



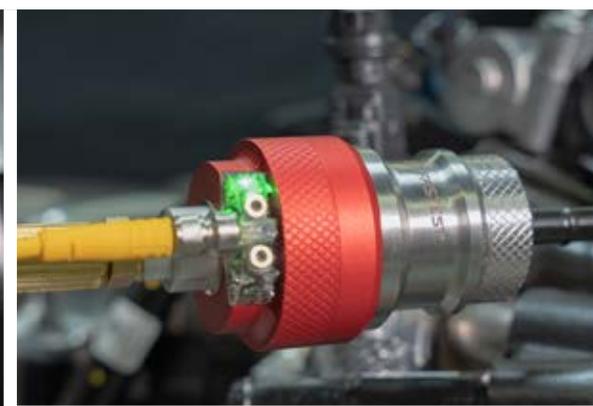
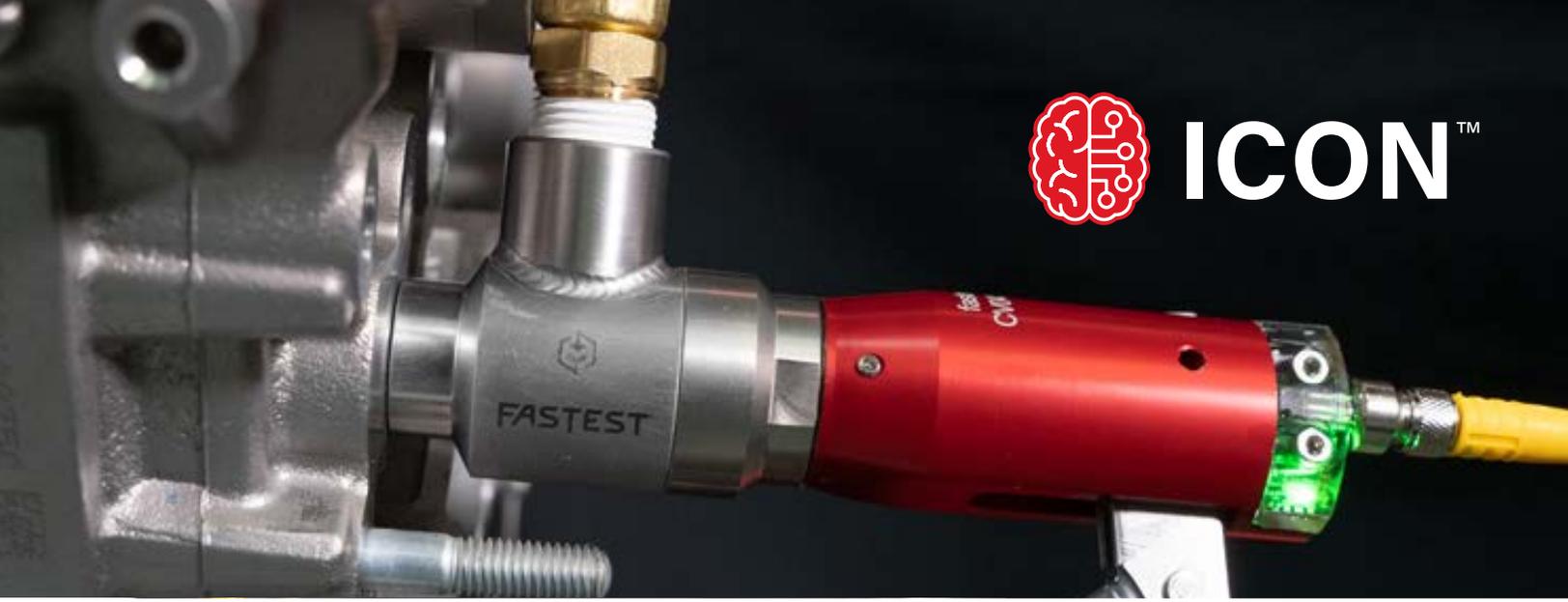
# INTELLIGENCE AT THE POINT OF CONNECTION

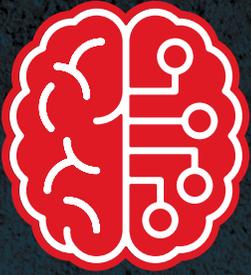


**ICON**<sup>TM</sup>  
Process Automation Technology



ICON™





# ICON™

## Intelligence at the Point of Connection

Vehicle Systems | HVAC-R | Compressed Gas | Medical Life Science

ICON™ is an process automation enabling technology engineered to enhance and maximize our customer's testing process.

