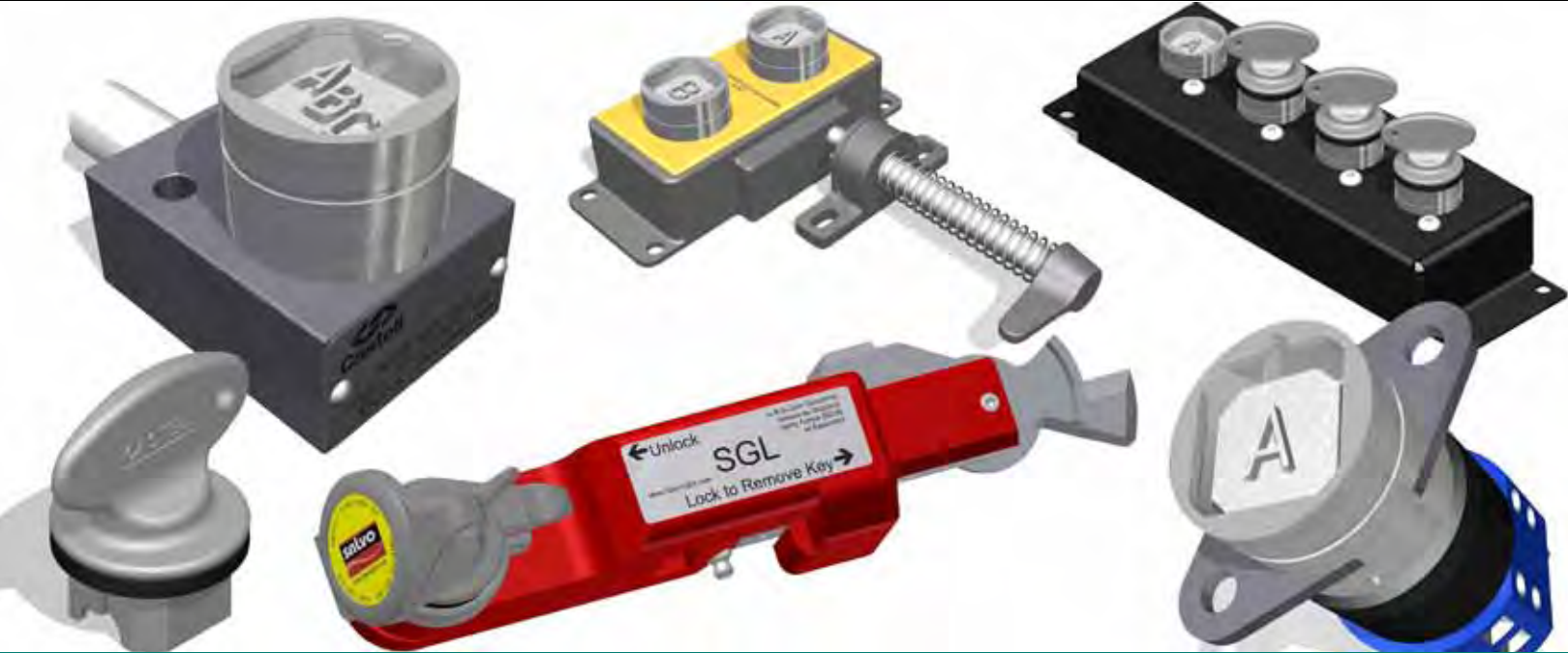




A full spectrum of sensing and signaling products for protection, detection, and safety



