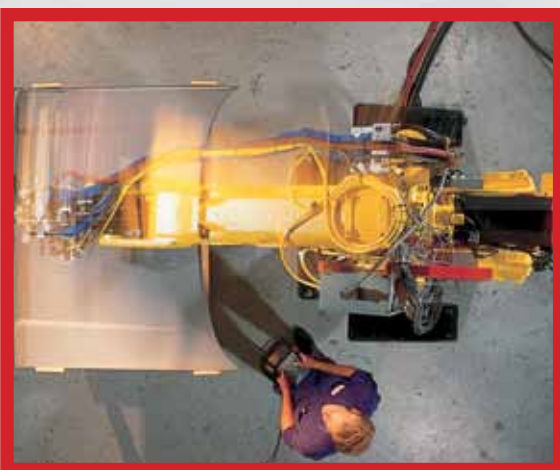
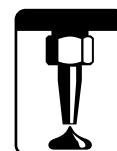
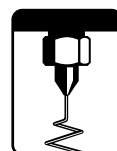
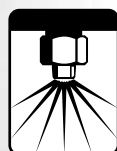
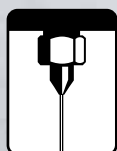
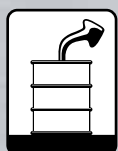


AutoStream™ Systems



Dispensing Solutions

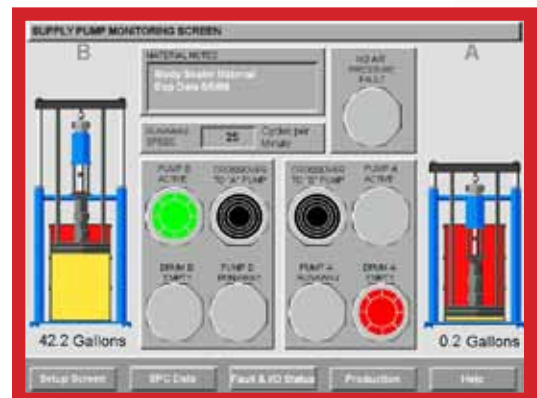
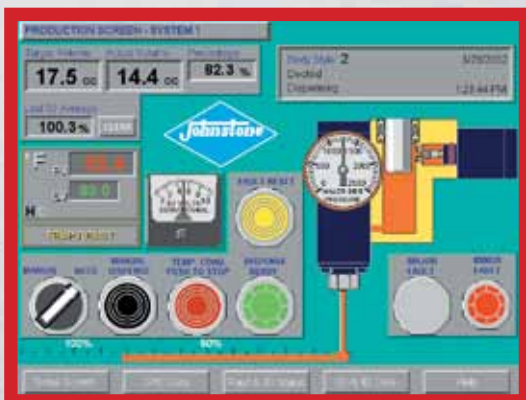
*State-Of-The-Art
Material Dispensing
And Control Systems*



AutoStream™ PC

The Next Generation Material Dispensing Control System

Johnstone's AutoStream™ PC sets the benchmark for the next generation of material dispensing control systems. This compact, PC-based system delivers sophisticated process monitoring and control capabilities in an easy-to-use graphic format that is welcomed by both computer users and non-users alike.



All dispensing information is present on a single touch-sensitive Production screen. Graphic gauges and control buttons simulate familiar last-generation analog systems to simplify operator training. Unlike last-generation controls the AutoStream PC is fast, flexible, precise, and nearly maintenance-free.



AutoStream 1K

Single-Component Precision Dispensing Systems

1K - DISPENSING HEAD

Johnstone's single-component metered dispensing system is a lightweight design for robot end-of-arm tooling applications. The 1K systems are designed for applications below 60cc in volume and are ideal for use with the Johnstone AutoStream PC control system in producing automotive enclosures using single-component materials.

