



DispenseJet[®] Series

DJ-100

Owner's Manual

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1 Introduction

The DispenseJet Series DJ-100 (Figure 1-1) is a non-contact applicator providing high-speed delivery and exceptional volumetric control for various fluids, including surface mount adhesive, encapsulants, conformal coating, liquid crystal, UV adhesives, and silver epoxy. The Jet dispenses fluid either as discrete dots or a rapid succession of dots to form a stream of fluid from the nozzle as small as 100-micrometer in diameter.

Dispensing Systems

- Axiom™ X-1000 Series Dispensing System
- DispenseMate® D-580 Series Dispensing System
- Spectrum S-820 Series Dispensing System
- Spectrum® S-920 Series Dispensing System

Each DJ-100 is manufactured by Asymtek under strict manufacturing quality control standards to ensure precise and reliable performance. To obtain maximum performance, please read instructions carefully. Please contact Asymtek for the suitability of the DJ-100 technology for other applications.



Figure 1-1 DispenseJet Series DJ-100

DJ-100 Jet Types

Asymtek's DJ-100 Jets have three major configurations. Table 1-1 describes all currently available models of the DJ-100.

Table 1-1 DJ-100 Jet Types



Jet Type	Amplifier Module	Stroke Length	Min Jet On-Time for Max Stroke	Viscosity Range
DJ-100	CON-100	Approx. 165 μm	250 μs	Approx. 50~200,000 mPas
DJ-100 NC	CON-100 NC	Approx. 45 μm	220 μs	Approx. 50~1,000 mPas
DJ-100 GH	CON-100 GH	Approx. 320 μm	500 μs	Approx. 1,000~500,000 mPas

2 Safety

Dispensing system operation involves heat, air pressure, fluid pressure, mechanical devices, electrical power, and the use of hazardous materials. Refer to the [Safety](#) section of your particular dispensing system Operations Manual prior to installing and operating your DispenseJet Series DJ-100.

Safety is considered a joint responsibility between the original equipment manufacturer (Asymtek) and the end-user (owner). All safety precautions and practices should be in accordance with local regulations and facility practice.

Safety Warning Symbols

Symbol	Description
	Personnel Safety Warning. This symbol appears in a shaded text block to warn you about actions that could cause personal injury or death.
	Property Damage Caution. This symbol appears in a shaded text block to warn you about actions that could cause serious damage to the machinery, software, parts being processed, and facilities.

Safety of Personnel



WARNING!

Unsafe equipment conditions can result in personal injury or property damage. Failure to adhere to safety warnings and precautions could result in serious bodily harm to the user.

- Only trained personnel should be permitted to perform installation, operation, maintenance, and troubleshooting procedures on the DJ-100 and the CON100 Amplifier Module.
- Before performing maintenance or service on the DJ-100, position it at the front of the dispensing chamber. This will provide easy access to components and limit exposure to hazardous areas.
- Immediately push the red Emergency Machine Off (EMO) button on your dispensing system if personnel are in danger.
- Do not touch moving parts while the dispensing system is operating.
- Relieve pneumatic pressure before adjusting or servicing pressurized components.
- Allow the valve to cool before handling.
- Remove the DJ-100 completely from the dispensing system before cleaning or performing maintenance.

Preventing Equipment and Workpiece Damage

- Immediately push the EMO button on the dispensing system if the dispensing system, DJ-100, or a workpiece is in danger of being damaged.
- Use standard Electrostatic Discharge (ESD) precautions when working near sensitive components. Always wear a grounding strap and connect it to the ESD ground before handling workpieces and equipment.
- Perform all recommended DJ-100 maintenance procedures at the suggested intervals.
- The jet must not run without fluid (material)! Without fluid, the nozzle plate and needle ball can be damaged and the fluid can leak through the nozzle when the valve is closed.
- Immediately contain and clean up any caustic or conductive fluid spills as recommended in the material manufacturer's MSDS.
- If fluid gets into internal portions of the DJ-100 (that are not normally wetted), immediately contact Asymtek Technical Support.
- Use only replacement parts that are designed for use with the original equipment. An illustrated parts list is located in the [Illustrated Parts List](#) section.



CAUTION!

The DJ-100 is a precision instrument of inherently safe design. The use of any dispensing fluid and the related choice of solvent for cleaning, as well as all associated safety precautions is the responsibility of the end-user. Consult with your fluid supplier for recommendations on Personal Protective Equipment and safety practices.

Material Safety

- Follow Material Safety Data Sheet (MSDS) recommendations for the proper handling and disposal of all materials when cleaning dispensing equipment and materials.
- Ensure proper ventilation during handling and cleanup of all materials when cleaning the Jet and spills.
- Know the MSDS recommendations for treatment of injury resulting from exposure to hazardous materials.
- When working with multiple fluids, refer to the MSDS to ensure materials are compatible.
- Always wear appropriate Personal Protective Equipment (PPE) as recommended by facility safety practices and the material manufacturer's MSDS.
- If possible, save or recycle unused materials. Refer to the MSDS before saving or recycling unused materials.

3 Operation

The DJ-100 is driven by two specially positioned piezoelectric actuators. The actuators move a rod, which is lifted or lowered. A sealing ball from resistive ceramics is fixed to the lower end of this rod. The tight fit from ceramic plate is closed by means of the sealing ball. When the sealing ball is lifted, the fluid can flow from the valve. Due to the extremely fast piezoelectric drive it is possible to achieve a dispensing frequency of up to 1000 Hz. However, a maximum frequency of 150Hz is recommended to increase the life time of the nozzle plate and the sealing ball. By means of the jet on time of approx. 250 μ s (maximum stroke for DJ-100) it is possible to dispense a minimum volume of approx. 2nl (subject to the fluid). The jet on-time can be increased in increments of 10 μ s (e.g. > 0.25 μ s \rightarrow 0.26 μ s) to create a very exact attitude of the dispensing quantity.

Adjustable Features

The following features affect performance of the DJ-100 and are typically adjusted to fit your application.

Fluid Pressure

Fluid Pressure should be set so that fluid fills to the seat but does not push the fluid through the seat and nozzle. In general, higher fluid pressure results in a larger volume of material jetted.

Piezo Electric Actuator

The Piezo Electric Actuator controls the valve operation. The jet ON/OFF times can be adjusted in the Fluidmove software.

Fluid Heater

Fluid temperature often influences fluid viscosity and flow characteristics. The DJ-100 is equipped with a heater system that assures a constant fluid temperature.

Dot and Line Parameters

In addition to the DJ-100 hardware configuration and settings, Dot and Line Parameters are set in the Fluidmove software program to control the size and quality of dots and lines dispensed. For information on dispense parameters, refer to the *Fluidmove User Guide* or Online Help.