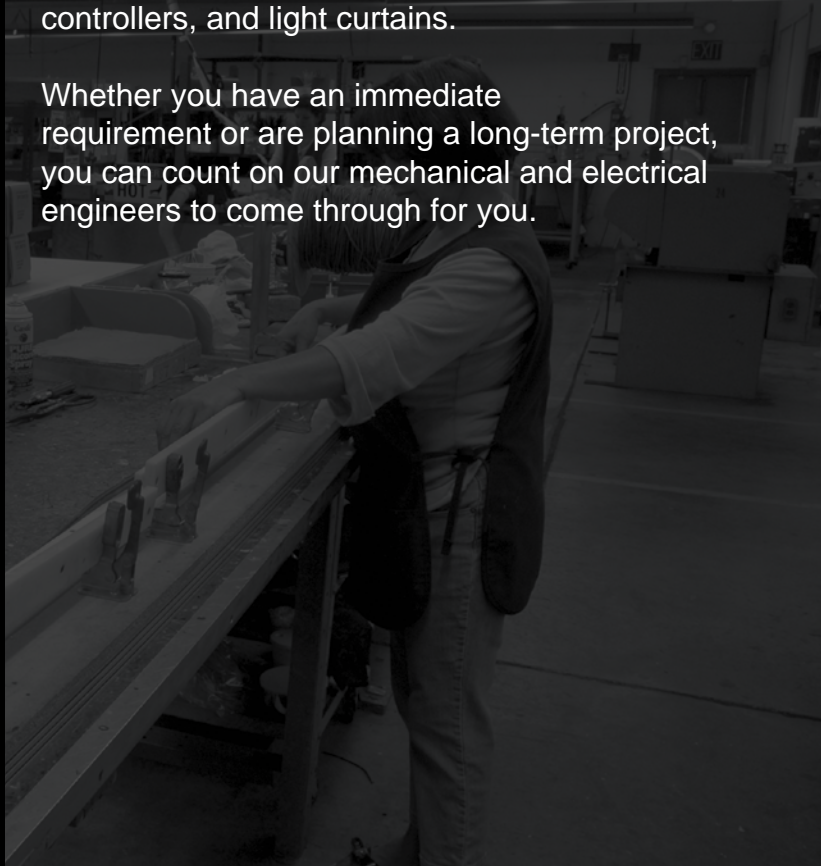
- SWITCH PRODUCTS
- SAFETY & SIGNAL MATS
- SENSING EDGES
- SENSING BUMPER
- INTERFACE CONTROLLERS
- LIGHT CURTAINS
- CUSTOM DESIGN
- TRAPPED KEY INTERLOCKS



### Welcome to Tapeswitch

We design and manufacture innovative sensing, switching, and control products for use in a wide range of safety and non-safety applications. Our products include ribbon switches, sensing edges and bumpers, safety mats, touch pads, controllers, and light curtains.

Whether you have an immediate requirement or are planning a long-term project, you can count on our mechanical and electrical engineers to come through for you.



**For additional information and our full list of trapped key interlocks please visit our website at [www.tapeswitch.com](http://www.tapeswitch.com) or call our sales team at 1-800-234-8273.**



pg. 2

## Mechanical Bolt Interlocks

Bolt Interlocks are widely used for the interlocking of switchgear. The bolt is often used for the physical blocking of levers or rotary switches via a cam mechanism.



pg. 3

## Key Switch Interlocks

Key switches provide power isolation ranging from 20A safety circuits through disconnects up to 250A.



pg. 4 & 5

## Access Interlocks

Access Interlocks provide a trapped key method of obtaining access to numerous types of doors, hatches and panels.



pg. 6

## Keys and Caps

Keys and dust caps for different application functions and environments.



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Key Exchange Units provide additional keys for when there are a greater number of access locks than number of keys from power isolation.



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Motor driven machinery and other systems with run down times do not provide a safe area at the instant of power isolation.



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## Salvo

Loading dock safety kits to prevent unscheduled truck departure.



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## Additional Tapeswitch Corporation Products

Products designed to solve unique problems. We specialize in innovative solutions for unusual or difficult applications.

# MECHANICAL BOLT INTERLOCKS

Bolt Interlocks are widely used for the interlocking of switchgears. The bolt is often used for the physical blocking of levers or rotary switches via a cam mechanism.

## **K Single Key Bolt Interlock**

The K Single Key Bolt Interlock is designed for switchgear and valve interlocking applications. The unit comprises a heavy-duty lock body, a lock center and a locking bolt.

Under normal operating conditions, the key is free and the bolt is extended to lock or release a cam or lever associated with the safe operation of switchgear isolators or valve assemblies. Inserting and turning the key retracts the bolt, thereby releasing the cam and trapping the key. An additional lock can be fitted to secure the cam in the closed position.



## **KL Multiple Key Bolt Interlock**

The KL Multiple Key Bolt Interlock is designed for switchgear and valve interlocking applications.