Volumetric monitoring does not require inline flow meters

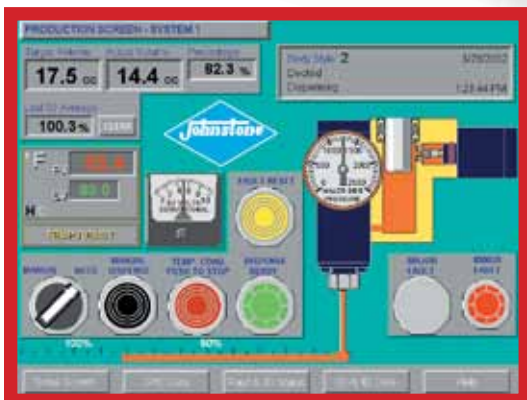
Suitable for pedestal or robot mounting

Stream flow or extrusion dispensing for all single-component structural adhesives and weld-through expandable sealers

500 to 800 mm/second tool speed in most applications; higher or lower speeds available if required

Close-coupled design for instant flow response at nozzle

Quick, precise and repeatable pressure/flow control response to dynamic robot command signal changes



This graphic representation of the dispensing head helps users better understand the system. The AutoStream PC is designed to make viewing system operation and troubleshooting as simple as possible.

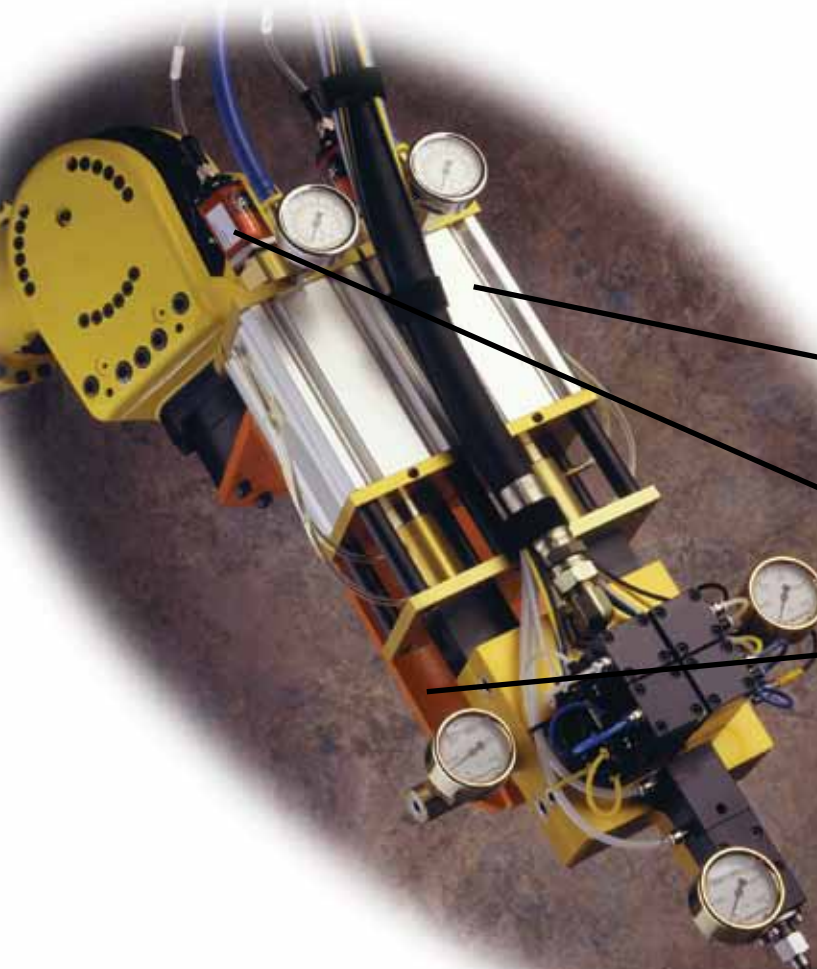


AutoStream 1KC

Single-Component Dual Shotmeter Dispense Systems

1KC - HIGH-VOLUME DISPENSING HEAD

Johnstone's lightweight dual shotmeter dispense system provides unlimited volume output of single component materials. Higher volume output enables quicker cycle times and is ideal for applications that require volumes greater than 60cc. Also, the AutoStream 1KC is ideal for use with the Johnstone AutoStream PC control system.



