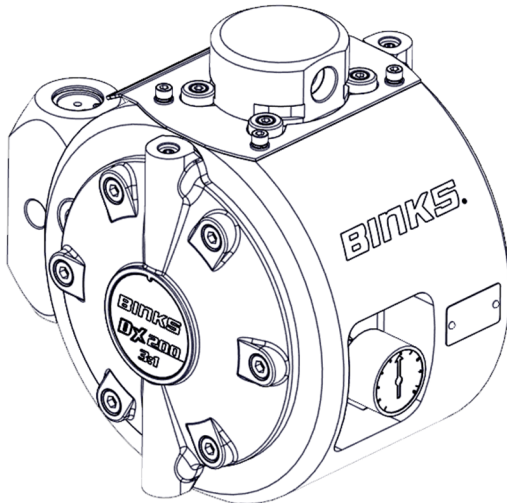


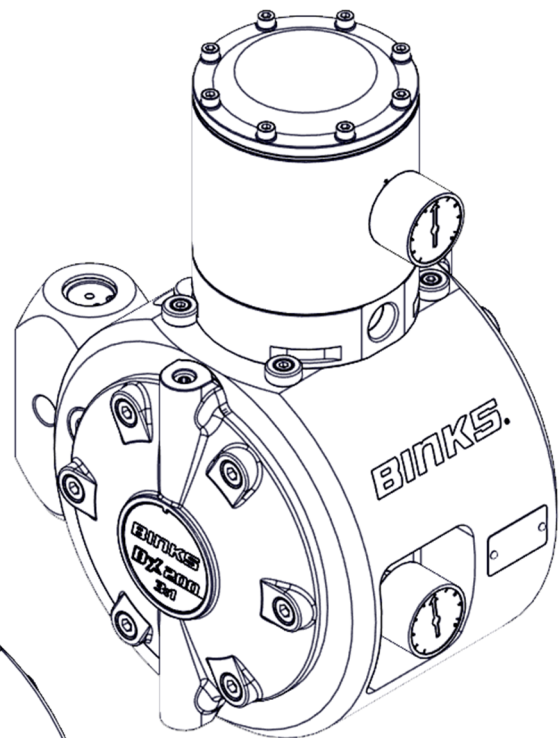
**BINKS**®

**DX200-3 3:1**

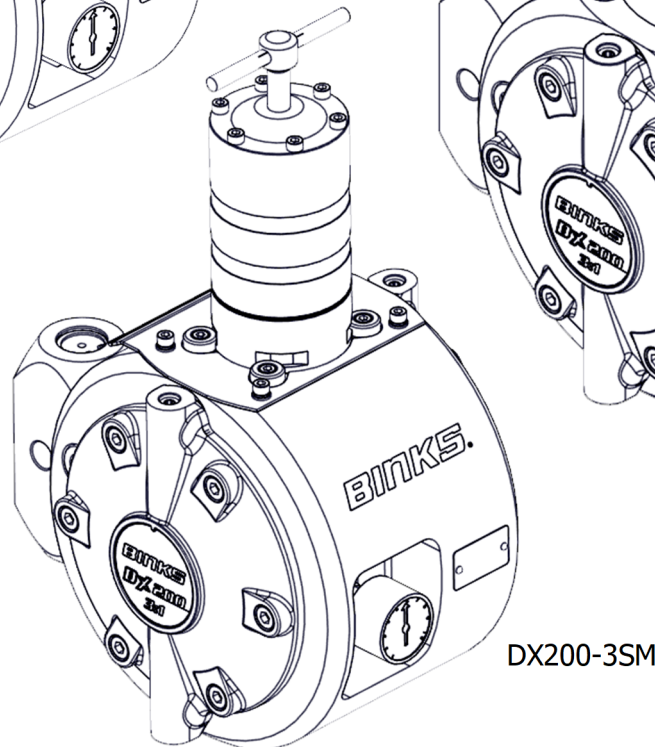
## Stainless Steel Diaphragm Pump



DX200-3SN



DX200-3SP



DX200-3SM

Patent US 9447780

### **IMPORTANT! DO NOT DESTROY**

It is the Customer's responsibility to have all operators and service personnel read and understand this manual.

Contact your local Carlisle Fluid Technologies representative for additional copies of this manual.

**READ ALL INSTRUCTIONS BEFORE OPERATING THIS PRODUCT**

<b>Product Description / Object of Declaration:</b>	Diaphragm Pumps - DX70, DX200, DX200-3 Bare pump and packages	<b>EN</b>
<b>This Product is designed for use with:</b>	Solvent and Water based materials	
<b>Suitable for use in hazardous area:</b>	Zone 1	
<b>Protection Level:</b>	II 2 G Ex h IIB T4 Gb	
<b>Notified body details and role:</b>	Element Materials Technology (0891) Lodging of Technical file	
<b>This Declaration of conformity / incorporation is issued under the sole responsibility of the manufacturer:</b>	Carlisle Fluid Technologies UK Ltd, Ringwood Road, Bournemouth, BH11 9LH. UK	

## EU Declaration of Conformity



**This Declaration of conformity / incorporation is issued under the sole responsibility of the manufacturer:**

Machinery Directive 2006/42/EC

ATEX Directive 2014/34/EU

by complying with the following statutory documents and harmonized standards:

EN ISO 12100:2010 Safety of Machinery - General Principles for Design

EN 12621:+A1:2010 Machinery for the supply and circulation of coating materials under pressure - Safety requirements

EN 1127-1:2011 Explosive atmospheres - Explosion prevention - Basic concepts

EN ISO 80079-36:2016 Explosive Atmospheres- Part 36: Non Electrical equipment for explosive atmospheres- Basic methods and requirements.

EN ISO 80079-37:2016 Explosive Atmospheres- Part 37: Non Electrical equipment for explosive atmospheres - protection by methods "c", "b" and "k".

Providing all conditions of safe use / installation stated within the product manuals have been complied with and also installed in accordance with any applicable local codes of practice.



Signed for and on behalf of Carlisle Fluid  
Technologies UK Ltd:

D Smith

Director of Sales (EMEA)

3/5/17

Bournemouth, BH11 9LH, UK

 <b>WARNING</b>	 <b>CAUTION</b>	<b>NOTE</b>
Hazards or unsafe practices which could result in severe personal injury, death or substantial property damage.	Hazards or unsafe practices which could result in minor personal injury, product or property damage	Important installation, operation or maintenance information.

 **WARNING**

Read the following warnings before using this equipment.



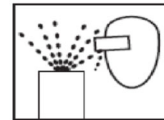
**READ THE MANUAL.** Before operating finishing equipment, read and understand all safety, operation and maintenance information provided in the operation manual.



**AUTOMATIC EQUIPMENT.** Automatic equipment may start suddenly without warning.



**WEAR SAFETY GLASSES.** Failure to wear safety glasses with side shields could result in serious eye injury or blindness.



