

Modular Powder Feed Centre Pumps

Manual P/N 768 623 D
– English –

Keep for Future Reference



NORDSON (UK) LTD. • STOCKPORT



Order number

P/N = Order number for Nordson products

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DECLARATION of CONFORMITY

PRODUCT: Modular Powder Feed Centre Pumps

PRODUCT RANGE: All variants and models

Conformity has been verified following the provisions of the following directives :

APPLICABLE DIRECTIVES:

Directive 2006/23/EC

Directive 2006/42/EC

STANDARDS USED TO VERIFY COMPLIANCE:

EN 60204-1: 2006 "Safety of Machinery – Electrical equipment of machines"

EN 60335-1: 2002 "Safety of household and similar electrical appliances"

EN ISO 12 100-1, 12 100-2 "Safety of machinery – Basic concepts, general principles for design"

This product has been manufactured according to good engineering practice and conforms to the specified directives and standards described above.

Marked:

CE  II 3D T 200C



Jens Kollosche
Operations Manager Nordson Germany
Nordson Germany GmbH

Date: 04th January 2011

Table of Contents

Congratulations on the Purchase of Your Nordson Product

Your Safety is Important to Nordson	O-1
Manufacturer of Equipment	O-1

Nordson International

Europe	O-3
Distributors in Eastern & Southern Europe	O-3
Outside Europe / Hors d'Europe / Fuera de Europa	O-4
Africa / Middle East	O-4
Asia / Australia / Latin America	O-4
Japan	O-4
North America	O-4

Section 1 Safety

1. Introduction	1-1
2. Qualified Personnel	1-1
3. Intended Use	1-1
4. Regulations and Approvals	1-1
5. Personal Safety	1-2
6. Fire Safety	1-3
7. Action in the Event of a Malfunction	1-4
8. Disposal	1-4

Section 2 Description

1. Corona Pump	2-1
2. Tribo I Pump	2-2
3. Tribo II Pump	2-2
4. Features	2-3
5. Dip Leg Assembly	2-3

Section 3
Installation

1. Transport	3-1
2. Unpacking	3-1
3. Removing	3-1
4. Storage	3-1
5. Disposal	3-1
6. Setting Up of the Pump	3-2
Air Tubing Colour Code	3-2

Section 4
Operation

1. IDaily Operation	4-1
---------------------------	-----

Section 5
Maintenance

1. Daily Maintenance	5-1
2. Routine Maintenance	5-2

Section 6
Parts

1. Introduction	6-1
Using the Illustrated Parts List	6-1
2. Corona Modular Pump	6-2
3. Tribo I Modular Pump	6-3
4. Tribo II Modular Pump	6-4

Congratulations on the Purchase of Your Nordson Product

Nordson equipment is engineered and manufactured in accordance with strict specifications, using high quality components and state-of-the-art technologies that assure reliable, long-term performance. Your product was thoroughly tested for proper operation prior to shipment.

Before unpacking and installing your new equipment, please read this manual. It is your guide to safe installation, productive operation and effective maintenance. We recommend that you keep the manual available for future reference.

Your Safety is Important to Nordson

Carefully read the *Safety* section. Your product is designed for safe operation when used according to the published instructions. Potential hazards exist when operating instructions are not followed.

Manufacturer of Equipment

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For a list of local Nordson organisations, see *Nordson International*.