- *Dual/alternating shotmeter design delivers continuous volume output at programmed pressures from 0-2,000 psi for stream and extrusion capabilities*
- *Volumetric monitoring does not require inline flow meters*
- *Suitable for pedestal, robot, boom or end-of-arm mounting*
- *Stream flow or extrusion dispensing for all single-component structural adhesives and weld-through expandable sealers*
- *High flow rate capability enables 500 to 800 mm/second tool speeds for antflutter stitch bead, roof-bow, and paint shop sealing applications*
- *Dispense pressure is developed at the metering system; does not require a high-pressure pump*
- *Close-coupled design for instant flow response at nozzle*
- *Point of application temperature and flow control*

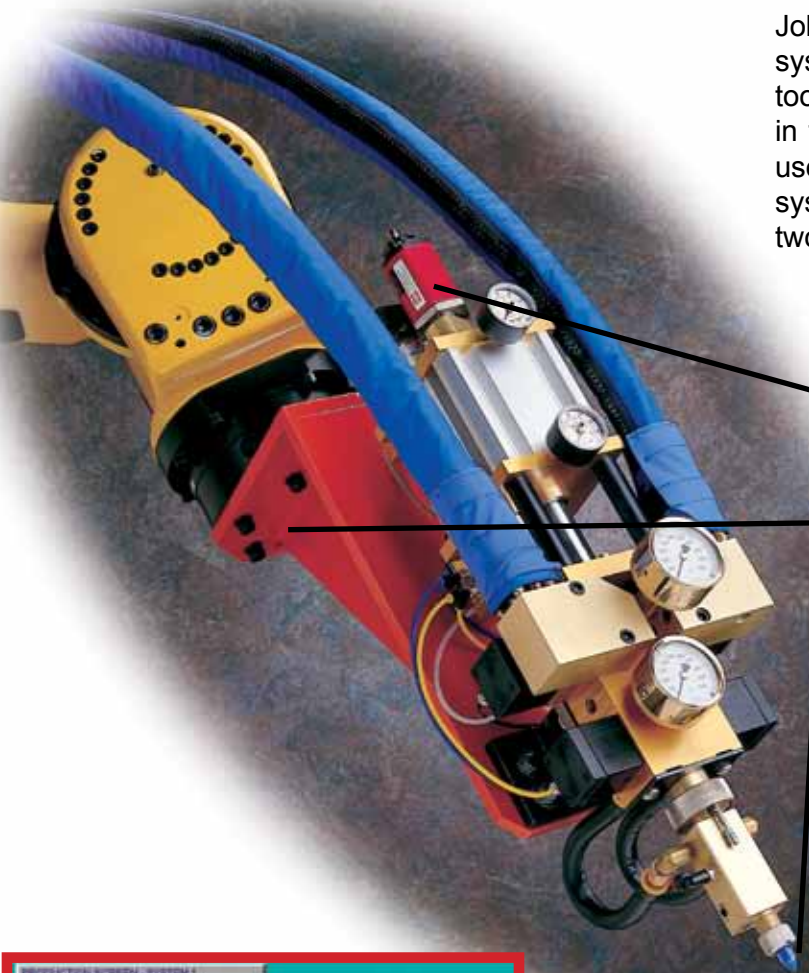


AutoStream 2K

Two-Component Precision Dispensing Systems

2K - DISPENSING HEAD

Johnstone's two-component precision dispensing system is a lightweight design for robot end-of-arm tooling applications. The 2K systems are available in 1:1, 2:1, and 4:1 mixing ratios, and are ideal for use with the Johnstone AutoStream PC control system in producing automotive enclosures using two-component materials.



No mixing tube? Nozzle not installed correctly? With the AutoStream PC's graphical interface, you can see these things and many more before they become a problem.

- **Volumetric monitoring does not require inline flow meters**
- **Suitable for pedestal or robot mounting**
- **Stream flow for all two-component structural adhesives and after-hem materials**
- **500 to 800 mm/second tool speed in most applications; higher or lower speeds available if required**
- **Close-coupled design for instant flow response at nozzle**
- **Point of application temperature and flow control**
- **Dispense pressure is developed at the metering system; does not require a high-pressure pump**

The First Name in Material Dispensing Systems

Johnstone AutoStream material dispensing systems set the standard for productivity, precision, and reliability in tough industrial applications around the world. As a supplier of both pressure regulated and metered systems, Johnstone is able to design AutoStream systems with characteristics that are optimal for your application without regard for “what’s in inventory.”

