Ink-Dot Hydraulic System with Reservoir Manifold

Customer Product Manual

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For parts and technical support, call the Industrial Coating Solutions Customer Support Center at (800) 433-9319 or contact your local Nordson representative.

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Check http://emanuals.nordson.com for the latest version.

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Contact Us
Nordson Corporation welcomes requests for information, comments, and inquiries about its products. General information about Nordson can be found on the Internet using the following address:
http://www.nordson.com

http://www.nordson.com/en/global-directory

Change Record

Revision	Date	Change
01	07/10	Initial Release
02	12/21	Adding tubing
03	8/22	Added UKCA certification.
04	12/24	Updated manufacturer’s address.

Safety

Introduction

Read and follow these safety instructions. Task- and equipment-specific warnings, cautions, and instructions are included in equipment documentation where appropriate.

Make sure all equipment documentation, including these instructions, is accessible to persons operating or servicing equipment.

Qualified Personnel

Equipment owners are responsible for making sure that Nordson equipment is installed, operated, and serviced by qualified personnel. Qualified personnel are those employees or contractors who are trained to safely perform their assigned tasks. They are familiar with all relevant safety rules and regulations and are physically capable of performing their assigned tasks.

Intended Use

Use of Nordson equipment in ways other than those described in the documentation supplied with the equipment may result in injury to persons or damage to property.

Some examples of unintended use of equipment include:

- using incompatible materials
- making unauthorized modifications
- removing or bypassing safety guards or interlocks
- using incompatible or damaged parts
- using unapproved auxiliary equipment
- operating equipment in excess of maximum ratings

Regulations and Approvals

Make sure all equipment is rated and approved for the environment in which it is used. Any approvals obtained for Nordson equipment will be voided if instructions for installation, operation, and service are not followed.

Personal Safety

To prevent injury follow these instructions.

- Do not operate or service equipment unless you are qualified.
- Do not operate equipment unless safety guards, doors, or covers are intact and automatic interlocks are operating properly. Do not bypass or disarm any safety devices.
- Keep clear of moving equipment. Before adjusting or servicing moving equipment, shut off the power supply and wait until the equipment comes to a complete stop. Lock out power and secure the equipment to prevent unexpected movement.
- Relieve (bleed off) hydraulic and pneumatic pressure before adjusting or servicing pressurized systems or components. Disconnect, lock out, and tag switches before servicing electrical equipment.
- While operating manual spray guns, make sure you are grounded. Wear electrically conductive gloves or a grounding strap connected to the gun handle or other true earth ground. Do not wear or carry metallic objects such as jewelry or tools.
- If you receive even a slight electrical shock, shut down all electrical or electrostatic equipment immediately. Do not restart the equipment until the problem has been identified and corrected.
- Obtain and read Safety Data Sheets (SDS) for all materials used. Follow the manufacturer’s instructions for safe handling and use of materials, and use recommended personal protection devices.
- Make sure the spray area is adequately ventilated. To prevent injury, be aware of less-obvious dangers in the workplace that often cannot be completely eliminated, such as hot surfaces, sharp edges, energized electrical circuits, and moving parts that cannot be enclosed or otherwise guarded for practical reasons.

High-Pressure Fluids

High-pressure fluids, unless they are safely contained, are extremely hazardous. Always relieve fluid pressure before adjusting or servicing high pressure equipment. A jet of high-pressure fluid can cut like a knife and cause serious bodily injury, amputation, or death. Fluids penetrating the skin can also cause toxic poisoning.

If you suffer a fluid injection injury, seek medical care immediately. If possible, provide a copy of the SDS for the injected fluid to the health care provider.

The National Spray Equipment Manufacturers Association has created a wallet card that you should carry when you are operating high-pressure spray equipment. These cards are supplied with your equipment. The following is the text of this card:

WARNING: Any injury caused by high pressure liquid can be serious. If you are injured or even suspect an injury:

- Go to an emergency room immediately.
- Tell the doctor that you suspect an injection injury.
- Show them this card
- Tell them what kind of material you were spraying

MEDICAL ALERT — AIRLESS SPRAY WOUNDS: NOTE TO PHYSICIAN

Injection in the skin is a serious traumatic injury. It is important to treat the injury surgically as soon as possible. Do not delay treatment to research toxicity. Toxicity is a concern with some exotic coatings injected directly into the bloodstream.

