department’s design. Having all necessary materials sourced from one supplier, as well as the reduction of necessary individual parts like the wires, that has allowed for fewer ‘golden screw’ supply disruptions over the course of production. Additionally, NKK’s suggestions prevented a full redesign of the panel. This saved Belmed the cost and hassle of sourcing for new materials.



Solution: Belmed and NKK Switches worked together to create a streamlined design for the new alarm system. NKK provided a simplified printed circuit board (PCB) which eliminated the need for wiring the switches—they could be directly soldered in. In the process, NKK’s team noted that LED illuminated switches would need to replace the current incandescent lamp illuminated pushbuttons. NKK’s engineers recommended the LB Series illuminated pushbutton with a panel seal option. This was the most sanitary option because it ensured easy cleaning of the device that was used in a medical setting.

Challenge: Dental equipment used in conscious sedation procedures needed to be overhauled due to their overly complex assembly. The panel was developed in-house and had not been updated since the invention of the device. This led to inefficient assembly and a complex design behind the panel. Four to six switches, depending on the device, were assembled by the Belmed team with a wire harness. This created an intricate and highly specialized set of assembly instructions. Belmed wanted to reduce the time and money that was spent on manufacturing.

Belmed manufactures both a wall mounted and a desk alarm manifold that is used with a medical gas device. The manifolds deliver a consistent gas supply to a dental facility at a constant pressure rate and monitor the pressure that is left in the gas cylinders. This system lets the dental office know when there is a low pressure reading coming from the tanks and notifies them when they need to either switch to new, full tanks or schedule a gas delivery. This is vital to ensure that there is always an uninterrupted gas (O₂ and/or N₂O) supply during conscious sedation procedures.

The alarm system’s board was in a dire need of an improvement. Belmed enlisted the help of NKK Switches’ engineering team, who were instrumental in updating the product with a new streamlined behind panel design, preventing a full redesign. This was done by replacing incandescent switches that required a wire harness to new LED switches that are now mounted via sockets to simply be soldered in. In addition, NKK was able to provide them with a PCB assembly that included everything but the switches and the front panel. This saved time spent on labor because the recommended switches were easier to install as there was no more crisscrossing wires from the old switches.

