

SPIDER Automatic Dispensing System

Version 1.6 / February 2023

Specifications

		SPIDER (Inline)
Process	Dispensing speed up to ⁽¹⁾	Piezo jet valve 150'000 dots/h Shockwave jet valve 80'000 dots/h Time/pressure valve 28'000 dots/h Archimedean screw valve 24'000 dots/h Volume dispenser valve 24'000 dots/h
	Dispensing mode	Dot, line, 3D, curve, interpolated curves on multiple layers ⁽²⁾
	Programmable z-stroke	80 mm (3.35")
	Process height	± 18 mm (0.71") from zero height ⁽³⁾
	Number of processes	Up to 2x valves simultaneously
Accuracy	Linear encoder resolution (x,y)	0.2 µm
	Dispensing accuracy XY dots	± 40 µm (3σ) ⁽⁴⁾
	Positioning accuracy Z axis	± 20 µm (3σ)
PCB	Min. PCB dimensions	50 x 50mm (2 x 2")
	Max. PCB dimensions	406 x 305 mm (16 x 12")
	PCB thickness	0.5 – 5.0 mm (0.02 - 0.2")
	PCB edge clearance	Top side 3.0 mm (0.11") Bottom side 5.0 mm (0.2")
	Max. board weight	4 kg (8.8 lb)
	Conveyor height	SMEMA 940 – 965 mm
	Clearance below PCB	27 mm (1.1") ⁽³⁾

Machine Dimensions, Packaging and Supplies

Machine dimensions	Machine footprint without hood (L x W)	880 x 1090 mm (34.7 x 43")
	Machine footprint with hood (L x W)	1027 x 1117 mm (40.4 x 44")
	Approx. operating floor space (L x W)	1050 x 1150 mm (41.3 x 45.3")
	Machine height (without / with light tower)	1578 mm (62") / 1939 mm (76")
	Approx. machine weight	875 kg (1929 lb)
	Approx. floor loading	912 kg/m ² (1.3 lb/sq.in)
	Packaging weight	70 kg (154 lb)
Supplies	Electrical	230V / 50Hz or 120V / 60Hz (with optional transformer)
	Power consumption (average / peak)	0.75 kW / 1.7 kW
	Entry fuse	13A / 230V
	Min. wire cross section	1.5 mm ²
	Electrical connector	230V, CEE-16, 16A, 230V, 3P L+N+PE 6h, blue color 120V, CEE-16, 16A, 120V, 3P L+N+PE 4h, yellow color
	Compressed air	6 - 7 bar (87 - 102 psi), clean and filtered, dry, ISO 8573-1: class 3 (max part diameter 5µm, dew point < -20°C, oil ≤ 1 mg/m ³)
	Air consumption	max. 25 NI/min. (0.9 cfm) (depends on valve and application)
	Air connection	Push-in connector for outer hose Ø8 mm
Environment	Performance temperature / humidity range	22 - 24°C / 50 – 70% RH
	Operational temperature / humidity range	15 – 30°C / 30 – 70% RH (non condensing)
	Noise level	max. 75 dB (A)