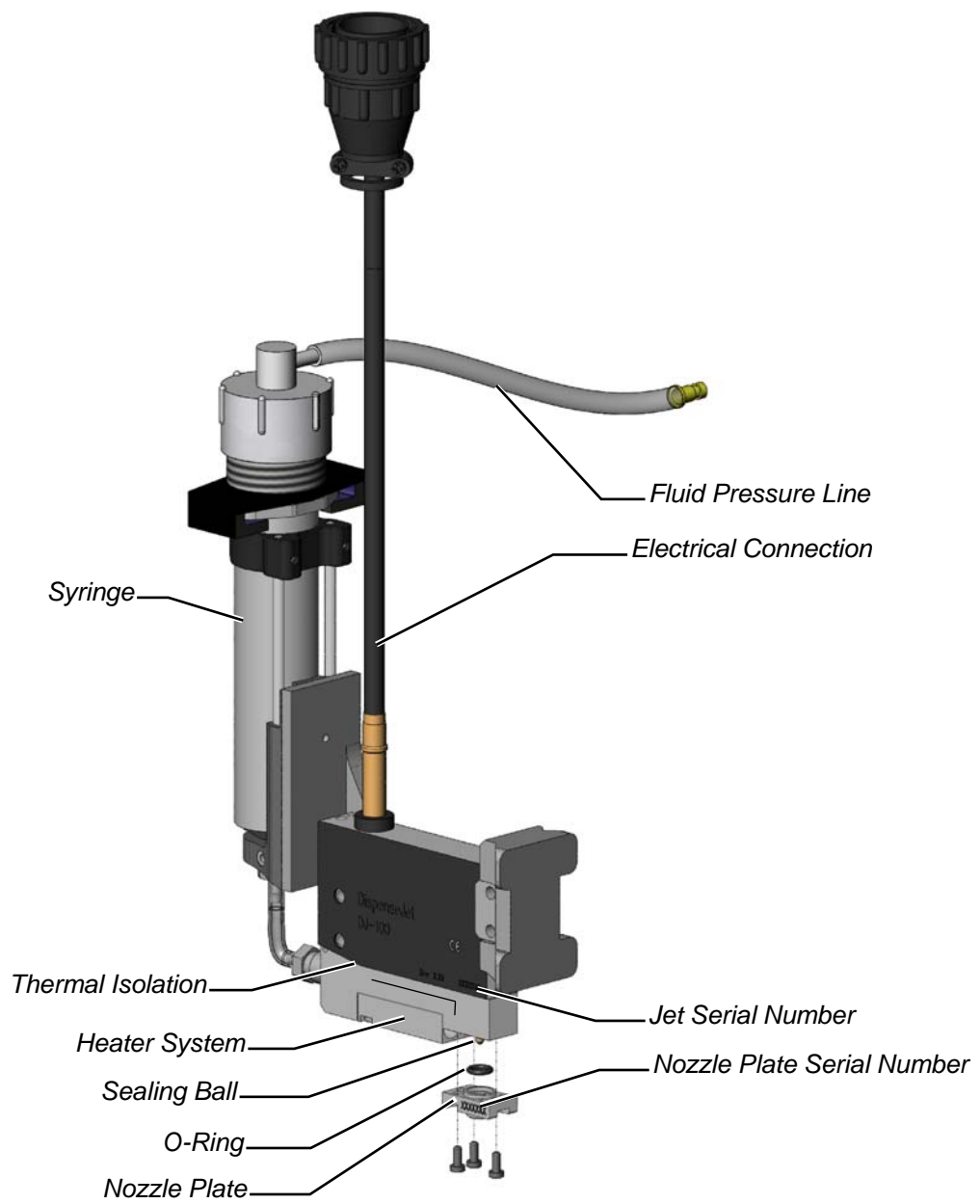


Figure 3-1 DJ-100 Exploded View

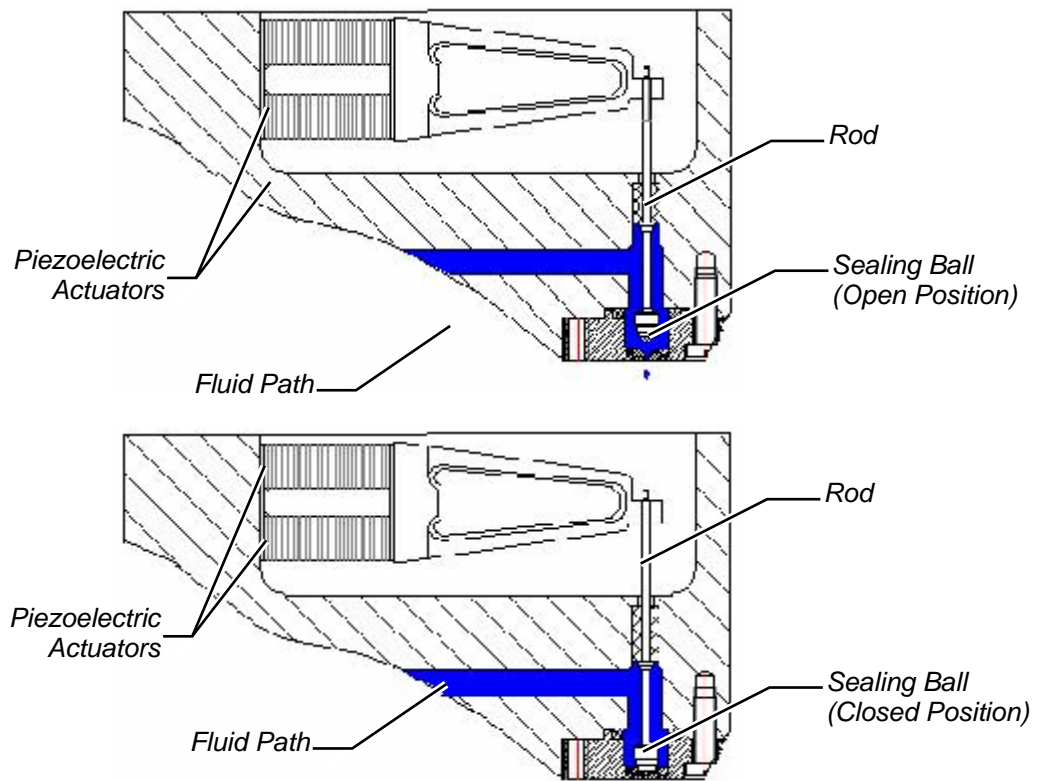


Figure 3-2 DJ-100 Jet Operation

The signal for the piezoelectric actuators is generated by the platform and amplified by the CON100 amplifier module. An additional programming module (PDA) is needed to control the jet on time for the Axiom platform only.



CAUTION!

The jet offers a heated fluid area. The maximum temperature is + 100°C. The drive is thermally isolated from the fluid area. This avoids temperature stress and increases reliability and lifetime of the piezoelectric drive.



WARNING!

If temperature exceeds + 45 °C, the operator assures appropriate labeling and protection against contact.

Delivery of the fluid towards the jet takes place pneumatically or by a feed pump.