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Austria		43-1-707 5521	43-1-707 5517
Belgium		31-13-511 8700	31-13-511 3995
Czech Republic		4205-4159 2411	4205-4124 4971
Denmark	<i>Hot Melt</i>	45-43-66 0123	45-43-64 1101
	<i>Finishing</i>	45-43-66 1133	45-43-66 1123
Finland		358-9-530 8080	358-9-530 80850
France		33-1-6412 1400	33-1-6412 1401
Germany	<i>Erkrath</i>	49-211-92050	49-211-254 658
	<i>Lüneburg</i>	49-4131-8940	49-4131-894 149
	<i>Düsseldorf - Nordson UV</i>	49-211-3613 169	49-211-3613 527
Italy		39-02-904 691	39-02-9078 2485
Netherlands		31-13-511 8700	31-13-511 3995
Norway	<i>Hot Melt</i>	47-23 03 6160	47-22 68 3636
	<i>Finishing</i>	47-22-65 6100	47-22-65 8858
Poland		48-22-836 4495	48-22-836 7042
Portugal		351-22-961 9400	351-22-961 9409
Russia		7-812-11 86 263	7-812-11 86 263
Slovak Republic		4205-4159 2411	4205-4124 4971
Spain		34-96-313 2090	34-96-313 2244
Sweden	<i>Hot Melt</i>	46-40-680 1700	46-40-932 882
	<i>Finishing</i>	46 (0) 303 66950	46 (0) 303 66959
Switzerland		41-61-411 3838	41-61-411 3818
United Kingdom	<i>Hot Melt</i>	44-1844-26 4500	44-1844-21 5358
	<i>Finishing</i>	44-161-495 4200	44-161-428 6716
	<i>Nordson UV</i>	44-1753-558 000	44-1753-558 100

Distributors in Eastern & Southern Europe

DED, Germany	49-211-92050	49-211-254 658
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**Outside Europe /
Hors d'Europe /
Fuera de Europa**

- For your nearest Nordson office outside Europe, contact the Nordson offices below for detailed information.
- Pour toutes informations sur représentations de Nordson dans votre pays, veuillez contacter l'un de bureaux ci-dessous.
- Para obtener la dirección de la oficina correspondiente, por favor diríjase a unas de las oficinas principales que siguen abajo.

Contact Nordson	Phone	Fax
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Africa / Middle East

DED, Germany	49-211-92050	49-211-254 658
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Asia / Australia / Latin America

Pacific South Division, USA	1-440-988-9411	1-440-985-3710
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Japan

Japan	81-3-5762 2700	81-3-5762 2701
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North America

Canada		1-905-475 6730	1-905-475 8821
USA	Hot Melt	1-770-497 3400	1-770-497 3500
	Finishing	1-440-988 9411	1-440-985 1417
	Nordson UV	1-440-985 4592	1-440-985 4593

Section 1

Safety

Section 1

Safety

1. Introduction

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

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

2. 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.

3. 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

4. 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.

5. 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 any 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 electrostatic 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.
- 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.

6. Fire Safety

To avoid a fire or explosion, follow these instructions.

- Ground all conductive equipment in the spray area. Check equipment and workpiece grounding devices regularly. Resistance to ground must not exceed one mega-ohm.
- 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.
- Provide adequate ventilation to prevent dangerous concentrations of volatile materials or vapors. Refer to local codes or your material MSDS for guidance.
- Do not disconnect live electrical circuits while 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.

**7. *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 electrical power. Close pneumatic shutoff valves and relieve pressures.
- Identify the reason for the malfunction and correct it before restarting the equipment.

8. *Disposal*

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

Section 2

Description

Section 2

Description

There are three varieties of Powder Feed Centre Pumps as illustrated below:

1. Modular Corona Pump

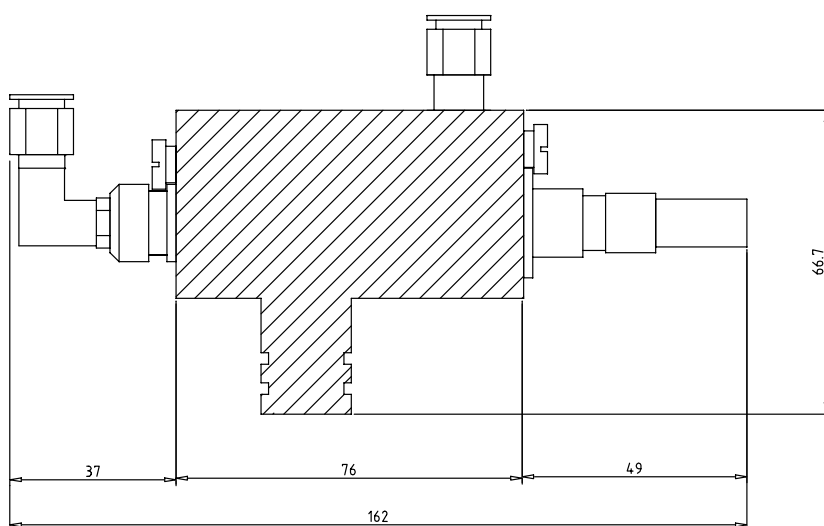


Fig. 2-1 Modular Corona Pump

2. *Tribo I Pump*

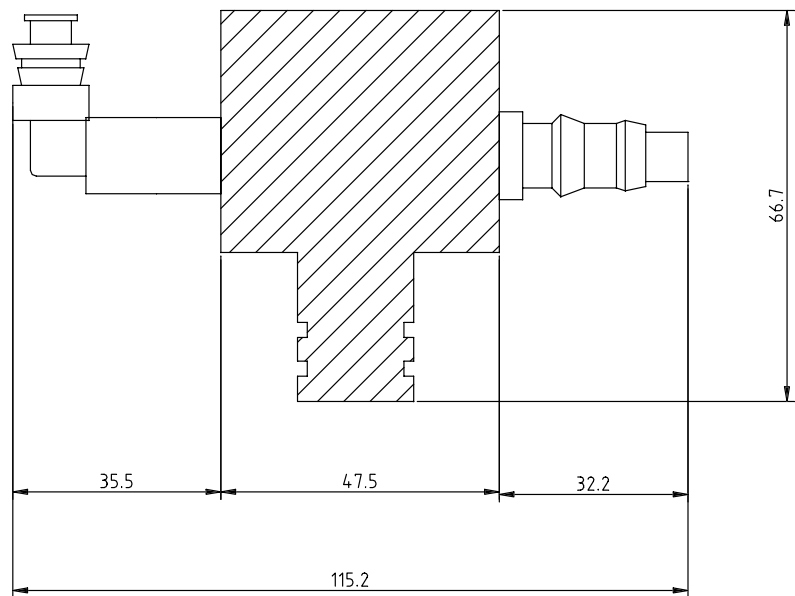


Fig. 2-2 Tribo 1 Pump

3. *Modular Tribo Pump*

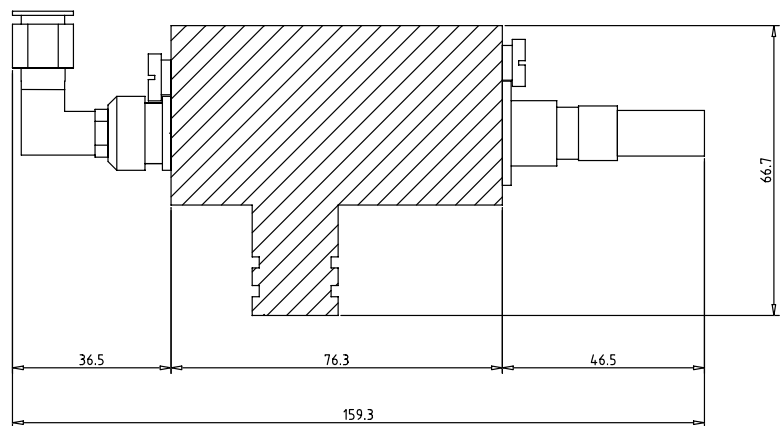


Fig. 2-3 Modular Tribo Pump

4. Features

The Modular Corona powder pump is used with Nordson Corona charging guns and the Tribo I and Tribo Modular pumps are used with Nordson Tribomatic guns.

These pumps are used to feed powder coatings to powder spray guns from a Powder Feed Centre. They are venturi-type pumps; the Modular Corona pump uses flow rate air to lift fluidised powder from a feed hopper and force the powder and air mixture through the feed tubing to the guns. Atomising air dilutes and atomises the powder stream as it exits the pump.

The Tribo pump uses flow rate air only. The atomising/diffusing air is introduced at the gun.

Air and powder feed tubing are optional and must be ordered separately.

5. Dip Leg Assembly

Dip legs and Purge Nozzles must be ordered separately. For description and part numbers see Powder Feed Centre manual for details.

Section 3

Installation

Section 3

Installation



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

1. Transport

Transport the unit so as to avoid damage. Do not throw the unit. Use suitable packaging materials and sturdy cartons.

Protect the unit from exposure to humidity, dust and vibrations.

