

# **A7A Single and Dual Automatic Airless Spray Guns**

Customer Product Manual

Part 107966L

Issued 3/06

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# Table of Contents

<b>Safety</b> .....	<b>1</b>	Compound and Extended Guns .....	<b>24</b>
Qualified Personnel .....	1	Compound Single-Chamber Gun	
Intended Use .....	1	with Ball and Seat .....	25
Regulations and Approvals .....	1	Extended Single-Chamber Gun	
Personal Safety .....	2	with Needle and Seat .....	26
High-Pressure Fluids .....	2	Straight Dual-Chamber Guns .....	27
Fire Safety .....	3	Standard Straight Dual-Chamber Gun	
Halogenated Hydrocarbon Solvent Hazards ..	4	with Needle and Seat .....	28
Action in the Event of a Malfunction .....	4	High Pressure, Non-Corrosive Straight	
Disposal .....	4	Dual Chamber Gun with Nickel-Carbide	
<b>Description</b> .....	<b>5</b>	Ball and Seat .....	29
Specifications .....	5	Stainless Steel Straight Dual-Chamber Gun	
Theory of Operation .....	6	with Needle and Seat .....	30
<b>Installation</b> .....	<b>7</b>	Stainless Steel Waterborne Straight Dual-Chamber	
Mounting .....	7	Gun with Nickel-Carbide Ball and Seat .....	31
Fluid Connections .....	7	Angled Dual Chamber Guns .....	32
Trigger Air Connection .....	8	Standard Angled Dual-Chamber Gun	
Optional Air-Release Valve .....	8	with Ball and Seat .....	33
Optional Quick Exhaust Valve .....	8	Stainless Steel Angled Dual-Chamber Gun	
<b>Maintenance</b> .....	<b>9</b>	with Needle and Seat .....	34
<b>Troubleshooting</b> .....	<b>9</b>	Waterborne Angled Dual-Chamber Gun	
<b>Repair</b> .....	<b>10</b>	with Nickel-Carbide Ball and Seat .....	35
Disassembly .....	10	Service Kits .....	36
Cleaning and Inspection .....	10	Piston and Seals Kit .....	36
Assembly .....	12	Standard Single-Chamber Ball and Seat Kit ..	36
<b>Parts</b> .....	<b>13</b>	Non-Corrosive and Waterborne Single-	
Using the Illustrated Parts List .....	13	Chamber Nickel-Carbide Ball and Seat Kit ..	36
Quick Reference .....	14	Single-Chamber Needle and Seat Kit .....	37
A7A Gun List .....	14	Extended Needle and Seat Service Kit .....	37
Recommended Spare Parts .....	14	Waterborne Dual Chamber Ball and Seat Kit ..	37
Service Parts, Kits, and Options .....	15	Standard Angled Dual-Chamber	
Single Chamber Guns .....	16	Ball and Seat Kit .....	37
Standard Single-Chamber Gun		Angled Dual-Chamber Ball and Seat	
with Ball and Seat .....	17	with Retainer Kit .....	38
Standard Single-Chamber Gun		Dual-Chamber Needle and Seat Kit .....	38
with Needle and Seat .....	18	Dual Chamber Needle and Seat with	
High Pressure, Non-Corrosive Single-Chamber		Retainer Kit .....	38
Gun with Nickel-Carbide Ball and Seat .....	19	Conversion Kits .....	39
High Speed Single-Chamber Gun		Air Cylinder with Detent Adjustment .....	39
with Nickel-Carbide Ball and Seat .....	20	High Pressure Conversion Kit .....	40
Stainless Steel Single-Chamber Gun		Standard Angled Dual-Chamber Gun with	
with Needle and Seat .....	21	Ball and Seat Conversion Kit .....	40
Stainless Steel Waterborne Single-Chamber		Stainless Steel Angled Dual-Chamber Gun	
Gun with Nickel-Carbide Ball and Seat .....	22	with Needle and Seat Conversion Kit .....	41
Large Passage Single-Chamber Gun		Stainless Steel Straight Dual Chamber	
with Ball and Seat .....	23	Gun Retrofit Kit .....	42

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# A7A Single and Dual Automatic Airless Spray Guns

## Safety

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 Material Safety Data Sheets (MSDS) 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 MSDS 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 him this card
- Tell him 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.

## **Fire Safety** (contd)

- Provide adequate ventilation to prevent dangerous concentrations of volatile particles or vapors. Refer to local codes or your material MSDS 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:

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

Check your material MSDS 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**

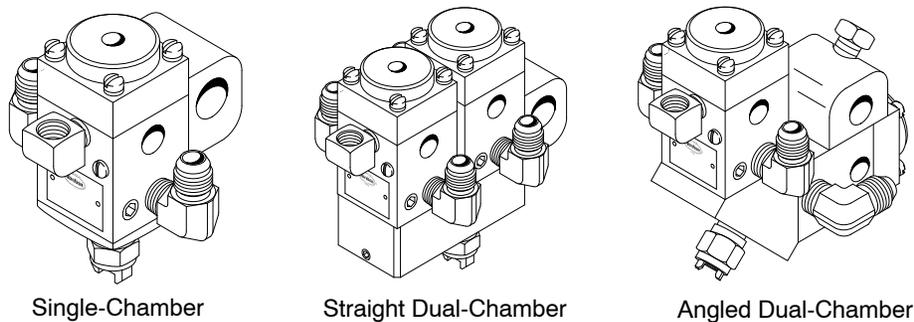
Dispose of equipment and materials used in operation and servicing according to local codes.

## Description

A7A automatic guns are compact, high-cycle, airless spray guns designed for use with solvent or waterborne coatings. They are air-operated, actuated by remote electro-pneumatic solenoids. They can be used for general finishing as well as ultra-high speed applications.

A7A guns are available in single-chamber, straight dual-chamber and angled dual chamber models. The dual-chamber models permit the user to quickly switch between two different coatings with no downtime. Kits are available to convert two single-chamber A7A guns to one straight or angled dual-chamber gun, or a straight dual-chamber gun to an angled gun.

Refer to the A7A Gun List on page 14 for a list of all available models.



1300450A

Figure 1 A7A Spray Gun Models

## Specifications

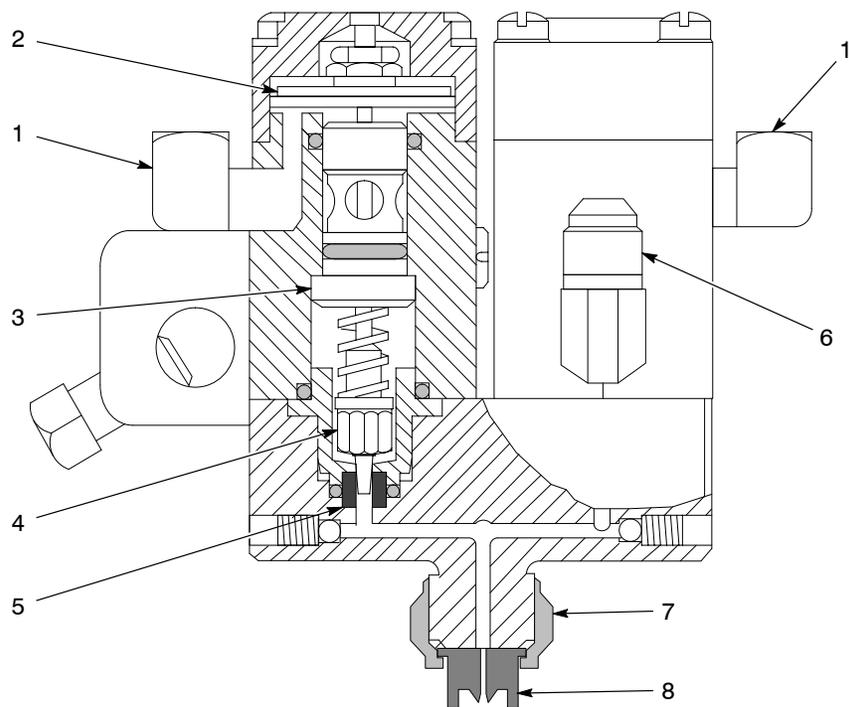
Properties	Single-Chamber	Dual-Chamber	Dual-Chamber Angled
<b>Maximum Fluid Pressure, bar (psi)</b>			
Standard	117 (1700)	117 (1700)	117 (1700)
With High-Pressure Option Kit	207 (3000)	207 (3000)	207 (3000)
<b>Air Trigger Requirements, bar (psi)</b>	2.75–8.27 (40–120)	2.75–8.27 (40–120)	2.75–8.27 (40–120)
<b>Dimensions, cm (in.)</b>			
Height	8.9 (3.5)	11.1 (4.375)	11.7 (4.625)
Length	8.9 (3.5)	13.3 (5.25)	15.2 (6.0)
Width	8.9 (3.5)	8.9 (3.5)	8.9 (3.5)
<b>Weight, kg (oz)</b>	0.45 (0.94)	1.43 (3.15)	1.20 (2.65)
<b>Fittings</b>			
Fluid (In and Out)	1/2–20 JIC*	1/2–20 JIC	1/2–20 JIC
Air	1/8 in. NPT female	1/8 in. NPT female	1/8 in. NPT female
<b>Mounting</b>	13-mm (1/2-in.) round bar	13-mm (1/2-in.) round bar	13-mm (1/2-in.) round bar
* Compound guns use 3/4-16 JIC fluid fittings.			

## Theory of Operation

See Figure 2. This figure shows a cutaway view of a dual-chamber A7A gun. The dual-chamber gun is two single-chamber guns mounted on a manifold, sharing a single nozzle. Only one chamber is triggered at a time.

To trigger the gun, air pressure is applied to the bottom of the piston assembly (2), which lifts the needle (4) off the seat (5). Coating flows through the seat to the nozzle (8). When the air pressure is removed, the spring in the packing cartridge (3) returns the needle to the seat and stops the flow of the coating material to the nozzle.

The packing cartridge seals prevent coating material from contaminating the air piston. If the seals fail, coating material will flow out of the weep holes above the fluid fittings.



1300451A

Figure 2 Gun Operation

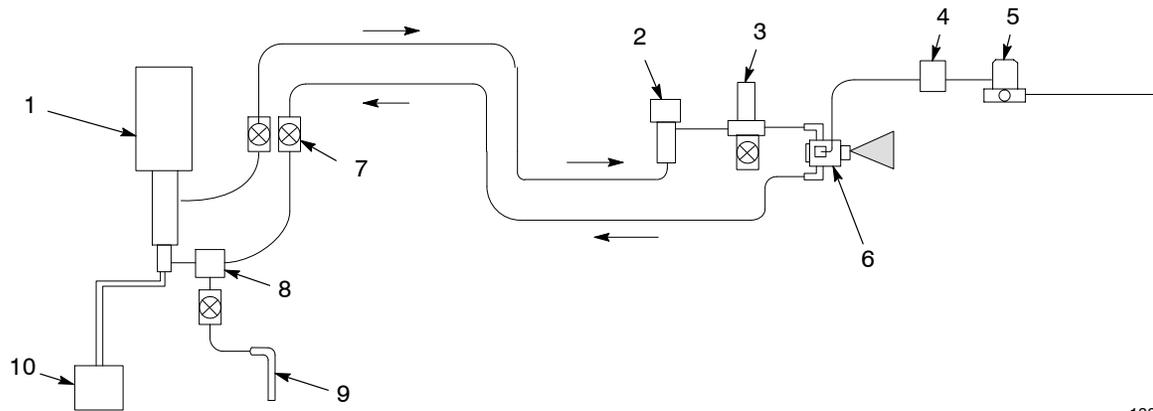
- |                      |                                      |
|----------------------|--------------------------------------|
| 1. Air fitting       | 5. Seat                              |
| 2. Piston assembly   | 6. Fluid fittings (inlet and outlet) |
| 3. Packing cartridge | 7. Nozzle nut                        |
| 4. Needle            | 8. Nozzle                            |

## Installation



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

Figure 3 shows a typical coating system installation.



1300452A

Figure 3 Typical Circulating System

- |                   |                  |                      |
|-------------------|------------------|----------------------|
| 1. Pump           | 5. Air regulator | 8. Circulation valve |
| 2. Heater         | 6. A7A gun       | 9. Drain off rod     |
| 3. Filter         | 7. Ball valves   | 10. Coating supply   |
| 4. Solenoid valve |                  |                      |

## Mounting

Slide a 13-mm ( $1/2$ -in.) round mounting bar through the hole in the mounting block, orient the gun as desired, and tighten the square head screw.

## Fluid Connections



**WARNING:** In the fluid supply line, install an approved pressure relief device set to the lowest maximum working pressure of all system components. The fluid hoses must have a minimum burst pressure greater than the pressure relief device setting.



