



EFE80 Metallic Pumps

- Aluminum
- Cast Iron
- Stainless Steel

Assembly, Installation and Operation Manual *Design Level 1*



Ex II 2G c T5

Ex II 2D c T100°C

Ex II 2 G Ex h IIB T4...T3 Gb

**UK
CA**

Enviroflex Ltd

Pump Point, 21 Ascot Drive, DERBY, DE24 8GZ, United Kingdom

www.enviroflexpumps.com

Safety Information

⚠ IMPORTANT



Read the safety warnings and instructions in this manual before pump installation and start-up. Failure to comply with the recommendations stated in this manual could damage the pump and void factory.



When the pump is used for materials that tend to settle out or solidify, the pump should be flushed after each use to prevent damage. In freezing temperatures the pump should be completely drained between uses.

⚠ CAUTION



Before pump operation, inspect all fasteners for loosening caused by gasket creep. Retighten loose fasteners to prevent leakage. Follow recommended torques stated in this manual.



Nonmetallic pumps and plastic components are not UV stabilized. Ultraviolet radiation can damage these parts and negatively affect material properties. Do not expose to UV light for extended periods of time.

⚠ WARNING



When used for toxic or aggressive fluids, the pump should always be flushed clean prior to disassembly.



Before maintenance or repair, shut off the compressed air line, bleed the pressure, and disconnect the air line from the pump. Be certain that approved eye protection and protective clothing are worn at all times. Failure to follow these recommendations may result in serious injury or death.



Airborne particles and loud noise hazards. Wear eye and ear protection.



In the event of diaphragm rupture, pumped material may enter the air end of the pump, and be discharged into the atmosphere. If pumping a product that is hazardous or toxic, the air exhaust must be piped to an appropriate area for safe containment.



Take action to prevent static sparking. Fire or explosion can result, especially when handling flammable liquids. The pump, piping, valves, containers and other miscellaneous equipment must be properly grounded.



This pump is pressurized internally with air pressure during operation. Make certain that all fasteners and piping connections are in good condition and are reinstalled properly during reassembly.



Use safe practices when lifting

Explanation of Pump Nomenclature

	EF	E	80	X-XX-XX-XX-XX	X
Pump Brand EF - Enviroflex Pumps					
Series E - "E" Series					
Pump Size 80 - 3"					
Fluid Connection N - 3 - 8 N.P.T.F. - 1 B - Rp 3 (3 - 11 BSP parallel)					
Fluid Caps & Manifold Material AL - Aluminum CI - Cast Iron SS - Stainless Steel					
Seat Material SP - Santoprene HY - Hytrel CS - Carbon Steel BN - Nitrile KY - Kynar PVDF AL - Aluminum SS - 316 Stainless Steel					
Ball Material SP - Santoprene HY - Hytrel BN - Nitrile TF - Teflon P.T.F.E. VT - Viton					
Diaphragm Material SP - Santoprene HY - Hytrel BN - Nitrile TF - Teflon P.T.F.E. / Santoprene VT - Viton					
FLUID SECTION SERVICE KIT SELECTION EXAMPLE: Model # EFE-80B-AL-SP-SP-SP-X Fluid Section Service Kit # EF637303-SP-SP				EFE-80X - XX - XX XX XX -X EF637303 - XX XX Ball Diaphragm	

Record the model number and serial number below for future reference-This is important information when ordering replacement parts or when technical assistance is required-

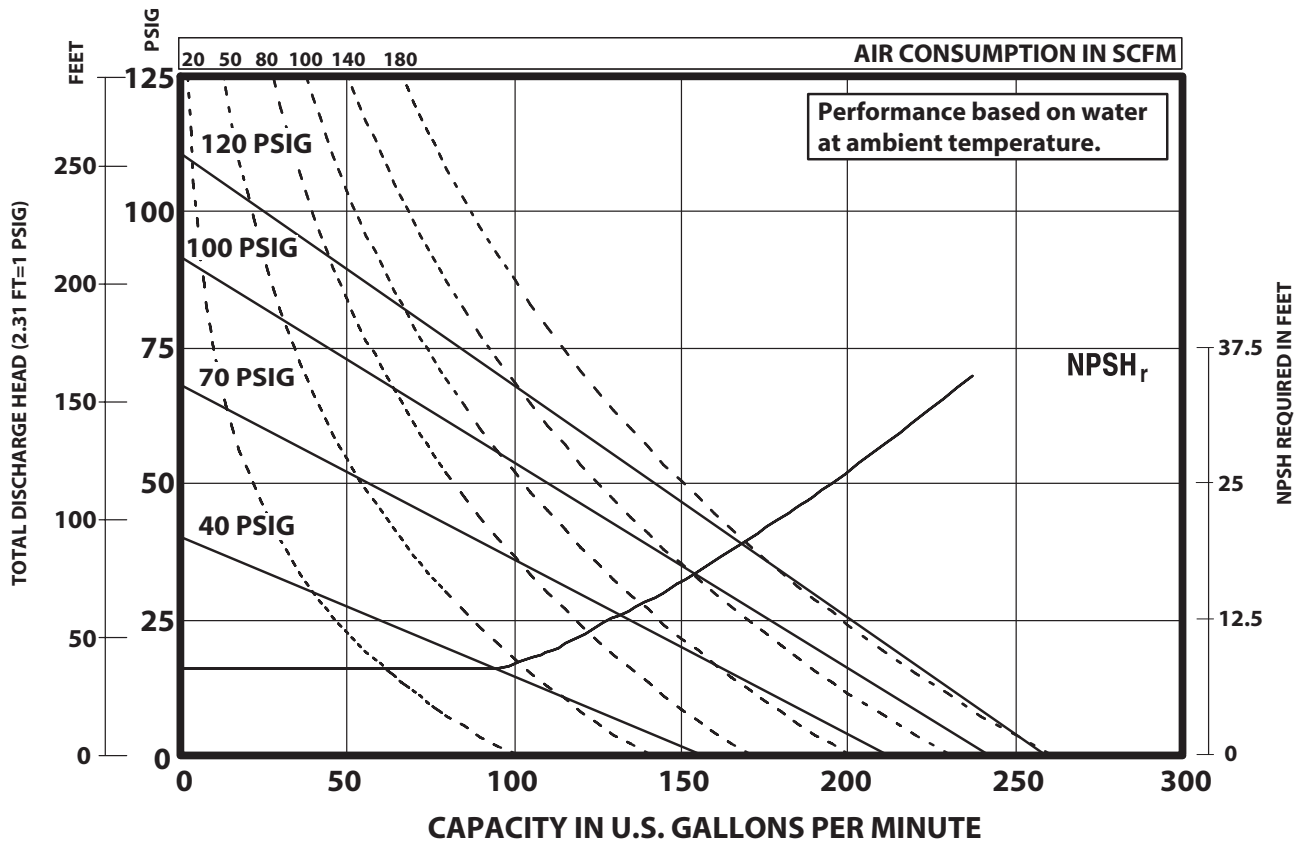
Your Pump Model# -----

Your Serial#

Performance

EFE80 METALLIC

Model EFE80 Metallic Performance Curve



Ratio: 1:1

Maximum GPM (LPM): 275 (1041)

