Tribomatic® Powder Disc

Customer Product Manual
Part 229 756C

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

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Tribomatic Powder Disc

1. Safety

This section contains general safety instructions for using your Nordson equipment. Task- and equipment-specific warnings are included in other sections of this manual where appropriate. Note all warnings and follow all instructions carefully. Failure to do so may result in personal injury, death, or property damage.

To use this equipment safely,

- read and become familiar with the general safety instructions provided in this section of the manual before installing, operating, maintaining, or repairing this equipment.
- read and carefully follow the instructions given throughout this manual for performing specific tasks and working with specific equipment.
- store this manual within easy reach of personnel installing, operating, maintaining, or repairing this equipment.
- follow all applicable safety procedures required by your company, industry standards, and government or other regulatory agencies. Refer to the National Fire Protection Association (NFPA) standard 33 and to federal, state, regulatory agency, and local codes for rules and regulations covering installation and operation of powder spray systems.
- obtain and read Material Safety Data Sheets (MSDS) for all materials used.

Safety Symbols

Become familiar with the safety symbols presented in this section. These symbols will alert you to safety hazards and conditions that may result in personal injury, death, or property and equipment damage.

WARNING: Failure to observe this warning may result in personal injury, death, or equipment damage.

Safety Symbols *(contd.)*

WARNING: Risk of electrical shock. Failure to observe this warning may result in personal injury, death, or equipment damage.

WARNING: Disconnect equipment from line voltage. Failure to observe this warning may result in personal injury, death, or equipment damage.

WARNING: Risk of explosion or fire. Fire, open flames, and smoking prohibited.

WARNING: Wear protective clothing, safety goggles, and approved respiratory protection. Failure to observe may result in serious injury.

WARNING: System or material pressurized. Relieve pressure. Failure to observe this warning may result in serious injury or death.

CAUTION: Failure to observe may result in equipment damage.

Qualified Personnel

"Qualified personnel" is defined here as individuals who thoroughly understand the equipment and its safe operation, maintenance, and repair. Qualified personnel are physically capable of performing the required tasks, familiar with all relevant safety rules and regulations, and have been trained to safely install, operate, maintain, and repair the equipment. It is the responsibility of the company operating the equipment to see that its personnel meet these requirements.

Intended Use

WARNING: Use of this equipment in ways other than described in this manual may result in personal injury, death, or property and equipment damage. Use this equipment only as described in this manual.

Nordson Corporation cannot be responsible for injuries or damages resulting from nonstandard, unintended applications of its equipment. This equipment is designed and intended only for the purpose described in this manual. Uses not described in this manual are considered unintended uses and may result in serious personal injury, death, or property damage. Unintended uses may result from taking the following actions:

- making changes to equipment that have not been recommended or described in this manual or using parts that are not genuine Nordson replacement parts
- failing to make sure that auxiliary equipment complies with approval agency requirements, local codes, and all applicable safety standards
- using materials or auxiliary equipment that are inappropriate or incompatible with your Nordson equipment
- allowing unqualified personnel to perform any task

Installation

Read the installation section of all system component manuals before installing your equipment. A thorough understanding of system components and their requirements will help you install the system safely and efficiently.

- Allow only qualified personnel to install Nordson and auxiliary equipment.
- Use only approved equipment. Using unapproved equipment in an approved system may void agency approvals.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- Follow all instructions for installing components and accessories.
- Install all electrical, pneumatic, gas, and hydraulic connections to local code.

Installation *(contd.)*

- Install locking, manual, shutoff valves in the air supply lines to the system. This allows you to relieve air pressure and lock out the pneumatic system before undertaking maintenance and repairs.
- Install a locking disconnect switch or breaker in the service line ahead of any electrical equipment.
- Use only electrical wire of sufficient gauge and insulation to handle the rated current demand. All wiring must meet local codes.
- Ground all electrically conductive equipment within 10 feet (3 meters) of the spray area. Ungrounded conductive equipment can store a static charge which could ignite a fire or cause an explosion if a hot spark is discharged.
- Route electrical wiring, electrostatic cables, and air hoses and tubing along a protected path. Make sure they will not be damaged by moving equipment. Do not bend electrostatic cables around a radius of less than 6 in. (152 mm).
- Install safety interlocks and approved, fast-acting fire detection systems. These shut down the spray system if the booth exhaust fan fails, a fire is detected, or other emergency situation develops.
- Make sure the spray area floor is conductive to ground and that the operator's platform is grounded.
- Use only designated lifting points or lugs to lift and move heavy equipment. Always balance and block loads when lifting to prevent shifting. Lifting devices must be inspected, certified, and rated for a greater weight than the equipment being lifted.
- Protect components from damage, wear, and harsh environmental conditions.
- Allow ample room for maintenance, material supply container drop-off and loading, panel accessibility, and cover removal.
- If safety devices must be removed for installation, install them immediately after the work is completed and check them for proper functioning.

Operation

Only qualified personnel, physically capable of operating the equipment and with no impairments to their judgement or reaction times, should operate this equipment.

Read all component manuals before operating a powder spray system. A thorough understanding of all components and their operation will help you operate the system safely and efficiently.

- Use this equipment only in the environments for which it is rated. Do not operate this equipment in humid, flammable, or explosive environments unless it has been rated for safe operation in these environments.

- Before starting this equipment, check all safety interlocks, fire-detection systems, and protective devices such as panels and covers. Make sure all devices are fully functional. Do not operate the system if these devices are not working properly. Do not deactivate or bypass automatic safety interlocks or locked-out electrical disconnects or pneumatic valves.

- Know where EMERGENCY STOP buttons, shutoff valves, and fire extinguishers are located. Make sure they work. If a component malfunctions, shut down and lock out the equipment immediately.

- Before operating, make sure all conductive equipment in the spray area is connected to a true earth ground.

- Never operate equipment with a known malfunction or leak.

- Do not attempt to operate electrical equipment if standing water is present.

- Never touch exposed electrical connections on equipment while the power is ON.

- Do not operate the equipment at pressures higher than the rated maximum working pressure of any component in the system.

- Know the pinch points, temperatures, and pressures for all equipment that you are working with. Recognize potential hazards associated with these and exercise appropriate caution.

- Wear shoes with conductive soles, such as leather, or use grounding straps to maintain a connection to ground when working with or around electrostatic equipment.

Operation *(contd.)*

- Do not wear or carry metallic objects (jewelry or tools) while working with or around electrostatic equipment. Ungrounded metal can store a static charge and cause harmful shocks.

- Maintain skin-to-metal contact between your hand and the gun handle to prevent shocks while operating manual electrostatic spray guns. If wearing gloves, cut away the palm or fingers.

- Keep parts of the body or loose clothing away from moving equipment or parts. Remove personal jewelry and cover or tie back long hair.

- Wear National Institute of Occupational Safety and Health (NIOSH) approved respirators, safety glasses or goggles, and gloves, and while handling powder containers, filling hoppers, operating spray equipment, and performing maintenance or cleaning tasks. Avoid getting powder coatings on your skin.

- Never point manual guns at yourself or other persons.

- Do not smoke in the spray area. A lit cigarette could ignite a fire or cause an explosion.

- If you notice electrical arcing in a spray area, shut down the system immediately. An arc can cause a fire or explosion.

- Shut off electrostatic power supplies and ground gun electrodes before making adjustments to powder spray guns.

- Shut off moving equipment before taking measurements or inspecting workpieces.

- Wash exposed skin frequently with soap and water, especially before eating or drinking. Do not use solvents to remove coating materials from your skin.

- Do not use high-pressure compressed air to blow powder off your skin or clothes. High-pressure compressed air can be injected under the skin and cause serious injury or death. Treat all high-pressure fittings and hoses as if they could leak and cause injury.

Less-Obvious Dangers

Operators should also be aware of less-obvious dangers in the workplace that often cannot be completely eliminated:

- exposed surfaces on the equipment which may be hot or have sharp edges and cannot be practically safeguarded
- electrical equipment which may remain energized for a period of time after the equipment has been shut off
- vapors and materials which may cause allergic reactions or other health problems
- automatic hydraulic, pneumatic, or mechanical equipment or parts that may move without warning
- unguarded, moving mechanical assemblies

Action in the Event of a System or Component Malfunction

Do not operate a system that contains malfunctioning components. If a component malfunctions, turn the system OFF immediately.

- Disconnect and lock out electrical power. Close and lock out hydraulic and pneumatic shutoff valves and relieve pressures.
- Allow only qualified personnel to make repairs. Repair or replace the malfunctioning component.

Maintenance and Repair

Allow only qualified personnel to perform maintenance, troubleshooting, and repair tasks.

- Always wear appropriate protective devices and use safety devices when working on this equipment.
- Follow the recommended maintenance procedures in your equipment manuals.
- Do not service or adjust any equipment unless another person trained in first aid and CPR is present.
- Use only genuine Nordson replacement parts. Using unapproved parts or making unapproved modifications to equipment may void agency approvals and create safety hazards.

Maintenance and Repair *(contd.)*

- Disconnect, lock out, and tag electrical power at a disconnect or breaker in the service line ahead of electrical equipment before servicing.
- Do not attempt to service electrical equipment if there is standing water present. Do not service electrical equipment in a high-humidity environment.
- Use tools with insulated handles when working with electrical equipment.
- Do not attempt to service a moving piece of equipment. Shut off the equipment and lock out power. Secure equipment to prevent uncontrolled movement.
- Relieve air pressures before servicing equipment. Follow the specific instructions in this manual.
- Make sure that the room where you are working is sufficiently ventilated.
- If a “power on” test is required, perform the test carefully and then shut off and lock out power as soon as the test is over.
- Connect all disconnected equipment ground cables and wires after servicing the equipment. Ground all conductive equipment.
- Service lines connected to panel disconnect switches may still be energized unless they are disconnected. Make sure the power is off before servicing. Wait 5 minutes for capacitors to discharge after shutting off the electrical power.
- Turn off the electrostatic power supply and ground the gun electrode before adjusting or cleaning.
- Keep high-voltage connection points clean and insulated with dielectric grease or oil.
- Check all ground connections periodically with a standard ohmmeter. Resistance to ground must not exceed one megohm. If arcing occurs, shut down the system immediately.

Maintenance and Repair (contd.)

- Check interlock systems periodically to ensure their effectiveness.

WARNING: Operating faulty electrostatic equipment is hazardous and can cause electrocution, fire, or explosion. Make resistance checks part of your periodic maintenance program.

- Do not store flammable materials in the spray area or room. Keep containers of flammable materials far enough away from spray booths to prevent their inclusion in a booth fire. If a fire or explosion occurs, flammable materials in the area will increase the chances and the extent of personal injuries and property damage.

- Practice good housekeeping procedures. Do not allow dust or powder coatings to accumulate in the spray area or booth or on electrical equipment. Read this information carefully and follow instructions.

Disposal

Dispose of equipment and materials used in operation and cleaning according to your local regulations.

2. Description

This manual covers description, repair, and parts lists for the Tribomatic Powder Disc. Refer to the Tribomatic Powder Disc Operator's Card for operation, maintenance, and troubleshooting procedures.

The disc is used in omega-loop powder coating systems and other applications, such as drum coating. Figure 1 shows a typical omega-loop system. The disc (1) is mounted vertically on a reciprocator (6), in the center of the spray booth (3). The conveyor (2) moves the parts around the disc while the reciprocator moves the disc up and down.

One or more powder pumps (8) supply powder from a feed hopper (9) to the disc through feed hoses (7). The disc electrostatically charges and sprays the powder in a 360 pattern. An exhaust fan (5) pulls spray room air into the booth and through the cartridge filters (4). The powder overspray collects on the external surfaces of the cartridge filters and can be reclaimed and reused or discarded.

Controls for the disc (10) and the reciprocator and conveyor (11) are usually housed in an equipment rack.

2. Description (contd.)

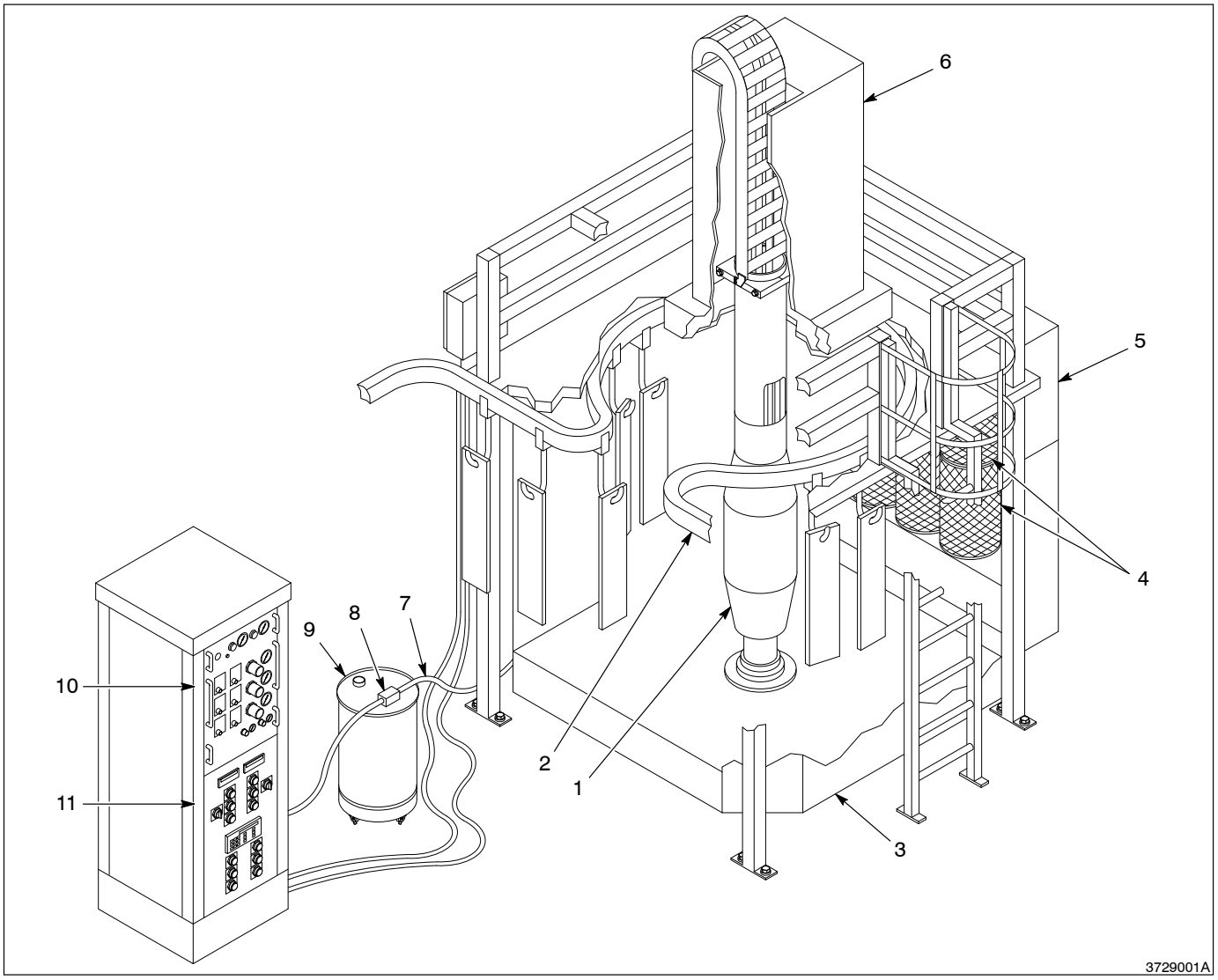

Fig. 1 Typical Tribomatic Disc system

1. Disc
2. Omega-loop conveyor
3. Booth
4. Cartridge filters
5. Exhaust fan
6. Reciprocator
7. Feed hose
8. Powder pump
9. Feed hopper
10. Disc controls
11. Reciprocator/conveyor controls

Disc Mounting

See Figure 2.