The unit comprises a heavy-duty lock body, a multiple lock centers and a locking bolt. The KL Interlock is available in a key exchange configuration which is used in applications where a continuous interlocking sequence and a personal key are required. The KL Interlock is also available in a double key configuration, which is used at the end of an interlocking sequence.



## **KP Single Key Bolt Interlock with Safety Switch**

The KP Lock is a key operated mechanical bolt interlock, complete with electrical contacts suitable for the control of electrical switchgear or valves. Both the KP1 and KP2 units come with a 16mm diameter bolt of variable length that is used to control the rotation or movement of operating handles or toggles. The KP1 comes with 1n/o 1n/c 10A contacts and the KP2 2n/o 2n/c 10A contacts. These are used to provide remote indication of the bolt position on the machine.

The locks are manufactured in brass or stainless steel, making them ideally suited for use in harsh or corrosive environments.

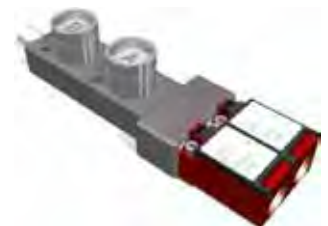


## **KLP Multiple Key Bolt Interlock with Switch**

The KLP Lock is a multi-key operated mechanical bolt interlock, complete with electrical contacts suitable for the control of electrical switchgear or valves.

The standard unit comes with a 16mm diameter bolt of variable length that is used to control the rotation or movement of operating handles or toggles. The KLP1 comes with 1n/o 1n/c 10A contacts and the KP2 2n/o 2n/c 10A contacts. These contacts are used to provide remote indication of the bolt position on the machine.

These locks are manufactured in either brass or stainless steel, making them ideally suited for use in harsh or corrosive environments.



# KEY SWITCH INTERLOCKS

Key switches provide power isolation ranging from 20A safety circuits through disconnects up to 250A. The direct rotation of the key changes the positive break contacts of the switch, thus isolating the system. This allows the key to be freed, allowing access to the once hazardous areas. Solenoid Controlled Key Switch Interlocks trap the key until a signal is received, often from a PLC. Once this signal is received, the solenoid is energized and unblocks the key mechanism, which allows the key to be released.

## KS Powersafe Electrical Switch

The KS is a key driven electrical switch suitable for the isolation or switching of low (20, 32, 63 or 150A) current.

This type of isolator should be used for short term, off load isolation and should be operated by suitably qualified personnel only. The KS is manufactured in either brass or stainless steel, making it suitable for use in standard or harsh, corrosive environments, or where the lock is subject to heavy usage.

The unit is suitable for mounting into an existing panel or for surface mounting within its own IP65 rated polycarbonate enclosure.

The KS is available with 2NO/2NC or 4NC contacts.



## KSD Switch Disconnect

The KSD is a key driven switch disconnect available for the isolation or switching of 32, 63, 125, 160 or 250A systems.

This type of disconnect is suitable for 'on load' isolation, can be operated by unskilled personnel and is suitable for extended periods of isolation. The standard KSD comes with six poles plus two auxiliary early break contacts. The KSD is manufactured in either brass or stainless steel making it suitable for use in either standard or harsh, corrosive environments.

The unit is suitable for mounting into an existing panel or for surface mounting within its own IP65 rated polycarbonate enclosure.



## KSS Solenoid Controlled Interlock Switch

The KSS is a heavy-duty, solenoid controlled trapped key interlock switch. It is designed to control access to hazardous machines with a rundown time or in situations where machinery must complete an operating cycle before the power supply is disconnected.

The KSS can be used in high-risk, Category 4 applications. The unit incorporates a lock center, a heavy-duty continuously rated solenoid, solenoid position monitoring, front panel lamp indication of solenoid position and an electrical switch.

Depending on the number of access points requiring control, this box would work in conjunction with access interlocks.



# ACCESS INTERLOCKS

Access Interlocks provide a trapped key method for obtaining access to numerous types of doors, hatches and panels. The door can only be accessed when a key is present. While the door is open, the key remains trapped in the lock so that the system cannot be re-energized until the door is closed and the key is returned to the power isolation source.

## AI Single Key Access Interlock

The AI is a single key access interlock suitable for use on both hinged and sliding doors.

The interlock has an open cavity design and is manufactured in a durable stainless steel or brass making it ideally suited for use in harsh or corrosive environments where the lock is subject to heavy usage. The AI is typically used in the following industries: food, chemical, quarrying and aggregates, steel and pharmaceutical.