CAUTION!

The jet must not be activated without fluid! Without fluid the valve seat can be damaged with the risk of a seat leakage.

Nozzle Sizes

The nozzle diameter can be determined from the marking on the nozzle plate. The following nozzle diameters are available: 100µm, 150µm, 200µm, and 300µm. A 300µm nozzle is shown in Figure 3-3.

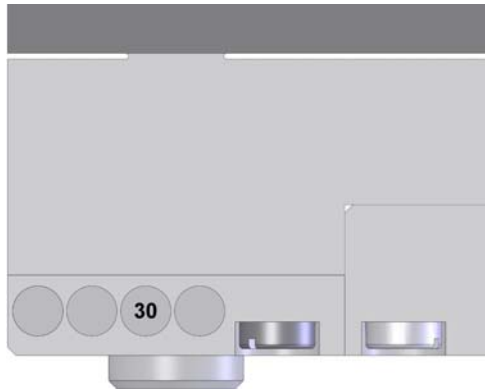


Figure 3-3 Nozzle Diameter Marking

Table 3-1 Nozzle Codes

Nozzle Plate Code	Nozzle Size (inner diameter)
10	100 µm
15	150 µm
20	200 µm
30	300 µm

Matching Serial Numbers

Each jet and its associated nozzle plate are precisely aligned at the factory and delivered as a matched assembly with identical serial numbers on the jet and the nozzle plate. Be careful not to accidentally interchange jets and nozzles when cleaning or performing maintenance.

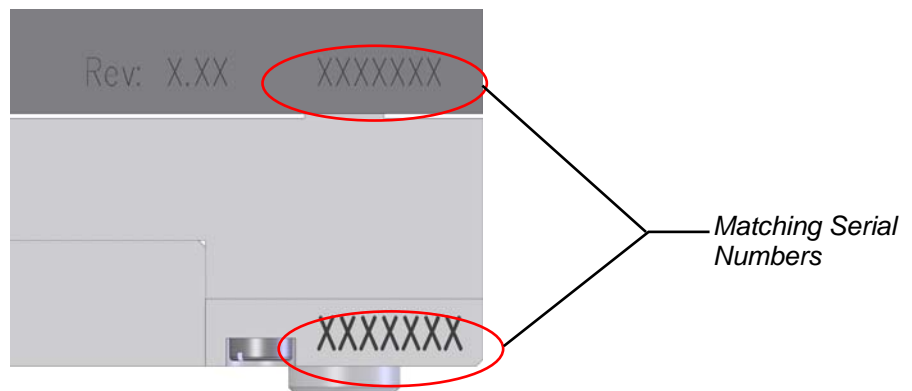


Figure 3-4 Matching Serial Numbers

4 Installation

The DJ-100 is designed for use on Asymtek's Axiom X-1000, DispenseMate 580 Series, Spectrum S-820 Series, and Spectrum S920 Series Dispensing Systems.



NOTE For more information, refer to the manual for your particular dispensing system.

Unpacking the DJ-100

Every care has been taken when packaging your DJ-100. However, we recommend that you look for obvious damage and verify contents against the packing slip.

Retain the case for storage of the DJ-100 and accessories. Retain shipping cartons for future use. If an item needs to be returned to Asymtek, obtain a Return Material Authorization (RMA) number from Asymtek.

Installing the DJ-100

If your DJ-100 series jet was factory installed, you do not need to perform this procedure.

Tools and Materials Needed:

- Flat-head screwdriver
- 3 mm hex wrench
- 4 mm hex wrench



NOTE Prior to installation, use the software or dispensing system position controls to move the dispensing head to the front center of the dispensing area. Perform a service shutdown as specified in the applicable dispensing system manual. Remove any jet currently installed on the dispensing head. If the jet bracket installed is incompatible with the DJ-100, remove it. Refer to the installation/removal procedures in the applicable jet manual if necessary.

1. Mount the DJ-100 on the dovetail bracket and tighten with the 4-mm hex wrench.
2. Make the electrical connections according to the appropriate machine configuration shown in Figure 4-1 and Figure 4-2.
3. Connect the pneumatic hoses as shown in Figure 4-1 and Figure 4-2. You should hear a click when the hose is inserted properly.



NOTE Verify that the cables and connections are secured adequately to account for the motion of the robot.

4. Connect to the respective fluid supply source (e.g. small cartridge fitting). The syringe must be installed to connect the clear fluid line. See "[Installing/Changing a Fluid Syringe](#)" in the [Operation](#) section.
5. Set temperatures within the Fluidmove software. See "[Software Configuration](#)" later in this section for specific instructions.
6. Select the appropriate active valve configuration in the Fluidmove Valve Setup Screen. See "[Software Configuration](#)" later in this section for specific instructions.
7. Test the jet operation as necessary. Refer to the *Fluidmove User Guide* or consult with a trained operator.

8. After the jet has been installed, you must adjust the Height Sensor Probe. Refer to the appropriate platform manual.
9. The DJ-100 is now connected and ready for operation.