**CAUTION:** Do not overtighten the fluid fittings. You can strip the threads in the gun body.

Apply pipe thread adhesive (shipped with the gun) to the two fluid fittings and install them in the gun body. If your system is dead-ended (non-circulating), install one fitting and the  $1/4$ -in. NPT plug furnished with the gun. Connect the fluid supply and return hoses to the fluid fittings. Either fitting can be used for supply or return.

## Trigger Air Connection

Use an electro-pneumatic solenoid valve to trigger the gun. For the fastest trigger response, connect the solenoid valve directly to the gun at the  $\frac{1}{8}$ -in. NPT air inlet fitting. If this is not possible, install the valve as close to the gun as possible, and use the shortest length of air tubing possible.

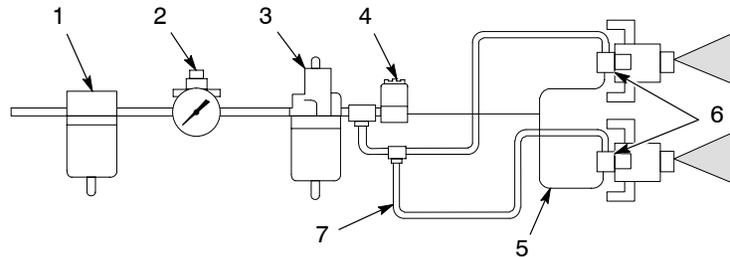
**NOTE:** If the trigger air tubing is too long, it can cause trigger on/off delays, spitting, and premature wear of the ball or needle and seat. If you cannot shorten the air tubing, install an optional air-release valve on the gun.

## Optional Air-Release Valve

See Figure 4. Refer to *Options* on page 15 for the air-release valve part number. The air-release valve

- reduces the cycle time of the A7A gun, if the speed of operation is less than 600 cycles per minute.
- may be used when the electro-pneumatic solenoid valve cannot be installed on the gun. With this option, 100-ft air line lengths are practical.
- reduces wear on the ball or needle and seat if operating the gun at high speed.
- allows one solenoid valve to trigger several guns.
- provides precise gun triggering from a remote timer, eliminates poor gun/timer resolution, and saves coating material.

**NOTE:** The trigger air pressure must remain constant. Limit the diameter of the pilot air lines (5) to prevent spitting and other problems.



1300453A

Figure 4 Typical Air Release Valve Installation

- |                   |   |
|-------------------|---|
| 1. Filter         | 5. Small diameter pilot air line                        |
| 2. Gauge          | 6. Air-release valves                                   |
| 3. Lubricator     | 7. Trigger air supply line<br>(2.7–4.1 bar (40–60 psi)) |
| 4. Solenoid valve |   |

## Optional Quick Exhaust Valve

The optional quick exhaust valve will allow the gun to close faster and reduce overall cycle time. Use a  $\frac{1}{4}$ -in. NPT nipple to connect the valve to the gun, and a  $\frac{1}{4}$ -in. tube x  $\frac{1}{8}$ -in. NPT fitting to connect the actuating air tubing to the valve. Refer to *Options* on page 15 for the exhaust valve and fittings.

## Maintenance

Flush the gun periodically to keep the fluid passageways and ball and seat clean and free of contaminants. As required, disassemble and clean the gun and replace any worn parts.

Make sure the trigger air is clean and dry. Lubricate the air supply if operating at high speeds for long periods of time.

## Troubleshooting



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

**NOTE:** If you cannot solve your problem with the information given here, contact your local Nordson representative for help.

Problem	Possible Cause	Corrective Action
1. Leaking around nozzle or nozzle retaining nut	Dirty or damaged metal sealing surface	Relieve system pressure. Remove the nozzle retaining nut and clean or replace the nozzle or retaining nut.
2. Leaking from weep holes in the gun body above the fluid fittings	Worn packing cartridge	Replace the packing cartridge with the appropriate kit. Refer to <i>Parts</i> .
3. Spitting	Dirty or worn ball and seat	Clean or replace the ball and seat.
	Actuating or trigger air lines too long	Mount the solenoid on or as close as possible to the gun. Use optional air-release valve as shown in Installation.
	Air trapped in fluid system	Purge air from system by opening the ball valve at circulation valve and draining system until no air bubble are seen, or spraying until spitting is stopped. Make sure the pump is not siphoning air into the fluid system.
4. On/Off cycle response poor or gun not opening or closing	Air piston assembly worn or out of adjustment	Adjust or replace the air piston assembly.
	Low air pressure to the solenoid valve	Increase the air pressure to between 2.7–4.1 bar (40–60 psi).
	Trigger air lines too long	Mount the solenoid on or as close as possible to the gun or install an air release valve.
	Fluid pressure too high	Reduce the fluid pressure or install a high-pressure kit. The guns will not close if their maximum working pressure is exceeded.

## Repair



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



**WARNING:** Relieve trigger air pressure and system fluid pressure before disconnecting air and fluid hoses to the spray gun. High pressure fluid is dangerous and can cause injection injuries.

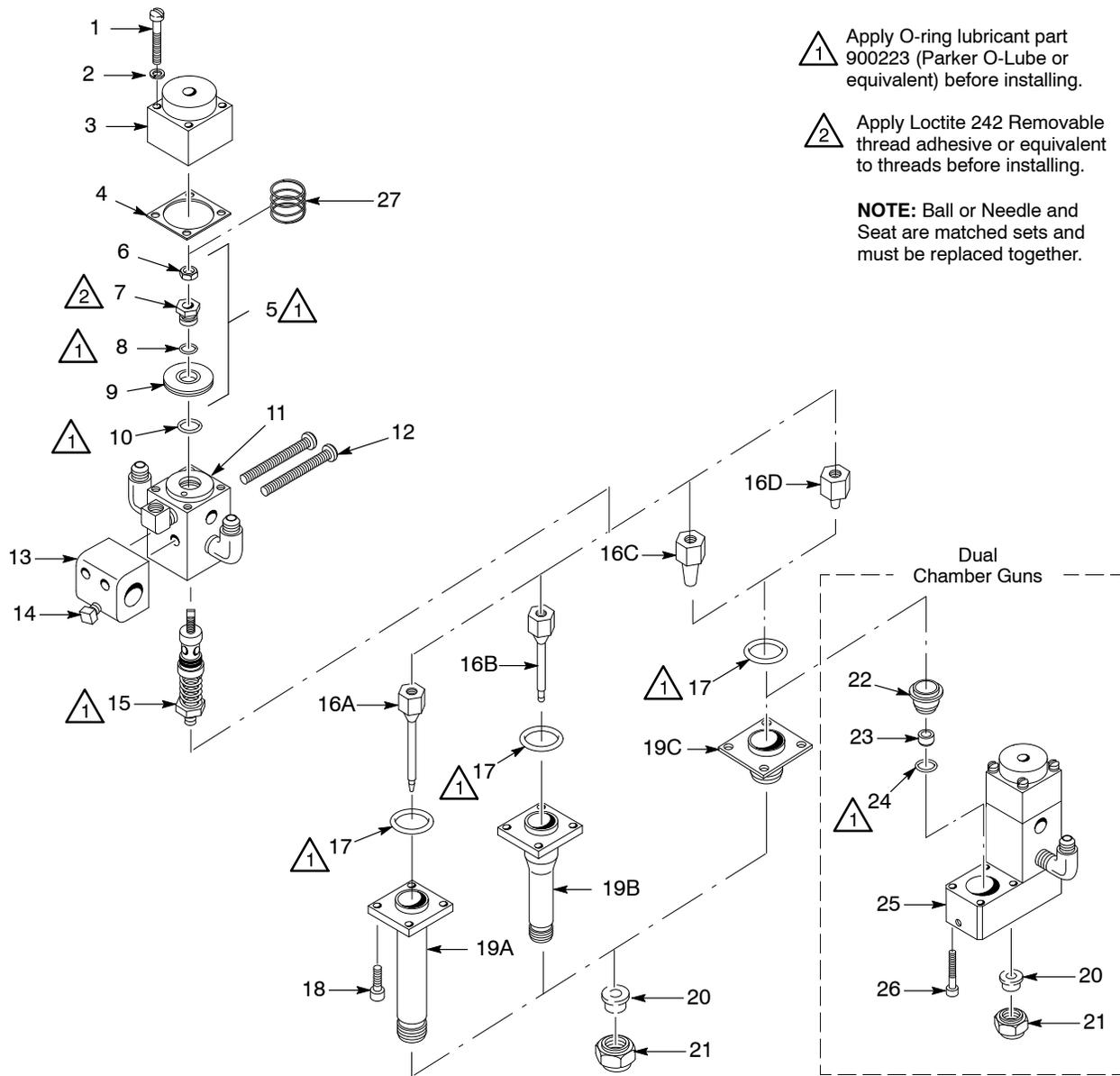
Refer to Figure 5 for both Disassembly and Assembly procedures.

### *Disassembly*

1. Flush the gun with clean solvent.
2. Relieve system fluid and air pressure, then disconnect the fluid and air lines from the gun.
3. To avoid having to reposition the gun on the mounting bar when you reinstall it, unscrew the two screws (12) and remove the gun from the mounting block (13). Otherwise, remove the gun from the mounting bar by loosening the square head screw (14).
4. Disassembly order:
  - a. Remove the air cylinder (3).
  - b. Hold the packing cartridge stem with a wrench and remove the lock nut (6). Unscrew the piston assembly (5) from the stem and separate the seal nut, O-ring and piston (7, 8, 9).
  - c. Single Chamber: Remove the seat (19A–C) from the body (11).
  - d. Dual Chamber: Remove the body (11) from the manifold (25), then remove the seat retainer, seat, and O-ring (22, 23, 24).
  - e. Push the packing cartridge (15) out of the body.
  - f. If replacing the ball or needle (16A–D), unscrew it from the packing cartridge.

### *Cleaning and Inspection*

1. Clean the air cylinder, packing cartridge, gun body, and seat with a compatible cleaning solution.
2. Inspect the seat and ball or needle. If either are damaged or scored, replace them. The ball and seat (or needle and seat) are a matched set and only sold as a kit.
3. Inspect the piston seal. If it is damaged replace the entire piston assembly with the piston service kit.
4. Inspect all gaskets and O-rings. Replace any that are damaged.
5. If coating material was leaking from the weep holes above the fluid fittings, replace the packing cartridge.



△ 1 Apply O-ring lubricant part 900223 (Parker O-Lube or equivalent) before installing.

△ 2 Apply Loctite 242 Removable thread adhesive or equivalent to threads before installing.

**NOTE:** Ball or Needle and Seat are matched sets and must be replaced together.

Figure 5 Repair

- |                          |                              |  |
|--------------------------|------------------------------|--|
| 1. #10-32 x 1 in. screws | 12. #10-32 x 2 in. screws    | 19B. Compound seat                                 |
| 2. #10 lock washer       | 13. Mounting block           | 19C. Standard seat                                 |
| 3. Air cylinder          | 14. Square-head screw        | 20. Nozzle (sold separately)                       |
| 4. Gasket                | 15. Packing cartridge        | 21. Nozzle nut                                     |
| 5. Piston assembly       | 16A. Extended needle         | 22. Seat retainer                                  |
| 6. #10-32 lock nut       | 16B. Compound ball           | 23. Seat   |
| 7. Seal nut              | 16C. Needle                  | 24. O-ring   |
| 8. O-ring                | 16D. Ball                    | 25. Manifold                                       |
| 9. Piston                | 17. O-ring                   | 26. Screws   |
| 10. O-ring               | 18. #10-32 x 0.50 in. screws | 27. Compression spring (high-pressure models only) |
| 11. Body                 | 19A. Extended seat           |  |

**Note:** Do not use these item numbers to order parts. Your gun part number is on the label plate on the gun body. Refer to the gun list on page 14 to find the correct parts list for your gun. Order parts by part number and description.

## Assembly

**NOTE:** Lubricate all O-rings with Parker O-Lube or equivalent before installing.

See Figure 5.

1. If removed, install the O-ring (10) in the groove in the body (11).
2. Install the ball or needle (16A–D) on the end of the packing cartridge (15).
3. Install the packing cartridge in the body.
4. Assemble the seat and gun body:
  - Single Chamber:
    - a. Install the O-ring (17) on the seat (19).
    - b. Install the seat on the body and tighten the screws (18) securely.
  - Dual Chamber:
    - a. Install the O-ring (17) on the seat retainer (22).
    - b. Install the O-ring (24), seat (23), and seat retainer in the manifold (25).
    - c. Install the body on the manifold and tighten the screws (26) securely. The angled gun uses three screws, two short and one long.
5. Assemble the piston parts (6, 7, 8, 9) on the packing cartridge stem. Do not tighten the lock nut (6).
6. Screw the piston assembly (5) onto the packing cartridge stem clockwise until it comes to rest against the gun body.
  - If the gun is equipped with a ball and seat, turn the piston assembly counterclockwise  $\frac{1}{2}$  to  $\frac{3}{4}$  turn.
  - If the gun is equipped with a tapered needle and seat, turn the piston counterclockwise 1  $\frac{1}{2}$  turns.
7. Apply a drop of thread-locking compound to the lock nut threads. Hold the packing cartridge stem with a small wrench while tightening the lock nut.
8. High Pressure Guns: Install the compression spring (27) on top of the piston.
9. Install the gasket (4) and air cylinder (3).
10. Re-install the gun on the mounting block (13) or mounting rod.