**PROJECTILE HAZARD.** You may be injured by venting liquids or gases that are released under pressure, or flying debris.



**DE-ENERGIZE, DE-PRESSURISE, DISCONNECT AND LOCK OUT ALL POWER SOURCES DURING MAINTENANCE.** Failure to de-energize, disconnect and lock out all power supplies before performing equipment maintenance could cause serious injury or death.



**KNOW WHERE AND HOW TO SHUT OFF THE EQUIPMENT IN CASE OF AN EMERGENCY.**



**NOISE LEVELS.** The A-weighted sound level of pumping and spray equipment may exceed 85 dB(A) depending on equipment settings. Actual noise levels are available on request. It is recommended that ear protection is worn at all times while equipment is in use.



**PRESSURE RELIEF PROCEDURE.** Always follow the pressure relief procedure in the equipment instruction manual.



**INSPECT THE EQUIPMENT DAILY.** Inspect the equipment for worn or broken parts on a daily basis. Do not operate the equipment if you are uncertain about its condition.



**OPERATOR TRAINING.** All personnel must be trained before operating finishing equipment.



**EQUIPMENT MISUSE HAZARD.** Equipment misuse can cause the equipment to rupture, malfunction or start unexpectedly and result in serious injury.



**PACEMAKER WARNING.** You are in the presence of magnetic fields which may interfere with the operation of certain pacemakers.



**HIGH PRESSURE CONSIDERATION.** High pressure can cause serious injury. Relieve all pressure before servicing. Spray from the gun, hose leaks or ruptured components can inject fluid into your body and cause extremely serious injury.



**KEEP EQUIPMENT GUARDS IN PLACE.** Do not operate the equipment if the safety devices have been removed.



**STATIC CHARGE.** Fluid may develop a static charge that must be dissipated through proper grounding of the equipment, objects to be sprayed and all other electrically conductive objects in the dispensing area. Improper grounding or sparks can cause a hazardous condition and result in fire, explosion or electric shock and other serious injury.



**NEVER MODIFY THE EQUIPMENT.** Do not modify the equipment unless the manufacturer provides written approval.



**PROP 65 WARNING.** WARNING: This product contains chemicals known to the state of California to cause cancer and birth defects or other reproductive harm.



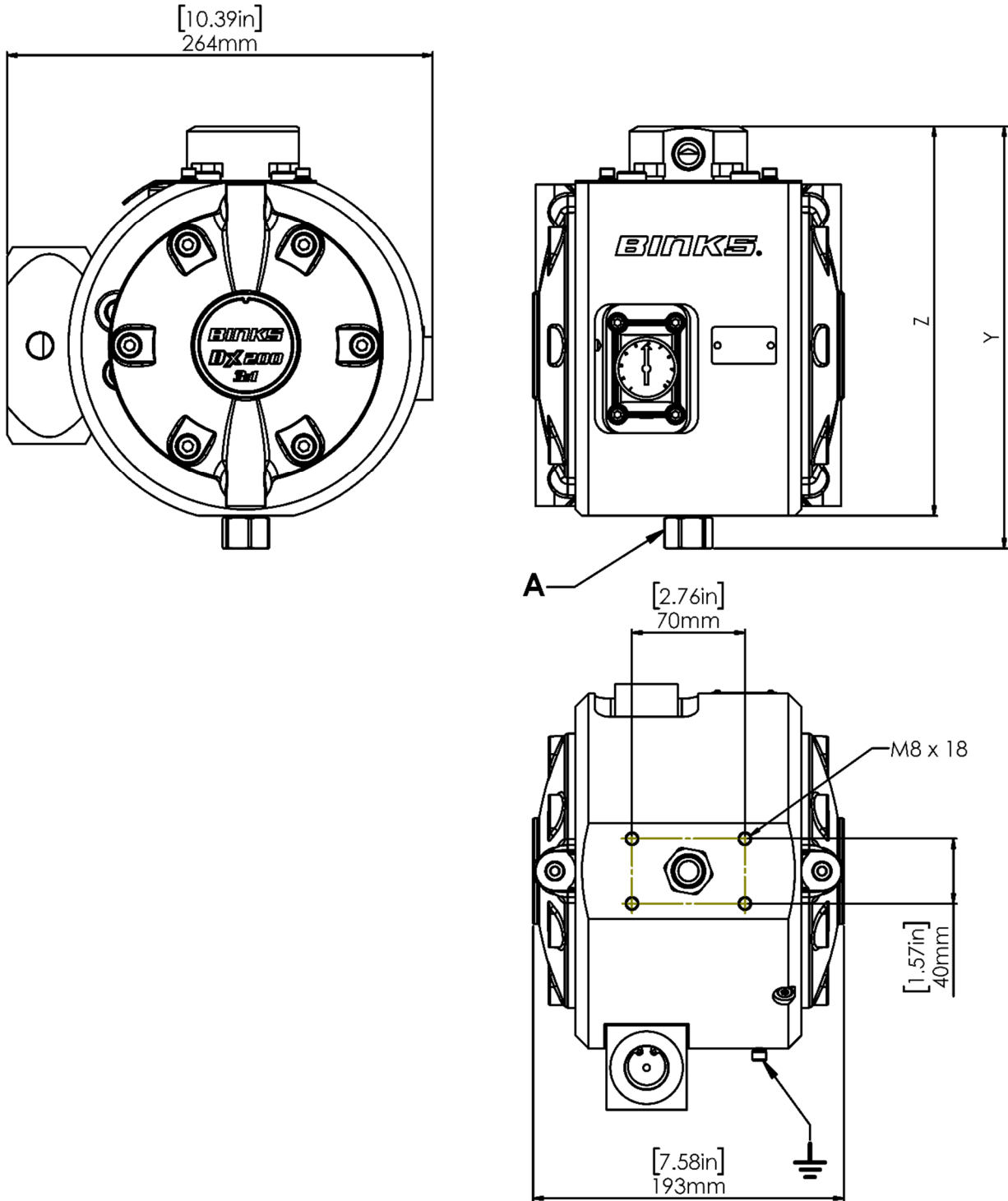
**PINCH POINT HAZARD.** Moving parts can crush and cut. Pinch points are any areas where there are moving parts.