The disc mount (1) supports the disc assembly and provides a protected pathway for the powder feed hose(s) (2), air tubing (3), and ground cable (4). The standard mount is 1708-mm (67-in.) long. An optional extension can be ordered in the length desired.

The powder feed hose(s), air tubing, and ground cable can be routed through an optional jointed track (5). The track is fastened to the top of the disc mount and passes through the top of the reciprocator (6).

The support assembly (7), charge module holder (8), and lower tube assembly (9) are components of the disc assembly. They support the rest of the disc assembly components. The support assembly flange attaches to the disc mount flange. A two-part cover (10) protects the disc components.

Disc Mounting *(contd.)*

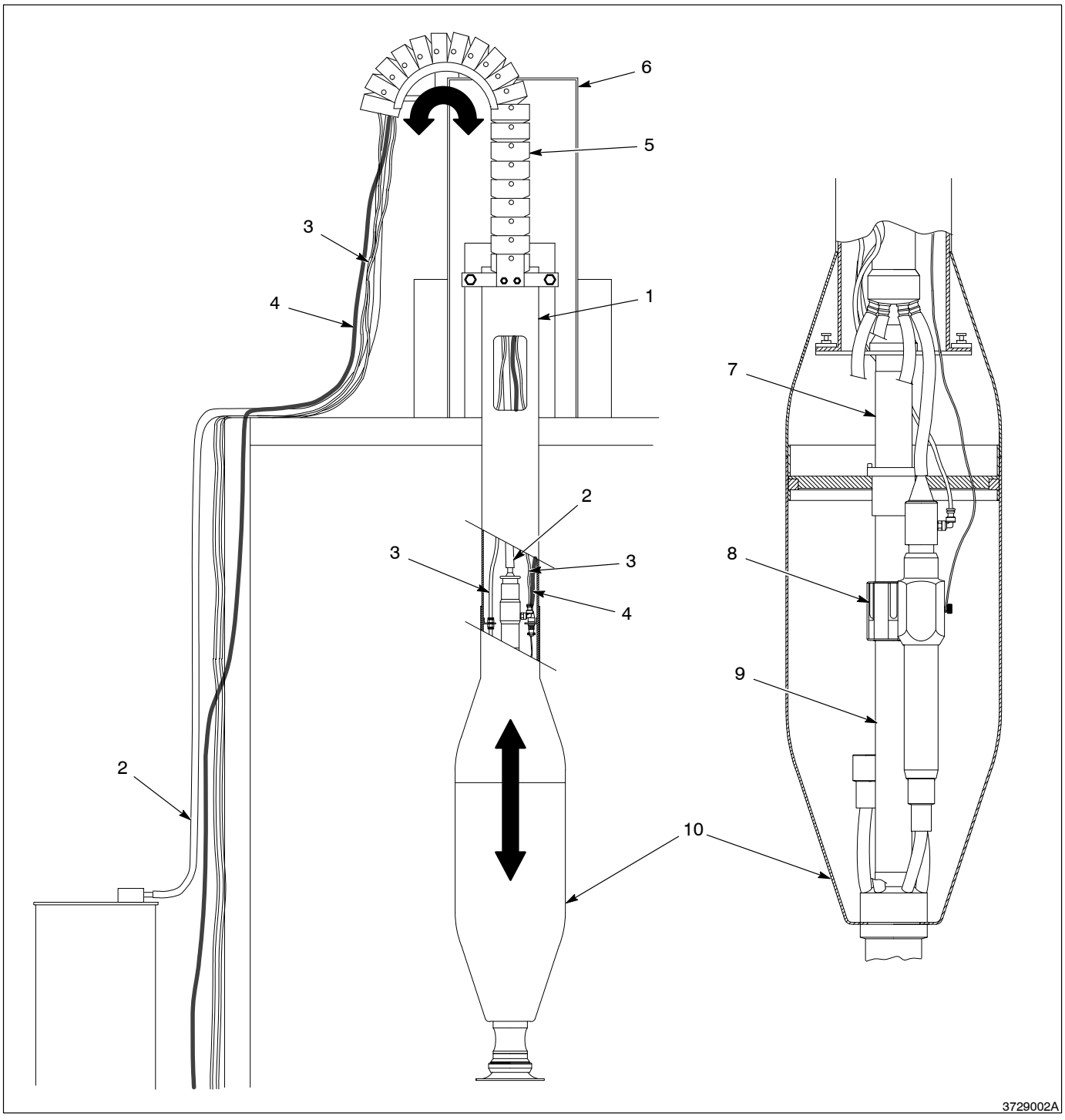

Fig. 2 Disc mounting

1. Disc mount
2. Feed hose
3. Air tubing
4. Ground cable
5. Track
6. Reciprocator
7. Support assembly
8. Charge module holder
9. Lower tube assembly
10. Cover

Disc Operation

See Figure 3. Compressed air conveys the powder from a powder pump to the booster diffuser (1). The booster diffuser evenly distributes the powder particles in the air flow and increases their velocity. The distributor (2) then divides the powder flow into separate streams that flow through tubing (3) into the charge module diffusers (5).

The charge module diffusers add more air to the powder flow to separate the powder particles and increase their velocity. As the powder particles flow through the charge modules (6), they become electrostatically charged.

NOTE: Powder discs are available in four configurations:

- with 3 or 6 charge modules, with booster diffuser
- with 3 or 6 charge modules, without booster diffuser

When the application requires high volumes of powder, discs without a booster diffuser are used. Multiple powder pumps and separate feed hoses then deliver the powder directly to the charge module diffusers.

The powder flows from the charge modules through tube assemblies (7) into the sprayhead (8). The powder flows through a restrictor inside the sprayhead and exits through a series of small holes around the circumference. The optional deflector (9) directs the powder cloud toward the parts. Deflectors are available in different sizes and shapes.

The ground wires (4) connect the charge modules to the disc controls. A charge meter displays the charge generated by each charge module. The charge varies, depending on the type of powder, the volume of powder, and its velocity. The higher the velocity or volume, the greater the charge.

Disc Operation *(contd.)*

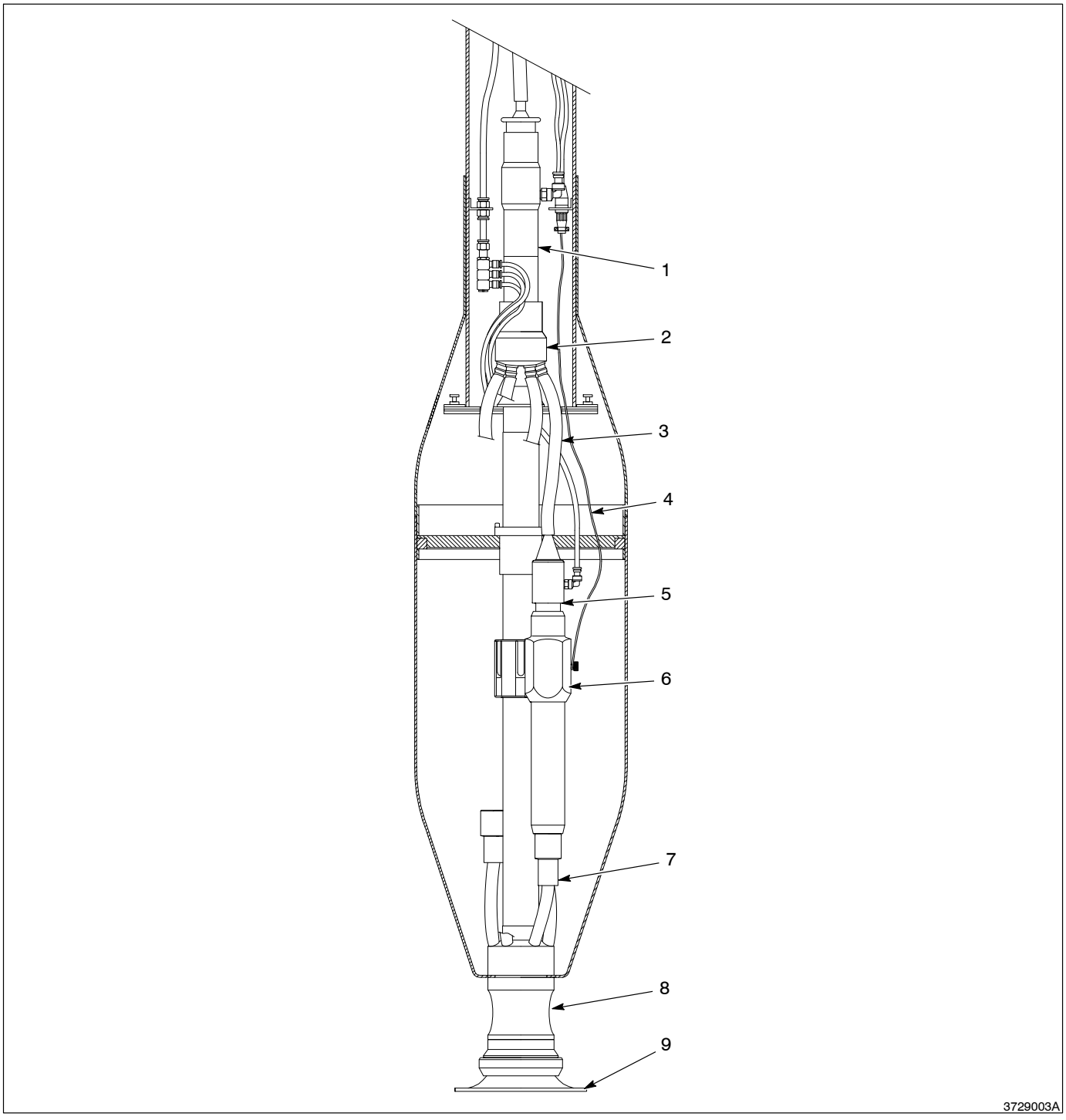

Fig. 3 Disc components

1. Booster diffuser
2. Distributor
3. Tubing
4. Ground wires
5. Charge module diffusers
6. Charge modules
7. Tube assemblies
8. Sprayhead
9. Deflector

Specifications

Maximum air supply pressure:	6 bar (87 psi), with 1 bar (14.5 psi) pressure drop
Required air consumption	4000 liters/min (141.25 cfm)
Power requirements: (controls)	100/115/200/220/240 volts 50/60 Hz 90 watts

3. Repair

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

Introduction

This section covers repair procedures for the

- sprayhead
- booster diffuser and distributor
- charge modules
- charge module diffusers

WARNING: Before performing any of the tasks in this section, shut off the reciprocator and allow it to come to a complete stop. Disconnect and lock out system electrical power. Shut off the compressed air supply to the disc and relieve the air pressure.

Removing the Disc Assembly from the Mount

Use this procedure for quick color changes or when making extensive repairs. You can clean the disc assembly and make minor repairs without removing it from the mount.

1. See Figure 4. Slide the top half of the cover (1) up the disc mount (9) and secure it out of the way.
2. Reach through the slots in the disc mount tube and pull the booster diffuser out of the distributor (5).

   NOTE: If not using the booster diffuser and distributor, disconnect the feed hoses from the charge module diffusers.
3. Disconnect the ground cable connector (3). Disconnect the air tubing (7) from the disc mount (8) fitting.

Removing the Disc Assembly from the Mount *(contd.)*

4. Loosen the locking pin (10).

5. Hold onto the support assembly flange (11). Rotate the locking ring (13) counterclockwise until the mounting pins (14) line up with the holes in the locking ring and disc mount flange (12).

6. Lower the disc assembly until the mounting pins are free of the locking ring and disc mount flange. Remove the disc assembly from the spray booth, being careful not to damage the deflector.

7. If changing colors, blow out the powder feed hose and booster diffuser with compressed air, or replace them.

Removing the Disc Assembly from the Mount *(contd.)*

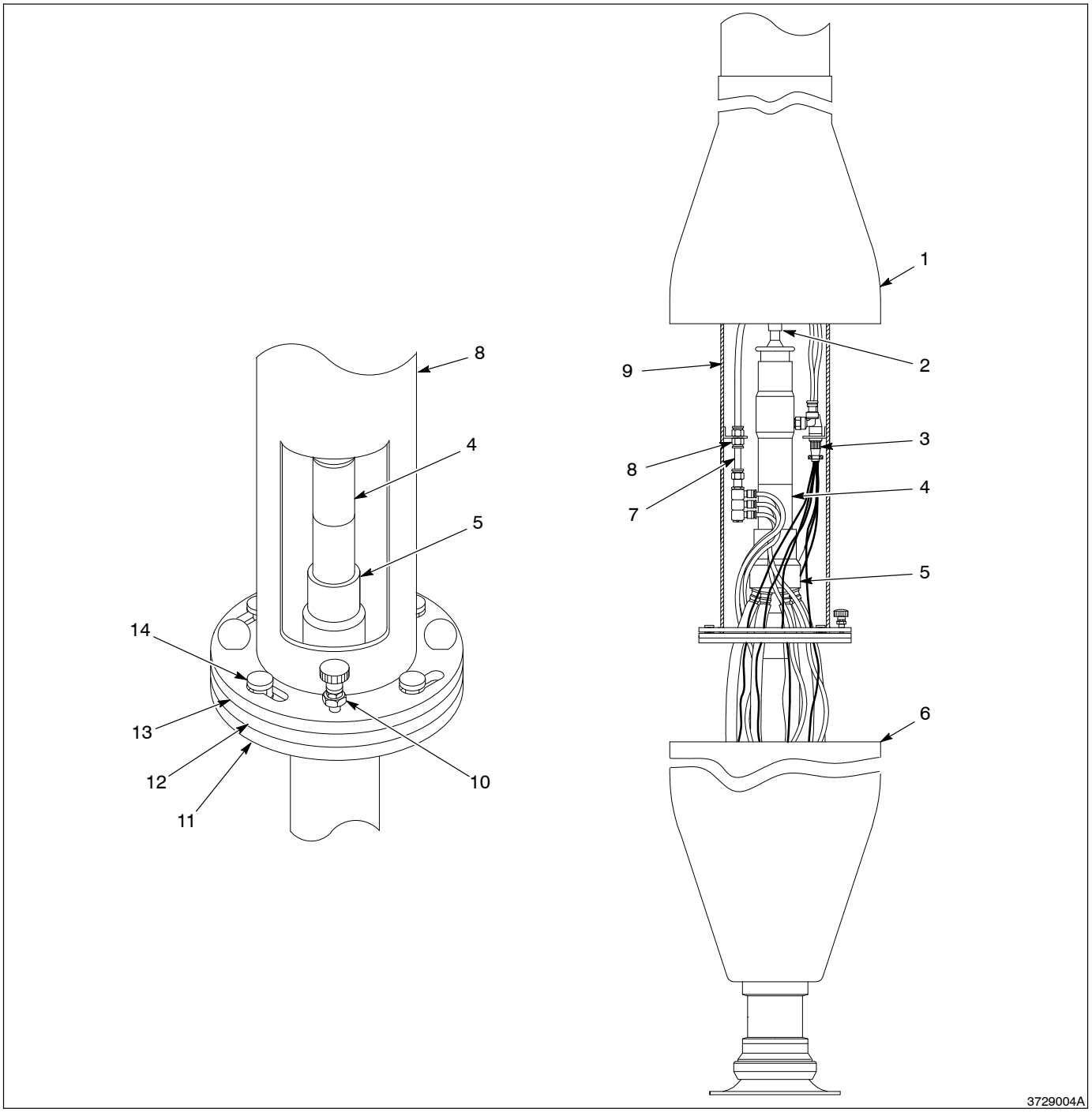

Fig. 4 Removing the disc assembly from the disc mount

1. Cover (top half)
2. Feed hose
3. Ground cable connector
4. Booster diffuser
5. Distributor
6. Cover (bottom half)
7. Air tubing
8. Disc mount fitting
9. Disc mount
10. Locking pin
11. Support flange
12. Disc mount flange
13. Locking ring
14. Mounting pins

Sprayhead Repair

1. See Figure 5. Remove the screws (18) and deflector (17).
2. Slide the ring (16) off the sprayhead (13).
3. Unscrew the sprayhead from the distributor (11).
4. Remove the screw (15), cone (11), and O-rings (14) from the sprayhead. Remove the O-ring (12) from the cone and the O-ring (10) from the distributor.
5. Unscrew the distributor from the tube holder (4).
6. Remove the bottom half of the cover (see Fig. 4, (6)).
7. Remove the restrictor (6) and O-ring (8) from the distributor.
8. Remove the O-rings (7) from the restrictor.
9. Disconnect the tube assemblies (3) from the charge modules. You may have to slide the charge modules up and out of their mounting slots to do this.
10. Unscrew the tube holder (4) from the lower tube assembly (1). Remove the screw (2) and rear cone (5) from the tube holder.
11. Clean all parts thoroughly with low-pressure compressed air and a clean cloth. Replace any worn parts and damaged O-rings before reassembly.