## Parts

For Technical Service or to order parts, call the Nordson Finishing Customer Support Center at (800) 433-9319, or your local Nordson representative.

### *Using the Illustrated Parts List*

Numbers in the Item column correspond to numbers that identify parts in illustrations following each parts list. The code NS (not shown) indicates that a listed part is not illustrated. A dash (—) is used when the part number applies to all parts in the illustration.

The number in the Part column is the Nordson Corporation part number. A series of dashes in this column (-----) means the part cannot be ordered separately.

The Description column gives the part name, as well as its dimensions and other characteristics when appropriate. Indentions show the relationships between assemblies, subassemblies, and parts.

- If you order the assembly, items 1 and 2 will be included.
- If you order item 1, item 2 will be included.
- If you order item 2, you will receive item 2 only.

The number in the Quantity column is the quantity required per unit, assembly, or subassembly. The code AR (As Required) is used if the part number is a bulk item ordered in quantities or if the quantity per assembly depends on the product version or model.

Letters in the Note column refer to notes at the end of each parts list. Notes contain important information about usage and ordering. Special attention should be given to notes.

Item	Part	Description	Quantity	Note
—	0000000	Assembly	1	
1	000000	• Subassembly	2	A
2	000000	• • Part	1	

## Quick Reference

### A7A Gun List

Part	Description	Page
<b>Single-Chamber Guns</b>		
153150	Standard, single chamber, with ball and seat	17
248445	Standard, single chamber, with needle and seat	18
342276	High pressure, non-corrosive, single chamber, with nickel-carbide ball and seat	19
246789	High-speed, single chamber, with nickel-carbide ball and seat	20
153160	Stainless steel, single chamber, with needle and seat	21
337303	Stainless steel, single chamber, waterborne with nickel-carbide ball and seat	22
709831	Standard, large passage, single chamber, with ball and seat	23
510010	Compound, single chamber, with ball and seat	25
245375	Extended, single chamber, with 2.5 in. valve extension and needle and seat	26
<b>Dual-Chamber Guns</b>		
248937	Dual-chamber, standard, with needle and seat	28
342300	Dual-chamber, high pressure, non-corrosive, with nickel-carbide ball and seat	29
149097	Dual-chamber, stainless steel, with needle and seat	30
337302	Dual-chamber, stainless steel, waterborne with nickel-carbide ball and seat	31
160062	Dual-chamber, angled, standard, with ball and seat	33
160063	Dual-chamber, angled, stainless steel with needle and seat	34
337304	Dual-chamber, stainless steel, angled, waterborne, with nickel-carbide ball and seat	35

### Recommended Spare Parts

Keep these parts in stock to prevent unnecessary downtime.

Part	Description	Usage
<b>Order one each of the following:</b>		
901905	Brush	All Guns
901911	Wrench, adjustment, module	All Guns
152999	Wrench	All Guns
<b>Order one each of the following for each gun:</b>		
106230	Repair kit, piston, with seals, A7A	All Guns
–	Packing cartridge from <i>Service Parts, Kits, and Options</i> on page 15 or from your gun parts list.	Model Specific
–	Ball or needle and seat service kit from <i>Service Parts, Kits, and Options</i> on page 15 or from the notes in your gun parts list.	Model Specific
–	Nozzle retaining nut from your gun parts list.	Model Specific

## Service Parts, Kits, and Options

Part	Description	Usage
<b>Replacement Packing Cartridges</b>		
153152	Standard, compound, dual-chamber	153150, 510010, 248937, 709831, 160062
153090	Stainless steel	248445, 342276, 153160, 337303, 245375, 342300, 149097, 337302, 160063, 337304
245778	Corrosion-resistant	246789
244918	Ketone resistant	Optional
<b>Service Kits (Order two kits to repair both modules of dual-chamber guns)</b>		
106230	Piston with seals	All guns except high pressure
106231	Ball and seat, standard, single-chamber	153150
320031	Ball and seat, waterborne, single-chamber	342766, 246789, 337303
159447	Ball and seat, angled, dual-chamber	160062
134972	Ball and seat with retainer, angled, dual-chamber	160062
337305	Ball and seat, waterborne, dual-chamber and angled	342300, 337302, 337304
106280	Needle and seat, single-chamber	248445, 153160
106234	Needle and seat extended, single-chamber	245375
106416	Needle and seat, dual-chamber	248937, 149097, 160063
160354	Needle and seat with retainer, dual-chamber	248937, 149097, 160063
<b>Conversion Kits</b>		
106311	Cylinder, with detent adjust	Note A
160355	Dual A7A, angled, standard (aluminum)	Note B
160060	Dual A7A, angled, stainless steel	Note B
248941	High-pressure	Notes A, C
248939	Retrofit kit, A7A dual-chamber gun	Note D
331497	Air-assisted airless adapter	Note E
<b>Options</b>		
159146	Mounting bar, gun, universal 46-cm (18-in.)	
901262	Quick exhaust valve	
901028	Air release valve, normally closed	
973000	Nipple, steel, schedule 40, 1/8 in. NPT, 0.75 in. long	Note F
971154	Connector, male, 1/4 in. tube x 1/8 in. NPT, brass	Note F
<p>NOTE A: Order two kits for converting both chambers of a dual-chamber gun.</p> <p>B: Converts two single-chamber guns or one dual-chamber gun into an angled dual-chamber gun.</p> <p>C: Increases the operating pressure range to 207 bar (3000 psi). Use on all models.</p> <p>D: Converts two single-chamber guns into one dual-chamber gun.</p> <p>E: Provides better atomization for certain spraying applications. Uses A7AA Cross-Cut nozzles and air cap. Refer to instruction sheet shipped with kit for installation and parts information.</p> <p>F: Use to install quick exhaust or air release valves on gun and connect air tubing to valve.</p>		

### Single Chamber Guns

See Figure 7 on page 24 and associated parts lists for Compound and Extended A7A Guns.

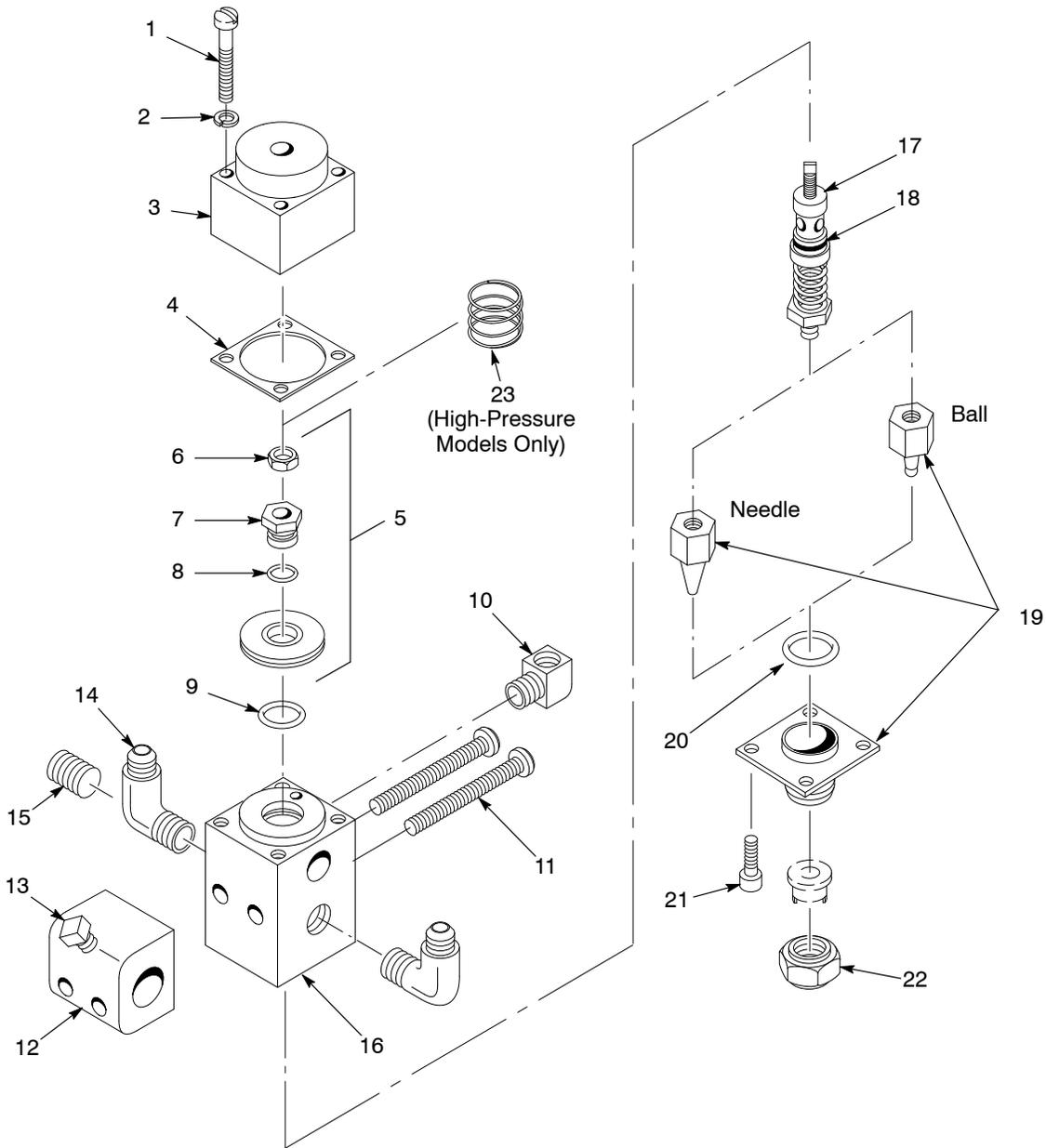


Figure 6 Single Chamber Guns (Except Compound and Extended Valve Guns)

1300455A

## Standard Single-Chamber Gun with Ball and Seat

See Figure 6 on page 16.

Item	Part	Description	Quantity	Note
—	153150	GUN, A7A, automatic, circulating	1	
1	981140	• SCREW, fillister, #10-32 x 1.00 in., slotted, zinc	4	
2	983120	• WASHER, lock, , split, #10, steel, nickel	4	
3	153028	• CYLINDER	1	
4	153031	• GASKET, gun, H20	1	A
5	153022	• PISTON assembly, H20	1	A
6	984539	• • NUT, lock, #10-32, upper	1	A
7	240274	• • NUT, seal lock	1	A
8	940090	• • O-RING, Viton, 0.208 ID x 0.70 in., brown	1	A
9	940157	• O-RING, Viton, black, 0.562 x 0.688 in., 10415	1	A
10	973125	• ELBOW, pipe, 1/8 in. NPT, brass	1	
11	981127	• SCREW, fillister, #10-32 x 2.00 in., slotted, zinc	2	
12	153158	• BLOCK, mounting	1	
13	981405	• SCREW, square, set, 3/8-16 x 0.750 in., cup, zinc	1	
14	972176	• ELBOW, male, 37°, 1/2-20 x 1/4 in. NPT, steel	2	
15	973415	• PLUG, pipe, socket, standard, 1/4 in NPT, stainless steel	1	B
16	-----	• BODY, gun	1	
17	153152	• CARTRIDGE, packing	1	
18	940134	• • O-RING, Viton, 0.438 x 0.563 x 0.063 in.	1	
19	153159	• BALL and seat	1	C
20	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	1	A, C
21	981115	• SCREW, oval, #10-32 x 0.50 in., slotted, zinc	4	C
22	152290	• NUT, retaining	1	
NS	901905	• BRUSH	1	
NS	901911	• WRENCH, adjustment, module	2	
NS	247646	• CARD, medical alert, injection	1	
NS	900431	• ADHESIVE, pipe/thread/hydraulic sealant	1	

NOTE A: Included in piston with seals repair kit, part 106230.

B: Used in non-circulating systems. Replaces one of the elbows, part 972176.

C: Included in ball and seat service kit, part 106231.

NS: Not Shown

## Standard Single-Chamber Gun with Needle and Seat

See Figure 6 on page 16.