Integrating sensing and real-time data output into FasTest's industry-leading connection tools, ICON™ puts the power in the hands of users – or robots – to run smarter, safer, and faster tests. Improve testing quality and lower manufacturing costs with ICON™.

As an industry leader of Sealing and Connection Technologies, FasTest offers standard products for most ports/threads/tubes, and a dedicated team of Custom Design Experts to engineer optimized solutions for demanding applications. Connect fast, seal reliably, test safely.



### BROAD OFFERING

Extensive standard and Custom Engineered Solutions.



### INTELLIGENT TOOLS

Sensing & data generation tools that support process automation.



### APPLICATION EXPERTS

Optimized solutions, tailored to your unique needs.



### GLOBAL SUPPORT

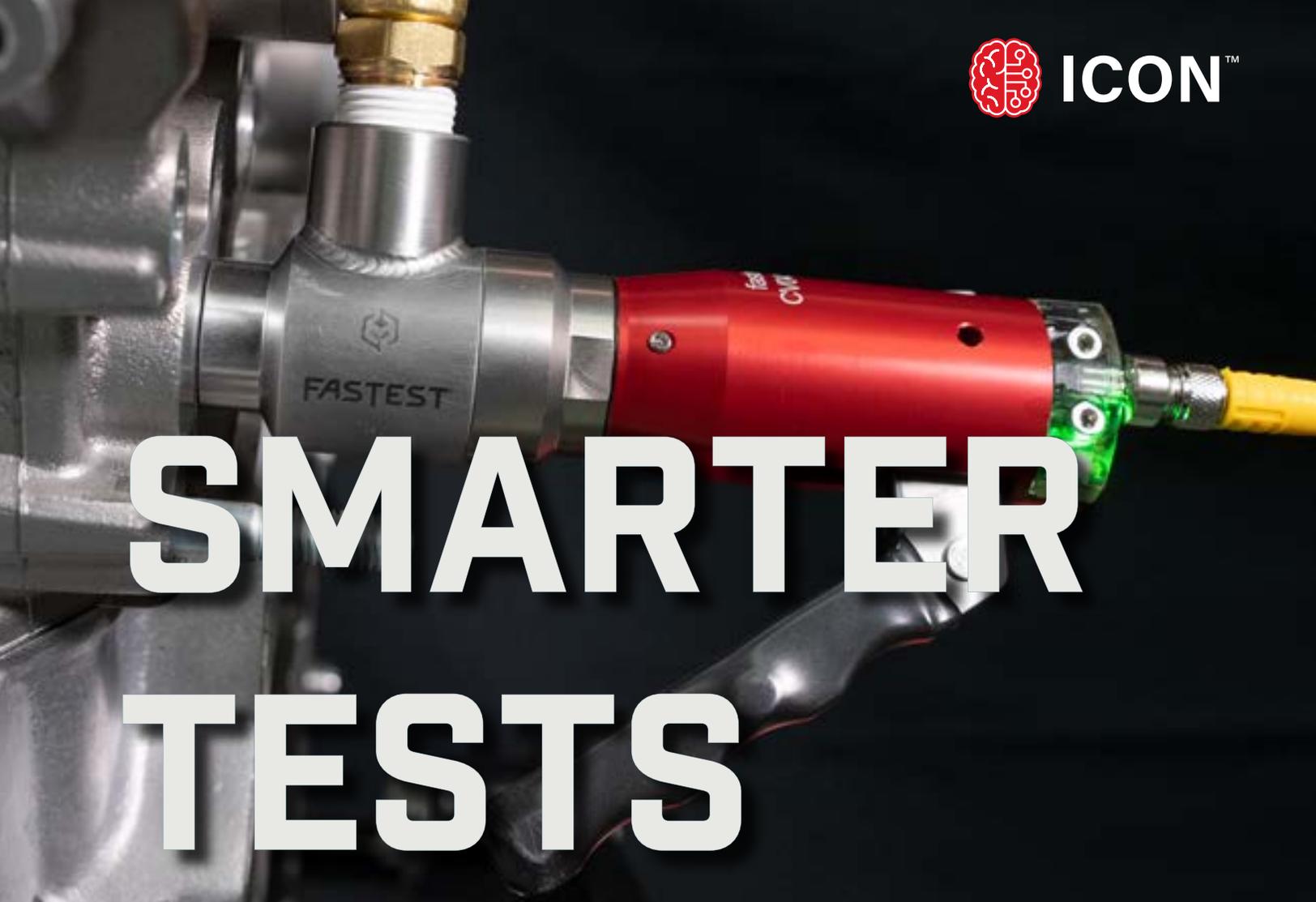
Global distribution network provides local, responsive support.



