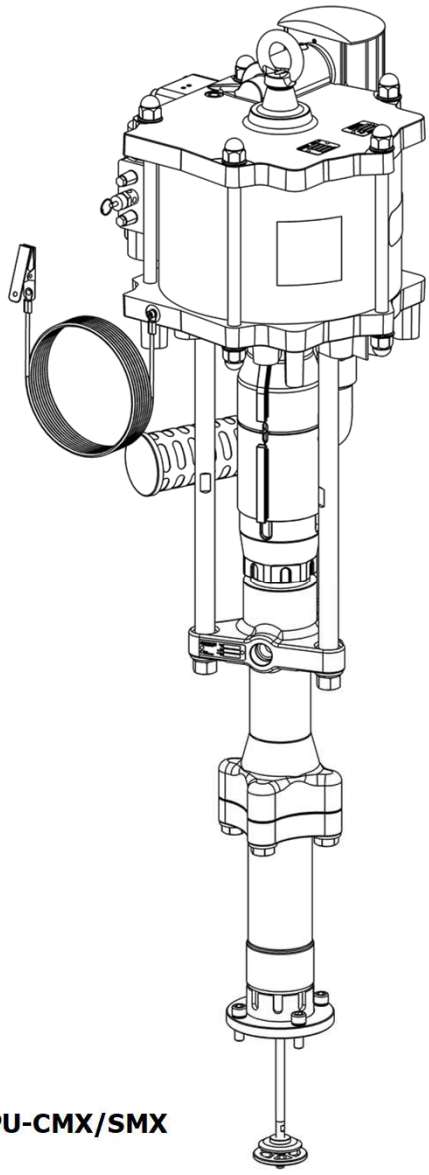
Binks

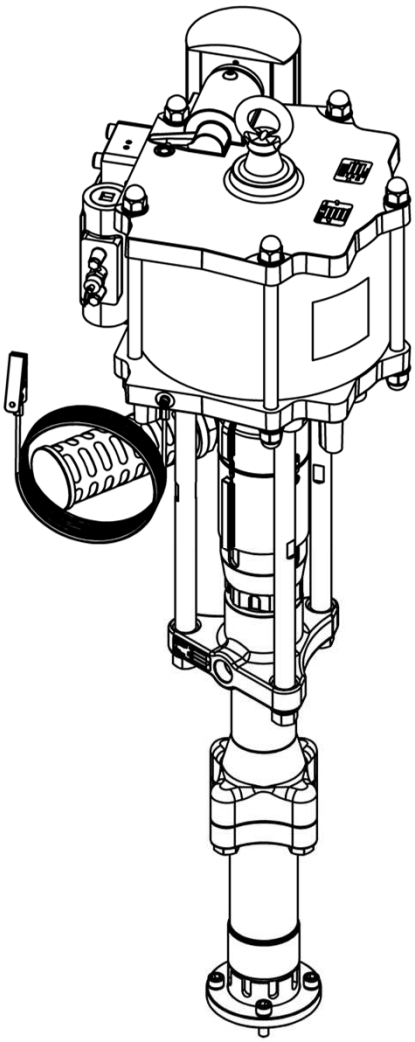
INSTALLATION MANUAL EN

77-3331

# MX20066PU-CMX/SMX
# MX22060PU-CMB/SMB
# MX19070PU-CMB/SMB
# Pump Assembly



MX20066PU-CMX/SMX



MX22060PU-CMB/SMB
MX19070PU-CMB/SMB

Patent 7,603,855

Binks

| | |
|---|---|
| MX20066PU-CMX | MX20066PU-SMX |
| MX22060PU-CMB | MX22060PU-SMB |
| MX19070PU-CMB | MX19070PU-SMB |

| | |
|---|---|
| **Product Description / Object of Declaration:** | **104×××/AX160L-×/AX110L-×/AX200L-××/AX320××/ MMX4×××××/MMX12××××/MXL4×××××/MXL12××××/MX114×××/MX115××××/MX12X××××/MX19×××××/MX2×××××/MX68××××/MX8×××××.** |
| **This Product is designed for use with:** | **Solvent & Waterbased Materials** |
| **Suitable for use in hazardous area:** | **Zone 1/Zone 2** |
| **Protection Level:** | **II 2 G c X IIB T4**<br>**Ex h IIB T4 Gb X** |
| **Notified body details and role:** | **Element Materials Technology Rotterdam B.V. (2812)** |
| | **Lodging of ATEX Technical file** |
| **This Declaration of Conformity / Incorporation is issued under the sole responsibility of the manufacturer:** | **Binks U.K. Limited,**<br>**Ringwood Road,**<br>**Bournemouth, BH11 9LH. UK** |
| **Representative authorised to compile the technical file** | **President @. Binks France SAS**<br>**5 Place Pierre Semard, 94130 Nogent sur Marne , Paris, France** |

# 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 harmonised standards:
EN ISO 12100:2010 Safety of Machinery - General Principles for Design
EN 12621:2006+2010 Machinery for the supply and circulation of coating materials under pressure - Safety requirements
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".
EN 1127-1:2019 Explosive atmospheres - Explosion prevention - Basic concepts