Item	Part	Description	Quantity	Note
—	248445	GUN, A7A, automatic, circulating, tapered needle and seat	1	
1	981140	• SCREW, fillister, #10-32 x 1.00 in., slotted, zinc	4	
2	983120	• WASHER, lock, split, #10, steel, nickel	4	
3	153028	• CYLINDER	1	
4	153031	• GASKET, gun, H20	1	A
5	153022	• PISTON assembly, H20	1	A
6	984539	• • NUT, lock, #10-32, upper	1	A
7	240274	• • NUT, seal lock	1	A
8	940090	• • O-RING, Viton, 0.208 ID x 0.70 in., brown	1	A
9	940157	• O-RING, Viton, black, 0.562 x 0.688 in.	1	A
10	973125	• ELBOW, pipe, 1/8 in. NPT, brass	1	
11	981127	• SCREW, fillister, #10-32 x 2.00 in., slotted, zinc	2	
12	153158	• BLOCK, mounting	1	
13	981405	• SCREW, square, set, 3/8-16 x 0.75 in., cup, zinc	1	
14	972177	• ELBOW, male, 37°, 1/2-20 x 1/4 in. NPT, stainless steel	2	
15	973415	• PLUG, pipe, socket, standard, 1/4 in NPT, stainless steel	1	B
16	-----	• BODY, gun	1	
17	153090	• CARTRIDGE, packing	1	
18	940134	• • O-RING, Viton, 0.438 x 0.563 x 0.063 in.	1	
19	-----	• NEEDLE and seat, A7A	1	C
20	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	1	A, C
21	981160	• SCREW, pan, #10-32 x 0.50 in., slotted, zinc	4	C
22	152290	• NUT, retaining	1	
NS	901905	• BRUSH	1	
NS	901911	• WRENCH, adjustment, module	2	
NS	247646	• CARD, medical alert, injection	1	
NS	900431	• ADHESIVE, pipe/thread/hydraulic sealant	1	
<p>NOTE A: Included in piston with seals repair kit, part 106230.            B: Used in non-circulating systems. Replaces one of the elbows, part 972176.            C: Included in needle and seat service kit, part 106280.            NS: Not Shown</p>				

## High Pressure, Non-Corrosive Single-Chamber Gun with Nickel-Carbide Ball and Seat

See Figure 6 on page 16.

Item	Part	Description	Quantity	Note
—	342276	GUN, A7A, high pressure, non-corrosive	1	
1	702105	• SCREW, fillister, #10-32 x 1.00 in., stainless steel	4	
2	702106	• WASHER, lock, split, #10, stainless steel	4	
3	248943	• CYLINDER, air	1	
4	153031	• GASKET, gun, H2O	1	
5	342277	• PISTON assembly, A7A, high pressure, stainless steel	1	
6	702118	• • NUT, lock, #10-32, upper	1	C
7	342278	• • NUT, seal lock, bulk melter, stainless steel	1	
8	940090	• • O-RING, Viton, 0.208 ID x 0.70 in., brown	1	
9	940157	• O-RING, Viton, black, 0.562 x 0.688 in.	1	
10	973125	• ELBOW, pipe, 1/8 in. NPT, brass	1	
11	702108	• SCREW, fillister, #10-32 x 2.00 in., slotted, stainless steel	2	
12	153158	• BLOCK, mounting	1	
13	702111	• SCREW, square, set, 3/8-16 x 0.75 in., 18-8 stainless steel	1	
14	972176	• ELBOW, male, 37°, 1/2-20 x 1/4 in. NPT, steel	2	
15	973415	• PLUG, pipe, socket, standard, 1/4 in NPT, stainless steel	1	A
16	-----	• BODY, gun	1	
17	153090	• CARTRIDGE, packing	1	
18	940134	• • O-RING, Viton, 0.438 x 0.563 x 0.063 in.	1	
19	320030	• BALL and seat, nickel	1	B
20	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	1	B
21	702109	• SCREW, oval, #10-32 x 0.50 in., 18-8 stainless steel	4	B
22	152290	• NUT, retaining	1	
23	342279	• SPRING, compression, 0.75 x 0.72 x 0.06 in., stainless steel	1	
NS	901905	• BRUSH	1	
NS	901911	• WRENCH, adjustment, module	2	
NS	247646	• CARD, medical alert, injection	1	
NS	900431	• ADHESIVE, pipe/thread/hydraulic sealant	1	

NOTE A: Used in non-circulating systems. Replaces one of the elbows, part 972176.

B: Included in ball and seat service kit, part 320031.

C: Lock nut 702118 is not part of piston assembly 342277. Order the lock nut separately.

NS: Not Shown

## High Speed Single-Chamber Gun with Nickel-Carbide Ball and Seat

See Figure 6 on page 16.

Item	Part	Description	Quantity	Note
—	246789	GUN, A7A, high speed	1	
1	981140	• SCREW, fillister, #10-32 x 1.00 in., slotted, zinc	4	
2	983120	• WASHER, lock, split, #10, steel, nickel	4	
3	153028	• CYLINDER	1	
4	153031	• GASKET, gun, H20	1	A
5	153022	• PISTON assembly, H20	1	A
6	984539	• • NUT, lock, #10-32, upper	1	A
7	240274	• • NUT, seal, lock	1	A
8	940090	• • O-RING, Viton, 0.208 ID x 0.70 in., brown	1	A
9	940157	• O-RING, Viton, black, 0.562 x 0.688 in.	1	A
10	973125	• ELBOW, pipe, 1/8 in. NPT, brass	1	
11	981127	• SCREW, fillister, #10-32 x 2.00 in., slotted, zinc	2	
12	153158	• BLOCK, mounting	1	
13	981405	• SCREW, square, set, 3/8-16 x 0.75 in., cup, zinc	1	
14	972176	• ELBOW, male, 37°, 1/2-20 x 1/4 in. NPT, steel	2	
15	973415	• PLUG, pipe, socket, standard, 1/4 in NPT, stainless steel	1	B
16	-----	• BODY, gun	1	
17	245778	• CARTRIDGE, packing, corrosion-resistant	1	
18	940134	• • O-RING, Viton, 0.438 x 0.563 x 0.063 in.	1	
19	320030	• BALL and seat, nickel	1	C
20	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	1	A, C
21	981115	• SCREW, oval, #10-32 x 0.50 in., slotted, zinc	4	C
22	152290	• NUT, retaining	1	
NS	901905	• BRUSH	1	
NS	901911	• WRENCH, adjustment, module	2	
NS	247646	• CARD, medical alert, injection	1	
NS	900431	• ADHESIVE, pipe/thread/hydraulic sealant	1	
<p>NOTE A: Included in piston with seals repair kit, part 106230.            B: Used in non-circulating systems. Replaces one of the elbows, part 972176.            C: Included in ball and seat service kit, part 320031.            NS: Not Shown</p>				

## Stainless Steel Single-Chamber Gun with Needle and Seat

See Figure 6 on page 16.

Item	Part	Description	Quantity	Note
—	153160	GUN, A7A, stainless steel, automatic, circulating	1	
1	981140	• SCREW, fillister, #10-32 x 1.00 in., slotted, zinc	4	
2	983120	• WASHER, lock, split, #10, steel, nickel	4	
3	153028	• CYLINDER	1	
4	153031	• GASKET, gun, H20	1	A
5	153022	• PISTON assembly, H20	1	A
6	984539	• • NUT, lock, #10-32, upper	1	A
7	240274	• • NUT, seal lock	1	A
8	940090	• • O-RING, Viton, 0.208 ID x 0.70 in., brown	1	A
9	940157	• O-RING, Viton, black, 0.562 x 0.688 in.	1	A
10	973125	• ELBOW, pipe, 1/8 in. NPT, brass	1	
11	981127	• SCREW, fillister, #10-32 x 2.00 in., slotted, zinc	2	
12	153158	• BLOCK, mounting	1	
13	981405	• SCREW, square, set, 3/8-16 x 0.75 in., cup, zinc	1	
14	972177	• ELBOW, male, 37°, 1/2-20 x 1/4 in. NPT, stainless steel	2	
15	973415	• PLUG, pipe, socket, standard, 1/4 in NPT, stainless steel	1	B
16	-----	• BODY, gun	1	
17	153090	• CARTRIDGE, packing	1	
18	940134	• • O-RING, Viton, 0.438 x 0.563 x 0.063 in.	1	
19	-----	• NEEDLE and seat, A7A	1	C
20	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	1	A, C
21	981160	• SCREW, pan, #10-32 x 0.50 in., slotted, zinc	4	C
22	152496	• NUT, retaining	1	
NS	901905	• BRUSH	1	
NS	901911	• WRENCH, adjustment, module	2	
NS	247646	• CARD, medical alert, injection	1	
NS	900431	• ADHESIVE, pipe/thread/hydraulic sealant	1	
<p>NOTE A: Included in piston with seals repair kit, part 106230.            B: Used in non-circulating systems. Replaces one of the elbows, part 972177.            C: Included in needle and seat service kit, part 106280.            NS: Not Shown</p>				

### Stainless Steel Waterborne Single-Chamber Gun with Nickel-Carbide Ball and Seat

See Figure 6 on page 16.

Item	Part	Description	Quantity	Note
—	337303	GUN, A7A, stainless steel, waterborne	1	
1	702105	• SCREW, fillister, #10-32 x 1.00 in., slotted, stainless steel	4	
2	702106	• WASHER, lock, split, #10, stainless steel	4	
3	153028	• CYLINDER	1	
4	153031	• GASKET, gun, H20	1	A
5	153022	• PISTON assembly, H20	1	A
6	984539	• • NUT, lock, #10-32, upper	1	A
7	240274	• • NUT, seal lock	1	A
8	940090	• • O-RING, Viton, 0.208 ID x 0.70 in., brown	1	A
9	940157	• O-RING, Viton, black, 0.562 x 0.688 in.	1	A
10	973125	• ELBOW, pipe, 1/8 in. NPT, brass	1	
11	702108	• SCREW, fillister, #10-32 x 2.00 in., slotted, stainless steel	2	
12	153158	• BLOCK, mounting	1	
13	702111	• SCREW, square, set, 3/8-16 x 0.75 in., 18-8 stainless steel	1	
14	972177	• ELBOW, male, 37°, 1/2-20 x 1/4 in. NPT, stainless steel	2	
15	973415	• PLUG, pipe, socket, standard, 1/4 in. NPT, stainless steel	1	B
16	-----	• BODY, gun, stainless steel	1	
17	153090	• CARTRIDGE, packing	1	
18	940134	• • O-RING, Viton, 0.438 x 0.563 x 0.063 in.	1	
19	320030	• BALL and seat, nickel	1	C
20	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	1	A, C
21	702109	• SCREW, oval, #10-32 x 0.50 in., 18-8 stainless steel	4	C
22	152496	• NUT, retaining	1	
NS	901905	• BRUSH	1	
NS	901911	• WRENCH, adjustment, module	2	
NS	247646	• CARD, medical alert, injection	1	
NS	900431	• ADHESIVE, pipe/thread/hydraulic sealant	1	

NOTE A: Included in piston with seals repair kit, part 106230.

B: Used in non-circulating systems. Replaces one of the elbows, part 972177.

C: Included in ball and seat service kit, part 320031.

NS: Not Shown

## Large Passage Single-Chamber Gun with Ball and Seat

See Figure 6 on page 16.

Item	Part	Description	Quantity	Note
—	709831	GUN, A7A, large passage, auto, circulating	1	
1	981140	• SCREW, fillister, #10-32 x 1.00 in., slotted, zinc	4	
2	983120	• WASHER, lock, split, #10, steel, nickel	4	
3	153028	• CYLINDER	1	
4	153031	• GASKET, gun, H20	1	A
5	153022	• PISTON assembly, H20	1	A
6	984539	• • NUT, lock, #10-32, upper	1	A
7	240274	• • NUT, seal lock	1	A
8	940090	• • O-RING, Viton, 0.208 ID x 0.70 in., brown	1	A
9	940157	• O-RING, Viton, black, 0.562 x 0.688 in.	1	A
10	973125	• ELBOW, pipe, 1/8 in. NPT, brass	1	
11	981127	• SCREW, fillister, #10-32 x 2.00 in., slotted, zinc	2	
12	153158	• BLOCK, mounting	1	
13	981405	• SCREW, square, set, 3/8-16 x 0.75 in., cup, zinc	1	
14	972176	• ELBOW, male, 37°, 1/2-20 x 1/4 in. NPT, steel	2	
15	973415	• PLUG, pipe, socket, standard, 1/4 in NPT, stainless steel	1	B
16	-----	• BODY, gun	1	
17	153152	• CARTRIDGE, packing	1	
18	940134	• • O-RING, Viton, 0.438 x 0.563 x 0.063 in.	1	
19	709832	• BALL and seat, large passage	1	
20	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	1	A
21	981115	• SCREW, oval, #10-32 x 0.50 in., slotted, zinc	4	
22	152290	• NUT, retaining	1	
NS	901905	• BRUSH	1	
NS	901911	• WRENCH, adjustment, module	2	
NS	247646	• CARD, medical alert, injection	1	
NS	900431	• ADHESIVE, pipe/thread/hydraulic sealant	1	

NOTE A: Included in piston with seals repair kit, part 106230.