**IT IS THE RESPONSIBILITY OF THE EMPLOYER TO PROVIDE THIS INFORMATION TO THE OPERATOR OF THE EQUIPMENT.**

## Specification

	Ratio:	3:1
	Maximum air inlet pressure: while pumping	7 bar [100 psi]
	Maximum air inlet pressure: while flushing	4 bar [58 psi]
	Maximum fluid pressure:	21 bar [305 psi]
	Displacement per cycle:	0.14 Litres [0.037 US gall]
	Output @ 60 cycles / min:	8.4 Litres/min [2.2 US gall/min]
	Maximum Recommended Continuous Cycle Rate [cycles/min]:	25
	Maximum Recommended Intermittent Cycle Rate [cycles / min]:	40
A	Fluid inlet connection:	1/2" BSPP Female
B	Fluid outlet connection:	1/2" BSPP Female
C	Minimum air hose internal diameter	Ø9.5mm
	Maximum recommended wet suction lift (continuous)	300 Millibar Vacuum
	Air volume / cycle @ 6.9 bar/100psi:	5.0L [0.18 SCFM]
	Air flow @ 10 cycles / min 6.9 bar / 100psi:	47.8L [1.69 SCFM]
	Air flow @ 30 cycles / min 6.9 bar / 100psi:	156.9L [5.54 SCFM]
	Recommended air quality ISO 8573.1 Class 3.3.2 #:	Dirt: 5 µm
		Water: -20°C@7bar [940ppm]
		Oil: 0.1mg/m <sup>3</sup>
		Non Lubricated
	Noise Level @ 40 cycles/min & 7 bar [100 psi]:	79.8 dBA Leq
E	Earth connection resistance:	<1Ω
	Weight:	DX200-3SN: 17.9 Kg [39.4lb's]
		DX200-3SM: 19.1 Kg [42.1lb's]
		DX200-3SP: 21.1 Kg [46.5lb's]
	Temperature range	0 - 40 °C [32 - 104 °F]

**Installation**



	Dimension	
	Y	Z
DX200-3SN	262mm	242mm
DX200-3SM	410mm	390mm
DX200-3SP	344mm	324mm

### **Prior To Use**

This product should be flushed with a suitable compatible solvent prior to use.

Mount the pump securely and position the pump at a convenient height to allow for maintenance.

Allow for stress caused by operation of pump.

Attach correctly sized and specified flexible hoses to all connections.

Use correctly sized fluid inlet hose to allow for required maximum recommended wet suction lift.

Using, viscosity, hose diameter & length to achieve requirement.

Connect a regulated and filtered air supply to the air connection (details on specification sheet).

Set the pump speed to a slow cycle rate and prime the pump to remove any air before increasing pressure.

A cover plate is fitted to the air exhaust to reduce material blow if a diaphragm fails.

However if no material blow out is allowed then hosing the exhaust away is optional.

Use min 3/4" bore conductive hose x 5m long.

### **ATEX special conditions for safe use:**

#### **Pump Earthing**

The pump must be earthed at all times. A resistance  $<1\Omega$  when measuring with an ohm-meter at the earth point

Earth connection, Binks Part No. 0114-011798

### **Important notes**

1. For regulated units (DX200-3SM) ensure fluid pressure is set at between 2 & 2.2 x air pressure at pump stall.

Failure to do this will produce a greater pressure pulse than is intended and may reduce diaphragm or regulator life.

2. End cap seals (DXK-305) MUST BE REPLACED every time an end cap is removed.

3. If end cap is removed fully clean and dry area around diaphragm before pump assembly.

4. Do not run the pump dry or allow it to 'race away', this may reduce the life of the diaphragms.

**Failure to operate the pump correctly will invalidate the Warranty.**

### **Paint section materials of construction**

<b>Item</b>	<b>Material</b>
Pump body inserts	Stainless Steel
End cap	Stainless Steel
Diaphragms	PTFE
Seals	FKM/PE
Valve ball & spring	Stainless Steel
End cap plugs	Stainless Steel
Ball Cage	(Acetal) POM
Fluid regulator & pulsation chamber	Stainless Steel/PTFE/PE/FKM

## Spare Parts

**Prior to contacting customer service please make a note of the pump serial number (see name plate).**

Item	Part No.	Description	Comments
1	DXK-287 *	Check valve seal kit x 4	①②
2	DXK-288 *	Check valve kit x 4	①②
3	DXK-304 *	Diaphragm kit x 2	①②③
4	DXK-206	Caps & screws x 2	
5	DXK-18	Cover, seal & screws	
6	DXK-25	Gasket x 4	①②
7	DXK-216	Air valve kit	①②
8	DXK-300 *	End cap x 1 c/w bolts & seals	②③
9	DXK-207	End cap bolts x 12	①②
10	0114-019209	Reducing Bush	
11	GA-382-P	Gauge	①②
12	DXK-305	End cap seal kit x 4	
13	DXK-306	Silencer shroud kit	

①	DXK-301 *	Overhaul kit	
②	DXK-302 *	Overhaul kit + Upgrade kit	
③	DXK-303 *	Upgrade kit	
④	DXK-305 *	End cap seal kit x 4	

**\* NOTE:-**

**All pumps with a pump serial no. pre 40209 Contact customer services**

**For pumps with a serial No. between 40209 - 40948, use kits DXK-302 (Overhaul + upgrade kit) to be used for full service or where media has leaked to the air side of the pump. DXK-303 (Upgrade kit) new diaphragms and end caps.**