Displacement per cycle Gallons (Liters): 2.8 (10.6)

Air Inlet (Female): 3/4 - 14 N.P.T.F. - 1

Fluid Inlet/Outlet: 3" - 8 N.P.T.F. - 1 / Rp 3 (3 - 11 BSP parallel)

Max. operating pressure psi (bar): 120 (8.3)

Suspended solids max. dia. in. (mm): 3/8" (9.5)

Weight lbs (kg):

Aluminum 129.5 (58.8)

Cast Iron 221.1 (100.3)

Stainless Steel 228.3 (103.8)

Maximum dry suction lift ft (m) : 14 (4.2)

Sound Level: 70 PS50 Cycles/Min 83.0 db(A)

Muffler Included: EF67389

Safety Information

⚠ IMPORTANT



Read the safety warnings and instructions in this manual before pump installation and start-up. Failure to comply with the recommendations stated in this manual could damage the pump and void factory.



When the pump is used for materials that tend to settle out or solidify, the pump should be flushed after each use to prevent damage. In freezing temperatures the pump should be completely drained between uses.

⚠ CAUTION



Before pump operation, inspect all fasteners for loosening caused by gasket creep. Retighten loose fasteners to prevent leakage. Follow recommended torques stated in this manual.



Nonmetallic pumps and plastic components are not UV stabilized. Ultraviolet radiation can damage these parts and negatively affect material properties. Do not expose to UV light for extended periods of time.

⚠ WARNING



When used for toxic or aggressive fluids, the pump should always be flushed clean prior to disassembly.



Before maintenance or repair, shut off the compressed air line, bleed the pressure, and disconnect the air line from the pump. Be certain that approved eye protection and protective clothing are worn at all times. Failure to follow these recommendations may result in serious injury or death.



Airborne particles and loud noise hazards. Wear eye and ear protection.



In the event of diaphragm rupture, pumped material may enter the air end of the pump, and be discharged into the atmosphere. If pumping a product that is hazardous or toxic, the air exhaust must be piped to an appropriate area for safe containment.



Take action to prevent static sparking. Fire or explosion can result, especially when handling flammable liquids. The pump, piping, valves, containers and other miscellaneous equipment must be properly grounded.



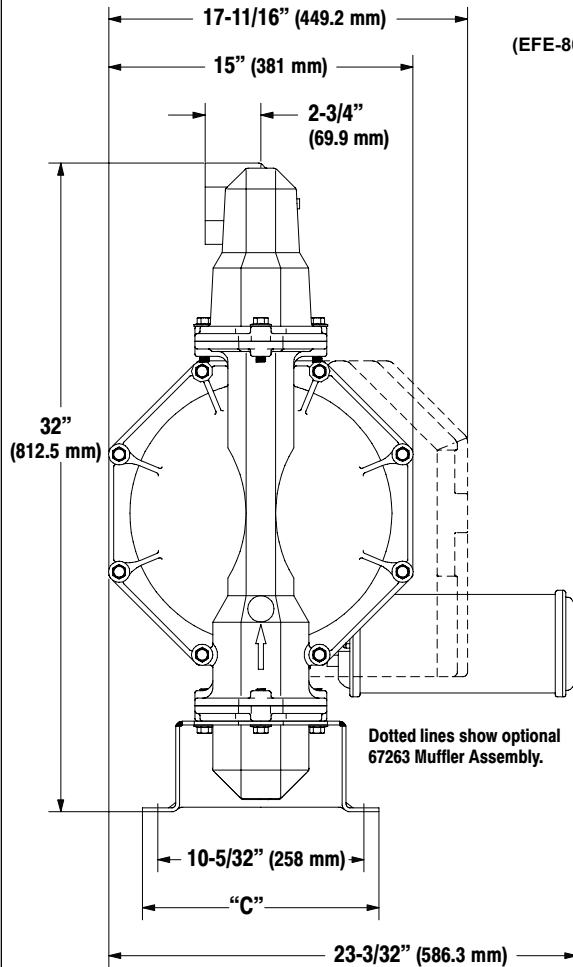
This pump is pressurized internally with air pressure during operation. Make certain that all fasteners and piping connections are in good condition and are reinstalled properly during reassembly.



