

SYMPHONI Assembly Technology

Mid (20 to 160 PPM) to High Volume (160 to 320+ PPM)

Autoinjector Final Assembly Series

OUR AUTOINJECTOR ASSEMBLY SYSTEMS
PROVIDE SCALABLE OUTPUT RATES RANGING
FROM **160 PPM TO 320 PPM+**

Our final assembly solutions are suitable for any
common three-piece autoinjector. Configured for
shorter delivery times, optimized footprint, and
lowered power/air usage.

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ASSEMBLY TECHNOLOGY



SYMPHONI Assembly Technology - Mid (20 to 160 PPM) to High Volume (160 to 320+ PPM)

ATS is an integrator of life science solutions to some of the world's largest companies. Over more than 45 years we have developed both standardized platforms and customized options to meet demanding product, process and production needs. Our innovations drive your success.



MDAutoinjectorF320

Illuminate™

- Capture real-time OEE intelligence across lines, machines and locations
- Data-to-decision in minutes
- Identify production trends
- Facilitate visual machine learning on parts and product quality control inspection

SuperTrak™

- Multiple configurations to maximize floor space
- Easily deploy and re-deploy your automation system as business demands change
- Save significant engineering and integration time to get to production faster

Symphoni™

- Exceptionally versatile
- Clinical production @ 2 PPM to commercialization @ 320+ PPM
- High flexibility of pallets & robots
- Ultra-precise motion control with a delicate touch
- End-to-end digital awareness, mapped out in 1-millisecond intervals, verified 200 times per second by self-diagnostics

Dynamics™

- Central machine layout to access all PLCs (up to 19)
- Device-based setup & configuration
- Automated design error-checking
- Position Cam configuration (real-time graphs)
- Output Cam setup



Critical Processes

The right automation solution suitable for the final assembly of common 3-piece autoinjectors, including YpsoMate® and Molly®. End-to-end solution that is configurable to your footprint. Consistent, reliable core processes based on proven ATS technologies.

Critical Processes and ATS Solution Set	
1	Remove drive unit from syringe unit
2	Reset push plunger rod with Force Measurement – Distance Monitoring
QR code printing and decoding	
3	Pick, orientate, inspect and insert PFS into syringe unit with Force Measurement – Distance Monitoring*
Algorithmic and AI-driven vision inspection	
4	Push the syringe holder to snap into syringe unit with Force Measurement – Distance Monitoring
5	*Transfer and insert drive unit into syringe unit with Force Measurement – Distance Monitoring
100% in-process functional and process check	

* Multiple force measurements taking place during this setup

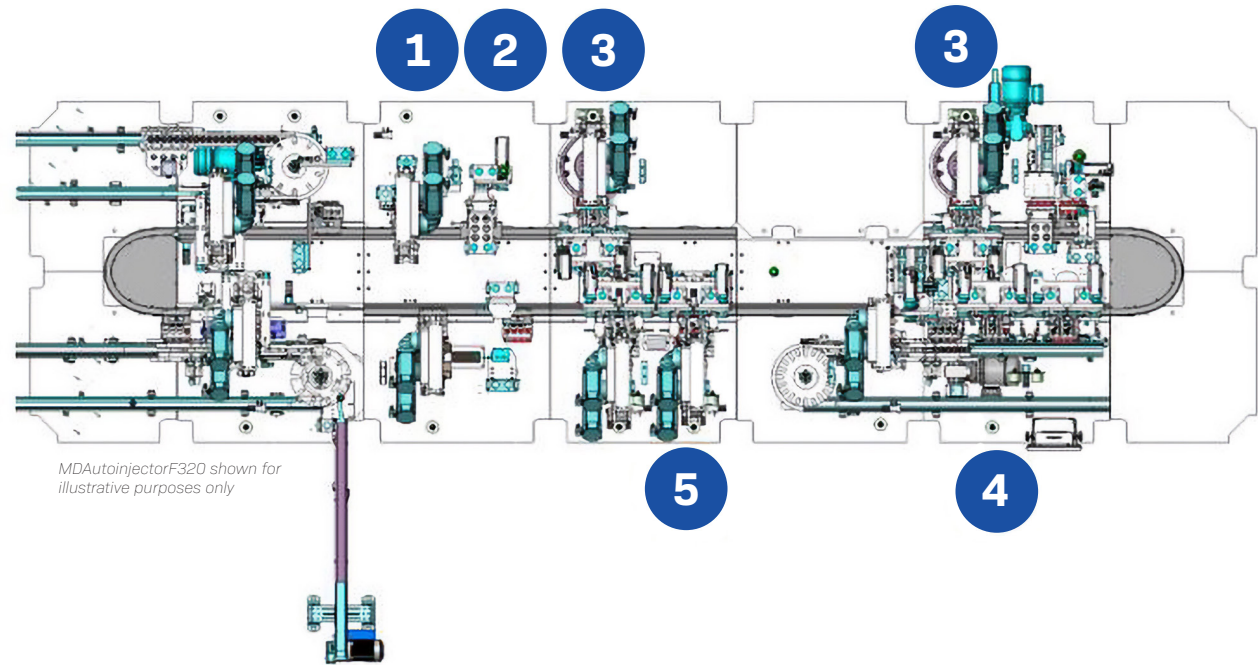
Force Measurement with Kistler Load Cell