B: Used in non-circulating systems. Replaces one of the elbows, part 972176.

NS: Not Shown

### Compound and Extended Guns

Refer to parts lists on following pages.

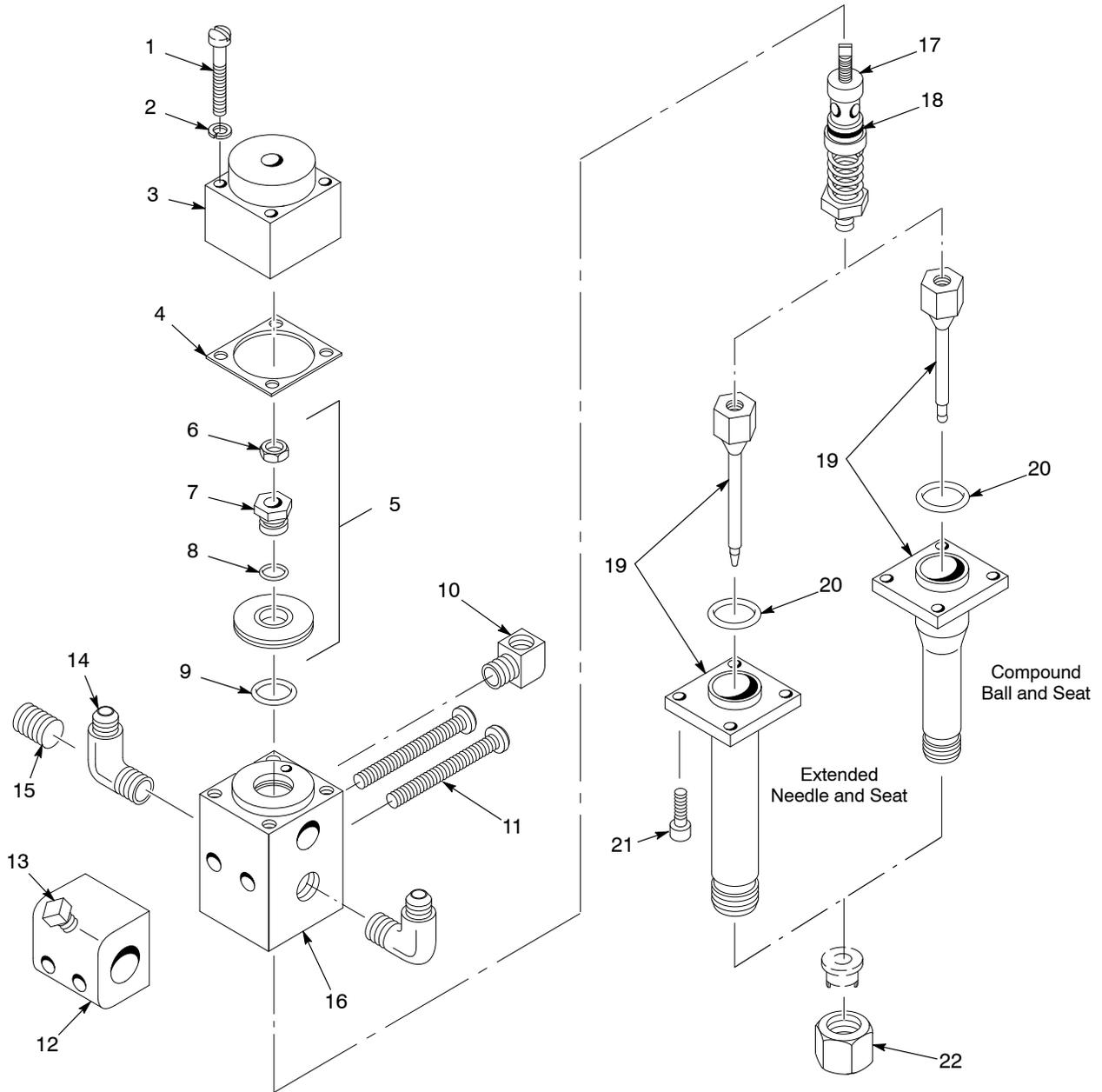


Figure 7 Single Chamber Compound and Extended Guns

1300456A

## Compound Single-Chamber Gun with Ball and Seat

See Figure 7 on page 24.

Item	Part	Description	Quantity	Note
—	510010	GUN, Model A7A, 1 1/2 in. extension	1	
1	981140	• SCREW, fillister, #10-32 x 1.00 in., slotted, zinc	4	
2	983120	• WASHER, lock, split, #10, steel, nickel	4	
3	153028	• CYLINDER	1	
4	153031	• GASKET, gun, H20	1	A
5	153022	• PISTON assembly, H20	1	A
6	984539	• • NUT, lock, #10-32, upper	1	A
7	240274	• • NUT, seal lock	1	A
8	940090	• • O-RING, Viton, 0.208 ID x 0.70 in., brown	1	A
9	940151	• O-RING, Viton, 0.563 x 0.688 x 0.063 in.	1	
10	973125	• ELBOW, pipe, 1/8 in. NPT, brass	1	
11	981127	• SCREW, fillister, #10-32 x 2.00 in., slotted, zinc	2	
12	153158	• BLOCK, mounting	1	
13	981405	• SCREW, square, set, 3/8-16 x 0.75 in., cup, zinc	1	
14	972254	• CONNECTOR, 3/4-16 x 1/4 in. NPT	2	
15	973415	• PLUG, pipe, socket, standard, 1/4 in NPT, stainless steel	1	B
16	-----	• BODY, gun	1	
17	153152	• CARTRIDGE, packing	1	
18	940134	• • O-RING, Viton, 0.438 x 0.563 x 0.063 in.	1	
19	242575	• BALL and seat	1	
20	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	1	A
21	981160	• SCREW, pan, #10-32 x 0.50 in., slotted, zinc	4	
22	152926	• NUT, retaining	1	
NS	901905	• BRUSH	1	
NS	901911	• WRENCH, adjustment, module	2	
NS	247646	• CARD, medical alert, injection	1	
NS	900431	• ADHESIVE, pipe/thread/hydraulic sealant	1	
NOTE A: Included in piston with seals repair kit, part 106230.				
B: Used in non-circulating systems. Replaces one of the connectors, part 972254.				
NS: Not Shown				

### Extended Single-Chamber Gun with Needle and Seat

See Figure 7 on page 24.

Item	Part	Description	Quantity	Note
—	245375	GUN, A7A, with valved extension	1	
1	981140	• SCREW, fillister, #10-32 x 1.00 in., slotted, zinc	4	
2	983120	• WASHER, lock, split, #10, steel, nickel	4	
3	153028	• CYLINDER	1	
4	153031	• GASKET, gun, H20	1	A
5	153022	• PISTON assembly, H20	1	A
6	984539	• • NUT, lock, #10-32, upper	1	A
7	240274	• • NUT, seal lock	1	A
8	940090	• • O-RING, Viton, 0.208 ID x 0.70 in., brown	1	A
9	940157	• O-RING, Viton, black, 0.562 x 0.688	1	
10	973125	• ELBOW, pipe, 1/8 in. NPT, brass	1	
11	981127	• SCREW, fillister, #10-32 x 2.00 in., slotted, zinc	2	
12	153158	• BLOCK, mounting	1	
13	981405	• SCREW, square, set, 3/8-16 x 0.750 in., cup, zinc	1	
14	972177	• ELBOW, male, 37°, 1/2-20 x 1/4 in. NPT, stainless steel	2	
15	973415	• PLUG, pipe, socket, standard, 1/4 in NPT, stainless steel	1	C
16	-----	• BODY, gun	1	
17	153090	• CARTRIDGE, packing	1	
18	940134	• • O-RING, Viton, 0.438 x 0.563 x 0.063 in.	1	
19	-----	• NEEDLE and seat, A7A, extended	1	B
20	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	1	A, B
21	981160	• SCREW, pan, #10-32 x 0.50 in., slotted, zinc	4	
22	152496	• NUT, retaining	1	
NS	901905	• BRUSH	1	
NS	901911	• WRENCH, adjustment, module	2	
NS	247646	• CARD, medical alert, injection	1	
NS	900431	• ADHESIVE, pipe/thread/hydraulic sealant	1	
<p>NOTE A: Included in piston with seals repair kit, part 106230.            B: Included in extended needle and seat service kit, part 106234.            C: Used in non-circulating systems. Replaces one of the elbows, part 972177.</p> <p>NS: Not Shown</p>				

### Straight Dual-Chamber Guns

See Figure 9 on page 32 and associated parts lists for angled dual-chamber guns.

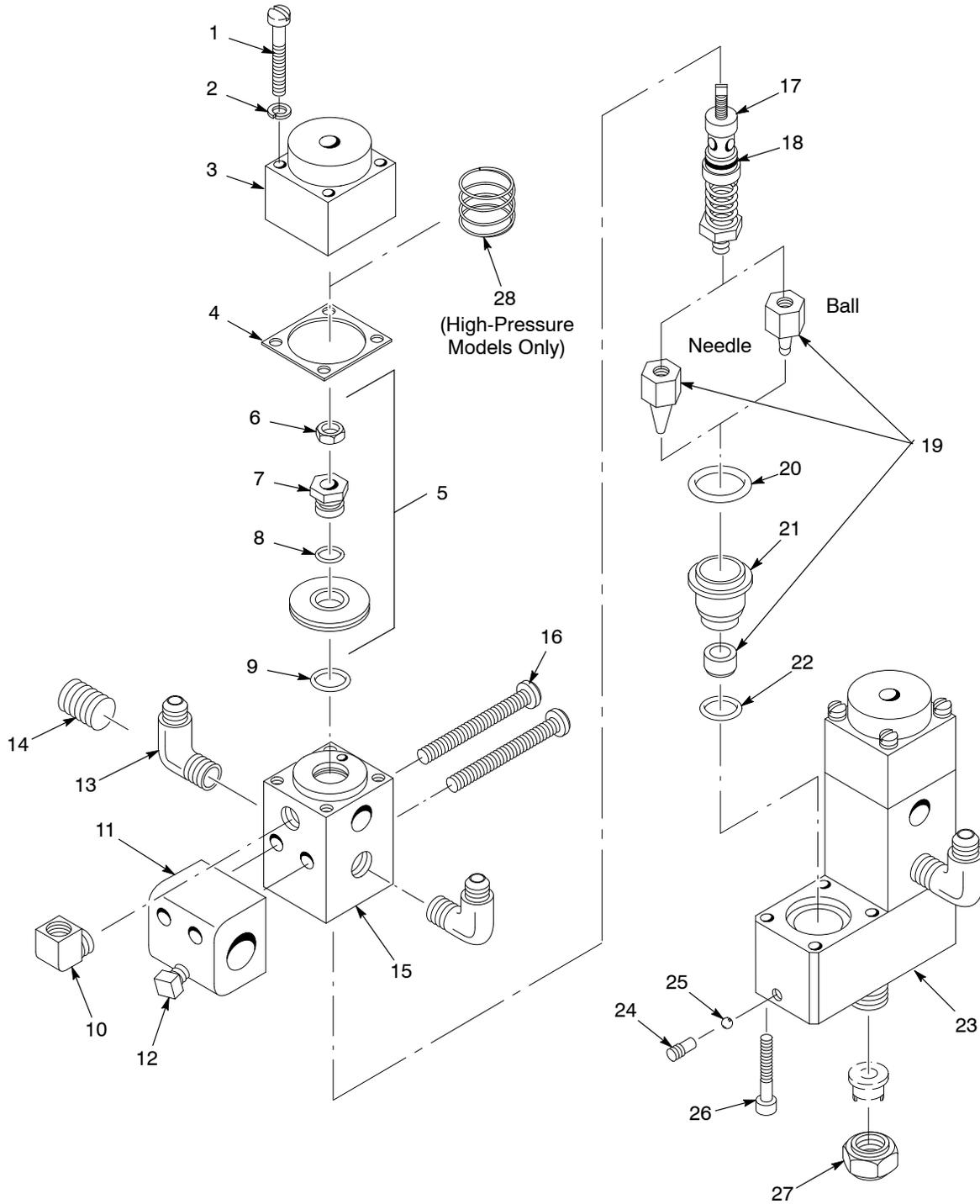


Figure 8 Dual-Chamber Guns

1300457A

### Standard Straight Dual-Chamber Gun with Needle and Seat

See Figure 8 on page 27.