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 Binks U.K. Ltd: | F. A. Sutter | Executive President: Engineering and Operations, Shoreview, MN, 55126. USA |
| Document Part No.<br>. EN | 22/04/25 | |

| | |
|---|---|
| **Product Description / Object of Declaration:** | **104×××/AX160L-×/AX110L-×/AX200L-××/AX320××/ MMX4×××××/MMX12××××/MXL4×××××/MXL12××××/MX114×××/MX115××××/MX12X××××/MX19×××××/MX2×××××/MX68××××/MX8×××××.** |
| **This Product is designed for use with:** | **Solvent & Waterbased Materials** |
| **Suitable for use in hazardous area:** | **Zone 1/Zone 2** |
| **Protection Level:** | **II 2 G c X IIB T4**<br>**Ex h IIB T4 Gb X** |
| **Approved body details and role:** | **Element Materials Technology Warwick Ltd. UK. (0891)** |
| | **Lodging of UKEX Technical file** |
| **This Declaration of Conformity / Incorporation is issued under the sole responsibility of the manufacturer:** | **Binks U.K. Limited,**<br>**Ringwood Road,**<br>**Bournemouth, BH11 9LH. UK** |
| | |

# UKCA Declaration of Conformity

**This Declaration of Conformity / Incorporation is issued under the sole responsibility of the manufacturer:**

Supply of Machinery (Safety) Regulations 2008
Equipment and Protective Systems Intended for use in Potentially Explosive Atmospheres Regulations 2016
by complying with the following statutory documents and designated standards:
BS EN ISO 12100:2010 Safety of Machinery - General Principles for Design
BS EN 12621:2006+2010 Machinery for the supply and circulation of coating materials under pressure - Safety requirements
BS EN ISO 80079-36:2016 Explosive Atmospheres- Part 36:Non Electrical equipment for explosive atmospheres-Basic methods and requirements.
BS EN ISO 80079-37:2016 Explosive Atmospheres- Part 37: Non Electrical equipment for explosive atmospheres - protection by methods "c", "b" and "k".
BS EN 1127-1:2019 Explosive atmospheres - Explosion prevention - Basic concepts

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.

| | | |
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| Signed for and on behalf of Binks U.K. Ltd: | F. A. Sutter | Executive President: Engineering and Operations, Shoreview, MN, 55126. USA |
| Document Part No.<br>. EN | 20/05/25 | |

In this part sheet, the words WARNING, CAUTION and NOTE are used to emphasize important safety information as follows:

EN

| WARNING | CAUTION | NOTE |
|---|---|---|
| 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.

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

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.

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.

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.

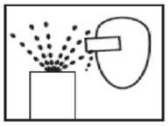
EQUIPMENT MISUSE HAZARD. Equipment misuse can cause the equipment to rupture, malfunction or start unexpectedly and result in serious injury.

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.

STATIC CHARGE. Fluid may develop a static charge that must be dissipated through proper grounding of the equipment, objects to be sprayed and alll 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.


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

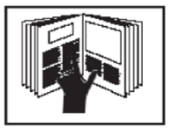
AUTOMATIC EQUIPMENT. Automatic equipment may start suddenly without warning.



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

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

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



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

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

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

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

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

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

# GENERAL DESCRIPTION

- The MX******* -CMX/SMX/CMB/SMB fluid pumps are designed for pumping a range of high viscosity automotive and industrial fluids.

  All variants have a flanged inlet connection for mounting onto a ram based dispensing system to pump high viscosity materials such as mastic and panel sealants, liquid PVC, liquid sound deadening fluids and other similar materials straight from a drum or other container.

  -CMX/SMX variants additionally have a 'chop check' extension attached to the pump rod and extend below the ram mount. This device consisting of a flap type valve on a disc is designed to be immersed in the fluid within the drum / container. As the pump operates, this device moves up and down agitating the fluid. This function is particularly useful for fluids with a thixotropic viscosity characteristic as this pre-pump agitation helps reduce viscosity and improve fluid flow close to the pump inlet.

- The fluid section is based on a double diameter, double seal rod / plunger pump design resulting in the pump delivering fluid in both the up and down strokes. A ball check valve system ensures a precise, smooth volume output. Tungsten carbide ball seats ensure maximum operating life between servicing.

  The internal layout maintains high flow capacity with minimum pressure drop ensuring high efficiency. Special surface treatments provide a smooth micro surface making cleaning and flushing easier.

  Both sets of seals are static and of the chevron type with wear adjustment being taken up either automatically over a certain range (lower seal) by a wave spring or by manual tightening of a packing nut (upper seal). The packing nut also contains a fluid compatible lubricant (supplied with pump) which helps to clean and lubricate the pump rod and upper seal to prolong working life.

- The air motor utilises the Binks quick exhaust technology to help reduce the risk of pump stall caused by air valve sticking from the freezing of moisture contained in the exhausted air. However, in parallel to this, the operator should endeavour to control the quality of the supplied compressed air to this standard or better:

  Recommended minimum air quality to ISO 8573.1: Class 3.3.2

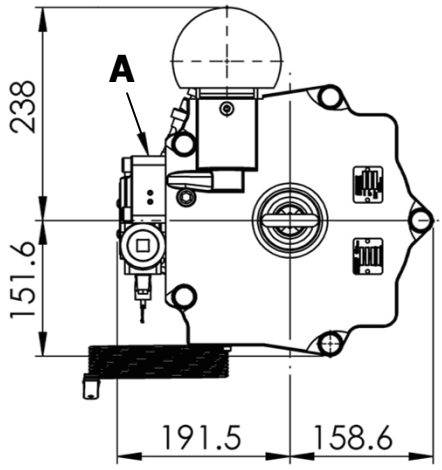
  [Solid particles: 5µm max, water: -20°C pressure dew point, total oil content: 0.1mg/m3 max]

