



POLY DISPENSING SYSTEMS

S Y S T E M E S D E D O S A G E I N D U S T R I E L

CATALOG

PDS ROBOT RANGE

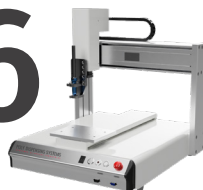
Poly Dispensing Systems, offers dispensing robots for an automated dispense. They are easy to install, to use and to program for maximum precision. Compatible with many devices, they are adaptable to various applications. Available in both benchtop and gantry versions, they also provide precise recalibration for optimal dispensing.



04

Series 781

06



Series 782

08

Series 783

10



Series 784

12

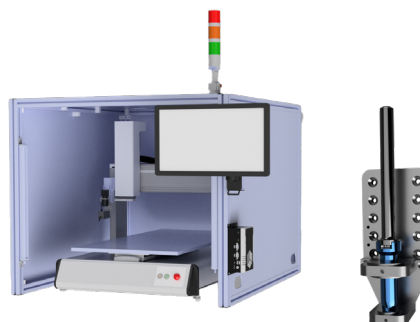


Series 785

14

Series 786

16



Options

The PDS series of robots

Poly Dispensing Systems automated dispensing systems feature pre-integrated dispensing functionalities, simplifying programming and ensuring more precise positioning as well as increased consistency. These systems are designed for easy installation, enabling quick and efficient setup in various production environments.

Our dispensing robots provide essential reproducibility and precision for assembly operations and automated dispensing systems. Tailored to specific requirements, PDS dosing robots are compatible with a wide range of dispensing systems, whether automated or manual. This compatibility includes syringes, valves, and UV curing systems. These robots are suitable for a variety of applications, from single part dispensing to high-volume dispensing.

Available in both benchtop and gantry versions, Poly Dispensing Systems robots can perform different types of dispensing, including dots, lines, encapsulation, filling, sealing, and jet dispensing. Additionally, a vision system is available to recalibrate the position of parts, including their positioning within the jig, meeting the latest industrial requirements and ensuring optimal precision in automated dispensing operations.

SERIES 781 – STANDARD 3 AXIS



The 3-axis benchtop robots in the 781 series are engineered to provide accurate arrangement and positioning to dispense many types of fluids. When set up with a syringe, cartridge, or valve system, they achieve a high degree of precision and repeatability.

Specially designed for fluid dispensing processes, the user-friendly programming software allows the creation of complex dispensing routines (dots, lines, circles, arcs, and fill patterns) specifically developed for fluid dosing. They can be configured and operational within minutes (for basic routines) using the supplied programming teach pendant.

The 781 series robots from Poly Dispensing Systems can be provided individually or as a complete system integrated into a safety enclosure (featuring light barriers or a safety door).

| MODELS | 781-200 | 781-300 | 781-400 | 781-500 | 781-500DP |
|---|--------------------------------------|----------------------|-----------------|-----------------|-------------------------|
| Work area X/Y/Z(mm) | 200 / 200 / 50 | 300 / 300 / 100 | 400 / 400 / 100 | 500 / 500 / 100 | 500 / 500 / 500 /100 |
| Load Surface Axis Y / Axis Z | 5 kg / 3 kg | 10 kg / 5 kg | | | 5 kg / 3 kg |
| Max. speed XY / Z (mm/sec) | 0.1 ~ 500 / 300 | 0.1 ~ 600 / 300 | | | |
| Resolution | 0.001 mm / Axis | | | | |
| Repeatability | +/- 0.01 mm / Axis | | | | |
| Program capacity | 100 programs - 4000 points / program | | | | |
| Display | TFT | | | | |
| Display Drive system / Stepper motor | Micro stepping motor | | | | |
| Motion Control | PTP & CP | | | | |
| Linear/ circular Interpolation | 3 axis | | | | 3 axis / 2Y |
| Teaching method | Teach pendant | | | | |
| I/O Signals | 8 Inputs / 8 Outputs | | | | |
| Power Supply | 100 ~ 230 VAC, 200 W | 100 ~ 230 VAC, 320 W | | | |
| Operating temperature | 0 - 40°C | | | | |
| Relative Humidity of Operation | 20 - 90% No condensation | | | | |
| Dimensions (WxDxH in mm) | 382 x 374 x 485 | 482 x 499 x 593 | 585 x 599 x 597 | 685 x 698 x 593 | 685 x 715 x 670 |
| Robot weight (kg) | 23 kg | 30 kg | 40 kg | 45 kg | 70 kg |