    NOTE: Do not remove the tube assemblies from the tube holder unless they are damaged. When cleaning the sprayhead parts, do not scratch the powder contact surfaces. Powder particles will build up in scratches and fuse together on impact, clogging the sprayhead.

Sprayhead Repair *(contd.)*

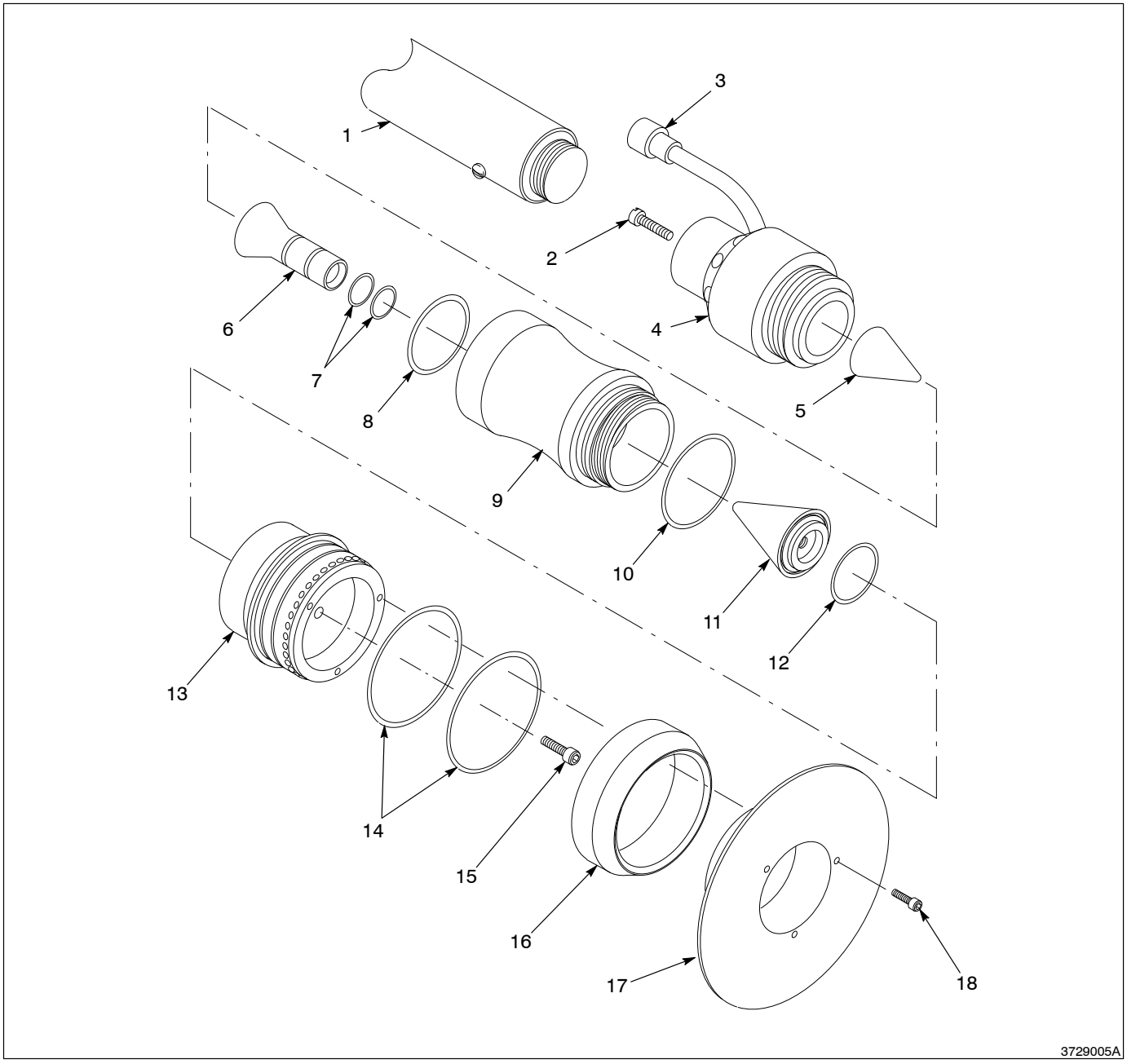

Fig. 5 Sprayhead repair

1. Lower tube assembly
2. Screw
3. Tube assemblies
4. Tube holder
5. Rear cone
6. Restrictor
7. O-rings
8. O-ring
9. Distributor
10. O-ring
11. Cone
12. O-ring
13. Sprayhead
14. O-rings
15. Screw
16. Ring
17. Deflector
18. Screws

Booster Diffuser and Distributor Repair

1. See Figure 6. Remove the diffuser (items 1 through 6) from the distributor (8).
2. Disassemble the diffuser. The O-rings (2) hold the diffuser together.
3. Disconnect the tubing (10) from the distributor.
4. Unscrew the distributor from the support assembly (11). Remove the cone (7).

   NOTE: Remove the tubing connectors (9) from the distributor only if they are damaged.

5. Clean the diffuser and distributor parts with a low-pressure compressed air and a clean cloth. Do not scratch the powder contact surfaces.
6. Inspect and replace any worn or damaged parts before reassembly.

Booster Diffuser and Distributor Repair *(contd.)*

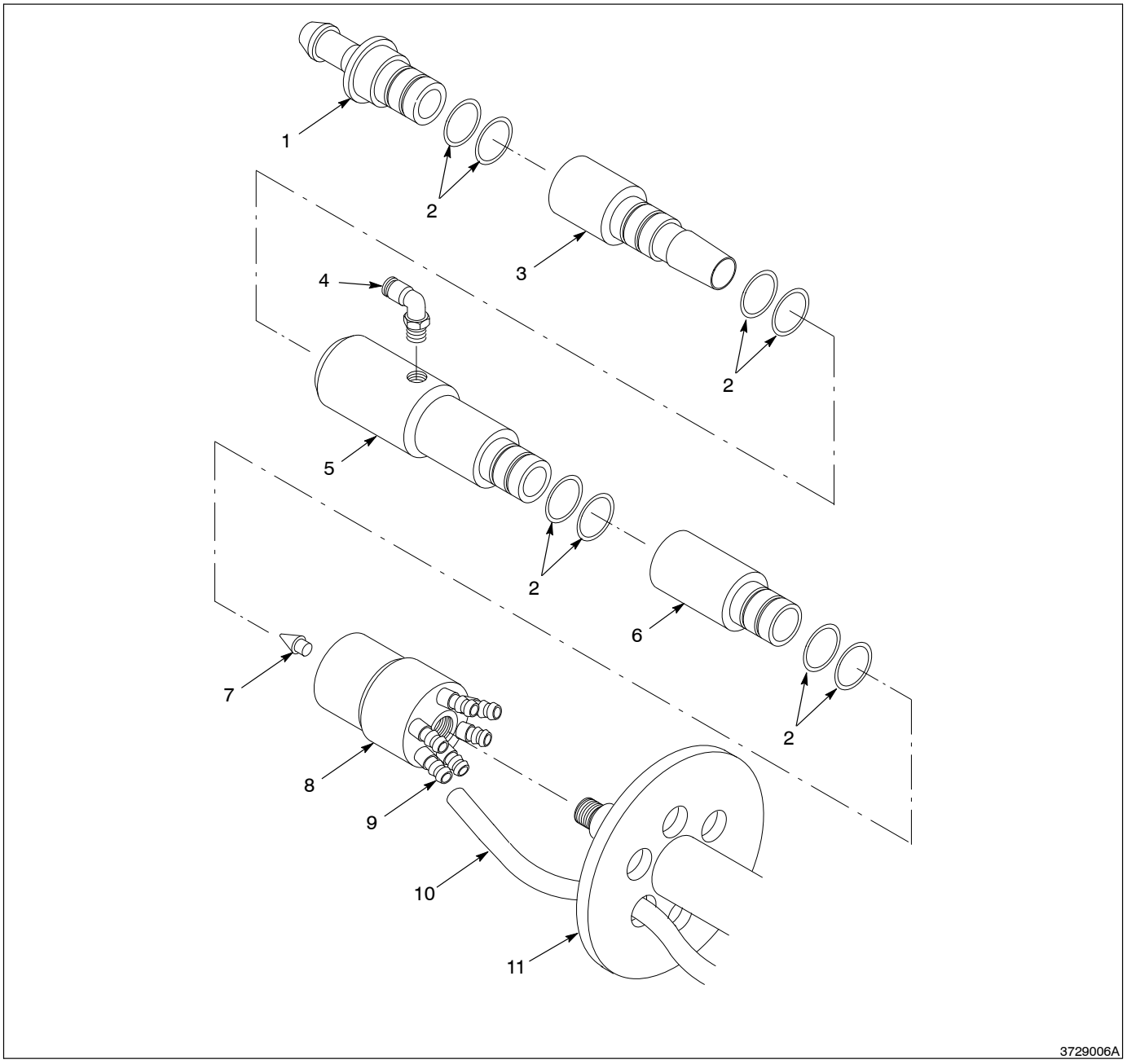

Fig. 6 Booster diffuser/distributor repair

1. Tube connector
2. O-rings
3. Pump
4. Elbow fitting
5. Housing
6. Spacer
7. Cone
8. Distributor
9. Connectors
10. Tubing
11. Support assembly

Charge Module Removal and Repair

This procedure covers removal of the charge modules from the disc assembly and installation of the charge module service kit and inner/outer wear sleeve service kit.

Removal

1. Perform steps 1, 2, 3, 5, and 6 of the *Sprayhead Removal and Disassembly* procedure to remove the bottom half of the cover and access the charge modules.

2. See Figure 7. Disconnect

   - the ground wires (2) from the ground studs (6)
   - the air tubing (3) from the diffuser fittings (4)
   - the feed tubing (1) from the diffusers (5)

3. Lift the charge modules (7) up and disconnect the tube assemblies (8) from the ends of the charge modules.

4. Remove the diffusers from the charge modules.

5. Slide the charge modules up and out of the slots in the holder (9).

Charge Module Removal and Repair (contd.)

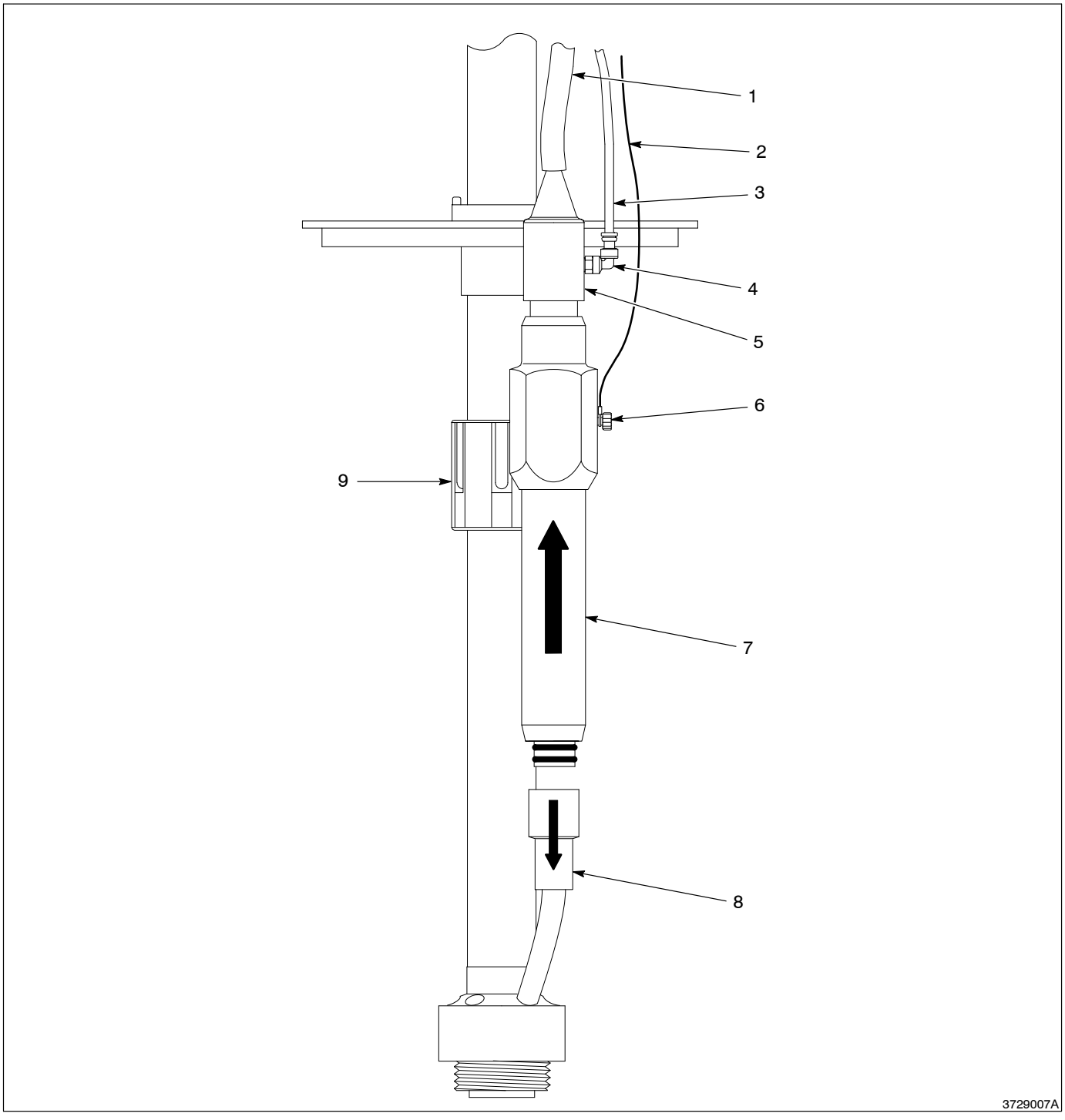

Fig. 7 Removing the charge modules

1. Feed tubing
2. Ground wires
3. Air tubing
4. Diffuser fittings
5. Diffusers
6. Ground studs
7. Charge modules
8. Tube assemblies
9. Holder

Charge Module Removal and Repair *(contd.)*

Figure 8 is a cutaway drawing that shows how the components of the charge module fit together. Use this drawing along with the kit installation procedures to repair the charge module.