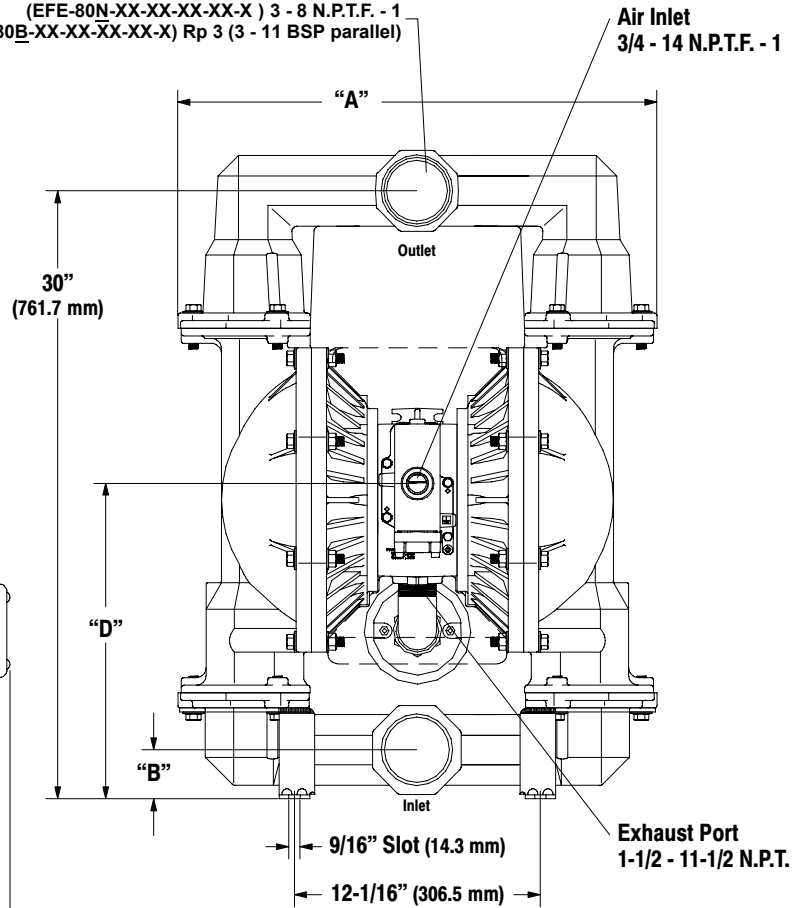
Use safe practices when lifting

Dimensional Drawings for EFE80 Metallic Pumps

(Dimensions shown are for reference only, they are displayed in inches and millimeters (mm)).



(EFE-80N-XX-XX-XX-XX-X) 3 - 8 N.P.T.F. - 1
(EFE-80B-XX-XX-XX-XX-X) Rp 3 (3 - 11 BSP parallel)



OPTIONAL ACCESSORY: EF66109 Air Line Connection Kit

	"A"	"B"	"C"	"D"
EFE-80X- <u>AL</u> -XX-XX-XX-X	23-5/8" (598.7 mm)	2-3/8" (60.3 mm)	11" (279.4 mm)	15-1/2" (393.7 mm)
EFE-80X- <u>CI</u> -XX-XX-XX-X	23-5/8" (598.7 mm)	2-7/16" (61.1 mm)	11-11/16" (296.1 mm)	15-1/2" (393.7 mm)
EFE-80X- <u>SS</u> -XX-XX-XX-X	23-1/8" (587.3 mm)	2-3/4" (69.9 mm)	11-11/16" (296.1 mm)	16" (406.4 mm)

Troubleshooting Guide

Symptom:	Potential Cause(s):	Recommendation(s):
Pump Cycles Once	Deadhead (system pressure meets or exceeds air supply pressure).	Increase the inlet air pressure to the pump. Pump is designed for 1:1 pressure ratio at zero flow. (Does not apply to high pressure 2:1 units).
	Air valve or intermediate gaskets installed incorrectly.	Install gaskets with holes properly aligned.
	Bent or missing actuator plunger.	Remove pilot valve and inspect actuator plungers.
Pump Will Not Operate / Cycle	Pump is over lubricated.	Set lubricator on lowest possible setting or remove. Units are designed for lube free operation.
	Lack of air (line size, PSI, CFM).	Check the air line size and length, compressor capacity (HP vs. CFM required).
	Check air distribution system.	Disassemble and inspect main air distribution valve, pilot valve and pilot valve actuators.
	Discharge line is blocked or clogged manifolds.	Check for inadvertently closed discharge line valves. Clean discharge manifolds/piping.
	Deadhead (system pressure meets or exceeds air supply pressure).	Increase the inlet air pressure to the pump. Pump is designed for 1:1 pressure ratio at zero flow. (Does not apply to high pressure 2:1 units).
	Blocked air exhaust muffler.	Remove muffler screen, clean or de-ice, and re-install.
	Pumped fluid in air exhaust muffler.	Disassemble pump chambers. Inspect for diaphragm rupture or loose diaphragm plate assembly.
Pump Cycles and Will Not Prime or No Flow	Pump chamber is blocked.	Disassemble and inspect wetted chambers. Remove or flush any obstructions.
	Cavitation on suction side.	Check suction condition (move pump closer to product).
	Check valve obstructed. Valve ball(s) not seating properly or sticking.	Disassemble the wet end of the pump and manually dislodge obstruction in the check valve pocket. Clean out around valve ball cage and valve seat area. Replace valve ball or valve seat if damaged. Use heavier valve ball material.
	Valve ball(s) missing (pushed into chamber or manifold).	Worn valve ball or valve seat. Worn fingers in valve ball cage (replace part). Check Chemical Resistance Guide for compatibility.
	Valve ball(s) / seat(s) damaged or attacked by product.	Check Chemical Resistance Guide for compatibility.
	Check valve and/or seat is worn or needs adjusting.	Inspect check valves and seats for wear and proper setting. Replace if necessary.
	Suction line is blocked.	Remove or flush obstruction. Check and clear all suction screens or strainers.
	Excessive suction lift.	For lifts exceeding 20' of liquid, filling the chambers with liquid will prime the pump in most cases.
	Suction side air leakage or air in product.	Visually inspect all suction-side gaskets and pipe connections.
	Pumped fluid in air exhaust muffler.	Disassemble pump chambers. Inspect for diaphragm rupture or loose diaphragm plate assembly.
Pump Cycles Running Sluggish / Stalling, Flow Unsatisfactory	Over lubrication.	Set lubricator on lowest possible setting or remove. Units are designed for lube free operation.
	Icing.	Remove muffler screen, de-ice, and re-install. Install a point of use air drier.
	Clogged manifolds.	Clean manifolds to allow proper air flow.
	Deadhead (system pressure meets or exceeds air supply pressure).	Increase the inlet air pressure to the pump. Pump is designed for 1:1 pressure ratio at zero flow. (Does not apply to high pressure 2:1 units).
	Cavitation on suction side.	Check suction (move pump closer to product).
	Lack of air (line size, PSI, CFM).	Check the air line size, length, compressor capacity.
	Excessive suction lift.	For lifts exceeding 20' of liquid, filling the chambers with liquid will prime the pump in most cases.
	Air supply pressure or volume exceeds system hd.	Decrease inlet air (press. and vol.) to the pump. Pump is cavitating the fluid by fast cycling.
	Undersized suction line.	Meet or exceed pump connections.
	Restrictive or undersized air line.	Install a larger air line and connection.
	Suction side air leakage or air in product.	Visually inspect all suction-side gaskets and pipe connections.
	Suction line is blocked.	Remove or flush obstruction. Check and clear all suction screens or strainers.
	Pumped fluid in air exhaust muffler.	Disassemble pump chambers. Inspect for diaphragm rupture or loose diaphragm plate assembly.
	Check valve obstructed.	Disassemble the wet end of the pump and manually dislodge obstruction in the check valve pocket.
	Check valve and/or seat is worn or needs adjusting.	Inspect check valves and seats for wear and proper setting. Replace if necessary.
	Entrained air or vapor lock in chamber(s).	Purge chambers through tapped chamber vent plugs. Purging the chambers of air can be dangerous.
Product Leaking Through Exhaust	Diaphragm failure, or diaphragm plates loose.	Replace diaphragms, check for damage and ensure diaphragm plates are tight.
	Diaphragm stretched around center hole or bolt holes.	Check for excessive inlet pressure or air pressure. Consult Chemical Resistance Chart for compatibility with products, cleaners, temperature limitations and lubrication.
Premature Diaphragm Failure	Cavitation.	Enlarge pipe diameter on suction side of pump.
	Excessive flooded suction pressure.	Move pump closer to product. Raise pump/place pump on top of tank to reduce inlet pressure. Install Back pressure device (Tech bulletin 41r). Add accumulation tank or pulsation dampener.
	Misapplication (chemical/physical incompatibility).	Consult Chemical Resistance Chart for compatibility with products, cleaners, temperature limitations and lubrication.
	Incorrect diaphragm plates or plates on backwards, installed incorrectly or worn.	Check Operating Manual to check for correct part and installation. Ensure outer plates have not been worn to a sharp edge.
Unbalanced Cycling	Excessive suction lift.	For lifts exceeding 20' of liquid, filling the chambers with liquid will prime the pump in most cases.
	Undersized suction line.	Meet or exceed pump connections.
	Pumped fluid in air exhaust muffler.	Disassemble pump chambers. Inspect for diaphragm rupture or loose diaphragm plate assembly.
	Suction side air leakage or air in product.	Visually inspect all suction-side gaskets and pipe connections.
	Check valve obstructed.	Disassemble the wet end of the pump and manually dislodge obstruction in the check valve pocket.
	Check valve and/or seat is worn or needs adjusting.	Inspect check valves and seats for wear and proper setting. Replace if necessary.
	Entrained air or vapor lock in chamber(s).	Purge chambers through tapped chamber vent plugs.