LVDT – To measure distance

Cognex Vision Camera – To inspect PFS

SuperTrak CONVEYANCE™ – To move shuttle/pallet from station to station

Illuminate™ – To manage and organize production data



ATS Builds:

- Tray and tote handling
- AGV integration
- Palletizer
- Tub & Syringe Handling
- Labeling
- Handling

Types

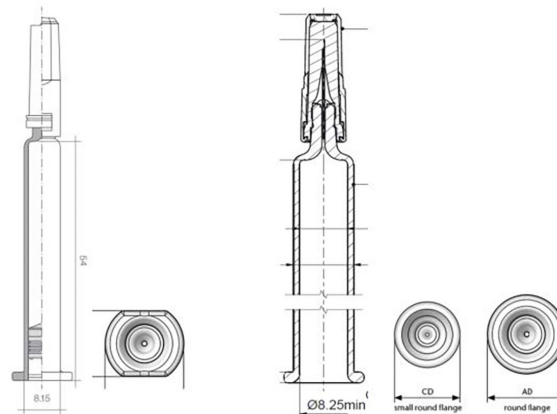
- Cut Flange
- Round Flange

Fill Volumes

- 0.5 ml
- 1.0 ml
- 2.25 ml

Diameter

- 11mm ± xx OD
- 14mm ± xx OD



Custom variants are possible

Configurable solutions for a broad range of outputs

As the demand for tools for the self-administration of drugs increases, so does the need for manufacturing systems that are safe, reliable, compliant, time-efficient and customizable. Our final assembly solutions are suitable for the assembly of any common three-piece autoinjector; pre-engineered and tested for shorter delivery times, optimized footprint, and lowered power/air usage.

/// Features

- Perfect for manufacturing either low or high volumes of items, and for both semi- and fully-automated assembly
- Configured for lower design costs and faster delivery
- Accommodates both round and cut flange syringes
- Quick retooling of stations to accommodate new products or variants, and introduction of new stations/modules
- 1 person required to run Symphoni™
- Various component loading options available from manual to fully automated





/// What we can deliver

- Rapid time to market
- A wide variety of customization options such as manual workstations, feeder units or tray handling can be added. Process technologies and testing systems can be integrated, such as vision systems
- The Symphoni™ platform's patented assembly technology that eliminates non-value-added delays while carefully respecting essential process time
- Drug delivery device assembly systems delivered worldwide



YpsoMate® autoinjectors shown actual size

Solution Type	Output	Platform
MDAutoinjectorF2	Ultra low-volume 0 - 2 PPM	Benchtop
MDAutoinjectorF20	Low volume 2 - 20 PPM	SwiftCell™
MDAutoinjectorF160	Medium volume 20 - 160 PPM	SuperTrak™
MDAutoinjectorF320	High volume 160 - 320+ PPM	Symphoni™

Standard Inspections Offered	
	Tray full/empty (FSA/LSA) 3D tray scan – robot EOAT positioning (FSA/LSA)
	SKU identification (FSA/LSA)
	Measure force vs Displacement PFS --> FSA & RSA --> FSA
	Other position & orientation checks as needed