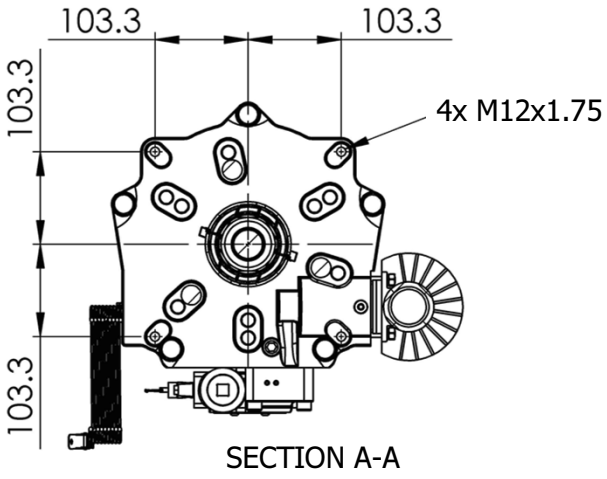
- The air motor is furnished with an exhaust muffler to control air exhaust noise emission. An adapter kit is also available to facilitate connection to a piped exhaust system if required.

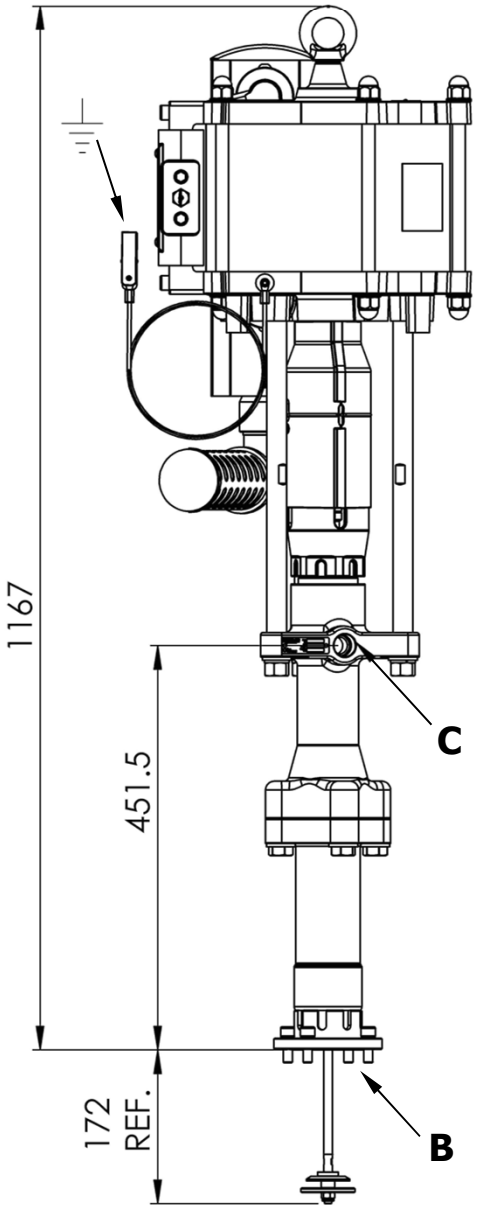
# SPECIFICATION

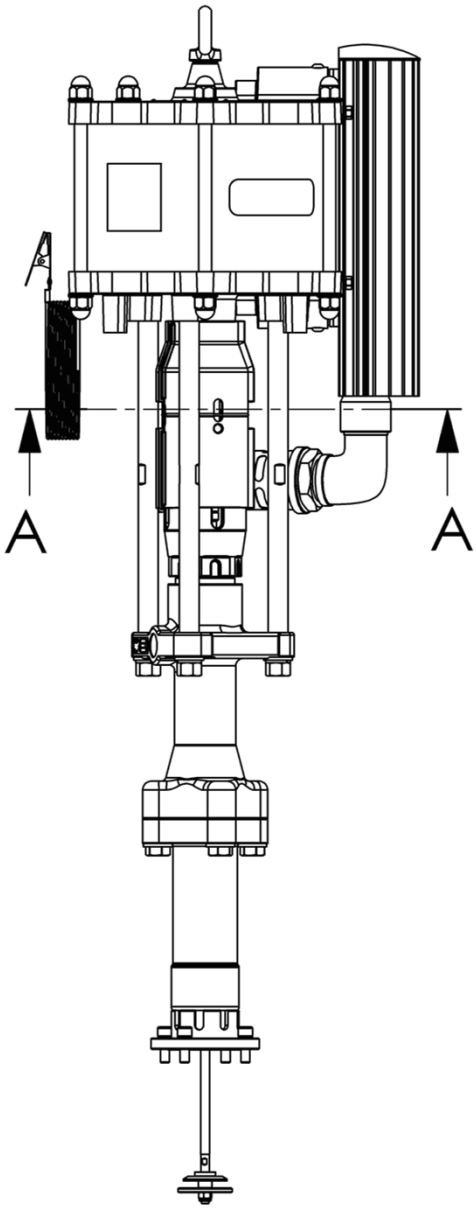
| | | | MX20066PU -CMX/SMX | MX22060PU -CMB/SMB | MX19070PU -CMB/SMB |
|---|---|---|---|---|---|
| | Ratio: | | 66:1 | 60:1 | 70:1 |
| | Stroke length: | | 5" [127mm] | | |
| | Maximum air inlet pressure: | | 7 bar [101.5 psi] | 8 bar [116 psi] | 7 bar [101.5 psi] |
| | Maximum fluid pressure: | | 462 bar [6700 psi] | 480 bar [6962 psi] | 490 bar [7107 psi] |
| | Displacement per cycle: | | 200 ml [6.8 US fl oz] | 220 ml [7.4 US fl oz] | 190 ml [6.4 US fl oz] |
| | Output @ 60 cycles/min: | | 12.0l/m [3.2 US gal/m] | 13.2 l/m [3.5 US gal/m] | 11.4 l/m [3.0 US gal/m] |
| | Air flow @ 25 cycles / min 6.9 bar / 100psi: | | 2477 l/m [87.5 SCFM] | | |
| | Maximum Recommended Intermittent Cycle Rate [cycles / min]: | | 25 | | |
| **A** | Air inlet connection: | | 3/4" BSPP (f) | | |
| **B** | Fluid inlet connection: | | Ram Mount with Chop-Check | Ram Mount | Ram Mount |
| **C** | Fluid outlet connection: | | 3/4" NPT (f) | | |
| | Sound level @ 7 Bar: | | 79.5 dB(A) Leq | | |
| | Weight: | | 53.5kg [118lbs] | | |
| | Wetted parts materials of construction: | -SMX -SMB | Stainless Steel, Ceramic coated Stainless Steel, PTFE, UHMWPE, FEP, Flurocarbon rubber, Tungsten Carbide. | | |
| | | -CMX -CMB | As above plus carbon steel | | |
| | Pump Rod Surface Treatment: | -SMX -SMB | Ceramic coated stainless steel | | |
| | | -CMX -CMB | Carbon Steel (Nitrided Shaft) | | |
| | Pump Rod Upper Packing Seal (-PU-) : | | PTFE & UHMWPE Chevron | | |
| | Pump Rod Lower Packing Seal (-PU-) : | | PTFE & UHMWPE Chevron | | |