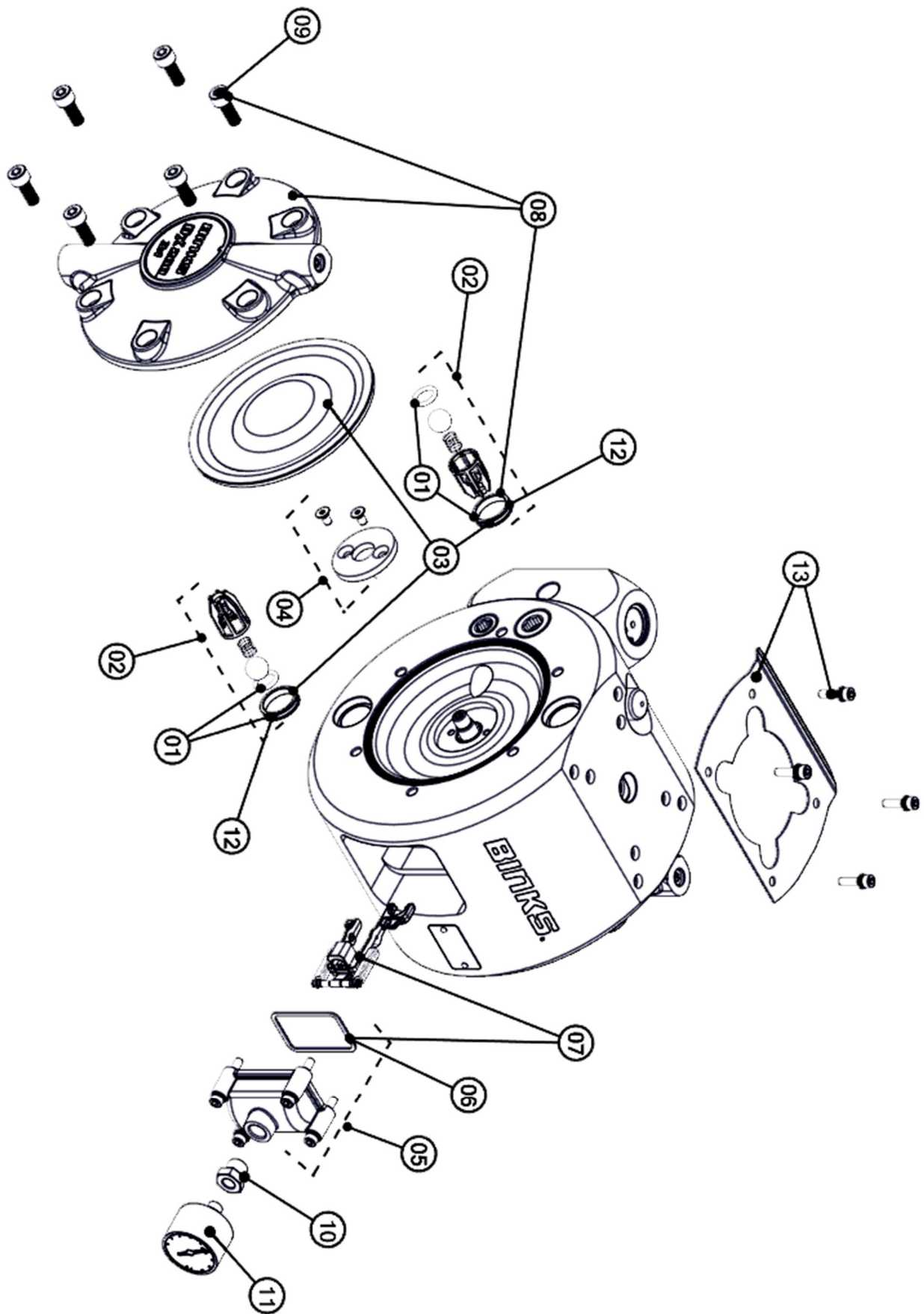
### IMPORTANT NOTE

**End cap seals MUST BE REPLACED every time an end cap is removed.**

**If end cap is removed fully clean and dry area around diaphragm before pump assembly.**



**Spare Parts**

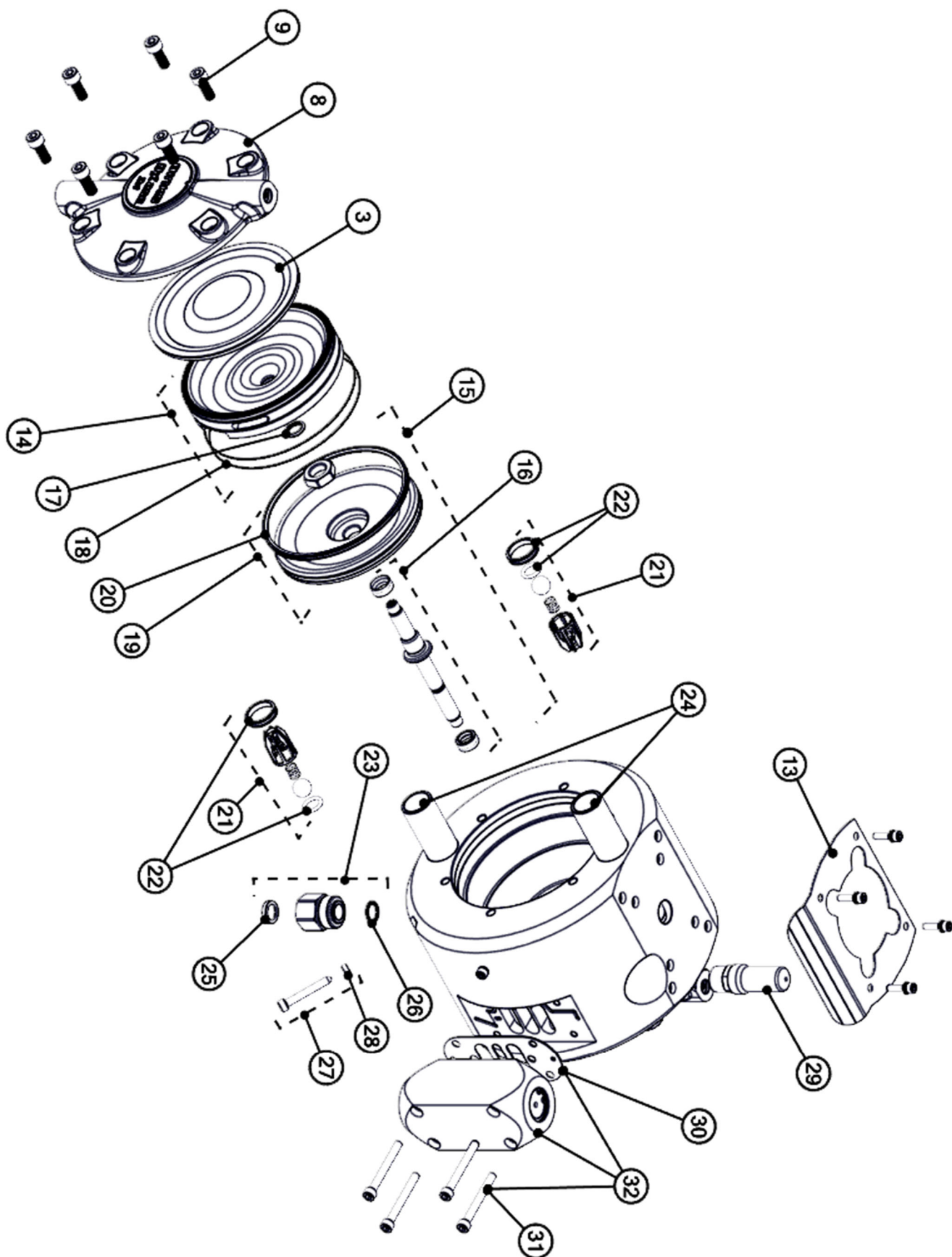


## Spare Parts

Item	Part No.	Description	Comments
14	DXK-236	Cylinder cap - Includes seals x 3	
15	DXK-263	Piston & shaft assembly - Includes seals	
16	DXK-266	Shaft & seal kit	
17	DXK-261	Shaft seal x 1	
18	DXK-237	Seal x 2	① ③ ④
19	DXK-264	Piston assembly - Includes seals	
20	DXK-265	Piston seal x1	
21	DXK-288	Check valve kit x 4	① ④
22	DXK-287	Check valve seal kit x 4	① ④
23	DXK-232	1/2" Female inlet connector kit, with seals	
24	DXK-273	Stainless Steel inserts	
25	DXK-229	Inlet/outlet seal x 4	① ④
26	DXK-230	Insert seal x 4	① ④
27	DXK-238	Pin - Includes seal	
28	DXK-239	Seal x1	
29	DXK-240	SILENCER (1/2" Thread)	① ④
30	DXK-241	Gasket x 2	① ④
31	DXK-242	Bolts x 4	① ④
32	DXK-243	Air valve kit	
	DXK-244	Air Valve rebuild kit	