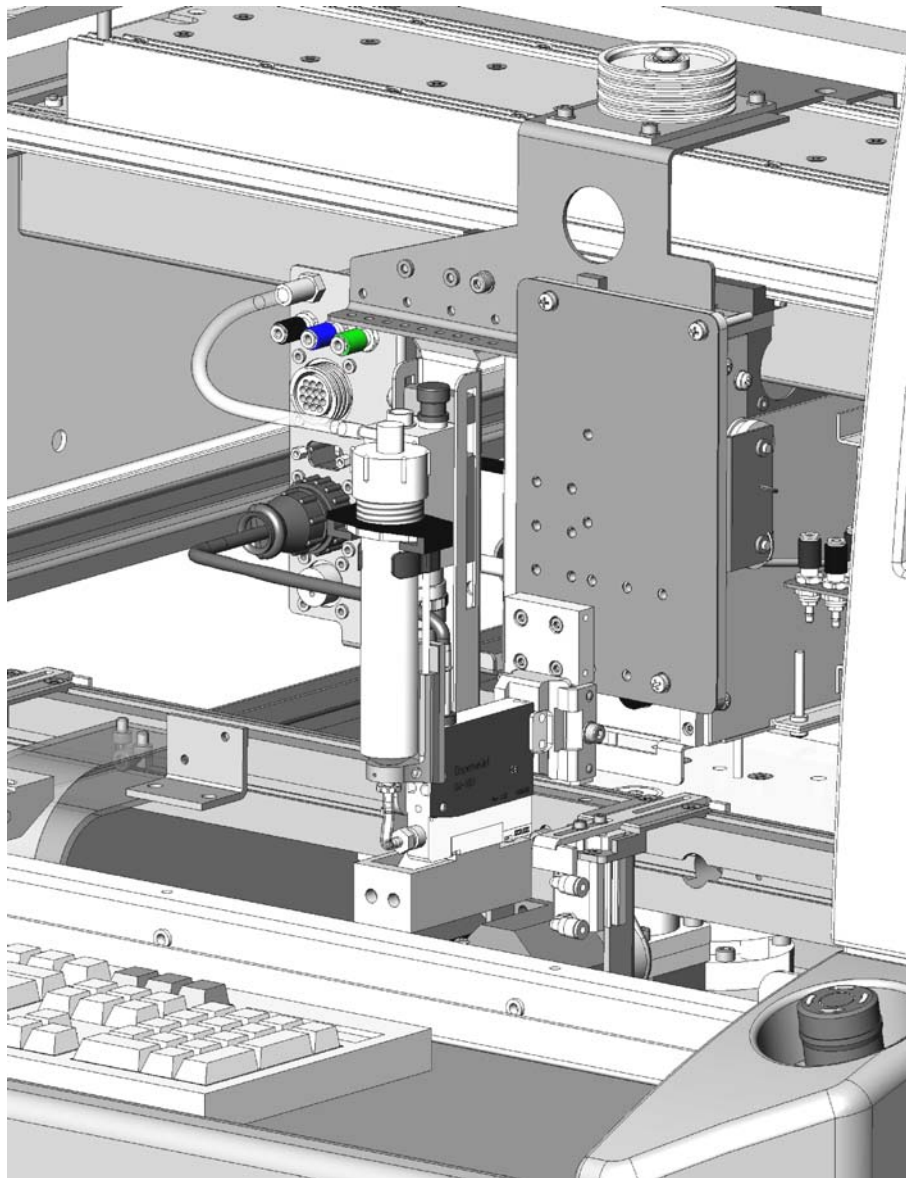


Figure 4-1 Connection Diagram – Axiom

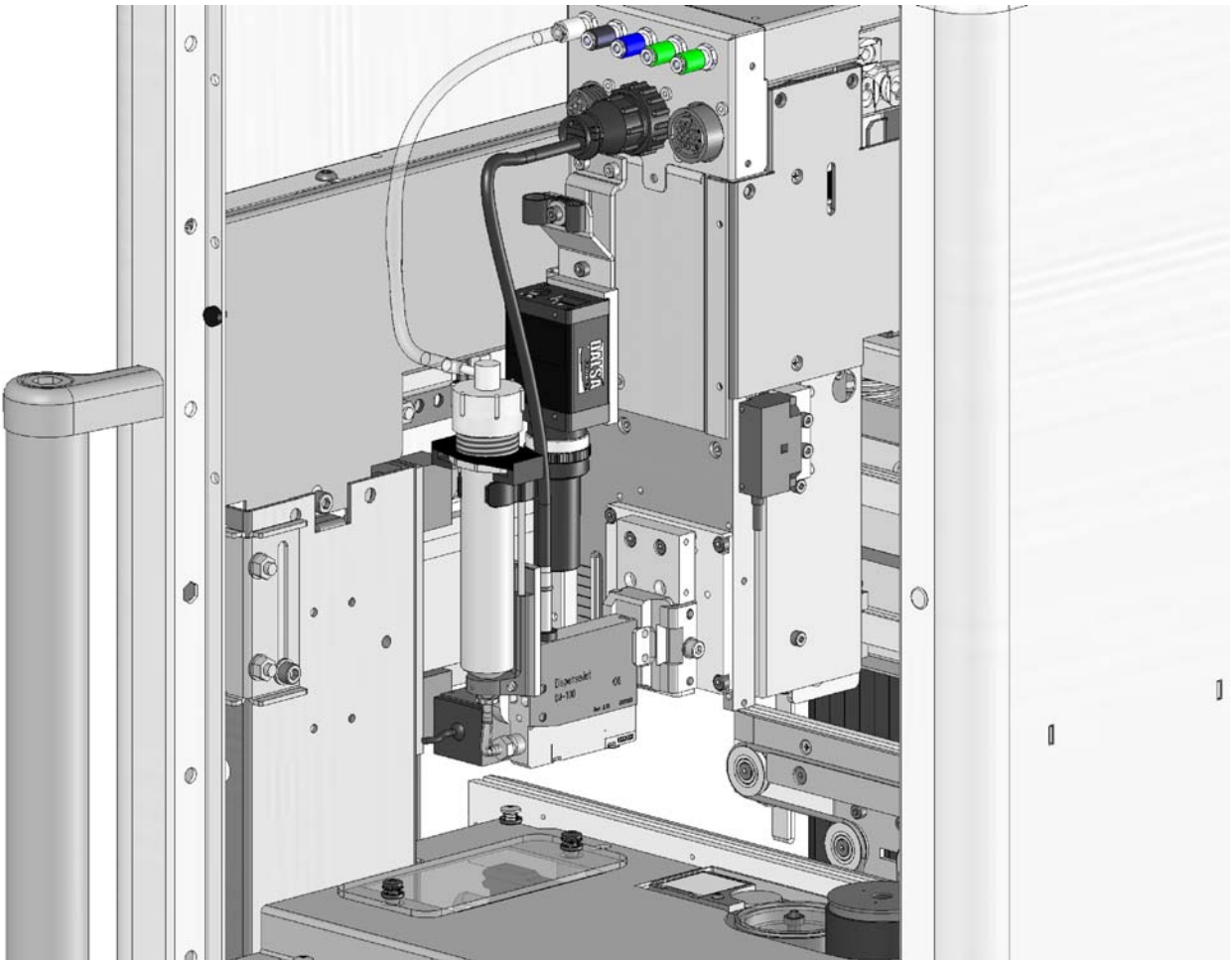


Figure 4-2 Connection Diagram – S-920 Series



NOTE The connections in Figure 4-2 also apply to Asymtek's DispenseMate and Spectrum S-820 platforms.

Installing/Changing a Fluid Syringe

Tools and Materials Needed

- Clean Cloth and Solvent (for spills)
- 10mm Wrench or Pliers (as needed)
- Syringe of Fluid to be Dispensed
- Appropriate Personal Protective Equipment



NOTE If changing fluid types, you must first clean the jet in accordance with “[Cleaning the DJ-100](#)” in the [Maintenance and Service](#) section.


1. Use position controls to move the dispensing head to the front center of the dispensing area.
2. Perform a production shutdown as specified in the applicable dispensing system manual.
 - ▶ If there is no syringe installed, skip to Step 6.
3. Disconnect the syringe air hose from the **FLUID AIR** connector on the bulkhead.
4. Remove the syringe receiver head from the empty syringe and unscrew the empty syringe from its fitting.
 - ▶ If the fitting turns with the syringe, use a small wrench or pair of pliers (as applicable) to hold the fitting while unscrewing the syringe.
5. Remove the syringe and discard it in accordance with local regulations.
6. Obtain a new syringe and inspect the fluid for voids. If voids are present, obtain another syringe.
7. Remove the syringe cap and hold the syringe tip-side-down to allow the fluid to completely fill the syringe tip.
8. Slide the new syringe down through the syringe clip and screw it onto the syringe fitting.
 - ▶ There should be no fluid voids at the top of the syringe fitting. If any material seeps over the fitting, clean the fitting with a cloth and recommended solvent.
9. Screw the receiver head onto the top of the new syringe.
10. Connect the syringe air hose to the **FLUID AIR** connector on the dispensing head bulkhead.
11. Perform a dispensing system start-up as specified in the applicable dispensing system manual.

