

Fiber Optic Connector Assembly Program (FOCAP)



President's Message

For over 30 years I have watched compressed air fluid dispensing systems create numerous headaches for manufacturers. To remedy this situation we have spent the past decade developing solutions that eliminate compressed air from the fluid assembly process.

More and more of our solutions are finding their way onto production lines of manufacturers that have embraced the technological innovations offered by Fishman® Corporation; advancements that free them from the assembly fluid nightmares and lost profits they endured with compressed air fluid dispensing systems.

The technological bedrock of our systems is AlgorithmicControl,™ which when working in tandem with our patented AirFree® Technology, eliminate problems and increase profits. Once manufacturers see what AirFree® Technology can do for them, they are sold on its merits. Shortly after selecting our solutions, our customers begin to see that in addition to our innovative technology, it is the people behind Fishman® that truly set us apart.

When you purchase a SmartDispenser® Fluid Dispensing System you are gaining access to a group of people who not only believe in our products, but more important, are dedicated to assuring your success. When you need us, you can always count on us to be there for you. Moreover, we never put a price on what you need to make our products work for you. Instead, we will do whatever it takes to make sure you are satisfied with our solutions and with our company.

Fishman® was incorporated in 1958, and purchased by my family in 1976, I am a second generation owner. Our management team has over 70 years of combined experience perfecting the science and art of fluid dispensing systems. After you review our Fiber Optic Connector Assembly Program (FOCAP) Catalog, I welcome you to provide us with the opportunity to earn your trust, and with it your business.

Scott Beebe, President



Table of Contents

FOCAP Program Overview	4
FOCAP Program Choice 1	8
FOCAP Program Choice 2	10
FOCAP Program Upgrade 1 to 2	12
FOCAP Program Choice 3	14
FOCAP Program 2 to 3	22
The Difference in Technology	24
FOCAP Genius® Components	26

Introduction

Fishman®'s new Fiber Optic Connector Assembly Program (FOCAP) is targeted at companies making LC, SC and MT Fiber Optic Connector assemblies. The program eases the selection and ordering process, providing a solution that reduces manufacturing downtime, which results in increased throughput and profits.

The program consists of three choices, covering companies doing annual production yields, ranging from low to mid to high. We think the most unique and popular is Program Choice 3. We believe this because it gives manufacturers an effective way to automate a process that is difficult, forcing them to do it by hand.

Attached are six data sheet outlining the entire program. They are as follows:

- FOCAP Program Overview
- FOCAP Program Choice 1
- FOCAP Program Choice 1 Buy Back Certificate
- FOCAP Program Choice 2
- FOCAP Program Choice 3
- FOCAP Genius® Components

Once you review the materials, we are convinced you will see how our new Fiber Optic Connector Assembly Program (FOCAP) will help you to increase annual throughput and profits

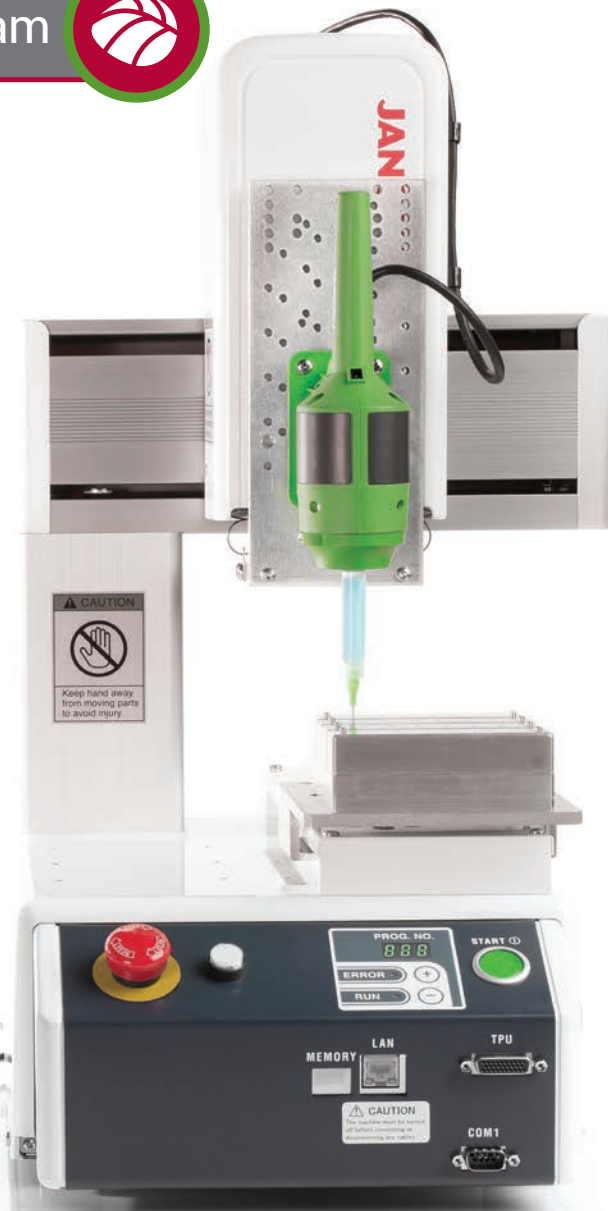
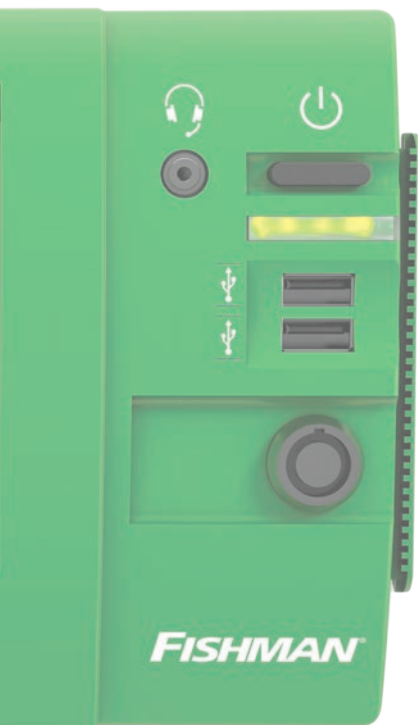