### SUPERIOR QUALITY

ISO 9001 Certified; Robust tools improve the quality of your product.





# SMARTER TESTS



## Reliable Sealing

Safe connections, reliable seals, and false failure reduction with connection verification.



## Safety Interlock

Ensure safe connections and operator safety prior to running tests.



## Process Automation

Confirm step completion and set handshake points. Ideal for manual to fully automated processes.



## Faster Cycle Times

Reduce cycle times with quick and accurate connections.



## Real-Time Data

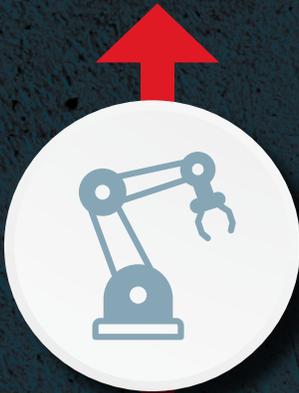
Real-time data and data logging provide process insight.



## Fast Integration

Quick and easy integration into user's testing process.

# ICON™ supports multiple levels of process automation:



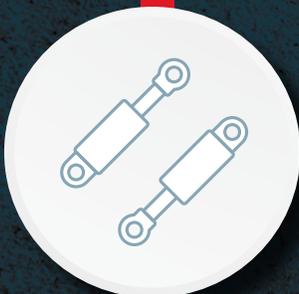
## Full Automation

Multiple connectors are involved with the test such as the case with testing an internal combustion engine. One robot has to pick and place multiple connectors which will require the development of a flexible end of arm tooling system with a common interface across all FasTest connectors.



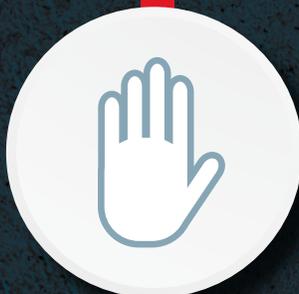
## Collaborative Robot ("CoBot")

When access to the port or tube requires a non-linear motion to place the connector, the connector is rigidly mounted to the end of a robotic arm.



## Linear Actuator

Connectors are mounted on linear actuators. When the test part is positioned, the actuators move connectors into position. Upon actuation a "good connection/seal" signal is sent to the PLC indicating OK to start test.

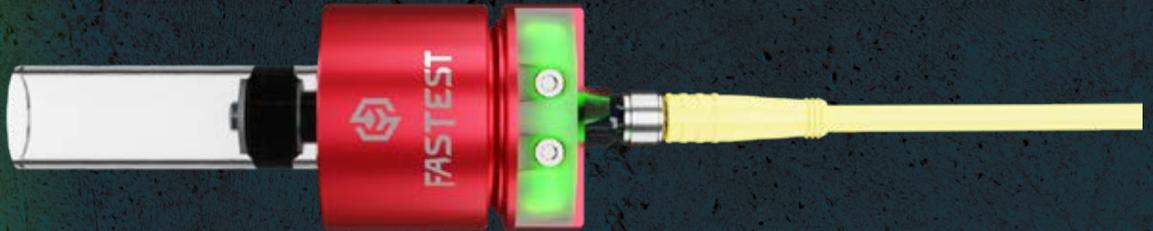


## Manual Operation

The operator manually places connectors, actuating either manually or pneumatically. With each good connection, the safety interlock instant green LED notifies the operator/PLC of a reliable seal. Once all connectors are placed and connections are verified, the operator/PLC can begin the leak test.