Software Configuration

Once you have installed the DJ-100 on your dispensing system, the dispensing software must be configured.



WARNING! Only trained service technicians should perform this procedure.

1. Perform a system start-up as specified in the applicable dispensing system manual.
2. Start the Fluidmove software by double-clicking the **Fluidmove** icon  on the Windows desktop.
3. Select **Configuration > Setup Valves** from the Fluidmove Main Window.
 - ▶ The Setup Valves screen (Figure 4-3) opens.

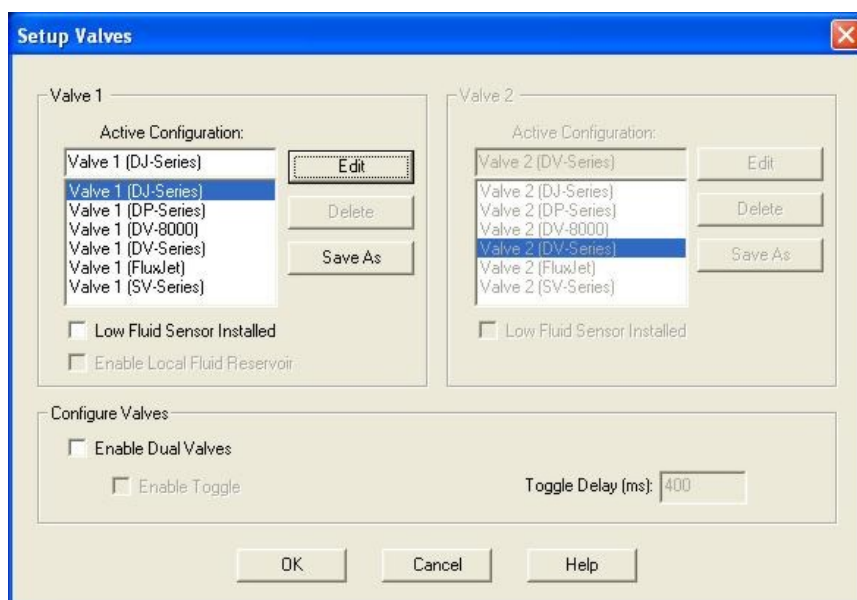


Figure 4-3 Fluidmove Setup Valves

4. Select **Valve 1 (DJ-Series)** in the Active Configuration list.
5. Click on **OK**.
 - ▶ You will be prompted to restart Fluidmove.
6. Click on **Yes**
 - ▶ Fluidmove will restart and you will be prompted to run Valve Offsets. Refer to the *Fluidmove User Guide* or Online Help for instructions.

5 Maintenance and Service

Overview

Performing the recommended maintenance and service procedures at suggested intervals increases the life of your DJ-100 and ensures high quality performance for every production run.

Record Keeping

The type of procedure performed should be recorded in maintenance records for the DJ-100 Jet. Dates, part numbers/serial numbers of replaced parts, names of technicians, and other pertinent data should be recorded.

Tools and Materials Needed:

- 10mm box-end wrench
- Flat-head screwdriver

Cleaning the DJ-100

Cleaning of the DJ-100 is exclusively restricted to the components contacting the product. The fluid channel in the jet is rinsed and the nozzle plate is cleaned with a lint-free cloth. Please take the following steps:

Rinsing the Fluid Channel

1. Disconnect the fluid pressure hose and remove the syringe. Replace the dispensing fluid with an appropriate cleaning fluid. Place a cup under the jet to collect fluid.
2. Connect the fluid pressure hose.
3. Open the jet until cleaning fluid comes out. The cleaning fluid will typically exit the jet at a higher speed than the fluid that was being dispensed. Close the jet as soon as the cleaning fluid regains its original color. Use at least 30 ml of cleaning fluid to rinse the jet.



CAUTION!

Do not trigger the jet without a liquid medium! If dispensing is carried out without fluid, the nozzle seat might be damaged and this might cause leakages.



NOTE

For best results, allow the cleaning fluid to soak in the fluid path for five minutes with the jet closed.

4. Open the jet again to purge the cleaning fluid.



NOTE

After all the cleaning fluid has drained, compressed air will escape. To prevent a mess, put a cloth or cup in front of the nozzle.

5. Repeat the rinsing process three times.
6. Disconnect the fluid pressure hose.
7. Remove the cleaning fluid syringe.

Cleaning the Nozzle Plate and Fluid Channel



CAUTION!

Each jet and its associated nozzle plate are precisely aligned at the factory and delivered as a matched assembly with identical serial numbers on the jet and the nozzle plate. Be careful not to accidentally interchange jets and nozzles when cleaning or performing maintenance.



WARNING!

After removing the screws, do not use tools to remove the nozzle plate from the jet. Using tools can cause serious damage. Always pull the nozzle plate down vertically, to avoid bending the rod.

When the nozzle plate is removed, be careful not to damage the exposed rod and sealing ball, as this could result in leakage.

1. Complete the fluid channel rinsing process as described previously.
2. Disconnect all electric and pneumatic lines.
3. Remove the nozzle plate.
 - ▶ The fluid channel, sealing ball and threads can be cleaned with cleaning fluid, a lint-free cloth, a cotton swab and a pipe cleaner.
4. Clean the nozzle plate and screws
 - ▶ For a thorough cleaning of the nozzle, ultrasonic cleaning is recommended.
5. With the nozzle plate removed, rinse the jet with cleaning fluid.
6. Clean the fluid channel thoroughly with recommended brushes and swabs.
7. Blow out the fluid channel of the jet with pressurized air.
8. Reassemble the nozzle plate (don't forget the O-ring).
9. Connect the DJ-100 to the dispense platform.

Testing for Leaks

Always check for leaks after performing the cleaning procedure.

1. Replace the fluid being dispensed with the appropriate cleaning fluid.
2. Close the valve and pressurize the fluid reservoir to approximately 6 bar (87 psi).
3. No fluid should be visible at the nozzle. If fluid is visible, repeat the cleaning procedure.
4. If the jet leaks, check the nozzle seat with a magnifying glass for any remaining contamination, particles and damage and remove contaminants. Replace all fluid lines from the reservoir to the jet.
5. If the jet still leaks, contact Asymtek for technical assistance.