**NOTE:**

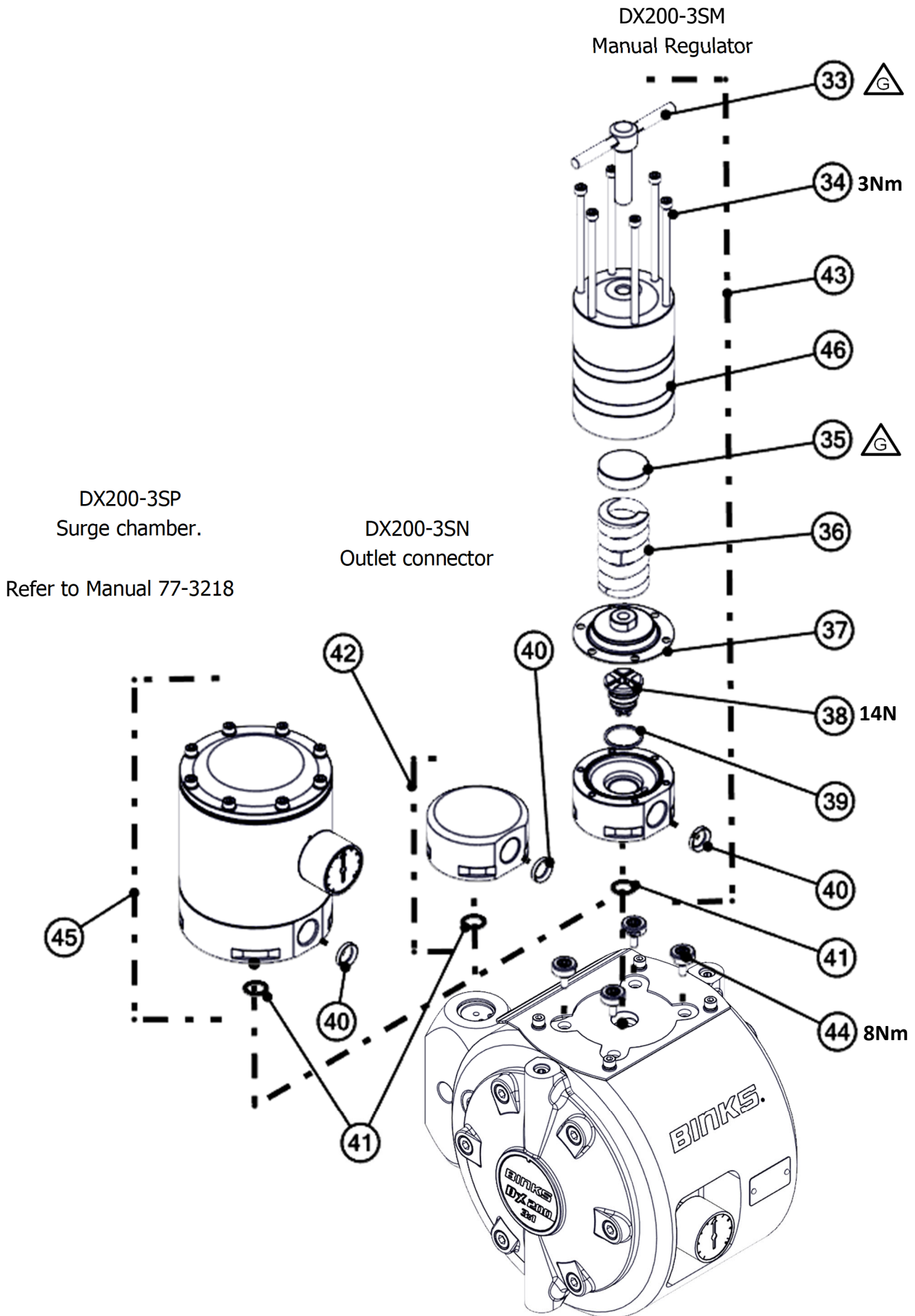
If upgrade kit DXK-281 has been fitted, use service kits from serial number 40209 onwards.

**Spare Parts**

**Spare Parts**

<b>Item</b>	<b>Part No.</b>	<b>Description</b>	<b>Comments</b>
33	DXK-268	Adjusting screw	
34	DXK-269	Screw x 6	
35	DXK-270	Spring pad	
36	DXK-271	Spring	
37	DXK-272	Diaphragm assembly	
38	DXK-280	Regulator Insert	
39	DXK-215	Seal x4	
40	DXK-229	Inlet/outlet seal x 4	
41	DXK-230	Insert seal x 4	
42	DXK-279	Non regulated assembly	
43	DXK-274	Manual regulator assembly	
44	DXK-282	Retainer kit x 4	
45	DXA-SC31P	Active surge chamber	
46	DXK-259	Regulator body	

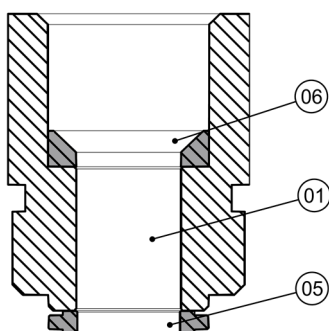
**Spare Parts**



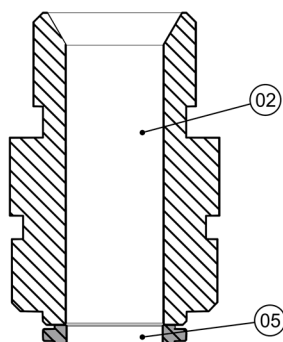
## ACCESSORIES

Item	Part No.	Description
1	DXK-232	1/2" Female inlet connector kit, with seals
2	DXK-233	1/2" Male inlet connector kit, with seals
3	DXK-234	3/4" Female inlet connector kit, with seals
4	DXK-235	1/2" - 3/8" Male inlet connector kit, with seals
5	DXK-230	Seal x 4
6	DXK-229	Seal x 4
7	DXK-221	Seal x 4