1 Fishman® makes it easy to go from the MINI...

2 ...to the Benchtop System...



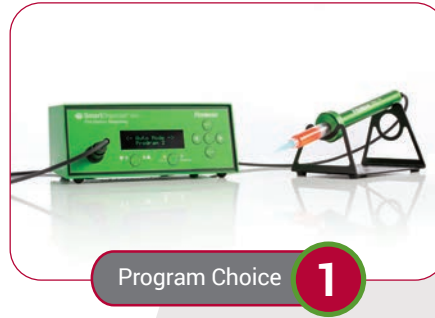
FOCAP Program



3 ...to the SmartAutomation™ Platform



AlgorithmicControl™ offers the capability to apply algorithms to a precise mechanical drive so that it delivers fluid deposits with the highest degree of repeatability. This level of control mitigates the impact of an epoxy's changing viscosity on the fluid deposit volume. With it, all parameters such as fluid deposit size, speed, and reverse motion are numerical inputs, making adjustments easy. It also provides documentation and standardizes workstation to workstation performance.



Program Choice **1**



Program Choice **2**



Program Choice **3**

Three Program Choices for Assembling Fiber Optic Connectors

Each is intended to serve a different production need. For additional information, see attached Data Sheets—

Program Choice

1

The SmartDispenser® MINI—*includes only the AlgorithmicControl™ portion of AirFree® Technology*—ideal for limited budgets and mid to high throughput production.

Program Choice

2

The SmartDispenser® Benchtop System—*includes the full AirFree® Technology operating system*—perfect for mid to high throughput production.

Program Choice

3

The SmartAutomation™ platform, featuring the SmartDispenser®— *includes the full AirFree® Technology operating system, ConnectorMount™, FO Connector SmartApp™, SmartReload™ Station and Janome Benchtop Robot*—suitable for automated high production throughput.