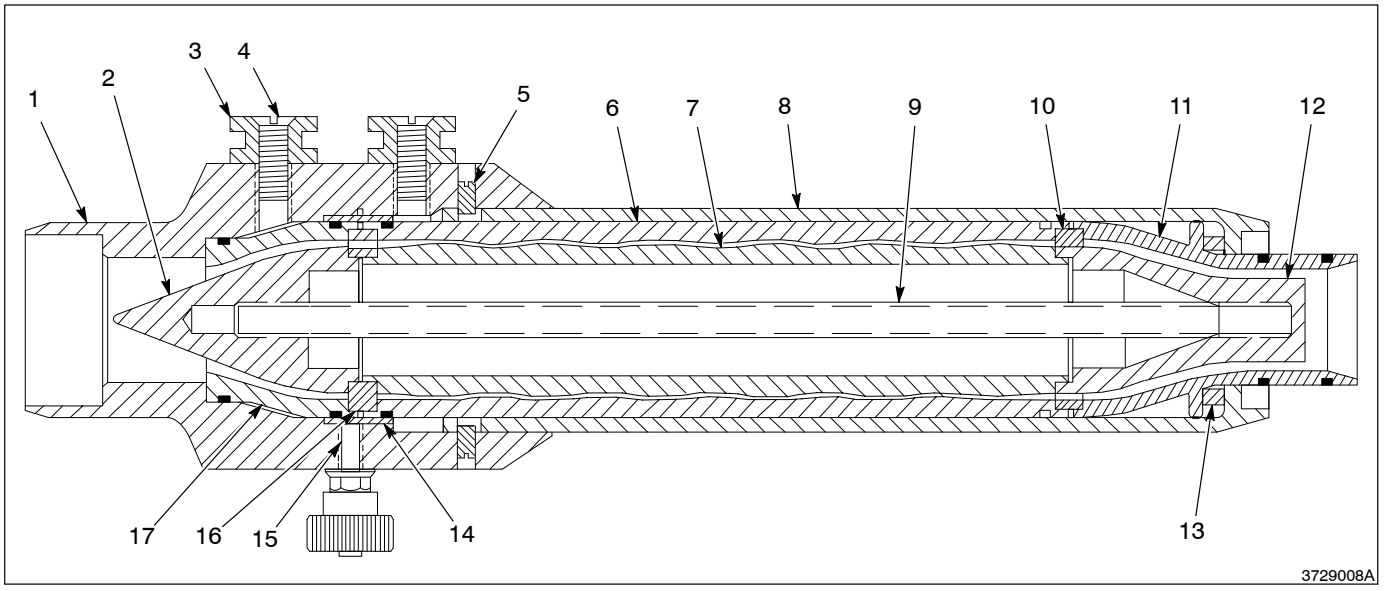

Fig. 8 Charge module cutaway

1. Body
2. Inlet distributor
3. Studs
4. Screws
5. Body pins
6. Outer wear sleeve
7. Inner wear sleeve
8. Extension
9. Threaded rod
10. Spacing ring
11. Outlet wear sleeve
12. Outlet distributor
13. Spring
14. Grounding ring
15. Ground stud
16. Positioning ring
17. Inlet wear sleeve

Charge Module Service Kit Installation

1. See Figure 9. Push the extension (4) toward the body (1) and twist it counterclockwise to release it from the body pins (2).

2. Pull the extension out of the body, and slide it off the inner/outer wear sleeve assembly (3). The outlet wear sleeve assembly (5) will remain inside the extension.

3. Pull the inner/outer wear sleeve assembly from the body.

   NOTE: The body pins are replaceable. If you break or bend them, unscrew them from the body and install new ones.

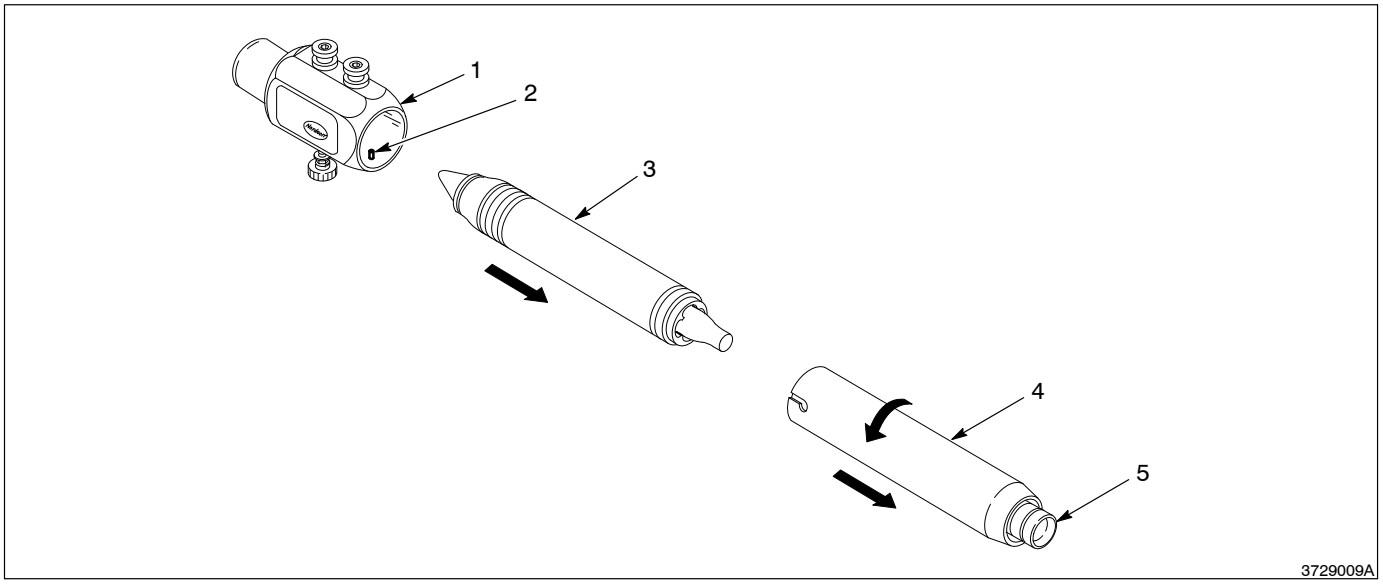

Fig. 9 Charge module service kit installation; steps 1–3

1. Body
2. Body pins
3. Inner/outer wear sleeve assembly
4. Extension
5. Outlet wear sleeve assembly

Charge Module Service Kit Installation (contd.)

4. See Figure 10. Push the inlet wear sleeve assembly (1) out of the body (3) with a wooden dowel or piece of $^3/_4$-in. OD schedule 40 PVC pipe.

5. Remove the outlet wear sleeve assembly (2) from the extension (4). Clean the body and extension with low-pressure compressed air and a clean cloth.

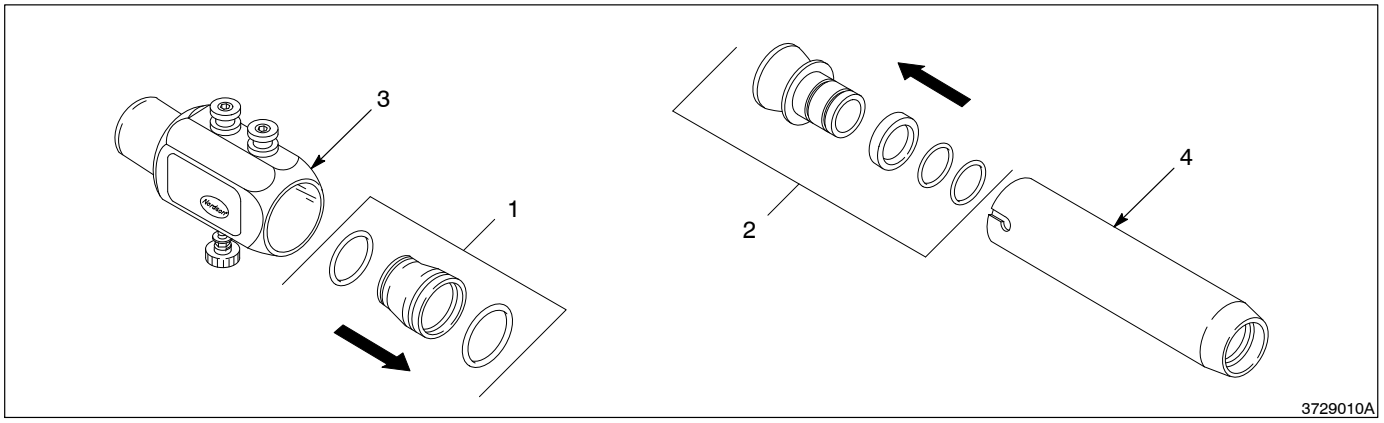

Fig. 10 Charge module service kit installation; steps 4 and 5

1. Inlet wear sleeve assembly
2. Outlet wear sleeve assembly
3. Body
4. Extension

6. See Figure 11. Remove the inlet wear sleeve assembly (2) from the inner/outer wear sleeve assembly (3) and install it in the body (1).

7. Remove the outlet wear sleeve assembly (4) from the inner/outer wear sleeve assembly and install it in the extension (5).

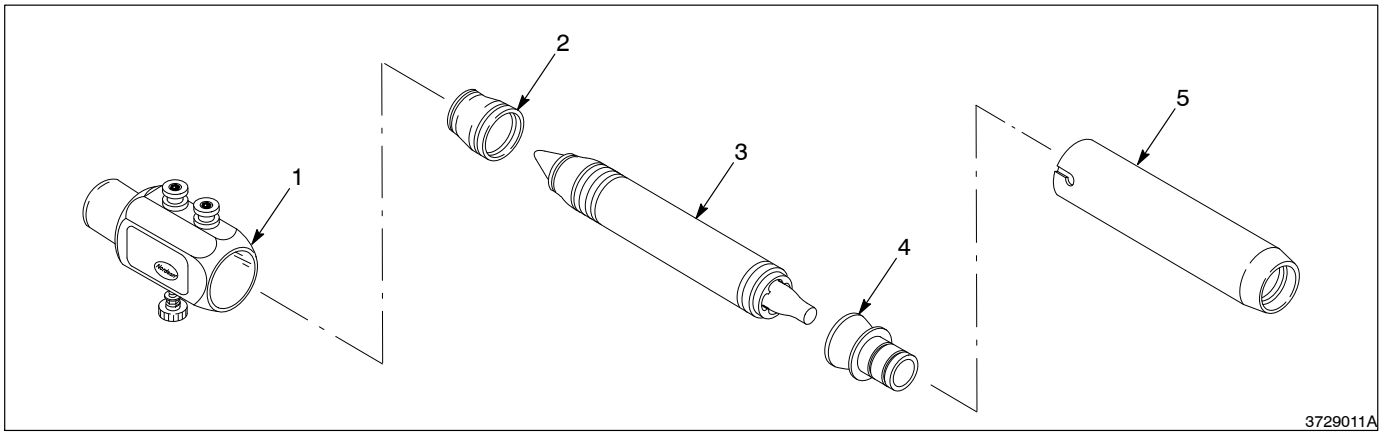

Fig. 11 Charge module service kit installation; steps 6 and 7

1. Body
2. Inlet wear sleeve assembly
3. Inner/outer wear sleeve assembly
4. Outlet wear sleeve assembly
5. Extension

Charge Module Service Kit Installation (contd.)

8. See Figure 12. Insert the inner/outer wear sleeve assembly (2) into the body (1). Make sure the positioning ring (3) fits into the groove in the ID of the inlet wear sleeve (see Fig. 11, (2)).

9. Make sure the spacing ring (4) is in place on the end of the outer wear sleeve assembly. Slide the extension (5) over the inner/outer wear sleeve assembly.

10. Engage the extension slots with the body pins. Push the extension into the body and rotate it clockwise to lock it in place.

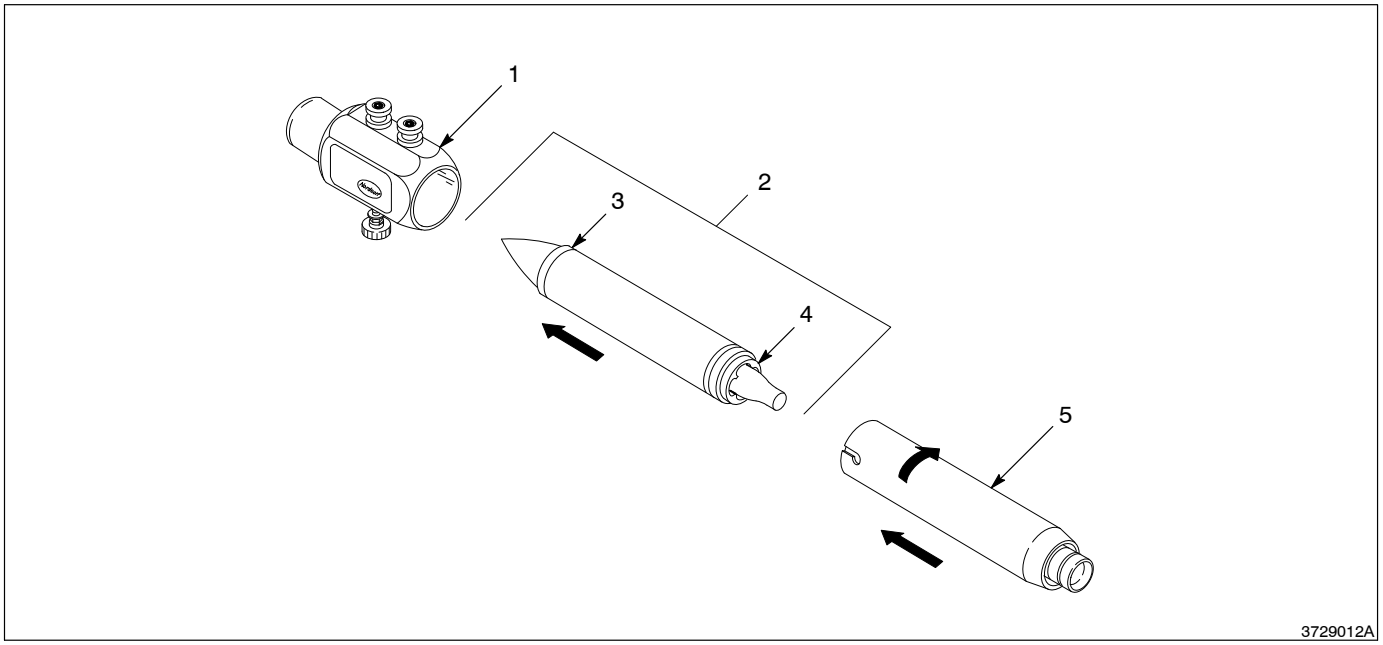

Fig. 12 Charge module service kit installation; steps 8–10

1. Body
2. Inner/outer wear sleeve assembly
3. Positioning ring
4. Spacing ring
5. Extension

11. To reinstall the charge module on the disc assembly, perform the *Removal* procedure in reverse.

Inner/Outer Wear Sleeve Service Kit Installation

1. Perform steps 1, 2, and 3 of the *Charge Module Service Kit Installation* procedure.

2. See Figure 13. Separate the outer wear sleeve (3) and inner wear sleeve (1) by holding the outer wear sleeve in your hand and pushing on the outlet distributor (2). Discard the outer wear sleeve and spacing ring (4).