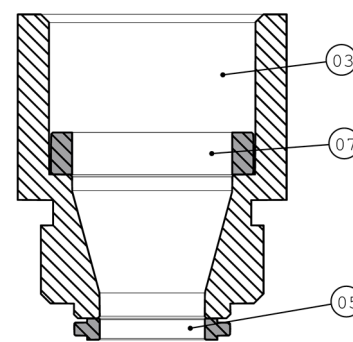
### Inlet Connectors



1/2" BSPP Female

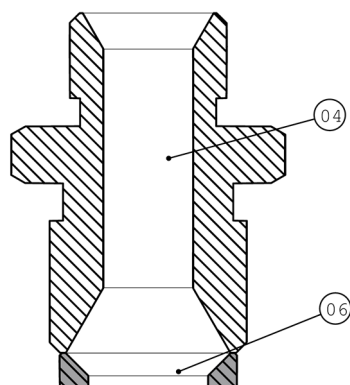


BSPP Male





3/4" BSPP Female

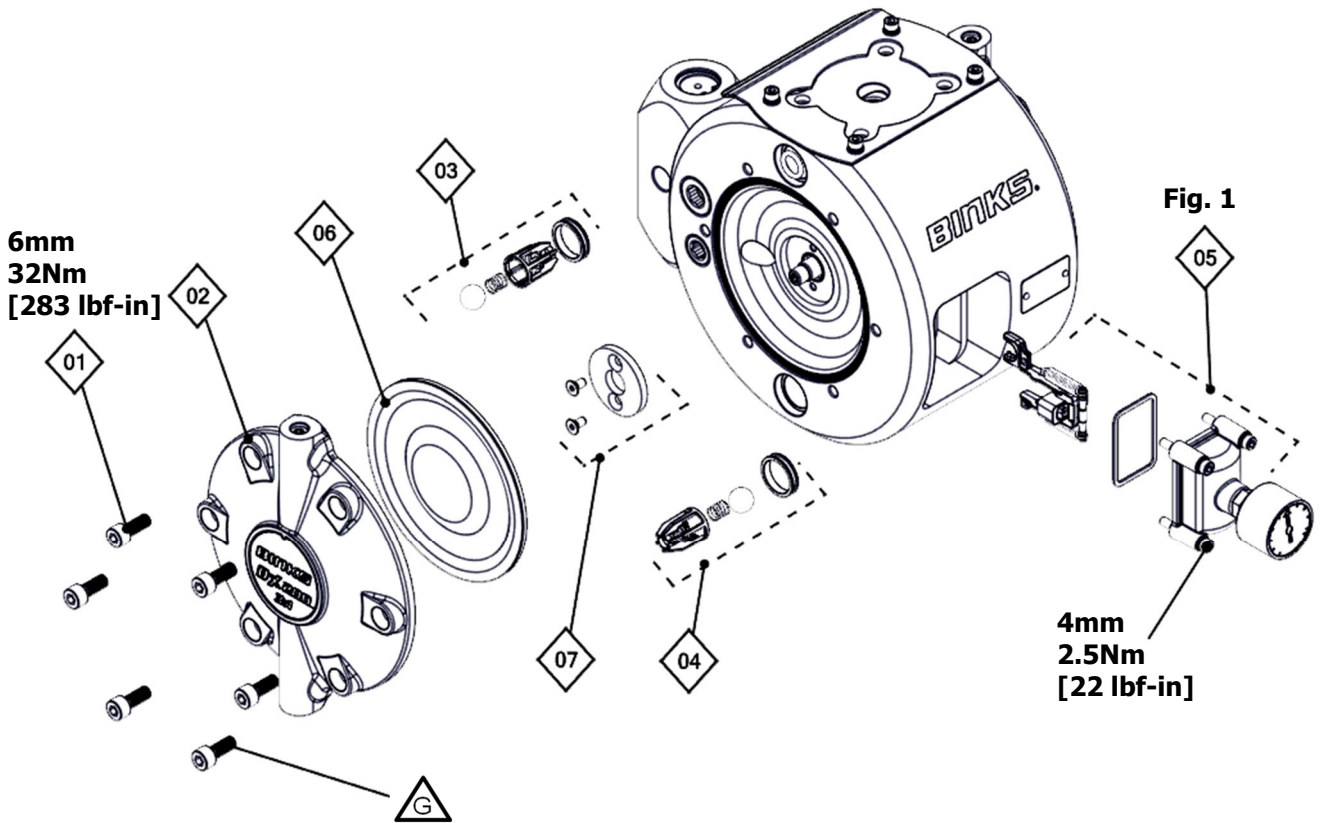
### Outlet Adaptor

1/2" BSPP Male to 3/8" BSPP  
Male

# Maintenance

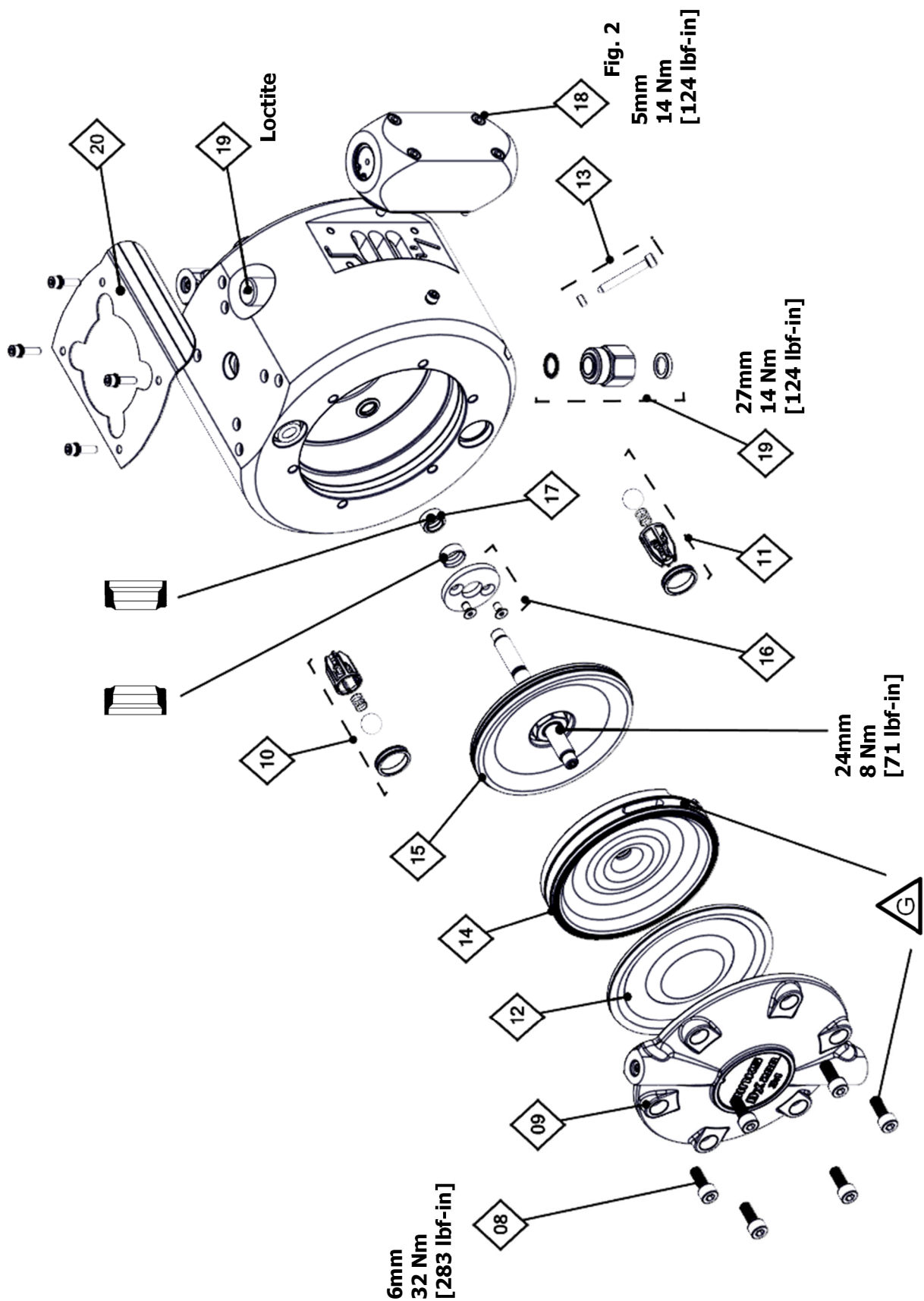
## Key - Maintenance symbols

-  = **Order for dis-assembly**  