# DIMENSIONS AND MOUNTING DETAILS - MX20066PU-CMX/SMX

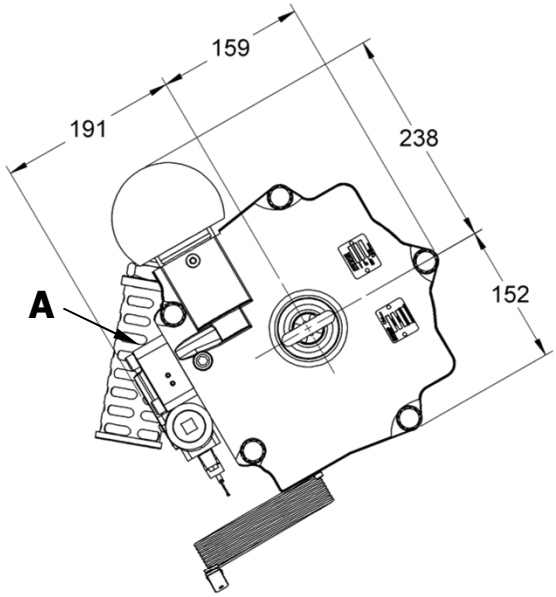


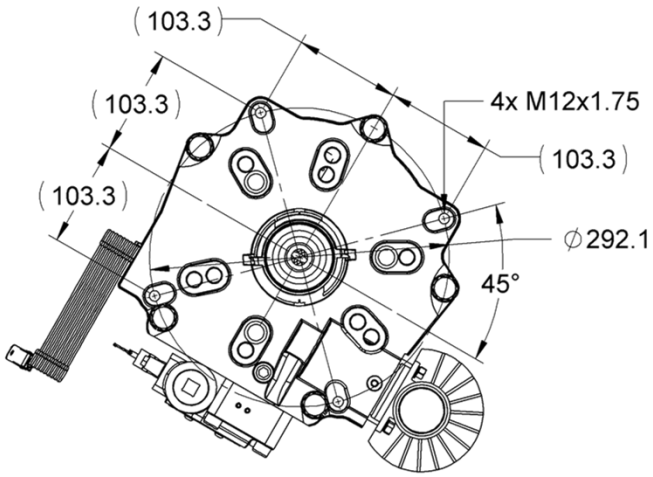



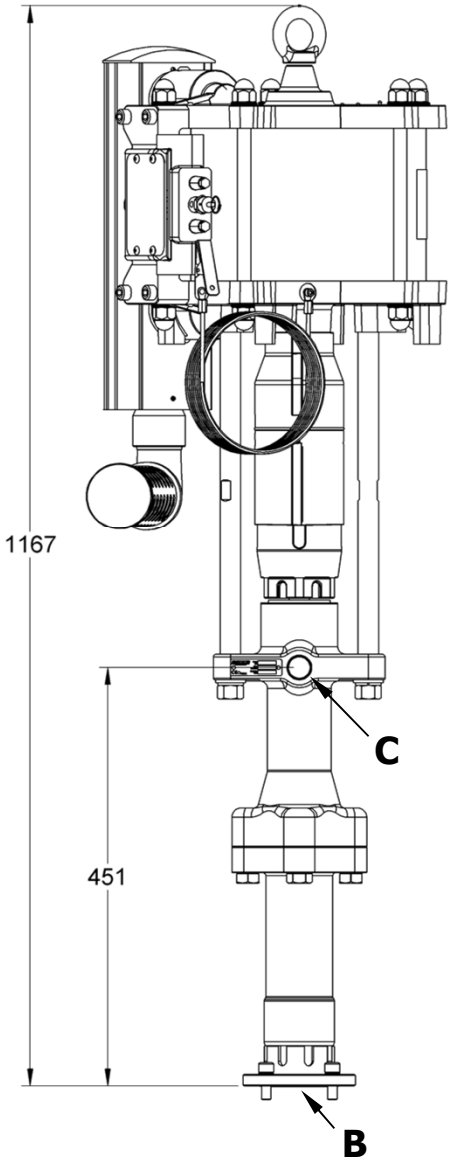



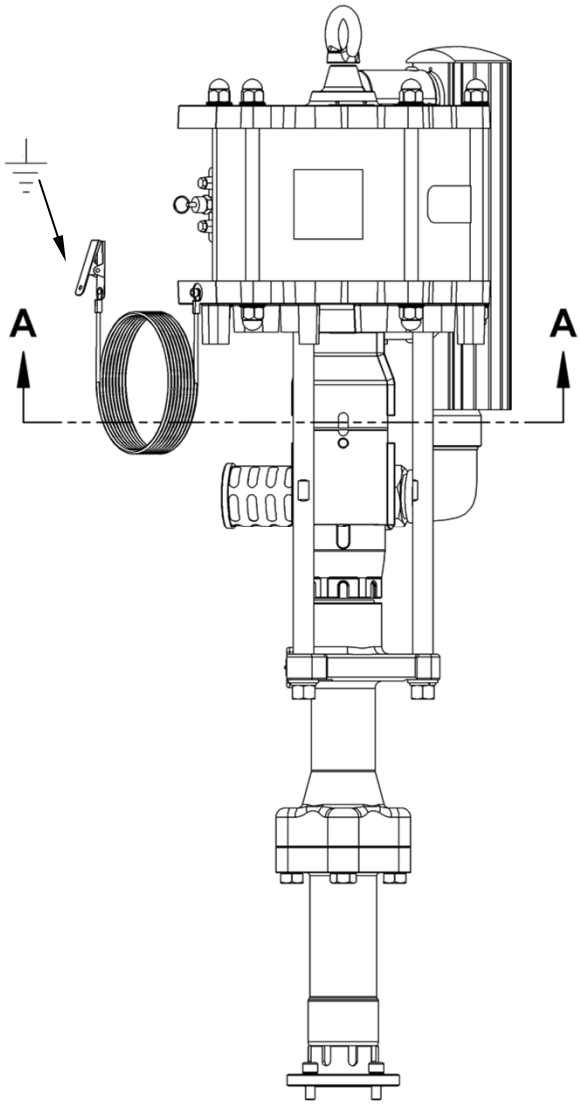
# DIMENSIONS AND MOUNTING DETAILS
# MX22060PU-CMB/SMB & MX19070-CMB/SMB




SECTION A-A



# INSTALLATION

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

- It is recommended that a suitable filter and regulator unit is fitted into the air line close to the pump to provide final control of the compressed air to the air motor.

- Mount the pump securely and position the pump at a convenient height to allow for maintenance, visual observation, and periodic inspection.

- The pump assembly must be connected to a suitable earth ground to ensure that there is no possibility of electrical static charge build up. A 4 metre grounding cable is supplied with each pump for this purpose - attached to the pump air motor in the earth location shown in the drawings by use of an M5 screw. Resistance to earth should be less than 1 Ohm.