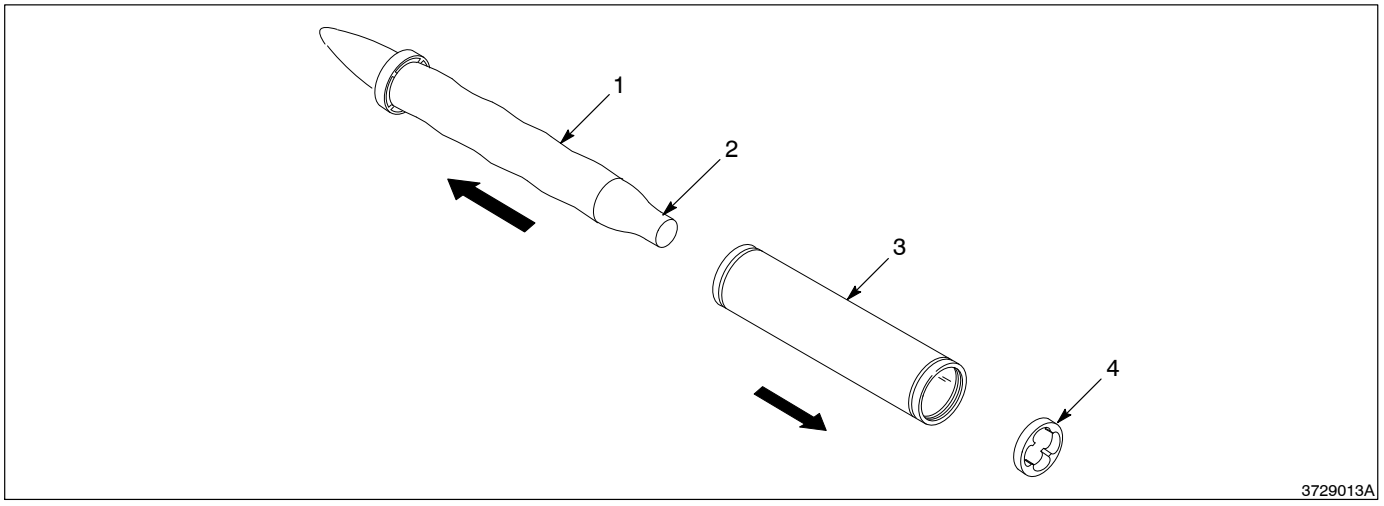

Fig. 13 Inner/outer wear sleeve service kit installation; step 2

1. Inner wear sleeve
2. Outlet distributor
3. Outer wear sleeve
4. Spacing ring

3. See Figure 14. Unscrew the inlet distributor (1) or outlet distributor (5) from the threaded rod (2).

4. Remove the distributors and threaded rod from the inner wear sleeve (4). Discard the inner wear sleeve and positioning ring (3).

5. Slide the new positioning ring onto one end of the new inner wear sleeve.

   NOTE: The spacing and positioning rings, as well as the inner and outer wear sleeves, are reversible.

6. Screw the inlet distributor onto one end of the threaded rod. Insert the threaded rod into the positioning ring end of the inner wear sleeve.

7. Screw the outlet distributor onto the threaded rod and tighten it securely by hand.

Inner/Outer Wear Sleeve Service Kit Installation (contd.)

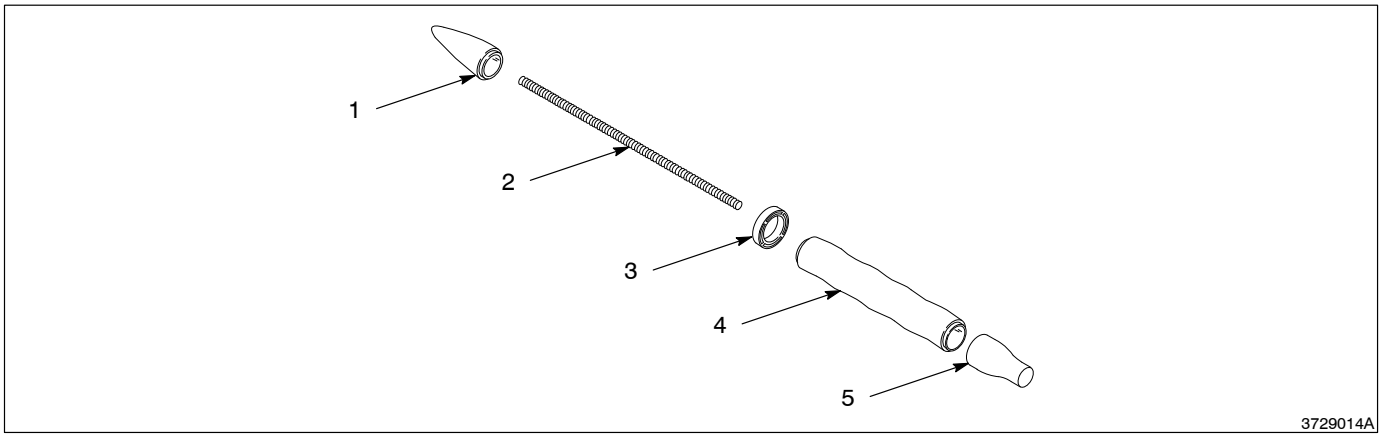

Fig. 14 Inner/outer wear sleeve service kit installation; steps 3–7

1. Inlet distributor
2. Threaded rod
3. Positioning ring
4. Inner wear sleeve
5. Outlet distributor

8. See Figure 15. Slide the outer wear sleeve (4) over the inner wear sleeve assembly (1) constructed in step 6 until the positioning ring (2) seats into the outer wear sleeve.

   NOTE: The O-ring (3) must be positioned as shown in Figure 15.

9. Install the new spacing ring (5) over the inner wear sleeve assembly. Seat the spacing ring in the end of the outer wear sleeve.

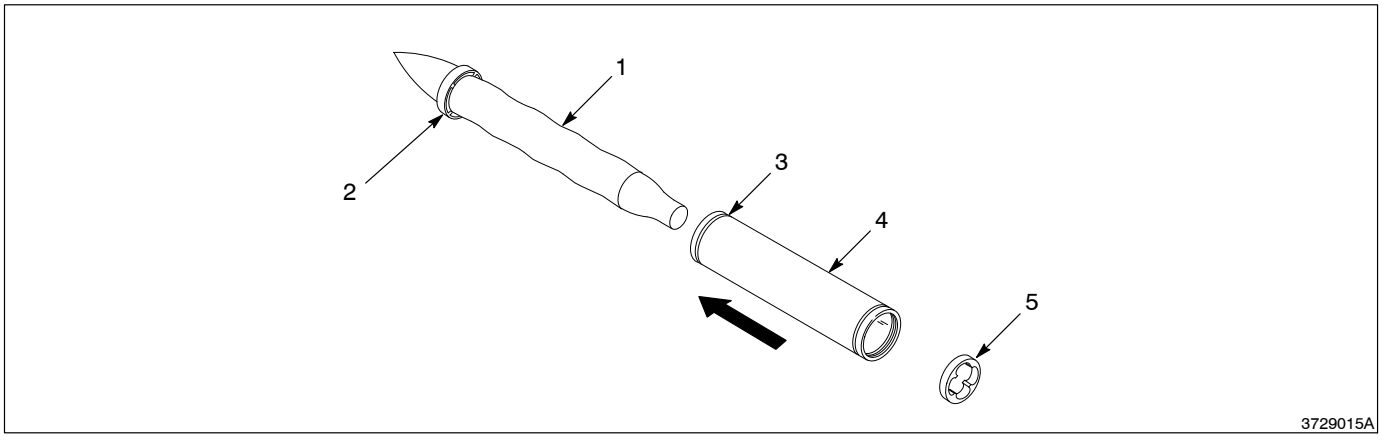

Fig. 15 Inner/outer wear sleeve service kit installation; steps 8 and 9

1. Inner wear sleeve
2. Positioning ring
3. O-ring
4. Outer wear sleeve
5. Spacing ring

10. Perform steps 8, 9, and 10 of the *Charge Module Service Kit Installation* procedure.

Charge Module Diffuser Repair

1. See Figure 16. Unscrew the chargetube connector (6) from the housing (1).
2. Remove the distributor flange assembly (4, 5) and filter (3).
3. Unscrew the flow distributor (4) from the distributor flange (5) and the fitting (2) from the housing. Remove the O-rings (7) from the chargetube connector.
4. Clean the parts with low-pressure compressed air and a clean cloth. Do not scratch the powder contact surfaces.
5. Inspect and replace any worn or damaged parts before reassembly.

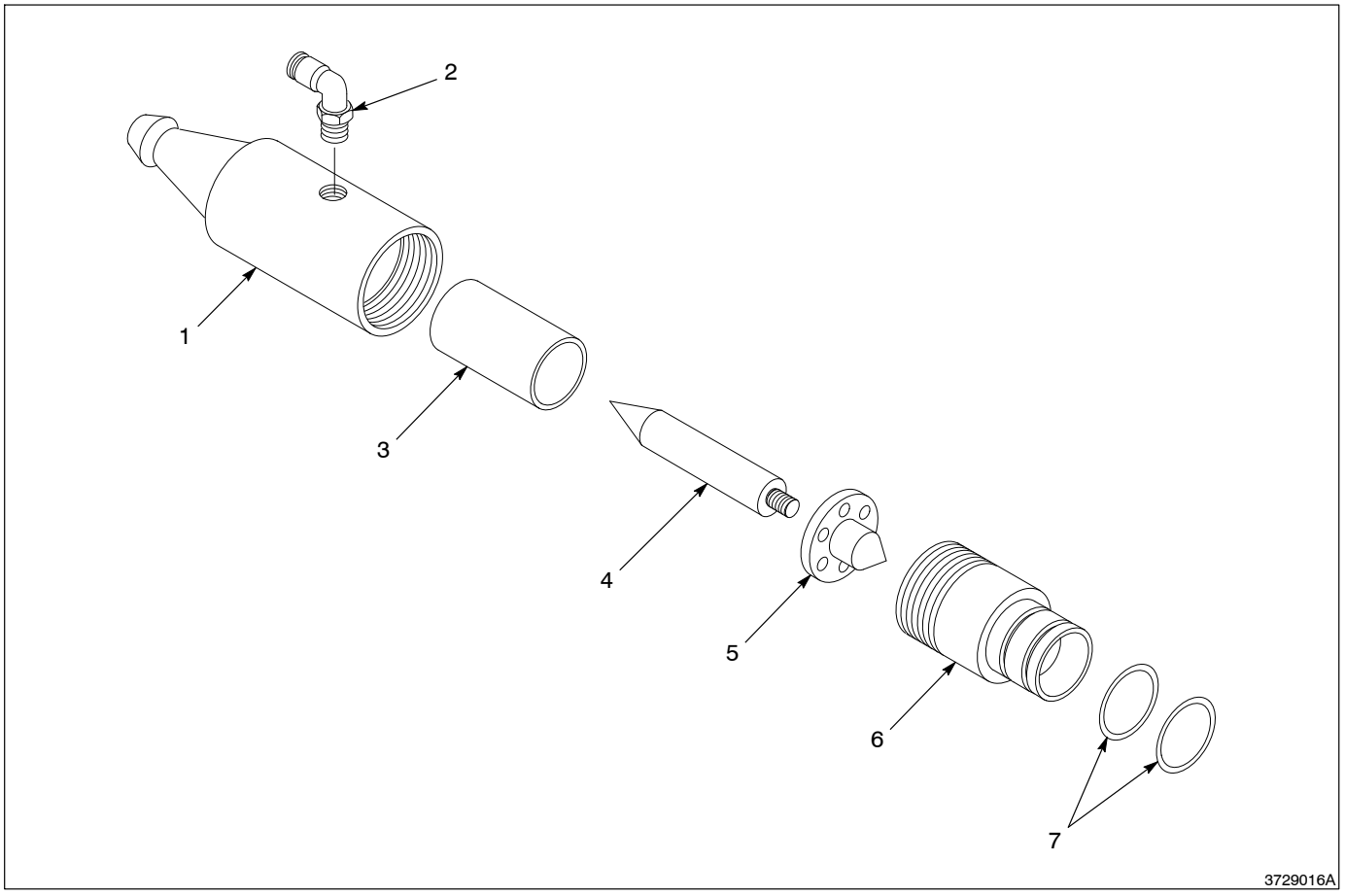

Fig. 16 Charge module diffuser repair

1. Housing
2. Fitting
3. Filter
4. Flow distributor
5. Distributor flange
6. Chargetube connector
7. O-rings

4. Parts

To order parts, call the Nordson Customer Service Center or your local Nordson representative. Use this five-column parts list, and the accompanying illustration, to describe and locate parts correctly.

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 six-digit 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.

Item	Part	Description	Quantity	Note
—	000 000	Assembly	1	
1	000 000	• Subassembly	2	A
2	000 000	• • Part	1	

- 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.

Recommended Spare Parts To minimize downtime, keep the following spare parts on hand.

Part	Description	Quantity	Note
237 995	O-ring, 35.1 mm dia x 1.6 mm thick	2	
945 128	O-ring, 55 mm dia x 1.6 mm thick	1	
237 994	O-ring, 85 mm dia x 2 mm thick	1	
638 293	Cone	1	
945 130	O-ring, 60.5 mm dia x 1.6 mm thick	1	
237 993	O-ring, 98.5 mm dia x 1.78 mm thick	2	
- - - - - -	Restrictor	1	A
- - - - - -	Deflector	1	A
630 025	O-ring, pump, diffuser	AR	B
634 543	Filter, diffuser	AR	C
238 494	Service kit, charge module	AR	
631 208	Service kit, inner/outer wear sleeve	AR	

NOTE A: See *Optional Equipment* list. For other options, contact your Nordson representative.
B: Used on booster diffuser and charge module diffuser. Order quantity required.
C: One per charge module diffuser. Order quantity required.
AR: As Required

Optional Equipment

For options not listed here, contact your Nordson representative.

Part	Description	Note
638 291	Deflector, 201 mm dia	A
638 799	Restrictor, 24 mm dia	
638 797	Restrictor, 18 mm dia	
630 979	Tubing, air, 12/8 mm, blue (charge module diffuser air)	B
630 980	Tubing, air, 12/8 mm, black (booster diffuser air)	B
638 779	Connector, ground, standard (1150-mm long)	
900 549	Tubing, powder feed, $^{3}/_{8}$ in. ID (black rubber)	C
900 500	Tubing, powder feed, $^{1}/_{2}$ in. ID (black rubber)	C
630 237	Tubing, powder feed, 10 mm (PVC)	B
630 061	Tubing, powder feed, 12 mm (PVC)	B
634 562	Extension, disc mount	B
634 564	Track, tubing	B

NOTE A: Other deflectors available. Contact your Nordson representative for more information.
B: Order length required in one-meter increments.
C: Order length required in one-foot increments.

Disc Assemblies

See Figure 17 to identify parts in this list. Parts lists and illustrations for subassemblies follow in the order they appear in this list.