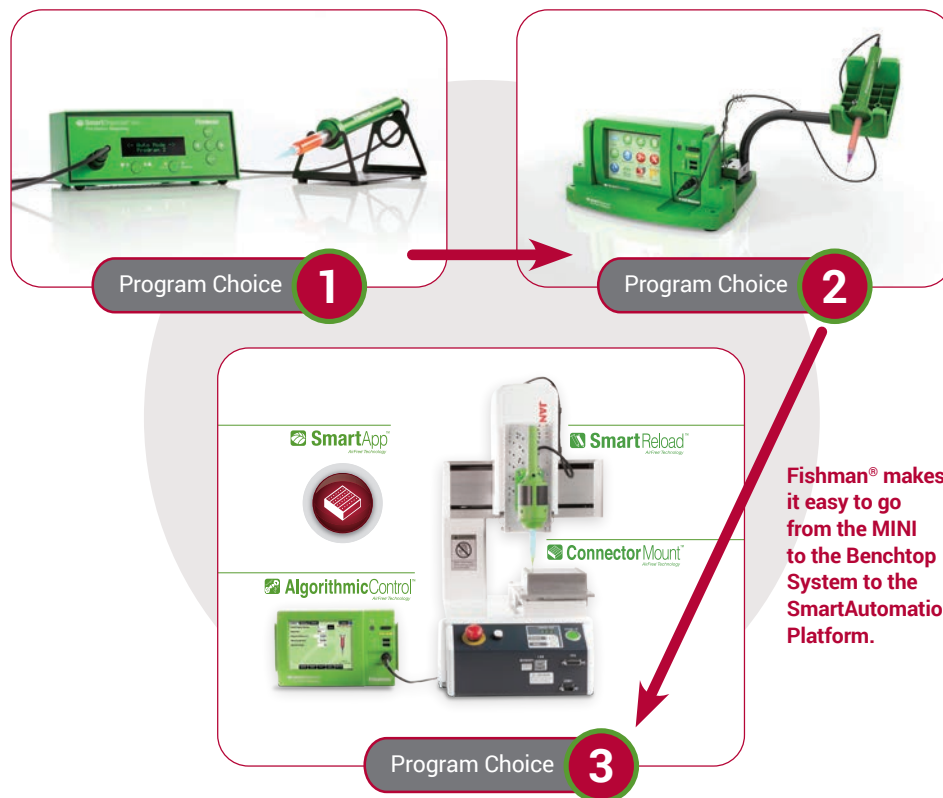
AirFree® Technology

AirFree® Technology lets manufacturers gain total control of their processes, because it gives them a controller with intelligence.

One that can apply algorithms to control the delivery of fluid deposits with the highest level of process control. Adding artificial intelligence allows the machine to make

decisions, automatically report daily production data, and reduce PLC programming.

Plus, it enables machine to machine cross communication between workstations and with MES systems.



Fishman® makes it easy to go from the MINI to the Benchtop System to the SmartAutomation™ Platform.

The best part about each Program Choice is that they are upgradable to the next option—

Program Choice

1

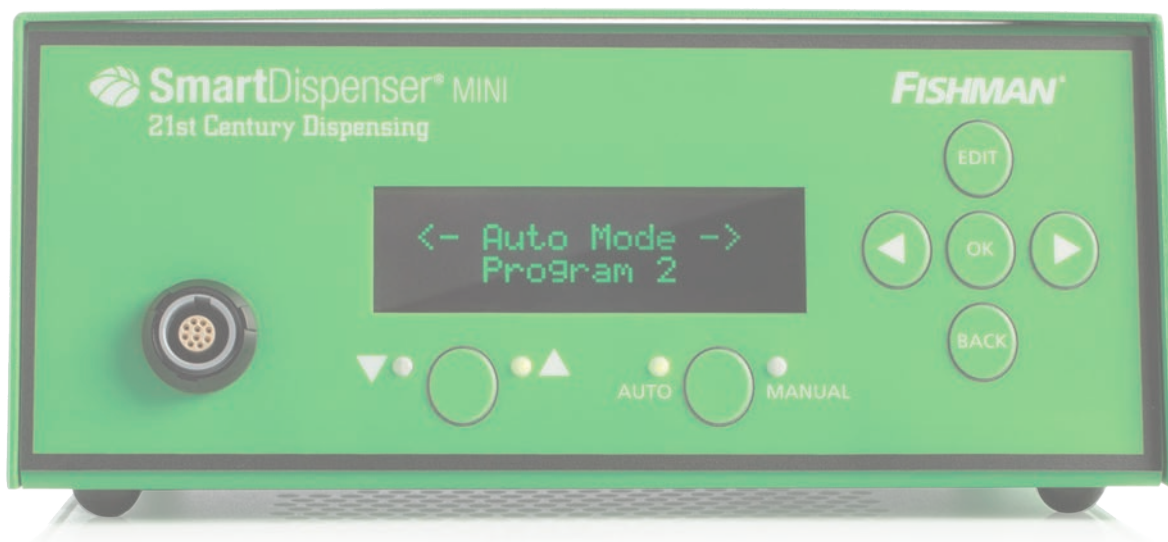
The SmartDispenser® MINI comes with a buyback program to upgrade to the SmartDispenser® benchtop system—see attached certificate.

Program Choice

2

The SmartDispenser® Benchtop System can be integrated into the SmartAutomation™ platform. So, if manufacturers know they will automate down the road, they can buy the SmartDispenser® Benchtop System now, and the SmartAutomation™ platform later.

With these three Program Choices, the original investment is never lost. As a customer's production grows, so does the SmartDispenser®; the most flexible fluid dispensing system available today.