SERIES 782 – BALL SCREW 3 AXIS



The 3-axis benchtop robots in the 782 series include all the features of the 781 series while employing a drive technology with ball screws and servo motors. This enhancement allows them to handle higher mechanical loads, supporting a maximum payload of 12 kg on the Z axis and 15 kg on the Y axis.

| MODELS | 782-320CL | 782-420CL | 782-400CL | 782-500CL | 782-600CL |
|-----------------------------------|--------------------------------------|-----------------|--|-----------------|-----------------|
| Work area X/Y/Z(mm) | 320 / 350 / 100 | 420 / 350 / 100 | 400 / 400 / 100 | 500 / 500 / 100 | 600 / 600 / 100 |
| Load Surface Axis Y / Axis Z | 10 kg / 5 kg | | 15 kg / 12 kg | | |
| Max. speed XY / Z (mm/sec) | 0.1 ~ 500 / 300 | | 0.1 ~ 600 / 300 | | |
| Repeatability | +/- 0.01 mm / Axis | | | | |
| Resolution | 0.001 mm / Axis | | | | |
| Program capacity | 100 programs - 4000 points / program | | | | |
| Display | TFT Teach Pendant | | | | |
| Motor system | X/Y/Z AXIS DC servo motor | | | | |
| Drive system | X/Y/Z AXIS with ball screw | | X/Y/Z axis ball screw with AC servo motor driven | | |
| Motion control | PTP & CP | | | | |
| Linear/ Circular Interpolation | 3 axis | | | | |
| Teaching method | Teach Pendant | | | | |
| I/O Signals | 8 Inputs / 8 Outputs | | | | |
| External control interface | RS232 | | RS232 Ethernet option | | |
| Power Supply | AC100 ~ 220V 320W | | AC220V 1KW | | |
| Operating temperature | 0 - 40°C | | | | |
| Relative Humidity of Operation | 20 – 90% no condensation | | | | |
| Dimensions (WxDxH mm) | 510 x 650 x 600 | 610 x 650 x 600 | 654 × 700 × 770 | 754 × 800 × 770 | 854 × 895 × 770 |
| Robot weight (kg) | 45 kg | 55 kg | 70 kg | 75 kg | 80 kg |

783 SERIES – BALL SCREW 3 AXIS



The 3-axis benchtop robots of the 783 series include all the features of the 782 series, incorporating a PC and highly intuitive programming software. It is possible to program dispensing trajectories from a DXF file. The programming software runs on Windows, making it easy to perform backups and export programs. The entire robot history can be exported to a CSV file. Additional functionalities can be developed upon request, such as specific message displays and low product level detection.

| MODELS | 783-320L | 783-420L | 783-400L | 783-500L | 783-600L |
|-----------------------------------|--|-----------------|-----------------|-----------------|-----------------|
| Work area X/Y/Z(mm) | 320 / 350 / 100 | 420 / 350 / 100 | 400 / 400 / 100 | 500 / 500 / 100 | 600 / 600 / 100 |
| Load Surface Y Axis / X Axis | 10 kg / 5 kg | | 15 kg / 12 kg | | |
| Max speed XY / Z (mm/sec) | 0.1 ~ 500 / 300 | | | | |
| Repeatability | 0.001 mm / Axis | | | | |
| Resolution | +/- 0.01 mm / Axis | | | | |
| Program capacity | 100 programs - 4000 points / program | | | | |
| Display | 19» LCD Monitor | | | | |
| Drive system | X/Y/Z axis ball screw with AC servo motor driven | | | | |
| Motion control | PTP & CP | | | | |
| Linear/circular Interpolation | 3 axis | | | | |
| Motion control | Teach pendant | | | | |
| I/O Signals | 8 Inputs / 8 Outputs | | | | |
| Power Supply | AC110 ~ 220V, 450W | | AC220V 1 KW | | |
| Operating temperature | 0 - 40°C | | | | |
| Relative Humidity of Operation | 20 - 90% No condensation | | | | |
| Dimensions (WxDxH mm) | 558 x 647 x 600 | 685 x 647 x 600 | 654 × 700 × 770 | 754 × 800 × 770 | 854 × 895 × 770 |
| Robot weight (kg) | 60 kg | 65 kg | 70 kg | 75 kg | 80 kg |

784 SERIES – 3 AXIS VISION ROBOT



The 3-axis benchtop robots of the 784 series incorporate all the features of the 783 series while integrating a camera and a laser probe.