*(reverse for assembly)*
-  = Grease (AGMD-010)
- Fig. 1 = refer to figure
- 13MM = Spanner or socket size
- 8 Nm = Torque required



## Non-Piston side

# Maintenance





# Maintenance

Figure 1

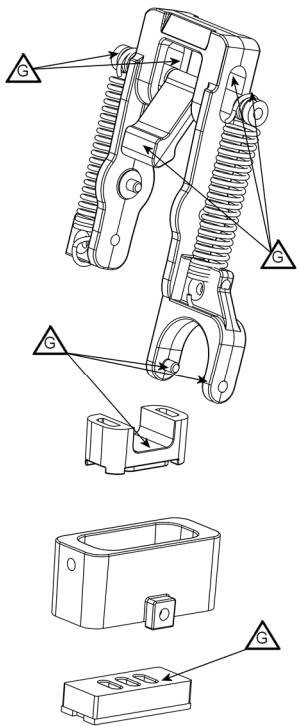
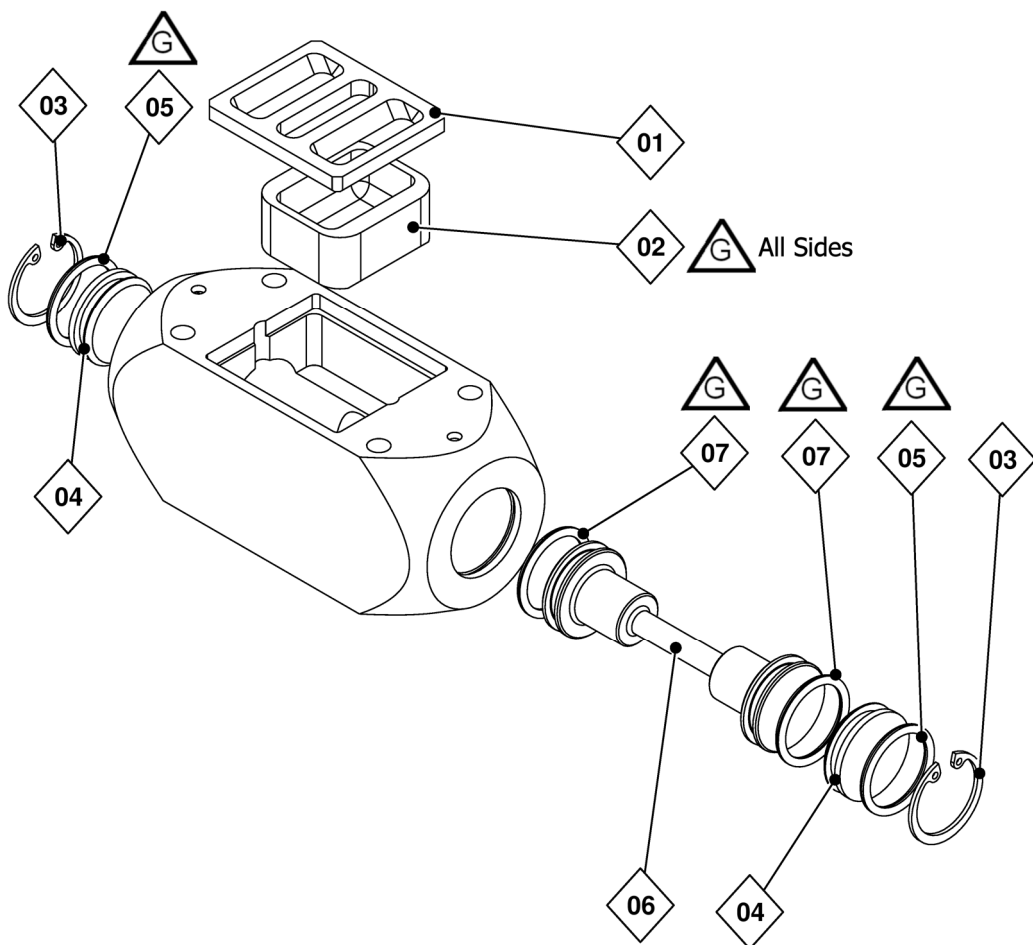
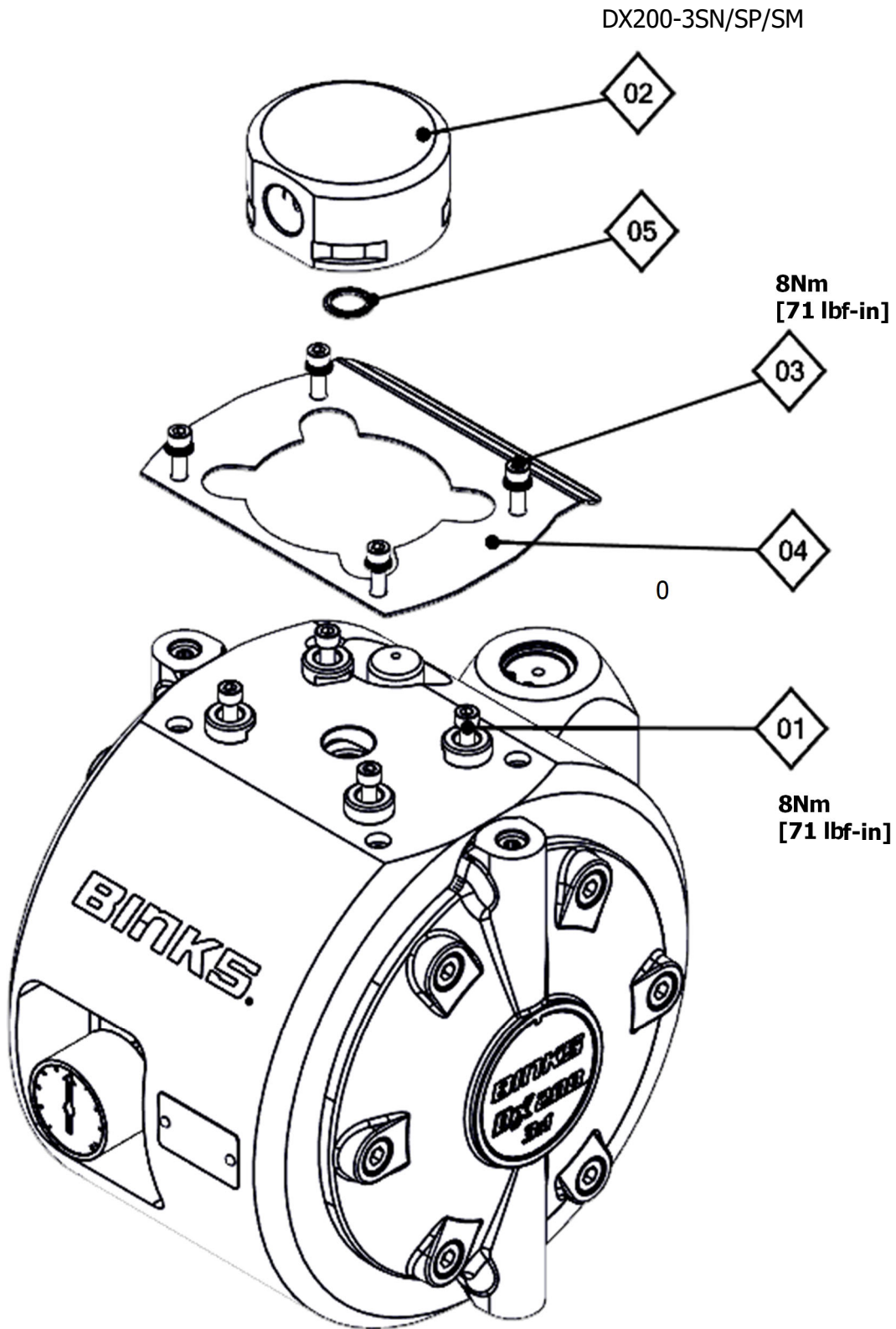