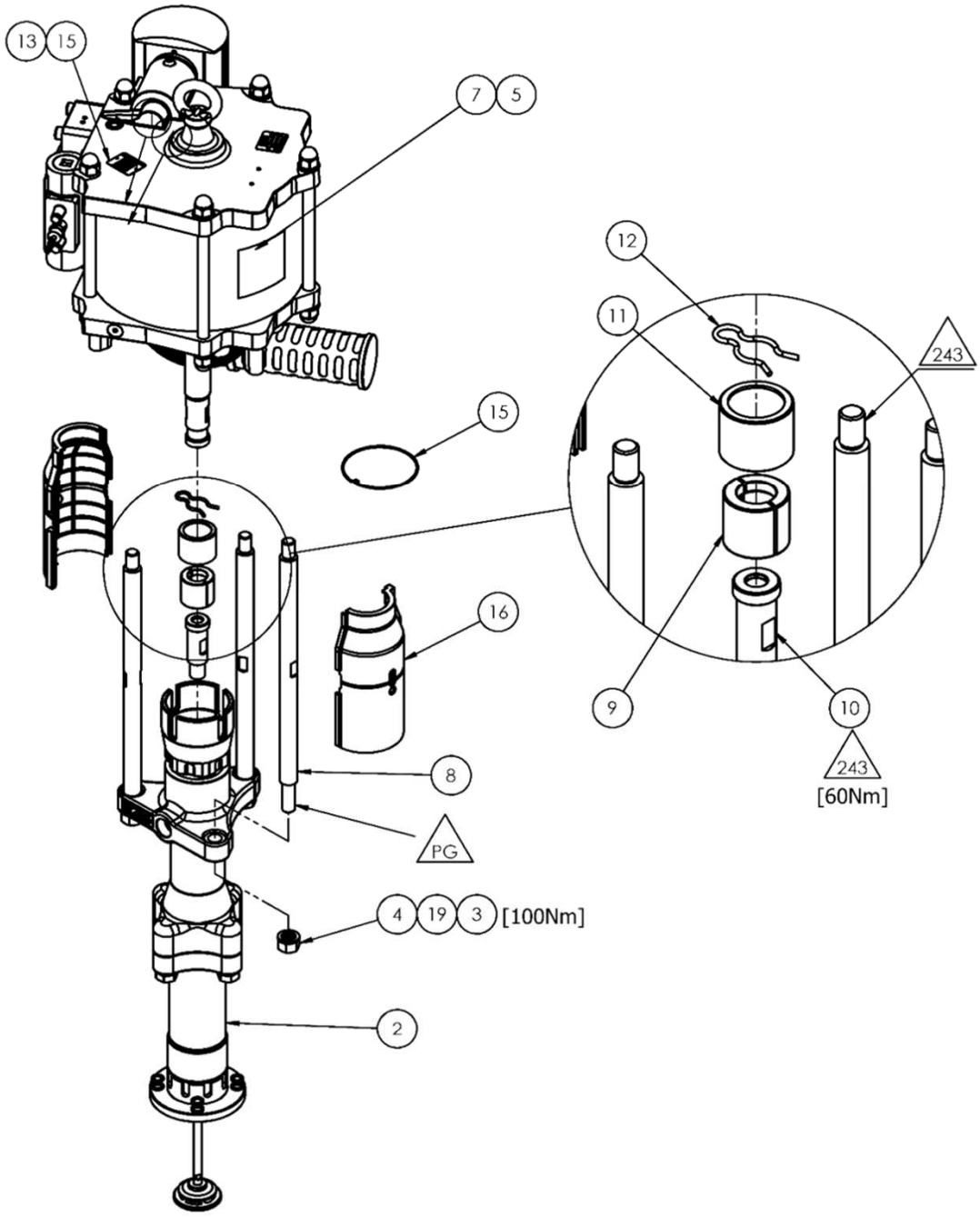
- Attach suitable pipework or flexible hoses designed to meet the working pressure of the pump assembly (dependent on pump ratio) to the outlet connection.

- Fill the packing cup with a lubricant compatible with the fluid to be pumped. Two small bottles of lubricant are supplied with the pump - one for use with solvent based fluids and the other for water based fluids.

- Set the pump speed to a slow cycle rate and prime the pump to remove any air before increasing pressure. Inspect for any air or fluid leaks.