2. Unpacking

Carefully unpack the unit to avoid damaging it. Check for damage caused during transport.

Save packing materials for possible later use. Otherwise recycle or dispose of properly according to local regulations.

3. Removing

Switch off the mains supply, then disconnect all electrical connections from the unit.

4. Storage

Pack the unit in suitable packing materials and sturdy cartons. Protect from humidity, dust and large temperature fluctuations (condensation).

5. Disposal

Dispose of properly according to local regulations.

6. Setting Up of the Pump



WARNING: Allow only qualified personnel to perform the installation. Observe safety instructions.

- Install the pump on the lance arm inside the Powder Feed Centre with a slight twisting motion.



WARNING: All conductive equipment in the spray area must be connected to a true earth ground. Ungrounded or poorly grounded equipment used in a powder spray area can become electrically charged. This charge can deliver a severe shock or create sparks hot enough to cause a fire or explosion.

- Connect the 6mm/8mm flow rate and atomising air tubing from the gun controller to the pump fittings. Figure 3-1 shows the symbols used to denote atomising and flow rate air.

Air Tubing Colour Code

Blue: Atomising air.

Black: Flow rate air.

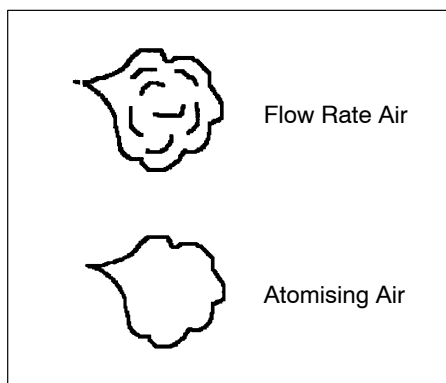


Fig. 3-1 Controller Flow and Atomising Symbols

NOTE: Each pump uses 11 mm (0.44 in) ID powder feed tubing. For best results, the powder feed hose should be no longer than 8 meters (27 feet) and rise vertically over its length no more than 2.7 meters (9 feet).

Connect the powder feed tubing to the pump outlet and secure with a hose clamp. If necessary, install a short length of spiral wrap around the tubing at the connection point to prevent the tubing from kinking and cutting off the flow of powder.

Section 4

Operation

Section 4 Operation



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

1. *Daily Operation*

Typical operation pressures are:

Corona Pump

Atomising: 2 bar

Flow Rate: 1.5 bar

Tribo Pump

Atomising: 3 bar

Flow Rate: 2 bar

These pressures are average starting points. They can be adjusted higher or lower to achieve the desired delivery volume and cloud density.

Section 5

Maintenance

Section 5 Maintenance



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



WARNING: Breathing in certain airborne dusts (including finishing powders) may be hazardous to health. Ask the powder manufacturer for a Material Safety Data Sheet (MSDS) for information. Use appropriate respiratory protection.

1. Daily Maintenance

- Disconnect the atomising air and flow rate air tubing.
- Make sure the Powder Feed Centre exhaust fan is running.

NOTE: Always blow air from the pump end.

- Clean the pump body by compressed air.
- Remove any impact fused powder chemically. DO NOT scratch the internal parts of the pump, as this encourages further impact fusion.

2. Routine Maintenance

- Perform routine maintenance as necessary.
- Disassemble and thoroughly clean the pump.



CAUTION: Do not immerse O-rings in solvent. Solvents cause O-rings to swell. Do not use solvent to clean the pump body.



CAUTION: Do not scrape parts with sharp objects. Burrs or scratches on contact surfaces may occur, which may contribute to powder build-up or impact fusion.

- Blow the parts clean with low pressure compressed air.
- Wipe the parts with a clean, lint free cloth. If necessary, remove the O-rings and moisten the cloth with water or isopropyl alcohol.



WARNING: Do not replace conductive O-rings with non-conductive O-rings. Conductive O-rings provide a path to the ground that is required with powder spray equipment. Failure to observe this warning could result in personal injury, fire, or explosion.

- Inspect the parts for wear and replace if necessary.
- Inspect the powder feed tubing and replace any pieces that are worn or damaged. If powder is impact-fused inside the tubing, replace the tubing.