Diaphragm Servicing

Step 1: With manifolds and outer chambers removed, remove diaphragm assemblies from diaphragm rod. **DO NOT** use a pipe wrench or similar tool to remove assembly from rod. Flaws in the rod surface may damage bearings and seal. Soft jaws in a vise are recommended to prevent diaphragm rod damage.

Step 1.A: NOTE: Not all inner diaphragm plates are threaded. Some models utilize a through hole in the inner diaphragm plate. If required to separate diaphragm assembly, place assembly in a vise, gripping on the exterior cast diameter of the inner plate. Turn the outer plate clockwise to separate the assembly.

Always inspect diaphragms for wear cracks or chemical attack. Inspect inner and outer plates for deformities, rust scale and wear. Inspect intermediate bearings for elongation and wear. Inspect diaphragm rod for wear or marks.

Clean or repair if appropriate. Replace as required.

Step 2: Reassembly: There are two different types of diaphragm plate assemblies utilized throughout the Enviroflex Pumps product line: Outer plate with a threaded stud, diaphragm, and a threaded inner plate.

Outer plate with a threaded stud, diaphragm, and an inner plate with through hole. Secure threaded inner plate in a vise. Ensure that the plates are being installed with the outer radius against the diaphragm.

Step 3: Lightly lubricate, with a compatible material, the inner faces of both outer and inner diaphragm plates when using on non Overlay diaphragms (For EPDM water is recommended). No lubrication is required.

Step 4: Push the threaded outer diaphragm plate through the center hole of the diaphragm. **Note:** Most diaphragms are installed with the natural bulge out towards the fluid side. 05, 07, and 10 non-metallic units are installed with the natural bulge in towards the air side.

Step 5: Thread or place, outer plate stud into the inner plate. For threaded inner plates, use a torque wrench to tighten the assembly together. Torque values are called out on the exploded view.

Repeat procedure for second side assembly. Allow a minimum of 15 minutes to elapse after torquing, then re-torque the assembly to compensate for stress relaxation in the clamped assembly.

Step 6: Thread one assembly onto the diaphragm rod with sealing washer (when used) and bumper.

Step 7: Install diaphragm rod assembly into pump and secure by installing the outer chamber in place and tightening the capscrews.

Step 8: On opposite side of pump, thread the remaining assembly onto the diaphragm rod. Using a torque wrench, tighten the assembly to the diaphragm rod. Align diaphragm through bolt holes, always going forward past the recommended torque. Torque values are called out on the exploded view. **NEVER** reverse to align holes, if alignment cannot be achieved without damage to diaphragm, loosen complete assemblies, rotate diaphragm and reassemble as described above.

Step 9: Complete assembly of entire unit. One Piece Diaphragm Servicing (Bonded PTFE with integral plate) The One Piece diaphragm has a threaded stud installed in the integral plate at the factory. The inner diaphragm plate has a through hole instead of a threaded hole. Place the inner plate over the diaphragm stud and thread the first diaphragm / inner plate onto the diaphragm rod only until the inner plate contacts the rod. Do not tighten. A small amount of grease may be applied between the inner plate and the diaphragm to facilitate assembly. Insert the diaphragm / rod assembly into the pump and install the outer chamber. Turn the pump over and thread the second diaphragm / inner plate onto the diaphragm rod. Turn the diaphragm until the inner plate contacts the rod and hand tighten the assembly. Continue tightening until the bolt holes align with the inner chamber holes. **DO NOT LEAVE THE ASSEMBLY LOOSE**