Consultation with a plastic surgeon or a reconstructive hand surgeon may be advisable.

The seriousness of the wound depends on where the injury is on the body, whether the substance hit something on its way in and deflected causing more damage, and many other variables including skin microflora residing in the paint or gun which are blasted into the wound. If the injected paint contains acrylic latex and titanium dioxide that damage the tissue's resistance to infection, bacterial growth will flourish. The treatment that doctors recommend for an injection injury to the hand includes immediate decompression of the closed vascular compartments of the hand to release the underlying tissue distended by the injected paint, judicious wound debridement, and immediate antibiotic treatment.

Fire Safety

To avoid a fire or explosion, follow these instructions.

- Ground all conductive equipment. Use only grounded air and fluid hoses. Check equipment and workpiece grounding devices regularly. Resistance to ground must not exceed one megohm.
- Shut down all equipment immediately if you notice static sparking or arcing. Do not restart the equipment until the cause has been identified and corrected.
- Do not smoke, weld, grind, or use open flames where flammable materials are being used or stored. Do not heat materials to temperatures above those recommended by the manufacturer. Make sure heat monitoring and limiting devices are working properly.
- Provide adequate ventilation to prevent dangerous concentrations of volatile particles or vapors. Refer to local codes or your material SDS for guidance.
- Do not disconnect live electrical circuits when working with flammable materials. Shut off power at a disconnect switch first to prevent sparking.
- Know where emergency stop buttons, shutoff valves, and fire extinguishers are located. If a fire starts in a spray booth, immediately shut off the spray system and exhaust fans.
- Shut off electrostatic power and ground the charging system before adjusting, cleaning, or repairing electrostatic equipment.
- Clean, maintain, test, and repair equipment according to the instructions in your equipment documentation.
- Use only replacement parts that are designed for use with original equipment. Contact your Nordson representative for parts information and advice.

Halogenated Hydrocarbon Solvent Hazards

Do not use halogenated hydrocarbon solvents in a pressurized system that contains aluminum components. Under pressure, these solvents can react with aluminum and explode, causing injury, death, or property damage. Halogenated hydrocarbon solvents contain one or more of the following elements:

Element	Symbol	Prefix
Fluorine	F	“Fluoro-”
Chlorine	Cl	“Chloro-”
Bromine	Br	“Bromo-”
Iodine	I	“Iodo-”

Check your material SDS or contact your material supplier for more information. If you must use halogenated hydrocarbon solvents, contact your Nordson representative for information about compatible Nordson components.

Action in the Event of a Malfunction

If a system or any equipment in a system malfunctions, shut off the system immediately and perform the following steps:

- Disconnect and lock out system electrical power. Close hydraulic and pneumatic shutoff valves and relieve pressures.
- Identify the reason for the malfunction and correct it before restarting the system.

Disposal

Dispose of equipment and materials used in operation and servicing according to local codes.

Description

See Figure 1. The Ink-Dot hydraulic system is a part of the Ink-Dot Identification System. This system applies a small dot of ink onto the can to identify the line and spray machine where it was coated. The identifying mark saves time in correcting problems and provides a means of producing a better quality product.

This system can apply thermal sensitive can marking ink for quality control.

Two different versions of the Ink-Dot electric spray gun are available, depending on your application needs.

