



1001 Trout Brook Crossing
 Rocky Hill, CT 06067-3910
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Product Description Sheet

400 Series Benchtop Robot

North American Engineering Center, June 2006

PRODUCT DESCRIPTION

The Loctite® 400 Series Benchtop Robot has a 400 by 400 mm range of operation. This robot is available to meet your process requirements in eight different configurations offering: 3 or 4 axes, 110 or 220 V power, standard or CE certified. The simultaneous control over all axes provides for 3D linear and arc interpolations that are required for complicated dispensing processes. This unit is fully compliant with RIA (Robotic Industry Association) safety guidelines. Programming accessories, dispensing equipment, integration cables and mounting hardware are sold separately. Loctite has special application software that simplifies programming of the robot.



PRODUCT FEATURES

- Integrated solution - plug and play
- Low cost operation and ownership
- Compact size
- Application specific software
- Teach point programming
- 255 program, 30,000 point memory
- Wide variety of mounting hardware available

TECHNICAL SPECIFICATIONS

Attribute		Value
Number of controllable axes		3 to 4
Range of operation	X axis	400 mm
	Y axis	400 mm
	Z axis	150 mm
	R axis	± 360°
Portable weight	Work Surface	11.0 kg
	Tool Head	6.0 kg
Speed	PTP (X,Y)	8 to 800 mm/s
	PTP (Z)	3.2 to 320 mm/s
	PTP (R)	8 to 800 °/s
	CP (X,Y,Z)	0.1 to 800 mm/s
Repeatability accuracy	X, Y, Z axis	± 0.01 mm
	R axis	± 0.02°
CPU		32 bit
Control method		Point to Point or Continuous Path
Drive method		5-phase stepping motor
I/O		16
Program capacity		255 programs
Data memory capacity		30,000 points
Dimensions	Width	584 mm
	Depth	629 mm
	Height, 3 Axis	799 mm
	Height, 4 Axis	840 mm
Weight		42 kg
Power source		110 or 220V / 50-60 Hz
Consumption current		200 VA
Working environment	Temperature	0 - 40°C
	Humidity	20 - 95% RH
Parts Included:		
<ul style="list-style-type: none"> • By-Pass Connector for Teach Pendant • External Interlock By-Pass Connector • CD-ROM Instruction Operating Manual • AC Power Cord – 115 VAC • Robot 		
Additional Accessories Sold Separately: 988000 – Solenoid Valve Module for pneumatic control by the Robot.		

ROBOT CONFIGURATIONS

Part No.	Description
98295A	400 mm x 400 mm, 3 axis, 110V
98296A	400 mm x 400 mm, 3 axis, 100V CE Rated
98297A	400 mm x 400 mm, 3 axis, 220V
98298A	400 mm x 400 mm, 3 axis, 220V CE Rated
98299A	400 mm x 400 mm, 4 axis, 110V
98300A	400 mm x 400 mm, 4 axis, 100V CE Rated
98301A	400 mm x 400 mm, 4 axis, 220V
98302A	400 mm x 400 mm, 4 axis, 220V CE Rated

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PROGRAMMING

Simple to program using either a multi-line backlit teach pendant with user-friendly prompts (sold separately) or Windows® 2000 software. The program allows for continuous part motion and automatically interpolates any line or arc in all axes. The Operating Manual provides step-by-step instructions for programming the Robot. No previous experience is required.

INTEGRATION ACCESSORIES (not included):

Loctite® brand cables and junction boxes provide plug-and-play integration solutions for a variety of Loctite® dispensing systems. Single or multiple systems functionally can be easily accommodated.

98395 - Interface Cable for Benchtop Robots. Length: 10'. 37-pin male D to 3 different output connectors for **single dispenser** integration. Allows integration to Syringe Dispensers (98417, 97006); Spray Controller (98521); Integrated Semi-Auto Controllers (97007, 97010, 97017, 97020); and Benchtop Peristaltic Dispenser (98548).

98549 - Robot Interface Junction Box. Provides a convenient connection point between robots and up to 12 external devices including all Loctite® dispensers, UV Wands, Loctite® light curtains, LED cure systems, Posi-Link™ Volumetric Dispensing System and 3rd party solenoids. Allows multiple systems integration simultaneously. This junction box accepts up to 7 inputs and 5 outputs, device status indicator lights with a view window, and a 500 ma/24 VDC power supply for powering 3rd party devices.