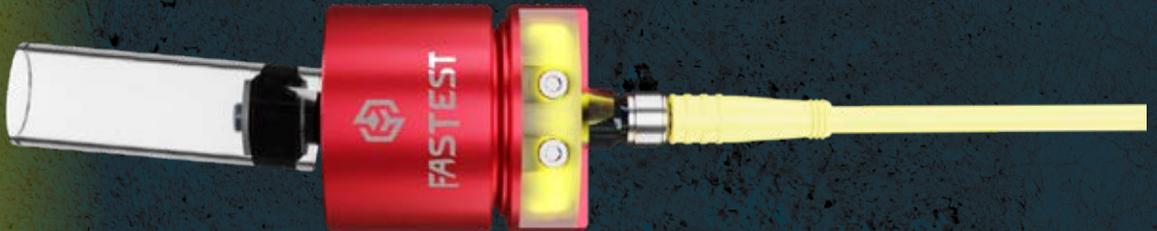
# How ICON™ Works

Good  
Connection



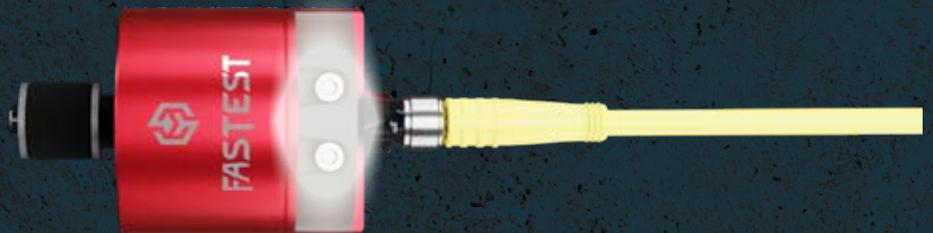
Green indication of a good connection. The connection and seal are secure, "okay" to begin next steps.

Short  
Connect



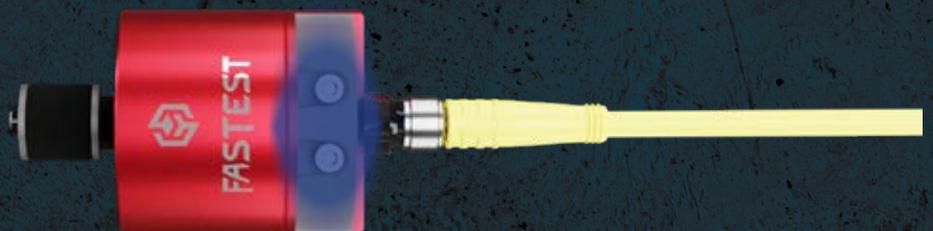
Yellow indication of a miss-connect or short-connect. Reconnect for green indication.

User  
Controllable  
LED



User controllable white indication allows user's to tailor to their testing process. Examples include setting a signal to operators to use a specific tool, or an indication that a test is running and to not remove connector.

Powered On



Blue heartbeat indication that power is connected.

# ICON™ Integration

## System Overview:

**CONNECTED**

Green indication of a good connection.

**RECONNECT**

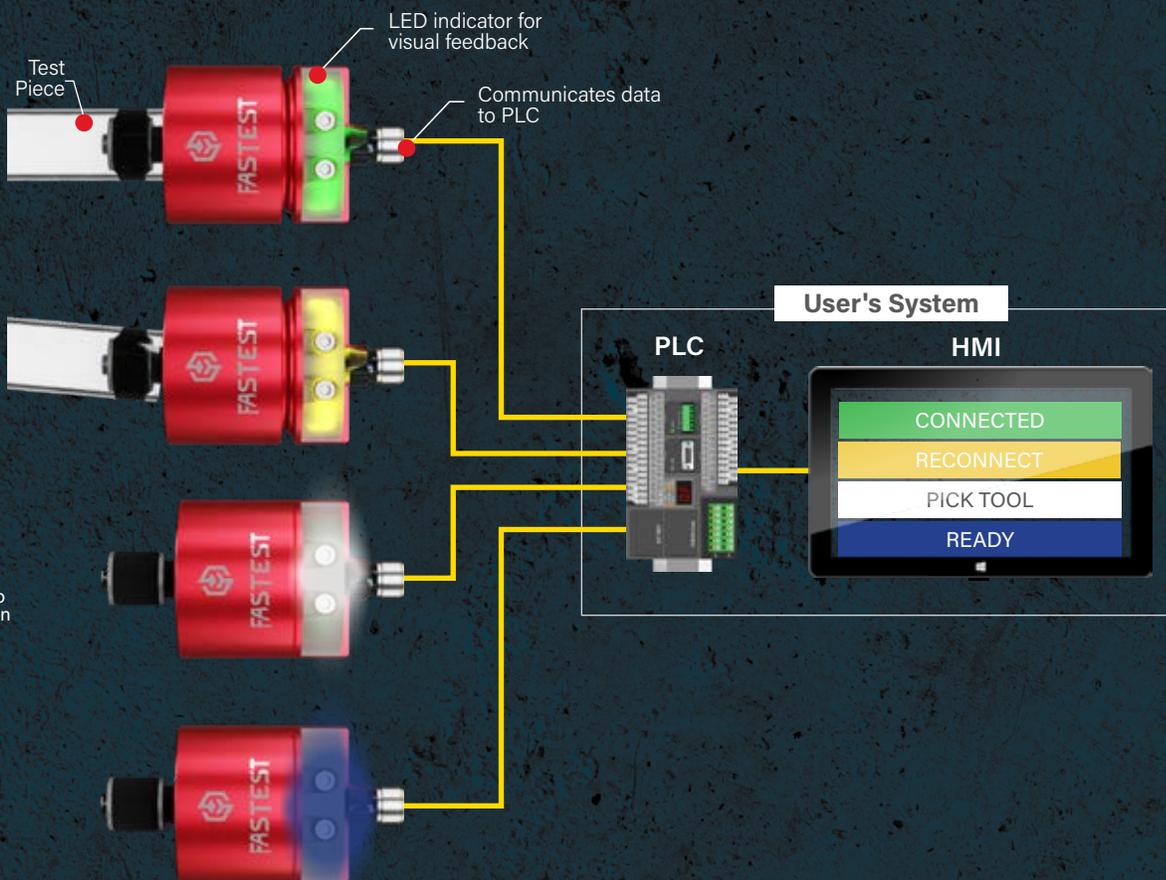
Recognize a connection issue before causing a false failure.