Item	Part	Description	Quantity	Note
—	248937	GUN, A7A, dual, drum coating	1	
1	981140	• SCREW, fillister, #10-32 x 1.00 in., slotted, zinc	8	
2	983120	• WASHER, lock, split, #10, steel, nickel	8	
3	153028	• CYLINDER	2	
4	153031	• GASKET, gun, H20	2	A
5	153022	• PISTON assembly, H20	2	A
6	984539	• • NUT, lock, #10-32, upper	1	A
7	240274	• • NUT, seal lock	1	A
8	940090	• • O-RING, Viton, 0.208 ID x 0.70 in., brown	1	A
9	940154	• O-RING, Buna-N, 0.563 x 0.688 x 0.063 in.	2	
10	973125	• ELBOW, pipe, 1/8 in. NPT, brass	2	
11	153158	• BLOCK, mounting	1	
12	981405	• SCREW, square, set, 3/8-16 x 0.75 in., cup, zinc	1	
13	972176	• ELBOW, male, 37°, 1/2-20 x 1/4 in. NPT, steel	4	
14	973415	• PLUG, pipe, socket, standard, 1/4 in NPT, stainless steel	2	B
15	-----	• BODY, gun	2	
16	981513	• SCREW, pan, #10-32 x 2.00 in., slotted, zinc	2	
17	153152	• CARTRIDGE, packing	2	
18	940134	• • O-RING, Viton, 0.438 x 0.563 x 0.063 in.	2	
19	-----	• NEEDLE and seat, A7A	2	C, D
20	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	2	A, C, D
21	248933	• RETAINER, seat	2	C
22	940105	• O-RING, PTFE, 0.25 x 0.375 x 0.063 in.	2	C, D
23	248936	• MANIFOLD, A7A	1	
24	248932	• PLUG	2	
25	900013	• BALL, 440 stainless steel, 0.125 in. dia., 100	2	
26	981171	• SCREW, socket, #10-32 x 1.25 in., zinc	8	
27	152290	• NUT, retaining	1	
NS	901905	• BRUSH	1	
NS	901911	• WRENCH, adjustment, module	2	
NS	247646	• CARD, medical alert, injection	1	
NS	900431	• ADHESIVE, pipe/thread/hydraulic sealant	1	

NOTE A: Included in piston with seals repair kit, part 106230. Order two kits to repair both chambers.  
 B: Used in non-circulating systems. Replaces two of the elbows, part 972176.  
 C: Included in needle and seat with retainer service kit, part 160354. Order two kits to repair both chambers.  
 D: Included in needle and seat service kit, part 106416. Order two kits to repair both chambers.  
 NS: Not Shown

## High Pressure, Non-Corrosive Straight Dual Chamber Gun with Nickel-Carbide Ball and Seat

See Figure 8 on page 27.

Item	Part	Description	Quantity	Note
—	342300	GUN, A7A, dual, high pressure, non-corrosive	1	
1	702105	• SCREW, fillister, #10-32 x 1.00 in., stainless steel	8	
2	702106	• WASHER, lock, split, #10, stainless steel	8	
3	248943	• CYLINDER, air	2	
4	153031	• GASKET, gun, H20	2	
5	342277	• PISTON assembly, A7A, high pressure, stainless steel	2	
6	702118	• • NUT, lock, #10-32, upper	2	C
7	342278	• • NUT, seal lock, bulk melter, stainless steel	1	
8	940090	• • O-RING, Viton, 0.208 ID x 0.70 in., brown	1	
9	940157	• O-RING, Viton, black, 0.562 x 0.688 in.	2	
10	973125	• ELBOW, pipe, 1/8 in. NPT, brass	2	
11	153158	• BLOCK, mounting	1	
12	702111	• SCREW, square, set, 3/8-16 x 0.75 in., 18-8, stainless steel	1	
13	972177	• ELBOW, male, 37°, 1/2-20 x 1/4 in. NPT, stainless steel	4	
14	973415	• PLUG, pipe, socket, standard, 1/4 in NPT, stainless steel	2	A
15	-----	• BODY, gun	2	
16	338198	• SCREW, pan, #10-32 x 2.00 in., slotted, stainless steel	2	
17	153090	• CARTRIDGE, packing	2	
18	940134	• • O-RING, Viton, 0.438 x 0.563 x 0.063 in.	2	
19	-----	• BALL and seat, A7A, nickel	2	B
20	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	2	B
21	134975	• RETAINER, seat, A7A	2	
22	940105	• O-RING, PTFE, 0.25 x 0.375 x 0.063 in.	2	B
23	248936	• MANIFOLD, A7A	1	
24	248932	• PLUG	2	
25	900013	• BALL, 440 stainless steel, 0.125 in. dia., 100	2	
26	338693	• SCREW, socket, #10-32 x 1.25 in., stainless steel	8	
27	152496	• NUT, retaining	1	
28	342279	• SPRING, compression, 0.75 x 0.72 x 0.06 in., stainless steel	2	
NS	901905	• BRUSH	1	
NS	901911	• WRENCH, adjustment, module	2	
NS	247646	• CARD, medical alert, injection	1	
NS	900431	• ADHESIVE, pipe/thread/hydraulic sealant	1	

NOTE A: Used in non-circulating systems. Replaces two of the elbows, part 972176.  
 B: Included in waterborne ball and seat kit, part 337305. Order two kits to repair both chambers.  
 C: Lock nut 702118 is not part of piston assembly 342277. Order the lock nut separately.

NS: Not Shown

## Stainless Steel Straight Dual-Chamber Gun with Needle and Seat

See Figure 8 on page 27.

Item	Part	Description	Quantity	Note
—	149097	GUN, A7A, dual, stainless steel, drum coating	1	
1	981140	• SCREW, fillister, #10-32 x 1.00 in., slotted, zinc	8	
2	983120	• WASHER, lock, split, #10, steel, nickel	8	
3	153028	• CYLINDER	2	
4	153031	• GASKET, gun, H20	2	A
5	153022	• PISTON assembly, H20	2	A
6	984539	• • NUT, lock, #10-32, upper	2	A
7	240274	• • NUT, seal lock	1	A
8	940090	• • O-RING, Viton, 0.208 ID x 0.70 in., brown	1	A
9	940154	• O-RING, Buna-N, 0.563 x 0.688 x 0.063 in.	2	
10	973125	• ELBOW, pipe, 1/8 in. NPT, brass	2	
11	153158	• BLOCK, mounting	1	
12	981405	• SCREW, square, set, 3/8-16 x 0.75 in., cup, zinc	1	
13	972177	• ELBOW, male, 37°, 1/2-20 x 1/4 in. NPT, stainless steel	4	
14	973415	• PLUG, pipe, socket, standard, 1/4 in NPT, stainless steel	2	B
15	-----	• BODY, gun	2	
16	981513	• SCREW, pan, #10-32 x 2.00 in., slotted, zinc	2	
17	153090	• CARTRIDGE, packing	2	
18	940134	• • O-RING, Viton, 0.438 x 0.563 x 0.063 in.	2	
19	-----	• NEEDLE and seat, A7A	2	C, D
20	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	2	A, C, D
21	248933	• RETAINER, seat	2	C
22	940105	• O-RING, PTFE, 0.25 x 0.375 x 0.063 in.	2	C, D
23	248936	• MANIFOLD, A7A	1	
24	248932	• PLUG	2	
25	900013	• BALL, 440 stainless steel, 0.125 in. dia., 100	2	
26	981171	• SCREW, socket, #10-32 x 1.25 in., zinc	8	
27	152496	• NUT, retaining	1	
NS	901905	• BRUSH	1	
NS	901911	• WRENCH, adjustment, module	2	
NS	247646	• CARD, medical alert, injection	1	
NS	900431	• ADHESIVE, pipe/thread/hydraulic sealant	1	

NOTE A: Included in piston with seals repair kit, part 106230. Order two kits to repair both chambers.

B: Used in non-circulating systems. Replaces two of the elbows, part 972177.

C: Included in needle and seat with retainer service kit, part 160354. Order two kits to repair both chambers.

D: Included in needle and seat service kit, part 106416. Order two kits to repair both chambers.

NS: Not Shown

## Stainless Steel Waterborne Straight Dual-Chamber Gun with Nickel-Carbide Ball and Seat

See Figure 8 on page 27.

Item	Part	Description	Quantity	Note
—	337302	GUN, A7A, dual, stainless steel, waterborne	1	
1	702105	• SCREW, fillister, #10-32 x 1.00 in., stainless steel	8	
2	702106	• WASHER, lock, split, #10, stainless steel	8	
3	153028	• CYLINDER	2	
4	153031	• GASKET, gun, H20	2	A
5	153022	• PISTON assembly, H20	2	A
6	984539	• • NUT, lock, #10-32, upper	2	A
7	240274	• • NUT, seal lock	1	A
8	940090	• • O-RING, Viton, 0.208 ID x 0.70 in., brown	1	A
9	940154	• O-RING, Buna-N, 0.563 x 0.688 x 0.063 in.	2	
10	973125	• ELBOW, pipe, 1/8 in. NPT, brass	2	
11	153158	• BLOCK, mounting	1	
12	702111	• SCREW, square, set, 3/8-16 x 0.75 in., 18-8 stainless steel	1	
13	972177	• ELBOW, male, 37°, 1/2-20 x 1/4 in. NPT, stainless steel	4	
14	973415	• PLUG, pipe, socket, standard, 1/4 in NPT, stainless steel	2	B
15	-----	• BODY, gun	2	
16	338198	• SCREW, pan, #10-32 x 2.00 in., slotted, stainless steel	2	
17	153090	• CARTRIDGE, packing	2	
18	940134	• • O-RING, Viton, 0.438 x 0.563 x 0.063 in.	2	
19	-----	• BALL and seat, A7A, nickel	2	C
20	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	2	A, C
21	134975	• RETAINER, seat, A7A	2	
22	940105	• O-RING, PTFE, 0.25 x 0.375 x 0.063 in.	2	C
23	248936	• MANIFOLD, A7A	1	
24	248932	• PLUG	2	
25	900013	• BALL, 440 stainless steel, 0.125 in. dia., 100	2	
26	338693	• SCREW, socket, #10-32 x 1.25 in., stainless steel	8	
27	152496	• NUT, retaining	1	
NS	901905	• BRUSH	1	
NS	901911	• WRENCH, adjustment, module	2	
NS	247646	• CARD, medical alert, injection	1	
NS	900431	• ADHESIVE, pipe/thread/hydraulic sealant	1	

NOTE A: Included in piston with seals repair kit, part 106230. Order two kits to repair both chambers.

B: Used in non-circulating systems. Replaces two of the elbows, part 972177.

C: Included in waterborne ball and seat kit, part 337305. Order two kits to repair both chambers.

NS: Not Shown

### Angled Dual Chamber Guns

See Figure 8 on page 27 and associated parts lists for dual-chamber guns.