## AIE Multi Key Access Interlock

The AIE is a multi key access interlock suitable for use on both hinged and sliding doors.

The interlock has an open cavity design and is manufactured in a zinc alloy. The locks are ideal for use in harsh or corrosive environments, or where the lock is subject to heavy usage.

Under normal operating conditions, the key is free and the bolt is locked to prevent access to the guarded area. The bolt can only be released when the key is inserted into the lock and turned. The key remains trapped in the lock and can only be removed after the gate or guard is closed and the bolt has been reinserted.



## D Panel Door Interlock

The D type lock is a two-part interlock, comprising a lock body and either a rear or front entry mounted catch. Typically, the D lock is used for interlocking electrical control cubicles and distribution panels. It is also suitable for use on well-aligned, light access doors or hatches.

The key is inserted and trapped to release the catch. The key remains trapped while the door/hatch is open. Only when the catch is reinserted, i.e., by closing the door, can the key be released and returned to reinstate the power.



## Entrysafe Access Interlock to Prevent Door Closure

The Entrysafe prevents the accidental closing of access doors while an operator is inside.

The unit is designed to inhibit the starting of a machine by preventing the operation of tongue switch or similar devices.

Lock portion is available in either stainless steel or brass.



Access Interlocks provide a trapped key method for obtaining access to numerous types of doors, hatches and panels. The door can only be accessed when a key is present. While the door is open, the key remains trapped in the lock so that the system cannot be re-energized until the door is closed and the key is returned to the power isolation source.

## KE Sliding Door Interlock

The KE Lock is a sliding door access interlock comprised of a main body and sliding bolt. The lock is designed to suit sliding doors of various sizes and thicknesses.

The KE is typically used in the following industries: automotive and steel production. Available in stainless steel or brass.



## HERCULES Access Interlock with Safety Switch

The Hercules is a single key access interlock, complete with electrical contacts suitable for use on both hinged and sliding doors.

The Hercules contacts can be used to switch off the machine via its control circuitry or to initialize a signal to visual beacons/sounders. The switch is sealed to IP65 and provides 1n/o 2n/c contacts, making it suitable for use in cross-monitored safety systems.

The interlock has an open cavity design and is manufactured in a durable stainless steel making it ideally suited to use in harsh or corrosive environments where the lock is subject to heavy use.

The Hercules is typically used in the following industries: food, chemical, quarrying and aggregates, steel and pharmaceutical.



## Coming Soon

### Salus Access Interlock

The Salus access interlock is a genuine innovation trapped key safety interlocking technology thanks to its unique and patent protected high-integrity locking mechanism.

Salus has a robust design for heavy industry and harsh environments, stainless steel construction, suitable for wash down environments such as food, beverage and corrosive atmospheres.



# KEYS AND CAPS

The following is a selection of keys and dust caps for different applications, functions and environments.

## Flip Cap

Protective Flip Caps

A selection of protective caps is available to suit a range of applications. Caps are available in both basic plastic push-on as well as stainless steel.

Suitable for use on both the figure and Q lock portions.



## FKW6-S\*\*

Sealed Stainless Steel Key

The FKW6 is supplied with a fitted neoprene seal and flange to prevent ingress into the lock portion.

This stainless steel version is suitable for harsh environments.



## FKW6-NI Sealed Nickel Plated Key\*\*

The FKW6 is supplied with a fitted neoprene seal and flange to prevent ingress into the lock portion.



## FKW3-NI Sealed 'T' Key\*\*

The FKW3-NI is supplied with a fitted neoprene seal and flange to prevent ingress into the lock portion. 'T' design provides increased torque on rotary switches.



## QS-B\*\*

Brass QS Key

High security interlock key.



## QS-S\*\*

Stainless Steel QS Key

High security interlock key.

The QS-S key is stainless steel and suitable for harsh environments.



\*\*NOTE: All interlocks with the FS lock portion will accept FK type keys. Lock portions with a Q lock portion require QS keys.

Key Exchange units provide additional keys for when there are a greater number of access locks than number of keys from power isolation.