NOTE: Connection of this Robot Junction Box to the Benchtop Robot requires this one additional cable (sold separately):

989434 - Junction Box Cable for Benchtop Robots. 37 pin male "D" shell to 37 pin male "D" shell.

98648 - Laptop PC Interface Cable to Benchtop Robot. 9 pin female "D" shell to 9 pin female "D" shell.

300 ML CARTRIDGE DISPENSING EQUIPMENT

300 ml cartridge dispensing is commonly used as a low cost fluid delivery system when the dispense volumes are large.

Part No.	Description
Dispensers	
98417	Syringe dispensing system, analog
97006	Syringe dispensing system, digital
300 ml cartridge adapter	
98319	300 ml pneumatic cartridge adapter
98022	300 ml cartridge pusher

PROGRAMMING ACCESSORIES

The specially designed, easy-to-use Teach Pendant is the preferred device for programming and operating the robot. A laptop computer with the Teach Point Software can also be used as an alternative.

Part No.	Description
989657	Teach Pendant
989656	Teach Point Software

SYRINGE DISPENSING EQUIPEMENT

Syringe dispensing is commonly used as a low cost fluid delivery system when the dispense volumes are small.

Part No.	Description
Dispensers	
98417	Syringe dispensing system, analog
97006	Syringe dispensing system, digital
See Web site	Posi-Link™ Volumetric Dispensing System
Syringes	
98479	3 ml, clear syringe barrel and piston
98481	3 ml, black syringe barrel and piston
98483	5 ml, clear syringe barrel and piston
98485	5 ml, black syringe barrel and piston
97207	10 ml, clear syringe barrel kit
97263	10 ml, black syringe barrel kit
97244	30 ml, clear syringe barrel kit
97264	30 ml, black syringe barrel kit
98314	55 ml clear syringe barrel kit
98315	55 ml black syringe barrel kit
Air Line Adapters	
98656	3 ml syringe air line adapter
98657	5 ml syringe air line adapter
97208	10 ml syringe air line adapter
97245	30 and 55 ml syringe air line adapter

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VALVE DISPENSING EQUIPMENT

Valve dispensing is typically used with large dispense volume to minimize the downtime associated with package change out and to improve the bead precision, particularly the knit line.

Part No.	Description
Valves	
98009	Light cure dispense valve
98013	Cyanoacrylate dispense valve
97113	Stationary dispense valve with 1/4" feedline
97114	Stationary dispense valve with 3/8" feedline
983914	Poppet valve
Controller and Reservoirs	
97007	Integrated Semiautomatic Controller and Reservoir, 0-100 psi
97010	Integrated Semiautomatic Controller and Reservoir, 0-15 psi
97017	Integrated Semiautomatic Controller and Reservoir, 0-100 psi, with Low Level Sensor
97020	Integrated Semiautomatic Controller and Reservoir, 0-15 psi, with Low Level Sensor
Solenoid Valve Module	
988000	Used to pneumatically control the 983914 Poppet valve, the 98022 cartridge pusher or other dispensing equipment using the I/O from the robot to control the air on/off.

MOUNTING BRACKET KITS

Mounting bracket kits are used to grasp syringe barrels, 300 ml cartridges or dispense valves. Mounting rails or adapters are required to mount the brackets on the robot.

Part No.	Description
98316	30 and 55 ml syringe mounting bracket kit
98318	300 ml cartridge mounting bracket kit
98326	98009 and 98013 valve mounting bracket kit
98327	97113 and 97114 valve mounting bracket kit
98406	983914 valve mounting bracket kit

TIP LOCATOR BRACKETS

Tip locator brackets position the dispense tip to increase precision and are used to mechanically set the tip height during installation. **A mounting bracket and rail, plate or adapter must be purchased separately. These are sized for 1" long, 25 gauge needles and must be modified by the user for larger gauge sizes.**

Part No.	Description
98332	Tip locator bracket for 30 ml syringe
98333	Tip locator bracket for 300 ml cartridge
98334	Tip locator bracket for 98009 and 98013 valve
98335	Tip locator bracket for 97113 and 97114 valve
98407	Tip locator bracket for 983914 valve

MOUNTING RAILS FOR 3 AXIS ROBOTS

A mounting rail is required when using Loctite mounting hardware for all 3 axis Benchtop Robots.