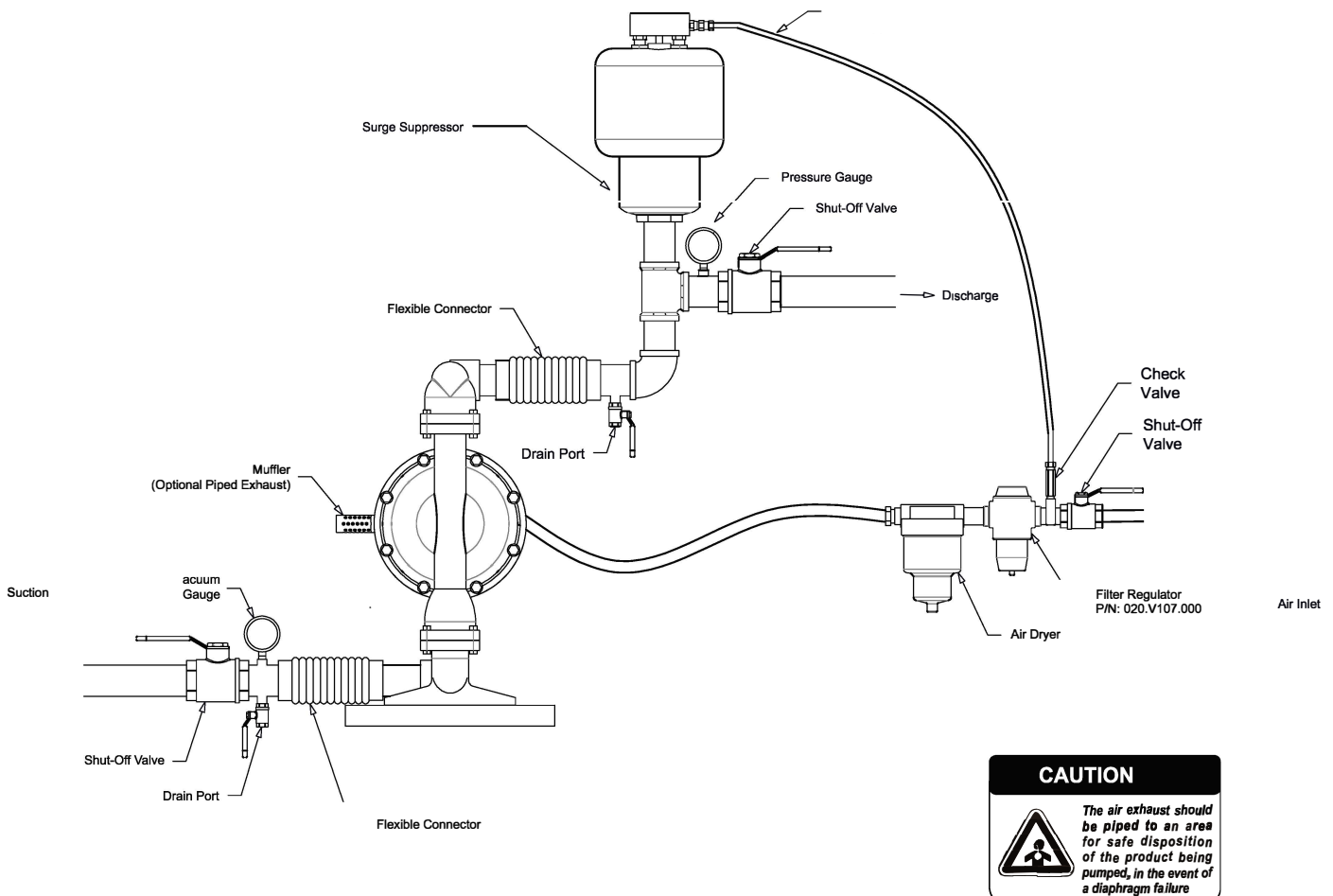


IMPORTANT



Read these instructions completely, before installation and start-up. It is the responsibility of the purchaser to retain this manual for reference. Failure to comply with the recommendations stated in this manual will damage the pump, and void factory.

Recommended Installation Guide



Installation And Start-Up

Locate the pump as close to the product being pumped as possible. Keep the suction line length and number of fittings to a minimum. Do not reduce the suction line diameter.

Air Supply

Connect the pump air inlet to an air supply with sufficient capacity and pressure to achieve desired performance. A pressure regulating valve should be installed to insure air supply pressure does not exceed recommended limits.

Air Valve Lubrication

The air distribution system is designed to operate WITHOUT lubrication. This is the standard mode of operation. If lubrication is desired, install an air line lubricator set to deliver one drop of SAE 10 non-detergent oil for every 20 SCFM (9.4 liters/sec.) of air the pump consumes. Consult the Performance Curve to determine air consumption.