These tools simplify programming and facilitate easy placement on the workpiece, especially for applications with limited space.

The programming software can learn the geometric shapes of the part to position the dispensing system accurately. This capability helps overcome issues related to part positioning and manufacturing tolerances.

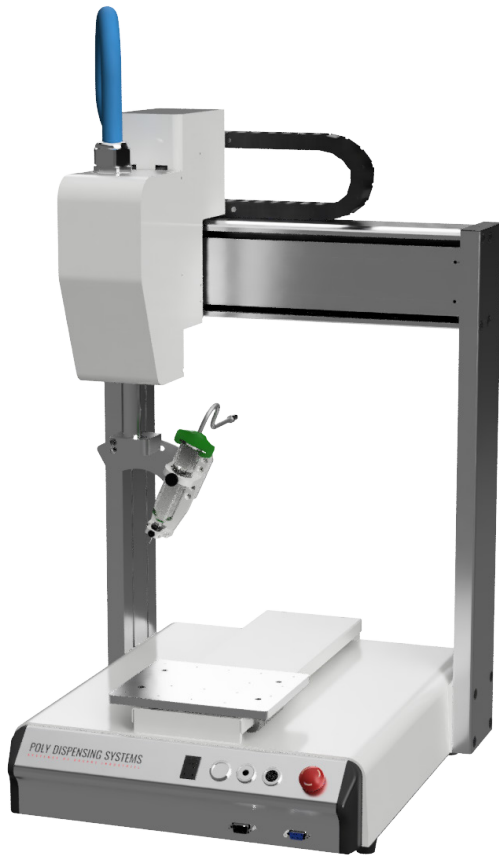
The laser probe can measure the height of the part, allowing the needle to be positioned at the correct height, in case there are height variations from one part to another.

VISION

| | |
|------------------|--|
| Operating system | Windows 10 |
| | +/- 0.01 mm/ pixel |
| Display | 19 « LCD MONITOR |
| Image capture | USB COLOR Camera , Resolution : 2588 x 1520 (4M pixel) |
| | Optional |
| Lighting | Direct Ring Lighting |
| Vision lens | 6~25mm Machine Vision Lens |

| MODELS | 784-320V | 784-420V | 784-400V | 784-500V | 784-600V |
|-----------------------------------|------------------------------|-----------------|--|-----------------|-----------------|
| Work area X/Y/Z(mm) | 320 / 350 / 100 | 420 / 350 / 100 | 400 / 400 / 100 | 500 / 500 / 100 | 600 / 600 / 100 |
| Load Surface Y Axis / X Axis | 10 kg / 5 kg | | 15 kg / 12 kg | | |
| Max speed XY / Z (mm/sec) | 0.1 ~ 500 / 300 | | | | |
| Resolution | 0.001 mm / Axis | | | | |
| Teaching method | Teach jog | | | | |
| Data storage type | | | PC HD Storage | | |
| Display | 19» LCD Monitor | | | | |
| Drive system | X/Y/Z axis ball screw driven | | X/Y/Z axis ball screw with AC servo motor driven | | |
| Motion control | PTP & CP | | | | |
| Linear/ circular Interpolation | 3 axis | | | | |
| Programming method | Windows software interface | | | | |
| I/O Signals | 8 Inputs / 8 Outputs | | | | |
| Power Supply | AC110 ~ 220V, 480W | | AC220V 1 KW | | |
| Operating temperature | 0 - 40°C | | | | |
| Relative Humidity of Operation | 20 - 90% No condensation | | | | |
| Dimensions (WxDxH mm) | 558 x 647 x 600 | 685 x 647 x 600 | 654 × 700 × 770 | 754 × 800 × 770 | 854 × 895 × 770 |
| Robot weight (kg) | 60 kg | 65 kg | 70 kg | 75 kg | 80 kg |

785 SERIES – 4 AXIS STANDARD ROBOT



The 785 series benchtop robots are designed for precise fluid dispensing using syringes and valve systems. These 4-axis tabletop robots are equipped with a user-friendly teach pendant, ensuring unmatched precision and repeatability.