Part No.	Description
98328	3 3/4 inch bar with two cap screws
98329	8 3/4 inch bar with two cap screws
98330	12 inch bar with two cap screws
98357	Z height adjustment plate

MOUNTING ADAPTER FOR 4 AXIS ROBOTS

A mounting adapter is required when using Loctite mounting hardware for all 4-axis robots. The mounting a360 degree rotation kit which allows the dispense tip to be fixed at any angle.

Part No.	Description
98336	Mounting adapter for 4 axis robots

3, 5 AND 10 ML SYRINGE ADAPTERS

These adapters are inserted into the 30 ml syringe mounting bracket kit to adapt it for 3, 5 and 10 ml syringes.

Part No.	Description
98320	10 ml adapter for use with 98316
98321	5 ml adapter for use with 98316
98322	3 ml adapter for use with 98316

360 DEGREE ROTATION KIT

This kit is used to allow for 360 degrees of rotation when using a mounting bracket kit or tip locator. A 360-degree rotation kit is already included with the mounting adapter for 4 axis Robots.

Part No.	Description
98325	360 degree rotation kit

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LIGHT CURTAIN GUARDING PACKAGE – Item # 989777

This package is an integrated safety enclosure to support Loctite® Robots. The enclosure has transparent hard guarding on 3 sides (with clear anodized aluminum extrusion frame), and a full-length safety light curtain on the front side. The light curtain guarding will permit loading and unloading of production parts while protecting the users from Robot motion. Included with the package is:

- Electrical enclosure with operator controls of E-Stop button, cycle start pushbutton, and a power On lamp.
- A quad AC power outlet at the rear of the electrical enclosure serves to power the Robot and any other dispense accessory for the application.

Control to the system will be centrally located from this enclosure. The operator E-Stop will remove power from the Quad outlet, disabling all functions when depressed (including the robot). The light curtain can be crossed at any time without affecting the Robot so long as the Robot is not in motion (dispense cycle). If the light curtain is crossed, during a dispense cycle, the power to robot's motors will be removed; and the Robot will have to be re-initialized (with the cycle start switch).

A single 120 VAC (or 220VAC for 220 Volt units) outlet is all that is required to power the guarding system. A small access panel is available at the rear of the guarding enclosure for access to the Robot power switch, cables, airlines, edge connectors, etc.

Dimensions: 32" Wide x 32" Deep x 31" High.

INTERLOCKED-DOOR GUARDING PACKAGE – Item # 989789

The Guarding Package is offered without the safety light curtain and instead, a sliding door is used to isolate the operator from the Robot motion. This package contains all the same features as the Light Curtain Guarding Package. It requires the user to slide (right to left) the clear polycarbonate door to gain access to the Robot loading platform. A roller arrangement allows for minimal effort in opening and closing.

The door is interfaced with the Robot and will not allow a cycle to start if the door is opened. If the door is opened during a dispense cycle, the Robot will stop and will have to be re-initialized. This package is well suited for slower (long) cycle, or low volume applications. **Dimensions:** 32" Wide x 32" Deep x 31" High.

ROBOT BASE TABLE – Item # 989785

The Robot or Guarding Package can be ordered with a sturdy tubular painted steel base table, standard laminate top, and leveling feet with capacity of 4,000 lb. This table frame can also serve for the mounting of dispense hardware such as pressure regulators, purge hardware, ball valves, dispense solenoids, etc.

It is provided with ample room for tabletop dispense accessories like Semi-Auto Controllers, Syringe Systems, etc. Each base table is set to a standing working height of 36." The user chooses the location for the Guard Package and can then anchor the guard system to the table (anchors are pre-installed on the guarding frame). **Dimensions:** 48" Wide x 36" Deep x 36" High.

Photo shows an example of a 200 Series Robot, Light Curtain Guarding Package, and a Robot Base Table.



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