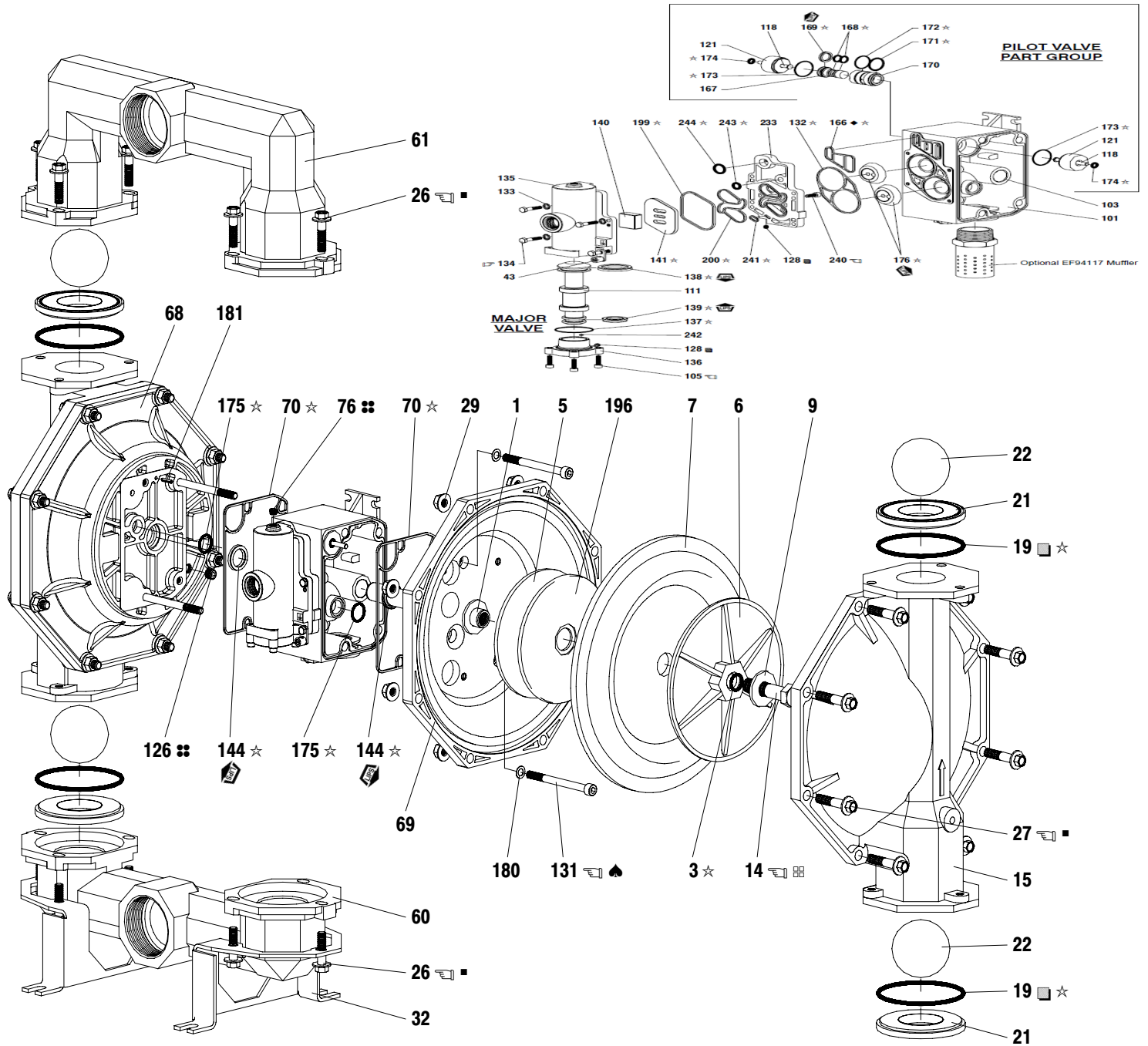
Air Line Moisture

Water in the compressed air supply may cause icing or freezing of the exhaust air, causing the pump to cycle erratically or stop operating. Water in the air supply can be reduced by using a point-of-use air dryer.

Air Inlet And Priming

To start the pump, slightly open the air shut-off valve. After the pump primes, the air valve can be opened to increase air flow as desired. If opening the valve increases cycling rate, but does not increase the rate of flow, cavitation has occurred. The valve should be closed slightly to obtain the most efficient air flow to pump flow ratio.

EXPLODED VIEWS FOR EFE80 METALLIC PUMPS



PARTS LIST FOR EFE80 METALLIC PUMPS

EF637303-XX FLUID SECTION SERVICE KITS INCLUDE: BALLS (see Ball Option, refer to -XX in chart below), DIAPHRAGMS (see Diaphragm Option, refer to -XX in chart below), and items; 3, 19, 70, 144, 175, 196, (listed below) plus (174) and EF94276 Lubriplate FML-2 grease.

SEAT OPTIONS EFE-80X-XX-XX-XX-XX-X								BALL OPTIONS EFE-80X-XX-XX-XX-XX-X							
★ "21"								★ "22" (3-1/4" dia.)				★ "19" (3/16" x 5" o.d.)			
-XXX	Seat	Qty	[Mtl]	-XXX	Seat	Qty	[Mtl]	-XXX	Ball	Qty	[Mtl]	Gasket	Qty	[Mtl]	
-AXX	EF94104-A	(4)	[Sp]	-HXX	EF94114	(4)	[SH]	-XAX	EF94103-A	(4)	[Sp]	EF94115	(4)	[E]	
-CXX	EF94104-C	(4)	[H]	-KXX	EF94621-K	(4)	[K]	-XCX	EF94103-C	(4)	[H]	EFY327-350	(4)	[V]	
-EXX	EF95678	(4)	[C]	-LXX	EF94939	(4)	[Ha]	-XGX	EF94103-G	(4)	[B]	EFY325-350	(4)	[B]	
-FXX	EF95674	(4)	[A]	-SXX	EF94113	(4)	[SS]	-XTX	EF94103-T	(4)	[T]	EFY328-350	(4)	[T]	
-GXX	EF94104-G	(4)	[B]					-VXX	EF94103-V	(4)	[V]	EFY327-350	(4)	[V]	

DIAPHRAGM OPTIONS EFE-80X-XX-XX-XX-XX-X										
★ SERVICE KIT		★ "7"			★ "8"			★ "3" (1/8" x 1" o.d.)		
-XXX	-XX = (Ball) -X = (Diaphragm)	Diaphragm	Qty	[Mtl]	Diaphragm	★ "7" Qty	[Mtl]	"O" Ring	Qty	[Mtl]
-XXA	EF637303-XA	EF94091-A	(2)	[Sp]	-----	---	---	EFY328-210	(2)	[T]
-XXB	EF637303-XB	EF94110-A	(2)	[Sp]	-----	---	---	EFY328-210	(2)	[T]
-XXC	EF637303-XC	EF94091-C	(2)	[H]	-----	---	---	EFY327-210	(2)	[V]
-XXG	EF637303-XG	EF94091-G	(2)	[B]	-----	---	---	EFY328-210	(2)	[T]
-XXT	EF637303-XT	EF94090-T	(2)	[T]	94110-A	(2)	[Sp]	EFY328-210	(2)	[T]
-XXV	EF637303-XV	EF95345	(2)	[V]	-----	---	---	EFY327-210	(2)	[V]

MATERIAL CODE

[A]	=	Aluminum
[B]	=	Nitrile
[C]	=	Carbon Steel
[Co]	=	Copper
[CI]	=	Cast Iron
[E]	=	E.P.R.
[H]	=	Hytre
[Ha]	=	Hastelloy - C
[K]	=	Kynar PVDF
[SH]	=	Hard Stainless Steel
[Sp]	=	Santoprene
[SS]	=	Stainless Steel
[T]	=	Teflon P.T.F.E.
[V]	=	Viton