Inspecting the DJ-100 for Wear

Before start of production, the DJ-100 ceramic ball, valve seat, sealing valve body / rod (white o-ring), & rod should be inspected to ensure all particulate and any cured fluid is properly removed. It is critical to the lifetime of the DJ-100 assembly to remove cured fluid, debris or any particulate from the mating surfaces between ball tip and valve seat. Failure to properly clean & remove all particulate from these mating surfaces can cause poor dispense quality and will shorten the lifetime of the DJ-100. The ball tip and valve seat cannot be replaced, and must be maintained to the highest level of accuracy. Asymtek recommends that you inspect the valve seat using a laboratory microscope (10-30 x magnification) to ensure all particulate is removed before start of production.



WARNING! Do not use sharp or pointed metallic tools, as they can scratch the mating surfaces and cause poor jetting performance and leaking. Cleaning swabs are included in Kit P/N 7218366.

Jet Replacement Program

Asymtek offers a Jet Replacement Program available during the first two years from the original ship date of the DJ-100. If the ball & seat wear out due to normal operation & use, Asymtek will offer a replacement jet. Please contact your local service or sales team for details on the replacement jet program.

6 Troubleshooting

Overview

This section will help you determine the origin of problems you may experience with your valve and provide the recommended corrective actions.

If you experience problems that are not listed in this section, or continue experiencing the problem after trying the suggested corrective actions, please contact Asymtek Technical Support for more advanced fault diagnostics.



TIP You may want to contact your nearest Asymtek Regional Support Center (RSC) for Dispensing system problems or problems that may be attributable to fluid selection, dispensing applications, or programming.



WARNING!

Dispensing equipment in need of troubleshooting may have High Voltage present in both designated and unsuspected places. High Voltage can result in personal injury or death.



CAUTION!

Troubleshooting should only be performed by trained service technicians.

Troubleshooting the Jet

Basic troubleshooting and suggested recovery measures are presented in Table 6-1. Due to variances in production environment and operational conditions, not every possible problem can be addressed.



TIPS To quickly identify problems, look for obvious signs such as burnt, missing, damaged, or loose parts as well as obstructions and spills. Obvious uncharacteristic heat, noise, vibration, odor, or movement can also help to isolate problems.

Table 6-1 Troubleshooting Guide

Symptom	Possible Cause	Recovery
Intermittent or no fluid dispensing	Clogged nozzle	Clean the nozzle plate thoroughly.
	Plugged jet	Clean Jet. See “ Inspecting the DJ-100 for Wear ” in the <i>Maintenance and Service</i> section.
	No power to jet	Make sure that the jet power cable is connected to the power outlet on the dispensing head.
	Fluid syringe is empty	Replace with a new syringe and reconnect the fluid pressure fitting. Make sure the fluid pressure is on.
Inconsistent shot sizes	Syringe air pressure set too low	Increase syringe air pressure. Refer to the applicable dispensing system <i>Operations Manual</i> for instructions.
	Jet on time and off time is too low	Increase the jet on time and jet off time.
	Drive mechanics do not have time to damp-out after an X-Y move	Increase the settling time in the Dot Parameters. Refer to the <i>Fluidmove User Guide</i> or Online Help for instructions.
	Air voids in fluid syringe	Replace with new fluid syringe.
Shots too large	Jet on time is too big	Decrease the value of the on time.
	Syringe air pressure set too high	Decrease syringe air pressure (30 psi max). Refer to the applicable dispensing system <i>Operations Manual</i> for instructions.
Jet is contacting other components during Dispensing Head movement	Incorrect Jet Bracket / Mounting Plate installation	Check the save Z height and dispensing height. Check the Z mounting location.

Status Signals and Fault Codes

The LEDs on the front of the CON100 control unit indicate status signals as well as faults.

Table 6-2 provides an overview of the various indications:

Table 6-2 CON100 Status Signal and Trouble Codes

Power LED	Temp LED	P400 LED	Akku LED	Load LED	Possible cause for malfunction	Voltage PIN 13	Malfunction management	Categories: FD: Cause = Disp FB: Cause = User B = normal
On	On/out	Out	Out	On/out	Power Supply Amplifier Module normal and Amplifier Module connected with jet If heater is used and choosen temperature is reached, LED Temp is On	24V		B
Flash ¹	Out	Flash ¹	Out	On/out	Malfunction heater Chosen temperature is >20°C / 40°C (Potentiometer or external)	0V	Check cable and plugs to jet. Change jet. Or use temperature setting below 20°C / 40°C to continue.	FD
Flash ¹	Flash ¹	Flash ¹	Out	On/out	No jet connected to amplifier module or no ENA signal	0V	Connect jet. Check cable and plugs to jet.	FB
Out	Out	Flash ¹	Out	On/out	Piezoelectric drive damaged or failure jet power supply	0V	Change jet. Check cable and plugs to jet.	FD
Out	Flash ¹	Out	Out	On/out	Failure temperature sensor Chosen temperature is >20°C / 40°C (Potentiometer or external)	0V	Check cable and plugs to jet. Change jet. Or use temperature setting below 20°C / 40°C to continue.	FD
Out	Flash ¹	Out	Out	On/out	Jet without heater connected Chosen temperature is >20°C / 40°C (Potentiometer or external)	0V	Use temperature setting below 20°C / 40°C to continue.	FB
Out	Out	Out	Flash ²	On	Power supply voltage is too low (between 8 to 21 Volt)	0V	Check reason and use correct voltage	FB
Out	Out	Out	Flash ²	Out	Power supply completely down	0V	Jet closed by battery. Start up power supply again immediately or release fluid pressure on jet	FB
On	Flash ³	Out	Out	On/out	Heater deactivated by external signal	24V	As long as external signal is high, heater is deactivated	B

Flash¹ - LED - 0.333 s ON / 0.333 s OFF **Flash²** - Short flash with long break time to save energy **Flash³** - LED - 0.12 s ON / 0.12 s OFF for 2 times then break 1.5 s



CAUTION!

All malfunction categories (FB and FD) have to be cleared by resetting the amplifier module. To reset the amplifier module, please switch off the main power switch of the unit and turn it on again after a few seconds. Disconnect the fluid pressure hose before turning off the power.

7 Additional Information

Recommended Facility Items

In addition to the supplied accessories and tools, it is recommended that the following items be available at your facility:

- Personal Protective Equipment recommended in applicable MSDS
- Bench Lamp and Magnifier Set
- Ultrasonic Cleaning System
- Airgun and compressed, dry air
- Appropriate fluid collection and disposal container
- Solvent appropriate for the fluid used
- O-ring type lubricant
- Disposable towels, cleaning swabs and brushes



WARNING!

The outside of the jet should be cleaned only with a soft cotton or cellulose cloth. The cloth can be moistened with alcohol when fluid buildup on the jet is excessive. Do not use very wet cloths, and never pour solvent or water directly onto the jet. Do not submerge the jet in cleaning agent. The drive could be destroyed if liquid penetrates it. Only the components of the DJ-100 that come into contact with the processed fluid need be cleaned.



WARNING!