SmartDispenser® MINI 3, 5, 10 & 30cc Pencil Guns

Use these pencil guns for encapsulating Fiber Optic connectors. All four are especially suited for blind filling into Fiber Optic connector ferrules. The precision of these pencil guns is assured thanks to the SmartDispenser®'s patented AlgorithmicControl™. It provides the highest repeatability, from one dispense to the next, whether the application calls for a single component adhesive or a two component epoxy.



Program Choice

1



AlgorithmicControl™

AirFree® Technology

The SmartDispenser® MINI Fiber Optics Benchtop System is ideal for dispensing epoxies for bonding glass fiber to ceramic ferrules. AlgorithmicControl™ helps to manage two part epoxies and other Fiber Optic assembly fluids, making certain each ferrule is filled without overflow or air gaps.

Traditional air pressure systems simply cannot deliver repeatability from one fluid deposit to the next crucial for Fiber Optic connector assembly. AlgorithmicControl™ from Fishman® Corporation stabilizes the fluid dispensing process, providing the highest repeatability when compared to other fluid dispensers on the market today.



Program Choice

2



3, 5, 10 & 30cc Pencil Guns for the SmartDispenser®

Use these pencil guns for encapsulating Fiber Optic connectors. All four are especially suited for blind filling epoxies into Fiber Optic connector ferrules when bonding glass fiber to ceramic. The precision of these pencil guns is assured thanks to the SmartDispenser®'s patented AlgorithmicControl™. It provides the highest repeatability, from one dispense to the next, managing two part epoxies making certain each ferrule is filled without overflow or air gaps. This is an advantage that is unattainable with compressed air systems because unlike the SmartDispenser® they are unable to have algorithms accurately applied to them.



Program Choice

2



AirFree® Technology

The SmartDispenser® features AirFree® Technology. It not only delivers AlgorithmicControl™, but it also provides manufacturers with a host of other benefits not possible with compressed air systems. AirFree® Technology—

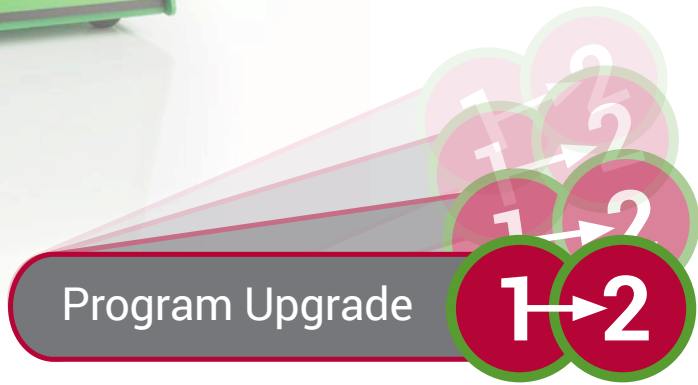
- Provides automatic production data reporting that management can review
- Eliminates human error by reducing operator interaction with the use of tools such as bar code scanning
- Makes available an on-board database that lets the SmartDispenser® make decisions like verifying the assembly fluid, automatically loading a program and locking the system when wrong operator choices are made
- Allows the SmartDispenser® to network with servers or MES systems for command, control and reporting functions

As new versions of AirFree® Technology are released, the SmartDispenser® can be safely updated with the latest innovations via a local USB memory stick. Fishman® Corporation also offers SmartApps™ that let manufacturers customize their SmartDispensers® to enhance their specific process.





1 Fishman® makes it easy to go from the MINI...



2 ...to the Benchtop System

Program Upgrade

1 → 2



SmartDispenser® MINI
AirFree Technology



SmartDispenser®
AirFree Technology

BUY BACK CERTIFICATE

★ FULL PRICE CREDIT ★

Enjoy the best of both worlds—when you're ready to move up from the SmartDispenser® Mini to the industry 4.0 ready SmartDispenser®, simply email the certificate and the serial number off the back of the MINI, and you'll receive a product credit for the full price of the SmartDispenser® Mini.

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FISHMAN®
Dispensing Innovation®



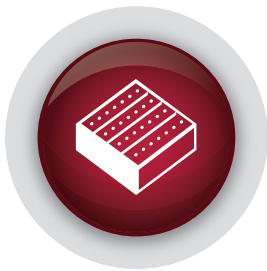
Program Choice

3



The Complete System for True Automation

 **SmartApp™**
AirFree® Technology



 **SmartReload™**
AirFree® Technology

 **ConnectorMount™**
AirFree® Technology

 **AlgorithmicControl™**
AirFree® Technology



By combining AlgorithmicControl™ with the LC/MT/SC Genius™ Precision ConnectorMount™, the High Precision Benchtop Robot, the SmartReload™ Station and the Fiber Optic Connector SmartApp™, Fishman® has created a superior solution that makes certain each Fiber Optic connector is filled precisely, cycle after cycle.