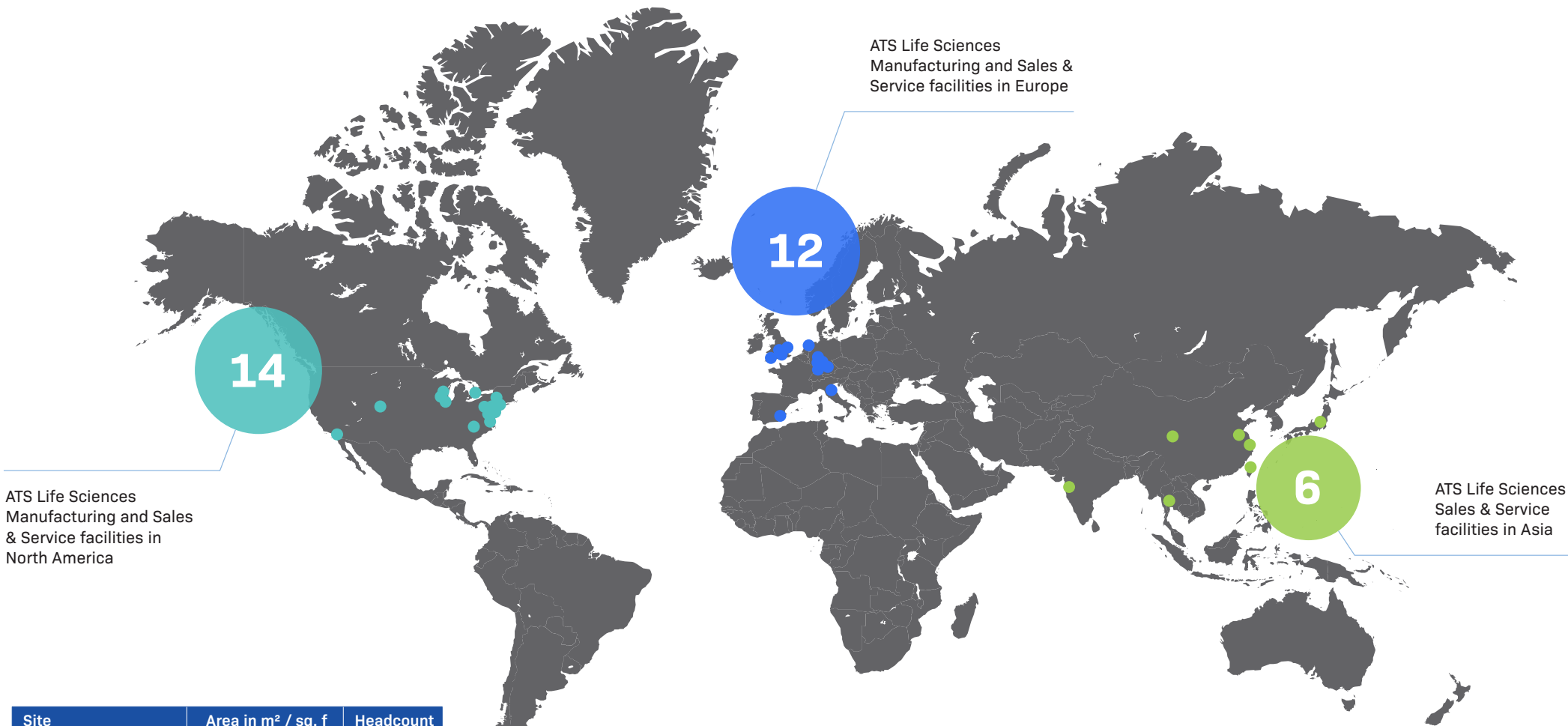
FSA – Front Sub Assembly, RSA – Rear Sub Assembly, PFS – Pre-Filled Syringe, EOAT – End of Arm Tooling

One (1) F320 Machine	Multiple Autoinjector Assembly
Off-the-shelf	Standard and proven station designs Standard Spare parts > 70%
Electronic CAM software	CAMs are digital, as opposed to physical plates and shafts
*Future variants	Add new component nest in the shuttle Change EOAT (end-of-arm-tooling) Just configure existing program
Tooling changeover	Fully automated, recipe driven
70 - 90% tooling reduction	4-up @ 320 PPM on Symphoni™ vs 20-up @ 320 PPM on traditional platforms
High speed	Up to 120 strokes per minute; cycle time as low as 800 ms
High throughput	Up to 95% machine OEE
Rate change	Touch & Go (HMI)
Component range	3, or custom