The integrated controls allow for the programming of complex patterns in just a few minutes. With true three-dimensional motion control, it's easy to program dots, beads, circles, arcs, curves, and other patterns on various plans.

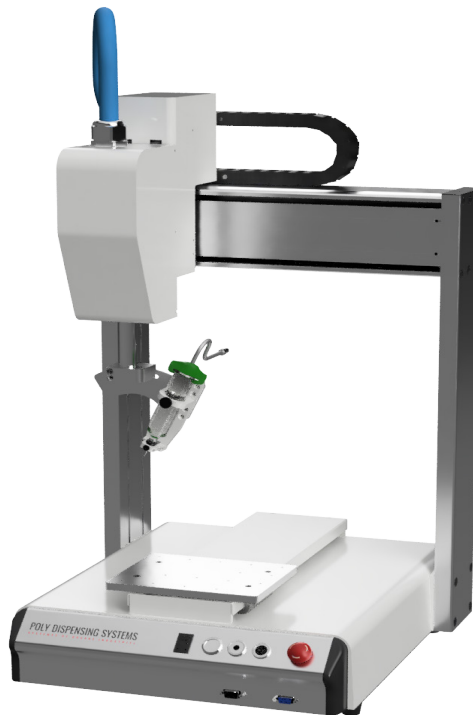
The fourth axis enables dispensing at any angle with a full 360° rotation.

This series also features a unique calibration point for needle realignment, ensuring consistent dispensing repeatability.

These platforms are ideal for dispensing applications per batch or complex dispensing tasks.

| MODELS | 785-300R | 785-400R | 785-500R | 785-600R |
|-----------------------------------|--------------------------------------|---------------------------|---------------------------|---------------------------|
| Work area X/Y/Z(mm) | 300 / 300 / 100 / 360° | 400 / 400 / 400 / 360° | 500 / 500 / 100 / 360° | 600 / 600 / 100 / 360° |
| Load surface Y Axis / Z Axis | 5kg / 2 kg | | | |
| Max speed XY / Z (mm/sec) | 0.1 ~ 500 / 300 | | | |
| Resolution | 0.001 mm / Axis | | | |
| Repeatability | +/- 0.02 mm / Axis | | | |
| Program capacity | 100 programs - 4000 points / program | | | |
| Display | Teach Pendant LCD | | | |
| Drive system / Stepper motor | Micro stepping motor | | | |
| Motion control | PTP & CP | | | |
| Motion control Linear/circular | 4 axis | | | |
| Teaching method | Teach pendant | | | |
| I/O Signals | 8 Inputs / 8 Outputs | | | |
| Power Supply | AC110 ~ 220V 300W | | | |
| Operating temperature | 0 - 40°C | | | |
| Relative Humidity of operation | 20 - 90% No condensation | | | |
| Dimensions (WxDxH mm) | 485 x 500 x 810 | 585 x 600 x 810 | 685 x 700 x 810 | 785 x 800 x 810 |
| Robot weight (kg) | 35 kg | 45 kg | 55 kg | 65 kg |

786 SERIES – 4 AXIS BALL SCREW



The 4-axis tabletop robots of the 786 series incorporate all the features of the 785 series but use a drive technology with ball screws and servo motors.