 Watch Video

How the System Works



Intelligence
Algorithms = Intelligence



- 3cc Syringe
- 0.005cc Volume
- 0.236cc per second
- 10 Steps Backoff

$$\text{Volume} = \pi r^2 h$$



Acts as the Command Center for the Fiber Optic Benchtop Automation System

The SmartDispenser® with AlgorithmicControl™ is the industry's only intelligent fluid dispensing system.

- **As Such, It Supplies the Exact Amount of Epoxy to Each Fiber Optic Connector**
 - It does this by knowing the syringe size
 - It does this by knowing the exact fluid deposit volume
 - It does this by knowing the fluid delivery speed
 - It does this by knowing how much post dispense reverse motion
 - All this ensures exact replication
- **Plus, It Will Notify Operator When Syringe Reservoir is Empty and Stop Robot**

AirFree® Technology processes this information by applying algorithmic directives to the linear drive system. This enables the mechanical linear drive system with a cylinder (syringe) containing epoxy to dispense its fluid deposits accurately with the highest degree of repeatability.



ConnectorMount™

AirFree® Technology

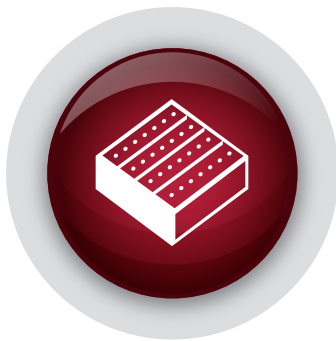


Acts as the Connector Location Tool for the Fiber Optic Benchtop Automation System

The Precision ConnectorMount™ Holds LC, SC or MT Fiber Optic Connectors in a Fixed Position.

- Its design allows for the fluid dispense tip to be guided into the connector center tube in preparation for the application of assembly fluid, which assures unparalleled precision

How the System Works



Acts as the Monitoring System for the Fiber Optic Benchtop Automation System

The LC, MT and SC Connector SmartApp™ Monitors Amount of Fluid in the Syringe Reservoir.

- This SmartApp™ monitors how many Fiber Optic connectors are in a complete ConnectorMount™
 - This SmartApp™ monitors how much epoxy is dispensed into each Fiber Optic connector
 - This SmartApp™ assures that each Fiber Optic connector in a ConnectorMount™ is 100% filled. It also will not allow a ConnectorMount™ to be partially filled

The LC, MT and SC Connector SmartApp™ Monitors Epoxy Cure Time.

- This SmartApp™ will automatically stop the robot and notify the operator when the epoxy cure time has expired
 - This SmartApp™ will hold the robot stop communication signal until each Fiber Optic connector in a ConnectorMount™ is 100% filled. It also will not allow a ConnectorMount™ to be partially filled



SmartReload™

AirFree® Technology



Acts as the Rapid Syringe Changeover Station for the Fiber Optic Benchtop Automation System

The SmartReload™ Station Reduces Syringe Changeover Downtime From Approximately 9 Minutes to 40 Seconds.

- Allows the AirFree® LinearDrive™ System (LDS) Dispense Guns, with syringe fluid reservoir, to be loaded while the automation cell is assembling Fiber Optic connectors
- Increases production throughput while dramatically lowering the cost of typical hand-held benchtop assembly lines
- Moreover, as part of a Fishman® Fiber Optic Benchtop Automation System, a single SmartReload™ Station can service multiple cells

[▶ Watch Video](#)

System Ordering Options

OPTION 1

DAA0041 – Fiber Optic Benchtop Automation System Includes:

- SmartDispenser® AirFree® Fluid Dispensing System
- High Precision Benchtop Robot
- LC, MT, SC Fiber Optic Connector SmartApp™
- SmartReload™ Station includes:
 - SmartDispenser® AirFree® Controller
 - SmartDispenser® AirFree® Controller Table Mount
 - SmartDispenser® Gun Tray
 - Dispense Tip Locator
 - USB Memory Stick
 - Genius™ Syringe Holding Rack
 - SmartDispenser® LDS Dispense Gun

TBD Genius™ Precision ConnectorMount™

- Custom Design to a Specific Fiber Optic Connector
- Part Number Assigned at Time of Design

OPTION 2

DAB0041 – Fiber Optic Benchtop Automation System Includes:

- SmartDispenser® AirFree® Fluid Dispensing System
- High Precision Benchtop Robot
- LC, MT, SC Fiber Optic Connector SmartApp™
- Floor Standing Safety Glass Enclosure for FO Benchtop Automation System
- SmartReload™ Station includes:
 - SmartDispenser® AirFree® Controller
 - SmartDispenser® AirFree® Controller Table Mount
 - SmartDispenser® Gun Tray
 - Dispense Tip Locator
 - USB Memory Stick
 - Genius™ Syringe Holding Rack
 - SmartDispenser® LDS Dispense Gun