Refer to following documents for more information:

- Ink-Dot Reservoir Manifold
- Ink-Dot Controller
- Ink-Dot II Series Driver
- Ink-Dot Electric Spray Gun

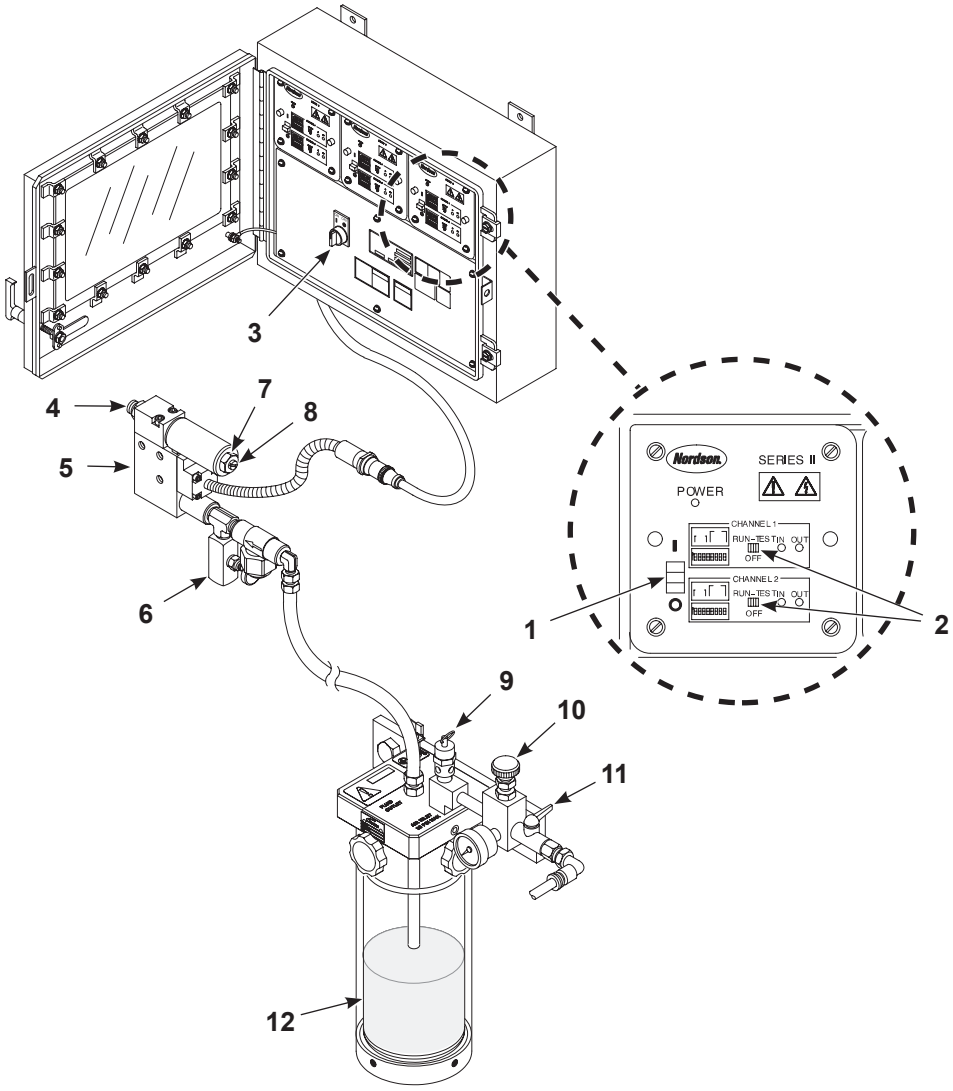

Figure 1 Typical Ink-Dot Reservoir Manifold System

1. Driver power switch
2. RUN/OFF/TEST switch
3. Controller power switch
4. Nozzle
5. Ink-Dot spray gun
6. Bleeder valve
7. Locknut
8. Armature sleeve
9. Relief valve lanyard
10. Air pressure regulator
11. Air shutoff valve
12. Reservoir manifold

Setup

See Figure 2. Follow these guidelines to prepare the Ink-Dot hydraulic system for operation.