Item	Part	Description	Quantity	Note
1	634 560	Mount, disc, complete, 1708 mm long	1	A
2	634 554	Diffuser, booster	1	B
3	638 773	Connector, ground, 3-pole	1	C
3	638 776	Connector, ground, 6-pole	1	C
4	634 553	Distributor, 3-module, complete	1	BC
4	634 556	Distributor, 6-module, complete	1	BC
5	638 894	Tube, powder, $^3/_8$ in. ID	AR	C
6	634 540	Diffuser, charge module	AR	C
7	634 593	Module, charge, Tribomatic II, auto, PTFE	AR	C
8	638 794	Tube assembly, module output	AR	C
9	634 580	Sprayhead, complete	1	D
10	634 570	Cover, disc	1	
11	638 793	Tube assembly, lower	1	
12	982 499	Screw, pan head, M6 x12 mm	2	
13	638 814	Holder, charge module	1	
14	638 785	Support assembly	1	
15	638 791	Coupling, air, 3 tube	1	C
15	638 790	Coupling, air, 6 tube	1	C

NOTE A: Optional extension available, refer to *Optional Equipment*.
B: Not used in models without boosters.
C: Order part number or quantity depending on number of charge modules in your assembly.
D: Deflectors are optional, refer to *Optional Equipment*.
AR: As Required

Disc Assemblies *(contd.)*

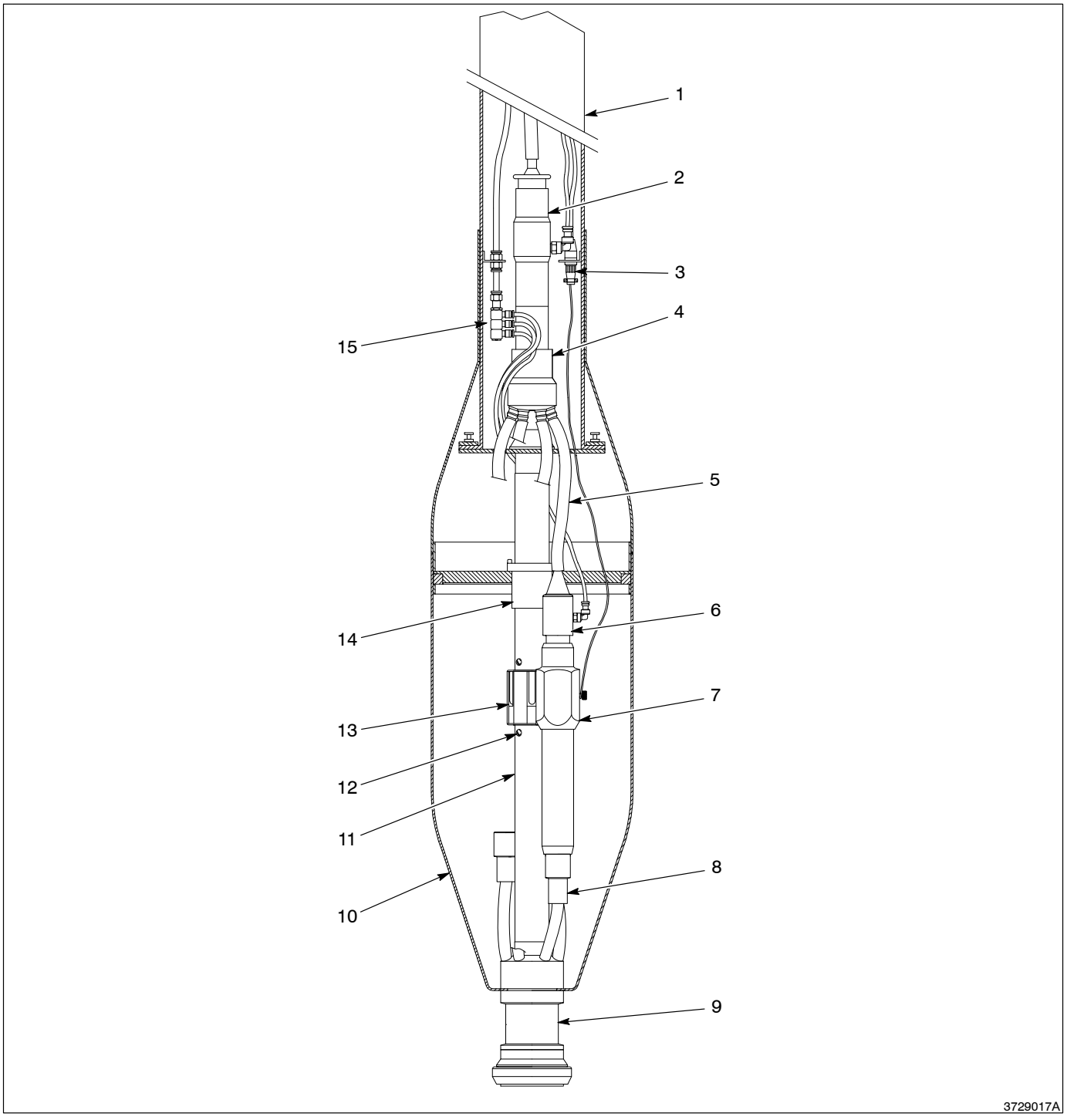

Fig. 17 Disc assemblies

Disc Mount

See Figure 18.

Item	Part	Description	Quantity	Note
—	634 560	Mount, disc, complete, 1708 mm long	1	
1	982 960	• Screw, flathead, M6 x 8 mm	4	
2	638 779	• Connector, ground, standard (15 m long, w/connectors and bracket)	1	
3	634 578	• Ring, locking	1	
4	634 581	• • Pin, spring, locking, M10	1	
5	634 582	• • Handle, ball	2	
6	982 960	• • Screw, flathead, M6 x 8 mm	2	
7	630 985	• Fitting, air, 12 mm tube, internal	1	
8	630 981	• Fitting, air, 12 mm tube, external	1	

Disc Mount *(contd.)*

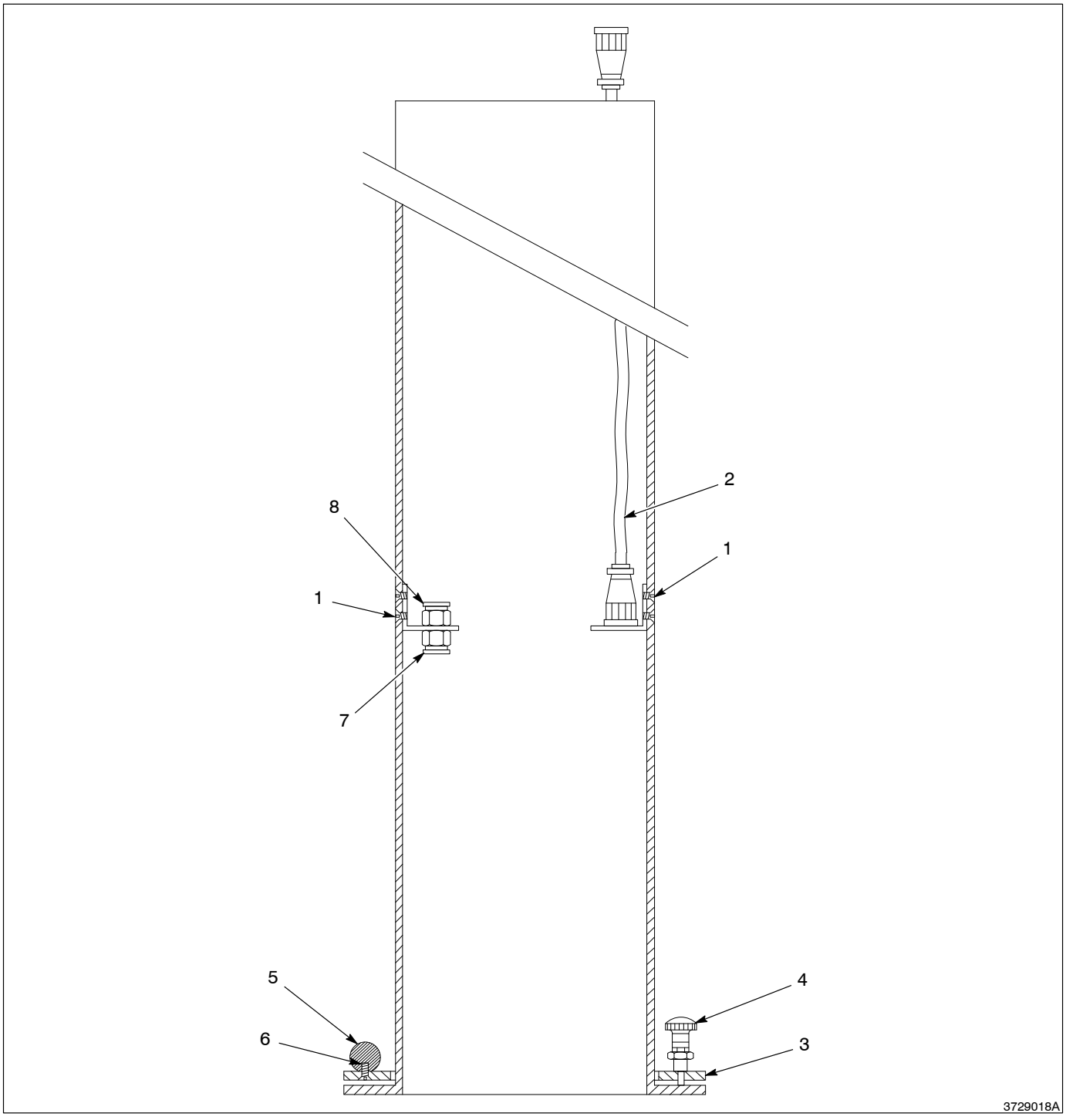

Fig. 18 Disc mount

Booster Diffuser

See Figure 19.

Item	Part	Description	Quantity	Note
—	634 554	Diffuser, booster	1	
1	638 800	• Connector, tube, 12 mm tubing	1	
2	630 025	• O-ring, pump, diffuser	8	
3	638 824	• Pump	1	
4	634 552	• Fitting, air, 12 mm, $^1/_8$ in.	1	
5	638 823	• Housing, diffuser	1	
6	638 822	• Spacer	1	

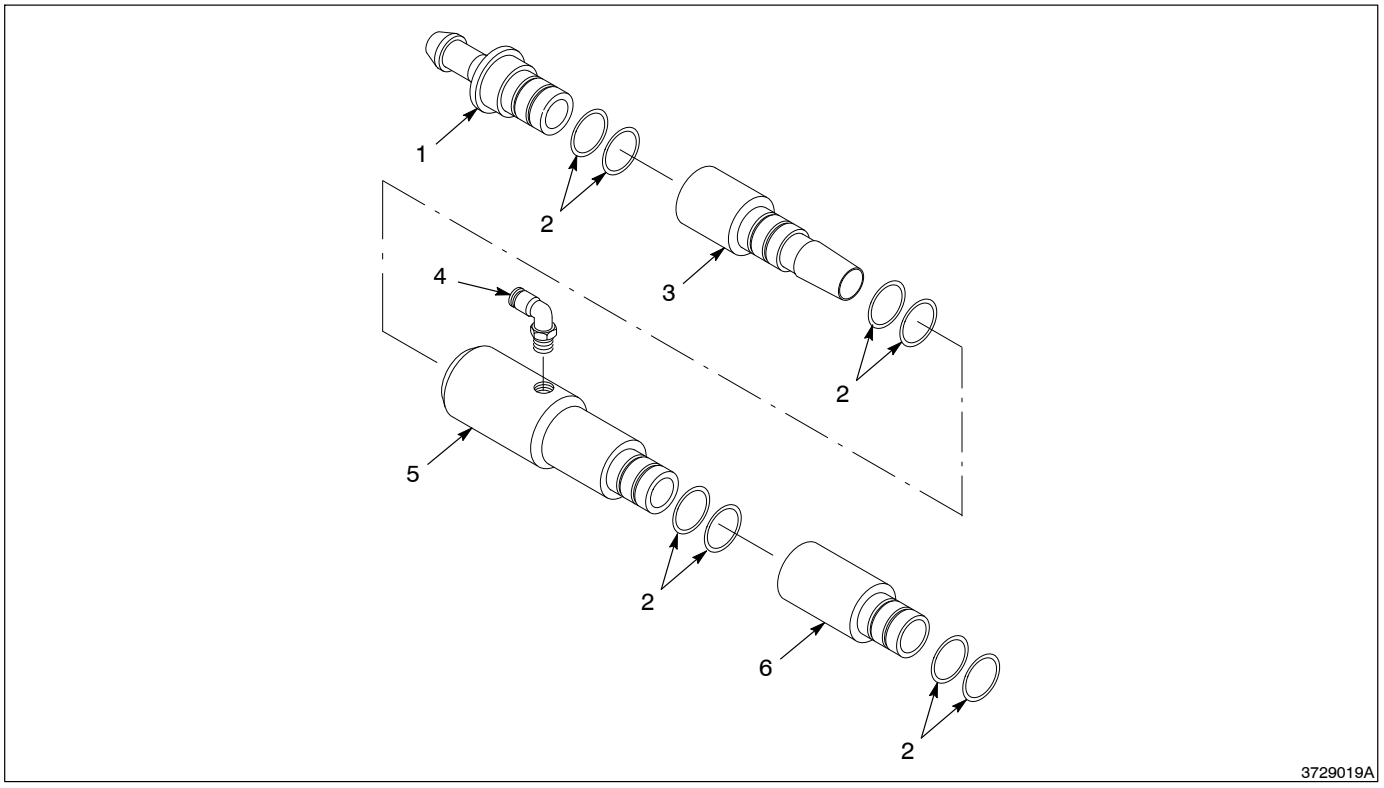

Fig. 19 Booster diffuser

Distributor See Figure 20.

Item	Part	Description	Quantity	Note
—	634 553	Distributor, 3-module, complete	1	A
—	634 556	Distributor, 6-module, complete	1	A
1	634 544	• Cone	1	
2	638 825	• Distributor, 3 holes	1	A
2	638 821	• Distributor, 6 holes	1	A
3	634 545	• Connector, distributor	AR	B

NOTE A: Order part number depending on number of charge modules in your disc assembly.
B: Order quantity depending on number of charge modules in your disc assembly.
AR: As Required

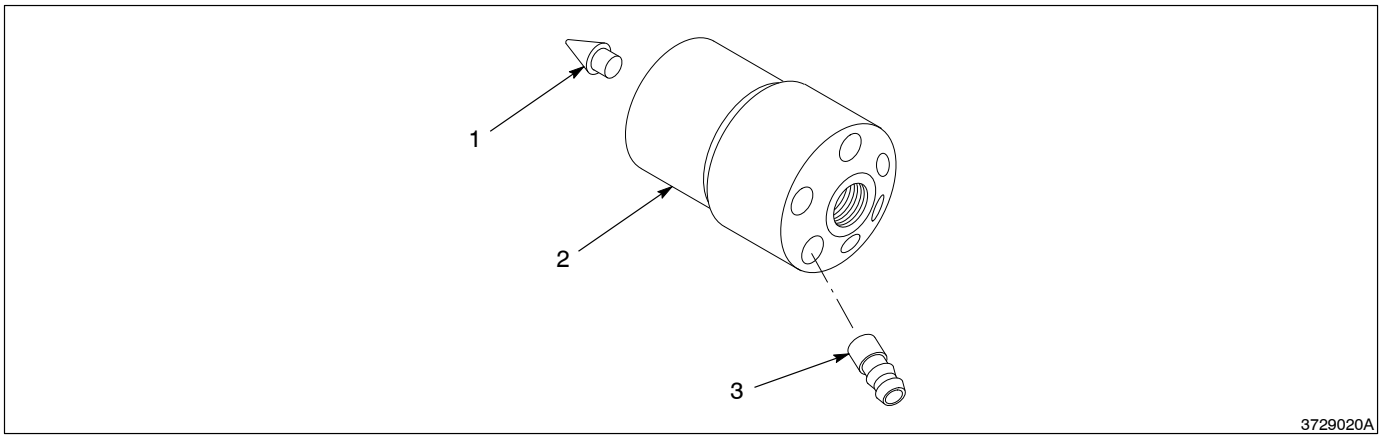

Fig. 20 Distributor

Charge Module Diffuser

See Figure 21.