TBD Genius™ Precision ConnectorMount™

- Custom Design to a Specific Fiber Optic Connector
- Part Number Assigned at Time of Design

OPTION 3

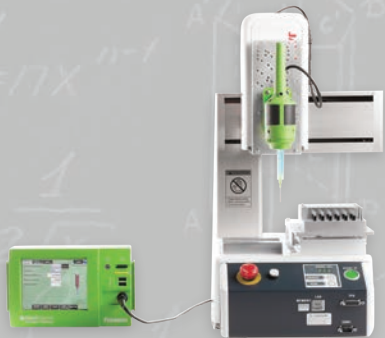
DAC0041 – Fiber Optic Benchtop Automation System Includes:

- SmartDispenser® AirFree® Fluid Dispensing System
- High Precision Benchtop Robot
- LC, MT, SC Fiber Optic Connector SmartApp™
- Floor Standing Safety Glass Enclosure for FO Benchtop Automation System
- Laser Light Curtain
- SmartReload™ Station includes:
 - SmartDispenser® AirFree® Controller
 - SmartDispenser® AirFree® Controller Table Mount
 - SmartDispenser® Gun Tray
 - Dispense Tip Locator
 - USB Memory Stick
 - Genius™ Syringe Holding Rack
 - SmartDispenser® LDS Dispense Gun

TBD Genius™ Precision ConnectorMount™

- Custom Design to a Specific Fiber Optic Connector
- Part Number Assigned at Time of Design

Note: Genius® Precision ConnectorMounts™ are custom quoted. A ballpark price range is included for budgetary purposes and is not fixed. Complexity of the Fiber Optic connector will determine final price.



How to Purchase



Contact Your Fishman® Account Manager

Step 1

- Send a .stp or .igs file of your Fiber Optic connector to your Fishman® Account Manager
- In lieu of a file, send samples of your Fiber Optic connector to your Fishman® Account Manager

Step 2

- Fishman® Engineers will design a custom Fiber Optic ConnectorMount™ for your Fiber Optic connector
- A quote for the ConnectorMount™ will be provided by your Fishman® Account Manager

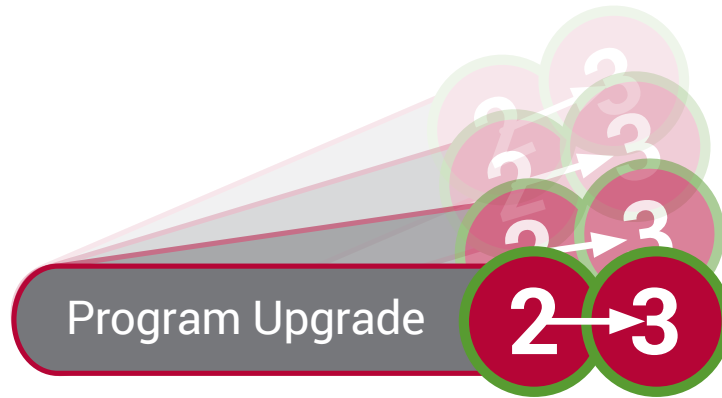
Step 3

- Choose the Fiber Optic Benchtop Automation Station; Option 1, Option 2 or Option 3
- A quote for will be provided by your Fishman® Account Manager

Step 4

- Place your Purchase Order(s)

It's That Easy!