**IF THE SYSTEM IS NOT USED FOR AN EXTENDED PERIOD IT IS RECOMMENDED TO BE FILLED WITH A LIGHT OIL AFTER CLEANING.**

# PUMP ASSEMBLY - MX20066PU-CMX/SMX




**SYMBOLS:**

[TORQUE] = TORQUE SPECIFICATION

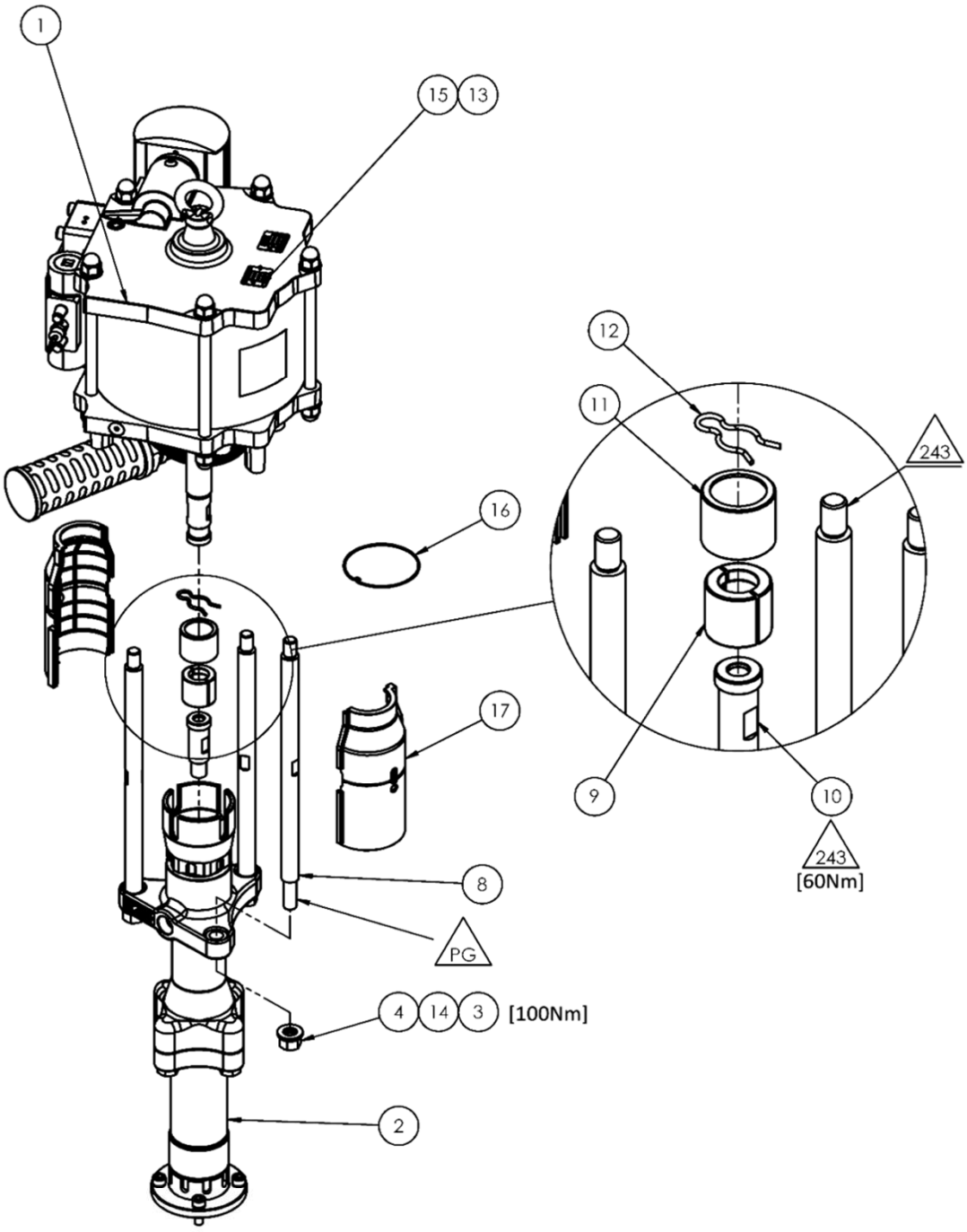
PG = PETROLEUM GREASE/JELLY

243 = LOCTITE 243

# PARTS LIST - MX20066PU-CMX/SMX

| ITEM | PART NO. | DESCRIPTION | QTY | REMARKS |
|---|---|---|---|---|
| 1 | AX260L-7R | AX260L-7R AIR MOTOR | 1 | |
| 2 | FX200PU-CMX | FX200PU-CMX FLUID SECTION | 1 | Hardened steel pump rod for solvent based fluids |
| | FX200PU-SMX | FX200PU-SMX FLUID SECTION | 1 | Coated stainless steel pump rod for water based fluids |
| 3 | 20-6832 | M16 LOCKWASHER | 3 | |
| 4 | 20-6834 | M16 HEX NUT | 3 | |
| 5 | 0114-009743 | M5 SPRING WASHER | 2 | |
| 6 | 0114-011798 | GROUNDING CABLE | 1 | |
| 7 | 0114-014179 | M5 x 12 SOCKET HEAD CAP SCREW | 1 | |
| 8 | 0115-010444 | TIE ROD | 3 | |
| 9 | 0115-010445 | MOTOR ROD SPLIT COLLAR | 1 | |
| 10 | 0115-010447 | PUMP ROD QD ADAPTER | 1 | |
| 11 | 0115-010448 | SPLIT COLLAR RETAINER | 1 | |
| 12 | 0115-010450 | HAIR PIN CLIP | 1 | |
| 13 | 164838 | RIVET | 2 | |
| 14 | 165097 | M16 WASHER | 3 | |
| 15 | 193540 | NAMEPLATE | 1 | |
| 16 | 193543 | COVER CLIP | 1 | |
| 17 | 193546 | GUARD | 2 | |
| - | 0114-016099 | PUMP LUBRICATION - SOLVENT BASED | 1 | (250mL) |
| - | 0114-016100 | PUMP LUBRICATION - WATER BASED | 1 | (250mL) |