In addition to the world’s best automated dispensing systems, Johnstone Assembly Solutions also offers:

PRODUCTS

- 5-, 30-, 55-, and 300-gallon fluid delivery systems and 20 liter for global markets
- Manual dispensing systems
- Lubrication dispensing equipment

SERVICES

- On-site or in-house training
- On-site service
- Process development
- Robot path programming
- Material testing
- Equipment reconditioning
- Specialty design and build



Johnstone Manual 1KC System

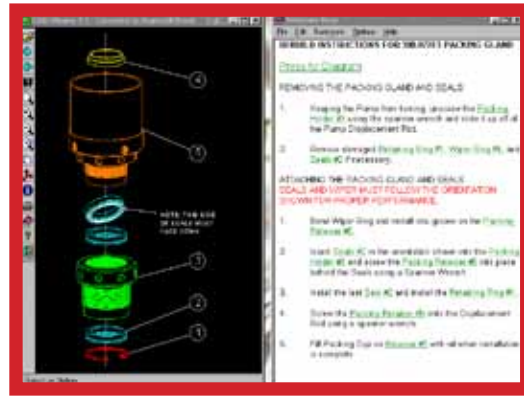
The Johnstone Manual 1KC System is designed for situations where manufacturing robots are neither practical nor financially feasible. They are designed with the operator in mind and make manual application of all types of single component materials simple, accurate, and fast. The manual 1KC is also suitable for handling pressure sensitive materials, including glass bubbles.



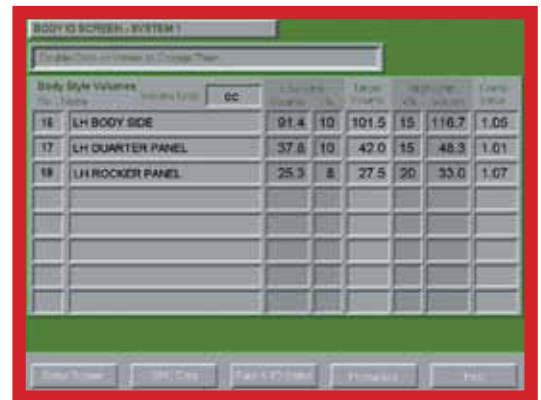
- Dual/alternating shotmeter design delivers continuous volume output at programmed pressures from 0-2,000 psi for stream and extrusion capabilities
- Replaces mastic regulator; eliminating material degradation
- Multiple gun usage from single station
- Eliminates pressure surges throughout material dispensing
- Lower pump operating pressures, creating less wear over the life of the system



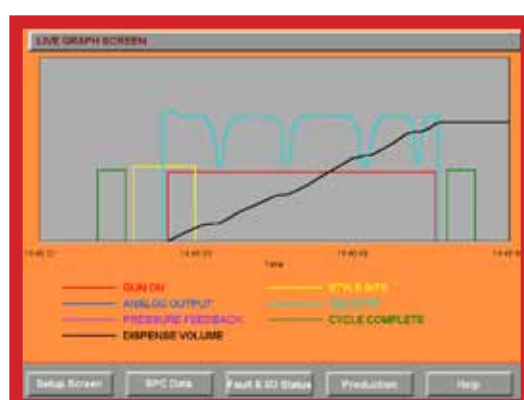
AutoStream Systems



A Fault and Diagnostics Screen with complete fault logging simplifies system troubleshooting. In addition, "Smart Faults" automatically triggers the appropriate "Help" files for each fault message. Pumping systems are also graphically presented to facilitate material monitoring in continuous duty applications.



The graphical Setup Screen places all 63 system variables in front of the user, with password protection for setup and body ID settings. Up to 32 different body styles, limits, and targets can be programmed, and both a name and a number on the Production Screen identify each body style. Faults are also user-definable as Major or Minor using the Setup Screen.



Other standard features of the AutoStream PC control include real-time dispense accuracy tracking for Statistical Process Control; the ability to produce system-performance Histograms; an integral 3.5-inch floppy drive for information retrieval; complete on-line mechanical and electrical component service guides; and a sophisticated Help system with "Root Cause Analysis" problem solving technology.



AutoStream Dispensing System Specifications

PC Controller

The AutoStream™ PC System includes everything PC-based systems have to offer and more! It is the benchmark against which all future systems will be measured.

Hardware:

600x800 Active Matrix (TFT) Touchscreen
3.5" Floppy Drive
On-Board Ethernet Capability

Software:

Windows 2000, XP
All screens just "2 clicks away"
Graphical representation aids throughout

- All operating information available on PC

- "Smart Faults" automatically opens dedicated Help file for current fault. Let AutoStream PC tell you how to fix it!