Figure 2



# Maintenance

Figure 3



## Maintenance schedule

EN

Typical period	Recommended operation
Monthly	<ul style="list-style-type: none"> <li>- Check for fluid or air leaks</li> <li>- Inspect Pump for Correct operation</li> <li>- Check for any excessive mechanical noise</li> <li>- Check for excessive fluid pressure pulsation</li> </ul>
4 Months	<p>Perform a pump stop test to ensure correct operation, by ensuring pump stops when the spraygun trigger is closed and there is no fluid flow.</p> <ul style="list-style-type: none"> <li>-</li> <li>If pump does not stop, inspect ball check valves, replace as required.</li> <li>- If air is heard leaking inspect Air Valve (7&amp;32), then shaft, piston seals (16, 17 &amp; 20)</li> <li>- Check fluid regulator adjusts fluid pressure correctly.</li> <li>- Replace if faulty</li> </ul>
12 Months	<ul style="list-style-type: none"> <li>- Replace Diaphragms</li> <li>- Replace fluid regulator seat and diaphragm</li> <li>- Replace centre shaft and seals</li> <li>- Replace Check Valves</li> <li>- Inspect and replace if required:- Air Valve module</li> </ul>

### Fault finding

Symptom	Possible Cause	Remedy
Pump will not 'Prime'	<ul style="list-style-type: none"> <li>a. Air getting into the suction hose/manifold</li> <li>b. Check valve ball/seal damaged</li> </ul>	<ul style="list-style-type: none"> <li>a. Check hose connections</li> <li>b. Inspect, clean/replace balls/seats</li> </ul>
Pump will not run	<ul style="list-style-type: none"> <li>a. No Air or Fluid supply</li> <li>b. Air valve worn or defective</li> </ul>	<ul style="list-style-type: none"> <li>a. Check air and fluid supply ball valves and supply hoses.</li> <li>b. Replace valve module.</li> </ul>
Pump runs but has excessive pulsation	<ul style="list-style-type: none"> <li>a. Air getting into fluid line, air supply restricted.</li> <li>b. Fluid check valves damaged</li> <li>c. Worn centre shaft/seals</li> <li>d. Worn air valve</li> </ul>	<ul style="list-style-type: none"> <li>a. Check seals and hose connections.</li> <li>Check air supply</li> <li>b. Remove, clean, and inspect seat, ball, and ball cage.</li> <li>Replace if suspect or worn.</li> <li>c. Replace shaft and seals.</li> <li>d. Replace air valve module</li> </ul>

**Bare pump selection**

DX200-3 

S	N
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1
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**Pump body**

<b>S</b>	Stainless Steel
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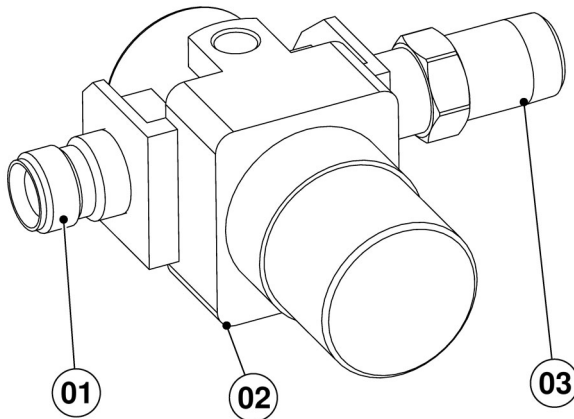
**Air Regulators**

-	No regulator
<b>1</b>	1 Regulator

**Fluid regulator/Pulsation chamber**

<b>M</b>	Manual Regulator
<b>N</b>	No regulator
<b>P</b>	Pulsation Chamber

**Air Regulators**



**DXA-AC1-200-3** 1 Regulator  
- Pump

Item	Part No.	Description
1	180584	Nipple
2	DVX-353	Air Regulator
3	DVX-354	Nipple

**NOTES**

**NOTES**

**NOTES**

**WARRANTY POLICY**

This product is covered by Carlisle Fluid Technologies' materials and workmanship limited warranty. The use of any parts or accessories, from a source other than Carlisle Fluid Technologies, will void all warranties. Failure to reasonably follow any maintenance guidance provided, may invalidate any warranty.

For specific warranty information please contact Carlisle Fluid Technologies.

Carlisle Fluid Technologies is a global leader in innovative finishing technologies. Carlisle Fluid Technologies reserves the right to modify equipment specifications without prior notice.

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