

POLY DISPENSING SYSTEMS

SYSTEMES DE DOSAGE INDUSTRIEL

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.



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Series 781

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Series 782

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Series 783

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Series 784

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Series 785

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Options

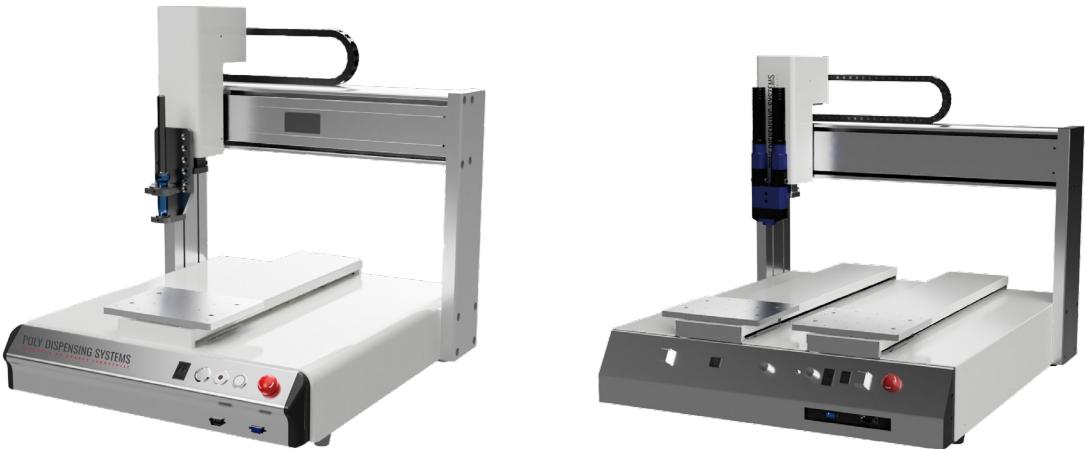
The PDS series of robots

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 x 700 x 770	754 x 800 x 770	854 x 895 x 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 x 700 x 770	754 x 800 x 770	854 x 895 x 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.

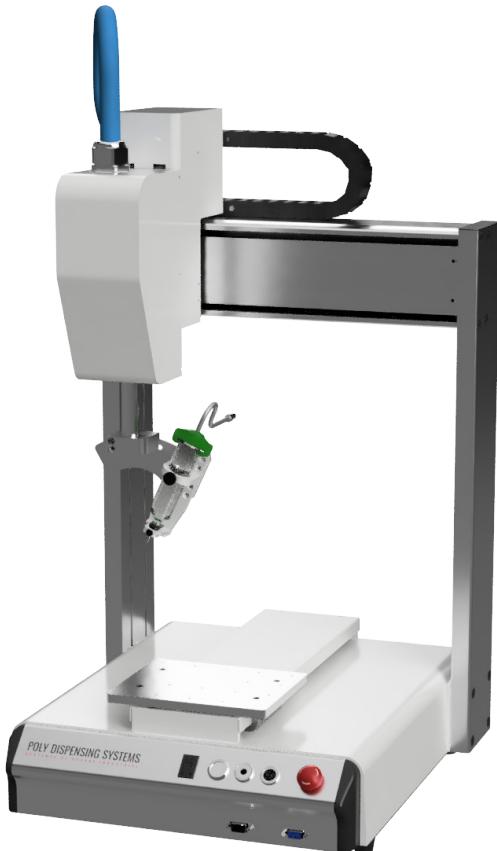
The laser probe can measure the height of the part, allowing the needle to be positioned at the correct height, in case there are height variations from one part to another.

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 x 700 x 770	754 x 800 x 770	854 x 895 x 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 planes.

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

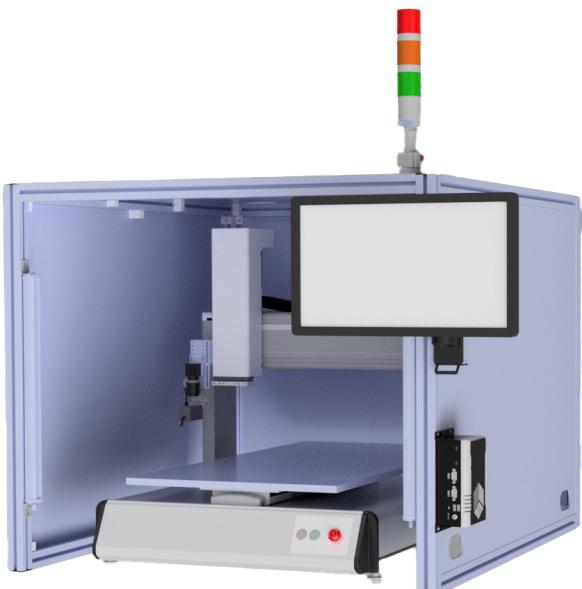
OPTIONS

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 φΦ4.8/2 cores, tensile strength 30N minimum bending R7

PDS-Z-ADJ



Model	Tip Finder
Corresponding Needle Dimensions (mm)	Ø0.4 ~ 2.0 mm
Detect Axis	X / Y / Z Axis
Accuracy	± 0.03 mm
Dimensions (WxDxH mm)	65 x 50 x 15
Accessories	Connector cord (1.5M)
Weight (kg)	300 g

PDS-N-ADJ



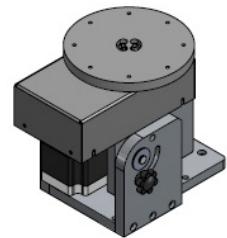
AUXILIARY ROTATION AXIS

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

- Horizontal mounting :

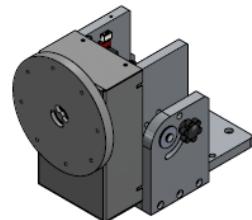
This method is used when 4-axis rotation (R) is needed, but the size or weight of the dispensing equipment attached to the robot's Z axis blocks this rotation.

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.



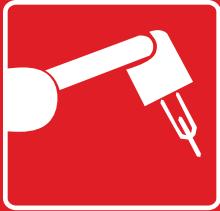
Dispensing on cylindrical components is facilitated by mounting the device in either a horizontal or vertical position, depending on the specific requirements of the application.

BRACKETS



INTEGRATION EXAMPLES





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CATALOG

PDS ROBOT RANGE

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