# PUMP ASSEMBLY - MX22060PU-CMB/SMB & MX19070-CMB/SMB




## SYMBOLS:

[TORQUE] = TORQUE SPECIFICATION

PG = PETROLEUM GREASE/JELLY

243 = LOCTITE 243

# PARTS LIST - MX22060PU-CMB/SMB & MX19070-CMB/SMB

| ITEM | PART NO. | DESCRIPTION | QTY | REMARKS |
|---|---|---|---|---|
| 1 | AX260L-7R | AX260L-7R AIR MOTOR | 1 | (MX19070PU-###) |
| | AX260L-8R | AX260L-8R AIR MOTOR | 1 | (MX22060PU-###) |
| 2 | FX220PU-CMB | FX220PU-CMB FLUID SECTION | 1 | Hardened steel pump rod for solvent based fluids |
| | FX190PU-CMB | FX190PU-CMB FLUID SECTION | | |
| | FX220PU-SMB | FX220PU-SMB FLUID SECTION | | Coated stainless steel pump rod for water based fluids |
| | FX190PU-SMB | FX190PU-SMB FLUID SECTION | | |
| 3 | 20-6832 | M16 LOCKWASHER | 3 | |
| 4 | 20-6834 | M16 HEX NUT | 3 | |
| 5 | 0114-009743 | M5 SPRING WASHER | 1 | |
| 6 | 0114-011798 | GROUNDING CABLE | 1 | |
| 7 | 0114-014179 | M5 x 12 SOCKET HEAD CAP SCREW | 1 | |
| 8 | 0115-010444 | TIE ROD | 3 | |
| 9 | 0115-010445 | MOTOR ROD SPLIT COLLAR | 1 | |
| 10 | 0115-010447 | PUMP ROD QD ADAPTER | 1 | |
| 11 | 0115-010448 | SPLIT COLLAR RETAINER | 1 | |
| 12 | 0115-010450 | HAIR PIN CLIP | 1 | |
| 13 | 165097 | M16 WASHER | 3 | |
| 14 | 193543 | COVER CLIP | 1 | |
| 15 | 193546 | GUARD | 2 | |
| - | 0114-016099 | PUMP LUBRICATION - SOLVENT BASED | 1 | (250mL) |
| - | 0114-016100 | PUMP LUBRICATION - WATER BASED | 1 | (250mL) |

