

## White Paper

**Reducing  
Unplanned  
Production Downtime  
Instances Due to Replacement  
of M8 Proximity Sensors  
in Projection Welding Cell**



## Continuous Improvement Opportunity:

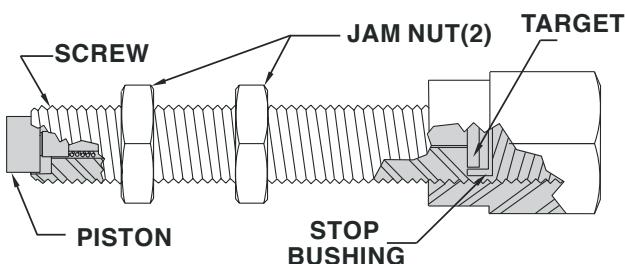
The HTM Sensors Cost Reduction Vending System has identified that this projection welding cell had unplanned production downtime due to replacement of M8 proximity sensors. All of the broken sensors were damaged by abrasion, heat and weld spatter generated within this welding cell.

HTM performed an audit on this welding cell to determine which strategy will best eliminate cost and downtime related to this sensor application. There are 4 - M8 proximity sensors on this cell. These sensors are not only being damaged due to abrasion when parts are being manually loaded into the cell, but also by heat and weld spatter due to their close proximity to the weld.



## Continuous Improvement Proposal:

- 1) HTM Sensors proposed to install an M8 Banking Screw Adapter (BSA) in the harshest M8 sensor application on this cell. Banking Screw Adapters are designed to absorb impact and protect sensor from the excessive heat and spatter generated during welding. Banking Screw Adapters have been successful in similar applications at extending sensor life, reducing downtime, and increasing productivity.

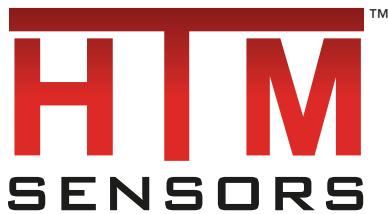


### Benefits

- Stop travel and sense with one device
- Versatile outputs using any shielded sensor
- Isolates sensor from impact damage
- New applications for proximity sensors

### Construction & Operation

Both the screw and piston are heat-treated to withstand heavy use. A connecting rod ties the spring loaded piston to a metal target, which triggers the sensor upon displacement of the piston. The sensor is separated and thus isolated from impact from the target by a plastic stop bushing. Two heavy-duty jam nuts or an optional threaded block mount secure the BSA.



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### Continuous Improvement Implementation:

An HTM Banking Screw Adapter was installed in one M8 application in this cell on April 3<sup>rd</sup>, 2014.

### Result:

Prior to the BSA installation, an average of 12 - M8 sensors per month were replaced on this cell. Since implementation of the BSA in this application four months ago, **M8 sensor replacement has dropped to an average of 6 sensors per month**. This **50% reduction in usage** will result in a projected **savings of \$4,536.00 annually** as well as the **elimination of 72 unplanned downtime instances**.

### Next Step:

There are 9 additional M8 applications on this projection welding cell that continue to require monthly M8 sensor replacement. Installing Banking Screw Adapters in these applications will further reduce sensor replacement.



**50%**  
**REDUCTION  
IN USAGE**

ELIMINATION OF  
**72** UNPLANNED PRODUCTION DOWNTIME INSTANCES  
**\$4,536**  
ESTIMATED ANNUAL SAVINGS



## DOWNTIME REDUCTION VENDING SYSTEM



### TOTAL COST SAVINGS WITH CONSIGNMENT SERVICE

- VENDOR MANAGED INVENTORY
- CONSIGNMENT STOCK
- CONTINUOUS IMPROVEMENT DATA
- AUTOMATED USAGE MONITORING



In the USA: 1889 Maryland Ave., Niagara Falls, NY 14305  
In Canada: 3419 Mainway, Burlington, ON L7M 1A9

**Toll Free: 1-800-644-1756**



For technical support, or information about the Application, Selection, Installation and Protection of sensor products:  
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