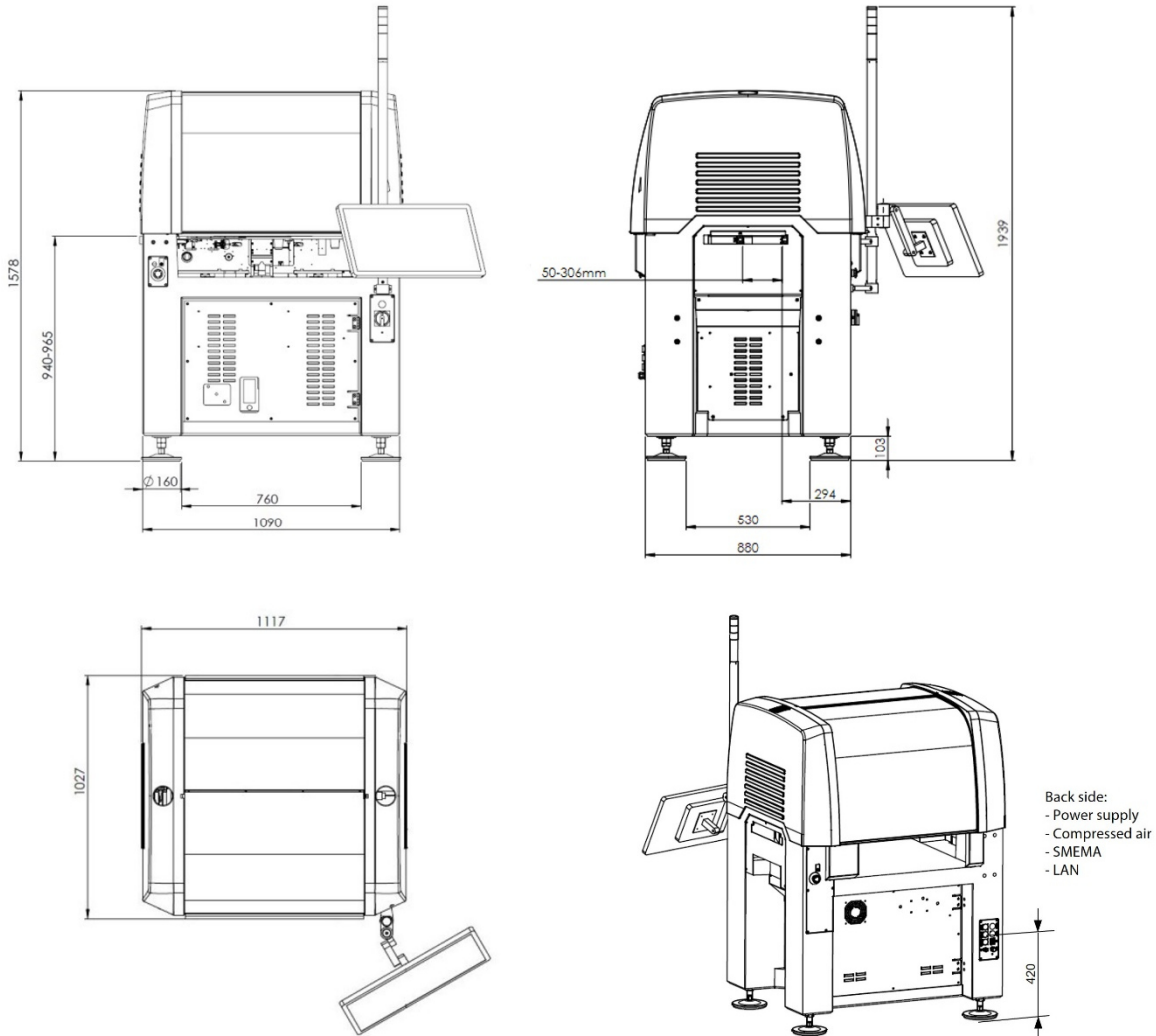
Configuration

		SPIDER
Machine base	In line type (conveyor 3 stage, support pins, manual width adjust.)	●
	Dispensing basic kit (dot plate, purge and z-height calibration station)	●
	Interior lighting LED	●
	Signal tower (3 color)	●
PCB Handling	IPC-HERMES-9852, SMDMA interface	●
	Conveyor direction L/R, R/L, batch mode R/R, L/L	●
	Automatic conveyor width adjustment	○
	Conveyor extensions	○
Control and software	PCB inspection station on conveyor	○
	ePlace dispensing software (En, De, Fr, Ru, Pl, Zh, Es, Cs, Ja)	●
	Machine PC with Windows 11 OS and 21.5" touch screen	●
	Technical support software	●
Alignment systems	Cognex base vision license (extended fiducial recognition)	●
	Red and blue color illumination for top camera	●
Dispensing valves (Cartridge sizes)	Piezo jet valve (5, 10, 30 cm ³)	○
	Shockwave jet valve (5, 10, 30 cm ³)	○
	Time/pressure valve (5, 10, 30 cm ³)	○
	Archimedean screw valve (5, 10, 30 cm ³)	○
	Volume dispenser valve (10, 30, 55 cm ³)	○
	Cartridge level control	○
	Dispenser needle heating	○
	Laser height measurement ⁽⁵⁾	◎
Dispensing options	High precision scale (only for Jet valves)	○
	Valve heating system (available for all valves)	○
	Vacuum cleaning station for needles	○
	Disp. Process Control Adjustment & Stabilization (PCAS) (software)	○
	Lifting table with heating or vacuum	○
		○
Various (extract)	Standard user level management (software)	●
	Bad mark sensing with vision (software)	●
	Universal CAD conversion (software)	●
	Calibration set dispensing	●
	Maintenance kit	●
	Key Performance Indicator (KPI with SEMI E10 standard) (software)	○
	Barcode reading over top camera (software)	○
	Second touch screen for machine backside	○
	Keyboard and mouse holder underneath monitor	○
	Clean room option ISO7 (class 10'000)	○
	Full traceability package for medium and valves (software)	○
	Recipe import in ePlace (software)	○
	Interface for host communication: IPC-CFX, ITAC, SECS/GEM, OIC, EEIP etc. (software)	○
		○

● standard feature ○ optional feature ◎ mandatory option, model to choose



Dimension Drawings



- 1) Conditions: Full speed, dot size 0.5mm, dot matrix 0.8 x 0.8 mm, 1000 x dots, medium Loctite 3621, zero height level and within performance temperature / humidity range
- 2) All 2.5D/3D applications need to be checked and approved by Essemtec Customer Application Engineering
- 3) Other heights on request
- 4) Conditions: Full speed, dot size 1.0 mm, medium Loctite 3621, zero height level and within performance temperature / humidity range
- 5) Mandatory option: Two laser models available, to choose depending on needed application

For more information ask for the SPIDER System Description and Product Notes.

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