## **X Sequential Key Exchange**

The X type key exchange unit is designed to form part of an integrated safety system linking machine control and access interlocks. The key exchange is configured to trap and release keys in a pre-determined sequence, depending on the operating requirements of the safety interlocking system. The X box can have multiple key entering and/or withdrawing.

The box can be supplied in numerous key configurations: one key to release three or six keys to release four, or any combination to suit the operating sequence of the machine. The X type of box allows multiple in-out keys, but is always supplied in one row.

In all cases, the use of a key exchange box forms part of the integrated solution to machinery safety and access to the machine.

Depending on the number of access points requiring control, this box would work in conjunction with access interlocks and key switches (Powersafe).



## **Y Non-Sequential Key Exchange**

The Y type key exchange unit is designed to form part of an integrated safety system linking machine control and access interlocks. The Y key exchange box is configured to release keys in any order, depending on the operating requirements of the safety interlocking system.

The box can be supplied in numerous key configurations, with one key to release a minimum of 6 keys. It is always supplied in two rows.

In all cases, the use of a key exchange box forms part of the integrated solution to machinery safety - access to the machine.

Depending on the number of access points requiring control, this box would work in conjunction with access interlocks and key switches (Powersafe).



# TIME DELAY INTERLOCKS

Motor driven machinery and other systems with run-down times do not provide a safe area at the instant of power isolation. Therefore, a predetermined or monitored delay is required before entry is permitted. Standstill Monitoring Interlocks provide greater production efficiency when systems have variable run-down times since access is granted at the instant that a drive has come to a full stop, rather than waiting for a time delay to elapse.

## **BEMF Movement Sensing Interlock**

Both the BEMF and the MSI units are designed to control access to machinery that has a run-down time, such as mixers and blenders.

The BEMF unit uses the measurement of back electromotive force that is generated by the windings of an electric motor. Only when the motor has stopped will the BEMF drop to zero and allow the release of a key. The unit is suitable for connection to AC and DC motors, including DC braking systems.



## **MSI Movement Sensing Interlock**

Both the BEMF and the MSI units are designed to control access to machinery that has a run-down time, such as mixers and blenders.

The MSI relies on the detection of motion via two sensors. Only when both sensors detect zero movement will a key be released.



## **DAE Mechanical Time Delay**

The DAE is a dual key controlled mechanical time delay unit designed to control access to dangerous machines which have a run-down time or where machinery must complete an operating cycle before access is permitted.

The DAE is ideally suited for applications where the availability of mains power is limited or where the timer needs to be located in a potentially explosive atmosphere.

Time delay is factory preset with delays between 30 seconds and 55 minutes.



Salvo is a set of dock products that works as a system to promote safety at the loading docks and to prevent unscheduled truck departure. Salvo prevents the unauthorized movement of a truck's trailer during the loading or unloading process at the loading dock.

### Salvo Glad Hand Lock

The Salvo Glad Hand Lock can be attached to the emergency glad hand fitting of the truck trailer. Once attached, the trapped key is released and can be inserted into the Salvo Manual Door Lock or Salvo Control Panel. The Salvo Glad Hand Lock helps ensure loading dock safety. After the operator has unhooked the truck's emergency brake, the Salvo Glad Hand Lock can be attached to the truck trailer, releasing the trapped key. The truck is unable to depart until the key is replaced and the Salvo Glad Hand Lock is removed, allowing the brake lines to once again be engaged and operational.



### SCP Salvo Control Panel

The Salvo Control Panel (SCP) ensures loading dock safety by interlocking with limit switches and other dock safety products. Once the Castell key is placed in the SCP from the SGL or Club, the SCP engages the SADL so that the tongue can be removed and the door opened. The key then cannot be removed from the SCP and placed back into the SGL or Club until the bolt has been placed back into the SADL, meaning the dock door has been closed and loading/unloading is complete.



### SADL Salvo Automatic Door Lock

The Salvo Automatic Door Lock (SADL) is mounted inside the building and works in conjunction with the Salvo Control Panel (SCP). The heavy duty steel tongue serves as a locking mechanism for the loading dock door. The SADL is linked to the SCP so that once the key is placed in the SCP, the SADL is engaged and the tongue can be removed, thus allowing the door to be unlocked and opened. While the lock is disengaged, the key is trapped in the SCP. Once loading/unloading is complete, the tongue is replaced in the lock and the key can be released from the SCP.