- Fault tracking and I/O map makes diagnostics fast, easy, and powerful

- Simple Setup Screen walks you through the setup process

- Complete Pump Monitoring for remote pump diagnostics; option available

- SPC Screen with process histogram graphically illustrates your process

- Comprehensive Help files online

- Complete service guides and electrical diagrams included on-screen



1K Dispensing Head

Component Dispenser is the new standard of accuracy in automotive material dispensing applications. When teamed with the Johnstone AutoStream PC control system, it is ideal for dispensing materials used in all Body Shop and Paint Shop dispensing applications with volumes less than 60cc.

- 500 to 800 mm/second tool speed in most applications; higher or lower speed available if required
- Point of application temperature and flow control
- Close-coupled design for instant flow response at nozzle
- Volumetric monitoring does not require inline flow meters
- Stream flow or extrusion dispensing for all single-component structural adhesives and weld-through expandable sealers
- Suitable for pedestal or robot mounting

Specifications:

Volume Range per Dispense	1cc - 60cc
Temperature Range	50°F - 150°F
Max. Dispense Pressure	2,000 psi
Required Feed Pressure	500 psi
Max. Flow Rate	1,200cc/minute
Weight	27 lbs.

Suggested Applications*

Antiflutter (Stitch Bead)
Roof-Bow Adhesives
After-Hem Sealing
Closure Adhesives

***60cc volume or less**



1KC Dispensing Head

This is the newest technology combining shotmeter precision with uninterrupted and unlimited volume output, for all Body Shop and Paint Shop dispensing applications above 60cc in volume.

Dual/alternating shotmeter design delivers continuous flow output at programmed pressures from 0-2,000 psi for stream and extrusion capabilities and PVC sealers.

- Volumetric monitoring does not require inline flow meters
- Suitable for pedestal or robot base, boom or e.o.a. mounting
- High flow rate capability enables 500 to 800 mm/second tool speeds for antiflutter stitch bead, roof-bow, and paint shop sealing applications
- Dispense pressure is developed at the metering system; does not require a high-pressure pump
- Close-coupled design for instant flow response at nozzle
- Point of application temperature and flow control

Specifications:

Volume Range per Dispense	2cc - ∞
Temperature Range	5°F - 150°F
Max. Dispense Pressure	2,000 psi
Required Feed Pressure	500 - 2,500psi
Max. Flow Rate	2,500cc/minute
Weight	75 lbs.

Suggested Applications**

Paint Shop Sealing Applications
Antiflutter Stitch Beads
Roof-Bow
Mastic and Adhesive Applications

****60cc volume or more**



2K Dispensing Head

The 2K Two-Part Dispenser is the industry's fastest, most accurate way to apply 2-part materials. When teamed with the Johnstone AutoStream PC control system, it is ideal for dispensing adhesives used on automotive closure applications.

- 500 to 800 mm/second tool speed in most applications
- Dispense pressure is developed at the metering system, does not require a high-pressure pump
- Point of application temperature and flow control
- Close-coupled design for instant flow response at nozzle
- Volumetric monitoring does not require inline flow meters
- Stream flow for all two-component structural adhesives and after-hem materials
- Suitable for pedestal or robot mounting

Specifications:

Volume Range per Dispense	1cc - 45cc
Temperature Range	50°F - 150°F
Max. Dispense Pressure	1,6000 psi
Required Feed Pressure	500 psi
Max. Flow Rate	1,200cc/minute
Weight	35 lbs.

Suggested Applications

Closure Adhesives



EXEL North America, Inc. - North American Headquarters - 45001 5 Mile Road - Plymouth, MI 48170 - Ph: (734) 979-0100 - Fax: (734) 927-0064

EXEL North America, Inc. - Canadian Branch - 931 Progress Ave., Unit 7 - Scarborough, Ontario M1G 3V5 - Ph: (416) 431-5017 - Fax: (416) 431-9171

EXEL-NA, S.A. de C.V. - Mexico Branch - Bernardo Garza Treviño # 1715 - Col. Del Maestro, Monterrey, N.L. Mexico CP 64180 - Phone: (81) 1257-1111

www.exel-na.com