Item	Part	Description	Quantity	Note
—	634 540	Diffuser, charge module	1	
1	634 541	• Housing, connector, diffuser	1	
2	630 033	• Fitting, air, with divider	1	
3	634 543	• Filter, diffuser	1	
4	634 547	• Distributor, flow, short	1	
5	630 294	• Flange, diffuser	1	
6	634 542	• Connector, chargetube	1	
7	630 025	• O-ring, pump, diffuser	2	

Charge Module Diffuser *(contd.)*

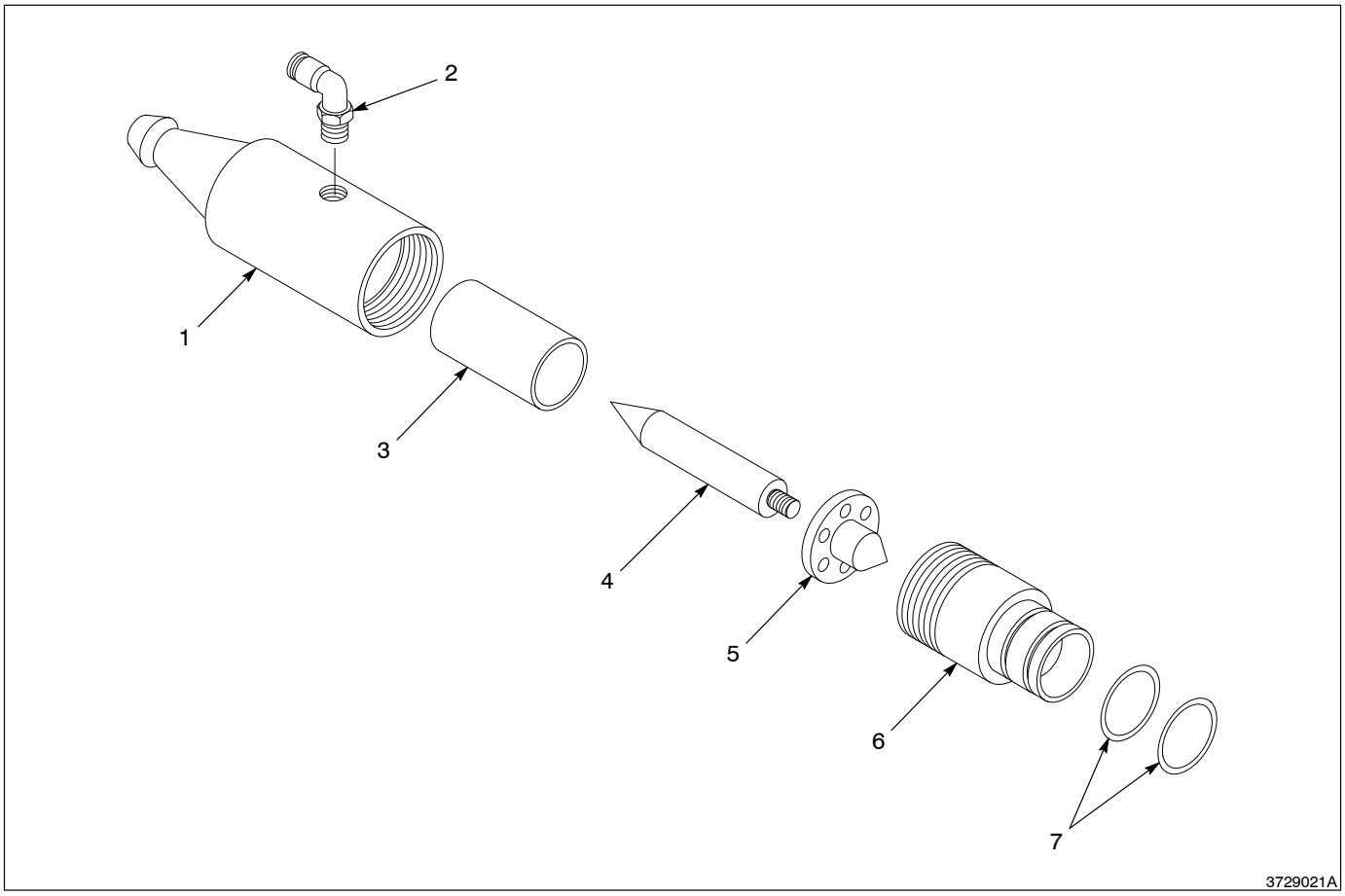

Fig. 21 Charge module diffuser

Charge Module

See Figure 22.

Item	Part	Description	Quantity	Note
—	634 593	Charge module, PTFE, complete	1	
1	631 225	• Extension, complete	1	
2	631 221	• Sleeve, wear, outlet, assembly, PTFE	1	A
3	940 224	• • O-ring, silicone, 1.00 x 1.125 in.	2	A
4	631 222	• • Spring, silicone, 1.25 x 1.50 in.	1	A
5	- - - - - -	• • Sleeve, wear, outlet, PTFE	1	A
6	631 220	• Ring, spacing	1	ABC
7	- - - - - -	• Sleeve, wear, outer, PTFE	1	AB
8	940 284	• • O-ring, silicone, 1.375 x 1.500 in.	1	AB
9	631 294	• Distributor, outlet, PTFE	1	A
10	- - - - - -	• Sleeve, wear, inner, PTFE	1	AB
11	631 210	• Ring, positioning	1	ABC
12	631 298	• Stud, M8 x 236 mm	1	A
13	631 234	• Distributor, inlet, PTFE	1	A
14	631 232	• Sleeve, wear, inlet, assembly, PTFE	1	A
15	940 284	• • O-ring, silicone, 1.375 x 1.500 in.	1	A
16	- - - - - -	• • Sleeve, wear, inlet, PTFE	1	A
17	940 243	• • O-ring, silicone, 1.125 x 1.250 in.	1	A
18	- - - - - -	• Body, auto gun, assembly	1	D
19	630 073	• • Knob, M5 x .08	1	
20	630 088	• • Stud, ground, w/nut	1	
21	631 235	• • Pin, quick connect	2	
22	638 816	• Stud, charge module	2	
23	638 819	• Screw, M8x 20 mm, polyamid	2	

NOTE A: These parts available in 238 494 service kit. Refer to *Service Kit* lists.
B: These parts available in 631 208 service kit. Refer to *Service Kit* lists.
C: These parts available in 631 209 service kit. Refer to *Service Kit* lists.
D: Limited service part. Contact your Nordson Representative for replacement.

Charge Module *(contd.)*

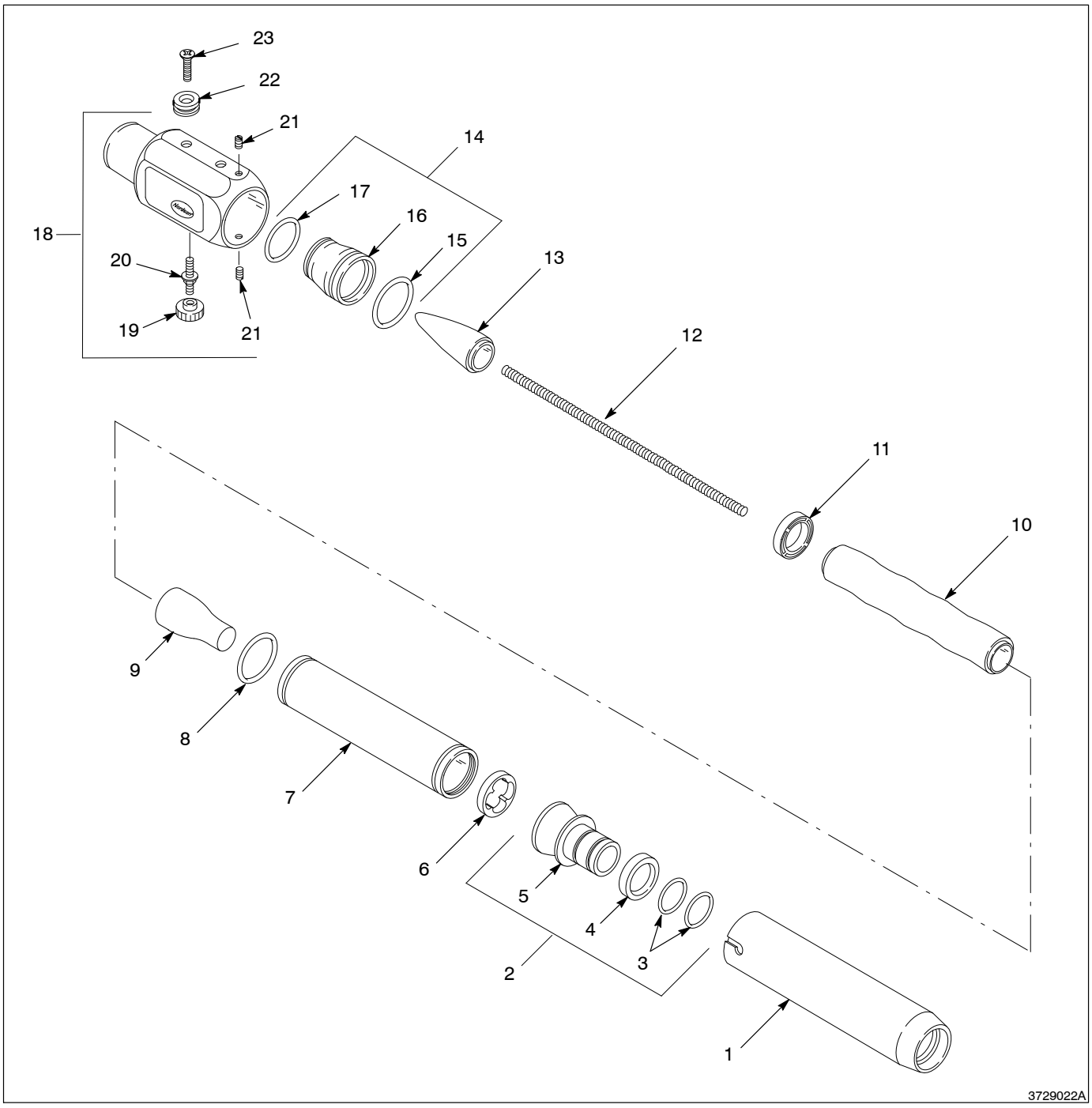

Fig. 22 Charge module

Sprayhead See Figure 23.

Item	Part	Description	Quantity	Note
—	634 580	Sprayhead, complete	1	
1	638 812	• Screw, M10 x 35 mm	1	
2	638 802	• Holder, tube	1	
3	638 297	• Cone, rear	1	
4	638 799	• Restrictor	1	A
5	237 995	• O-ring, EPDM, 35.1 mm dia x 1.6 mm thick	2	
6	945 128	• O-ring, EPDM, 55 mm dia x 1.6 mm thick	1	
7	638 295	• Distributor	1	
8	237 994	• O-ring, EPDM, 85 mm dia x 2 mm thick	1	
9	638 293	• Cone	1	
10	945 130	• O-ring, EPDM, 60.5 mm dia x 1.6 mm thick	1	
11	638 292	• Sprayhead	1	
12	237 993	• O-ring, 98.05 mm dia x 1.78 mm thick	2	
13	638 809	• Screw, M10 x 50 mm, polyamid	1	
14	638 829	• Ring	1	
15	638 808	• Screw, M6 x 25 mm, polyamid	3	
NOTE A: 18-mm restrictor available. Refer to *Optional Equipment* in this section.				

Sprayhead *(contd.)*

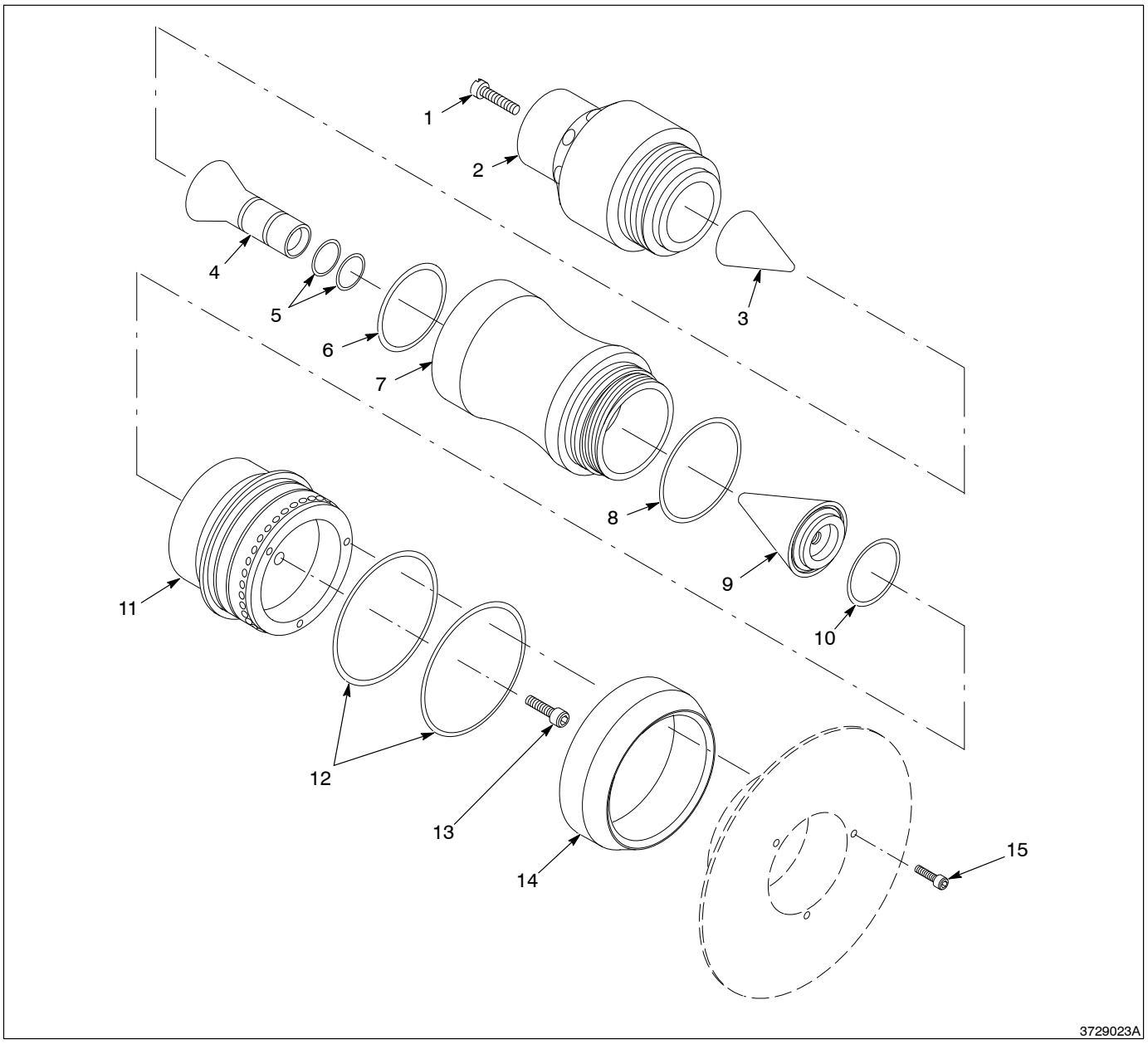

Fig. 23 Sprayhead

Lower Tube Assembly, Support Assembly, and Air Coupling Assemblies

See Figure 24.