### SMDL Salvo Manual Door Lock

The Salvo Manual Door Lock (SMDL) is mounted inside the building to a bracket or bollard. It is available with either a bolt or a chain attachment. The bolt will physically lock the dock door in place and the chain can be attached directly to the door or to a chain plate to span the width of the doorway. When the key is removed from the Salvo Glad Hand Lock (SGL) or Salvo Club, it is placed directly into the SMDL. Once the bolt is removed, the key is trapped in the lock until loading/unloading is complete. When the bolt is replaced, the key can be removed and it will be safe for the driver to depart.

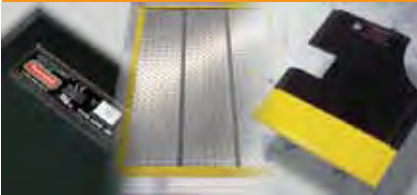


# OTHER TAPESWITCH PRODUCTS



## Switch Products

A diverse selection of products including ribbon switches, touchpads, foot and hand switches, tactile remote switches, vehicle sensing products, and innovative custom designs.



## Safety & Signal Mats

The broadest range of standard and custom-designed pressure-sensitive mats available. Serving industrial, commercial, transportation and specialty applications for over 50 years.



## Sensing Edges

Collision and contact protection with a compact, compliant surface. Choice of profile, sensitivity, and overtravel characteristics.



## Sensing Bumpers

Pressure-sensitive actuation with a large, cushioning surface that protects both personnel and equipment.



## Interface Controllers

Provides the fail-safe link between a sensing device and a machine or process. Compatible with our switches, mats, sensing edges and bumpers.



## Light Curtains

Choice of full-featured or economical models that meet the most rigorous international safety standards. Custom versions available for harsh environments.



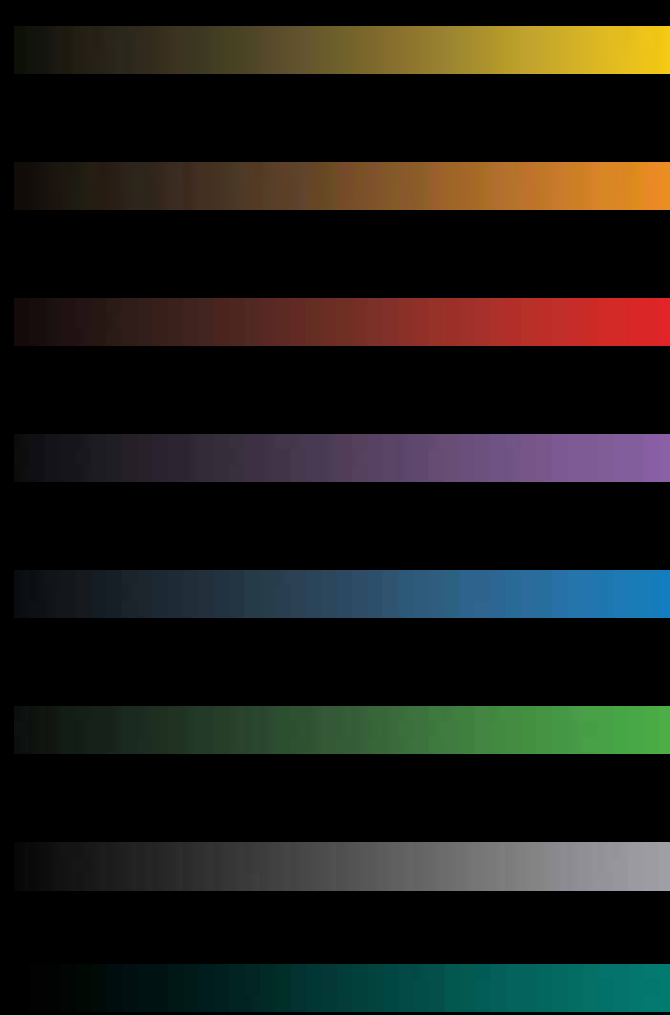
## Custom Designs

Products designed to solve unique problems. We specialize in innovative solutions for unusual or difficult applications.





Because we are constantly improving our products, specifications are subject to change without notice.



# A sample of industries we serve.



MANUFACTURING

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TRANSPORTATION

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