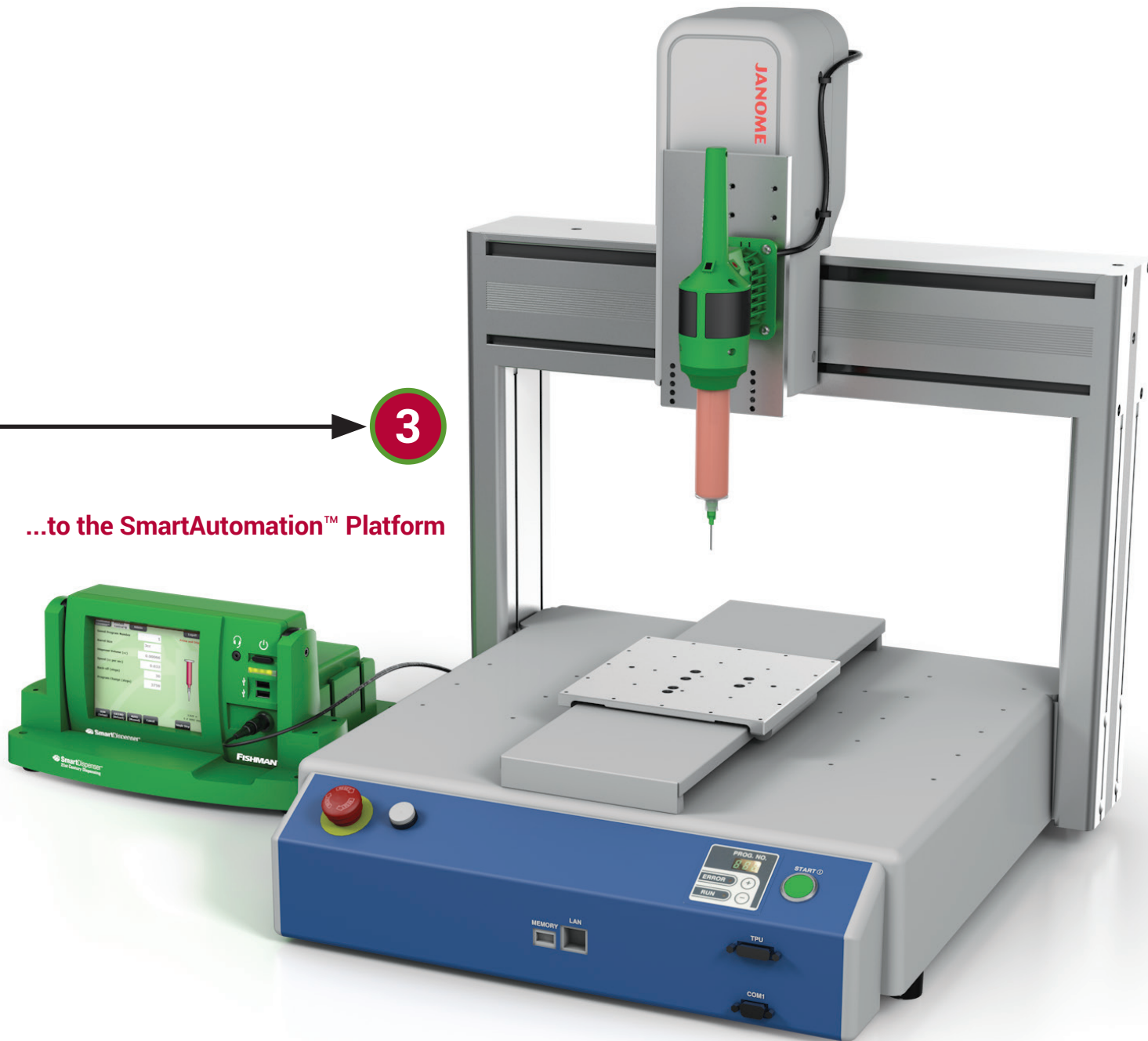
2

Fishman[®] makes it easy to go from the Benchtop System...



3

...to the SmartAutomation™ Platform



The Difference in Technology

Program Choice 1 provides manufacturers with an excellent starting point in terms of the technological innovations offered by Fishman[®] Corporation. These two links will take you to a pair of informative videos that illustrate why our fluid dispensing solutions are so much more effective than any other product on the market today.

Program Choice

1



[▶ Watch Video](#)



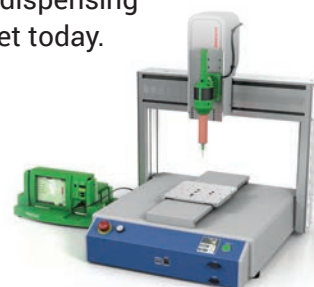
AlgorithmicControl[™]
AirFree[®] Technology

[▶ Watch Video](#)



Program Choices 2 & 3 provide manufacturers with the full complement of technological advancements offered by Fishman® Corporation. These eight links will take you to an array of informative videos that illustrate how these innovations make our fluid dispensing solutions considerably more effective than any other product on the market today.