Section 6

Parts

Section 6

Parts

1. Introduction

To order parts, call the Nordson Customer Service Center or your local Nordson representative. Use the 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 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 0000	Assembly	1	A
1	000 000	• Subassembly	2	
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.

2. Modular Corona Pump

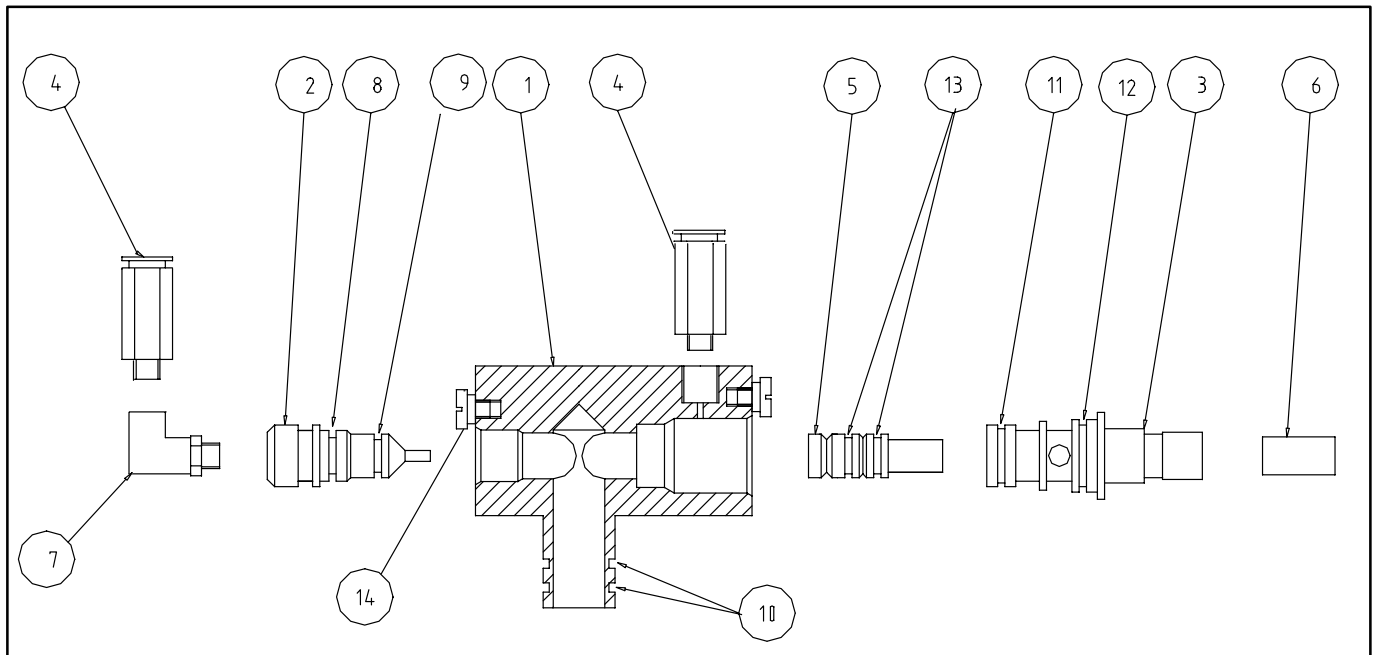


Fig. 6-1 Modular Corona Pump

Item	Part	Description	Quantity	Note
–	767 911	Pump Modular Corona	1	
1	767 913	• Pump Body	1	
2	224 727	• Nozzle, Air Flow	1	B
	344 238	• Nozzle, Air Flow, Purge	1	C
3	224 728	• Holder, Corona Throat	1	B
	344 241	• Holder, Corona Throat, Purge	1	C
4	344 252	• Fitting, Stud, 1/8 x 8mm, Non Return Valve	2	
5	225 546	• Throat, Tivar with O-rings	1	B
	344 257	• Throat, Tivar with O-rings, Purge	1	C
6	224 736	• Tube Wear	1	
7	768 174	• Elbow, 1/8BSPM x 1/8BSPF	1	
8	940 207	• O-ring	1	A
9	940 129	• O-ring	1	A
10	765 634	• O-ring	2	
11	940 015	• O-ring	1	A
12	940 177	• O-ring	1	A
13	940 126	• O-ring	2	
14	767 982	• Screw, Shoulder, Modular Pump, M5	2	

NOTE A: Black silicon O-rings are electrically conductive, do not substitute non conductive O-rings.