The cleaning fluid that should be used to purge and clean the equipment is a factor of the fluid in the jet. The cleaning intervals also depend on the dispensed fluid and can be found on the respective data sheet. Mix together the cleaning fluid and the dispensed fluid outside of the jet to verify solubility.

Return Material Authorization

Obtain a Return Material Authorization (RMA) from Asymtek Customer Service before returning parts.

Spares and Accessories

Table 7-1 lists available spares and accessories. You may order entire kits or by individual part number.

Table 7-1 Spares and Accessories

Part Number	Part Description	Description	
7218366	KIT, CLEANING DJ-100	Valve Cleaning Kit	
124520	SCREWDRIVER,#0 PHILIPS		
48-8105	TOOL,SEAL REMOVAL,PLASTIC		
58-0036	SWAB,COT,RD.TIP,6"WD,100/PKG		
58-0038	SWAB,MINI,COT,WD.HNDL 100/PKG		
7214868	BRUSH,BOTTLE,.13OD X6IN,PKG 10		
7218364	WRENCH,COMBINATION 10MM		
7218387	ASSY, FEED TUBE, DJ-100,PKG/25		
7218413	KIT,O-RING,DJ-100,EPDM		
7218415	BOX,SHIPPING,DJ-100		
7218442	BRUSH,DIA .24IN,PKG 8,PURPLE		
7218443	BRUSH,DIA .11IN,PKG 8,BLUE		
901916	VICE,PIN		
901922	KIT,WIRE,CLN,MUSIC W .007IN DIA		
901923	KIT,WIRE,CLN,MUSIC W,.011IN DIA		
901924	KIT,WIRE,CLN,MUSIC W,.014IN DIA		
901935	KIT,WIRE,CLN,MUSIC W,.003IN DIA		
7218421	KIT, ACCESSORIES, DJ-100	Accessories Kit	
7218011	MAN,OWNER,DJ-100		
32-2011	BOX, 11 X 6.5 X 2 WITH CHERRY		
7201408	LOCKS		
7201409	HOLDER,SYRINGE,10CC		
KS-01	HOLDER,SYRINGE,5CC		
SA-603-C	SET, SYRINGE		
SA-606-C	ASSY,SYRINGE 3CC,CLR		
SA-610-C	ASSY,SYRINGE 6CC,CLR	Magnetic Low Fluid Sensor Kit	
SA-635-C	ASSY,SYRINGE 10CC,CLR		
7201410	KIT,MLFS,DJ-9000		
7217961	KIT, DJ-100,X1K,UPGRADE		Axiom X-1000 Integration Kit
7217962	KIT,SV/DJ-100,S-9XX,UPGRADE		Spectrum S-820 Series Integration Kit
7217957	ASSY,DHC,UPGRADE,X-1K		Axiom X-1000 Integration Kit (Serial No 12549 and Earlier)
7218440	O-RING, 5.0 X 1.5MM,VITON		
7218430	O-RING, 5.0 X 1.5MM,EPDM		
7214808	O-RING, -008, EPDM		
7204264	O-RING, -008, VITON		

Table 7-1 Spares and Accessories (continued)

Part Number	Part Description	Description
7218387	ASSY, FEED TUBE, DJ-100,PKG/25	
7218444	ASSY, FEED TUBE UV, DJ-100,PKG/25	
7218355	DJ-100 (300µm nozzle)	
7218357	DJ-100 NC (150µm nozzle)	
7218359	DJ-100 GH (300µm nozzle)	
7218390	DJ-100 (200µm nozzle)	
7218393	DJ-100 GH (200µm nozzle)	
7218410	DJ-100 NC (100µm nozzle)	

Sample Application Settings

See Table 7-2 and Table 7-3 for a list of settings that affect DJ-100 performance. Values are application dependent. Refer to the *Fluidmove User Guide* or Online Help for detailed software instructions. Values are saved in the Fluidmove configuration, fluid, heater, and program files. A column is provided for you to record your current settings.

Table 7-2 Pneumatic Settings

Category	Unit	Current Settings
Fluid Pressure	KPa (psi)	

Table 7-3 Software Settings

Category	Parameter	Units	Current Settings
Configuration, Setup Valves..., Edit, Settings	Jet Pulse Time (Jet on Time)	msec	
	Purge Interval	ms	
	Pre-purge Rotations		
	Pre-purge Spacing	(0.1 mil)	
	Pre-purge Delay	ms	
Fluid Manager Purge Parameters	Vacuum Shutoff Delay	ms	1000
	Vacuum Pre-Shutoff Delay	ms	0
Fluid Manager Flow Rate Parameters			
Fluid Manager Pot Life /Low Fluid Check			
Machine Offset Parameters	Script file and settings		
Setup Heater	Set Point, Other Settings	°C	
Dot Parameters	Settling Time, Down Speed, Accel Gap, # Shots, MS Delta Dwell, Retract Dist, Retract Speed, Accel Post Dwell, Dwell Time		
Line Parameters	Down Speed, Accel Gap, Speed, Wt-Ctrl Speed, Accel Dist, Decel Dist, Retract Dist, Retract Speed, Accel Control Mode, Shot Time Interval		

8 Specifications

The specifications below are intended as a convenient reference for personnel involved with installation, operation, and maintenance of the DJ-100.

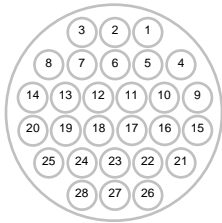
This section contains the technical specifications for the DJ-100 Jet. If you have any questions about these specifications or jet performance, contact Asymtek Technical Support or your authorized distributor.

Table 8-1 DJ-100 Technical Data

Characteristic	Specification
Dimensions (LxWxH)	72 x 14 x 60mm
Measureable Material	Lubricants like oils and fats, varnishes and colors, hydrous solutions, organic solvents, liquid polymers and polymeric solutions and many other liquids
Measureable viscosity range	Approx. 50 – 200.000 mPas (thixotrope)
Measureable Filters	Quartz powder, iron oxide, aluminium oxide, aluminium nitrate, nickel, silver, glass and polymeric particles up to a filling share of max. 50% and grain sizes of max. 50µm
Minimum On Time for max. stroke	250 µs (one open and close)
Maximum On Time	500 ms
Resolution	10 µs
Maximum Off Time	Infinite (stop)
Dispensing frequency	1000 Hz (not more than 150 dispensing cycles /s)
Dispensing Accuracy	Approx. 2% (with constant pressure and temperature)
Maximum Working Pressure	100 bar (10mPa)
Ambient temperature Range	Up to 45°C
Fluid temperature range	Up to +100°C (DJ-100) Up to +180°C (DJ200) (non-boiling media)
Tight Fit Ball / Nozzle	Self-adjustable from hard ceramics, removable for cleaning
Diameter Standard Nozzle	300 µm, light-blocked (others on demand)
Materials in contact with the piezoelectric drive	Perflouroelastomer, stainless steel 1.4305, EPDM
Min. Bending Radius	R 35mm (one-time); R 100 mm (deliberate movement)
Fastening Thread at the jet body	M4; 6mm deep; Tightening Torque: 2.5 Ncm +0.2
Degree of Protection	IP 54
Explosion Protection	No
Storage temperature	-10°C up to +85°C
Weight including connecting cable	Approx. 290 g
Suitable Drive Electronics	CON100 Amplifier Module (1 jet each)
Dispensing Process Electronic	PDA1, PDA2 ⁺²