This improvement enables to handle greater mechanical loads, with a capacity of up to 5 kg on the Z axis and 15 kg on the Y axis.

| MODELS | 786-400RL | 786-500RL | 786-600RL |
|-----------------------------------|--|------------------------|------------------------|
| Work area X/Y/Z(mm) | 400 / 400 / 100 / 360° | 500 / 500 / 100 / 360° | 600 / 600 / 100 / 360° |
| Load surface Y Axis / Z Axis | 15 kg / 5 kg | | |
| Max speed XY / Z (mm/sec) | 0.1 ~ 600 / 300 | | |
| Resolution | 0.001 mm / Axis | | |
| Repeatability | +/- 0.01 mm / Axis | | |
| Program capacity | 100 programs - 4000 points / program | | |
| Display | Teach Pendant LCD | | |
| Drive system / Stepper motor | X/Y/Z/R axis ball screw with AC servo motor driven | | |
| Motion control | PTP & CP | | |
| Linear/ Circular Interpolation | 4 axis | | |
| Teaching method | Teach pendant | | |
| I/O Signals | 8 Inputs / 8 Outputs | | |
| Power Supply | AC220V 1 KW | | |
| Operating Temperature | 0 - 40°C | | |
| Relative Humidity of operation | 20 - 90% No condensation | | |
| Dimensions (WxDxH mm) | 654 x 700 x 993 | 754 x 800 x 993 | 854 x 900 x 993 |
| Robot weight (kg) | 75 kg | 80 kg | 85 kg |

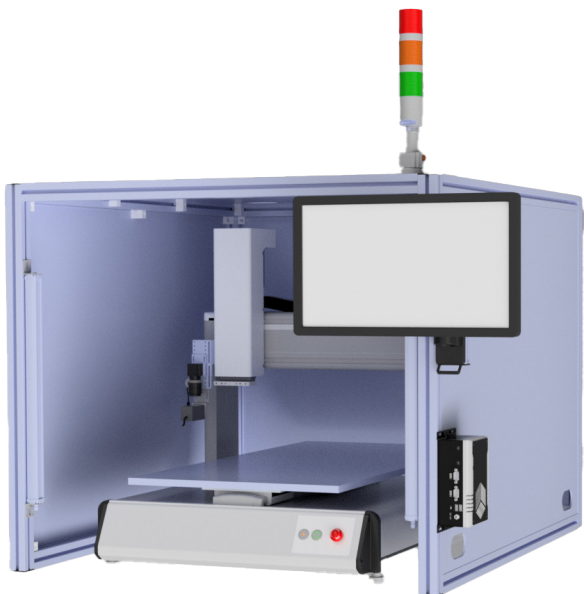
OPTIONS

ENCLOSURE

Poly Dispensing Systems offers secure protective housing that are perfectly integrated with our complete range of automated dispensing systems.

They can be easily integrated into existing production lines and include a lockable internal control box and integrated cable trays, facilitating fast and secure installation.

A safety light curtain at the front of the enclosure stops the dispensing cycle whenever an object crosses its detection field. A door with sensor is also available.



Specifications:

- *Internal electrical control box and integrated cable trays for quick and secure installation.*
- *Light safety barrier ensuring protection while providing easy access to the dispensing system.*
- *External control of system functionalities, including start and emergency stop.*

CALIBRATION

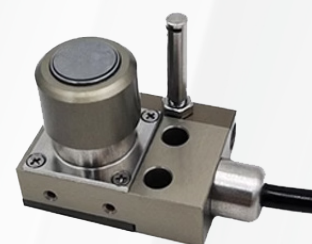
The robot can measure the distance between the needle and the workpiece after each needle or syringe change, ensuring consistent dispensing.

We provide two options:

- **XY needle alignment tool:** Using optical sensors, this tool detects the outer diameter and tip of the dispensing needle. If variations in XY position are detected from the previous needle, adjustments are made to the program to ensure the accuracy of the dispensing location.
- **Z needle detector:** This system brings the end of the needle tip into contact with a sensor to detect its height. If any Z height variations are detected compared to the previous needle, adjustments are made to the program to ensure accurate positioning.

| Product Name | Compact High Precision Touch Switch |
|----------------------|---|
| Model | PDS-Z-ADJ |
| Contact Diameter | 10mm |
| Output Mode | B : NC |
| Pretravel | 0 |
| Stroke | 5mm |
| Repeatability | 0.001mm (Operating speed 1-3/sec) |
| Protective Structure | IP67 |
| Contact Force | 1.5N (Straight-on type) |
| Contact Material | Tungsten carbide |
| Surface treatment | Abrasive 4S surface |
| Contact Rating | DC24V-20mA(MAX) |
| Cable | 3m oil resistant ϕ Φ 4.8/2 cores, tensile strength 30N minimum bending R7 |