Program Choices

2 & 3

[▶ Watch Video](#)


AirFree® Technology


AlgorithmicControl™
 AirFree Technology

[▶ Watch Video](#)

SmartApp™
 AirFree Technology

[▶ Watch Video](#)

SmartNetworking™
 AirFree Technology

[▶ Watch Video](#)

SmartScanning™
 AirFree Technology

[▶ Watch Video](#)

SmartReporting™
 AirFree Technology

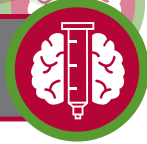
[▶ Watch Video](#)

SmartRecycling™
 AirFree Technology

[▶ Watch Video](#)

SmartValve™
 AirFree Technology

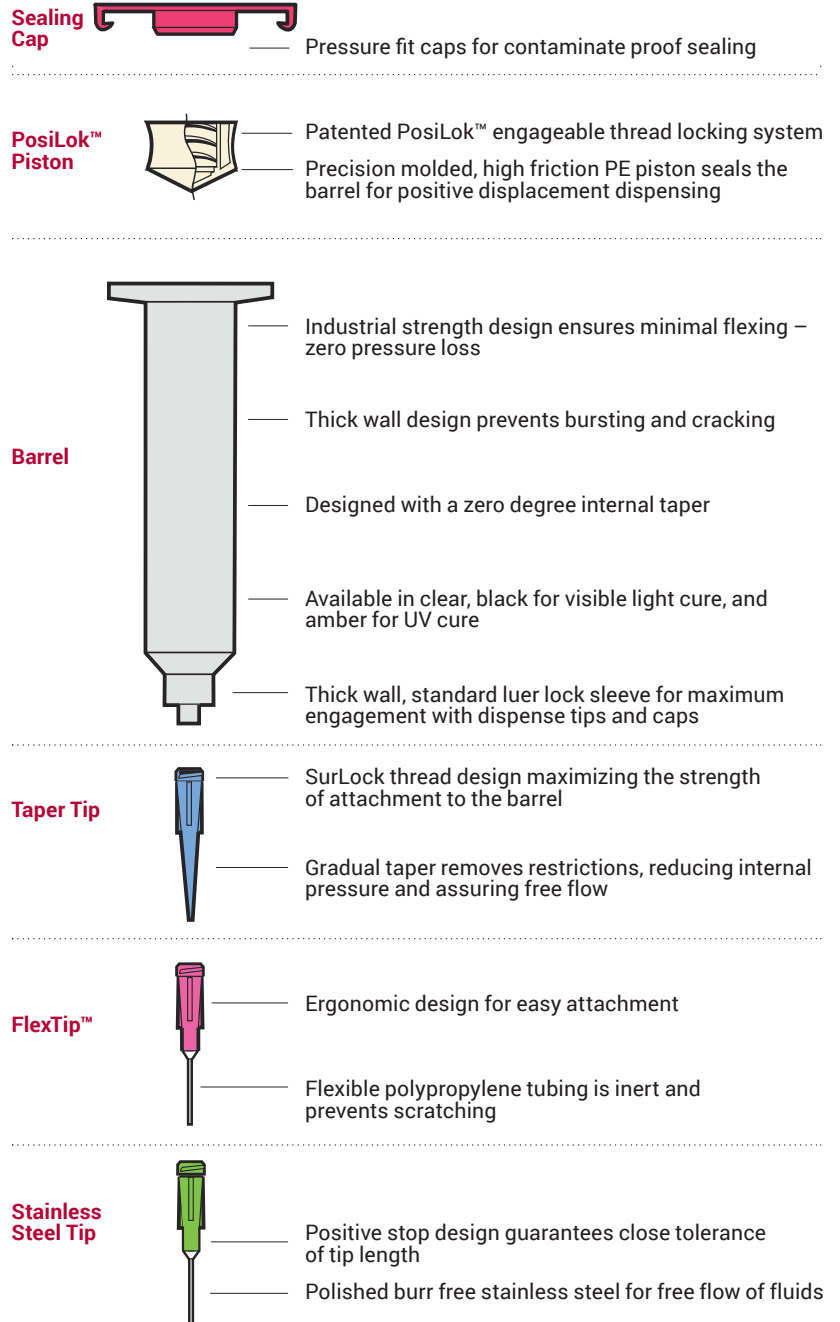
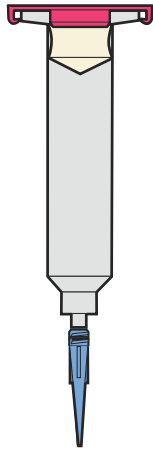
[▶ Watch Video](#)

Genius® Components 



Genius® Dispensing Components

Genius® dispensing components offer a thick wall design that eliminates flexing and promotes a zero draft that assures smooth flow. The disposable design of these dispensing components also does away with the need and use of harmful cleaning agents such as MEK or acetone. Moreover, the polypropylene reservoir protects assembly workers from coming in contact with harmful assembly fluids. Plus, when empty, the capped syringe acts as a sealed container making disposal easy and safe.



FOCAP Program



Program Choice **1**



Program Choice **2**



Program Choice **3**



For more information on Fishman's® Fiber Optic Connector Assembly Program (FOCAP) as well as on any of the other innovative solutions and programs outlined in this catalog, please contact a sales representative at 800-433-2115.