DJ-100 Electrical Interface Assignment

28-pin female CPC connector



Pin	Signal	Pin	Signal
1	UNUSED	15	UNUSED
2	UNUSED	16	UNUSED
3	UNUSED	17	UNUSED
4	+24V	18	UNUSED
5	NEEDLE_HEAT1/	19	PICO_RX_TX
6	RTD1_RETURN	20	GND/A
7	RTD1_SENSE	21	UNUSED
8	UNUSED	22	UNUSED
9	UNUSED	23	UNUSED
10	UNUSED	24	UNUSED
11	UNUSED	25	UNUSED
12	UNUSED	26	UA
13	PE	27	UNUSED
14	ENA	28	P400/A

9 Illustrated Parts List

Table 9-1 identifies components referred to in Figure 9-1. The item numbers associated with the description correspond to the callout numbers in the illustration.


 **NOTE** Before attempting to replace any parts, please review the precautions in the [Safety](#) section.

Table 9-1 Illustrated Parts List

Item No.	Part No.	Description
1	7218390	DJ-100 (200 µm nozzle)
2	7218355	DJ-100 (300 µm nozzle)
3	7218410	DJ-100 NC (100 µm nozzle)
4	7218357	DJ-100 NC (150 µm nozzle)
5	7218393	DJ-100 GH (200 µm nozzle)
6	7218359	DJ-100 GH (300 µm nozzle)
7	7218389	BRKT, DJ-100
8	7217703	CLAMP, DJ-100, VCI
9	49-4312	SCREW, M4 X 0.7, SOCKET X 12
10	7201407	HOLDER, SYRINGE, 30cc
11	7201408	HOLDER, SYRINGE, 10cc
12	7201409	HOLDER, SYRINGE, 5cc
13	7201394	HOLDER, SYRINGE
14	49-3206	SCREW, M3 X .05, FLAT
15	49-3504	SCREW, M3 X 4, FLAT PT
16	7218387	ASSY, FEED TUBE, DJ-100, PK/25
17	7218444	ASSY, FEED TUBE UV, DJ-100, PK/25
18	7218386	FITTING, M10-1/8 BARB DJ-100
19	7214808	O-RING, -008, EPDM
20	7204264	O-RING, -008, VITON
21	7218440	O-RING, 5.0 X 1.5MM, VITON
22	7218430	O-RING, 5.0 X 1.5MM, EPDM
23		VALVE PLATE
24		SCREWS, VALVE PLATE

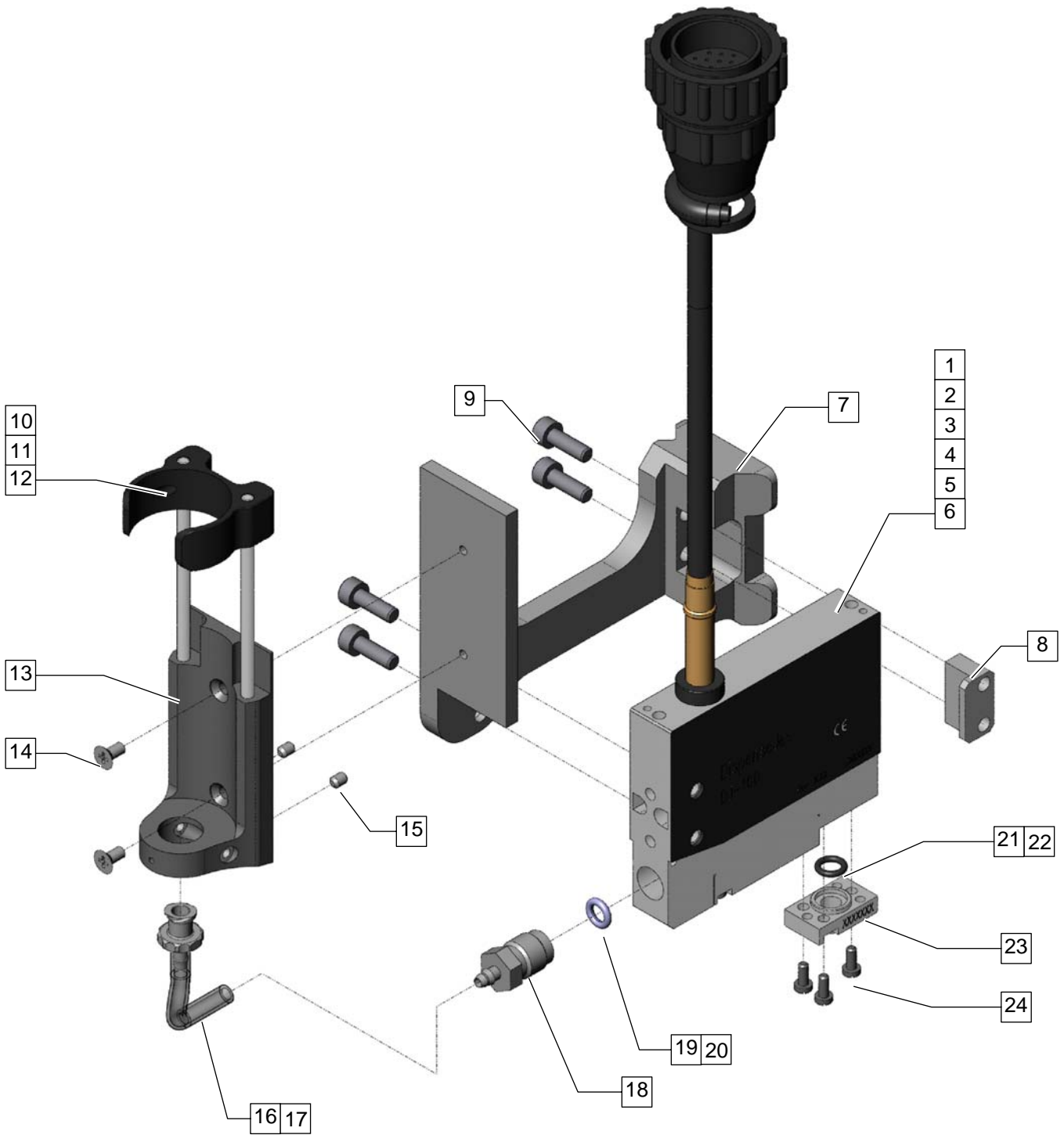


Figure 9-1 DJ-100 Illustrated Parts List



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