Item	Part	Description	Quantity	Note
A	638 785	Support assembly	1	
1	638 820	• Standoff	1	
2	634 500	• Plate, A, with tube, complete	1	
3	638 781	• Pin, mounting, M10	4	
4	982 753	• Screw, set, M5 x 5 mm	2	
5	982 751	• Screw, pan head, M6 x 30 mm, polyamid	3	
6	982 752	• Screw, pan head, M8 x 16 mm, polyamid	1	
7	634 576	• Support	1	
8	634 577	• Guide	1	
B	638 793	Tube assembly, lower	1	
1	982 958	• Screw, pan head, M6 x 20 mm	1	
2	638 795	• Tube, PVC, 55 x 1.5 mm	1	
3	638 813	• Holder, tube	1	
C	638 791	Coupling, air, 3-tube, assembly	1	
C	638 790	Coupling, air, 6-tube, assembly	1	
1	630 594	• Tube, air, 12/8 mm, blue (0.30 m)	AR	
2	630 985	• Fitting, air, straight, KQF-12-02	1	
3	630 989	• Fitting, air, QSLV 6-$^1/_4$-6	1	
4	630 597	• Tube air, 6/4 mm, blue (1.5 m)	AR	
5	630 993	• Plug, KQP-06	3	A

NOTE A: Note A: Used with 3-tube coupling assembly.
AR: As Required

Lower Tube Assembly, Support Assembly, and Air Coupling Assemblies *(contd.)*

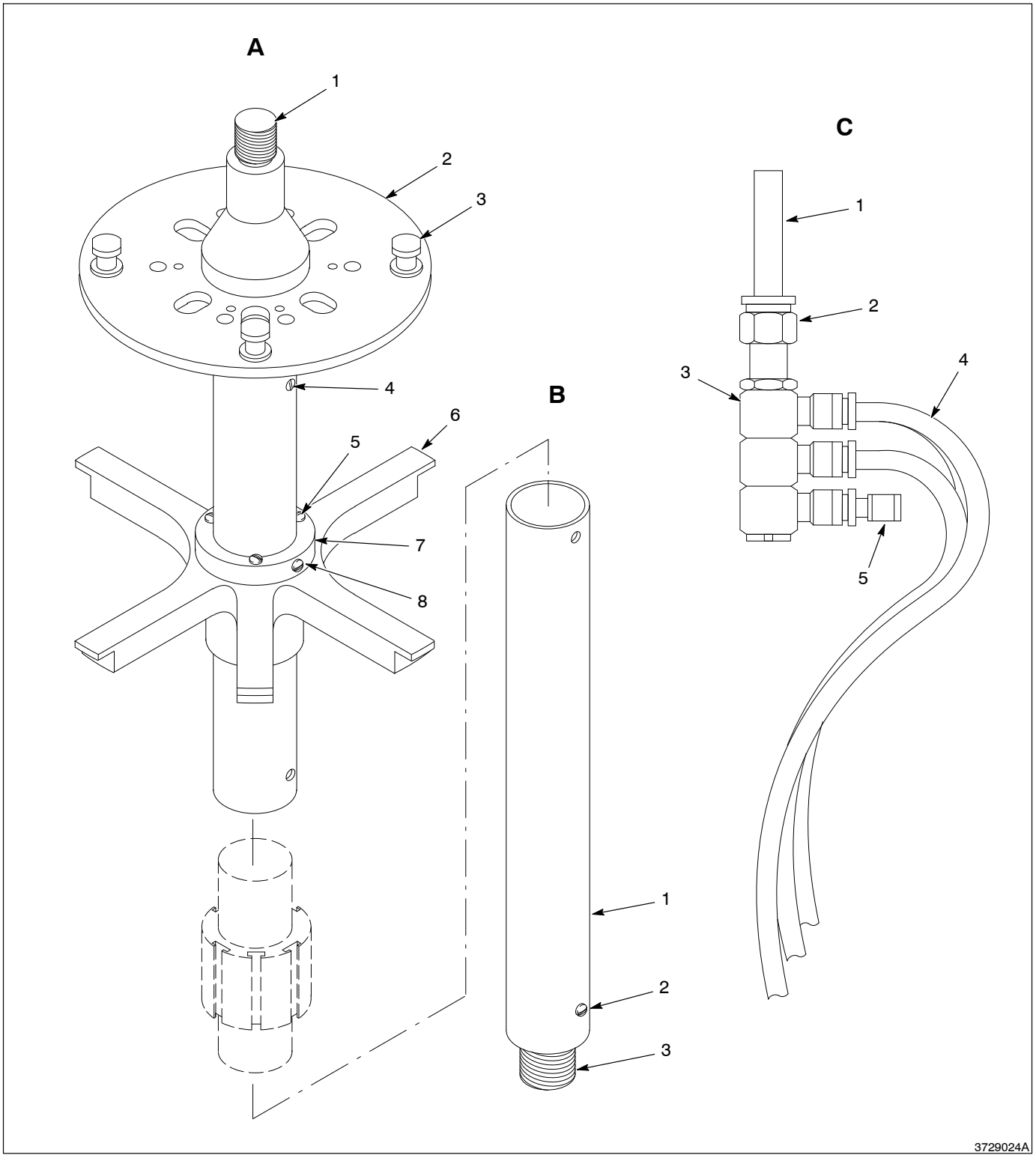

Fig. 24 Lower tube assembly, support assembly, and air coupling assemblies

Service Kits

Three service kits are available for the charge module: charge module service kit, inner/outer wear sleeve service kit, and positioning and spacing ring service kit.

Charge Module Service Kit

See Figure 25. Item numbers also apply to Figure 22.

Item	Part	Description	Quantity	Note
—	238 494	Service kit, charge module, complete, PTFE	1	
2	631 221	• Sleeve, wear, outlet, assembly, PTFE	1	
3	940 224	• • O-ring, silicone, 1.00 x 1.125 in.	2	
4	631 222	• • Spring, silicone, 1.25 x 1.50 in.	1	
5	- - - - - -	• • Sleeve, wear, outlet, PTFE	1	
6	631 220	• Ring, spacing	1	A
7	- - - - - -	• Sleeve, wear, outer, PTFE	1	
8	940 284	• • O-ring, silicone, 1.375 x 1.500 in.	1	
9	631 294	• Distributor, outlet, PTFE	1	
10	- - - - - -	• Sleeve, wear, inner, PTFE	1	
11	631 210	• Ring, positioning	1	A
12	631 298	• Stud, M8 x 236 mm	1	
13	631 234	• Distributor, inlet, PTFE	1	
14	631 232	• Sleeve, wear, inlet, assembly, PTFE	1	
15	940 284	• • O-ring, silicone, 1.375 x 1.500 in.	1	
16	- - - - - -	• • Sleeve, wear, inlet, PTFE	1	
17	940 243	• • O-ring, silicone, 1.125 x 1.250 in.	1	

NOTE A: Also available as a set, order 631 209 service kit.

Charge Module Service Kit *(contd.)*

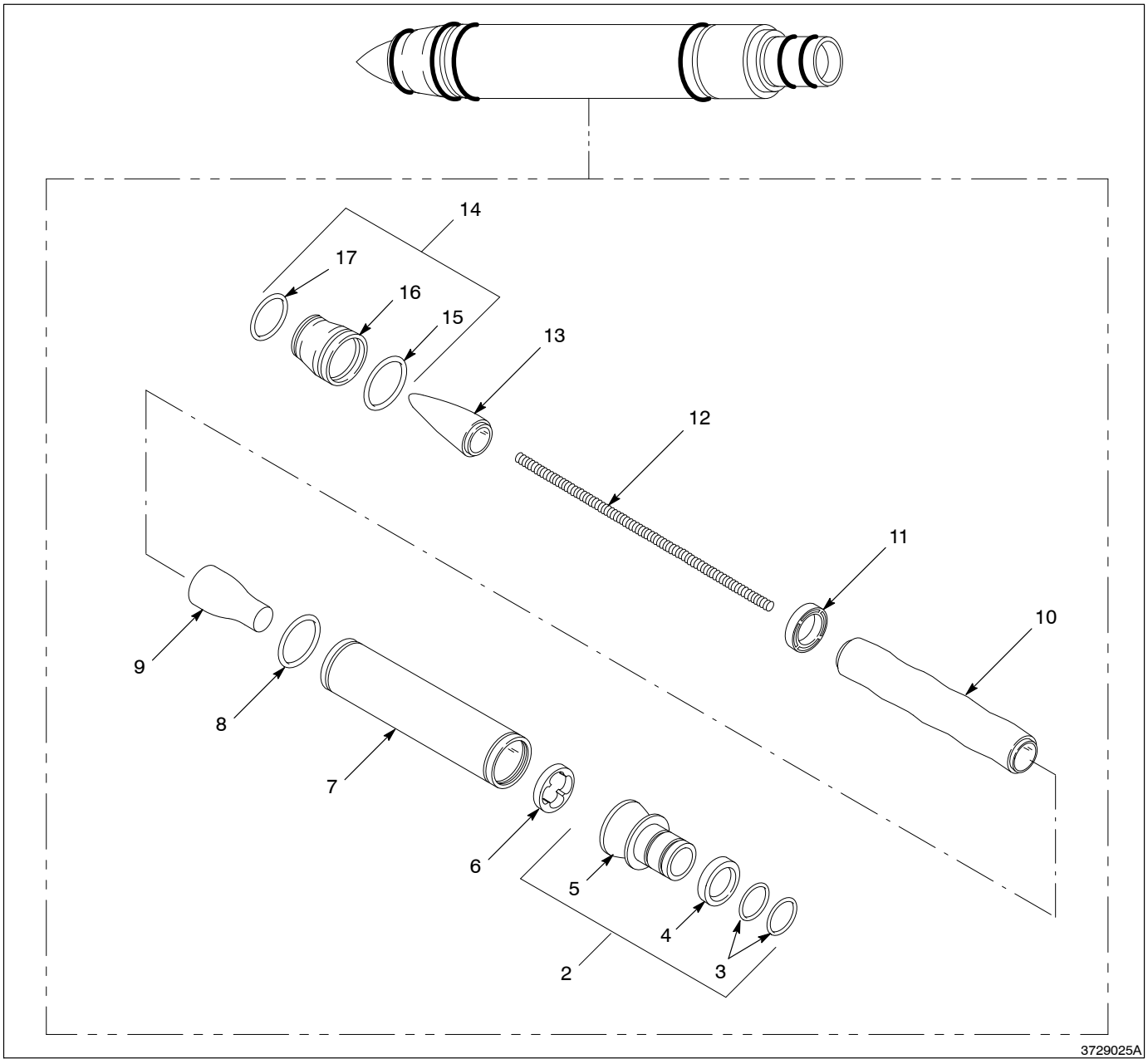

Fig. 25 Charge module service kit

Inner/Outer Wear Sleeve Service Kit

See Figure 26. Item numbers also apply to Figure 22.

Item	Part	Description	Quantity	Note
—	631 208	Service kit, inner and outer wear sleeves, PTFE	1	
6	631 220	• Ring, spacing	1	A
7	- - - - - -	• Sleeve, wear, outer, PTFE	1	
8	940 284	• • O-ring, silicone, 1.375 x 1.500 in.	1	
10	- - - - - -	• Sleeve, wear, inner, PTFE	1	
11	631 210	• Ring, positioning	1	A
NOTE A: Also available as a set, order 631 209 service kit.				

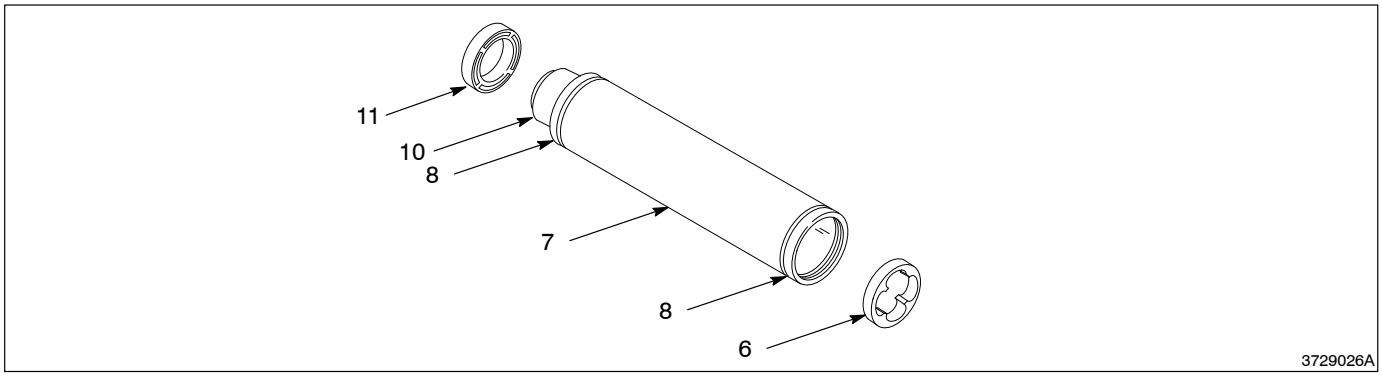

Fig. 26 Inner and outer wear sleeve service kit

Positioning and Spacing Ring Service Kit

See Figure 27. Item numbers also apply to Figure 22.

Item	Part	Description	Quantity	Note
—	631 209	Service kit, inner and outer wear sleeves, PTFE	1	
6	631 220	• Ring, spacing	1	A
11	631 210	• Ring, positioning	1	A

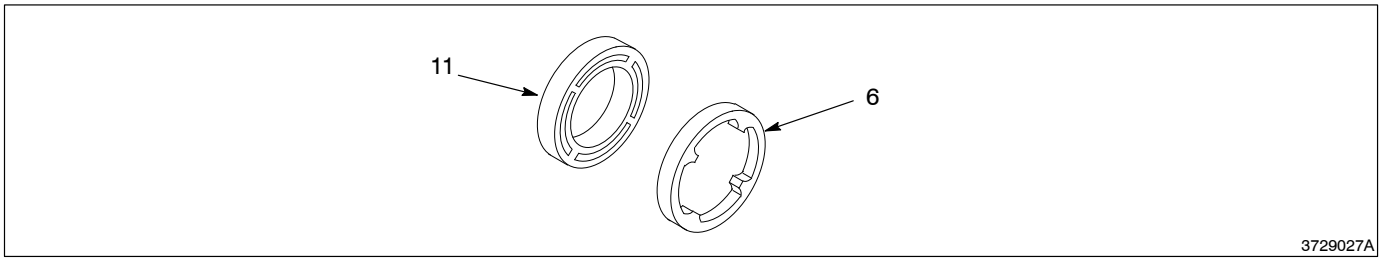

Fig. 27 Positioning and spacing ring service kit