Ink-Dot Electric Spray Gun

- Leave the plastic cap on the gun nozzle until the setup process is complete.
- The spray gun should be on a 15-30° angle from the conveyor, approximately 4-6 mm (0.16-0.24 in.) above the rim of the can and 5 mm (0.19 in.) or closer to the can.
- The spray gun must be at least five feet from the spinning mechanism on the spray machine to allow for adequate ink drying time.
- Refer to the *Ink-Dot Electric Spray Gun* manual for more information.

Proximity Sensor

- The distance between the spray gun and the proximity sensor must be adjustable due to variations in the line speed.
- Position the sensor 3-5 mm (0.12-0.20 in.) from the can.
- If the cans are passing the Ink-Dot station at consistent rate, align the center of the sensor 12-45 mm (0.50-1.5 in.) away from the center of the nozzle.
- Erratic movement of the cans may cause false triggering of the spray gun. Correct this by adjusting the can regulating system or moving the proximity sensor closer to the spray gun leaving approximately 12 mm (0.50 in.) from center to center.

NOTE: Refer to the *Ink-Dot Controller* manual for proximity sensor connection information.

Infeed Conveyor Track-Work

- Adjust the track-work to minimize movement of the cans as they pass by the spray gun.
- Locate a can-stop in the track-work prior to the index wheel. The can-stop will collect and maintain a stack of cans around the spray gun area to help with the consistent and accurate placement of the ink dot.
- The can-stop sensor should be located so that at least 3-4 cans remain above the spray gun during idle periods.

Operation

Operation is dependent upon the system application requirements. Refer to *Ink-Dot System with Reservoir Manifold* operator card 1100472 for detailed operating procedures.