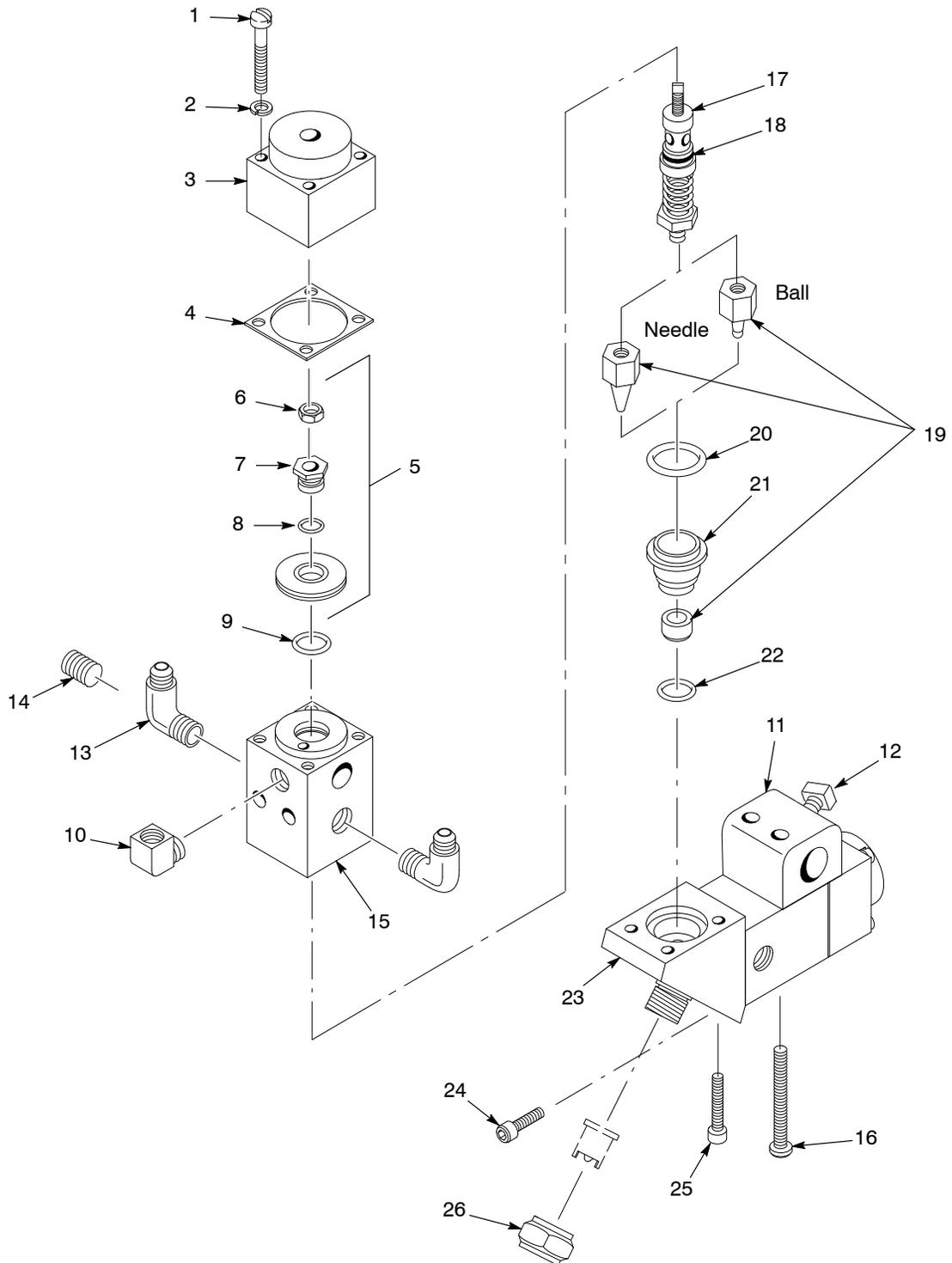


Figure 9 Angled Dual-Chamber Guns

1300458A

## Standard Angled Dual-Chamber Gun with Ball and Seat

See Figure 9 on page 32.

Item	Part	Description	Quantity	Note
—	160062	GUN, dual, A7A, drum, angled, standard	1	
1	981140	• SCREW, fillister, #10-32 x 1.00 in., slotted, zinc	8	
2	983120	• WASHER, lock, split, #10, steel, nickel	8	
3	153028	• CYLINDER	2	
4	153031	• GASKET, gun, H20	2	A
5	153022	• PISTON assembly, H20	2	A
6	984539	• • NUT, lock, #10-32, upper	2	A
7	240274	• • NUT, seal lock	1	A
8	940090	• • O-RING, Viton, 0.208 ID x 0.70 in., brown	1	A
9	940157	• O-RING, Viton, black, 0.562 x 0.688 in.	2	A
10	973125	• ELBOW, pipe, 1/8 in. NPT, brass	2	
11	153158	• BLOCK, mounting	1	
12	981405	• SCREW, square, set, 3/8-16 x 0.75 in., cup, zinc	1	
13	972176	• ELBOW, male, 37°, 1/2-20 x 1/4 in. NPT, steel	4	
14	973415	• PLUG, pipe, socket, standard, 1/4 in NPT, stainless steel	2	B
15	-----	• BODY, gun	2	
16	981513	• SCREW, pan, #10-32 x 2.00 in., slotted, zinc	2	
17	153152	• CARTRIDGE, packing	2	
18	940134	• • O-RING, Viton, 0.438 x 0.563 x 0.063 in.	2	
19	-----	• BALL and seat, A7A	2	C, D
20	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	2	A, C, D
21	134975	• RETAINER, seat, A7A	2	C
22	940105	• O-RING, PTFE, 0.25 x 0.375 x 0.063 in.	2	C, D
23	160061	• MANIFOLD, dual, A7A, angled	1	
24	981893	• SCREW, socket, #10-32 x 0.50 in., zinc	4	
25	981771	• SCREW, socket, #10-32 x 1.375 in., zinc	2	
26	152290	• NUT, retaining	1	
NS	901905	• BRUSH	1	
NS	901911	• WRENCH, adjustment, module	2	
NS	247646	• CARD, medical alert, injection	1	
NS	900431	• ADHESIVE, pipe/thread/hydraulic sealant	1	

NOTE A: Included in piston with seals repair kit, part 106230. Order two kits to repair both chambers.

B: Used in non-circulating systems. Replaces two of the elbows, part 972176.

C: Included in ball and seat with retainer service kit, part 134972. Order two kits to repair both chambers.

D: Included in ball and seat service kit, part 159447. Order two kits to repair both chambers.

NS: Not Shown

## Stainless Steel Angled Dual-Chamber Gun with Needle and Seat

See Figure 9 on page 32.

Item	Part	Description	Quantity	Note
—	160063	GUN, dual, A7A, drum, angled, stainless steel	1	
1	981140	• SCREW, fillister, #10-32 x 1.00 in., slotted, zinc	8	
2	983120	• WASHER, lock, split, #10, steel, nickel	8	
3	153028	• CYLINDER	2	
4	153031	• GASKET, gun, H20	2	A
5	153022	• PISTON assembly, H20	2	A
6	984539	• • NUT, lock, #10-32, upper	2	A
7	240274	• • NUT, seal lock	1	A
8	940090	• • O-RING, Viton, 0.208 ID x 0.70 in., brown	1	A
9	940157	• O-RING, Viton, black, 0.562 x 0.688 in.	2	A
10	973125	• ELBOW, pipe, 1/8 in. NPT, brass	2	
11	153158	• BLOCK, mounting	1	
12	981405	• SCREW, square, set, 3/8-16 x 0.75 in., cup, zinc	1	
13	972177	• ELBOW, male, 37°, 1/2-20 x 1/4 in. NPT, stainless steel	4	
14	973415	• PLUG, pipe, socket, standard, 1/4 in. NPT, stainless steel	2	B
15	-----	• BODY, gun	2	
16	981513	• SCREW, pan, #10-32 x 2.00 in., slotted, zinc	2	
17	153090	• CARTRIDGE, packing	2	
18	940134	• • O-RING, Viton, 0.438 x 0.563 x 0.063 in.	2	
19	-----	• NEEDLE and seat, A7A	2	C, D
20	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	2	A, C, D
21	248933	• RETAINER, seat	2	C
22	940105	• O-RING, PTFE, 0.25 x 0.375 x 0.063 in.	2	C, D
23	160061	• MANIFOLD, dual, A7A, angled	1	
24	981893	• SCREW, socket, #10-32 x 0.50 in., zinc	4	
25	981771	• SCREW, socket, #10-32 x 1.375 in., zinc	2	
26	123200	• NUT, nozzle, anti-foul, stainless steel	1	
NS	901905	• BRUSH	1	
NS	901911	• WRENCH, adjustment, module	2	
NS	247646	• CARD, medical alert, injection	1	
NS	900431	• ADHESIVE, pipe/thread/hydraulic sealant	1	

NOTE A: Included in piston with seals repair kit, part 106230. Order two kits to repair both chambers.

B: Used in non-circulating systems. Replaces two of the elbows, part 972176.

C: Included in needle and seat with retainer service kit, part 106354. Order two kits to repair both chambers.

D: Included in needle and seat service kit, part 106416. Order two kits to repair both chambers.

NS: Not Shown

## Waterborne Angled Dual-Chamber Gun with Nickel-Carbide Ball and Seat

See Figure 9 on page 32.

Item	Part	Description	Quantity	Note
—	337304	GUN, dual, A7A, angled, waterborne	1	
1	702105	• SCREW, fillister, #10-32 x 1.00 in., stainless steel	8	
2	702106	• WASHER, lock, split, #10, stainless steel	8	
3	153028	• CYLINDER	2	
4	153031	• GASKET, gun, H20	2	A
5	153022	• PISTON assembly, H20	2	A
6	984539	• • NUT, lock, #10-32, upper	2	A, E
7	240274	• • NUT, seal lock	1	A
8	940090	• • O-RING, Viton, 0.208 ID x 0.70 in., brown	1	A
9	940157	• O-RING, Viton, black, 0.562 x 0.688 in.	2	A
10	973125	• ELBOW, pipe, 1/8 in. NPT, brass	2	
11	153158	• BLOCK, mounting	1	
12	702111	• SCREW, square, set, 3/8-16 x 0.75 in., 18-8 stainless steel	1	
13	972177	• ELBOW, male, 37°, 1/2-20 x 1/4 in. NPT, stainless steel	4	
14	973415	• PLUG, pipe, socket, standard, 1/4 in. NPT, stainless steel	2	B
15	-----	• BODY, gun	2	
16	338198	• SCREW, pan, #10-32 x 2.00 in., slotted, stainless steel	2	
17	153090	• CARTRIDGE, packing	2	
18	940134	• • O-RING, Viton, 0.438 x 0.563 x 0.063 in.	2	
19	-----	• BALL and seat, A7A, nickel	2	C, D
20	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	2	A, C, D
21	134975	• RETAINER, seat, A7A	2	C
22	940105	• O-RING, PTFE, 0.25 x 0.375 x 0.063 in.	2	C, D
23	160061	• MANIFOLD, dual, A7A, angled	1	
24	982860	• SCREW, socket, #10-32 x 0.50 in., stainless steel	4	
25	338199	• SCREW, socket, #10-32 x 1.375 in., stainless steel	2	
26	123200	• NUT, nozzle, anti-foul, stainless steel	1	
NS	901905	• BRUSH	1	
NS	901911	• WRENCH, adjustment, module	2	
NS	247646	• CARD, medical alert, injection	1	
NS	900431	• ADHESIVE, pipe/thread/hydraulic sealant	1	

NOTE A: Included in piston with seals repair kit, part 106230. Order two kits to repair both chambers.

B: Use in non-circulating systems. Replaces two of the elbows, part 972177.

C: Included in waterborne ball and seat kit, part 337305. Order two kits to repair both chambers.

NS: Not Shown

## Service Kits

For more information on the guns these kits are used with, refer to *Service Parts, Kits, and Options* on page 15.

### Piston and Seals Kit

Use this kit for all guns except high pressure guns.

Item	Part	Description	Quantity	Note
—	106230	REPAIR KIT, piston with seals, A7A	1	A
4	153031	• GASKET, gun, H20	2	
5	153022	• PISTON assembly, H20	1	
6	984539	• • NUT, lock, #10-32, upper	1	
7	240274	• • NUT, seal lock	1	
8	940090	• • O-RING, Viton, 0.208 ID x 0.700 in., brown	1	
9	940157	• O-RING, Viton, black, 0.562 x 0.688 in.	2	B
20	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	2	

NOTE A: Order two kits to repair both modules of dual-chamber guns.  
B: This O-ring may be in place of O-ring 940151 used on Compound gun.

### Standard Single-Chamber Ball and Seat Kit

Use this kit for the standard single-chamber gun (153150).

Item	Part	Description	Quantity	Note
—	106231	SERVICE KIT, ball and seat	1	
19	153159	• BALL and seat	1	
20	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	1	
21	981115	• SCREW, oval, #10-32 x 0.50 in., steel, zinc	4	

### Non-Corrosive and Waterborne Single-Chamber Nickel-Carbide Ball and Seat Kit

Use this kit for the non-corrosive, high-speed, and waterborne single-chamber guns (342276, 246789, 337303).

Item	Part	Description	Quantity	Note
—	320031	KIT, ball and seat, A7A, nickel	1	
19	320030	• BALL tip and seat, nickel	1	
20	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	1	
21	702109	• SCREW, oval, #10-32 x 0.50 in., 18-8 stainless steel	4	

### Single-Chamber Needle and Seat Kit

Use this kit for the standard and stainless steel single-chamber guns (248445, 153160).

Item	Part	Description	Quantity	Note
—	106280	SERVICE KIT, needle and seat, tapered, A7A	1	
19	-----	• NEEDLE and seat	1	
20	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	1	
21	981160	• SCREW, pan, #10-32 x 0.50 in., slotted, zinc	4	

### Extended Needle and Seat Service Kit

Use this kit for the standard extended single-chamber gun (245375).

Item	Part	Description	Quantity	Note
—	106234	SERVICE KIT, needle and seat, A7A	1	
19	-----	• NEEDLE and seat, A7A, extended	1	
20	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	1	

### Waterborne Dual Chamber Ball and Seat Kit

Use this kit for the non-corrosive dual chamber gun (342300) and the stainless steel waterborne straight and angled dual-chamber guns (337302, 337304).