**PICK TOOL**

User controllable LED  
Examples: signal operator to use specific tool or indication of a running test.

**POWERED**

Blue heartbeat indicates power is connected.



# ICON™ Technology Overview



FasTest's ICON™ intelligent connection technology measures the relative motion of the moving parts of the connector to determine whether a good connection has been made.

ICON™ is currently offered in two forms: Discrete SSR Output and Analog Voltage Output.

## Solid-State Relay (SSR)

The Solid-State Relay (SSR) version will be preferable to most customers. A "good" connection is indicated by a normally-open potential-free output (dry contact) on pins 5 and 6, ideal for easy integration. The module has a number of LED states to indicate operational modes depending on the exact model and connector family, but a green LED is used on all products to indicate a good connection, in conjunction with the output signal. Calibration points are stored internally on the connector in non-volatile memory for ease of maintenance. For most connectors, FasTest provides easy-to-follow calibration procedures; for FE and FI connectors calibration will require gauge pins or other tooling sized according to the size and tolerance of the device under test. A calibration tool is available from FasTest; the calibration signal can also be asserted as a 24V input.

## Analog (ANA)

The Analog (ANA) version of the connector is for advanced users only. It must be used in conjunction with a Programmable Logic Controller (PLC) with an analog input option. This model provides a 0-10V voltage output which varies according to the actuation of the connector. The LEDs are not controlled internally and, if desired, must be controlled by the PLC. There are two LED channels, red and green, which can be combined to make yellow. FasTest can provide guidance on calibration, but proper calibration is ultimately customer responsibility.

# ICON™ Tools & Accessories



**60**

Standard & Custom  
Sized Threads  
(750 psi/51 bar)



**VDA**

VDA Standard  
Ports  
(150 psi/10.3 bar)



**70 FR**

J2044 Standard  
Fuel Rails  
(750 psi/51 bar)



**FX**

High Pressure  
Connections to  
Standard Threads  
(5,000 psi/345 bar)



**ZGNP**

Wide Tolerance  
Threaded Connections  
for Multiple Thread  
Sizes/Types  
(300 psi/20.7 bar)



**FN**

High Pressure  
Connections to  
Threaded Bores  
(5,000 psi/345 bar)



**FE**

Standard Tubes and  
Threads  
(500 psi/34 bar)



**FEG**

Custom Cradle  
Connections to  
Flanged Ports and  
Turbos



**FI**

Standard Tubes,  
Bores and Threads  
(120 psi/8.3 bar)



**FIG**

Gripping  
Connections to Cast  
and Rough Surfaces  
(120 psi/8.3 bar)

# ICON™ Accessories



**Calibration**

Standard & Custom  
Sized Threads  
(750 psi/51 bar)



**M8 Cable**

Straight Female M8  
threaded Connector  
to straight Male M8  
connector (6-wire  
2m cable)



**M8 Cable**

Straight Female M8  
to Flying Leads (6-  
wire 2m cable)

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**Interested in Learning More? Have Questions?**

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[fastsales@fastestinc.com](mailto:fastsales@fastestinc.com)  
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**Headquarters | USA**

1646 Terrace Drive, Roseville, MN, 55113-1317  
Phone: 651.645.6266 • Fax: +1.651.645.7390 • [www.fastestinc.com](http://www.fastestinc.com)

**Shenzhen | China**

Room#1013,1015, A9 Building, Tianrui Industrial Park  
No.35 Fuyuan 1st Road, FuHai residential district,  
Baoan Shenzhen, China 518103  
(755) 27084905 • [fastsalescn@fastestusa.cn](mailto:fastsalescn@fastestusa.cn)