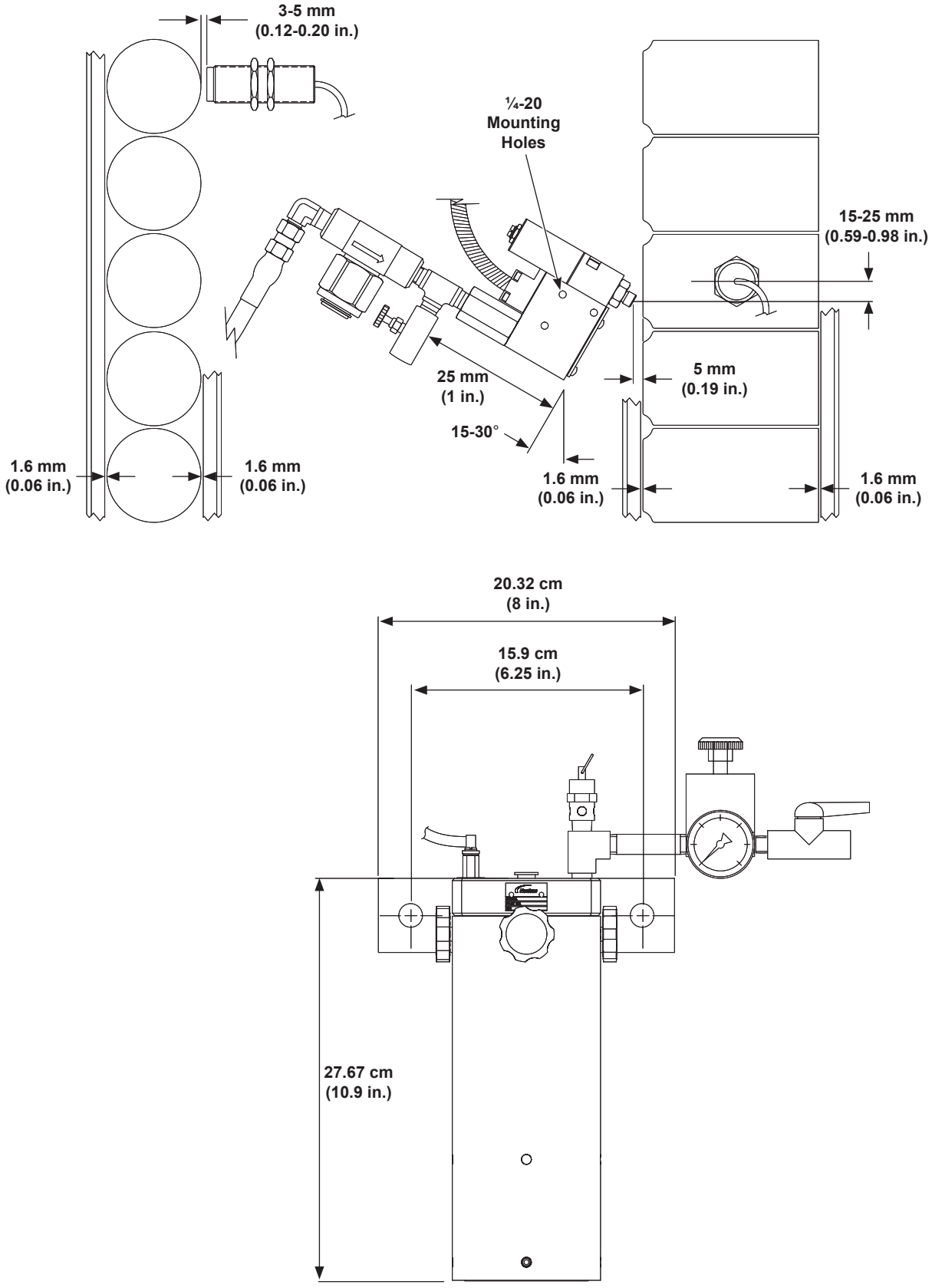

Figure 2 Ink-Dot Hydraulic System Dimensions

Maintenance

NOTE: The frequencies listed are only guidelines. It may be necessary to adjust frequencies due to the facility enviornment, process parameters, ink being applied, or experience. Always perform preventive maintenance procedures according to your facility maintenance schedule.

Frequency	Task
Daily	Wipe or brush the nozzle once per shift with a solvent that is compatible with the ink. A nozzle brush is included with the spray gun.
Weekly	1. Refer to the spray gun manual to check the lgun mounting angle. 2. Check the distance between the • proximity sensor and can conveyor • spray gun and can conveyor • gun nozzle and proximity sensor 3. Make sure that the proximity sensor is perpendicular to the side of the can.
Periodically	Depending upon the system, check the ink level in the ink bottle. **! CAUTION !** To prevent damage, only use isopropyl alcohol and a solvent cloth to clean the shroud. Do not soak the shroud in solvent. Wipe down the shroud using a solvent cloth and isopropyl alcohol.
3-6 months	Flush the system with a compatible solvent and replace the inline filter element.
9-12 Months	Replace the gun ball and seat, seals, O-rings and the inline filter element. Refer to the *Ink-Dot Electric Spray Gun* manual.

Troubleshooting

WARNING: Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

This section contains troubleshooting procedures. These procedures cover only the most common problems that you may encounter. If you cannot solve the problem with the information given here, contact your local Nordson representative for help.

Problem	Possible Cause	Corrective Action
1. Spray gun will not spray	Clogged nozzle	Clean the nozzle tip.
	Spray gun is out of adjustment	Adjust the stroke of the spray gun. Refer to the gun manual.
	No air pressure to the spray gun	Adjust the air pressure. Check for obstructions in the airline.
	Ink in the system is dried out or it is contaminated	Flush the system with a compatible solvent. Refer to the *Flushing the System* procedure for the applicable system.
	Clogged filter element	Replace the filter element.
2. Spray gun remains open	Contamination inside the spray gun seat	Disassemble the front of the Ink-Dot spray gun and clean. Refer to the gun manual.
	Broken spring in the spray gun	Replace the spring. Refer to the gun manual.
3. Ink bubbling or turbulence observed in ink bottle	Gasket missing or bottle needs to be tightened.	Make sure gasket is installed. Tighten the bottle. Refer to the *How to Install an Ink Bottle* procedure.
4. Ink bottle does not screw into manifold	Foil seal covering the opening on the bottle is partially removed.	Remove the entire foil seal from the bottle.