# TROUBLESHOOTING

| PROBLEM | CAUSE | SOLUTION |
|---|---|---|
| Pump will not start | No compressed air.<br>System is blocked. | Check compressed air supply.<br>Clear the blockage. |
| Erratic operation of air motor, air motor stops. | Worn poppet assemblies.<br>Worn or dirty spool and sleeve assembly.<br>Worn piston seal.<br>Quick exhaust valve cup / diaphragm defective | Replace poppet assemblies.<br>Clean or replace the spool and sleeve assembly as necessary.<br>Replace piston seal.<br>Check / replace quick exhaust cups / diaphragms. |
| Continuous air leak from the exhaust | Worn poppet assemblies.<br>Worn piston seal.<br>Quick exhaust valve cup / diaphragm defective | Replace poppet assemblies.<br>Replace piston seal.<br>Check / replace quick exhaust cups / diaphragms. |
| Material in solvent cup. | Worn or dirty upper packings.<br>Damaged fluid section rod | Replace or clean upper packings as necessary.<br>Replace rod. |
| Pump unable to stall on the down stroke | Worn or dirty lower ball check. | Replace or clean the parts as necessary. |
| Pump unable to stall on the up stroke | Worn or dirty upper ball check.<br>Worn or dirty lower packings. | Replace or clean the parts as necessary. |
| Pump runs, with no output<br>Pump runs erratically | Air entering into loose suction side connections.<br>Stuck, worn or damaged balls or seats.<br>Low material level.<br>Worn or dirty lower packings.<br>Contamination trapped between ball and seat. | Check that all connections are tight.<br>Replace or clean the parts as necessary.<br>Replace or refill material container.<br>Replace or clean the parts as necessary.<br>Clean parts. |

# PREVENTATIVE MAINTENANCE

| INSPECTION | OPERATION | |
|---|---|---|
| Daily | Check for general air leakage and correct motor operation.<br><br>Ensure lubricant is present in the fluid section packing cup. This should be compatible with the material being pumped. Confirmation from the supplier of the pumped fluid should be sought to ensure lubricant compatibility to prevent the risk of contamination.<br><br>Check there is no excessive pumped fluid leaking up into the fluid section packing cup. | |
| 6 Month Test | Perform a pump stall test to ensure correct operation.<br><br>Pump should stall in both the upward and downward strokes. When stalled there should be no continuous escape of air. | |
| 12 to 36 Months (Typically 10 million pump cycles dependent on air quality and abrasiveness of the fluid pumped) | Replace air piston seal.<br><br>Replace motor rod cartridge assembly.<br><br>Replace poppet assemblies. | Order an air motor seal kit. See Spare Parts List. |
| | Inspect and replace if required: Main valve assembly parts. | Order an air motor main valve repair kit. See Spare Parts List. |

# ACCESSORIES

| Part No. | Description | Remarks |
|---|---|---|
| 0114-016099 | 0.25L Pump Lubricant (Solvent Based) | |
| 0114-009433 | 0.5L Pump Lubricant (Solvent Based) | |
| 0114-016100 | 0.25L Pump Lubricant (Water Based) | |
| 0114-014871 | 0.5L Pump Lubricant (Water Based) | |
| AGMD-010 | SYNTHETIC GREASE (Kluber ISOFLEX TOPAS NB 52) | 50g Tube |
| 192506 | Exhaust Tube Adapter - 1½" BSPP - 1½" nominal bore hose | For piped exhaust |
| MXA-C13ALM5-H34 | Air filter regulator unit with isolator valve and 0.5 metre pump connection hose | For wall / panel mounting ½" BSPP female inlet |

# SPARE PARTS LIST

| PART NO. | DESCRIPTION |
|---|---|
| 250699 | MX20066PU-CMX/SMX FLUID SECTION SEAL KIT |
| 250732 | MX22060PU-CMB/SMB FLUID SECTION SEAL KIT |
| 250663 | MX19070PU-CMB/SMB FLUID SECTION SEAL KIT |
| 250645 | Air motor seal kit |
| 250648 | Air motor cylinder seal kit |
| 250649 | Air valve assembly repair kit |
| 250650 | Air motor hardware kit |
| 250651 | Air motor exhaust seal kit |

Kit contents are indicated in the respective separate air motor and fluid section service manuals.

For air motor assembly and fluid section assembly, parts listing and servicing information, please see separate air motor and fluid section service manuals.

## NOTES

# WARRANTY POLICY

This product is covered by Binks materials and workmanship limited warranty.

The use of any parts or accessories, from a source other than Binks, will void all warranties. Failure to reasonably follow any maintenance guidance provided, may invalidate any warranty.

For specific warranty information please contact Binks.

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For technical assistance or to locate an authorised distributor, contact one of our international sales and customer support locations below.

| REGION | BINKS CONTACT |
|---|---|
| Americas | Tel: 1-888-992-4657 |
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# WARRANTY PAGE

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