CENTER SECTION PART OPTIONS EFE-80X-XX-XX-XX-XX-X										
Item	Description (size)	Qty	Part No.	[Mtl]	Part No.	[Mtl]	Part No.	[Mtl]	Part No.	[Mtl]
5	Backup Washer	(2)	EF94831-1	[C]	EF94831-1	[C]	EF94831-2	[SS]	EF94831-2	[SS]
68	Air Cap	(1)	EF94030-1	[A]	EF94721-1	[A]	EF94031-1	[SS]	EF94031-1	[SS]
69	Air Cap	(1)	EF94030-2	[A]	EF94721-2	[A]	EF94031-2	[SS]	EF94031-2	[SS]
76	Pipe Plug (1/8 - 27 N.P.T. x 0.27")	(1)	-----	---	EFY17-50-S	[SS]	-----	---	EFY17-50-S	[SS]
126	Pipe Plug (1/4 - 18 N.P.T. x 7/16")	(2)	-----	---	EFY17-51-S	[SS]	EFY17-51-S	[SS]	EFY17-51-S	[SS]
131	Screw (M10 x 1.5 - 6g x 120 mm)	(4)	EF94531	[C]	EF94531	[C]	EF96656	[SS]	EF96656	[SS]
★✓ 175	"O" Ring (3/32" x 1" o.d.)	(2)	EFY325-117	[B]	EFY325-117	[B]	-----	---	-----	---
★✓	(3/32" x 1-1/16" o.d.)	(2)	-----	---	-----	---	EFY325-118	[B]	EFY325-118	[B]
181	Roll Pin (5/32" o.d. x 3/4 long")	(4)	-----	---	-----	---	EFY178-56-S	[SS]	EFY178-56-S	[SS]

MANIFOLD THREAD / FLUID CAP MATERIAL OPTIONS EFE-80X-XX-XX-XX-XX-X										
Item	Description (size)	Qty	Part No.	[Mtl]	Part No.	[Mtl]	Part No.	[Mtl]	Part No.	[Mtl]
6	Fluid Side Washer	(2)	EF94802	[A]	EF94803	[SS]	EF94947	[Ha]	EF94803	[SS]
9	Washer (3/16" i.d. x 2" o.d. x 5/32")	(2)	EFY13-12-T	[SS]	EFY13-12-T	[SS]	EF94949	[Ha]	EFY13-12-T	[SS]
14	Cap Screw (3/4" - 16 x 3-1/4")	(2)	EFY5-134-T	[SS]	EFY5-134-T	[SS]	EF94948	[Ha]	EFY5-134-T	[SS]
15	Fluid Cap	(2)	EF94024	[A]	EF94106	[CI]	EF94693	[Ha]	EF94107	[SS]
32	Leg (PX30A-XXX-XXX-C)	(2)	-----	---	EF94701-1	[C]	N / A	N / A	EF94703-1	[C]
	(PX30S-XXX-XXX-C)	(2)	-----	---	EF94701-2	[SS]	EF94703-2	[SS]	EF94703-2	[SS]
60	Inlet Manifold (N.P.T.F.)	(1)	EF94699-1	[A]	EF94305-1	[CI]	EF94691-1	[Ha]	EF94216-1	[SS]
	(BSP)	(1)	EF94699-2	[A]	EF94305-2	[CI]	EF94691-2	[Ha]	EF94216-2	[SS]
61	Outlet Manifold (N.P.T.F.)	(1)	EF94700-1	[A]	EF94702-1	[CI]	EF94809-1	[Ha]	EF94704-1	[SS]
	(BSP)	(1)	EF94700-2	[A]	EF94702-2	[CI]	EF94809-2	[Ha]	EF94704-2	[SS]

EXTERNAL HARDWARE OPTION EFE-80X-XX-XX-XX-XX-X						
Item	Description (size)	Qty	Part No.	[Mtl]	Part No.	[Mtl]
26	Screw (M12 x 1.75 - 6g x 45 mm)	(12)	EF94412-1	[C]	EF94412-2	[SS]
27	Screw (M12 x 1.75 - 6g x 60 mm)	(16)	EF94991-1	[C]	EF94991	[SS]
29	Nut (M12 x 1.75 - 6g)	(16)	EF95053-1	[C]	EF95053	[SS]

NOTE: Seat options -AXX, -CXX and -GXX do not require item 19 "O" ring.

✓ Air Motor Kit parts, see page 6.

COMMON PARTS									
Item	Description (size)	Qty	Part No.	[Mtl]	Item	Description (size)	Qty	Part No.	[Mtl]
1	Rod	(1)	EF94984	[C]	★✓ 144	"U" Cup (3/16" x 1-3/8" o.d.)	(2)	EFY186-51	[B]
43	Ground Lug (see page 7)	(1)	EF93004	[Co]	✓ 180	Gasket (0.406" i.d. x 0.031" thick)	(4)	EF94098	[Co]
★✓ 70	Gasket	(2)	EF94100	[B]	★ 196	Cushion	(2)	EF94631	[Sp]

AIR MOTOR PARTS

Item	Description (size)	Qty	Part No.	[Mtl]
101	Center Body (EFE-80X-XX-XX-XX-XX-X)	(1)	EF94028	[A]
	EFE-80X-XX-XX-XX-XX-X	(1)	EF94109	[SS]
103	Bushing	(1)	EF94092	[D]
105	Screw (M6 x 1 - 6g x 20 mm)	(4)	EF95887	[SS]
111	Spool	(1)	EF95651	[D]
118	Actuator Pin (0.250" x 2.276" long)	(2)	EF94083	[SS]
121	Sleeve	(2)	EF94084	[D]
127	90 St. Elbow (1-1/2 - 11-1/2 N.P.T.)	(1)	EF94860	[C / I]
128	Set Screw (1/4" - 20 x 1/4")	(2)	EFY29-42-S	[SS]
✓ 132	Gasket	(1)	EF94099	[B]
133	Lockwasher (1/4") (EFPX30A-X-X-C)	(3)	EFY117-416-C	[C]
	(EFPX30S-X-X-C)	(3)	EFY14-416-T	[SS]
134	Screw (M6 x 1 - 6g x 30 mm)	(4)	EF96358	[SS]
135	Valve Housing (EFE-80X-AL-XX-XX-XX-X)	(1)	EF96334-1	[A]
	(EFE-80X-AL-XX-XX-XX-X)	(1)	EF96334-2	[A]
	(EFE-80X-SS-XX-XX-XX-X)	(1)	EF96337-1	[SS]
	(EFE-80X-SS-XX-XX-XX-X)	(1)	EF96337-2	[SS]
136	Plug (EFE-80X-AL-XX-XX-XX-X)	(1)	EF96335	[A]
	(EFE-80X-AL-XX-XX-XX-X)	(1)	EF96339	[SS]
✓ 137	"O" Ring (1/16" x 2" o.d.)	(1)	EFY325-32	[B]
✓ 138	"U" Cup (3/16" x 1.792" o.d.)	(1)	EF95966	[B]
✓ 139	"U" Cup (3/16" x 1-1/4" o.d.)	(1)	EFY186-50	[B]
140	Valve Insert	(1)	EF95650	[Ck]
141	Valve Plate	(1)	EF95659	[Ck]
✓ 146	"O" Ring ◆ (3/32" x 1-1/16" o.d.)	(1)	EFY325-118	[B]
✓ 147	"O" Ring ◆ (1/8" x 1/2" o.d.)	(2)	EFY325-202	[B]