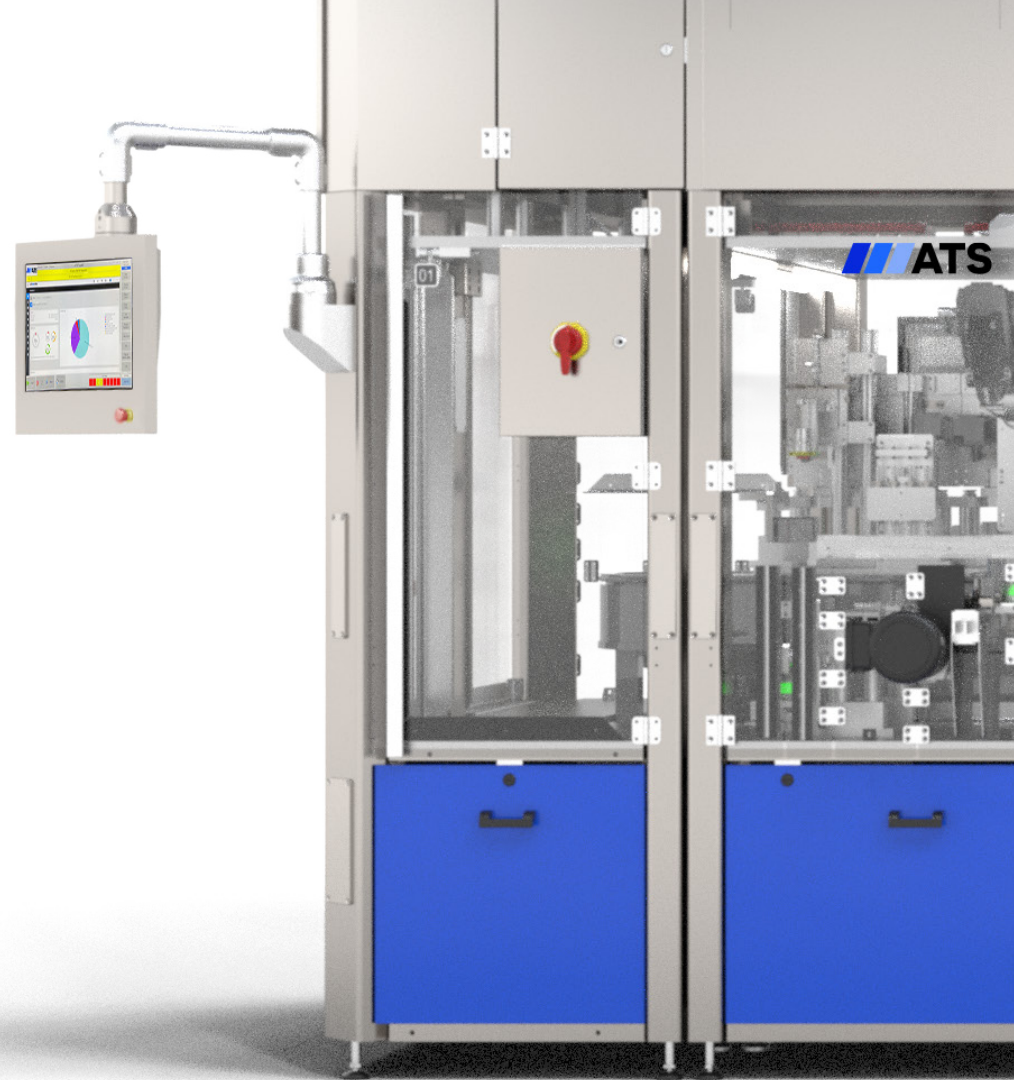
*Different variants (SKUs) within a product family, with different form-factors but the same assembly sequence, can be configured to run on the same system

Our Global Footprint

ATS Life Sciences Systems provides high-quality, high-value automation solutions to manufacturers of medical technology and pharmaceutical products where regulatory compliance is critical. With manufacturing sites in North America and Europe, we have a highly flexible supply base.



Site	Area in m² / sq. f	Headcount
LS Cambridge	54,657 / 588,309	1,070
LS REM Cambridge	10,962 / 118,000	125
IWK	30,500 / 328,299	550
Comecer	15,735 / 169,400	375
BioDot	1,393 / 15,000	93
Scientific Products	28,000 / 300,000	800
Avidity	13,191 / 142,000	380



Learn how **SYMPHONI** can help you quickly bring your autoinjector and pen needles to market by contacting one of our sales representatives at SYMPHONIttech@atsautomation.com or visiting our website at SYMPHONIttech.com

Leading life sciences companies trust us to solve their production needs. Let's discuss how ATS automated autoinjector assembly equipment can deliver for you.



Contact us at lifesciences@atsautomation.com

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