Parts

To order parts, call the Nordson Industrial Coating Solutions Customer Support Center at (800) 433-9319 or contact your local Nordson representative.

See and refer to the following parts list.

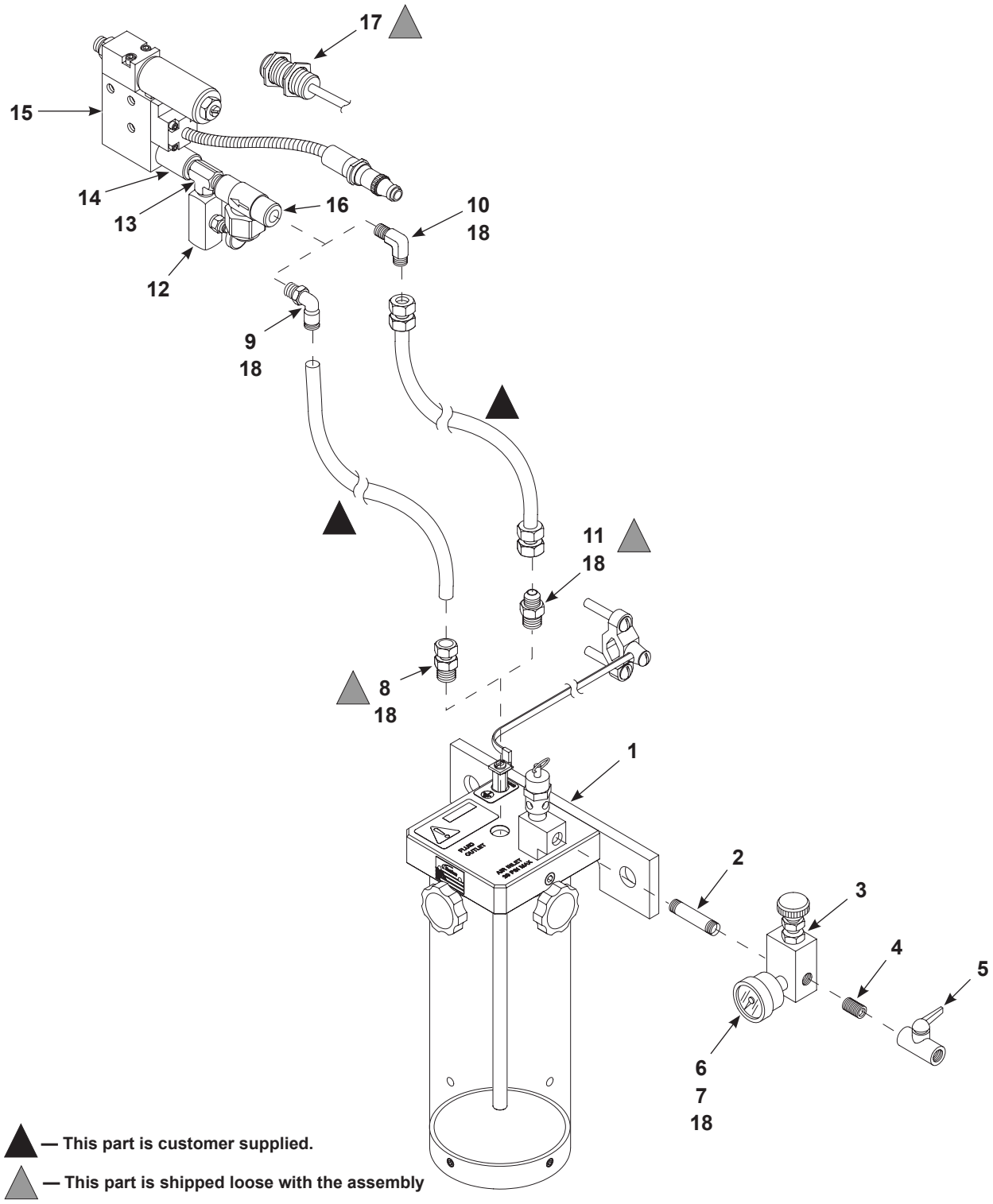

Figure 3 Ink-Dot Manifold Reservoir Hydraulic System Parts

Item	Part	Description	Quantity	Note
—	1099241	SYSTEM, reservoir manifold, Ink-Dot hydraulic	1	
1	1099025	• RESERVOIR, manifold Ink Dot	1	A
2	973036	• NIPPLE, brass, schedule 40, ¼ x 3.00 in.	1	
3	1107942	• REGULATOR, air, 2-10 psi, ¼ NPT, self-vent	1	
4	973027	• NIPPLE, brass, schedule 40, ¼ x 0.87 in.	3	
5	901090	• VALVE, ball, shut-off, 2-way, ¼ in.	1	
6	1073163	• GAUGE, air, 0-30 psi, 2 in. dial, ⅛ NPT	1	
7	973238	• BUSHING, red, ¼ in. NPT x ⅛ in. NPT, brass	1	
8	971265	• CONNECTOR, male, ¼ tube x ¼ NPT	1	
9	971266	• ELBOW, male, ¼ tube x ¼ NPT	1	
10	972177	• ELBOW, male, 37°, ½-20 x ¼ in. NPT, stainless steel	1	
11	972029	• CONNECTOR, male, 37°, ½-20 x ¼ in. NPT, stainless steel	1	
12	172143	• VALVE, flow control, bleeder, ¼ in. NPT, stainless steel	1	
13	973247	• TEE, pipe, male, ¼ in. NPT, stainless steel	1	
14	168016	• ADAPTER, ¾-16 x ¼ in. NPT with EPR	1	
15	1102825	• GUN, Ink-Dot	1	
16	179300	• T-FILTER, liquid, 15 micron, ¼ in. NPT, stainless steel	1	
17	159917	• SENSOR, proximity	1	
18	- - - - - -	• TAPE, PTFE	AR	
NS	159908	• FILTER ELEMENT, 15 micron	1	B
NS	973157	• ELBOW, pipe, street, ¼ in., brass	1	
NS	901905	• BRUSH	1	

NOTE: A. Refer to *Ink-Dot Reservoir Manifold Instruction Sheet* 1099092 to order parts.

B. Filter element is located inside of T-filter 179300.

NS: Not Shown

AR: As Required

Spare Parts

Keep the following parts on hand to reduce downtime.

Part	Description	Note