Item	Description (size)	Qty	Part No.	[Mtl]
✓ 166	Track Gasket ●	(1)	EF94026	[B]
✓ 167	Pilot Piston (includes 168 and 169)	(1)	EF67164	[D]
168	"O" Ring (3/32" x 5/8" o.d.)	(2)	EF94433	[U]
169	"U" Cup (1/8" x 7/8" o.d.)	(1)	EFY240-9	[B]
170	Piston Sleeve	(1)	EF94081	[Br]
✓ 171	"O" Ring (3/32" x 1-1/8" o.d.)	(1)	EFY325-119	[B]
✓ 172	"O" Ring (1/16" x 1-1/8" o.d.)	(1)	EFY325-22	[B]
✓ 173	"O" Ring (1/16" x 1-3/8" o.d.)	(2)	EFY325-26	[B]
★✓ 174	"O" Ring (1/8" x 1/2" o.d.)	(2)	EFY325-202	[B]
✓ 176	Diaphragm (check valve)	(2)	EF94102	[Sp]
✓ 199	Track Gasket	(1)	EF95666	[B]
✓ 200	Gasket	(1)	EF95665	[B]
201	Muffler	(1)	EF94810	
233	Adapter Plate (EFE-80X-AL-XX-XX-XX-X)	(1)	EF96336	[A]
	(EFE-80X-AL-XX-XX-XX-X)	(1)	EF96338	[SS]
240	Screw (M6 x 1 - 6g x 16 mm)	(2)	EF95991	[SS]
✓ 241	Track Gasket	(1)	EF96344	[B]
✓ 242	"O" Ring (1/16" x 7/32" o.d.)	(1)	EFY325-5	[B]
✓ 243	"O" Ring (1/8" x 5/8" o.d.)	(1)	EFY325-204	[B]
✓ 244	"O" Ring (1/8" x 7/8" o.d.)	(1)	EFY325-208	[B]
★✓	Lubriplate FML-2 Grease	(1)	EF94276	
	Lubriplate Grease Packets (10)		EF637308	
◆ Used on models EFE-80X-AL-XX-XX-XX-X.				
● Used on models EFE-80X-SS-XX-XX-XX-X.				
○ Items not shown				



Certificate of Compliance

No. 3N221114.ECC82

Certificate's
Holder:

Enviroflex Ltd.
Pump Point, 21 Ascot Drive, DERBY, DE24 8GZ, United Kingdom

Certification
ECM Mark:



Product:
Model(s):

Air Operated Double Diaphragm Pump (Conductive)
(see the following annex)

Verification to:

Standard:

BS EN IEC 60079-0:2018, BS EN ISO 80079-37:2016,
BS EN IEC 60079-15:2019-TC

related to GBR Regulation:

Equipment and Protective Systems Intended for use in Potentially
Explosive Atmospheres Regulations 2016

Remark: This document has been issued on a voluntary basis and upon request of the manufacturer. It is our opinion that the technical documentation received from the manufacturer is satisfactory for the requirements of the ECM Certification Mark. The conformity mark above can be affixed on the product(s) accordingly to ECM regulation about its release and its use. The regulation can be found at www.entecerma.it.

Additional information and clarification about the Marking:



The manufacturer is responsible for the UKCA Marking process, and if necessary, must refer to a Notified Body. This document has been issued on the basis of the regulation on ECM Voluntary Mark for the certification of products. RG01_ECM available at: www.entecerma.it

Issuance date: 14 November 2022

Expiry date: 13 November 2027

For online check:



Approver
Ente Certificazione Macchine
Legal Representative
Luca Bedonni



Ente Certificazione Macchine Srl

Via Ca' Bella, 243 – Loc. Castello di Serravalle – 40053 Valsamoggia (BO) - ITALY
☎ +39 051 6705141 📠 +39 051 6705156 ✉ info@entecerma.it 🌐 www.entecerma.it



Annex I

No. 3N221114.ECC82

Model(s):

EFG05 series, EFG1F series, EFG15 series, EFG20 series, EFG30 series;
 EF05 metallic series, EF1F metallic series, EF15 metallic series, EF20 metallic series, EF30 metallic series;
 EF02 non-metallic conductive series, EF05 non-metallic conductive series, EF07 non-metallic conductive series, EF10 non-metallic conductive series, EF1F non-metallic conductive series, EF15 non-metallic conductive series, EF20 non-metallic conductive series;
 EF66605H series, EF66610X metallic series, EF66615X metallic series, EF6662XX metallic series, EF6663XX metallic series;
 EFPD15 metallic series, EFPD20 metallic series, EFPD30 metallic series;
 EFT02 series, EFT04 series, EFT08 series, EFT15 series;
 EFE5 metallic series;
 EFHDF10 series, EFHDF20 series, EFHDF30 series, EFHDF40 series;
 EFL1F metallic series, EFL15 metallic series, EFL20 metallic series, EFL30 metallic series;
 EFTA1 series, EFTA2 series, EFTA3 series;
 EFT1F food series, EFT15 food series, EFT20 food series, EFT30 food series;
 EFF2 hygienic series, EFF4 hygienic series, EFF8 hygienic series, EFF15 hygienic series

Marking:

-  II 2G c T5
-  II 2D c T100°C
-  II 2 G Ex h IIB T4...T3 Gb