PDS-Z-ADJ



| Model | Tip Finder |
|--------------------------------------|-----------------------|
| Corresponding Needle Dimensions (mm) | ϕ 0.4 ~ 2.0 mm |
| Detect Axis | X / Y / Z Axis |
| Accuracy | \pm 0.03 mm |
| Dimensions (WxDxH mm) | 65 x 50 x 15 |
| Accessories | Connector cord (1.5M) |
| Weight (kg) | 300 g |

PDS-N-ADJ



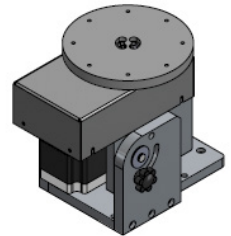
AUXILIARY ROTATION AXIS

The auxiliary rotation module allows for the quick and easy addition of an extra axis to a 3-axis robot.

- Horizontal mounting :

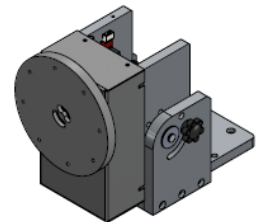
This method is used when 4-axis rotation (R) is needed, but the size or weight of the dispensing equipment attached to the robot's Z axis blocks this rotation.

In such cases, the workpiece rotates instead, resulting in the same dispensing result.



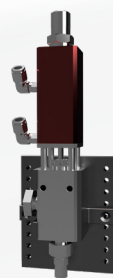
- Vertical mounting:

Suitable for applications that require dispensing on multiple surfaces of the same part.

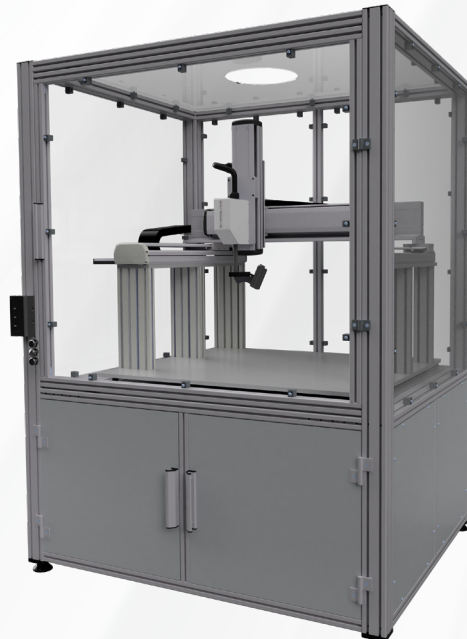
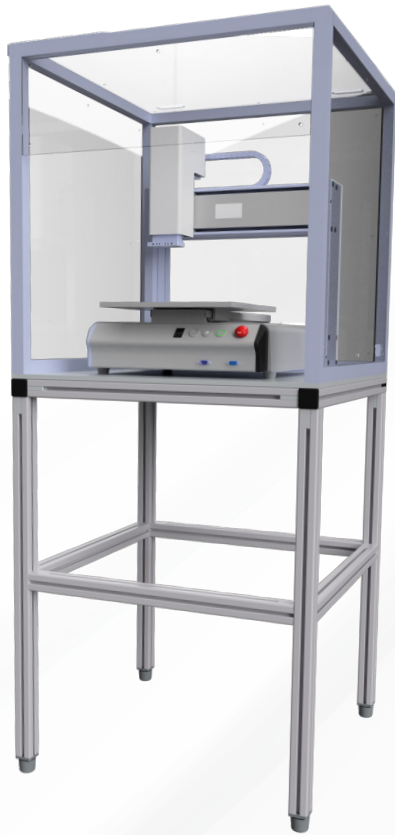


Dispensing on cylindrical components is facilitated by mounting the device in either a horizontal or vertical position, depending on the specific requirements of the application.

BRACKETS



INTEGRATION EXAMPLES





POLY DISPENSING SYSTEMS

SYSTEMES DE DOSAGE INDUSTRIEL

CATALOG

PDS ROBOT RANGE

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