Item	Part	Description	Quantity	Note
—	337305	SERVICE KIT, ball and seat, waterborne	1	A
19	-----	• BALL and seat, waterborne	1	
20	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	1	
22	940105	• O-RING, PTFE, 0.25 x 0.375 x 0.063 in.	1	

NOTE A: Order two kits to repair both chambers.

### Standard Angled Dual-Chamber Ball and Seat Kit

Use this kit for the standard angled dual-chamber gun (160062).

Item	Part	Description	Quantity	Note
—	159447	SERVICE KIT, ball and seat	1	A
19	-----	• BALL and seat	1	
20	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	1	
22	940105	• O-RING, PTFE, 0.25 x 0.375 x 0.063 in.	1	

NOTE A: Order two kits to repair both chambers.

### Angled Dual-Chamber Ball and Seat with Retainer Kit

Use this kit for the standard angled dual chamber gun (160062).

Item	Part	Description	Quantity	Note
—	134972	SERVICE KIT, ball and seat, with retainer	1	A
19	-----	• BALL and seat, A7A	1	
20	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	1	
21	134975	• RETAINER, seat, A7A	1	
22	940105	• O-RING, PTFE, 0.25 x 0.375 x 0.063 in.	1	
NOTE A: Order two kits to repair both chambers.				

### Dual-Chamber Needle and Seat Kit

Use this kit for the standard and stainless steel dual chamber guns (248937, 149097) and the stainless steel angled dual-chamber gun (160063).

Item	Part	Description	Quantity	Note
—	106416	SERVICE KIT, needle and seat	1	A
19	-----	• NEEDLE and seat, A7A	1	
20	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	1	
22	940105	• O-RING, PTFE, 0.25 x 0.375 x 0.063 in.	1	
NOTE A: Order two kits to repair both chambers.				

### Dual Chamber Needle and Seat with Retainer Kit

Use this kit for the standard and stainless steel dual chamber guns (248937, 149097) and the stainless steel angled dual-chamber gun (160063).

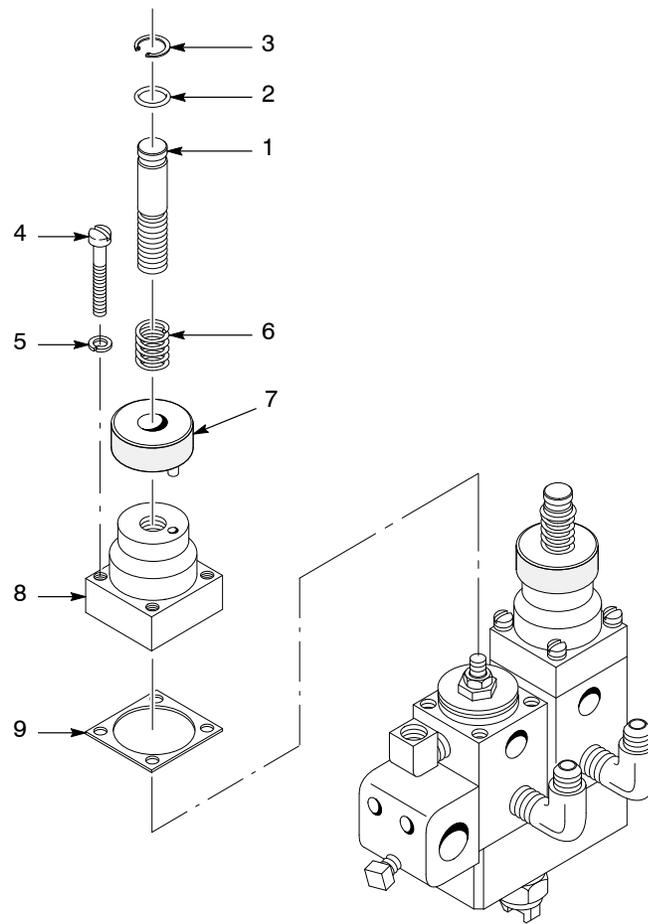
Item	Part	Description	Quantity	Note
—	160354	SERVICE KIT, needle and seat, with retainer	1	A
19	-----	• NEEDLE and seat, A7A	1	
20	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	1	
21	248933	• RETAINER, seat	1	
22	940105	• O-RING, PTFE, 0.25 x 0.375 x 0.063 in.	1	
NOTE A: Order two kits to repair both modules of dual-chamber guns.				

## Conversion Kits

### Air Cylinder with Detent Adjustment

Item	Part	Description	Quantity	Note
—	106311	CONVERSION KIT, air cylinder, detent	1	A
1	246252	• SCREW	1	B
2	986013	• RETAINING RING, external, 34, basic	1	B
3	246928	• WASHER, flat, 0.349 in. ID, special	1	B
4	981140	• SCREW, fillister, #10-32 x 1.00 in., slotted, zinc	4	
5	983120	• WASHER, lock, split, #10, steel, nickel	4	
6	246257	• SPRING, compression, 0.950 x 0.433 ID x 0.041 in.	1	
7	246253	• KNOB	1	
8	246251	• CYLINDER, air	1	
9	153031	• GASKET, gun, H2O	1	

NOTE A: Order two kits to convert both chambers of a dual-chamber gun.  
B: Items 1, 2, and 3 are shipped pre-assembled.



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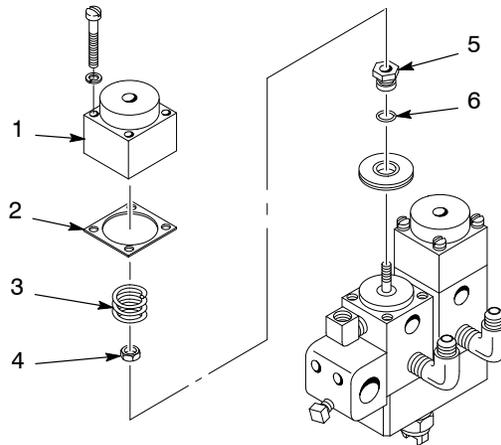
Figure 10 Air Cylinder with Detent Adjustment Conversion Kit

### High Pressure Conversion Kit

This kit increases the maximum operating pressure of a gun to 206 bar (3000 psi).

Item	Part	Description	Quantity	Note
—	248941	CONVERSION KIT, A7A, high pressure	1	A
1	-----	• CYLINDER, air	1	
2	153031	• GASKET, gun, H2O	1	
3	247206	• SPRING, compression, 0.75 x 0.72 x 0.063 in.	1	
4	984120	• NUT, hex, machine, #10-32, steel, zinc	1	
5	-----	• NUT, seal lock	1	
6	940090	• O-RING, Viton, 0.208 ID x 0.70 in., brown	1	

NOTE A: Order two kits to convert both chambers of a dual-chamber gun.



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Figure 11 High Pressure Conversion Kit

### Standard Angled Dual-Chamber Gun with Ball and Seat Conversion Kit

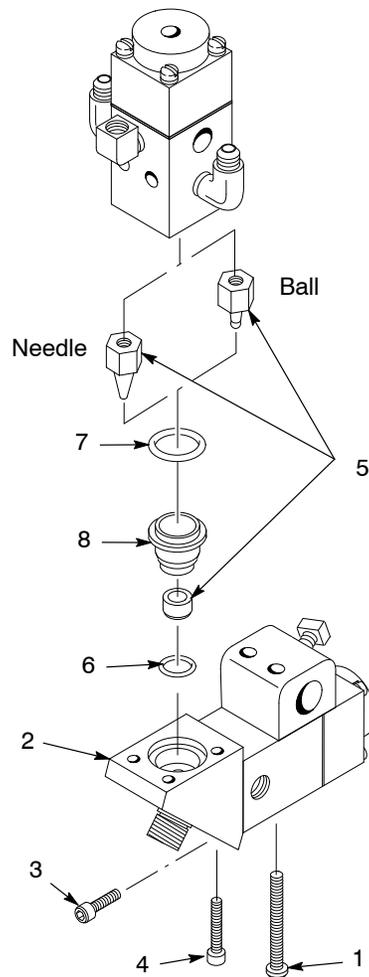
See Figure 12. This kit converts two standard single-chamber guns or one standard dual-chamber gun into an angled dual-chamber gun with ball and seat.

Item	Part	Description	Quantity	Note
—	160355	CONVERSION KIT, dual A7A, angled, standard	1	
1	981513	• SCREW, pan, #10-32 x 2.00 in., slotted, zinc	2	
2	160061	• MANIFOLD, dual, A7A, angled	1	
3	981893	• SCREW, socket, #10-32 x 0.50 in., zinc	4	
4	981771	• SCREW, socket, #10-32 x 1.38 in., zinc	2	
5	-----	• BALL and seat, A7A	2	
6	940105	• O-RING, PTFE, 0.25 x 0.375 x 0.063 in.	2	
7	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	2	
8	134975	• RETAINER, seat, A7A	2	

## Stainless Steel Angled Dual-Chamber Gun with Needle and Seat Conversion Kit

See Figure 12. This kit converts two stainless steel single-chamber guns or one stainless steel dual-chamber gun into an angled dual-chamber gun with needle and seat.

Item	Part	Description	Quantity	Note
—	160060	CONVERSION KIT, gun, dual, angled	1	
1	981513	• SCREW, pan, #10-32 x 2.00 in., slotted, zinc	2	
2	160061	• MANIFOLD, dual, A7A, angled	1	
3	981893	• SCREW, socket, #10-32 x 0.50 in., zinc	4	
4	981771	• SCREW, socket, #10-32 x 1.38 in., zinc	2	
5	-----	• NEEDLE and seat, A7A	2	
6	940105	• O-RING, PTFE, 0.25 x 0.375 x 0.063 in.	2	
7	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	2	
8	248933	• RETAINER, seat	2	



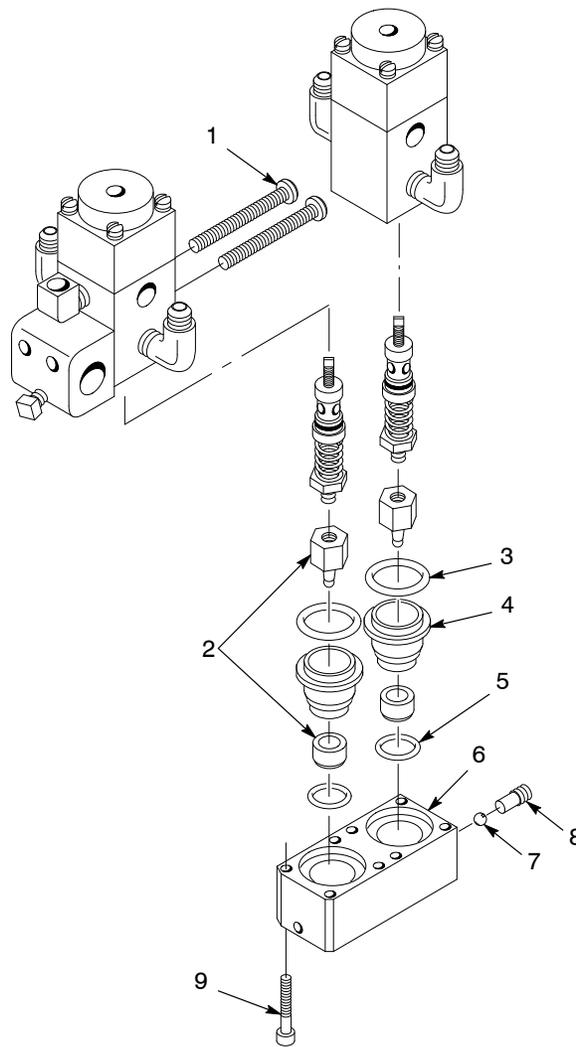
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Figure 12 Angled Conversion Kits

### ***Stainless Steel Straight Dual Chamber Gun Retrofit Kit***

This kit converts two single-chamber stainless steel guns into one straight dual-chamber gun with needle and seat.

Item	Part	Description	Quantity	Note
—	248939	CONVERSION KIT, dual, A7A, retrofit	1	A
1	981513	• SCREW, pan, #10-32 x 2.00 in., slotted, zinc	2	
2	-----	• NEEDLE and seat, A7A	2	
3	940174	• O-RING, Viton, black, 0.688 x 0.813 in.	2	
4	248933	• RETAINER, seat	2	
5	940105	• O-RING, PTFE, 0.25 x 0.375 x 0.063 in.	2	
6	248936	• MANIFOLD, A7A	1	
7	900013	• BALL, 440 stainless steel, 0.125 in. dia., 100	2	
8	248932	• PLUG	2	
9	981171	• SCREW, socket, #10-32 x 1.25 in., zinc	8	



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Figure 13 Angled Conversion Kits