159908	FILTER ELEMENT, 15 micron	
224732	KIT, dryer/filter	
1073163	GAUGE, air, 0-30 psi, 2 in. dial, ⅛ MNPT	
1099028	GASKET	
1099029	TUBE, siphon assembly	
1617369	TUBING, PFA, 0.25 in. OD, 0.156 in. ID, 500 feet long	
1617370	TUBING, PFA, 0.25 in. OD, 0.156 in. ID,1000 feet long	

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EU DECLARATION of Conformity

Product: Ink Dot Manifold Reservoir

Models: Ink-Dot

Description: This is a simple component used as part of the Ink Dot Spray system. The reservoir safely houses the customer's ink bottles for dispensing ink.

Applicable Directives:
2006/42/EC - Machinery Directive

Standards Used for Compliance:
EN/ISO12100

Principles:
This product has been manufactured according to good engineering practice.
The product specified conforms to the directive and standards described above.

Quality System DNV – ISO9001 Certified

Date: 15OCT2024

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Nordson Authorized Representative in the EU

Person authorized to compile the relevant technical documentation.

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UK DECLARATION of Conformity

Product: Ink Dot Manifold Reservoir

Models: Ink-Dot

Description: This is a simple component used as part of the Ink Dot Spray system. The reservoir safely houses the customer's ink bottles for dispensing ink.

Applicable UK Regulations:
Supply Machinery Safety 2008

Standards Used for Compliance:
EN/ISO12100

Principles:
This product has been manufactured according to good engineering practice.
The product specified conforms to the directive and standards described above.

Quality System DNV – ISO9001 Certified

Date: 15OCT2024

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