B: Pre June 2002

C: Post June 2002. These new parts can be fitted as direct replacements for old parts

AR: As Required

NS: Not Shown

3. Tribo I Pump

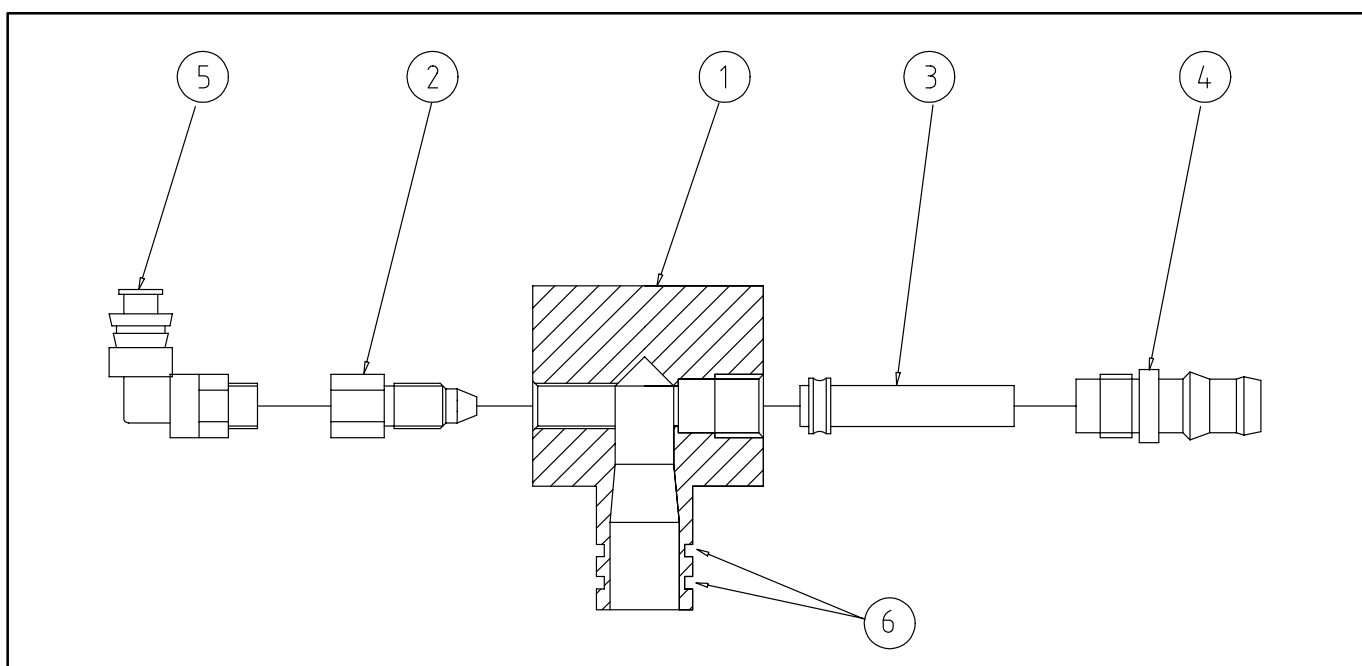


Fig. 6-2 Tribo I Pump

Item	Part	Description	Quantity	Note
–	631 434	Pump Modular Tribo I	1	
1	631 435	• Pump Body	1	
2	630 036	• Nozzle, Venturi	1	
3	630 381	• Throat, Venturi	1	
4	630 041	• Throat, Retainer	1	
5	630 035	• Fitting, Air	1	
6	765 634	• O-ring	2	

NOTE A: Black silicon O-rings are electrically conductive, do not substitute non conductive O-rings.

4. Modular Tribo Pump

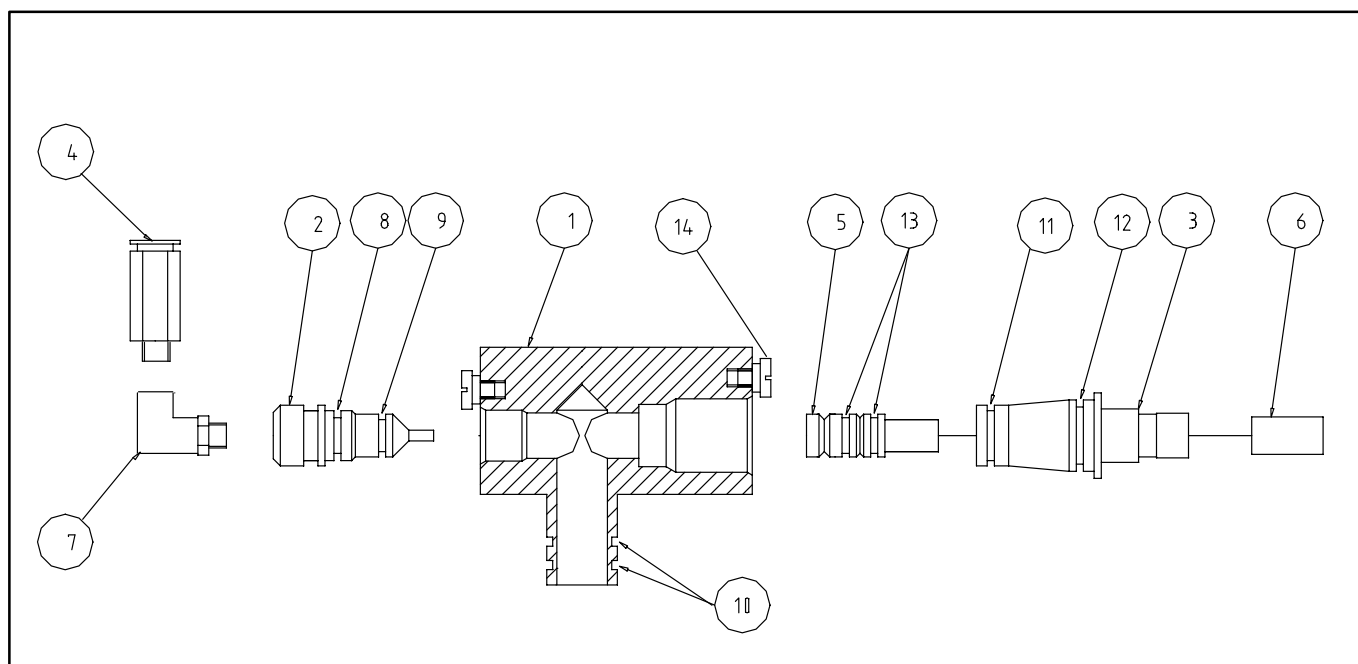


Fig. 6-3 Modular Tribo Pump

Item	Part	Description	Quantity	Note
–	767 910	Pump Modular Tribo II	1	
1	767 913	• Pump Body	1	
2	224 727	• Nozzle, Air Flow	1	B
	344 328	• Nozzle, Air Flow, Purge	1	C
3	224 730	• Holder, Tribo Throat	1	B
	768 834	• Holder, Tribo Throat, Purge	1	C
4	344 252	• Fitting, Stud, 1/8 x 8mm, Non Return Valve	1	
5	225 547	• Throat, Tivar with O-rings	1	B
	344 357	• Throat, Tivar with O-rings, Purge	1	C
6	224 736	• Tube Wear	1	
7	768 174	• Elbow, 1/8BSPM x 1/8BSPF	1	
8	940 207	• O-ring	1	A
9	940 129	• O-ring	1	A
10	765 634	• O-ring	2	
11	940 015	• O-ring	1	A
12	940 177	• O-ring	1	A
13	940 126	• O-ring	2	
14	767 982	• Screw, Shoulder, Modular Pump, M5	2	

NOTE A: Black silicon O-rings are electrically conductive, do not substitute non conductive O-rings.

B: Pre June 2002

C: Post June 2002. These new parts can be fitted as direct replacements for old parts

AR: As Required

NS: Not Shown